

Potential and Implementation of Alternative Funding and Finance of the USACE Civil Works Mission: APPENDIX A

2013-R-06



APPENDIX A

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- Analysis of Alternative Finance Mechanisms
- Florida State Infrastructure Bank: Overview
- Fluor P3 Models
- NYC Department of Environmental Protection: West of Hudson Hydroelectric Projects
- North Tarrant Express – Project Brief
- Ohio Department of Transportation: State Infrastructure Bank
- Transportation Infrastructure Finance and Innovation Act (TIFIA)

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- List of Attendees
- Summary of USACE Civil Works Business Programs
- USACE Civil Works Mission and the Potential for Alternative Financing

Other MaterialsA-466

- Afternoon Session Workshop Notes
- Key Principles and Objectives for Workshop (Summary from Initial Speakers)

USACE Innovative Financing Workshop Agenda

First Day: Tuesday, Feb 21st

- 8:30 AM Introductions
- Workshop Goals and Objectives
- Administrative Details
- 9:00 AM Presentation of Innovative Financing Techniques
- A. Public Private Partnerships
- B. Infrastructure Banks
- C. Credit Assistance and Bonds
- D. Matching Ratios/Donations
- E. Bonds
- F. Added Value Capture
- G. Public-Sector Comparator
- H. Advance Construction
- I. Other
- 10:00 AM Break
- 10:15 AM Agency and Private Sector Presentations
- A. State Departments of Transportation:
 AASHTO – Director of Program Finance and Management
 Mr. Jack Basso
- B. P3 and Innovative Finance Solutions:
 Clary Consulting, LLC
 Lowell Clary – President, and Chair, TRB Revenue and Finance Committee
- C. Lending and Financial Advisory:
 Macquarie Group
 Mr. D.J. Gribbin (formerly US DOT and FHWA General Counsel)
- D. Implications of Innovative Funding Techniques in Design & Construction
 Jacobs Engineering
 Ms. Pamela Bailey Campbell
- E. Operations and Maintenance Privatization:
 Berger Group Holdings, Inc.
 Nick Masucci – President and CEO

Note: Each speaker will make a short presentation followed by a question and answer period.

12:15 PM – Lunch

1:30 PM – Moderated Session – Applicability of Innovative Techniques for USACE Business Lines

- A. Navigation
- B. Recreation
- C. Hydropower
- D. Environmental Initiatives
- E. Flood Risk Management
- F. Water Supply
- G. Emergency Management

Each participant will be provided a matrix (previously developed by USACE) that identifies the potential application of innovative financing techniques by business lines. Each technique will be reviewed and the potential application to the business lines will be evaluated. The expert panel will participate in the discussion and provide application advice.

An updated matrix will be created based on the work session and redistributed at the beginning of the second day of the workshop.

4:00 PM – Adjourn

Second Day: Wednesday, Feb 22nd

8:30 AM – Review of Previous Day and Matrix

9:00 AM – Conduct First Charrette – Select Innovative Techniques with Significant Financial Potential

Conduct a scoping process with the participants to determine which techniques have the highest potential for increasing funding as well as having the best fit for the USACE and to be included in the White Paper and the Financial Report to be written for Phase II.

10:15 AM – Break

10:30 AM – Conduct Second Charrette – What Are the Opportunities and Constraints of the Identified Alternative Funding Mechanisms

As part of the charrette, the workshop participants will identify the opportunities available to implement the alternative funding mechanism in the context of the USACE programs and the constraints that implementation faces. For example:

1. Do the identified techniques require a legal review in order to be considered by USACE?
2. Could changes be made through the regulatory process?
3. What are the potential financial benefits of the innovative funding mechanisms?
4. Who and what are the likely objections to the proposed changes?

5. Who are the likely supporters and potential funding partners?
6. Who are the innovative funding champions with the USACE and what additional steps are necessary for implementation?

Note on Charrettes: The participants will be asked to form working groups and address a series of questions as described above. The group or groups will be given background information to assist them and recorders will be provided.

12:15 PM – Lunch

1:30 PM – Plenary Session – Moderator Led Review of Working Group Charrette Results

2:15 PM – Moderator Led Discussion and Review of Proposed White Paper Outline and Phase II Innovative Funding Report

3:00 PM – Summary and Next Steps

3:30 PM – Adjourn

Note: Prior to the workshop each participant will be given in advance copies of pertinent reports and papers from the literature review. Funding matrices and proposed White Paper and Innovative Funding Report outlines as well as working papers for the charrettes will be provided to each of the participants.

USACE Innovative Financing Workshop

Location: Louis Berger DC Office

1250 23rd Street NW

Washington, DC 20037

Conference Room 408

Date: Tuesday, February 21st and Wednesday, February 22nd

Objective: The objective of the workshop is to engage USACE senior leaders and external experts on financing mechanisms and to assist the USACE in exploring alternative financing mechanisms. The workshop will present a variety of innovative funding mechanisms used by various federal, state, and local agencies as well as the private sector for transportation infrastructure projects will. Invited experts who have applied these techniques will be making presentations during the workshop.

Workshop Approach:

After a series of presentations on existing financing mechanisms and what other agencies and private sectors are doing in terms of creative funding sources, a series of moderated led discussion will be held on the following issues and questions.

1. Is Alternative Financing a viable option for USACE? What components of each business line might lend themselves to finance options?
2. What are the opportunities and constraints of various Alternative Finance mechanisms within the context of the USACE operations?
3. What are the next steps forward? What are the most promising financial alternatives for implementation? What USACE administrative or legal steps are necessary for implementing the identified financial alternatives?

End Product: A Workshop Summary Report that will be the basis of the Innovative Financial White Paper.



Overview of Innovative Financing Techniques

Potential Strategies and Effective Practices for Consideration During the Workshop





Objective: Potential Financing Strategies

- Compilation of strategies for workshop discussion and evaluation in White Paper
 - Techniques for Increasing Capitalization and Recapitalization (partnerships and finance strategies)
 - Fee Enhancement (to support partnerships and local cost share)
 - Techniques for Lowering Cost of Program Delivery (effective practices to promote savings and efficiency)
 - Techniques for Expanding and Optimizing Cost Sharing (federal and local agencies)



Capitalization: Public Private Partnership (PPP) Strategies

- PPP Delivery Methods
 - Long Term Leases/Concessions, including Design Build Operate Maintain + Finance (DBOM+F) (*goals: asset divestiture, raise funds for recapitalization*)
 - Availability Payment Program with DBOM (*goal: pay over time for immediate recapitalization*)
 - Design Build (*goal: transfer cost and delivery risk with firm-fixed price*)
 - Privatized Asset Management Program (*goal: transfer cost escalation risk with firm-fixed price*)



Capitalization: Public Private Partnership (PPP) Strategies

- Financing to Facilitate PPPs
 - Credit Assistance/Enhancement Program (examples: USDOT TIFIA and RRIF programs)
 - Loan Guarantees and Bond Insurance
 - Construction-Period Loans and Long-Term Subordinate Loans
 - Reserve Funding or Guarantees
 - Bond Solutions (Private Activity Bonds or direct underwriting)
 - Revenue Source Authorization/Assistance
 - Investment Tax Credit Program
 - Infrastructure Bank (to organize all financing initiatives)
 - Seed funding through appropriation, asset divestiture, or trust fund revenue
 - Additional leverage (3:1 or 4:1) through issue of bank bonds or sale of loans
 - Administer Credit Assistance Program or Bond Solutions (as above) for additional leverage through private equity investment
 - Detailed credit evaluation and project prioritization



Fee Enhancement

- Raise funds for recapitalization through fees to dedicated trust funds, PPP support, or infrastructure bank
 - *Key target:* Freight User Fees (ad valorem taxes, container fees, docking surcharges or access fees, lock user fees, fuel taxes, waterway tolls)
 - Value Capture Program (fees to capture benefits to users of FRM, Recreation and FUSRAP investments)
 - Tax Increment Finance Districts
 - Developer Fees
 - Special Improvement or District
 - Asset Divestiture (upfront fee or annual lease/license)
 - Technology Transfer (royalty for use of innovative technology or fees for technical assistance or services)
 - Easements and Branding Rights (right of way easements, license of naming rights or advertising)



Lowering the Cost of Program Delivery

- Initiatives to promote efficiency and value based on effective USDOT practices
 - Special Experimental Program Delivery (authorization for pilot testing of innovative techniques)
 - Advance Construction Program (authorization for full recognition of advanced construction)
 - LIFE (Long-lasting, Innovative, Fast, and Efficient) program to promote efficient construction techniques, innovative materials, or effective life-cycle maintenance approaches.
 - Budget flexibility (redefine maintenance versus preservation to allow flexibility in transfer of program funds)



Expanding and Optimizing Cost Share

- Change in cost share standard (innovative finance justifies and enables higher local share)
 - USACE support through innovative finance toolkit, technical assistance, and credit enhancement
 - USACE shifts focus to project planning and technical assistance
- Project prioritization based on level of non-federal match (USACE sets minimum/maximum or removes cap)
- Promote donations and not-for-profit partnerships (e.g., conservancy program for recreation facilities)
- Federal agency coordination and cost sharing
 - Overlapping responsibilities and multi-use facilities
 - Consider actual use not just authorized purpose
 - Multi-modal corridor programs for goods movement



Your Ideas and Input





USACE Alternative Finance Workshop

Introduction and Goals



Workshop Objective and Goals

- Are alternative finance strategies a viable option for USACE? What components of each business line might lend themselves to alternative strategies?
- What are the opportunities and constraints of alternative strategies within the context of Civil Works operations?
- What are the most promising strategies?
- What are the next steps forward for study and implementation?
- What issues should be addressed in our workshop whitepaper?

Best Practices in Innovative Financing & P3s

Pamela Bailey-Campbell
Jacobs Engineering

USACE Innovative Financing Workshop
February 21, 2012

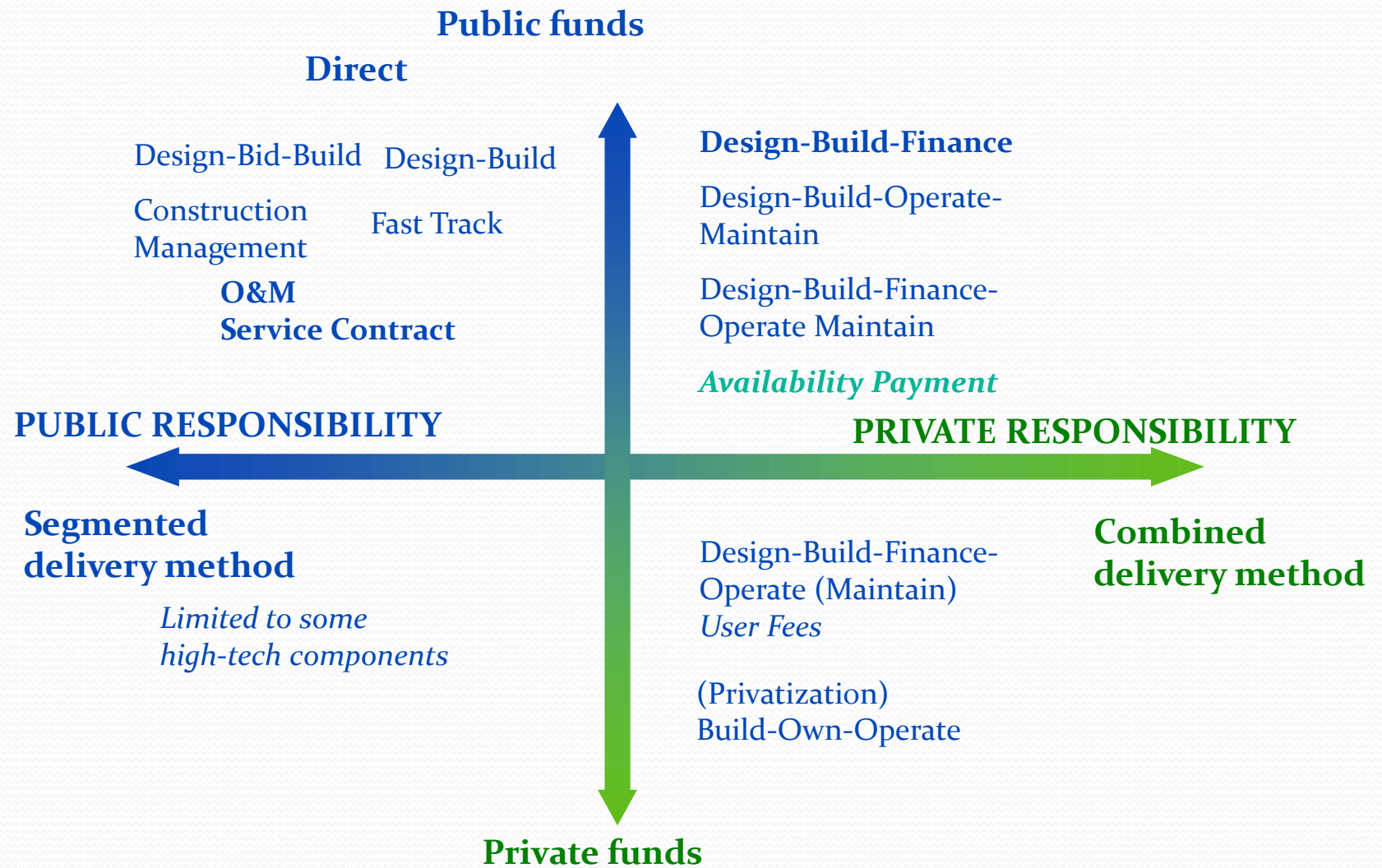
What is a P3?

An Agreement Between the Public and Private Sector Parties that Transfers Infrastructure Delivery Functions to the Private Sector

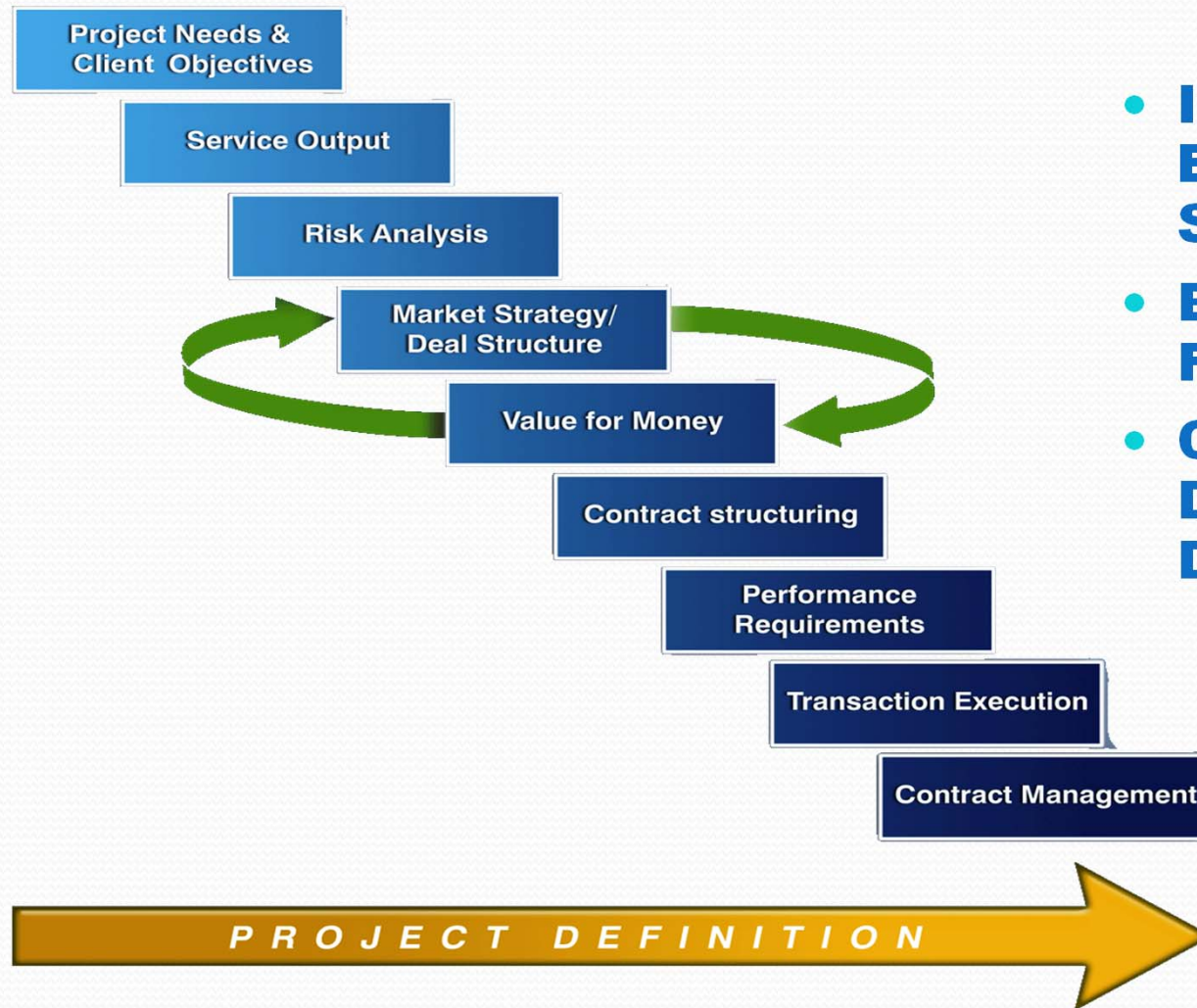
- Planning, design, financing, construction, operations and/or maintenance functions are candidates
- Most of these are traditionally regarded as public sector responsibility in the U.S.
- Transfer of *risk* associated with transfer of *responsibility*



Risk vs. Control Continuum



P3s: Much More Than Concessions



- **I**nnovative Tax-**E**xempt Financing **S**tructures
- **B**lending Various **F**unding Sources
- **C**reative Use of **D**esign-Build, **D**BOM
 - Obtain Innovation, Cost Efficiency, Schedule & Cost Certainty

Examples

Innovative Finance & P3s

Roadway Transaction Examples

<i>Project</i>	<i>Owner</i>	<i>Contract</i>	<i>Amt (\$M)</i>	<i>Lead Sponsor(s)</i>
I-495 Capital Beltway HOT Lanes	VDOT	DBFO/Concession	\$1,998	Fluor, Transurban
I-595 Express	FDOT	Availability Concession	\$1,635	ACS Dragados, Macquarie
SH 130 Segments 1-4	TxDOT	DB/Public Finance	\$1,369	Fluor
SH 130 Segments 5-6	TxDOT	DBFO/Concession	\$1,358	Cintra, Zachry
E-470	E-470 PHA	DB/Public Finance	\$1,200	Washington Group, Kiewit
Foothill Eastern Toll Road	TCA	DB/Public Finance	\$803	Flatiron
South Bay Expressway (formerly SR 125)	Caltrans	DBFO/Concession	\$773	Macquarie
Tacoma Narrows Bridge	WSDOT	DB/Public Finance	\$615	Bechtel/Kiewit
Dulles Greenway	VDOT	Fully Privatized	\$350	Macquarie
North Tarrant Express	TxDOT	DBFO/Concession	\$1,600	Cintra, Meridiam
LBJ Express I-635 ML	TxDOT	DBFO/Concession	\$1,500	Cintra, Meridiam

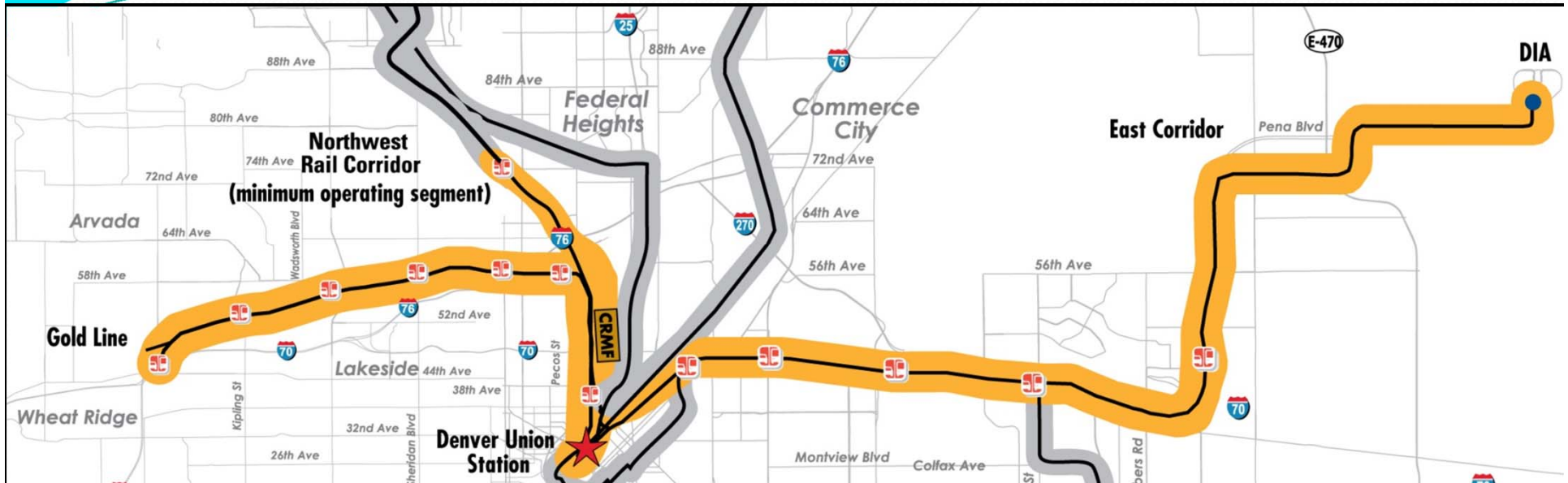
Notable Deal of the Year: Highway LBJ Express

- Project: 17-miles of Managed Lanes along I-635
- Owner: Texas Department of Transportation
- Private Developer: Cintra & Meridiam
 - 51% Cintra, 42.4% Meridiam, Dallas Police & Fire Pension System 6.6%
- 52-Year Concession Agreement
- \$2.62 Billion Project Financing
 - \$665M in sponsor equity
 - \$615M PABs (unwrapped) 7.25%
 - \$850M TIFIA loan (2nd largest in program history) 4.23%
 - \$496M TxDOT Grant

Transit Transaction Examples

<i>Project</i>	<i>Owner</i>	<i>Contract</i>	<i>Amt (\$M)</i>	<i>Lead Sponsor(s)</i>
Hudson-Bergen Light Rail	New Jersey Transit	DBOM	\$1,674	Washington Group
RAV Line	Vancouver Transit Authority	DBFO	\$1,650	SNC-Lavalin
T-REX (Combined Highway/Transit)	CDOT/RTD	DBOM	\$1,186	Kiewit/Parsons
Jamaica-JFK Airtrain	Port Authority of NY/NJ	DBOM	\$980	Skanka/Bombardier
Las Vegas Monorail	L.V. Monorail LLC	DBOM	\$800	Bombardier/Granite
Eastside Light Rail	Los Angeles County Metropolitan Transportation Authority	DB	\$600	Washington Group
BART San Francisco Airport Ext.	Bay Area Rapid Transit	DB	\$530	Tutor-Saliba
Trenton River Light Rail	New Jersey Transit	DBOM	\$508	Bechtel
Hiawatha Light Rail	MnDOT/Metropolitan Council	DB	\$291	Granite
Gold Line Light Rail	Los Angeles County Metropolitan Transportation Authority	DB	\$267	Kiewit/Washington Group
Palm Beach-Ft Lauderdale Rail	Tri-County Commuter Rail Authority	DB	\$232	Herzog/Granite
Portland Airport MAX	TriMet	DB	\$125	Bechtel
Eagle P3	Denver RTD	DBFO	\$2,800	Laing, Uberior

Denver RTD Eagle P3 Project



- 35.5 Miles of New Commuter Rail Open by 2016
 - 22.8 miles on East Corridor
 - 7.2 miles on Gold Line
 - 5.5 miles on Northwest Rail
 - 14 stations
- Commuter Rail Fleet
- Commuter Rail maintenance facility
- Private Developer: John Laing , Uberior, Fluor
 - 45% each Laing & Uberior (purchased from Macquarie) + 10% Fluor
 - 34-Year Concession Agreement (initially 46 years)
 - 6 years Design/Build
 - 28 years O&M

Notable P3 Deal of the Year: Transit

Denver Eagle P3

- \$2.8B Project Capital Financing
 - \$398M Private Activity Bonds (first ever for Mass Transit)
 - \$89M Equity/Concessionaire contribution
 - \$280M TIFIA
 - \$884M Sales & Use Tax and Revenue Bonds
 - \$1.03B Federal Transit Administration FFGA
 - \$101M Other federal grants/local/state contributions
- Bid received was \$300M LESS than estimated cost allowing partial funding for THREE more projects
- Able to reduce concession period from 46 to 34 years

Metrorail Plan of Finance

Funding Sources for the Washington Metrorail Project

(Thousands YOE Dollars)

SOURCE	PHASE 1	PHASE 2	TOTAL PROJECT	
	Total	Total	Total	% of Total
Federal - FFGA	\$ 900,000	\$ -	\$ 900,000	17.1%
Commonwealth of Virginia	251,700	23,300	\$ 275,000	5.2%
Fairfax County	400,000	446,167	846,167	16.1%
Loudoun County	-	252,273	252,273	4.8%
MWAA (Aviation Funds)	-	215,484	215,484	4.1%
DTR Funding	\$ 1,203,995	\$ 1,562,776	\$ 2,766,771	52.6%
TOTAL SOURCES OF FUNDS	\$ 2,755,695	\$ 2,500,000	\$ 5,255,695	100.0%

	= Contribution is fixed amount
	= Contribution is fixed percentage of total cost
	= Contribution is not fixed - amount and percentage of total cost may change.

Panama Canal



Panama's Third Set of Locks Project:

- Being developed as a design-build fixed price of \$3.10 billion – this was lower than the public sector's estimated \$3.48 billion
- Private sector partners will design and construct the project, taking on the risk of cost overruns
- The public sector will operate and maintain the locks once built

Successful Partnerships - Desalination

Project	Size (mgd)	Cost
Tampa Bay	25	\$2.08 Billion
Ashkelon, Israel	36	\$2 Billion
Ashkelon, Israel	36	\$1.89 Billion
Larnaca, Cyprus	14	\$2.76 Billion
Trinidad	30	\$2.69 Billion
Shuweihat, UAE	120	\$2.61 Billion
Taweelah B, UAE	63	\$2.65 Billion
Taweelah C, UAE	60	\$2.35 Billion
Texas	50	\$2.10 - \$2.30 Billion
Southern California	50	\$2.41 Billion

Scottish Water Solutions – Water Infrastructure Capital Program

Our Purpose

- Always delivering affordable solutions for Scottish Water
- A valued partner of Scottish Water
- Driving value for money through innovation, clear objectives and disciplined project management



- Joint Venture between Scottish Water, Veolia Water UK, Jacobs and Laing O'Rourke Infrastructure

51% Scottish Water	20% Veolia	15% Jacobs	15% Laing O'Rourke
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- \$720 million new capital investment; 280 water infrastructure improvement projects throughout Scotland over 5 years
- Scottish Water Solutions is a P3 program to deliver new infrastructure by incentivizing private partners to find innovative solutions
 - Delivered £2Billion of capital investment 2003-2010

“Scottish Water has transformed a public service into a significant success story”

Advantages & Disadvantages Best Practices

Innovative Finance & P3s

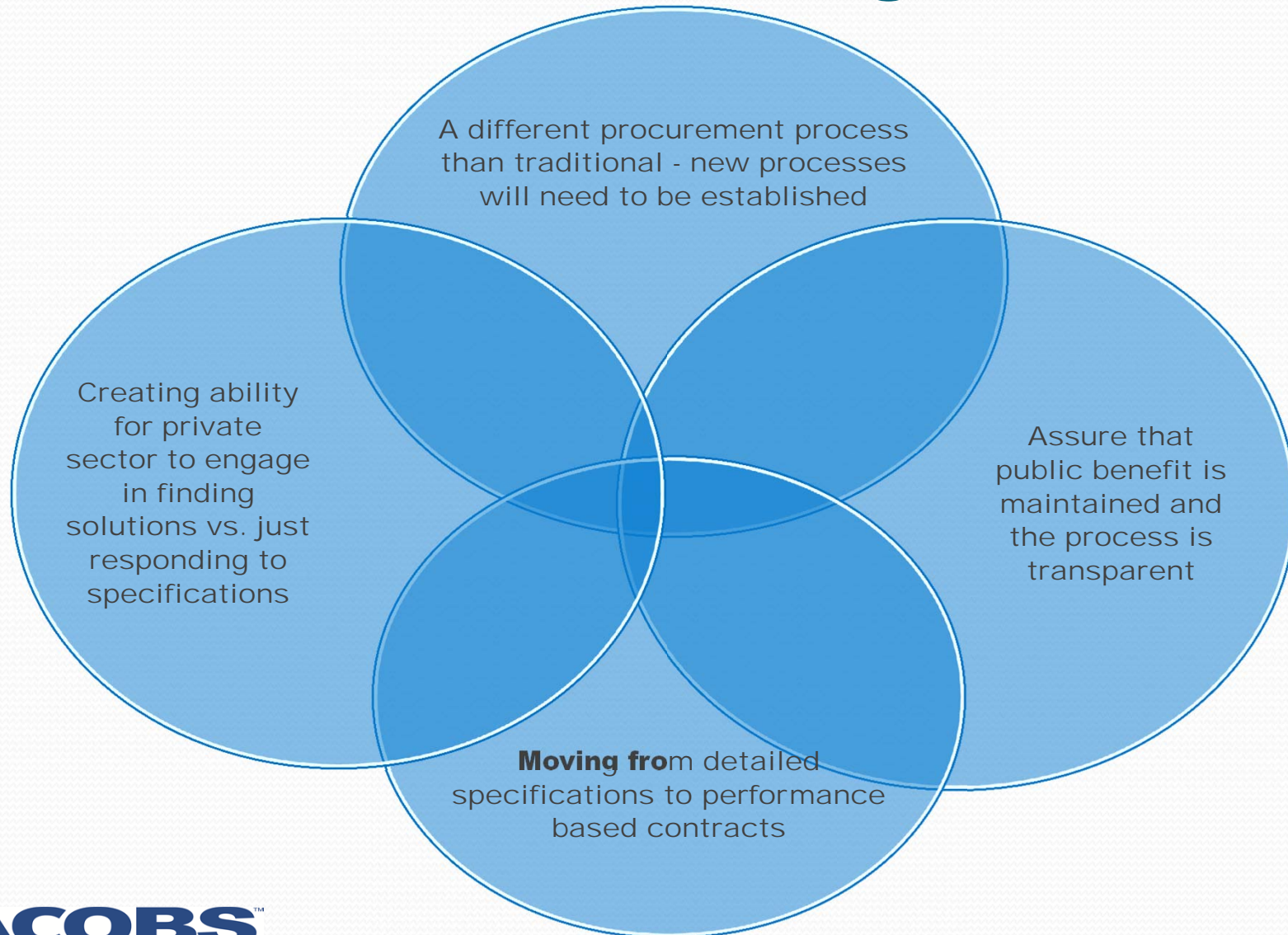
Disadvantages/Risks of P3s

	<i>Concerns of Reduced Public Control</i>
	<i>Private Financing Costs May Be Higher</i>
	<i>Consortium Selection - Optimal Partners for All Phases?</i>
	<i>User Fees: Private Entity "Control" of Rates</i>
	<i>Public Concerns on Level of Maintenance & Service</i>
	<i>Long-term Financial Stability of Private Partner</i>
	<i>For Concessions, Assuring Adequate "Hand-back" Condition</i>

Advantages of P3s

	<i>Expedites Delivery of Projects & Potentially Reduces Costs</i>
	<i>Additional Avenues for Project Funding and Financing Flexibility</i>
	<i>May Close "Gap" for Projects – Cash Flow, Decrease Cost, Faster Revenue Flow</i>
	<i>Single Point of Responsibility Ensures Integration</i>
	<i>Incentive to Increase Quality & Optimize Maintenance Investments to Reduce Lifecycle Costs</i>
	<i>Potential Operational Cost Efficiencies</i>
	<i>Risk Transfer: Financing, Construction and/or Operations If availability - repayment to private sector begins at project completion</i>

Understanding Key Differences with Innovative Funding & P3s



Critical Elements of a Successful Innovative Delivery Program



- Clear Goals, Designated Champion

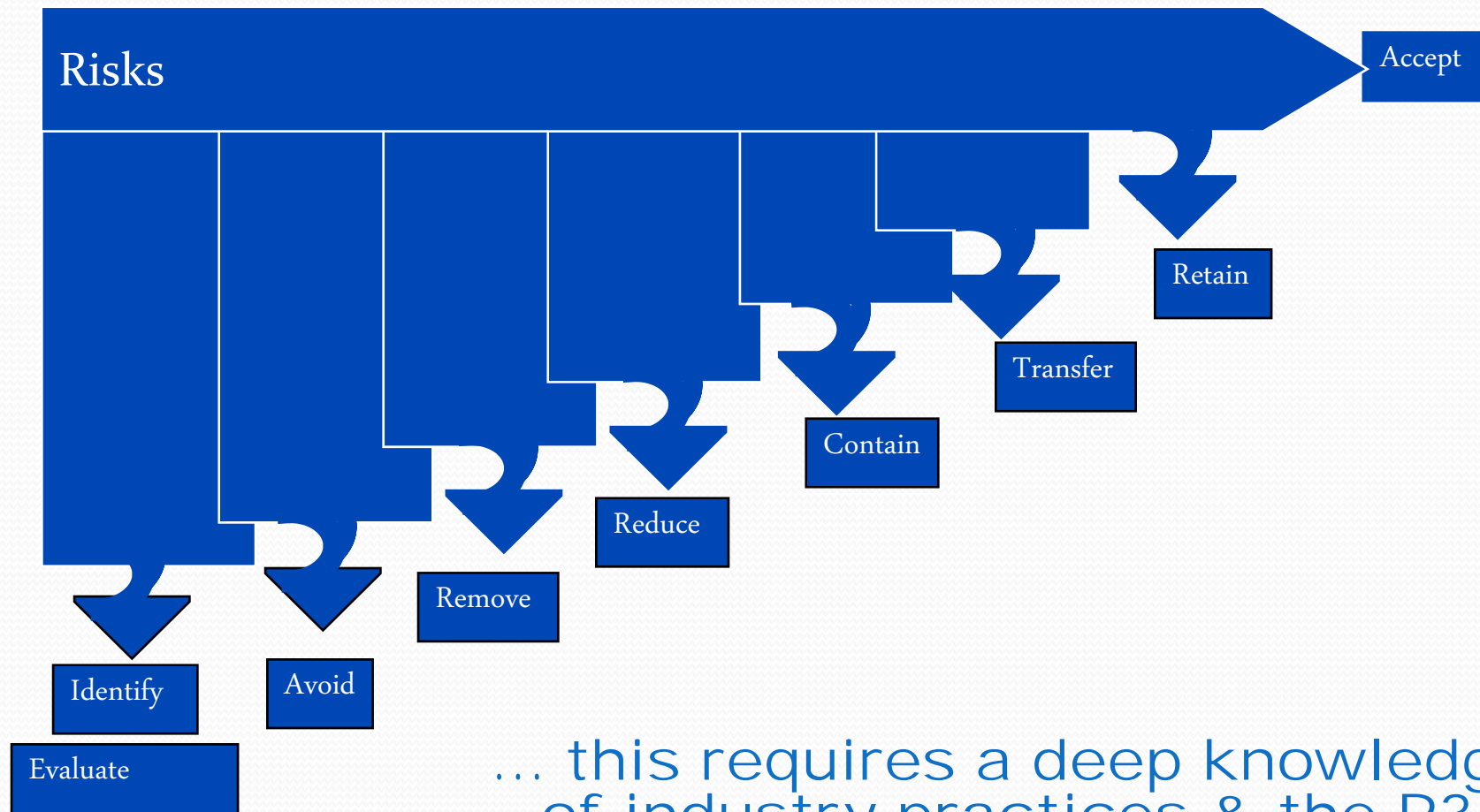
- Supportive Enabling Legislation

- Sufficient Funding and/or Revenue Streams

- Appropriate Risk Allocation

- Protecting the Public Interest

Risk Management is Key to Creating Value for Money...



... this requires a deep knowledge
of industry practices & the P3
market

Risk Allocation for P3 Projects

- Influenced by Type of P3 Structure



Optimal Risk Allocation



Risks That No Party Controls



Unintentional Assumption



Risk Premiums



Project Agreement

Value for Money Defined

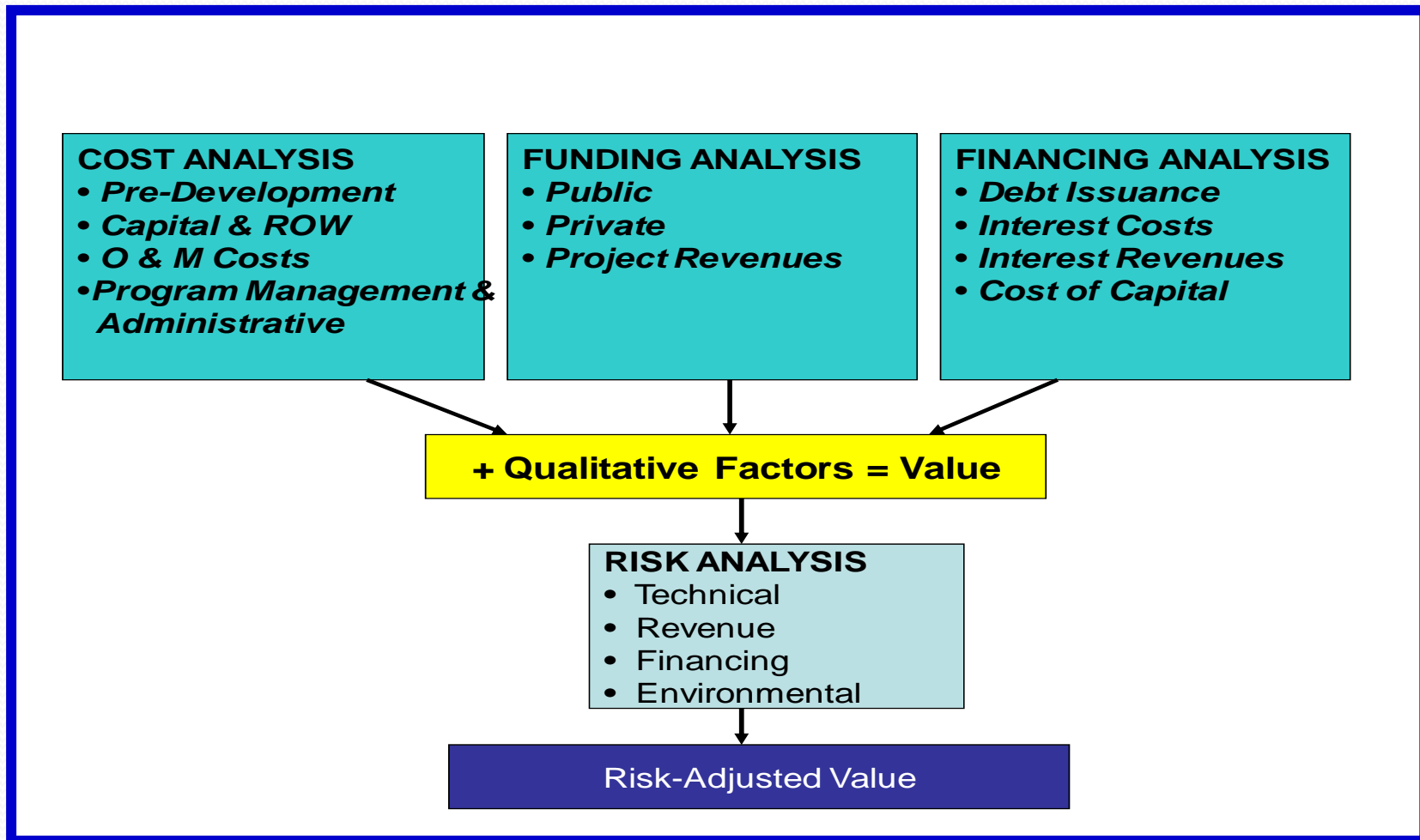
Definition: “The optimum combination of whole life costs and quality”

Critical for public sector entities to DEMONSTRATE the value received from using P₃ vs. traditional approaches

Value for Money assessments require creating an ‘apples to apples’ comparison between public and private

Both Quantitative and Qualitative Assessments

Value for Money Analysis



Achieving Value for Money (VfM)



Up front assessment of potential value of P3 process; set benchmark for comparison (Public Sector Comparator)



Assuring adequate competition in procurement process; use VfM to evaluate proposals



Balanced assessment of risk allocation to the party best able to manage the risk

MORE

Best Practices for Optimal Results

Development of Achievable Performance Criteria and Standards is Critical

- Design & construction, converting detailed to true Performance Criteria requires focusing on outcomes. For operations, performance standards are the basis for assuring quality delivery throughout the term.

Prepare for Complexity of Agreements

- Innovative project delivery agreements themselves are more complex and take more time to craft, particularly if it includes the elements of financing, design, construction, operations and maintenance.

Include Termination and Hand-Over Provisions in the Agreement

- The agreement for must include provisions for termination, if the private partners fail to deliver the project as agreed, as well as guidelines for project hand-over if long-term operations and maintenance.



Public Partner's Role

- Understand What PPPs Can & Cannot Do
- Provide Appropriate Enabling Legislation
- Identify Program Champion
- Create a Clear, Transparent, Defined Process
- Create Right Organization to Support the Program
- Protect the Public Interest
- Understand the Balance Between....
 - Risk, Control and Financial Issues
- Provide Public Outreach/Education Program
 - Strategy for Essential but Controversial Issues

Questions?

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JACOBSTM

MACQUARIE CAPITAL
PUBLIC PRIVATE PARTNERSHIPS
PRESENTATION TO USACE FINANCING WORKSHOP



CHARTING A COURSE FOR
P3 SUCCESS



February 2012
Strictly Confidential



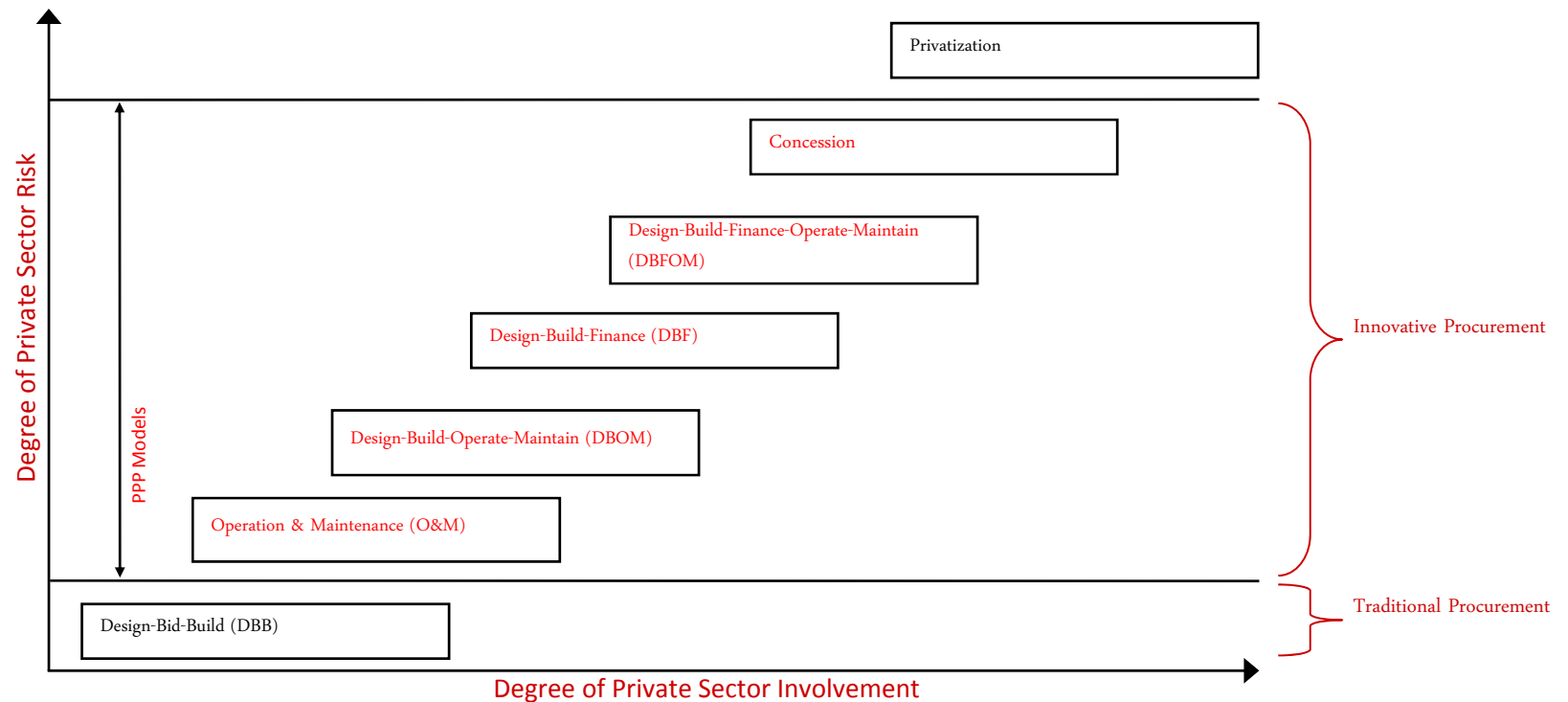
Public-Private Partnerships

OVERVIEW



PPPs are inherently flexible and can be modeled to meet the specific needs and goals of governments

Scale of PPPs: Risk Transfer and Private Sector Involvement



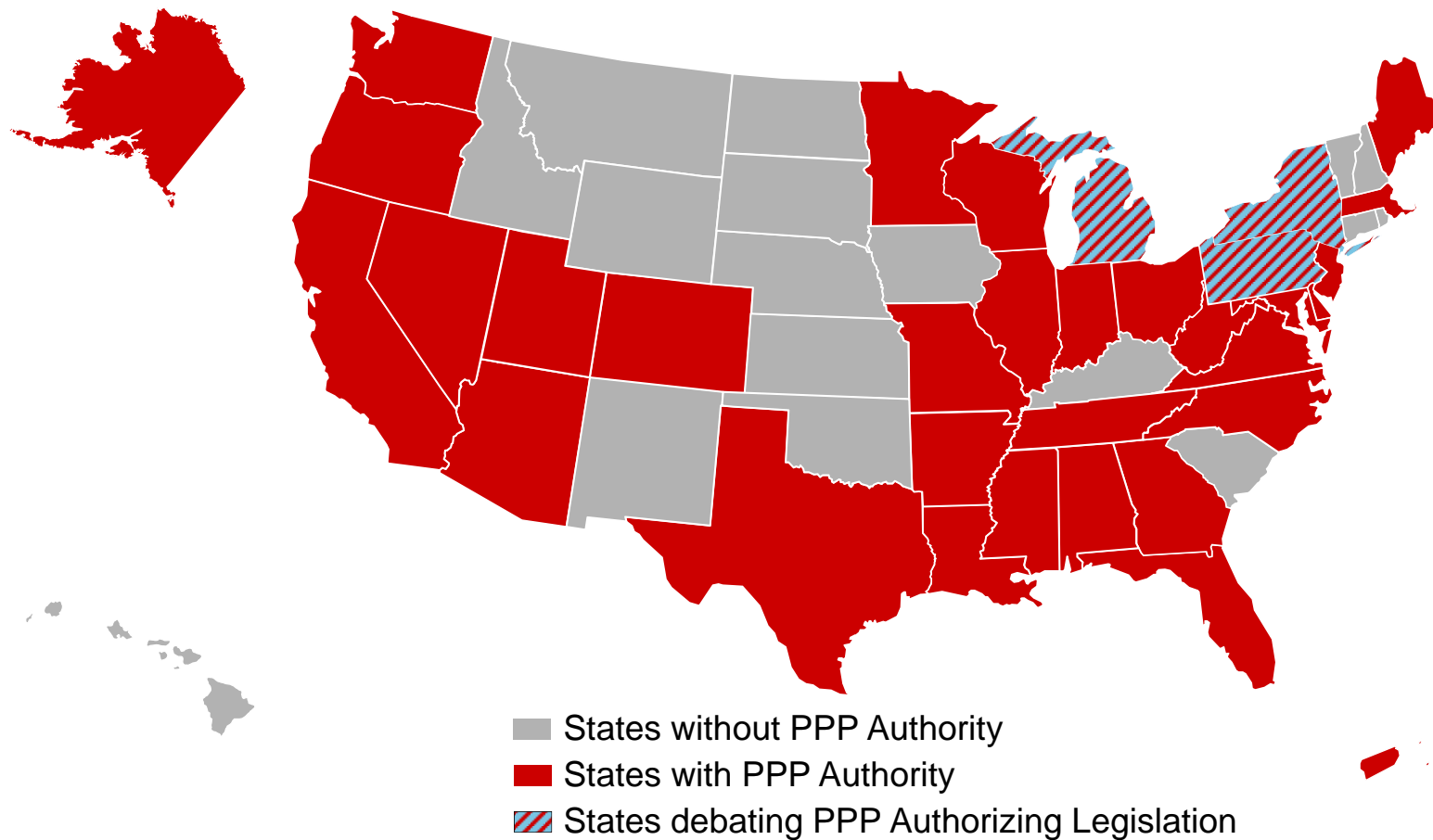
Source: The Canadian Council for Public-Private Partnerships



History of P3s in the US



STATES WITH PUBLIC-PRIVATE PARTNERSHIP AUTHORIZATION – 2015





Beyond Infrastructure: P3S ARE PROVEN ACROSS DIVERSE SECTORS



Airports



Water



Roads



Power



Ports



Parking



Bridges



Hospitals



Schools



Prisons



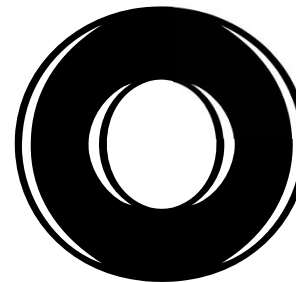
Rail



Courthouses



Emergency Services
Liquor Distribution



MACQUARIE



Why P3s?

BENEFITS OF PPPs



PPPs SAVE TAXPAYERS TIME AND MONEY

Taxpayer savings

300
million

335
million

300
million

Time

11
months

63.8
years

15
years



Why P3s?

RISK TRANSFER



A KEY BENEFIT FROM A PPP INVOLVES RISK TRANSFER FROM THE PUBLIC SECTOR TO THE PRIVATE CONCESSIONAIRE.

Public Sector Risks

Timing

Budget

Traffic

Changing Industry Standards

O&M

Technology

Private Sector

Timing

Budget

Traffic

Changing Industry Standards

O&M

Technology



The Public Sector Retains Control



GOVERNMENT CUSTOMIZES THE PARTNERSHIP TO ACHIEVE ITS OBJECTIVES

The key variables, which are typically set out in a detailed concession agreement (often of several hundred pages), include:

Performance Requirements / Standards	Private Sector Revenues	Public Sector Revenues	Private Sector Risks	Enforcement Penalties
<ul style="list-style-type: none"> ■ Lease payments by private sector ■ Revenue sharing ■ Refinancing gain sharing 	<ul style="list-style-type: none"> ■ Concession length (number of years) ■ User fee level and growth ■ Availability payment level and growth 	<ul style="list-style-type: none"> ■ Project specifications ■ Design and construction standards ■ Operating, maintenance and safety standards ■ DBE commitment 	<ul style="list-style-type: none"> ■ Traffic ■ Legal / revenue impacting facilities ■ Unexpected site conditions / hazardous materials 	<ul style="list-style-type: none"> ■ Penalties for underperformance, including provisions for early termination ■ Handback requirements

THE PUBLIC SECTOR 'TURNS THE DIALS'

The public sector's decisions in relation to these variables will influence:

- The net project cost
- The amount of capital that the private sector is willing to invest in the project and therefore the project's economics and viability



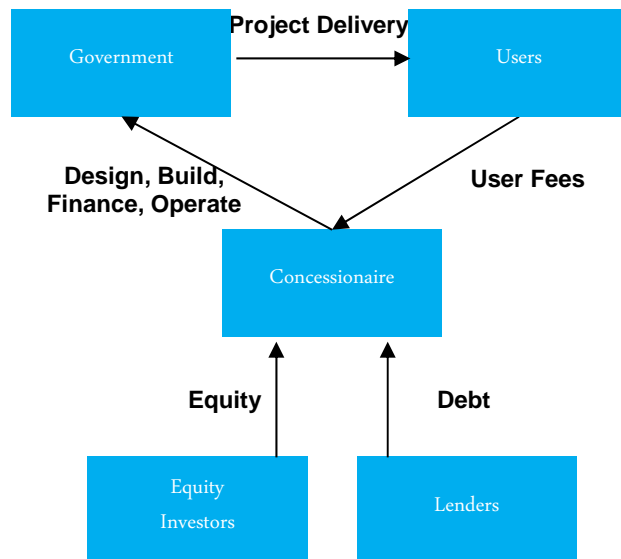


Two Models for Private Sector Compensation

A PARTICULAR PPP PROJECT MAY EMPLOY EITHER (OR A COMBINATION OF) THE PRIVATE SECTOR COMPENSATION MODELS BELOW

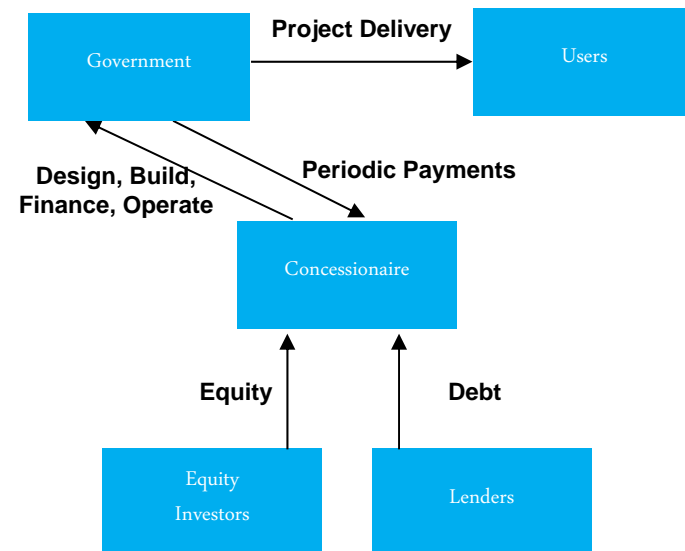
User fee collection

Government allows private sector to collect user fees from the public



Availability payments

Government makes periodic payments to private sector if concession agreement requirements and standards are met















Understanding Key Variables



GOVERNMENT'S DECISIONS AFFECT THE PROJECT'S ECONOMICS

- The chart below shows how the economics of a project will be affected when the government adjusts key variables
- A project surplus can be used to increase scope, reduce user fees or reduce concession term

Increase in:	Key variables (examples)	Size of project surplus
 Private sector revenues	Concession length; user fee level and growth; availability payment level and growth	
 Payments to the public sector	Lease payments by private sector; revenue sharing; refinancing gain sharing	
 Performance requirements / standards	Project specifications; design and construction standards; operating, maintenance & safety standards; handback requirements	
 Risks borne by private sector	Traffic; change in law; unexpected site conditions; hazardous materials; unplanned revenue impacting facilities	
 Enforcement penalties	Penalties for underperformance; cure periods; compensation on termination	



Public Sector Concerns



- 1 Private sector does not understand that decisions are not project decisions but program decisions
- 2 P3s take too long to develop and close
- 3 P3s can be hard to explain to the public, especially if they involve new user fees or existing assets
- 4 Private sector does not appreciate how much staff/management time P3s require when compared to traditional procurement
- 5 Private sector has unreasonable time expectations
- 6 Private sector motivations are suspect
- 7 Private sector staffing can be intimidating



Private Sector Concerns



- 1 Public sector will advance projects without the clear legal authority or political ability to close
- 2 Public decision-making is opaque
- 3 Public sector makes decisions slowly and in broad collaborative manner
- 4 Public sector will self-perform financeable projects and try to use P3s for difficult ones
- 5 Public sector will advance P3 project without a clear business case
- 6 Decision makers are subject to shifting political constraints
- 7 Public sector will not clearly define project benefits or will do the math wrong



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US Army Corps of Engineers

Examples of Innovative Finance and Public-Private Partnership Tools

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Agenda

- Many “tools” as Joung Lee noted
- Design-Build-Finance
- Loxahatchee Water Reservoir
- Miami Intermodal Center
- Port of Miami Tunnel
- Lessons Learned

Design-Build-Finance

- Tool to advance medium to large projects when funds are spread over time
- Private Team borrows the “gap” needed to advance the project and is paid back over time
- Florida DOT has advanced eight projects between 3 to 6 years totaling over \$2.1 billion
- All projects were at or below the estimated cost and available funding.

Design-Build-Finance

Projects examples:

- IROX (I-75) Southwest Florida



First project, solicited process to widen over 30 miles of I-75, advanced between three and six years and finished a year ahead of schedule - \$458 million

- US-1 “18-Mile Stretch” Southeast Florida

Unsolicited proposal to advance three segments of ultimate US-1 improvements south of Miami – advanced between one and four years - \$114 million

- See DBF projects at www.dot.state.fl.us/financial_planning/finance/P3%20Summary.pdf

Loxahatchee Water Reservoir

- Major water reservoir owned by South Florida Water Management District
- Design-Build-Finance project part of a eminent domain “settlement”
- Landowner/partners had rock quarry that was dug out for aggregate supply
- Landowner/partners renovated to create water reservoir and were paid when complete

Miami Intermodal Center



Consulting,



MIC Program Background

- 1993, the MIC Program created - FDOT entered partnership with six USDOT agencies
- 1998, USDOT awarded Record of Decision granting location and design concept approval
- 1998, passage of the Transportation Equity Act for the 21st Century (TEA-21) – created TIFIA
- MIC selected by then USDOT Secretary to receive up to \$433 million in TIFIA loans

Miami Intermodal Center

- The MIC Program consists of major components:
 - Major roadway improvements - open May 2008,
 - Rental Car Center open July 13, 2010,
 - MIA Mover operational on September 9, 2011,
 - Miami Central Station under construction and scheduled to be completed by 2013,
 - Joint Development is currently being explored.

Key Component for MIC

- TIFIA program was created in 1998, kick started the MIC with \$433M in TIFIA loans
 - Land acquisition
 - Roadways
 - Rental Car Center
 - Facilitated later program elements
- Florida State Infrastructure Bank (SIB) loans provided “finishing touches” on key program elements such as Central Station

MIC Partnerships

- Public – Public (primary partners)
 - Miami Dade County
 - Florida Department of Transportation
 - US DOT
 - Miami-Dade Expressway Authority
- Private Partners (primary partners)
 - Rental Car Companies
 - MIA Airlines
 - Future Joint Development

Program Financing

FDOT Program Coordinator - \$2 billion total

- Land Acquisition (TIFIA – various) FDOT
- Roadways (TIFIA – FDOT grants) FDOT
- Rental Car Center (TIFIA – Rental User Fees)
 - Design-CM at Risk FDOT
 - Operations MDAD
- MIA Mover (Bonds – Aviation Fees) MDAD
- Central Station (SIB – FDOT grants)
 - Design-CM at Risk FDOT
 - Operations MDX
- Joint Development (Private Investment) MDX

Miami Port Access: *A Challenge we can meet!*



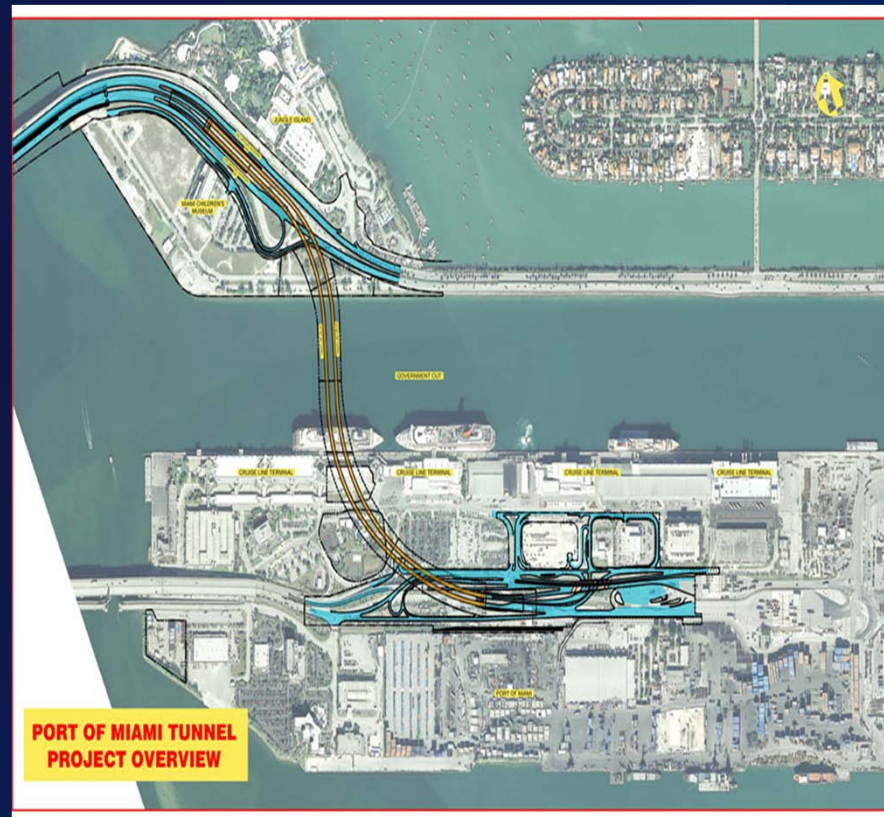
Miami Port Access: Existing truck routes through Downtown Miami

- Trucks currently travel through NE 1 and 2nd Avenue
- Must go through 6 to 7 signals inbound and outbound



Miami Port Access: Option Selected

- Tunnel under main channel of Government Cut
- Roadway work on Dodge and Watson Islands
- MacArthur Causeway Bridge widening



Miami Port Access: Building the Tunnel

- Involves specially-constructed Tunnel Boring Machine approx. 42 ft. high
- TBM consists of cutter head and trailing support gear
- Excavation will take just over one year—6 months in each direction



Why Use PPP?

- Hire expertise
- Good fit for industry
- Risk transfer
- Availability payment structure - strong financial incentives/warranty
- Cost Effective

Miami Port Access: PPP Overview

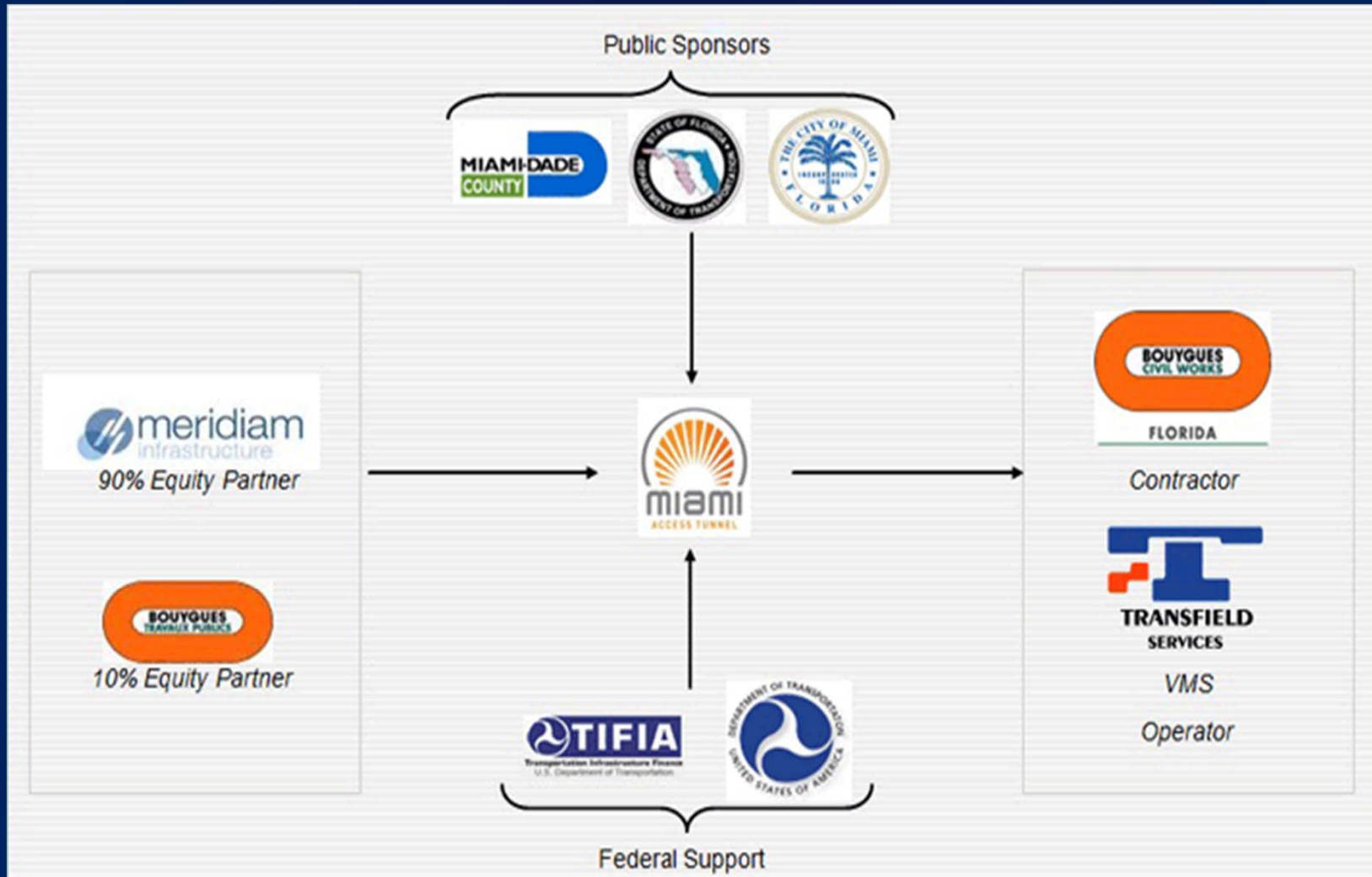
- Concessionaire will **design, build, finance, operate and maintain** tunnel
- Proposals received on March 5, 2007
- Best Value Proposal named on May 2, 2007
- ***Miami Access Tunnel*** Team selected and financial close October 15, 2009
- Currently under construction



Miami Port Access: Tunnel PPP Agreement

- 35-year agreement between FDOT & concessionaire
- FDOT begins availability payments once tunnel opens, adjusted for inflation
 - Scheduled for 2014
- Payment subject to reduction if tunnel not operational during required hours
- Tunnel will be returned to FDOT in first-class condition at end of contract

POMT P3 Structure



Miami Port Access: Project Capital Cost

- Top Ranked Proposal capital and related cost - **\$665 million**
- \$150 million for “risk reserve” for geology risk and related items
- \$50 million for project inspection
- Total capital cost - \$865 million (FDOT cost estimate at \$1.2 billion)

Miami Port Access: Funding the POMT

- FDOT contributing 50% of capital cost (\$432.5 million) from Strategic Intermodal System (SIS) funds
- Local partners matching capital costs
- FDOT funding tunnel Operations & Maintenance from statewide maintenance funds (about \$200 million over 30 years)



2/21/2012



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21

Miami Port Access: Funding the POMT

- Cash Flow:
 - \$100 million during construction
 - \$350 million upon POMT completion
 - Remaining in annual “availability payment”
 - Covers both remaining capital and annual operations and maintenance costs
 - Proposal at \$33 million in 2007 dollars (FDOT estimate at \$68 million)
 - Amount will adjust based on annual inflation

Miami Port Access – P3 Benefits

- One of best tunneling firms in the World
- Design-Build fixed cost well under estimate
- Risk Sharing on tunneling conditions
- Long-Term Warranty with 30 year term
- Future Payments depend on Performance
- Oversight by FDOT and Private Investors (equity and lenders)
- Advanced Project up to 20 years

Lessons Learned

- Be open to all available finance/delivery tools
- Each project is unique and the best tools for that project have to be crafted to the situation
- Identify how to apply the best tools for the situation (training, experience, advisors)
- Let projects that can fund themselves do so
- Best innovation occurs in times of tight funding constraints – think outside the box

Thank You!



Solutions for a Better World...

Transport Asset Management

“A Complete Program”

Presented by
Fredric S Berger, P.E.
Chairman, The Louis Berger Group, Inc.

21st February 2012

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- **Financial Engineering is not engineering**
- **Past Performance is not a predictor of future results**
- **Asset Management is a demand function**
- **Risk allocation**
- **Everything old is new again**

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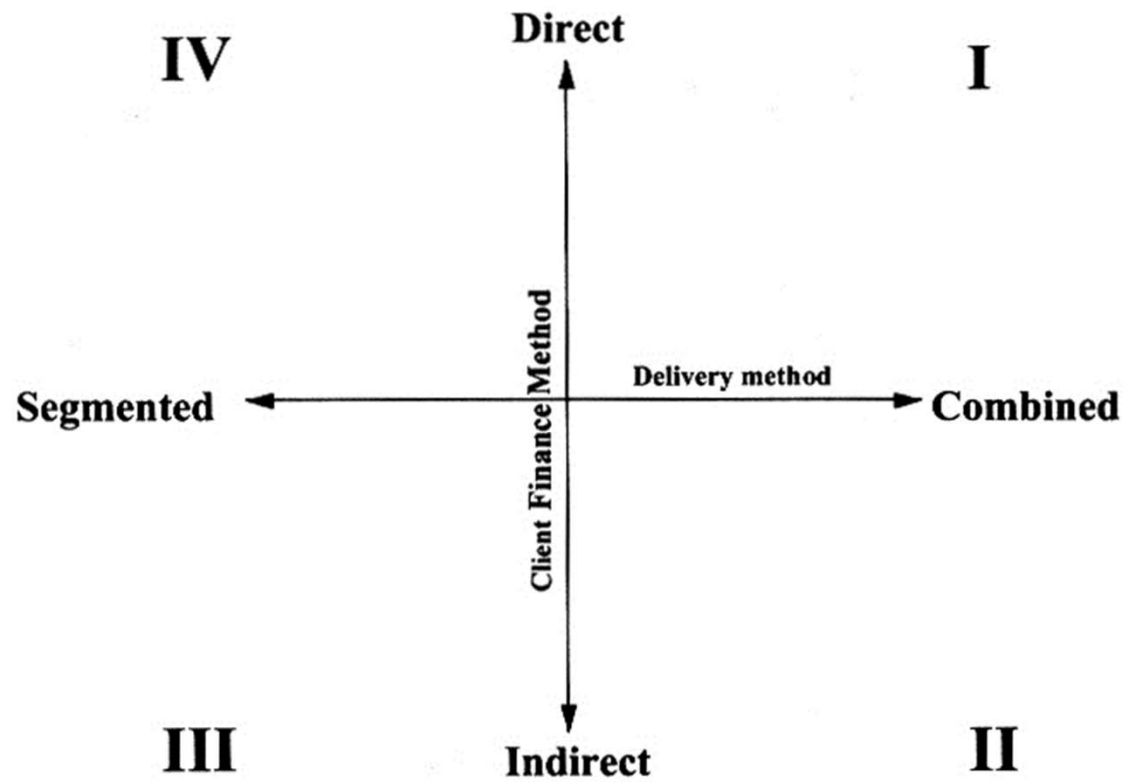


Figure 2-1

The Quadrant Framework

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Quadrant Framework

John B Miller, Principles of Public and
Private Infrastructure Delivery, MIT Press
2000

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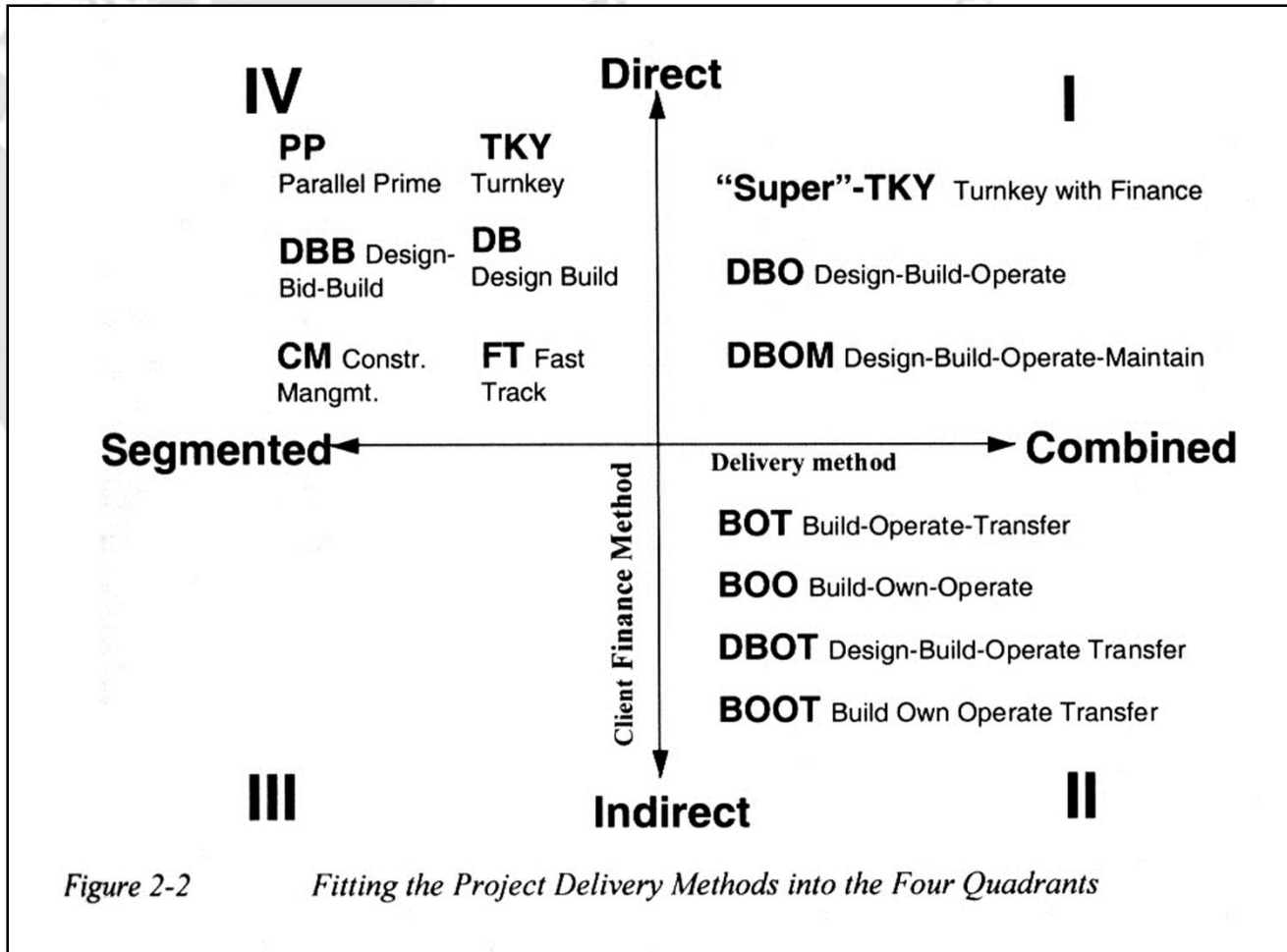
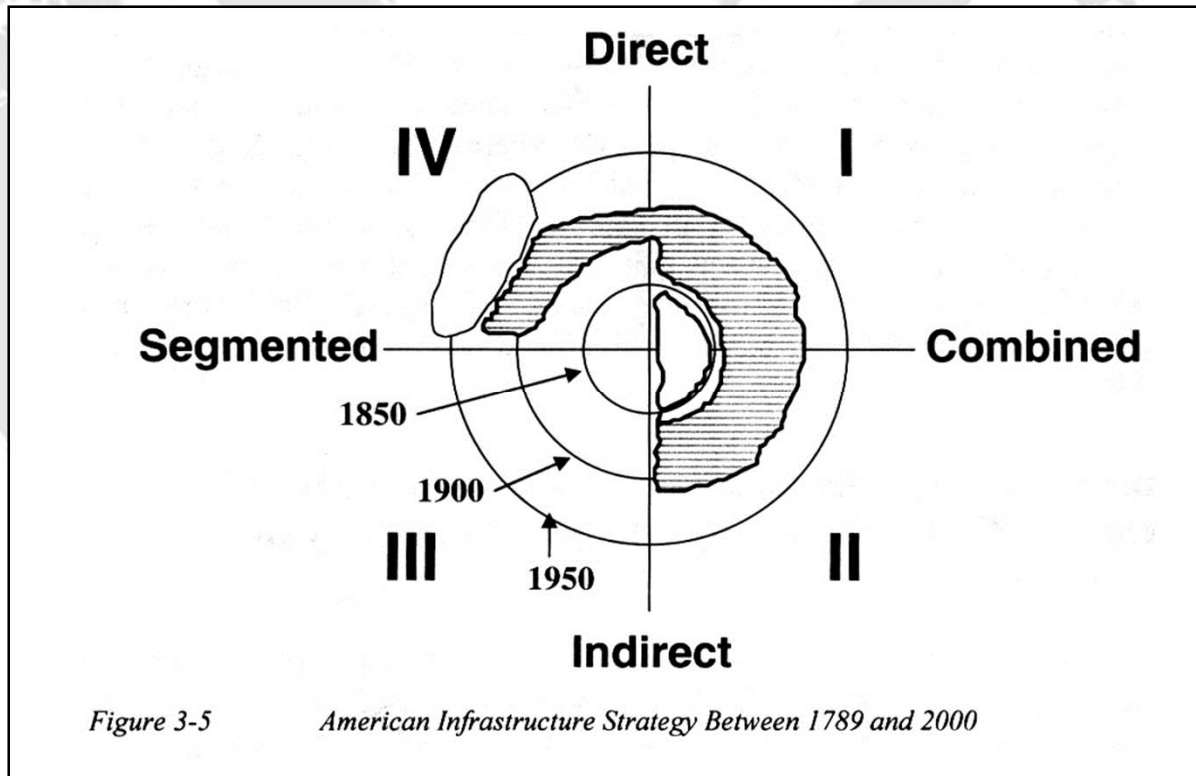


Figure 2-2 Fitting the Project Delivery Methods into the Four Quadrants

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Transport Asset Management

- Objectives and Theory
- **Asset Management Program Elements**
- **Putting a Program Together**
- **Results**

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Inventory — Key for Analysis and Selection

- Physical Assets
- What Is Present?
- How Much?
- Where?
- Condition Over Time?

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Maintenance Rating Program

- Quantitative
- Defines Objective
- Consistent Methodology
- Repeatable
- Pass/Fail
- Guide for Decision Making
- Structural Approach
- 90–100-Meter Sections
- Weighted Importance of Asset Group
- Frequency
 - Asset Manager – 3/Year
 - Independent Check – 2/Year

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Activity-Based Accounting

- All Direct Costs Coded to Activity Accounts
- All Indirect Costs Allocated to All Activities

Pothole Patching Total Cost =

- Vehicles (Depreciation, Fuel, Maintenance)
- + Labor (Salary, Benefits)
- + Materials (Asphalt, Stone, Cobblestones)
- + Equipment (Tools, Safety)
- + Consumables
- + Total Indirect Cost x Pothole Patching
Direct Cost for All Activities

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Management Methods

- Just-In-Time Execution
- Design to Cost
- Investment Orientation
- Integrated Information and Supporting Management Systems

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Just-In-Time Execution

- Utilize Pre-Placed Contractors for Execution
- Redundancy – Engage Multiple Contractors
- Lower Price Through Competition
- Increased Focus Generates Efficiency
- No Carrying Cost for Downtime
- Expands Skills Base Within Corridor
- Generates Increased Execution Activity
- Management Not Execution
- Limits In-House Execution
- Creates Popular Support

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Design to Cost

Contracts Sized to Achieve
Predetermined Goals

- Mitigates and Controls Mobilization Costs
- Allows More Contractors to Participate

Multiple Contractors to Ensure Performance

- Reduces Risk of Non-Performance or Substandard Performance
- Gives Flexibility to Increase or Decrease Numbers to Achieve Timeliness Requirements
- Allows Contractor to Achieve Optimum Mix

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Economic Development Through Subcontractor Recruitment

- Local Contractor Associations
- Subcontractor Workshops
- Subcontractor Training
- Subcontractor Oversight

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Subcontractor Recruitment

- Recruit From Entire Roadway Corridor
- Area Training Workshops
 - Focus on Small Subcontractors
 - Safety
 - Bid Preparation
 - Focus on Activity
- Benefits
 - Establish Multiple Contractors with Similar Capabilities for Redundancy
 - Establish an Overall Lower Cost to Achieve the Objective

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Investment Orientation

- Focus on Achieving the Greatest Possible Life Term Benefit at the Least Life Cycle Cost
- Take Action Earlier in the Life to Restore to Near-New Condition — Less Costly Approach and Gives Longer Life Expectancy
- “Divest” of Failed Assets
 - Abandon Worst-First Mentality
 - Spend on Worst Condition Only When Affecting Safety or When Savings from Other Investments Are Available

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Investment-Based Decision

- Trade-Off Analysis
- High-Level Engineering
- Financial Analysis
- Rate-of-Return Analysis
- Basis for the Establishment of a Work Program
- Immediate, Short- or Long-Term Planning to Meet Contract Specifications
- Investment Determination to Meet System-Wide Targets (Good, Fair, Poor)
- Roadside vs. Pavement Deterioration Decision
- Paving Specific Locations, Not Blanket Overlays



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Management System Applications

Contractor Integrates Data Contained in Various Systems to Support Planning

- Accounting System — Provides Details on Cost of Various Activities (Activity-Based Cost)
- Inventory System — Provides Data on Each Item of Inventory, Its Current and Historic Conditions
- Pavement Management, Bridge Maintenance, etc. — Allows Development of Deterioration Curves, Component Analysis and Modeling of Alternatives

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Putting a Program Together



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Results



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Reported Cost Savings

- Norway: 20 – 40%
- Sweden: +/- 30%
- Finland: 30 – 35%
- Holland: 30 – 40%
- Britain: > 10%
- Australia: 10 – 40%
- New Zealand: 20 – 30%
- USA: 20 – 30%
- Canada
 - Alberta +/- 20%
 - British Columbia +/- 10%
 - Ontario +/- 10%

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Benefits to the Owner

- Higher Level of Service
- Lower Maintenance Costs
- Guaranteed Performance
- Economic Growth Through Local Contractor Development

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Discussion



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Thank you



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TUESDAY 21 FEBRUARY 2012 / WASHINGTON, DC



AASHTO
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US ARMY CORPS OF ENGINEERS

Workshop on Innovative Financing

Joung Lee

Associate Director for Finance and Business Development
American Association of State Highway and Transportation Officials

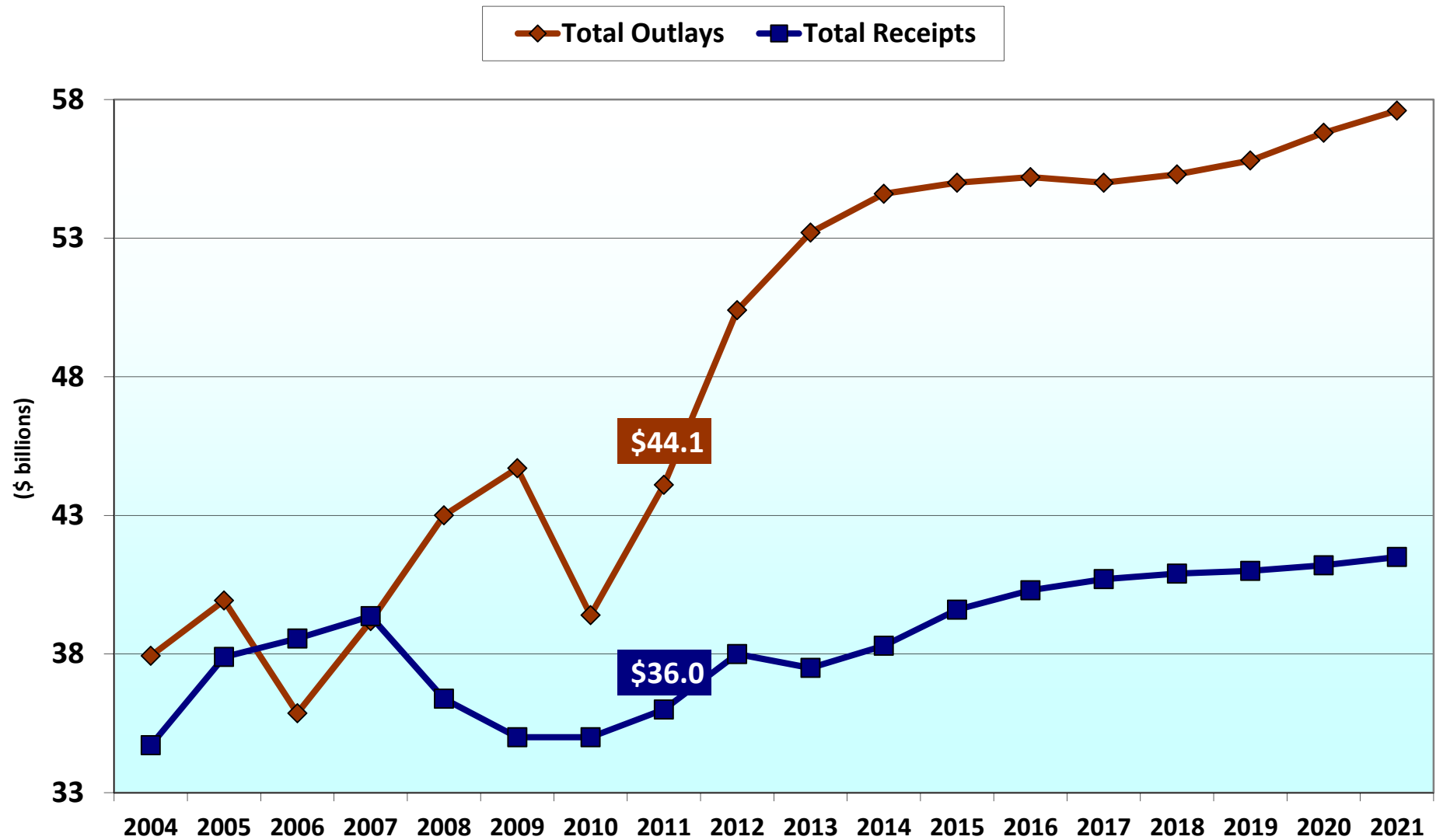
Deputy Director
AASHTO Center for Excellence in Project Finance

www.transportation-finance.org

MISSION "To provide support to State transportation departments in the development of finance plans and project oversight tools and to develop and offer training in state-of-the-art financing methods to advance projects and leverage funds."

SAFETEA-LU Section 5309(c)(4)

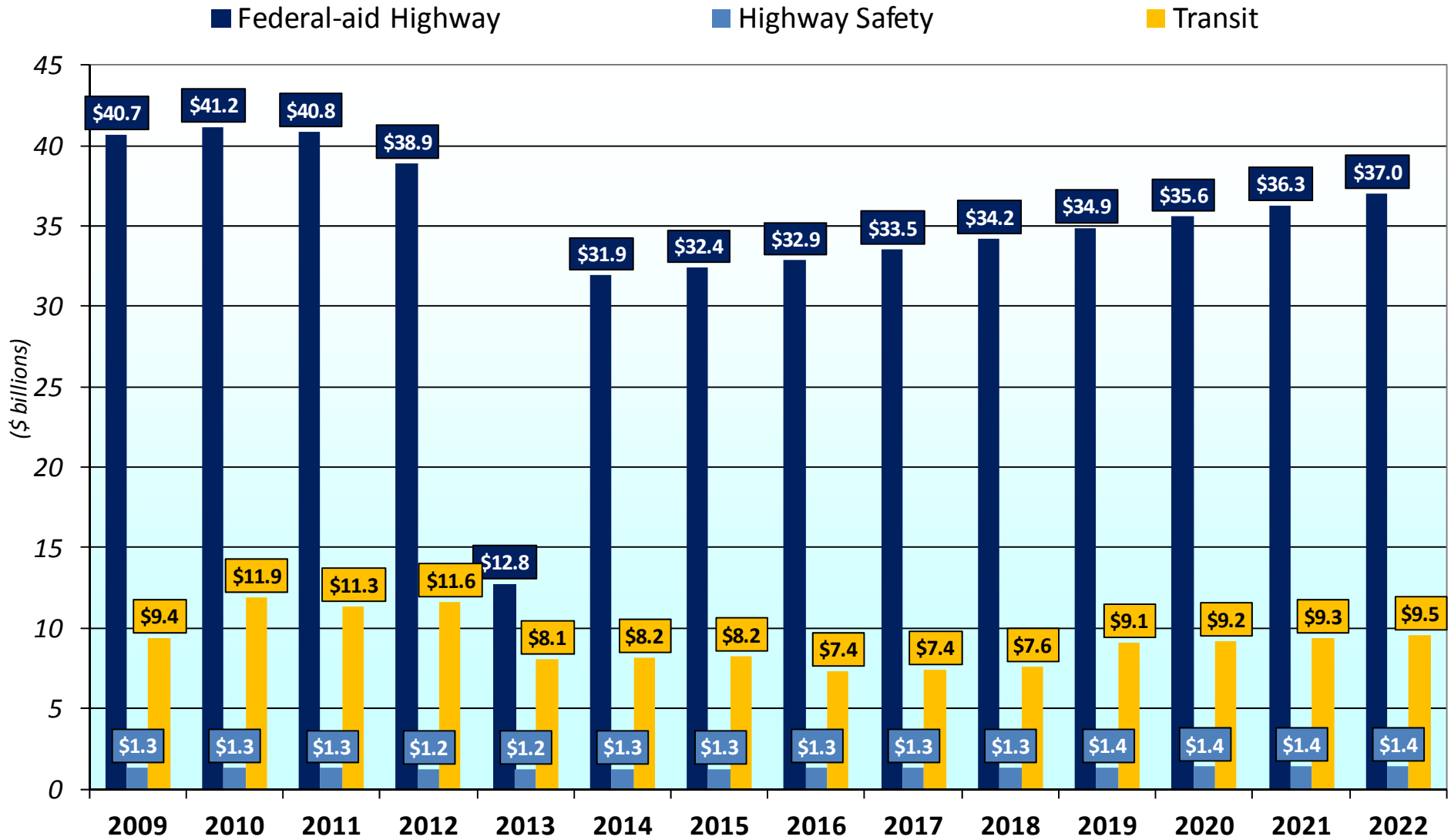
Highway Trust Fund: Receipts and Outlays Discrepancy



Note: From Congressional Budget Office. Excludes \$8.017 billion transfer from General Fund to Highway Account of HTF in September 2008; \$7 billion transfer from General Fund to Highway Account of HTF in August 2009; \$19.5 billion transfer from General Fund to Highway and Mass Transit Accounts of HTF in March 2010.

Estimation of Federal Highway and Transit Obligations Through 2022

Maintaining current services through FY 2012;
 Assuming minimum balance of \$4B in Highway Account and \$1B in Mass Transit Account;
 Assumes historical General Fund appropriations for transit





What is Innovative Finance?

- New or non-traditional sources of revenue
- New financing mechanisms designed to leverage resources
- New fund management techniques
- New institutional arrangements



Categories of Finance Tools

- Federal Credit Assistance
 - Transportation Infrastructure Finance and Innovation Act (TIFIA)
 - Section 129 Loans
 - Railroad Rehabilitation and Improvement Financing Program (RRIF)
 - State Infrastructure Banks (SIB)
- Bonding and Debt Instruments
 - Municipal/Public Bond Issues: *GARVEE Bonds*, Revenue Bonds, *General Obligation Bonds*, Limited and Special Tax Bonds, Hybrid Bonds, Anticipation Notes, *Private Activity Bonds*, *Tax Credit Bonds*
 - Non-profit 63-20 Financing
 - Private Bond Issues
 - Certificates of Participation



Categories of Finance Tools

- Mechanisms to Leverage Federal Aid
 - Federal matching flexibility
 - Tapered Match
 - Using Federal Funds as Match
 - Toll Credits (Soft Match)
 - Program Match
 - Third Party Donations
 - Advance Construction Authority
- Other tools
 - Pass-through Tolls
 - Availability Payments



Revenue Sources for Investment in Surface Transportation Assets

- Federal-aid highway program
- Federal general fund
- State funds
 - Motor vehicle fuel taxes, license fees, registration fees, sales taxes
- State general fund monies
- Local funds
 - Motor vehicle fuel taxes, registration fees, local option sales taxes
- Tolls
- Fare box receipts; value capture revenue
- Availability payments

“Funding” vs. “Financing”

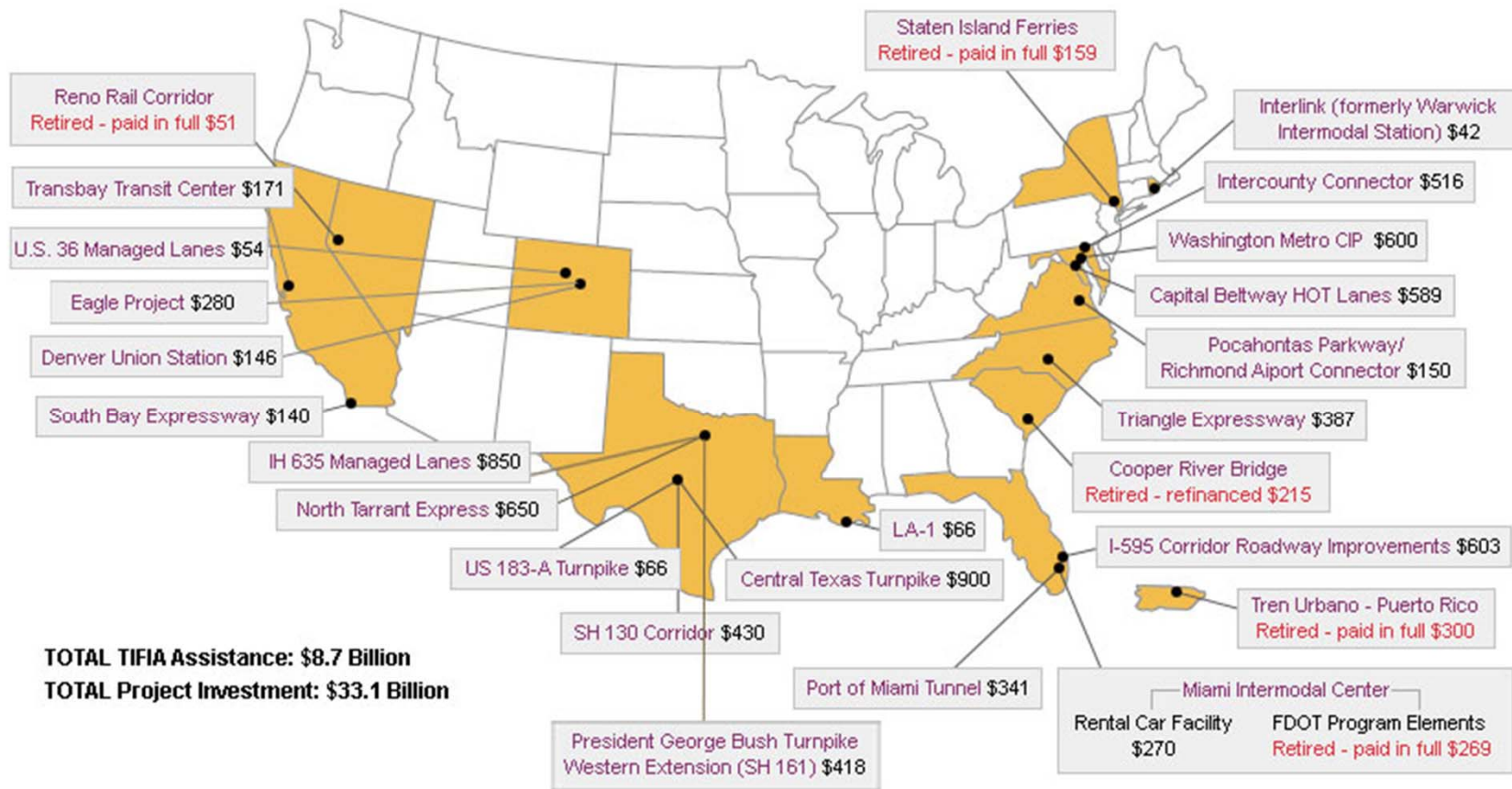


Use of Finance Tools by States

- Highway, toll road, and transit/sales tax revenue bonds; General Obligation (GO) bonds (47 states + DC + PR)
- Transportation Infrastructure Finance and Innovation Act (TIFIA) (11 states + PR)
- Grant Anticipation Revenue Vehicles (GARVEE Bonds) (33 states + DC + PR)
- Private Activity Bonds (PABs) (6 states)
- Build America Bonds (BABs; April 2009-December 2010) (25 states)
- State Infrastructure Bank (SIB) loans (34 states + PR)
- National Infrastructure Bank, Tax Credit Bonds (legislative proposals)
- Private Equity



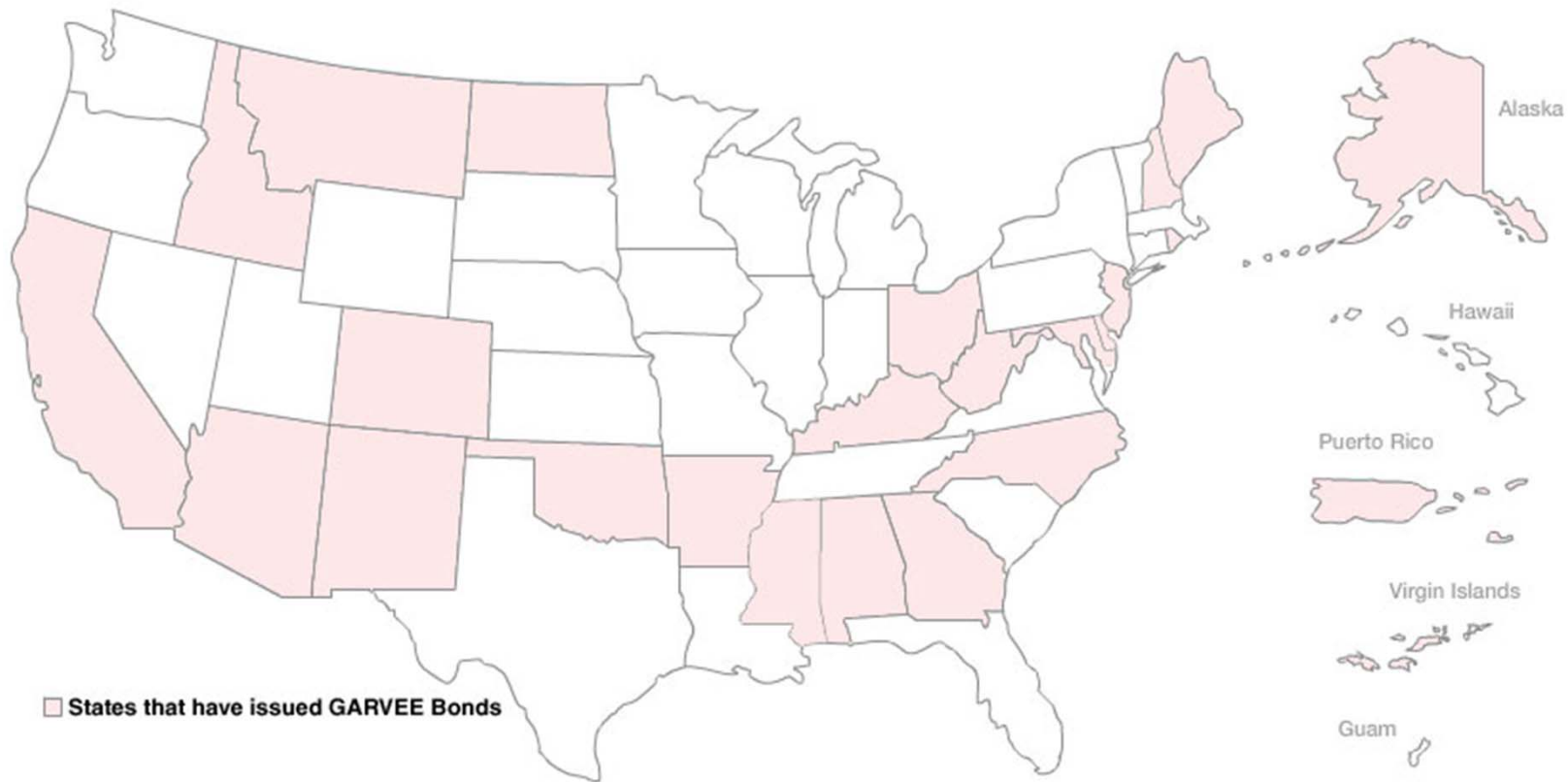
TIFIA Projects





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GARVEE Bonds



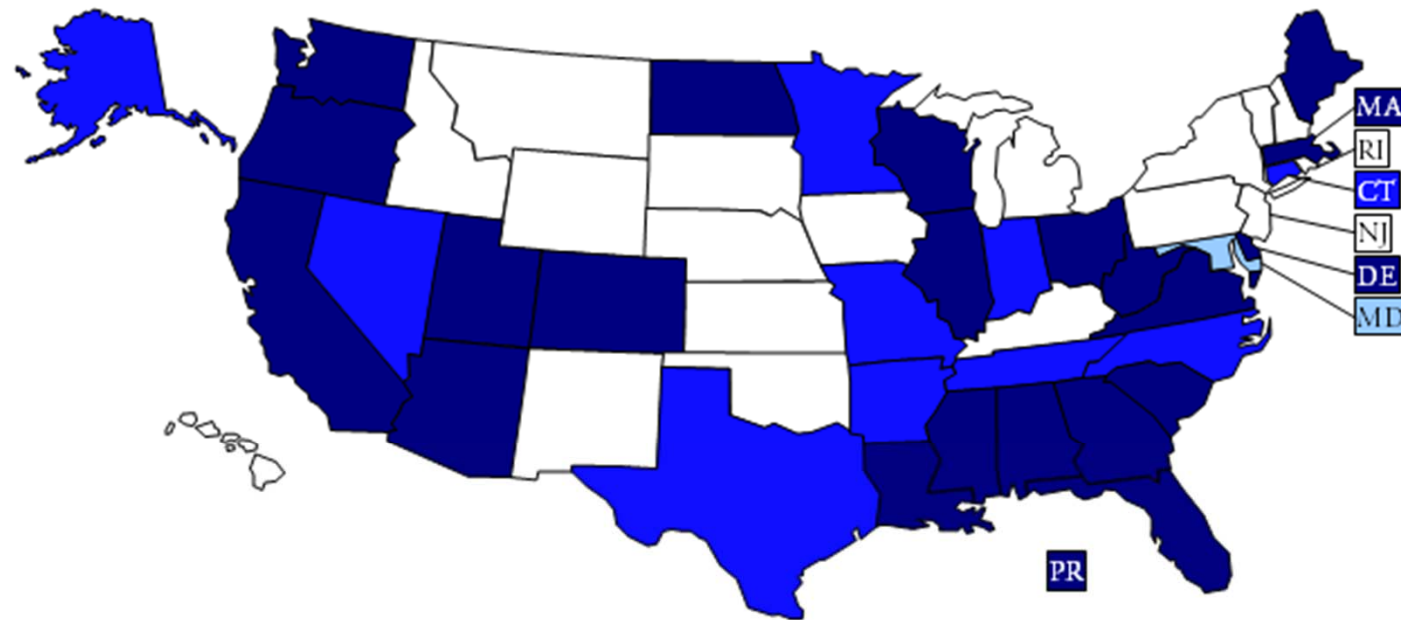






Potential of the PPP (P3) Option

- Can complete large transportation projects that cannot be fully delivered using traditional funding
- Can expand pool of available money to leverage for transportation projects (i.e., private equity)
- Can create cost savings and efficiencies
- Transfer a portion of financing and other risks from the public sector to private partner(s)
- **BUT PPPs themselves do not create new money for states.** The public still has to pay back the private investment with revenue that generally comes from traditional sources, such as taxes or tolls.



32 States Have PPP Enabling Legislation

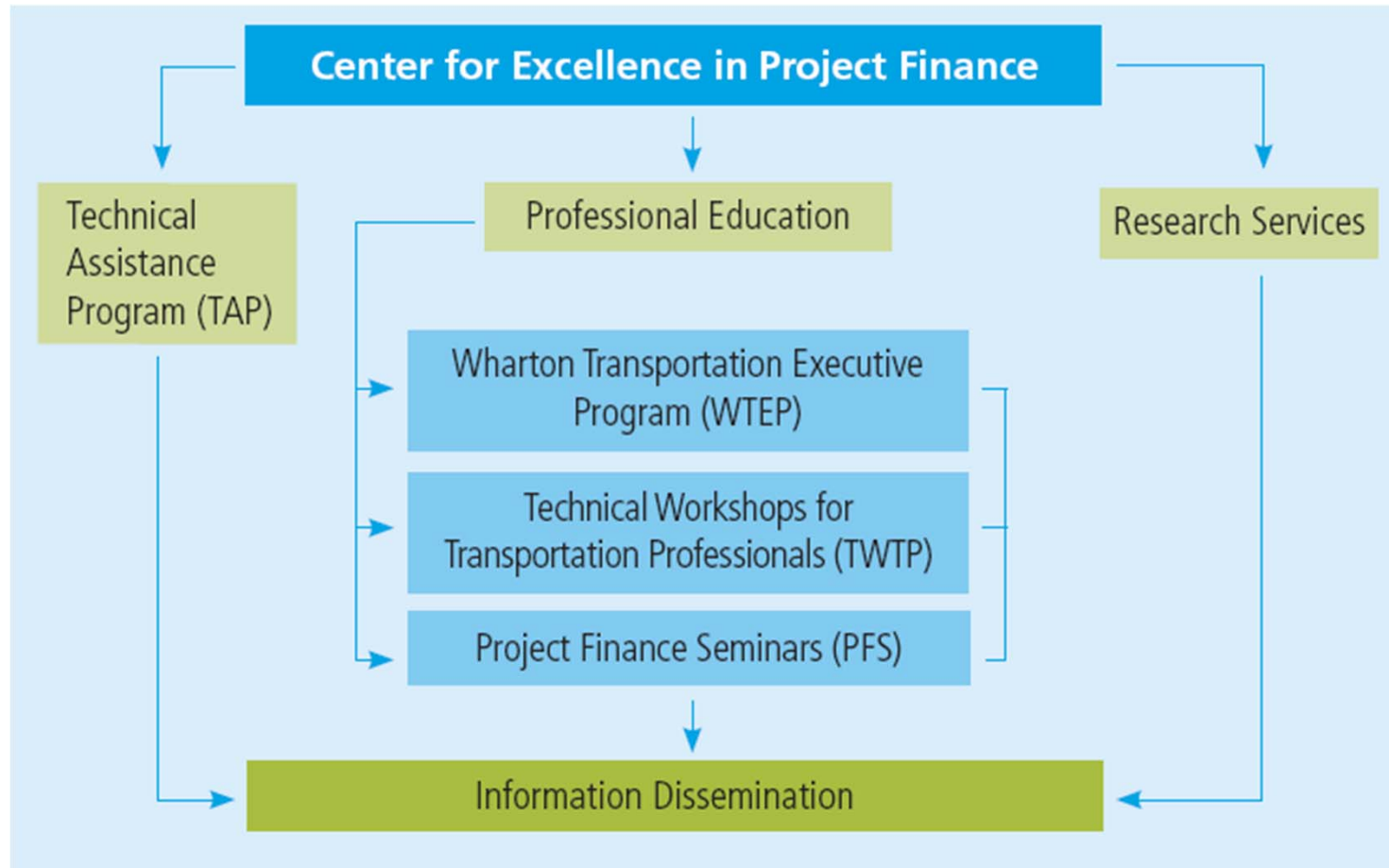


-  Broad enabling legislation
-  Limited or project-specific legislation
-  Authorization by regulation
-  No legislation

Sources: NCSL-AASHTO, 2011; NCSL, 2010.



Services of AASHTO Center for Excellence in Project Finance



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Resources

- AASHTO Center website:
<http://www.transportation-finance.org>
- AASHTO-NCSL 50-state governance and finance report:
[http://www.transportation-finance.org/pdf/50 State Review State Legislatures Departments Transportation.pdf](http://www.transportation-finance.org/pdf/50%20State%20Review%20State%20Legislatures%20Departments%20Transportation.pdf)
- NCSL PPP Toolkit:
<http://www.ncsl.org/issues-research/transport/public-private-partnerships-for-transportation-a.aspx>
- FHWA Office of Innovative Program Delivery:
<http://www.fhwa.dot.gov/ipd/index.htm>

PAMELA BAILEY-CAMPBELL*Vice President**North America Infrastructure Consultancy**Jacobs Engineering Group***Key Qualifications**

Pamela Bailey-Campbell is a nationally recognized leader with more than 25 years of experience applying her unique problem solving skills to the development, procurement and implementation of major projects that involve public-private partnerships (PPP) and other ground-breaking approaches. She brings hands-on experience in the full range of complex issues that must be addressed to successfully proceed from concept to reality for challenging projects. Pamela is a Vice-President and leads the North America Infrastructure Consultancy group at Jacobs Engineering.

Pamela has directed numerous high-profile projects and advised a broad range of clients on the full life cycle of project issues. Her work has encompassed the full spectrum of program management, strategic and executive advisory services from creating the initial strategy and assessing organizational and governance issues, to making delivery and financing approach decisions, developing procurement documents then assisting in selection processes and contract negotiations. She has particular expertise in working with organizations that are assessing new delivery approaches. Her work involves regular interaction with elected officials, boards and commissions, government managers, rating agencies, lending institutions and equity investors. She also has valuable experience in the areas of risk assessment and allocation, development of best value selection criteria, toll technology/operations and a variety of pricing approaches as well as contract oversight and administration.

One of the advantages Ms. Bailey-Campbell brings to clients is her hands-on public-private partnership and innovative financing expertise while holding executive positions with the E-470 Authority where she developed and implemented one of the first public-private projects and managed over \$7 billion in tax-exempt financings. A few highlights of her other work include advising public sector clients on developing and implementing innovative programs including a variety of non-highway and facility programs for cities and governmental agencies across the country in such states as: Virginia, Maryland, New York, Connecticut, Colorado, California, Washington, Arizona, Oregon, Texas, Florida, Ohio, South Carolina, Georgia, Oklahoma, Wyoming, Nevada, Utah, New Mexico, Pennsylvania and the first non-recourse financing of an infrastructure project in Canada. Jacobs is serving as the Program Manager for the Denver Regional Transportation District Eagle P3 program and she assisted in the development of a comprehensive P3 innovation program – Transformation Through Innovation. She has also provided advice for a variety of other transit agencies and rail programs.

Ms. Bailey-Campbell has just completed her term as President of the American Road & Transportation Builders Association Public-Private Venture Division, is on Board of Directors of the National Council for Public-Private Partnerships and is an active participant in International Bridge Tunnel and Turnpike Association where she served as the Chief Meeting Organizer for the Finance and Policy Summit, the Finance Steering Committee and participated on a number of other Program Committees. She frequently writes and speaks on PPPs.



Jack Basso

Chief Operating Officer, American Association of State Highway and Transportation Officials (AASHTO)

Peter J. “Jack” Basso is the Director of Program Finance and Management at AASHTO, the American Association of State Highway and Transportation Officials. Basso joined AASHTO as Chief Operating Officer and Business Development Director in March of 2001 to oversee the management of a \$60 million nonprofit organization representing the interests of State Departments of Transportation. He develops new member services, and more aggressively markets current technical services provided for AASHTO members. Basso works closely with Congressional staff and other associations who have mutual interests in Transportation financing issues. He is a nationally recognized expert on transportation finance.

Prior to joining AASHTO, Basso served as Assistant Secretary for Budget and Programs and as Chief Financial Officer of the U.S. Department of Transportation. In that capacity, he oversaw the development of a \$60 billion budget and interacted with senior officials, members of Congress, their staff, and key industry officials on a wide variety of transportation matters. Prior to his appointment by President Clinton to this position, he served as Deputy Assistant Secretary for Budget and Programs.

Basso's thirty six years of service as a career official included assignments such as Assistant Director for General Management of the Office of Management and Budget, Deputy Chair for Management of the National Endowment for the Arts, and Director of Fiscal Services for the Federal Highway Administration. He has held numerous positions in administration and management with the Federal Highway Administration.

Basso has served as a board member and Chair of numerous councils, including five years as a member of the President's Council on Management Improvement representing the independent agencies of the Executive Branch, and serving five years as Chair of the Small Agency Council. He also served as a member of the Consolidated Administrative Support Units Board of Directors. Basso currently serves as a board member of the Maryland Transportation Authority.

Basso has been recognized through numerous awards in his career, which include: the Presidential Rank Award of Meritorious Executive in 1989 and 1997; Senior Executive Service Bonus Awards 1991 through 1996; the President's Council on Management Improvement, Special Recognition Award, 1990; Executive Achievement Award, 1988; Senior Executives Association, Distinguished Service Award 1987; National Endowment for the Arts, Faculty Excellence Award; USDA Graduate School, 1987; SES Performance Awards, 1985 through 1988; and the Administrator's Award for Superior Achievement (Bronze Metal), 1980.

(Biography material from: <http://transportation.nationaljournal.com/contributors/jack-basso.php>)

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BRIEF BIOGRAPHY

Lowell R. Clary (Lowell) is the President and managing member of Clary Consulting, LLC (CCL), that provides advisory services to governmental and private sector clients on developing infrastructure projects, public-private partnerships (P3s), infrastructure finance, and assists in negotiations of complex projects and agreements. CCL serves as advisor on various projects for governmental clients including the Miami-Dade County Expressway Authority; Florida Department of Transportation, and various local governments. CCL also is developing private finance options for design-build-finance projects and advising on public-private partnerships projects in Florida, Colorado, Virginia, and the Cayman Islands.

Mr. Clary specializes in P3s and has been recognized as an expert and innovator in transportation finance and P3s. Areas of expertise include: P3s; Funding for all Modes of Transportation, including Revenue Options and Ways to Increase Funding; Tolling – Traditional and Managed Lanes; Development and Negotiation of Complex Projects and Agreements; Innovative Finance Solutions that Maximize Transportation Projects From Available Resources; and Federal, State and Local Transportation Programs and Relations.

Mr. Clary previously served as the Assistant Secretary for Finance and Administration for the Florida Department of Transportation. In this role Mr. Clary was the chief financial/administrative officer for the Department and managed statewide functions such as financial development, work program development and programming, finance and accounting, information technology, procurement, human resources, and support services. He also recommended and implemented Department policies related to finance and administration. Mr. Clary also served as the Florida Department of Transportation Chief Financial Planner, Inspector General and Deputy Comptroller. He has been extensively involved in transportation programs/finance for over 22 years.

Mr. Clary chairs the Transportation Research Board Taxation and Finance Committee, previously served on the AASHTO Finance and Administration Committee, and on various other panels and committees associated with transportation finance and administration. Mr. Clary received two national awards from the ARTBA for innovation and national contribution in P3s.

Mr. Clary served as the Deputy Secretary for Administration and Acting Inspector General for the Florida Department of Health and Rehabilitative Services during a three-year leave of absence from transportation.



D.J. Gribbin

Managing Director

Macquarie Capital (USA) Inc.

D.J. Gribbin is a Managing Director and Head of US Government Advisory and Affairs for Macquarie Capital, having spent over 15 years working on public policy and business development in the infrastructure sector. Gribbin most recently served as the General Counsel for the United States Department of Transportation. As the General Counsel, he was confirmed by the U.S. Senate to serve as the principal legal advisor to the Secretary and for the Department.

Gribbin's work in the infrastructure sector also includes serving as Chief Counsel to the Federal Highway Administration and Director of Business Development for Koch Industries, where he also served as Director of Government Affairs. Gribbin's varied professional background began on Capitol Hill, where he worked for U.S. Representative Larry Combest. He also has served as a legislative representative for trade association representing small business and as a grassroots organizer.

Gribbin has authored articles on payroll tax deposits and aviation policy. He is the only person to win ARTBA's public-private venture award for service in both the public and private sector, and is a two-time winner of the U.S. Secretary of Transportation's Gold Award, the Department's highest award.

Gribbin received his undergraduate degree in Philosophy from Georgetown University and his law degree from Georgetown University Law Center in Washington, D.C. He has also attended the Mandarin Training Center in Taipei, Taiwan.

In July 2005, Gribbin took a six-month sabbatical to Guatemala and established a non-profit, tax-exempt corporation to serve the needs of impoverished Guatemalans.

Gribbin and his wife, Molly, are the parents of seven children. They reside in Leesburg, Virginia.

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JOUNG H. LEE

Associate Director for Finance and Business Development

The American Association of State Highway and Transportation Officials (AASHTO)

In his role as Associate Director for Finance and Business Development at AASHTO, Joung Lee reviews surface transportation policy and legislative matters with the state transportation departments, Congressional staff, and executive branch. Joung also serves as Deputy Director of the AASHTO Center for Excellence in Project Finance, which provides education, research, and technical assistance on transportation finance to states. Prior to joining AASHTO in 2007, Joung held transportation planner and analyst positions between 2000 and 2007 with the Federal Highway Administration.

He holds a Bachelor of Urban and Environmental Planning degree from the University of Virginia and a Master of Governmental Administration degree from the University of Pennsylvania. He is founder of Young Professionals in Transportation, a national networking association based in Washington, DC.



NICHOLAS J. MASUCCI

President and CEO, Berger Group Holdings

Nicholas J. Masucci received his master's degree in city and regional planning in 1975 from what would later become the Edward J. Bloustein School of Planning and Public Policy, Rutgers University. Shortly thereafter, Mr. Masucci began his professional career with Louis Berger & Associates, Inc. (which would later become The Louis Berger Group, Inc.) as a planner, where he led the effort in preparing the solid waste management plan for Abuja, the new capital city of Nigeria, and master development plans for three principal cities in Yemen.

After spending time as a senior planner with the Middlesex County Planning Board in New Brunswick, Mr. Masucci returned to The Louis Berger Group, where he eventually led the firm's domestic Economics and Environment Group, pioneering the development of analytical techniques to assess the impacts of major public works construction projects, including several early New Jersey Turnpike widening programs and the Peacekeeper (MX) Missile program. He later oversaw the company's entire U.S. operations and would eventually become president and CEO of The Louis Berger Group, Inc. in 2002.

Mr. Masucci also previously founded VMS, Inc., a Virginia-based firm providing comprehensive infrastructure maintenance management services and pioneering outcomes-based highway asset preservation.

In his current role as president and CEO of Berger Group Holdings, Mr. Masucci is responsible for the strategic direction and financial oversight of the Group's companies, which are comprised of more than 5,000 architects, planners, engineers, economists and environmental scientists across the United States and in 140 countries worldwide and collectively generate revenues of upwards of \$1 billion annually. In addition to serving as president and CEO of Berger Group Holdings, Mr. Masucci is currently a member of the Berger Group Holdings Board of Directors.

Mr. Masucci's tenure at the Bloustein School at Rutgers University proved invaluable, as he gained the knowledge and experience to become the industry leader in the engineering and consulting field that he is today. Mr. Masucci was instrumental in establishing the Louis Berger Fellowship program at the Bloustein School, under which students are selected annually for financial support and to assist Louis Berger Group staff on transportation, agricultural development and poverty alleviation assignments around the world.

The Louis Berger Group (LBG) Project Team Information USACE Innovative Financing Workshop

Moderators: Dane Ismart and Al Racciatti

Dane Ismart:

Mr. Ismart has served 28 years with the Federal Highway Administration. During his tenure with the FHWA he served as the Intermodal Team Leader and led the effort to train State Highway Administration officials in Innovative Financing and Funding. He currently serves as the senior instructor for the NHI Federal-Aid 101 Course and provides assistance in the application of innovative funding techniques for State DOTs. As a Senior Associate with the Louis Berger Group during the past 14 years he has worked with the Florida DOT and Orange County on identifying potential sources for increasing their funding. He was also a contributing author on the NCHRP study for identifying and developing case studies that used innovative techniques to increase funding for port improvements.

Al Racciatti

Mr. Racciatti is director of financial and regional analysis at LBG with proven experience in evaluating infrastructure projects. He specializes in project finance, forecasting, regional economics, and risk assessment. Recently he managed a P3 feasibility study for Florida High Speed Rail, on behalf of a private client and is conducting ridership and financial evaluations for a study of high speed rail elsewhere on the East Coast for a private client. He has supervised and conducted analyses and reported on the economic impacts of several major projects including: the Economic Impacts of USACE Civil Works Program (participated in development and training for the USACE RECONS model) and the U.S. Department of Housing and Urban Development's \$2 billion recovery grant to the Lower Manhattan Development Corporation. He has conducted workshops, taught seminars, and designed training materials on forecasting techniques and impact assessment for the National Cooperative Highway Research Program and many state Departments of Transportation. Mr. Racciatti is also well-versed in financial analysis for infrastructure including rating agency requirements, and market trends and standards. Before recently rejoining LBG, he was vice president from 2007 to 2009 at Ambac Financial Group, Inc., the nation's second largest bond insurer where he developed credit enhancement solutions and conducted transaction due diligence for Public Private Partnership projects and select municipal finance transactions.

Facilitators: Raed EL-Farhan, Jane Mobley, Kelly Reinhardt, Deborah Matherly, Laura Rydland

Raed EL-Farhan

Dr. EL-Farhan has experience with USACE managing more than \$45 million in IDIQ contracts. As a doctorate-level water resources engineer, his specialty lies in civil works planning. Dr. EL-Farhan is currently the program manager for LBG's five-year, \$25 million contract with the

USACE IWR, and is also managing LBG's Technical Support for the National Watershed Protection Program for the Environmental Protection Agency. His areas of expertise include ecosystem restoration, water resources, stormwater management, water and wastewater treatment systems, water quality permitting and compliance, aquatic chemistry, and the fate and transport of contaminants in the environment. Dr. EL-Farhan is working on multiple assignments with USACE IWR and other USACE districts.

Jane Mobley

Dr. Mobley is founding principal of JMA, a nationally recognized communication firm with broad reach in the public and private sectors, especially governments, agencies and organizations providing essential services to the public. She has led groundbreaking research and reporting efforts for institutions, jurisdictions and agencies, including the Department of the Army (HQDA), US Army Training and Doctrine Command (TRADOC), General Services Administration (GSA), Water Research Foundation, and Transportation Research Board. She is a member of the Army Science Board. Dr. Mobley has authored white papers and reports for the Assistant Secretary of the Army for Manpower and Reserve Affairs/G-1 and the Deputy Undersecretary for Business Transformation. She has developed, produced, reported and briefed to senior leaders research and analysis on a range of topics important to the business of the Army. With more than 25 years' experience in physical and social infrastructures that shape communities, Dr. Mobley has led creation of a number of nationally distributed guides, most notably as lead consultant to the U.S. Centers for Disease Control and Prevention (CDC) in creating the Workbook for Defining, Locating and Reaching Special Populations.

Kelly Reinhardt

Ms. Reinhardt has nearly 25 years of experience in the field of communication, specializing in group process methodologies and the transfer of complex information into implementation strategies and training materials. As a principal and senior project manager at JMA, Ms. Reinhardt's responsibilities include client consultation in strategic planning, public information campaigns and event and conference management. Kelly provides formative research, primary and secondary data analysis, communication strategy development, materials development and oversees and conducts public information and involvement activities. She served as the project manager for American Water Works Association's Drinking Water Advisory Protocol Project to produce a guide for water utilities to address situations that generate drinking water advisories. Ms. Reinhardt was also responsible for the management of national research initiatives for the Water Research Foundation to identify communication issues facing water utilities in North America. Research formed the basis of communication tools to assist utilities in public outreach.

Deborah Matherly

Ms. Matherly is a principal planner with LBG. She has more than 31 years of experience with a broad technical and management background in major facets of transportation analysis. She is an exceptional multi-disciplinary team leader with international as well as U.S. experience. She has extensive transit and inter-city rail economic and financial analysis, operations planning and demand management evaluation experience. She has supported economic and financial

analysis for highways (Pennsylvania I-99, Texas U.S. 83, and Maryland), airports (Mississauga, Ontario), ports and intermodal facilities (multiple case studies), transit and moderate and high-speed rail projects (Midwest regional rail, Oklahoma-Texas Amtrak, Baltimore Maglev, Denver Air Train, others).

Laura Rydland

Ms. Rydland will be supporting the logistics, management, and materials development for the workshop. She has supported both Mr. Ismart and Ms. Matherly on other large workshops and charrettes that LBG has helped to facilitate. Mr. Rydland is a transportation planner for LBG, and also has a background in urban planning, urban design, and architecture.

**Department of the Army
U.S. Army Corps of Engineers Civil Works
Program
Five-Year Development Plan**

Fiscal Year 2011 to Fiscal Year 2015



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Executive Summary

This Five-Year Development Plan (FYDP) places the Fiscal Year (FY) 2011 budget into a longer term context. This context is important because most United States Army Corps of Engineers (USACE) studies build off the previous year's budget and require multi-year investments. This report presents projections of discretionary budget authority for the Army Civil Works program for FY11 through FY15. Two funding scenarios are presented: A Base Plan Scenario and an Enhanced Plan Scenario. The Base Plan consists of the President's FY11 budget and its out-year funding stream. The Enhanced Plan is derived from the FY10 appropriation and a growth rate necessary to assure constant purchasing power. The base plan ranges from \$4.939 billion in FY11 to \$4.774 billion in FY15. The enhanced plan ranges from \$5.587 billion in FY11 to \$6.3 billion in FY15.

There are three main sections in this report:

1) Detailed Methods and Assumptions: The Detailed Methods and Assumptions section describes in detail the two scenarios presented in this Five-Year Development Plan, the Base Plan and the Enhanced Plan. In both scenarios, activities are assumed to be assigned to the same accounts as proposed for FY11.

2) Business Program Summaries: For each business program, the report discusses accomplishments, future challenges, project spotlights and the business program's funding and performance under the historical, base, and enhanced funding. The report describes the performance objectives that influence each business program under the two funding scenarios.

This document attempts to relate performance and budgets. With base funding, the programs cannot keep up with inflation. This creates problems with maintaining the FY11 performance. Activities are eliminated or reduced to fit the budget. The enhanced budget allows most programs to maintain the status quo and to continue with improvement.

The three largest funded programs are: Navigation, Flood Risk Management, and Environment. Navigation receives the largest portion of funding, at 33 percent of base funding during the five year period. Flood Risk Management receives 31 percent of base funding. Navigation, Flood Risk Management, and Hydropower are facing similar circumstances, dealing with aging infrastructure. The programs are undertaking risk assessments to prioritize activities and manage infrastructure.

Environment receives between 16 and 17 percent and is broken into Aquatic Ecosystem Restoration, Environmental Stewardship, and Formerly Utilized Sites Remedial Action Program (FUSRAP). The Aquatic Ecosystem Program is the newest addition to Civil Works Program. The South Florida Everglades Ecosystem Project is the largest funded construction project in the environment program. The Louisiana Coastal Area Ecosystem Restoration Project is the largest investigation study; in the out-years, funding will be necessary to implement study recommendations.

3) Appendix: The appendix contains more detailed tables. Projects and projected funding levels are listed for both the Base and Enhanced Scenarios. The projects are broken down by state in separate tables by Investigations, Construction, and Mississippi River and Tributaries.

Detailed Methods and Assumptions

This section describes in detail the two scenarios presented in this Five-Year Development Plan, the Base Plan and the Enhanced Plan. In both scenarios, activities are assumed to be assigned to the same accounts as proposed for FY11.

Base Plan

The Base Plan is based on the President's budget for FY11 and formula-driven agency funding levels for FY12 through FY15 from the Office of Management and Budget (OMB). After the budget year decisions are complete, OMB generates out-year appropriation amounts that are consistent with the President's overall targets for revenues, defense, homeland security, and non-security spending. As a result, the data for the Base Plan out-years do not represent proposed levels for the agency accounts, or programs. Rather, the out-year numbers are formula-generated placeholders, pending budget decisions in future years.

Under the Base Plan, each account would maintain the same percentage of total funding in each of the out-years that it has in the FY11 budget. For example, the Investigations account is 2.1 percent of the total in the FY11 budget, so it would be 2.1 percent of the total in each out-year. Table 1 displays the total and the amount for each appropriations account from FY11 thru FY15 for the Base Plan.

**Table 1: Civil Works Base Plan Appropriations Accounts by Fiscal Year
(\$ Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Account:					
Investigations	104	100	96	98	101
Construction	1,690	1,620	1,562	1,597	1,634
Operation and Maintenance (O&M)	2,361	2,262	2,181	2,232	2,280
Mississippi River and Tributaries (MR&T)	240	230	222	227	232
Formerly Utilized sites Remedial Action Program (FUSRAP)	130	125	120	123	126
Regulatory Program	193	185	178	182	187
Flood Control and Coastal Emergencies (FCCE)	30	29	28	28	29
Executive Direction and Management	185	177	171	175	179
Assistant Secretary of the Army (Civil Works)	6	6	6	6	6
Total, Discretionary Budget Authority	\$ 4,939	\$ 4,734	\$ 4,564	\$ 4,668	\$ 4,774

Expenses and Office of the Assistant Secretary of the Army (Civil Works), (ASA(CW))

Expenses and ASA (CW) accounts fund USACE executive direction and management, and Army Secretarial oversight of the Civil Works program. USACE's executive direction covers the headquarters and division expenses. These accounts are not allocated to business programs. The following table displays the funding allocation among business programs.

**Table 2: Civil Works Base Plan Programs by Fiscal Year
(\$ Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
<i>Business Program:</i>					
Navigation	1,653	1,583	1,526	1,562	1,569
Flood Risk Management (FRM)	1,545	1,481	1,428	1,460	1,468
Aquatic Ecosystem Restoration	586	562	542	554	556
Environmental Stewardship	108	104	100	102	102
Formerly Utilized sites Remedial Action (FUSRAP) Program	130	125	120	123	124
Hydropower	207	198	191	196	196
Recreation	280	268	259	265	266
Water Supply	4	4	4	4	4
Regulatory	193	185	178	182	187
Emergency Management	43	41	40	41	42
Executive Direction and Management	185	177	171	175	179
Army Secretarial Oversight	6	6	6	6	6
Other (Additional studies, projects, programs, and activities, known as the "wedge")	0	0	0	0	76
Total	\$ 4,939	\$ 4,734	\$ 4,564	\$ 4,668	\$ 4,774

The "wedge" refers to funding made available due to the completion of budgeted projects. The "wedge" is not allocated to business programs; however, in a subsequent section, each business program provides examples of how these funds could be used. Under the base plan, the projects included in the FY2011 President's budget are funded in the out-years at no less than the level in the budget, but no more than capability. The wedge is then made up of the funds that become available as projects and studies are completed. Under this plan, a wedge becomes available only in the final year, 2015.

Table 3 shows how the Business Programs draw funds from the various accounts in FY11 Base Scenario. For example, the \$1.7 billion Navigation Program draws \$20 million from Investigations, \$291 million from Construction, \$1.297 billion from Operation and Maintenance (O&M), and \$45 million from the Mississippi River and Tributaries account. Similar data was used for the formulation of business program funding in each out-year scenario.

**Table 3: FY11 Base Business Program and Account Summary
(\$ Millions)**

	Investigations	Construction	O&M	MR&T Sub-Total	FUSRAP	FCCE	Regulatory	Expenses	ASA	Total
Business Program:										
Navigation	\$20	\$291	\$1,297	\$45						\$1,653
Flood Risk Management (Flood and Coastal Damage Reduction)	\$49	\$848	\$475	\$172						\$1,545
Aquatic Ecosystem Restoration	\$35	\$530	\$18	\$3						\$586
Environmental Stewardship			\$103	\$5						\$108
Formerly Utilized Sites Remedial Action (FUSRAP) Program					\$130					\$130
Hydropower		\$21	\$186							\$207
Recreation			\$265	\$15						\$280
Water Supply			\$4							\$4
Regulatory							\$193			\$193
Emergency Management			\$13			\$30				\$43
Executive Direction and Management								\$185		\$185
Assistant Secretary of the Army (ASA Civil Works)									\$6	\$6
TOTAL	\$104	\$1,690	\$2,361	\$240	\$130	\$30	\$193	\$185	\$6	\$4,939

Enhanced Plan

For the Enhanced Plan, the overall funding levels for FY11 through FY15 adjust the FY10 Appropriations overall funding level of \$5.445 billion (including the Assistant Secretary and Expenses) for projected changes in the Gross Domestic Product (GDP) price index. Consistent with the base scenario, Expenses and the Assistant Secretary accounts are not allocated to the business programs. The funding allocation is permitted to vary from the FY11 account mix. However, no account receives less funding in the FY11 Enhanced Plan than it does in the FY11 budget.

FY11 Appropriation Account Funding under the Enhanced Plan is distributed as follows:

- The Operation and Maintenance account receives funding above the FY11 budget amount to address priority maintenance. The O&M account receives \$2.7 billion in FY11, an increase of \$300 million over the FY11 budget amount for the O&M account.
- Investigations receives \$180 million in FY11, \$76 million above the FY11 budget amount.
- Construction receives \$1.9 billion in FY11, \$200 million above the FY11 budget amount.
- The Formerly Utilized Sites Remedial Action Program (FUSRAP) account receives \$145 million in FY11. This is \$15 million above the FY11 budget amount.
- The Expenses account receives \$195 million in FY11, which is \$10 million above the FY11 budget amount.
- The Regulatory Account receives \$213 million in FY11, or \$20 million above the FY11 budget amount.
- The Flood Control and Coastal Emergencies account would receive \$50 million, \$20 million above the FY11 budget amount.
- MR&T receives \$252 million, \$4 million above the FY11 budget amount.

Out-years Appropriation Funding under the Enhanced Plan is distributed as follows:

In the out-years, funding for each account generally increases from the FY11 level with the GDP price index. This is just under three percent per year. However, the O&M account and the Maintenance portion of the MR&T account increase three percent per year in recognition of the aging of the Civil Works capital assets. As an offset, the Construction account and the Construction portion of the MR&T account increase slightly less each year.

Table 4 displays the overall total and the total for each account in each fiscal year from FY11 through FY15 under the Enhanced Plan.

**Table 4: Civil Works Enhanced Plan Appropriations Accounts by Fiscal Year
(\$ Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Account:					
<i>Gross Domestic Product Price Index</i>	126	127	129	132	134
Investigations	180	185	189	195	203
Construction	1,894	1,936	1,992	2,062	2,136
Operation and Maintenance (O&M)	2,652	2,732	2,813	2,897	2,991
Flood Control, Mississippi River and Tributaries (MR&T)	252	259	266	275	284
Formerly Utilized Sites Remedial Action Program (FUSRAP)	145	149	153	158	164
Regulatory Program	213	219	225	232	240
Flood Control and Coastal Emergencies (FCCE)	50	51	53	55	56
Expenses	195	200	206	213	220
Assistant Secretary of the Army (Civil Works)	6	6	6	7	7
Total, Discretionary Budget Authority	\$ 5,587	\$ 5,737	\$ 5,904	\$ 6,093	\$ 6,300

Table 5 displays the business program funding. The “wedge” refers to funding made available due to the completion of budgeted projects. The “wedge” is not allocated to business programs; however, in a subsequent section, each business program provides examples of how these funds could be used. Under the enhanced plan, the projects included in the FY2011 President’s budget are funded in the out-years at the project’s capability level to the extent possible. Please note, as projects complete and a higher wedge is attained in FY15, the business lines affected by the wedge appear to decrease, however, the assumption is that these business lines would increase as new projects or activities are started with this additional funding.

**Table 5: Civil Works Enhanced Plan Business Programs by Fiscal Year
(\$ Millions)**

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
<i>Business Program:</i>					
Navigation	2,023	2,058	2,104	2,136	2,045
Flood and Coastal Storm Damage Reduction (FCSDR)	1,559	1,586	1,620	1,646	1,579
Aquatic Ecosystem Restoration	692	704	719	731	699
Environmental Stewardship	139	143	147	152	157
Formerly Utilized sites Remedial Action (FUSRAP) Program	145	149	153	158	164
Hydropower	260	264	270	274	263
Recreation	286	291	297	302	290
Water Supply	7	7	7	8	8
Regulatory	213	219	225	232	240
Emergency Management	62	64	66	68	70
Executive Direction and Management	195	200	206	213	220
Army Secretarial Oversight	6	6	6	7	7
Other (Additional studies, projects, programs, and activities, "wedge")	270	46	84	168	561
Total	\$ 5,587	\$ 5,737	\$ 5,904	\$ 6,093	\$ 6,300

Table 6 shows the distribution of Enhanced Plan funds to the Business Programs for FY11. For example, in FY11, Navigation receives \$2.023 billion which is \$360 million above the base.

**Table 6: FY11 Enhanced Business Program and Account Summary
(\$ Millions)**

	Investigations	Construction	O&M	MR&T Sub-Total	FUSRAP	FCCE	Regulatory	Expenses	ASA	Total
Business Program:										
Navigation	\$41	\$397	\$1,538	\$47						\$2,023
Flood Risk Management (Flood and Coastal Damage Reduction)	\$70	\$844	\$458	\$187						\$1,559
Aquatic Ecosystem Restoration	\$67	\$608	\$14	\$3						\$692
Environmental Stewardship			\$136	\$3						\$139
Formerly Utilized Sites Remedial Action (FUSRAP) Program					\$145					\$145
Hydropower		\$45	\$215							\$260
Recreation			\$274	\$12						\$286
Water Supply	\$2		\$5							\$7
Regulatory							\$213			\$213
Emergency Management			\$12			\$50				\$62
Executive Direction and Management								\$195		\$195
Assistant Secretary of the Army (ASA Civil Works)									\$6	\$6
TOTAL	\$180	\$1,894	\$2,652	\$252	\$145	\$50	\$213	\$195	\$6	\$5,587

Under the Base Plan there is no “wedge” in FY11, but there is a “wedge” in the final year. The Enhanced Plan shows a “wedge” for all years. In both cases, the “wedge” is not allocated across business programs (nor is it shown in the above cross-cut for FY11).

Business Program Summary

NAVIGATION

The navigation program is responsible for providing safe, reliable, efficient and environmentally sustainable waterborne transportation systems for the movement of commercial goods and for national security needs. The program seeks to meet this responsibility through a combination of capital improvements and the operation and maintenance of existing infrastructure projects. The navigation program is vital to the nation's economic prosperity: 75 percent of America's overseas international trade moves through its ports. The nation's marine transportation system (MTS) encompasses a network of navigable channels, waterways and infrastructure maintained by the USACE, as well as publicly- and privately-owned vessels, marine terminals, intermodal connections, shipyards and repair facilities. The MTS consists of approximately 12,000 miles of inland and intracoastal waterways; approximately 350 coastal, Great Lakes and inland harbors; and channel projects comprising 13,000 miles, maintained by USACE.

FLOOD RISK MANAGEMENT

Through both structural and non-structural measures, the Flood Risk Management Program serves as a vehicle to reduce the risk to human safety and property from riverine and coastal flooding. Upon completion, and with the exception of reservoirs, most of the federally constructed infrastructure has been transferred a non-Federal, cost-share sponsor to operate and maintain.

In implementing the Flood Risk Management Program, the Corps has demonstrated its commitment to lead the nation away from the mindset of controlling floods to a more comprehensive approach of managing the risks associated with floods and coastal storms. This shift in perspective acknowledges the complexities and dynamics of flood plains and the Corps' commitment to the partnerships necessary to apply effective flood plain and coastal flood risk management practices.

ENVIRONMENT

The Environmental Program includes three sub-programs: Aquatic Ecosystem Restoration, Environmental Stewardship and the Formerly Utilized Sites Remediation Action Program. Each of these sub-programs has separate goals and objectives and performance measures.

ENVIRONMENTAL: AQUATIC ECOSYSTEM RESTORATION (AER)

The Army's mission in the area of aquatic ecosystem restoration is to help restore aquatic habitat to a more natural condition in ecosystems whose structures, functions and dynamic processes have become degraded. The emphasis is on restoration of nationally- or regionally-significant habitat where the solution primarily involves modifying the hydrology and geomorphology.

ENVIRONMENTAL: ENVIRONMENTAL STEWARDSHIP

The environmental stewardship program focuses on the management, conservation and preservation of natural resources on 11.5 million acres of land and water at 456 multipurpose USACE projects. Among other environmental activities, program personnel monitor water quality at USACE dams and operate fish hatcheries in cooperation with state wildlife agencies. The program includes compliance measures to ensure that USACE projects meet federal, state and local environmental requirements; prevention; and conservation.

ENVIRONMENTAL: FORMERLY UTILIZED SITES REMEDIATION ASSISTANCE PROGRAM (FUSRAP)

Under the FUSRAP, USACE cleans up former Manhattan Project and Atomic Energy Commission sites, making use of expertise gained in cleaning up former military sites and civilian hazardous waste sites under the Environmental Protection Agency Superfund program.

HYDROPOWER

USACEs' multipurpose authorities provide hydroelectric power as an additional benefit of projects built for navigation and flood control. USACE is the largest owner-operator of hydroelectric power plants in the United States and one of the largest in the world. USACE operates 353 generating units at 75 multipurpose reservoirs, mostly in the Pacific Northwest; they account for about 24 percent of America's hydroelectric power and approximately 3 percent of the country's total electric-generating capacity. Its hydroelectric plants produce nearly 70 billion kilowatt-hours each year—sufficient to serve about 75 million households equal to 288 cities the size of Washington, DC. Hydropower is a renewable source of energy and one of the least environmentally disruptive sources of electric power, producing none of the airborne emissions that contribute to acid rain or the greenhouse effect.

RECREATION

USACE is an important provider of outdoor recreation, which is an ancillary benefit of its flood risk management and navigation projects. USACE's recreation program provides quality outdoor public recreation experiences in accordance with its three-part mission: 1) serve the needs of present and future generations; 2) contribute to the quality of American life; and 3) manage and conserve natural resources consistent with ecosystem management principles.

USACE administers 4,254 recreation sites at 422 projects on 12 million acres of land. During fiscal year 2009, 10 percent of the U.S. population visited a USACE project at least once. These visitors spent \$18 billion pursuing their favorite outdoor recreation activity, supporting some 350,000 full- and part-time jobs.

REGULATION OF WETLANDS AND WATERWAYS

In accordance with the Rivers and Harbors Act of 1890 (Sec. 10) and the Clean Water Act of 1972 (Sec. 404), as amended, the Army Civil Works Regulatory Program regulates the discharge of dredged and fill material into U.S. waters, including wetlands. USACE implements many of

its oversight responsibilities by means of a permit process. Throughout the permit evaluation process, the USACE complies with the National Environmental Policy Act and other applicable environmental and historic preservation laws. In addition to federal statutes, USACE must also consider the views of other federal, tribal, state and local governments and agencies; interest groups as well as the general public when rendering its final permit decisions.

EMERGENCY MANAGEMENT

Throughout USACE history, the United States has relied on the civil works program for help in times of national disaster. Emergency management continues to be an important part of the civil works program that supports the Department of Homeland Security in carrying out the National Response Framework. It does this by providing emergency support in the areas of public works and engineering, and by conducting emergency response and recovery activities under authority of Public Law 84-99. USACE responds to more than 30 presidential disaster declarations in a typical year, and its highly-trained workforce is prepared to deal with both man-made and natural disasters.

Hurricanes Katrina, Rita, Wilma and Ophelia caused significant damage to the flood and hurricane protection projects along the Gulf Coast and South Atlantic states. Hurricane Katrina, alone, resulted in federal costs of approximately \$125 billion in Louisiana, Mississippi and Alabama. USACE costs to repair and upgrade the New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS) will be approximately \$14 billion. Major damage to the storm protection system in the New Orleans area included overtopping of 47 sections of levees and the failure of three floodwalls along Lake Pontchartrain and vicinity.

Coupled with its repair efforts, USACE studied ways to improve hurricane protection in the vicinity of Lake Pontchartrain. USACE commissioned a Hurricane Protection Decision Chronology (HPDC) shortly after Hurricane Katrina in order to collect, record and analyze project memoranda, reports and related documentation. This material was used to better understand how complex social and political decision-making processes contributed to the HSDRRS and how those processes might be improved. Subsequently, a report provided an explanation—as opposed to an evaluation—of the way in which USACEs’ policies and organization, legislation, financial and other factors influenced decisions that led to the HSDRRS protective structures in place when Hurricane Katrina struck.

The HPDC focus on project decision-making complemented the engineering forensics investigations conducted by the Interagency Performance Evaluation Task Force and other institutions. The HPDC’s purpose is to make predictions about the future by looking at historical data, and it demonstrated that no single individual, agency, organization or decision was solely responsible for the development of the HSDRRS over the course of its 50-year history. USACE is committed to open, transparent communication with the American public regarding the ‘lessons learned’ in the aftermath of Hurricane Katrina.

USACE not only contributes to domestic emergency management efforts, but also plays a major role on the international stage through its participation in the civil military emergency preparedness program. In support of the Department of Defense (DoD), USACE shares emergency management knowledge and expertise with U.S. Allies and partners in the former Soviet Republics and Eastern Europe. This valuable program brings together key leaders and builds relationships among nations in direct support of the National Defense Strategy.

WATER STORAGE FOR WATER SUPPLY

Conscientious management of the nation's water supply is critical to limiting water shortages and lessening the impact of droughts. USACE has an important role in ensuring that homes, businesses and farms, nationwide, have enough water to meet their needs. USACE has the authority for water supply in connection with construction, operation and modification of federal navigation; flood damage reduction; and multipurpose projects.

EXECUTIVE DIRECTION AND MANAGEMENT (ED&M)

The Expenses Account provides for Executive Direction and Management (ED&M) of the Civil Works Program pursuant to policy guidance and oversight by the Assistant Secretary of the Army (Civil Works). This is accomplished through command and control, policy and guidance development, program management, national coordination, and quality assurance. Principal activities include corporate leadership, strategic planning and performance measurement. Performance measurement is accomplished through performance assessment metrics, construction leading/lagging indicators, and efficiency studies. Program management is accomplished through various levels of review such as Project Review Board (PRB) Reviews, Directorate Management Reviews (DMRs), and Command Management Reviews (CMRs). ED&M also allows for national coordination and collaboration with other agencies, States, local governments, and non-governmental organizations.

USACE Business Programs

Navigation



Navigation



Key Statistics

- ❖ Operates and maintains 25,000 miles of navigable channels
- ❖ Responsible for 926 deep and shallow draft harbors in 41 states.
- ❖ Operate and maintain 241 lock chambers at 195 sites
- ❖ There is 2.2 billion tons of domestic and foreign commerce carried annually on inland waterways.

Accomplishments

- Program operates and maintains diverse navigation resources including: channels and locks on inland and intracoastal waterways, commercially important ports and channels; refuge harbors to protect vessels from storms; subsistence harbors to meet community needs; locks, and smaller harbors among other assets.
- Program provides numerous activities such as basic maintenance for older and/or smaller commercial locks and harbors; construction of dredged material placement sites; mitigation, dredging, and construction of beneficial use sites for dredged material.

Future Challenges

- Achieving the Administration's goal of doubling exports in the next 5 years.
- Providing a reliable and resilient navigation system with limited funding and staff.
- Meeting the changing world shipping fleet needs to accommodate the wider and deeper ships being constructed. The Panama Canal is undergoing construction of new locks and deepening of its channels to be able to accommodate vessels up to 1,200 feet long, 160 feet wide, and have drafts up to 50 feet deep by 2014 (vessels using the Panama Canal are currently limited to 965 feet long, 106 feet wide, and maximum drafts of 39.5 feet). This will significantly change the vessel fleet calling on east and Gulf coast ports.
- Maintaining an inland navigation infrastructure that is on average over 50 years old with growing rehabilitation and maintenance needs.
- Depletion of the Inland Waterways Trust Fund (IWTF). Outlays exceeded revenues between 2002 and 2008, and the IWTF is essentially depleted. Funding for inland and intracoastal

waterways construction and rehabilitation is provided just in time and annual appropriations are limited to annual IWTF revenues of approximately \$75-80 million.

- Balancing environmental values (turtles, nesting birds, turbidity, sea grasses, fish spawning, etc) with dredging and dredged material placement responsibilities.
- Obtaining/Constructing/Financing new dredged material placement sites, and finding storage capabilities to hold dredged material from channel maintenance.
- Implementing a system that consistently evaluates asset quality and deficiencies across projects in various regions to assist in making better resource decisions.
- Creating a cost-effective model to show the relative performance increase from marginal increases in program resources.
- Establishing a baseline of the physical condition of USACE Navigation assets.

Program History and Performance

The Navigation business program supports the following strategic plan goals, objectives and performance measures. The program's strategic objectives come from Civil Works Strategic Goal 1 and Goal 3.

Strategic Objective 1.3: Reduce backlog of uncompleted, scheduled work on budgeted construction projects.

Strategic Objective 1.3.1: Deliver project benefits as quickly as possible within available resources.

Strategic Objective 3.1: Improve the efficiency and effectiveness of existing USACE water resource projects.

Strategic Objective 3.2: Address the operation and maintenance (O&M) backlog.

Performance Measures

Three categories of program performance measures support the above goals and objectives. Many of these Navigation measures were modified or added in 2007; these are noted below. Historical and future performance data for the new measures will be reported as it is collected and developed.

1) Customer Service Measures

- ❖ **Channel availability, high-use projects (coastal ports and harbors)** (shown in table below): Percent of time that high commercial-traffic navigation channels are available to commercial users.
- ❖ **Segment Availability (inland waterways)** (shown in table below): Number of instances where mechanical driven failure or shoaling results in the closure of all or part of a high or moderate commercial use segment for over 24 hours. Also closures in excess of 1 week.

- ❖ **Channel availability, high-use projects (inland waterways).** Added in 2007. Percent of time that all Inland Waterways segments with high commercial activity are available when customers want to use them.
- ❖ **Percent of high use segments with “good” service level.** Added in 2007. Percent of high commercial use segments with sufficient preventative maintenance to achieve a good service level. High use segments are the upper and lower Mississippi River, Illinois Waterway, Ohio River, Tennessee River, and the Gulf Intracoastal Waterway.

2) **Asset Management Measure**

- ❖ Percent of inland waterways projects exceeding facilities condition index (FCI) standard. Added in 2007. This measure assesses agency performance in meeting the goals of the President's Real Property Asset Management Initiative.

3) **Program Efficiency Measures (Added in 2007)**

- ❖ Percent of reports recommending projects reflecting watershed principles. Percent of Chief's reports recommending projects for authorization that meet criteria for reflecting watershed principles in the recommended plan.
- ❖ Average annual benefits (present value) attributable to Preconstruction Engineering and Design (PED) work completed in current FY.
- ❖ Average annual benefits (present value) realized by construction projects completed in FY.
- ❖ High-return investments (inland waterways). Percent of funding to rehabilitate, construct or expand projects that is allocated to high-return investments.
- ❖ Percent change in funds required to complete all programmed work.
- ❖ Total O&M funds expended per segment ton-mile averaged over a five-year period, including rehabilitations
- ❖ Cost per ton. Operation and maintenance cost per ton of cargo shipped through a port.

The following table presents a summary of the program funding and performance. Performance information provided in the table is incomplete because the applicable data systems which will be used to collect the data are being deployed.

Table 1: Navigation Performance for O&M Projects

Fiscal Year	2002	2003¹	2004	2005	2006	2007	2008	2009	2010
Appropriation (\$ Millions)	NA	NA	NA	\$1,692	\$1,796	\$1,926	\$2,009	\$1,900	\$1,766
Inland Waterway Segment Availability - Hours not Available (000 hours)	11	14	13	27	22	27	43	28	27
Channel availability, high-use projects² (Center half of channel)	NA	NA	NA	38%	35%	32%	30%	NA	NA
Note 1: The navigation business line was realigned in FY2003; annual appropriations prior to FY2004 cannot be directly compared to the appropriations in the years following the realignment.									
Note 2: Values for top 59 coastal and Great Lakes navigation projects based on tonnage. All projects included carry more than 10 million tons.									

The following High Priority Performance Goal also supports the above goals and objectives:

High Priority Performance Goal (HPPG): Responding to the President's challenge to deliver a government that works well and is transparent, all Federal agencies have developed High Priority Performance Goals that will be regularly reviewed for progress and reporting of performance results to the public via the PERFORMANCE.gov website. Each of the USACE Business Lines has developed HPPGs related to the business line mission area. The Commercial Navigation HPPG Goal is to help facilitate commercial navigation by providing safe, reliable, highly cost-effective, and environmentally-sustainable waterborne transportation systems. The Inland Navigation Priority Goal measure looks at segment availability – the number of instances where mechanically driven failure or shoaling results in the closure of all or part of a high or moderate commercial use segment anywhere in the nation for a defined period of time, e.g., preventable closures that last longer than 24 hours and those that last longer than one week. The measure only includes: (1) failures on the main chamber of a lock, rather than an auxiliary chamber; and (2) shoaling due to inadequate dredging (i.e., not closures due to low water levels from droughts, or high water levels from floods). Progress on the Navigation HPPG is reported quarterly to OMB.

**Table 2: Navigation High Priority Performance Goal for Inland and Intracoastal
Navigation O&M Projects**

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Appropriation (\$ Millions)	NA	NA	NA	\$	\$501	\$491	\$523	\$660	\$886	NA
Target- Instances of Lock Closures due to Mechanical Failures Lasting Longer than 24 Hours	NA	NA	NA	NA	NA	NA	NA	NA	37	38
Actual Instances of Lock Closures due to Mechanical Failures Lasting Longer than 24 Hours	45	45	36	19	33	38	42	37	61	NA
Total Hours for Lock Closures due to Mechanical Failures Lasting Longer than 24 Hours	13,448	12,575	9,265	5,029	9,817	9,317	16,033	11,096	19,562	NA
Target- Instances of Lock Closures due to Mechanical Failures Lasting Longer than 7 Days	NA	NA	NA	NA	NA	NA	NA	NA	19	21
Actual Instances of Lock Closures due to Mechanical Failures Lasting Longer than 7 Days	25	27	19	13	21	18	28	19	37	NA
Total Hours for Lock Closures due to Mechanical Failures Lasting Longer than 7 Days	12,255	11,399	7,929	4,728	8,871	7,805	15,073	9,675	17,638	NA
HPPG implemented in FY 10. Prior year targets were not established.										

Project Spotlight: New York and New Jersey Harbor Deepening Project



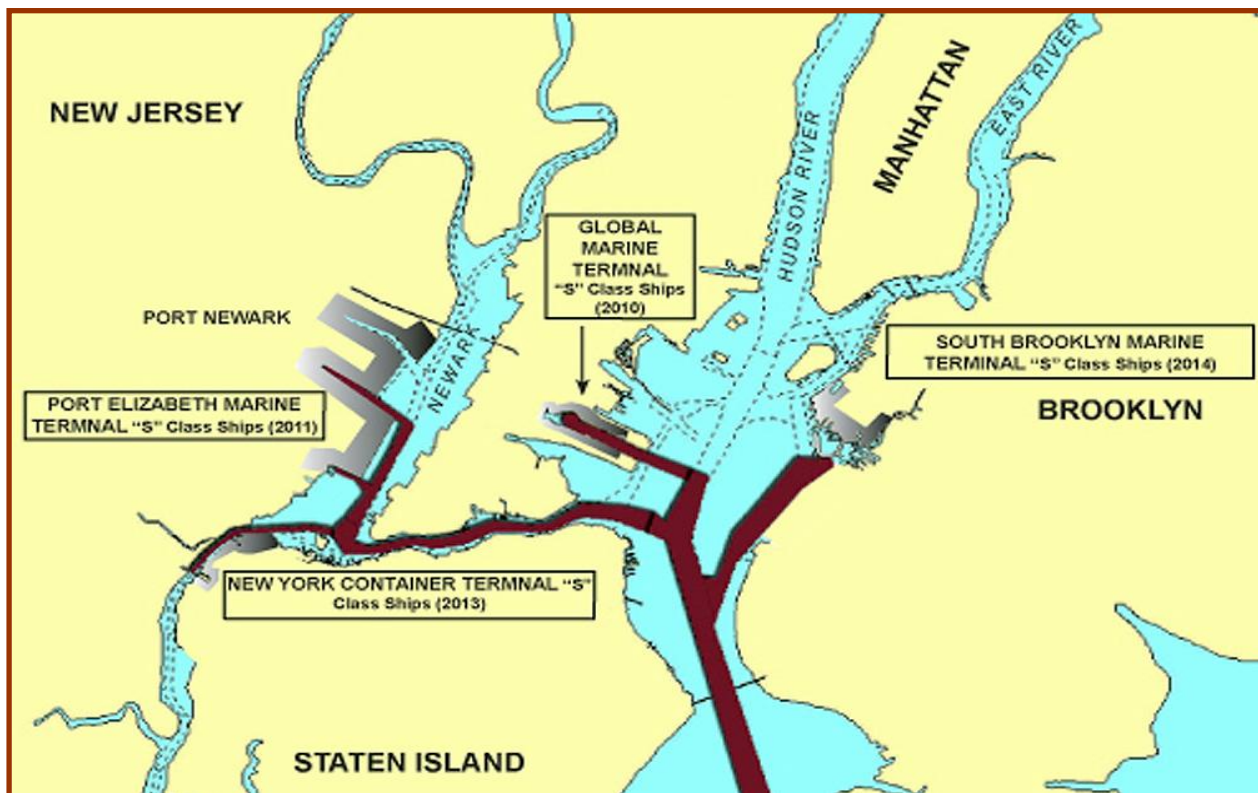
District: New York District

Location: Newark, Staten Island and Brooklyn Metro Area

Project: Deep Draft Navigation

The project deepens about 35 miles of the federal navigation channels to 50-53 foot-depths to provide larger vessel access to four major container terminals. The project includes beneficial use of dredged material, and environmental restoration to mitigate adverse environmental impacts. The port is the largest on the east coast and serves 35

percent of the American population. The port carries over 150 million tons of commerce annually. The \$2.5 billion project has a benefit-cost ratio of 2.7.



Base Funding and Performance

The Base Plan program focuses on the most critical infrastructure repairs and replacements. Constrained funding levels will not keep pace with escalating dredging and construction costs. Unscheduled closures of inland navigation locks are expected to increase, and channel availability is expected to decrease. Critical maintenance funding will keep most key navigation infrastructure functioning; however, overall facility condition will continue to decline. Channels not maintained at authorized project depths could result in light-loading of vessels (carrying less cargo to enter shallower drafts), delays waiting for higher tides, diversion to other ports, or using trucking or rail. Ongoing construction will continue at constrained levels. The highest-return studies, preconstruction engineering and designs (PEDs), and projects will be funded, and other projects may receive little or no funding.

**Table 3: Five-Year Base Plan Navigation Business Program by Account
(\$ Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ 20	\$ 19	\$ 18	\$ 19	\$ 19
Construction	\$ 291	\$ 279	\$ 269	\$ 275	\$ 276
Operation and Maintenance (O&M) Estimate	\$ 1,297	\$ 1,242	\$ 1,197	\$ 1,226	\$ 1,231
Mississippi River and Tributaries (MRT)	\$ 45	\$ 43	\$ 42	\$ 42	\$ 43
Total	\$ 1,653	\$ 1,583	\$ 1,526	\$ 1,562	\$ 1,569
Note: Includes CAP and Remaining Items					

Initiatives for Base Plan

- Support continued maintenance of high-use harbors and net exporting coastal ports, and high use inland and intracoastal waterways channels and locks.
- Continued development and implementation of Operational Condition Assessments to standardize and quantify risk and reliability criteria and prioritize necessary maintenance repairs at inland navigation structures to stop the trend of increasing unscheduled lock closures. Operational Condition Assessments were completed for all inland and intracoastal navigation structures by December 2010 and will be used in prioritizing maintenance requirements in FY 12 and beyond.
- Continue Facilities Equipment Management (FEM) implementation to apply consistent maintenance standards, develop standard maintenance data and provide a means to analyze maintenance trends and unaccomplished maintenance needs on all navigation facilities equipment.
- Use the standardized ‘Asset Management’ performance information in the budget decision process to optimize maintenance expenditures and improve the reliability for all large navigation structural assets.
- Continue performance measures and High Priority Performance Goal development and evaluation for inland navigation.

- Continue construction of New York/New Jersey Harbor, Texas City, and Sacramento Deepwater Ship Channel.
- Continue construction of Olmsted Lock and Dam on the Ohio River in Illinois and Emsworth Locks and Dam on the Ohio River in Pennsylvania. Ongoing construction at Chickamauga Lock on the Tennessee River in Tennessee, Kentucky Lock on the Cumberland River in Tennessee, and Locks and Dams 2, 3, 4, on the Monongahela River in Pennsylvania will be curtailed in the near-term and suspended in the long-term until sufficient revenues are generated in the IWTF to finance construction.
- Complete rehabilitation of locks at Locks 27 along the Mississippi River in Illinois.
- Construction and rehabilitation of ongoing inland and intracoastal waterways projects will be limited by annual IWTF revenues of approximately \$75-\$80 million. New construction or rehabilitation projects will not be undertaken until legislation is enacted to increase revenues in the IWTF.

Table 4: Five-Year Base Plan Total Budget and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Budget (\$ million)	\$1,653	\$1,583	\$1,526	\$1,562	\$1,569
Segment availability (000 hours)	32	34	36	38	40
Channel availability, high-use projects (Center half of channel)	28%	26%	24%	22%	20%

Project Spotlight: John Day Downstream Lock Gate Replacement, John Day Lock and Dam,



The downstream lock gate and the two friction sheaves for its lifting mechanism are being replaced at the John Day Lock and Dam on the Columbia River, Oregon and Washington. Advanced American Construction of Portland, Ore., is the prime contractor for the installation of the gate and sheaves. The contract was awarded for \$15.6 million. Oregon Iron Works was AAC's fabrication subcontractor. Work to begin removal of the John Day downstream lock gate is shown above.

District: Portland District

Location: Columbia River, Oregon and Washington

Project: Inland Navigation

Link:

<http://www.nwp.usace.army.mil/navigation/lockoutage.asp>

Construction of the John Day Lock and Dam began in 1958 and the downstream lock gate has been in use since its construction. The gate has a 113-foot maximum lift, and is the highest single-lift lock in the free world. The John Day navigation lock, along with The Dalles lock and Lower Monumental Lock on the Columbia-Snake River system are scheduled to be out of service from Dec. 10, 2010 through March 18, 2011 for replacement of the downstream lock gates and other ancillary work in an effort to keep navigation on the Columbia-Snake River system operating efficiently and reliably.

Enhanced Funding and Performance

The enhanced plan program contains funding for continuation and completion of ongoing construction projects and highest return studies. Additional dam safety assurance, seepage control, and static instability correction projects such as Lock and Dam 25 on the Mississippi River and Montgomery Lock and Dam on the Ohio River will be initiated. In addition, funding is included to accomplish high priority inland navigation infrastructure repairs to reduce the number of unscheduled lock closures and additional maintenance and dredging of coastal ports, harbors, and channels. Increased investments in inland navigation infrastructure will reduce unscheduled lock closures and increased investment in ports and channels could increase channel availability.

Table 5: Five-Year Enhanced Plan Navigation Business Program by Account (\$ Millions)

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ 41	\$ 42	\$ 43	\$ 43	41
Construction	\$ 397	\$ 404	\$ 413	\$ 419	401
Operation and Maintenance (O&M) Estimate	\$1,538	\$1,564	\$1,599	\$1,624	\$1,555
Mississippi River and Tributaries (MRT)	\$ 47	\$ 48	\$ 49	\$ 50	48
Total	\$2,023	\$2,058	\$2,104	\$2,136	\$2,045
Note: Includes CAP and Remaining Items					

Initiatives for Enhanced Plan

- Advance ongoing Feasibility studies and Preconstruction Engineering and Design work under the Investigations appropriation in order to complete studies and ready projects for construction.
- Advance construction of New York/New Jersey Harbor, Sacramento Deepwater Ship Channel, Mississippi River Regulating Works, and MR&T Dikes for Channel Improvements.
- Fund additional maintenance of high and moderate-use coastal ports and harbors and inland and intracoastal waterway channels and locks to increase channel availability and reduce lock closures due to mechanical failures.
- No additional work on construction or rehabilitation of ongoing inland and intracoastal waterways above the Base Plan will be performed until legislation is enacted to increase revenues in the IWTF.
- Fund additional construction of dredged material placement facilities for high use ports and harbors.
- Fund additional mitigation for sand lost as a result of construction of coastal navigation projects.

Table 6: Five-Year Enhanced Plan Navigation Budget and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Budget (\$ millions)	\$2,023	\$2,058	\$2,104	\$2,136	\$2,045
Segment availability (000 hours)	27	26	25	24	24
Channel availability, high-use projects (Center half of channel)	37%	39%	41%	43%	45%

Potential Work with “Wedge Money”

If “wedge” money for new starts was received for this business program, additional projects could be considered. While specific funding decisions would be made at that time, several examples of projects that could be considered are:

- Boston Harbor Deepening, Massachusetts
- Norfolk Harbor and Channels Deepening, Virginia
- Savannah Harbor Expansion, Georgia
- Miami Harbor Deepening, Florida
- Corpus Christi Ship Channel, Texas
- Sabine Neches Waterway, Texas
- Freeport Harbor, Texas

Flood Risk Management (FRM)



Flood Risk Management (FRM)



1993 Floods, Jefferson City, Mo

Key Statistics

- ❖ Constructed 8,500 miles of levees and dikes, 383 reservoirs and more than 90 storm damage reduction projects along 240 miles of the nation's 2,700-mile shoreline.
- ❖ The initial and continued investment in these projects has prevented an estimated \$706 billion in damages from coastal and riverine flooding; the cumulative cost for building and maintaining these projects is approximately \$120 billion, which yields a benefit to cost ratio of 6:1.

Accomplishments

- Completed and submitted to Congress the Recommendations for a National Levee Safety Program draft report. The report details 20 recommendations for a National Levee Safety Program. The recommendations fall within three major concepts: (1) the need for leadership via a new National Levee Safety Commission; (2) the building of strong levee safety programs in and within all states; and (3) a foundation of well-aligned federal agency programs. The Committee reconvened in October 2009 and is working to further define the strategic implementation plan including supplementing supporting data on costs and benefits of a National Levee Safety Program, defining governance and strategic implementation, and researching federal alignment opportunities. In addition, the Committee conducted seven regional stakeholder meetings to further solicit feedback on the recommendations.
- Completed the development of a National Levee Database and completed inventories of over 14,600 miles of levees covering levees in the Corps' levee safety program. Completion of 822 project periodic inspections, approximately 400 levee segments screened with over 100 levee project screenings submitted for levee safety classification
- Silver Jackets –This program proposes establishing a state-led interagency team for each state with the state National Flood Insurance Program (NFIP) coordinator, the state Hazard Mitigation Officer, FEMA, and USACE as standing members of the team, as well as lead facilitators. Through collaborative partnerships, the state Silver Jackets teams optimize the use of Federal resources; leverage additional state/local/Tribal resources, including talent, data/information and funding; and prevent duplication of effort amongst agencies. These interagency teams create a mechanism to collaboratively solve flood risk management issues, implement initiatives at the State and local levels, and improve public risk communication.

Silver Jackets teams are currently active in 20 states and an additional 9 state teams are expected to become active in FY2011.

- Dam Safety Modification Studies and Construction
 - Construction Work continued on 4 DSAC I dams and 4 DSAC II dams.
 - Modification studies continued on 8 DSAC I dams and 23 DSAC II dams
 - These activities represent the 39 highest risk dams in USACE portfolio. The activities were limited to these projects to provide an efficient flow of projects into the construction queue.

Initiated 20 Periodic Assessments to integrate risk prioritization principles within the routine dam safety program.

Future Challenges

- Execution of the efficient and effective operation, maintenance and rehabilitation of aging infrastructure to maintain the project's ability to function as designed
- Addressing the uncertainties associated with climate change as it may affect existing and planned water resources infrastructure
- The ability to address regional watershed issues due to limitations of the local, non-Federal sponsors to establish geographic, rather than political, flood risk management coalitions.

Program History and Performance

The Flood Risk Management program has linked USACEs' Strategic Goal 1 and Goal 2, and the following Strategic Objectives to its business program objectives and performance measures.

Strategic Objective 1.1: Better balance economic, environmental, and quality of life objectives

- FCSDR Strategic Objective 1.1.2: Invest in flood and coastal damage reduction solutions when benefits exceed the costs.

Strategic Objective 1.2: Support the formulation of regional and watershed solutions to water resource problems.

Strategic Objective 3.1: Improve the efficiency and effectiveness of existing USACE water resource projects.

Strategic Objective 3.2: Address the operation and maintenance (O&M) backlog.

Performance Measures

Performance indicators currently used are: (1) flood damages prevented from actual events by existing projects (ten year moving average), (2) people protected in the flood plain by projects brought on line, and (3) annual benefits (estimated future flood damages that would be avoided) by projects brought on line.

Additional indicators were recently established that will assist USACE to determine program progress in meeting this objective. USACE began collecting performance data relating to these indicators during the Fiscal Year 2009.

- ❖ **Flood damages prevented.** Measures the estimated annual dollars of property damage avoided from completed USACE flood control projects.
- ❖ **Increase in benefits realized.** This is the increase in the present value of benefits realized from construction work completed in the applicable fiscal year.
- ❖ **Additional people protected.** The increase in total affected population with reduced risk at project design attributed to completion of projects in the applicable fiscal year.
- ❖ **Operating projects in zones 21-25.** The number of operating projects (e.g., dams, levees, channels, flood gates) that are in zones 21-25 of the relative risk ranking matrix. These zones are defined in the Budget Engineering Circular EC 11-2-193 May 2008 (zones 21 to 25 are the projects in the worst condition with most adverse consequences of failure.) See Appendix III for the Condition Assessment Standards and Consequence Rating Criteria.
- ❖ **Operating projects in zones 1-6.** The number of operating projects (e.g., dams, levees, channels, flood gates) that are in zones 1-6 of the relative risk ranking matrix. These zones are defined in the Budget Engineering Circular. Zones 1 to 6 are the projects in the best condition and have the least adverse consequences of failure. See Appendix III.
- ❖ **Dam safety projects.** The percentage of the dams in the screening portfolio risk assessment (SPRA) that fall in Dam Safety Action Class (DSAC) I, II, or III.
- ❖ **Relative loss of life.** The total relative annualized loss of life per dam.
- ❖ **Dam Safety Action Classifications (DSAC) I, II, and III projects.** The number of DSAC I, II and III projects underway or completed during the applicable year.
- ❖ **Screening for Portfolio Risk Assessments (SPRA's) completed.** The number of SPRA screening level assessments completed in the applicable year.
- ❖ **Marginal cost of operations.** The marginal cost of operations and maintenance for all operating projects (e.g., dams, levees, channels, flood gates) relative to damages prevented.

The FRM business program identified performance-related indicators and ranking factors that enabled the FY 11 budgetary ranking of the relative merits of individual items of work and investment project increments.

These indicators include (but are not reported in this document):

- a. Benefit cost ratio (for PEDs and Construction)
- b. Net economic benefits
- c. Presence of dam safety, seepage, or static instability problems
- d. Number of people at risk in the 100-year flood plain (without project)
- e. Risk index (w/o project population at risk times average depth of flooding times average velocity of flooding divided by hours of warning)
- f. Presence of outputs from other business programs
- g. Percent of time available to operate as designed
- h. Cumulative operation and maintenance costs relative to cumulative economic benefits from operation and maintenance
- i. Inclusion of watershed management principles in project formulation

National flood damages, which averaged \$3.9 million annually in the 1980s, nearly doubled in the decade 1995 through 2004 despite USACE and other flood and storm damage prevention projects and programs. Total disaster assistance for both emergency response operations and subsequent long-term recovery efforts increased from an average of \$444 million during the 1980s to \$3.75 billion during the 1995 thru 2004 decade. Population migration to the coasts and development of floodplains explains much of the apparent contradiction between investment and national flood damages.

The performance history for flood damage reduction projects is shown in the following table which reflects the fact that if there are no floods in any given year, the project's performance cannot be measured. The only performance measures available at this time for riverine flood damage reduction projects is the annual 10-year running average of actual damages prevented. With coastal storms being less frequent, USACE does not yet have comparable data. Also performance can only be measured for completed projects.

High Priority Performance Goals (HPPG)

In FY2010, USACE developed flood risk management HPPGs to reduce the nation's risk of flooding that damages property and places individuals at risk of injury or loss of life. Each program year the Corps construction program funded construction completion of ongoing construction projects in order to achieve this goal. In FY2010 the Grand Forks - East Grand Forks flood damage reduction project was funded for completion and construction of this project was completed on schedule.

The measures, targets, and results for the Flood Risk Management HPPG are shown in bold in the table below.

Table 1: Flood Risk Management High Priority Performance Goal History

	FY 2008 Note 1	FY 2009	FY 2010
Expenditures (in millions of dollars)	1,107	1,343	1,135
Additional people protected (in thousands of dollars)	0	645	37
Flood damage prevented (in millions of dollars)	0	10.4	28

Note 1: FY2007 and prior year funds were for the total of all expenditures in the Coastal and Flood Damage Reduction program and should not be compared to the FY08 and later construction expenditures.

Performance

The performance history for flood damage reduction projects is shown in the following table which reflects the fact that if there are no floods in any given year, the project's performance cannot be measured. The only performance measures available at this time for riverine flood damage reduction projects is the annual 10-year running average of actual damages prevented. With coastal storms being less frequent, USACE does not yet have comparable data. Also performance can only be measured for completed projects.

Table 2: Flood Risk Management Historical Funding and Performance

Fiscal Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Appropriation (\$ Billions)	NA	NA	\$1.34	\$1.21	\$1.19	\$1.51	\$1.29	\$1.74	\$1.58	\$1.87
Flood Damages Prevented (\$ Billions)	\$21.90	\$23.10	\$15.70	\$22.50	\$24.00	\$9.20	\$42.3	\$40.3	29.5	NA*
Note 1: Includes CAP and Remaining Items										

* Flood damages prevented data is not available until March 2011.

Project Spotlight: Wolf Creek Dam

District: Nashville District
Location: Cumberland River, Russell County, KY
Project: Wolf Creek Dam



Wolf Creek Dam impounds Lake Cumberland, which is the Corps largest storage capacity reservoir east of the Mississippi River. Seepage problems currently threaten the stability of the dam. The Major Rehabilitation Evaluation Report dated July 11, 2005 was prepared in accordance with EP 1130-2-500 and evaluates several alternatives to improve the long term reliability of the dam by using a reliability analysis based on an analytical model built upon historical instrumentation data. From this analysis, the recommended alternative, which is also the National Economic Development alternative, is a new concrete diaphragm wall constructed using the secant pile method and supplemented with grouting. This new wall will start immediately upstream of the right most concrete monoliths and run the length of the embankment into the right abutment. The final approval of the Major Rehabilitation Evaluation Report was made July 25, 2005.

Worsening, chronic seepage problems originating from 1940's foundation construction methods currently threaten the stability of Wolf Creek Dam. Review of foundation construction data indicate the problems are due to the karst geology of the site characterized by an extensive interconnected network of solution channels in the limestone foundation. If the 55-year old dam should fail, loss of life is expected to exceed one-hundred lives. Inundation damages in the Nashville area alone are expected to exceed two billion dollars.

Base Funding and Performance

The FY11 FRM base plan program includes additional work on high performing studies, and preconstruction engineering, and design (PED), plus funding of an investigation that will result in a report that describes the Nation's vulnerability to damage from floods, including the risk to human life; the risk to property; and the comparative risks faced by different regions of the United States.

For FY11 investigations, the budget level includes continuing requirements not to exceed FY10 amounts, plus additional work on the highest performing studies and design efforts, with preference given to high performing studies that: involve communities with larger numbers of people at risk in the flood plains, greater expected inundation damages occurring without the

projects; and those with watershed-system planning potential. The five-year program also includes funds for coordination with FEMA and other critical coordination and data collection efforts.

The FRM construction program includes funding for earnings on previously awarded contracts, plus associated Engineering and Design (E&D) and Supervision and Administration (S&A). It also includes work on a variety of projects including: completion of Cedar Hammock, Wares Creek, Florida and West Sacramento, California; as well on continuing significant work on several dam safety project and dam safety studies at the dams that have been identified as high-risk.

The FRM program for operation and maintenance includes critical operation, maintenance and repair work and capability work for the Inspection of Completed Works efforts and work on asset management and risk-base condition indices.

Table 3: FRM Five-Year Base Plan by Account (\$ Millions)

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$35	\$33	\$31	\$30	\$49
Construction	\$873	\$816	\$775	\$756	\$848
Operation and Maintenance (O&M)	\$472	\$441	\$419	\$409	\$475
Mississippi River and Tributaries (MRT)	\$165	\$154	\$147	\$143	\$172
Total	\$1,545	\$1,481	\$1,428	\$1,460	\$1,468
Note: Includes CAP and Remaining Items					

Base Plan Highlights

Base Plan Highlights

- Water Resource Priorities Study (Section 2032 Flood Vulnerability Study): This study is authorized by the Water Resources Development Act of 2007 which calls for a report on the vulnerability of the Nation to damage from flooding. The report is to include an assessment of the extent to which programs in the United States relating to flooding address flood risk priorities, the extent to which such programs may be encouraging development and economic activity in flood-prone areas, and recommendations for improving those programs.

This investigation will include a baseline assessment of the nation's flood risks at both a national and regional scale, as well as an analysis of the effects of the existing portfolio of programs and policies intended to address that risk. The investigation will include a technical element, which will examine the risk of damage from flooding to human life and property, and the comparative risks faced by different regions of the United States. It will provide examples to explain why the risk of flooding is greater in some floodplain and some coastal locations than in others, and why and how the risk is changing over time. The study will also include a public policy element assessing the extent to which existing Federal, state and local programs operate (individually and together) to address flood risk reduction priorities; develop

recommendations for improving the effectiveness, efficiency, and accountability of these programs; and propose a strategy to implement those recommendations.

- Wise Use of Floodplains: A study of the “Wise Use of Floodplains” was funded in the 2008 Energy and Water Development and Related Agencies Appropriations Act with a focus on identifying any procedural or legislative changes that may be warranted to allow USACE to be more effective in working with other Federal agencies, states and local governments and stakeholders in the management of flood risk. The study is being conducted for the purpose of better understanding the effects of USACE programs and policies in different policy and watershed contexts on floodplain management choices affecting flood risk, and to describe options for policy, legislative or program reforms. Study activities were conducted throughout FY 2009 and the final study report will be completed in FY 2011.
- Dam Safety Assurance and Seepage Control: USACE is continuing a transition to risk-informed concepts for prioritization and decision making within the dam safety program. This includes program requirements, day-to-day routine activities such as inspections, instrumentation, and interim risk reduction measures. This effort is continuing, comprehensive, and integrated into the larger Civil Works program. One product is the justifications and prioritizations for dam safety actions, remedial structural and non-structural, based on a project’s risks and reliability determination. Projects are grouped into five Dam Safety Action Classifications (DSAC) based on a combination of risk, consequences, and reliability with the bottom two categories having the least risk. The top two classifications are the riskiest, and, to the extent possible, are being fast-tracked through the planning, design, and construction process. They also include substantial interim risk reduction measures such as reservoir restrictions, increased surveillance, and additional public awareness. The Periodic Assessment program continues in FY11 to assess each dam on a 10-year cycle. Many dams in preliminary risk screening have been recommended for an additional investigation. This additional investigation analyzes remediation appropriateness. The planning, design, and construction of remedies will continue for at least ten years or until all dams in the top three DSAC categories have been modified.
- Levee Safety Initiatives and Program Development: The National vision for this initiative follows the concept that federal levees should be 1) safe and reliable; 2) managed in a partnership of shared responsibilities, 3) assessed in a comprehensive and continuing program; and 4) effectively communicated to all stakeholders, decision-makers, and communities. Utilizing lessons learned and risk assessment, this program will use best existing resources and maximize its decision making processes. USACE has approximately 2,000 levees in its nationwide portfolio with many caretakers nationwide. USACEs' Levee Safety Program is continuing to research, develop and implement specific tools, policies, and methods which include: a levee screening tool and classification process to assess the entire USACE portfolio on a consistent basis and characterize the results, interim risk reduction methods and concepts until permanent remediation is achievable, methodology testing and finalization of periodic inspection and assessment criteria, a Levee Portfolio Risk Management Process, a comprehensive Engineer Regulation for Levee Risk Management, a levee inventory and inspection process. These various products and evaluation processes will provide a solid

foundation for USACEs' Levee Safety Program and a significant advancement in flood risk management.

Table 4: FRM Five-Year Base Plan Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Budget (\$ Millions)	\$1,545	\$1,481	\$1,428	\$1,460	\$ 1,468
Additional People Protected in Flood Plain (000)	500	384	1,712	2,267	2,822
Cumulative People Protected in Flood Plain (000)	3,265	3,649	5,361	7,628	9,895
Annual Benefits Brought On Line (\$ Millions)	\$6	\$262	\$ 375	\$ 248	\$ 121
Cumulative Annual Benefit Brought On Line (\$ Millions)	\$83	\$345	\$ 720	\$ 968	\$1,216
Note: Includes CAP and Remaining Items					

Enhanced Funding and Performance

The enhanced plan program contains funding for completion of ongoing construction projects and highest return studies. The enhanced funding would bring some studies and projects to an earlier completion.

**Table 5: FRM Five-Year Enhanced Plan by Account
(\$ Millions)**

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Investigations	\$70	\$71	\$73	\$74	\$71
Construction	\$844	\$859	\$877	\$891	\$855
Operation and Maintenance (O&M)	\$458	\$466	\$476	\$484	\$464
Mississippi River and Tributaries (MRT) Investigations	\$187	\$190	\$194	\$197	\$189
MRT Construction	\$	\$	\$	\$	\$
MRT O&M	\$	\$	\$	\$	\$
MRT Remaining Items	\$	\$	\$	\$	\$
Total	\$1,559	\$1,586	\$1,620	\$1,646	\$1,579
Note: Includes CAP and Remaining Items					

Initiatives for Enhanced Plan

- Accelerate the Levee Safety Program.
- Accelerate high-performing projects and thus avoid potential cost increases in the future.
- Increase funding to reduce backlog of maintenance needs and increase reliability of existing projects.

Table 6: FRM Five-Year Enhanced Plan Budget and Performance

Fiscal Year	2011	2012	2013	2014	2015
Budget (\$ Billions)	\$1,559	\$1,586	\$1,620	\$1,646	\$1,579
Additional People Protected in Flood Plain (000)	743	647	2,283	7,942	3,624
Cumulative People Protected in Flood Plain (000)	3,651	4,298	6,581	14,523	8,467
Annual Benefits Brought On Line (\$ Millions)	\$ 45	\$ 402	\$ 498	\$ 302	\$401
Cumulative Annual Benefit Brought On Line (\$ Millions)	\$ 154	\$ 556	\$1,045	\$ 1,347	\$983

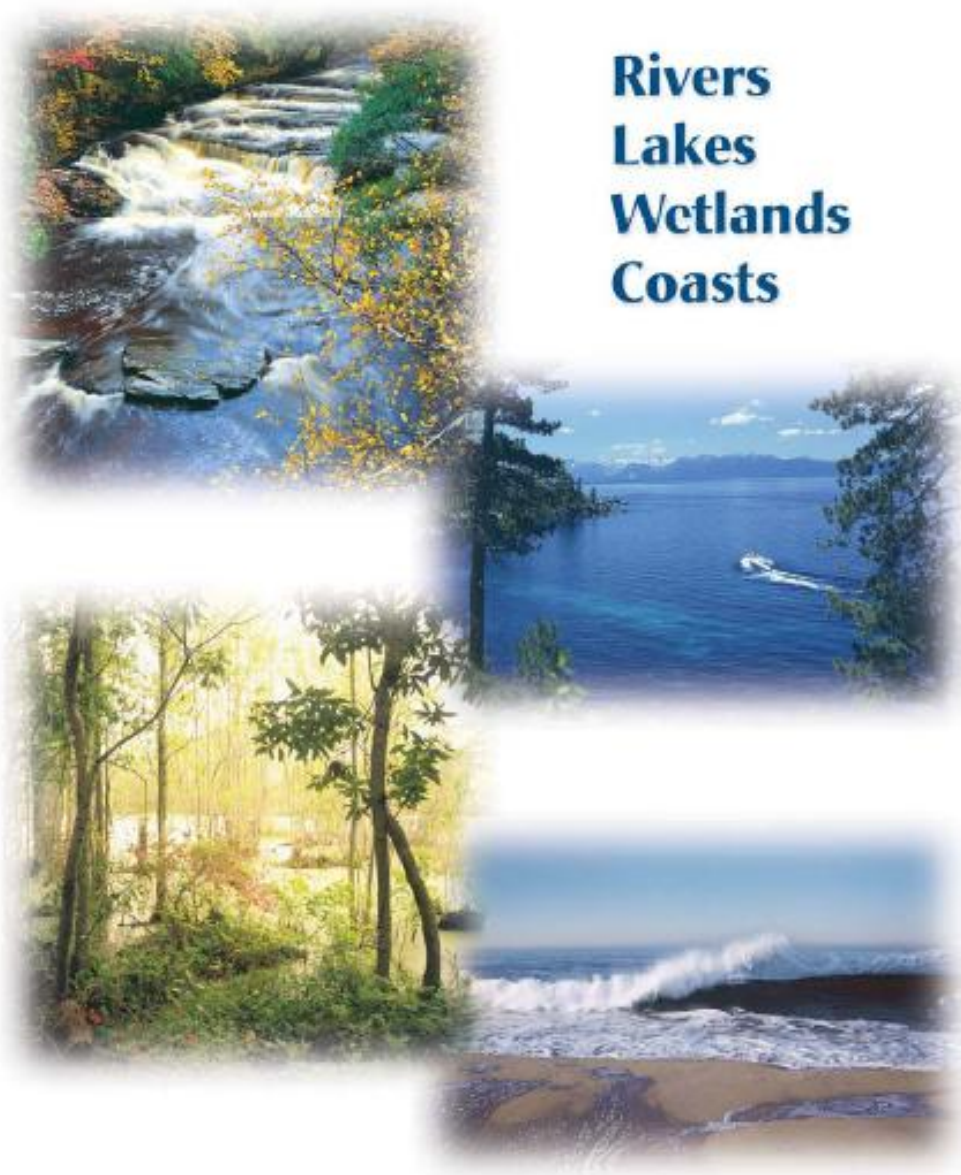
Potential Work with “Wedge Money”

If “wedge” money for new starts was received for this business program, additional projects could be considered. While specific funding decisions would be made at that time, several examples of projects that could be considered are:

- Augusta, Georgia
- Greens Bayou, Houston, Texas
- Clear Creek, Texas

Environment

- **Aquatic Ecosystem Restoration**
- **Environmental Stewardship**
- **Formerly Utilized Sites Remedial Action Program (FUSRAP)**



Aquatic Ecosystem Restoration



-Mud Lake Restoration near Dubuque, Iowa

Key Statistics

- ❖ In FY11, this program accounted for approximately 12% of the Civil Works program budget.
- ❖ \$180 million is included for continuing implementation of Everglades Restoration reflecting a continuing commitment to implementation of this historic restoration effort.
- ❖ For Louisiana Coastal Area, the base program includes \$16.595 million for the studies and design; and the science program. In addition, \$19 million is included to initiate construction.

Accomplishments

- The ecosystem restoration program, although relatively young, continues to make progress through accomplishment of large and small projects across the country. In FY10, 4540 acres of habitat were restored, created or protected. Of these, approximately 80% were nationally significant.
- Significant investments, including \$137 for Columbia River Fish Mitigation and \$78 million for Missouri River Recovery, were made to facilitate efficient progress in compliance with the biological opinions.

Future Challenges

The demand for aquatic ecosystem restoration projects continues to exceed the resources available to respond. In the absence of a standard performance measure to be used across all agencies, USACE continues to work toward the development of metrics and significance criteria to facilitate evaluation and prioritization of projects. This would eventually allow more objective comparison of disparate ecosystem restoration projects that occur in varied geographic regions across the country.

Program History and Performance

This subprogram is an integral part of Integrated Water Resources Management and supports the Civil Works Strategic Goal 2 and objectives as described below:

Strategic Objective 2.1: Invest in economically and environmentally justified and socially acceptable water resources solutions.

Sub Objective is 2.1.12: Implement integrated and collaborative approaches to effectively solve water resource problems.

Table 1: Aquatic Ecosystem Restoration Historical Funding and Performance

<i>Fiscal Year</i>	2006	2007	2008	2009	2010
Appropriation (\$ Millions)	\$516	578 ²	\$515	532	568
Acres of habitat restored, created, improved, or protected	13,000	4,800	2,445	10,200	4,540
Nationally significant acres of habitat restored, created, improved, or protected	5,500	3,000	1,986	1,700	3,760
Cost per acre to restore, create, improve, or protect nationally significant habitat	\$9,800	\$6,770	\$6,700	\$18,000	\$9,600
Percent of all restored, created, improved, or protected acres of habitat that is nationally significant	42%	62%	69%	17%	80%
Note 1: Performance measures were developed in FY 06, and it is the first year of reporting					
Note 2: After 2006 all appropriations include all remaining items assigned to AER					
Note 3: Results are estimates					

Performance Measures

Below are the applicable performance measures for Aquatic Ecosystem Restoration:

- ❖ Acres of habitat restored, created, improved, or protected. This is an annual output measure and the baseline is FY05.
- ❖ Nationally significant acres of habitat restored, created, improved, or protected. This measures the subset of acres of habitat restored each year that have high quality outputs as compared to national needs. This is an annual output measure.
- ❖ Percentage of all acres of habitat restored, created, improved or protected in a four-year period that are nationally significant. The long-term goal is for 75 percent of the total acres restored, created, improved, or protected. This is an annual measure.
- ❖ Dollars per acre to restore, create, improve or protect nationally significant habitat. The cost of the projects that produce nationally significant acres in any given year will be used to calculate this figure. The goal would be to restore more acres per dollar expended in the long run through efficiencies in project execution or other considerations.

Starting with 2008 this business program is crediting acres in a given year when physical construction is complete, instead of the last year that the project is budgeted in the construction account. This is due to the increased use of fully-funded contracts and the out-year monitoring requirements for many projects.

The Aquatic Ecosystem Restoration business program developed a set of seven criteria that together provide a basis for evaluating project significance and aid in setting FY 2010 funding priorities. The seven criteria are weighted and criteria definitions have been established to determine the extent to which a project contributes to the measure details of these performance measures are not included in this report).

The criteria are:

- 1) **Habitat scarcity and status:** The goal is to promote the restoration of scarce habitat with an emphasis on nationally scarce habitat that continues to become scarcer.
- 2) **Connectivity:** Criterion addresses the extent to which a project facilitates the movement of native species by contributing to the connection of other important habitat pockets within the ecosystem, region, watershed, or migration corridor, or adds a critical component to an ecosystem or increases biodiversity.
- 3) **Special Status Species:** Acknowledges projects that provide a significant contribution to some key life requisite of a special status species.
- 4) **Hydrologic Character:** This criterion recognizes the importance of appropriate hydrology in maintaining the ecological functions of aquatic, wetland, and riparian systems.
- 5) **Geomorphic Condition:** This criterion relates to the establishment of suitable structure and physical processes for successful restoration.

- 6) **Plan Recognition:** Documents the extent to which a project contributes to watershed or basin plans as emphasized in the Civil Works Strategic Plan.
- 7) **Self Sustaining:** Ecosystem sustainability is the ultimate goal of restoration efforts but is difficult to measure. As a proxy, the cost of the project's average annual Operation and Maintenance cost is used to measure the degree of project sustainability.

The first three measures along with Plan Recognition are used to determine national and regional significance. These criteria are reviewed and revised annually.

Project Spotlight: Everglades

District: Jacksonville District

Location: South Florida

Link: www.evergladesplan.org

The objective of the South Florida Everglades Ecosystem Restoration Program is to restore, protect and preserve the south Florida ecosystem, while providing for other water-related needs of the regions. The South Florida Greater Everglades ecosystem includes a diverse mosaic of upland, marsh, freshwater, estuarine, and saltwater habitats in a watershed encompassing approximately 16,000 square miles.



The South Florida Everglades Ecosystem Restoration Program includes the Central and Southern Florida Project (C&SF), the Kissimmee River Restoration Project, and the Everglades and South Florida Restoration Project, Modified Water Deliveries Project, and the Comprehensive Everglades Restoration Plan (CERP). In FY10, the program was funded at \$181 million and was funded at 180 million in the FY11 Administration Budget.

Under C&SF a systems approach is used in the implementation of CERP. Individual CERP projects are selected based on the principal of "system formulation". Individual projects are justified and evaluated based on their contribution to overall hydrologic connectivity and synergistic impact in the immediate and larger watershed context. The project's separable elements must be consistent with the Governor's Commission's Conceptual Plan and produce independent, immediate, and substantial restoration, preservation and protection benefits. Four projects have been completed under this authority; a fifth is nearly complete; and a sixth is expected in coming few years. In this discussion we highlight two components: Kissimmee River Basin and Modified Water Deliveries.

The Kissimmee River Basin (pictured) is approximately 3,000 square miles located between Orlando and Lake Okeechobee. Work is being completed to restore and re-establish similar historic wetland conditions for more than 40 square-miles of river-floodplain ecosystem including almost 27,000 acres of wetlands and 52 miles of historic river channel. To date, 10 miles of the 22 miles of the C-38 canal have been backfilled, restoring hydrologic conditions. Native flora and fauna have responded with dramatic improvements. Continuing construction in the next few years is expected to include backfill work on the remaining canal reaches and will restore significant segments of the original river system.



The Modified Water Deliveries to Everglades National Park (MWD) involves construction of modifications to the C&SF Project and related operational changes to provide improved water deliveries to Everglades National Park. These modifications will improve hydrologic connectivity between the Water Conservation Areas north of the Park and across the Tamiami Trail (Highway 41) to the headwaters of Shark River Slough within the Park, while providing flood mitigation to the 8.5 Square Mile Area (SMA- a residential area adjacent to the Park). Wetland habitat in the Park should improve through deep sloughs and sheetflow restoration in the Northeast Shark River Slough, and promoting a more natural hydroperiod while reducing the biological affects that the C&SF Project has had on the Park.

Base Funding

The total FY11 budget request for the program is \$586 million. The base program for studies and design includes continuing requirements not to exceed FY10 amounts, plus additional work on the highest performing studies and design efforts with preference given to high performing studies in the last year of a phase.

There is continuing need to refine the methods used for identifying restoration priorities, planning, and implementation. The FY11 program continues to emphasize research on Environmental Benefits Assessment that will contribute to increased program consistency, enhanced reliability of benefit estimates, and scientifically supported project justifications. This will eventually result in improved performance measures and assessment, as well as improvements in priority setting, evaluation and accountability.

Budget priority is placed on studies or projects that contribute to the cost-effective restoration of regionally or nationally significant ecosystems where USACE is uniquely well suited due to the requirement for hydrologic and geomorphic alterations or where a USACE project has contributed to the degradation of the area to be restored. The objectives of the business program, with regard to budgeting high-performing projects, are to implement projects that provide high value, cost-effective outputs. Value is determined by assessing the project in terms of its impact on scarcity, connectivity, special status species, hydrologic and geomorphic character, plan recognition and sustainability.

**Table 2: Aquatic Ecosystem Restoration Base Funding
(In Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ 35	\$ 34	\$ 32	\$ 33	33
Construction	\$ 530	\$ 508	\$ 490	\$ 501	\$ 503
Operation and Maintenance (O&M) Estimate	\$ 18	\$ 17	\$ 17	\$17	17
Mississippi River and Tributaries (MRT)	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3
Total	586	\$ 562	\$ 542	\$ 554	556

Base Plan Highlights

- The FY11 proposed program would restore over 11,000 acres, of which most would be considered nationally significant. The remaining projects are of regional and local importance for overall ecosystem health.
- Funding of \$16,595 million for the Louisiana Coastal Area studies, design and science program and \$19 million for construction.
- Substantial Everglades funding at \$180 million
- Upper Mississippi River Restoration is funded at \$21 million, including two scheduled project completions.
- \$12 million for continuing construction work on the Chicago Sanitary and Ship Canal Dispersal Barriers I and II and operation and maintenance of the completed components.

The following table displays outputs that would be expected in the base plan program FY11 through FY15, assuming completion of additional projects.

Table 3: Aquatic Ecosystem Restoration Base Funding and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 586	\$ 562	\$ 542	\$ 554	\$ 556
Acres of habitat restored, created, improved, or protected	11,300	70,100	5,300	931,600	5400
Nationally significant acres of habitat restored, created, improved, or protected	11,300	70,100	5,300	931,600	5400
Percent of all restored, created, improved, or protected acres of habitat that is nationally significant	100%	100%	100%	6%	100%
Cost per acre to restore, create, improve, or protect nationally significant habitat	\$4,600	3,600	\$17,100	\$770	\$11,200

Note: Cost per acre is based only on nationally significant projects completing in the specified year. It is strongly influenced by individual projects of very high acreage and low cost.

Enhanced Funding and Performance

The enhanced plan will improve program performance beyond the base plan. More acres will be restored, created or improved throughout FY11 to FY15. More acres can be restored over the base plan by FY13. Some projects planned in the base can be advanced more quickly with additional funds. Completing projects more quickly can lead to even higher project outputs in future years since restoration projects start flourishing once complete.

**Table 4: Aquatic Ecosystem Restoration Enhanced Funding
(In Millions)**

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ 67	\$ 68	\$ 70	\$ 71	\$ 68
Construction	\$ 608	\$ 619	\$ 632	\$ 642	\$ 614
Operation and Maintenance (O&M)	\$ 14	\$ 14	\$ 14	\$ 15	\$ 14
Mississippi River and Tributaries (MRT) Project	\$ 3	\$ 3	\$ 3	\$ 3	\$ 3
Total	\$ 692	\$ 704	\$ 719	\$ 731	\$ 699

Enhanced Plan Initiatives

- Advance South Florida Everglades project
- Advance Louisiana Coastal Area Restoration
- Advance Lower Columbia Restoration
- Advance watershed studies

The following table displays outputs produced in the enhanced plan program FY11 thru FY15, based on completion of construction of additional projects.

Table 5: Aquatic Ecosystem Restoration Enhanced Funding and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	692	704	719	731	699
Acres of habitat restored, created, improved, or protected	11,300	71,300	5,300	931,600	6,300
Nationally significant acres of habitat restored, created, improved, or protected	11,300	71,300	5,300	55,900	6,300
Percent of all restored, created, improved, or protected acres of habitat that is nationally significant	100%	100%	100%	6%	100%
Cost per acre to restore, create, improve, or protect nationally significant habitat	\$4,600	\$4,200	\$17,100	\$770	\$9,800

Note: Cost per acre is based only on nationally significant projects completing in the specified year. It is strongly influenced by individual projects of very high acreage and low cost. 2009 figures are estimates.

Potential Work with “Wedge Money”

If “wedge” money for new construction starts was received for this business program, additional projects could be considered. While specific funding decisions would be made at that time, several examples of projects that could be considered, in some cases subject to additional project authorization, are:

Some examples are:

- Hamilton City, California
- Louisiana Coastal Area Construction Starts
- Smith Island, Maryland

Environmental Stewardship



Key Statistics

- ❖ Stewardship provided on about 12 million acres comprising about 8% of Federal acreage east of the Rockies
- ❖ Over 4 million USACE acres have significant waterfowl use or improvement potential
- ❖ 56,000 miles of shoreline managed
- ❖ Nearly 47,000 known cultural resources sites exist on USACE property; 846 listed on the National Register of History Places and 7,500 eligible for listing
- ❖ 20 million fish produced annually at Corps projects to mitigate dam impacts

Accomplishments

- Participating in recovery of 58 federally listed threatened or endangered species on 139 USACE operating projects. These efforts contributed to the delisting of the bald eagle.
- Stewardship on USACE lands and waters provides the basis for quality outdoor recreational opportunities, and annually supports 91 million fishing visits, 8 million hunting visits, and 63 million wildlife watching visits
- The Audubon Society and the American Bird Conservancy designated 23 Important Bird Areas on USACE properties.
- Program manages diverse resources to promote sustainability, e.g. fish, wildlife, water, woodland, wetland, and cultural. These administered acres provide key habitats: water, edge, forage, cover, and critical green space for human populations.

Future Challenges

- Maximizing the effective use of online tools and information, such as Geographic Information Systems (GIS) and satellite imagery, to streamline tracking of stewardship performance at the project level
- Improving the condition of USACE lands and waters such that they are sustainable and available for future generations while balancing increasing and conflicting demands for the use and development of project lands and water

- Meeting the minimum requirements of environmental mandates for resource protection, health and safety
- Prioritizing use of constrained fiscal resources.

Program History and Performance

The Stewardship program supports Civil Works Strategic Goal 3 and five of its objectives. Seven performance measures assess progress toward meeting the identified goal and objectives.

Strategic Objective 3.1: Improve the efficiency and effectiveness of existing USACE water resources projects.

- ❖ **Performance Outcome 1:** Program efficiency is achieved. A percentage of program expenditures are recovered or leveraged through prudent natural resources use in accordance with the program mission.
 - **Efficiency Performance Measure:** *Cents per dollar of agency operation and maintenance spending that the program lessees or licensees pay for.* This assesses Federal costs avoided in relation to the program's cost, as an indicator of program efficiency. Annual revenue is from timber sales revenue, agricultural leases, and related contributions consistent with the resource protection and conservation program missions. For example, timber harvests are sometimes necessary to support healthy forested lands, and to prevent disease or wildfire. The timber must be disposed at Federal cost, or sold when possible to minimize disposal cost. Revenue is recovered by the project of origin. In many cases, revenues are used to replant, reseed and/or otherwise reclaim the site and results in no net revenue gain. Revenue recovered is equivalent to the federal costs avoided and will vary each year due to the nature and extent of the sustainability practices implemented. However, since the revenue generating sources cannot be predicted, this is not a driver for budget development.

Strategic Objective 3.1.3: Ensure healthy and sustainable lands and waters and associated natural resources on USACE lands in public trust to support multiple purposes.

- ❖ **Performance Outcome 2:** USACE lands and waters are maintained in, or managed toward, a healthy and sustainable condition. Intensive management needs and costs are reduced as lands move to a healthy, sustainable state.
 - **Basic Stewardship (formerly Healthy and Sustainable Lands and Waters) Performance Measure:** *Percent of healthy and sustainable acres on USACE fee-owned property.* This is defined as the number of USACE fee-owned acres classified as in a sustainable condition divided by the total number of USACE fee-owned acres. The result provides an indicator of the condition status of all USACE fee-owned acres. Sustainable is defined as meeting the desired state. The acreage is not significantly impacted by any factors that can be managed and does not require intensive management to maintain the health. The acreage also meets operational goals and objectives set forth in applicable management documents.

Strategic Objective 3.1.3.1: Protect, preserve and restore significant ecological resources in accordance with master plans.

- ❖ **Performance Outcome 3:** Endangered and threatened species are protected on USACE property.
 - **Endangered Species Protection Performance Measure:** *This measure is a percent defined as the total number of projects that are meeting Endangered Species Act (ESA) responsibilities of the year divided by the total number of USACE projects that have ESA compliance responsibilities in the year.*
- ❖ **Performance Outcome 4:** The identification and assessment of quality and quantity of ecological resources on USACE property is achieved.
 - **Level One Natural Resources Inventory Completion Performance Measure:** *Percent of minimum Level One Natural Resources Inventory completed on USACE property. This demonstrates the status of USACE efforts in completing basic, Level One Natural Resources Inventories required by Engineer Regulation 1130-2-540. Such inventories are necessary for sound resource management decisions and strategies development. The minimum inventory includes four standard components on each project: 1) classification and 2) quantification of vegetation, wetland, and land (soils) capability acreage, and 3) identification and 4) assessment of special status species for potential existence on USACE acreage. This is defined as the sum total acres of completed inventory for each of the four components divided by four times the total number of USACE fee-owned acres. The proportion (%) yielded is used to evaluate the relative completeness of the Inventory.*
- ❖ **Performance Outcome 5:** Balanced public use and access to USACE project natural resources is achieved, while accomplishing USACE project missions.
 - **Master Plan Completion Performance Measure:** *Percent of USACE-operated water resource projects with completed Master Plans in compliance with Engineer Regulation 1130-2-550 of the total number of required Master Plans. A Master Plan is completed, per regulation, to foster an efficient and cost-effective project for natural resources, cultural resources, and recreational management programs. It provides direction for project development and use, and promotes the protection, conservation, and enhancement of natural, cultural and man-made resources. The Master Plan is a vital tool for responsible stewardship and demonstrates USACE commitment to fully integrate environmental stewardship.*

Strategic Objective 3.1.3.2: Ensure that the operation of all Civil Works facilities and management of associated lands, including out-granted lands (lands leased or licensed to others for various purposes), complies with the environmental requirements of relevant Federal, state, and local laws and regulations.

- ❖ **Performance Outcome 6:** Cultural resources on USACE property are managed in accord with cultural resources management mandates.
 - **Cultural Resources Management Performance Measure:** *Percent of projects meeting federally mandated cultural resources management responsibilities. This demonstrates the status of efforts to protect and preserve cultural resources on USACE administered lands*

and waters. It is defined as the total number of USACE projects meeting federally mandated cultural resources management responsibilities divided by the total number of USACE projects with federally mandated cultural resources management responsibilities.

Strategic Objective 3.1.3.3: Meet the mitigation requirements of authorizing legislation or applicable USACE authorization decision document.

- ❖ **Performance Outcome 7:** USACE requirements are met for the mitigation of impacts to ecological resources, as specified in project authorizing legislation.
 - **Mitigation Compliance Performance Measure:** *Percent of USACE administered mitigation lands (acres), or the percent of pounds or numbers of mitigation fish produced at mitigation hatcheries, meeting the requirements in the authorizing legislation or relevant USACE authorization decision document.* This measure demonstrates USACE status in meeting mitigation requirements that are specified in project authorizations. Achievement of mitigation contributes to restoring lands and other resources to a healthy and sustainable condition. The measure is defined as either the mitigation acres meeting mitigation requirements divided by the total designated mitigation acres, or the total mitigation fish produced divided by the total mitigation fish needed to meet requirements.

History

Funding and performance history for the Environmental Stewardship business program as a distinct entity did not exist prior to FY05, when budgeting by business program was first implemented. Performance results data are presented in Table 1 for all measures applicable in a given year. Some historic data was incomplete and therefore inaccurate due to inconsistent implementation of a new data collection system deployed in late FY05. However, the actual results for each measure are displayed in the table as they were recorded each year. Results are directly related to, and derived from, the funding provided.

The number of projects which are able to satisfy a majority of their annual requirements has remained fairly constant from year to year. Performance levels for several measures are low and unable to improve substantially due to the relatively flat budget trend for Stewardship. It should be noted that more than half of the Stewardship program budget has been typically dedicated to critical annual requirements in support of endangered species, mitigation, and cultural resources, even though these requirements do not exist on every USACE project. Approximately \$4 per acre was left over to fund most stewardship responsibilities, i.e. those remaining essential, day-to-day requirements necessary at each project to support project purposes, prevent resource degradation or loss and achieve healthy and sustainable lands.

Master Plan Completions remained fairly low which unfortunately hampered projects' ability to adequately plan for and adjust to increasing pressures on Corps "green space" caused by rising population growth.

Table 1: Environmental Stewardship Historical Funding and Performance

<i>Fiscal Year</i>	2006	2007	2008	2009	2010
Operation and Maintenance (O&M)	\$91	\$85	\$93	\$106	\$90
Mississippi River and Tributaries (MR&T O&M)	\$9	\$9	\$2	\$4	4
Appropriation (\$ Millions)	\$100	\$94	\$95	\$110	\$94
Mitigation Compliance	76%	61%	77%	100%	100%
# Acres meeting mitigation requirement (in millions)	0.61	0.27	0.50	0.65	0.65
# Acres authorized for mitigation (in millions)		0.45	0.65	0.65	0.65
# lbs of mitigation fish produced (millions)	--	--	--	1.10	1.10
# lbs of mitigation fish required (millions)	--	--	--	1.10	1.10
# of mitigation fish produced (millions)	--	--	--	19.8	19.8
# of mitigation fish required (millions)	--	--	--	19.8	19.8
Endangered Species (ES) Protection	NA	NA	NA	100%	100%
# Projects meeting ES Act requirements	--	--	--	237	164
# Projects with ES Act requirements	--	--	--	237	164
Cultural Resources Management	NA	NA	63%	72%	67%
# Projects meeting cultural resources requirements	--	--	153	141	141
# Projects with cultural resources requirements	--	--	244	197	212
Healthy and Sustainable Lands and Waters	37%	21%	18%	25%	38%
# Fee acres classified as in sustainable condition (millions)	1.06	1.41	1.45	2.00	3.00
# Fee acres (millions)	2.8	6.73	7.94	7.94	7.97
Level One Natural Resources Inventory Completion Index	33%	38%	40%	41%	50%
Average # acres with completed inventory (millions)	2.33	2.54	3.24	3.3	3.50
Average # acres requiring inventory (millions)	7.17	6.99	7.94	7.94	6.99
Master Plan Completion	32%	27%	27%	27%	27%
# Up-to-date master plans	101	104	101	101	104
# Master plans required	306	380	379	379	380
Efficiency (cents per dollar)	\$0.09	\$0.10	\$0.12	\$0.11	0.11
\$ Revenue (millions)	\$ 9.23	\$ 9.87	\$ 11.38	\$ 12.10	\$10.00
\$ Appropriation (millions)	\$ 100	\$ 94	\$ 95	\$ 110	\$ 94
Note: 2008 values are estimated					

Improved annual performance is noted in Mitigation Compliance and Endangered Species Protection Performance Measures. The annual minimal requirements of environmental and legal mandates are projected to be met in FY10. However, past constrained budgets have allowed meeting only the highest priorities: the minimal requirements of Cultural Resources Management, and Healthy and Sustainable Lands and Waters outputs. For Cultural Resources Management, the

number of projects with an annual compliance requirement decreased from FY09 to FY10. However, the number of projects that satisfy the annual requirements remained fairly constant, causing the estimated performance output percentages to increase. For Healthy and Sustainable Lands and Waters Performance Measure acreage, performance was projected based on work and output descriptions, prior year results, and the similar budget amounts for these activities, from FY09 to FY10. It is noted more than half of the FY10 Stewardship program budget was intended to accomplish the critical annual requirements of endangered species, mitigation, and cultural resources. These requirements do not exist on every USACE project. Approximately \$4 per acre was available to support most stewardship responsibilities: those remaining mandated or essential, day-to-day requirements necessary at each project to meet project purposes; prevent resources degradation or loss; and achieve healthy and sustainable lands.

Results in Level One Natural Resources Inventory and Master Plan Completions have remained fairly constant. Constrained past budgets have limited progress and additional output is budget dependent in these areas. The Efficiency results have averaged at \$0.10 recovered on each dollar of program funding, exceeding the annual target. Since the efficiency result is not directly related to the budget and revenue recovery may not be predicted, the target was set at \$0.01 each year to avoid promoting revenue recovery at the expense of resource sustainability.

Project Spotlight: Fern Ridge

District: Portland District

Location: Southern Willamette River Valley in Oregon

Project: Healthy and Sustainable Lands and Endangered Species



The Fern Ridge Dam provides for flood damage reduction, fish and wildlife, irrigation, recreation, navigation, and improved water quality. Fern Ridge has over 12,000 acres of land and reservoir, of which hundreds of acres are prairie habitat that is home to endangered plants and butterflies (Fender's Blue), as well as numerous special status species. Level 1 Inventories ascertained that endangered species existed here. The Master Plan developed and outlined management activities to ensure the Endangered Species will persist on project lands and federal lands and waters are kept in a healthy and sustainable condition (Compliance with NEPA Section 101).

Land management activities included prescribed burns, removal of non-native vegetation, enhancing native vegetation through seed collection and plantings, and creating habitat diversity. These land management functions are done in partnership with multiple agencies and also serve to benefit recreation opportunities at the lake by providing pristine natural areas for hiking, bird



watching, and hunting. In addition, management and habitat development for the Fender's Blue Butterfly is improving its viability at and near Fern Ridge in several ways. Habitat development provides sufficient food resources for the species and allows populations to expand to habitats both on and off USACE lands. This all helps protect the species from extinction and potentially lead toward recovery.

Base Funding and Performance

Under the Base Plan Scenario in Table 2, the funding for Stewardship decreases. This plan projects output reductions or no output gains for measures, because work may be delayed, conditions deteriorate, and costs increase. Continued flat or declining funds impact the ability to maintain healthy resources conditions. Timely and effective management actions that help prevent resource degradation and that promote sustainability are essential to meet USACE environmental trustee responsibilities. Some of these actions would likely be delayed as funding to support these efforts decreases. Management needs grow quickly in scope and often become more expensive when important management efforts are forgone, such as the control of invasive species, and threaten the continued viability of native ecological resources.

A strong emphasis in meeting specific environmental mandates and requirements continues in this scenario. In any given year, there may be several minimum output requirements for certain projects. Most of these minimum output requirements are met successfully; however, the success of meeting requirements is contingent on funding levels during the given year. Cultural Resources Management responsibilities will not be fully met in this funding scenario. Risk to cultural resources will likely be higher, since the minimum required management activities go unfunded.

A related decrease in anticipated performance output will manifest over the period. Over the five-year period, vital stewardship requirements (such as trespass and encroachment prevention; erosion, fire, pest, and invasive species control and prevention, boundary surveillance and monitoring, and shoreline use evaluation), and staffing levels necessary to achieve Healthy and Sustainable Lands and Waters outputs could remain unfunded. Similarly, the cost for those efforts could increase, forcing the annual targets to trend downward. Outputs for Healthy and Sustainable Lands and Waters could shift to avoid a compromise of minimum safe project operating conditions.

The Level One Natural Resources Inventory Completion and Master Plan Completion performance targets will not change over the five-year period, due to targeting resources at other priority activities. Lack of progress compromises the ability to develop and implement best

resource management strategies and decisions. This is due to the lack of standard up-to-date resource quality and quantity data, and up-to-date project resources management guides.

Efficiency targets are held at \$0.01 recovered per program dollar over the five-year term, to maintain consideration of the program goal, but to avoid promoting revenue recovery at the expense of resources sustainability.

Table 2: Environmental Stewardship Base Funding

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	-	-	-	-	-
Construction	-	-	-	-	-
Operation and Maintenance (O&M)	\$ 103	\$100	\$ 95	\$ 97	\$97
Mississippi River and Tributaries (MRT) Project	\$ 5	\$ 4	\$ 5	\$ 5	\$ 5
Total	\$108	\$104	\$100	\$102	\$102
Note: Includes Remaining Items					

Initiatives for Base Plan

The program priorities are aligned with goals and objectives of the Civil Works Strategic Plan. Initiatives in the Base Plan scenario include meeting the minimum critical requirements of environmental and legal mandates to assure project compliance, assuring safe project operation, and preventing loss or degradation of resources. To the extent practicable, the Base Plan will seek to maintain performance output levels close to those achieved in FY08, and to minimize impacts to the program outcome of Healthy and Sustainable Lands and Waters.

Table 3: Environmental Stewardship Base Funding and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Operation and Maintenance (O&M)	\$108	\$104	\$100	\$102	\$102
Appropriation (\$ Millions)	\$108	\$104	\$100	\$102	\$102
Mitigation Compliance	76%	98%	98%	98%	98%
# Acres meeting mitigation requirement (in thousands)	0.49	0.566	0.566	0.566	0.566
# Acres authorized for mitigation (in thousands)	0.65	0.578	0.578	0.578	0.578
# lbs of mitigation fish produced (millions)	1.1	1.16	1.16	1.16	1.16
# lbs of mitigation fish required (millions)	1.1	1.16	1.16	1.16	1.16
# of mitigation fish produced (millions)	19.8	19.62	19.62	19.62	19.62
# of mitigation fish required (millions)	19.8	19.62	19.62	19.62	19.62
Endangered Species (ES) Protection	61%	99%	99%	99%	98%
# Projects meeting ES Act requirements	112	162	162	160	160
# Projects with ES Act requirements	185	164	164	164	164
Cultural Resources Management	53%	57%	57%	57%	57%
# Projects meeting cultural resources requirements	123	120	120	120	143
# Projects with cultural resources requirements	233	212	212	212	212
Healthy and Sustainable Lands and Waters	45%	26%	25%	24%	23%
# Fee acres classified as in sustainable condition (millions)	3.61	2.06	1.98	1.9	1.82
# Fee acres (millions)	7.97	7.94	7.94	7.94	7.94
Level One Natural Resources Inventory Completion Index	54%	46%	46%	46%	46%
Average # acres with completed inventory (millions)	3.82	3.65	3.65	3.65	3.65
Average # acres requiring inventory (millions)	7.1	7.94	7.94	7.94	7.94
Master Plan Completion	32%	27%	27%	27%	27%
# Up-to-date master plans	121	106	106	106	106
# Master plans required	380	380	380	380	380
Efficiency (cents per dollar)	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
\$ Revenue (millions)	\$ 1.08	\$ 1.04	\$ 1.00	\$ 1.02	\$ 1.02
\$ Appropriation (millions)	\$ 108	\$ 104	\$ 100	\$ 102	\$ 102

Enhanced Funding and Performance

The Enhanced Plan Scenario in Table 4 provides increased annual funding over the five-year period; however, the effective value of each increase is diminished due to inflation with the exception of FY11, which experienced a number of budget items added to Environmental Stewardship. The effective value of the increase is diminished due to inflation. The projected performance measures of the enhanced plan are based on historic performance results and funding. In general, minor incremental increases in performance output may be realized over the five-year period as most program outputs are budget dependent. This scenario seeks to maintain or improve performance outputs and to accomplish the overall program outcome of Basic Stewardship.

High targets for outputs of Mitigation Compliance and Endangered Species Protection continue to meet specific critical requirements of environmental mandates. Minor increases in Cultural Resources Management outputs are also anticipated in each year. Resource losses are prevented, but completely meeting annual requirements is not anticipated in any year of this scenario. Together, maintenance, or minor improvements continue to positively support the objectives to manage USACE lands and resources to comply with environmental requirements of relevant Federal laws and regulations, and to protect or conserve significant ecological resources.

Acreage targets, classified in a sustainable condition, are also increased to advance the program's overall outcome. Nearly one third of USACE fee-owned acreage is projected to be classified in this condition by FY13. Target increases for Level One Natural Resources Inventories are raised slightly to promote completion of high priority inventories over the period. However, only a small number of additional Master Plan completions will be afforded over the period due to constrained funds. As explained previously, the Efficiency measure targets hold constant at \$0.01 recovered per dollar of program funding over the term.

Table 4: Enhanced Five-Year Budget

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	-	-	-	-	-
Construction	-	-	-	-	-
Operation and Maintenance (O&M)	\$ 133	\$137	\$140	\$ 145	\$ 150
Mississippi River and Tributaries (MRT) Project	\$ 6	\$ 6	\$ 7	\$ 7	\$ 7
Total	\$ 139	\$143	\$147	\$152	\$157
Note: Includes Remaining Items					

Initiatives for Enhanced Plan

- Meet minimum requirements of environmental and legal mandates to assure project compliance and safe operation
- Prevent loss or degradation of resources and promote the sustainability of resources
- Advance the completion of high priority project natural resource inventories and master plans, which guide the effective and efficient management of existing project natural and cultural resources.

Table 5: Environmental Stewardship Enhanced Budget and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Operation and Maintenance (O&M)	\$139	\$143	\$147	\$152	\$155
Appropriation (\$ Millions)	\$139	\$143	\$147	\$152	\$155
Mitigation Compliance	100%	100%	100%	100%	100%
# Acres meeting mitigation requirement (in thousands)	0.65	0.65	0.65	0.65	0.65
# Acres authorized for mitigation (in thousands)	0.65	0.65	0.65	0.65	0.65
# lbs of mitigation fish produced (millions)	1.10	1.10	1.10	1.10	1.10
# lbs of mitigation fish required (millions)	1.10	1.10	1.10	1.10	1.10
# of mitigation fish produced (millions)	19.80	19.80	19.80	19.80	19.80
# of mitigation fish required (millions)	19.80	19.80	19.80	19.80	19.80
Endangered Species (ES) Protection	100%	100%	100%	100%	100%
# Projects meeting ES Act requirements	185	185	185	185	185
# Projects with ES Act requirements	185	185	185	185	185
Cultural Resources Management	100%	100%	100%	100%	100%
# Projects meeting cultural resources requirements	233	233	233	233	233
# Projects with cultural resources requirements	233	233	233	233	233
Healthy and Sustainable Lands and Waters	60%	65%	70%	75%	80%
# Fee acres classified as in sustainable condition (in millions)	4.78	5.18	5.58	5.98	6.38
# Fee acres (in millions)	7.97	7.97	7.97	7.97	7.97
Level One Natural Resources Inventory Completion Index	65%	72%	79%	86%	93%
Average # acres with completed inventory (millions)	4.62	5.11	5.61	6.11	6.60
Average # acres requiring inventory (millions)	7.1	7.1	7.1	7.1	7.1
Master Plan Completion	33%	35%	37%	39%	43%
# Up-to-date master plans	125	133	141	148	163
# Master plans required	380	380	380	380	380
Efficiency (cents per dollar)	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01	\$ 0.01
\$ Revenue (millions)	\$ 1.39	1.431	1.47	1.52	1.55
\$ Appropriation (millions)	\$ 139	\$ 143	\$ 147	\$ 152	\$ 155

Potential Work with “Wedge Money”

This program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

FUSRAP

Formerly Utilized Sites Remedial Action Program



Radiological Scanning of Soil Core Key Statistics

- ❖ There are currently 24 active sites located in 10 states.
- ❖ The program remediates more than 100,000 cubic yards (on average) of contaminated material per year.
- ❖ Currently more than \$1.3 billion additional dollars needed to complete work on active sites.

Accomplishments

- Remedial activities completed on schedule at 15 vicinity properties at the St. Louis sites In Missouri and 1 area at the Maywood site in New Jersey.
- Completed the remedial investigation at the Sylvania Corning Site and a Preliminary Assessment was completed at the Middlesex Municipal Landfill site.
- A groundwater Record of Decision was completed for the Colonie Site.
- The program excavated 181,687 cubic yards of contaminated material in FY10.

Future Challenges

- The Corps continues to work to improve cost and scheduling risk analysis to better anticipate increases in soil volumes affecting schedule and associated project growth costs.
- Additional eligible, “potential” sites are currently being evaluated:
 - Middlesex Municipal Landfill site in Middlesex, New Jersey
 - Staten Island Warehouse site in Staten Island, New York
- Progress for this program is commensurate with funding.

Program History and Performance

Strategic Goal 2 and Strategic Objective 2.3 directly relate to FUSRAP and influenced its specific objective. The FUSRAP Strategic Objective has correlating outcomes and those outcomes have various performance measures.

FUSRAP Strategic Objectives 2.3.1: Achieve the clean-up objectives of the Formerly Utilized Sites Remedial Action Program.

❖ **Performance Outcome:** To minimize risk to human health and the environment.

Performance Measures:

- Number of Records of Decision (RODs) signed. The number of RODs will increase as studies are completed and best alternatives for cleanup activities are decided. A ROD establishes the final cleanup standard, which controls the actual estimate of the remaining environmental liability for each site.
- Number of Remedial Investigations (RI) completed. The RI establishes the baseline risk assessment whereby the level of risk to human health and the environment is identified.
- Number of action memorandums signed. Where warranted by risk or other limited factors, action memorandums allow the USACE to move toward reducing risk more rapidly than through production of a ROD. No action memorandums are presently identified.

❖ **Performance Outcome:** To maximize the cubic yardage of contaminated material disposed in a safe and legal disposal facility.

Performance Measures:

- Cubic yardage of contaminated material disposed. Target soil amounts after FY10 are dependent on previous year funding and scheduled activities. Therefore, at this time it is not possible to predict target soil amounts for out-years.
- Total cost of disposal of contaminated material as measured in cubic yards.

❖ **Performance Outcome:** To return the maximum number of affected individual properties to beneficial use.

Performance Measures:

- Number of individual properties returned to beneficial use.

❖ **Performance Outcome:** To have all remedies in place as quickly as possible within available funding limits

Performance Measures:

- Cumulative percentage of FUSRAP funding that is expended on cleanup activities rather than studies.
- As the program matures, the percentage of funding expended on cleanup activities will be greater than funding spent on conducting studies.
- This measure was evaluated in FY08. The target goal was 80%. The program exceeded the goal at 84.3%. This measure will next be evaluated in FY16.

- Number of remedies in place or response complete.
- As select portions of sites or complete sites meet their remedial action goals, the risk to human health and the environment is reduced to within acceptable levels and properties are able to be used within a community without fear of increasing cancer risk or further degrading the environment.

History

Funding for the program has been relatively stable in nominal terms, although program scope has increased. USACE began managing FUSRAP in FY98 and the current program performance measures were developed in 2004. In FY05, the program received \$24 million above the President's Budget. That year performance measure targets were exceeded in four categories.

Table 1: FUSRAP Funding and Performance History

<i>Fiscal Year</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Appropriation (\$ Millions)	\$139	\$164	\$139	\$139	\$140	\$140	\$134
Number of Records of Decision (RODs) signed	9	3	2	2	2	3	1
Remedial Investigations completed	21	5	4	0	2	2	2
Action Memos signed	3	0	1	0	0	0	0
Cubic yardage of contaminated material removed (in thousand cubic yards)	2,927	243	225	186	153.7	105	181.6
Total cost of disposal of contaminated material	\$675	NE	NE	NE	NE	\$600	NE
Individual Properties returned to beneficial use	65	5	15	27	40	52	72
Cumulative Funding expended on cleanup rather than studies	77%	NE	NE	NE	84.3%	NE	NE
Remedies in place or response complete	4	2	0	3	2	1	1

The program met or exceeded five of five performance measure targets set for FY10. USACE has found significantly more than the estimated volume of contaminated materials on several sites. At this time, no Action Memorandums are planned for any of these sites. However, this performance measure may change, pending the results of Remedial Investigations currently being conducted at some sites.

Project Spotlight: Maywood Chemical Company Superfund Site

District: New York District

Location: Maywood, New Jersey
(20 miles north of Newark adjacent to
Interstate 80 and State Route 17)

Link: www.fusrapmaywood.com



The Maywood site is on the EPA's Superfund National Priorities List. The site is 40 acres with 88 residential, commercial and industrial properties. There are approximately 281,000 cubic yards of subsurface contaminated material containing thorium-232, radium-226, and uranium-238. USACE is working under the Federal Facilities Agreement (FFA) signed by Department of Energy (DOE) and EPA, while negotiating a USACE/EPA FFA. About 25 percent of the land is federally owned and is being used as a cleanup staging area. USACE completed potentially responsible party (PRP) negotiations through the Department of Justice with the Stepan Company. The Stepan Company, operating a chemical factory, and Sears, operating a large distribution warehouse, occupy part of the site. The clean-up process began in the mid-1980s with about a third of the properties. USACE remediated 23 of an additional 39 remediated properties by FY00 based on a 1994 DOE Engineering Evaluation/Cost Analysis (EE/CA). After FY00, USACE completed a Remedial Investigation/Feasibility Study/Proposed Plan, Record of Decision, Remedial Design (RI/FS/PP/ROD/RD) for the remainder. USACE also prepared an EE/CA for an interim removal action for 10 commercial properties impacted by the New Jersey Department of Transportation projects. USACE also initiated remedial action for the remainder soils and this remaining cleanup plan is estimated to cost approximately \$380 Million beyond FY10.

Base Funding and Performance

The five-year funding would enable the program to have seven individual portions (operable units) completed, as shown in the following table. These figures do not include adjustments for inflation or labor costs. Transportation costs have been increasing in recent years at a rate greater than inflation due to the increase in fuel costs and the demand for rail lines and rail cars; thus, reducing buying power. The table below shows the program with respective performance measures.

Work plans in FY11 and out-years will be developed by setting the following priorities:

- health & safety issues (evaluation and management of site risk)
- legal requirements
- program goal of closing out sites.

Table 2: FUSRAP Five-Year Base Funding Plan and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Appropriation (\$ Millions)	\$ 130	\$ 125	\$ 120	\$ 123	\$ 126
Number of RODs signed	2	3	2	1	1
Remedial Investigations completed	1	0	0	0	1
Action Memos signed	0	0	0	0	0
Cubic yardage of contaminated material removed (in thousand cubic yards)	110	100	100	105	105
Total cost of disposal of contaminated material	\$ 600	<i>NE</i>	<i>NE</i>	<i>NE</i>	<i>NE</i>
Individual Properties returned to beneficial use (annually)	4	3	3	2	2
Cumulative Funding expended on cleanup rather than studies	81%	82%	82%	83%	83%
Remedies in place or response complete	1	1	0	2	1
<i>Source: Information developed by CECW-IN during FY10 budget preparation. "NE" means not evaluated.</i>					

Base Plan Initiatives

- **Coordination with other agencies on disposal contracts:** Transportation and disposal remain a large percentage of project costs. USACE is working to coordinate disposal requirements with the Department of Energy (DOE) and the Department of Defense (DOD) executive agent for radioactive waste disposal in order to reduce disposal costs.
- **Risk-informed waste management:** USACE is working with the Nuclear Regulatory Commission (NRC) to find ways to manage waste according to a material's risk to the public, workers, and the environment, rather than by its pedigree or origin. This is per recent recommendations from the National Academies of Science.

- **Stakeholder buy-in on program goals:**
 - USACE is working to focus more site specific and national stakeholder attention on the overall program, the goals of protecting the public, and closing out sites. USACE is working to show how individual site decisions impact this goal.
 - USACE continues to coordinate with the Department of Energy's (DOE) Legacy Management (LM) GOAL 4: *Management of legacy land and assets, emphasizing protective real and personal property reuse and disposition*. DOE's goal is to increase the percentage of LM managed federal property in beneficial reuse, which would decrease management costs. Four DOE properties are being managed and remediated by USACE under FUSRAP.
 - USACE is coordinating with the Nuclear Regulatory Commission (NRC) on four sites that will help them to meet their license termination strategic goal.

Enhanced Funding and Performance

Projects would be accelerated with enhanced funding. If the program were to receive funding as projected in the Enhanced Plan Scenario for FY11 – FY15, 7 remedies would be completed as shown in the following table. The increased funding level for FY11 would enable projects to take better advantage of the remaining disposal capacity on current contracts. The program for the five years and respective performance measures are shown in table below.

Table 3: FUSRAP Five-Year Enhanced Funding Plan and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Appropriation (\$ Millions)	\$ 145	\$ 149	\$ 153	\$ 158	\$ 164
Number of RODs signed	2	3	2	1	1
Remedial Investigations completed	1	0	0	0	1
Action Memos signed	0	0	0	0	0
Cubic yardage of contaminated material removed (in thousand cubic yards)	120	125	128	132	136
Total cost of disposal of contaminated material	\$ 600	NE	NE	NE	NE
Individual Properties returned to beneficial use	5	5	6	5	4
Cumulative Funding expended on cleanup rather than studies	81%	82%	82%	83%	83%
Remedies in place or response complete	1	1	0	3	2
<i>Source: Information developed by CECW-IN during FY10 budget preparation. "NE" means not evaluated.</i>					

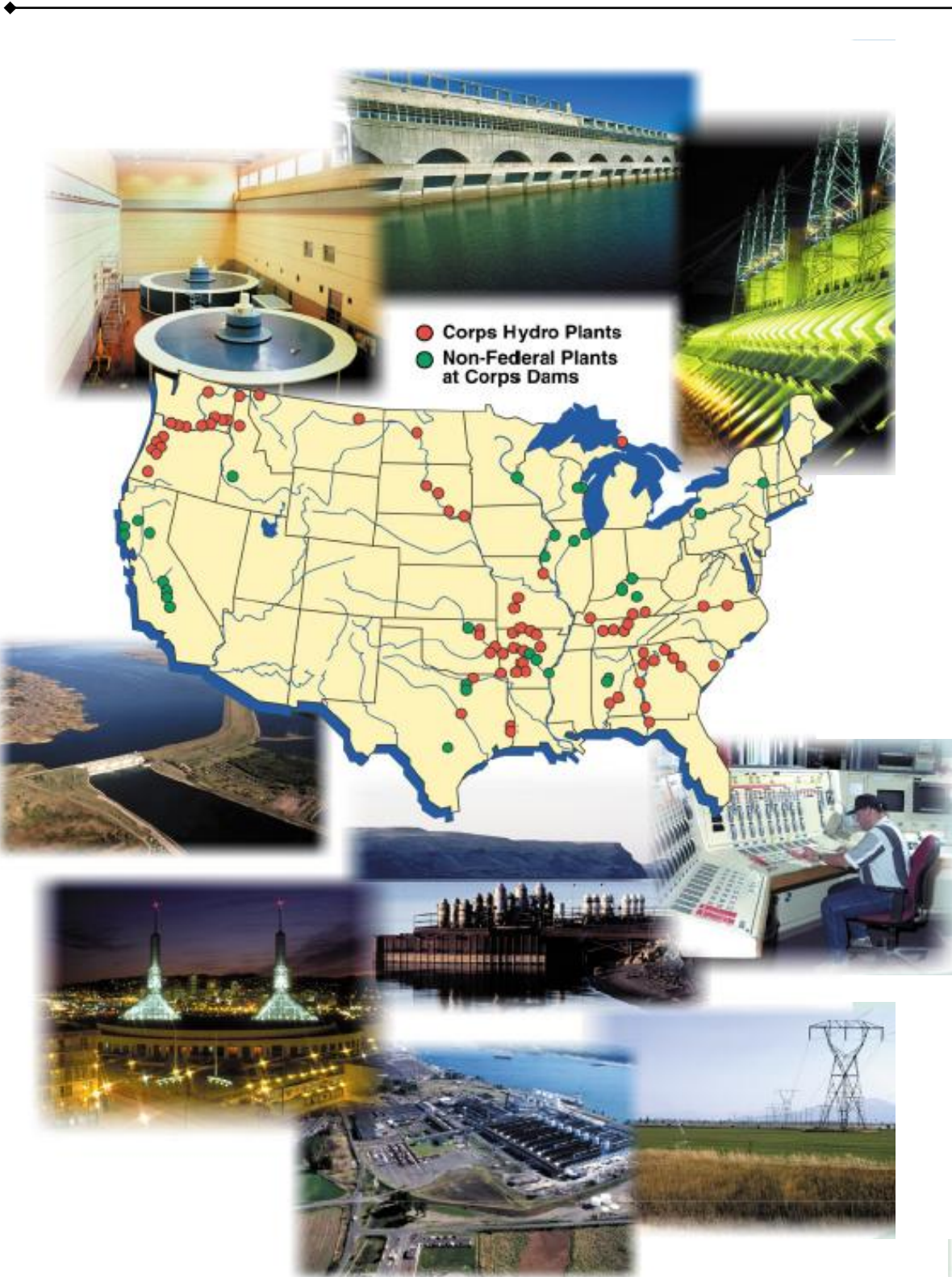
Enhanced Plan Initiatives

- Iowa Army Ammunition Plant: Increases funds at a National Priorities List (NPL) site and shows good faith under the recent Federal Facilities Agreement in place with the state of Iowa, EPA, & DOE.
- Maywood Site in New Jersey: Accelerates completion of three Nuclear Regulatory Commission (NRC) licensed pits.
- Shallow Land Disposal Area in Pennsylvania: Accelerates soil removal completion at ten Nuclear Regulatory Commission (NRC) licensed pits.
- Linde Site in Tonawanda, New York: Accelerates soil removal completion.
- St. Louis Airport Vicinity Properties in Missouri: Accelerates completion of soil removal and returns numerous private properties to beneficial use.

Potential Work with “Wedge Money”

The FUSRAP Program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Hydropower



Hydropower



-Chief Joseph Dam on the Columbia River, WA

Key Statistics

- ❖ There are 75 power plants at USACE dams totaling a rated capacity of 20,475 Megawatts (MW), and a maximum capability of 22,900 MW
- ❖ Own and operate 353 hydroelectric units that represents 24% of the nations hydropower capability and 3% of the total electric capability
- ❖ USACE hydropower plants produce over 68 billion kilowatt-hours of average annual energy

- ❖ Hydroelectric power sales generate over \$4 billion in gross annual revenue
- ❖ 90 non-federal power plants are Federal Energy Regulatory Commission (FERC) licensed to operate at USACE dams representing about 2,300 MW of installed capacity

Accomplishments

- Completed the development of the Hydropower Modernization Initiative Asset Investment Planning tool that informs the planning process for making major capital investments.
- Implemented the USACE Compliance Monitoring and Enforcement guidance for USACE Districts to comply with Federal Energy Regulatory Commission's Electric Reliability Compliance standards.
- Developed Baseline Recurring O&M Costs for each hydropower project to determine the minimum operating costs for budgeting purposes.
- Continued collaboration with the Bureau of Reclamation and the Department of Energy on major initiatives under the March 2010 energy Memorandum of Understanding that included a hydropower resource assessment study, develop methodologies for environmentally sustainable hydropower development, and improving Regulatory processes that impacts non-Federal hydropower development Conducted a successful workshop with USACE, FERC and non-Federal hydropower developers to explore ways to improve approval processes and inter-agency coordination.

Completed the publication of the Outlook Paper for the Corps of Engineers Hydropower Program, which examines the state of federal hydropower in the U.S. in the context of contemporary requirements for multi-use operations and other water users.

Future Challenges

The primary future challenges are related to asset management. Aging infrastructure and constrained funding for operating, maintaining, and replacing hydropower assets are difficult to balance. Due to the current state of the infrastructure, program performance measures have consistently been below industry standards for the previous ten operating years, except in the Pacific Northwest, where Bonneville Power Administration directly finances operation and maintenance and infrastructure modernization from revenues generated by USACE hydropower facilities. The key challenge to the program is incrementally improving program performance and asset reliability by targeting finite resources at the highest return projects over the next five years. Additional challenges include meeting new FERC electric reliability compliance standards and maintaining an adequately trained technical workforce.

Program History and Performance

The Hydropower Business Program supports the Civil Works Strategic Goal 3 and five of its objectives. Five performance measures are used to assess program progress toward meeting the identified goal and objectives.

Strategic Objective 3.1: Improve the efficiency and effectiveness of existing USACE water resources projects.

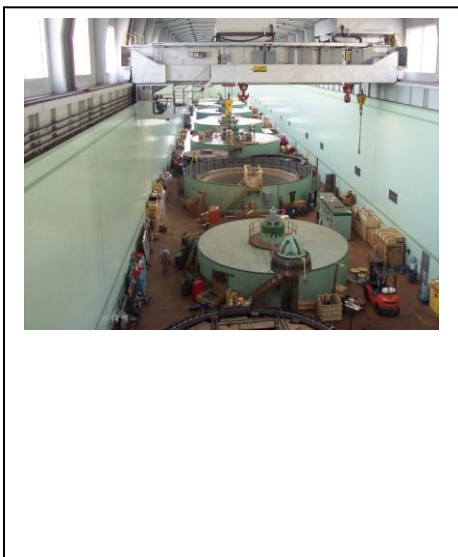
Performance Measures:

- ❖ **Forced Outage Rate:** This measures system reliability against industry standard. It is the percentage of regions achieving a system-wide annual forced outage rate of 2 percent or less.
- ❖ **Peak Availability Rate:** This measures system reliability. It is the percentage of system-wide availability of 98 percent during peak demand season.
- ❖ **Rate of Compliance to FERC Reliability Standards:** This measures the number of FERC electric reliability standards met or exceeded across all USACE hydropower facilities. It is the percent of Federal Energy Regulatory Commission (FERC) approved electric reliability standards applicable to Generator Owners and Operators in the bulk power system that are met or exceeded.
- ❖ **Amount of generating capacity rated as poor:** This measures the percent of unit generating capacity that has a component of its major power train rated as poor (as a result of a condition assessment with the hydroAMP Conditions Assessment tool). This is a new measure and should be available for FY11.
- ❖ **Meet O&M cost efficiency target:** This is an efficiency measure. It is the percentage of regions whose facilities achieve O&M cost efficiency as measured by cost per megawatt-hour or cost per megawatt, adjusted for unit size, compared to similar hydropower facilities. This is a newer measure and data should be available in FY11.

The total budgeted amount shown in Table 1 does not directly impact Hydropower Program performance measures. For budget years through FY09, approximately 30 to 35 percent of the program's budgeted amount is funding requirements for Columbia River fish recovery programs in the Pacific Northwest. In FY09, only 67 percent of the total amount in the President's Budget actually funds projects that directly affected performance measures. Therefore, about 33 percent of the program's budget in FY09 was not used for hydropower maintenance, operations, or improvements that impact the performance measures. FY2010 represents the first year in which the full budget amount was used to fund hydropower specific requirements.

Table 1: Hydropower Historical Funding and Performance

<i>Fiscal Year</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Total Appropriation (\$ Millions)	\$194	\$245	\$285	\$263	\$285	\$291	\$320	\$211
Forced Outage (percent)	3.73%	4.28%	4.94%	3.98%	4.33%	4.65%	4.50%	4.28%
Peak Unit Availability (percent)	88.58%	87.33%	87.10%	88.47%	86.45%	85.25%	87.10%	86.16%
O&M Cost Efficiency Benchmark (\$/MWh)	NA	NA	NA	NA	NA	NA	NA	TBD
Note: 2008 values for Forced Outage and Peak Unit Availability are estimates. O&M Cost Efficiency data will not be available until FY08.								
Source: O&M Business Information Link Database								

Project Spotlight: John H. Kerr Dam and Reservoir Power Plant Major Rehabilitation

District: Wilmington District
Location: North Carolina and Virginia
Project: Multipurpose, one of two hydroelectric facilities in the Wilmington District that comprise the Kerr-Philpott system. Seven main generators and turbines with original plant capacity of 225 megawatts.

The John H. Kerr power plant major rehabilitation project is a 10-year effort to rewind all seven generator units to maximum capacity, replace the turbines and main power transformers, and replace or refurbish key electrical and mechanical peripheral equipment in order to improve the overall reliability of the project, reduce operation and maintenance costs, reduce unscheduled repair costs, and provide additional hydropower capacity and power revenues. The power plant, initially placed into operation in 1953, is showing signs of excessive wear of the generators, the peripheral equipment and the turbines, resulting in a loss of efficiency, reduced reliability of the units and lost power output for the units. There is growing concern with project reliability due to malfunctions of oil circuit breakers in the switchyard, for which repair parts are no longer available and must be custom fabricated; frequent leaks in the raw water piping system, which is in extremely poor condition throughout; and the extremely heavy cavitation damage observed in the turbine runner, stay ring and discharge ring of Unit Number 5. Final marketable upgrade generation capacity is to be determined by the Southeastern Power Administration (SEPA) upon completion of the project. However, for now the capacity of the rehabilitated plant will be 265 megawatts, an increase of 40 megawatts above the original plant capacity of 225 megawatts. The total project cost is \$90.0 million, which will be totally reimbursed in the future through the sale of the electric power generated by SEPA. Average annual benefits for hydroelectric power are \$17,485,000. The major rehabilitation project is scheduled to be completed in FY11.

Base Funding and Performance

Budget priorities include avoiding plant closures, plant safety, increasing the reliable operation of hydropower facilities, assessing and reducing risks of major equipment failures, and quantifying consequences, both economically and operationally, of infrastructure failure. Additionally, improving upon percent of time generating units are available when electrical power is needed the most is another key program priority.

This Base Plan for the Hydropower Program is primarily driven by reducing maintenance backlogs and making investments in major maintenance. Major rehabilitations and replacements are included in this plan. However, the Base Plan does not address all maintenance and investment needs.

Table 2: Hydropower Base Funding by Accounts

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ 21	\$ 20	\$ 19	\$ 20	\$ 20
Operation and Maintenance (O&M) Estimate	\$ 186	\$ 178	\$ 172	\$ 176	\$ 176
Mississippi River and Tributaries (MRT) Total	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 207	\$ 198	\$ 191	\$ 196	\$ 196

Base Plan Initiatives

- Comply with approved Federal Energy Regulatory Commission (FERC) electric reliability standards and ensuring continued compliance. A comprehensive corporate reliability compliance plan is being implemented across USACE to voluntarily comply with approved FERC reliability standards. As a result of the electrical energy blackout of 2003, the FERC was given the authority to require all users, owners, and operators of facilities connected to the bulk power system to meet mandatory electric reliability standards. Although USACE is protected by sovereign immunity as a federal agency, it has made a commitment to the FERC to voluntarily comply with all approved reliability standards within constraints of appropriated resources and operating authorities.
- As part of the infrastructure reliability improvement initiative, risk will be assessed at each hydropower facility. It will measure risk exposure to major equipment breakdown or catastrophic failure and resulting economic and operational consequences, which will drive budget development decisions for FY11 and beyond.
- Complete the Hydropower Modernization Initiative Asset Investment Implementation Plan that will inform capital investment decision-making

Table 3: Hydropower Base Funding and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 207	\$ 198	\$ 191	\$ 196	\$ 196
Forced Outage (percent)	4.28%	4.28%	4.28%	4.28%	4.28%
Peak Unit Availability (percent)	86.16%	86.10%	86.16%	86.16%	86.16%

Enhanced Funding and Performance

Enhanced funding level priorities over this five-year plan would eliminate the program's maintenance backlog and make significant investments in replacement of aged, inefficient and unreliable infrastructure, reducing risk exposure to major component failures. High priority projects identified by low condition indices, high risk factors and significant benefits would be funded under the Hydropower Modernization Initiative in this scenario.

Table 4: Hydropower Enhanced Funding by Accounts

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ 35	\$ 35	\$ 35	\$ 35	\$ 35
Operation and Maintenance (O&M) Estimate	\$ 245	\$ 233	\$ 224	\$ 230	\$ 231
Mississippi River and Tributaries (MRT) Total	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 280	\$ 268	\$ 259	\$ 265	\$ 266

Initiatives for Enhanced Plan

- Update and start construction on approved major rehabilitation plans
- Continue the Hydropower Modernization Initiative. The key objective is to establish a programmatic approach to prioritizing major powerhouse rehabilitations. The HMI Asset Investment Planning tool will be used to inform capital investment decision-making based on physical conditions, environmental impacts, plant importance to electrical system, and customer considerations.
- Sustain performance improvements from previous investments: sustain repair for O&M.
- Projects could include several generator rewinds and turbine replacements at projects such as the Allatoona in Alabama, Ft. Randall in South Dakota, and Webbers Falls in Oklahoma.

Table 5: Hydropower Enhanced Funding and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 280	\$ 268	\$ 259	\$ 265	\$ 266
Forced Outage (percent)	4.28%	4.28%	4.28%	4.28%	4.28%
Peak Unit Availability (percent)	86.16%	87%	87.5%	88%	88.5%

Note: All values are estimates

Potential Work with “Wedge Money”

If the business line modernization initiative is funded for new starts, the funds would be utilized for additional hydropower major rehabilitations with a competitive benefit-to-cost ratio and climate change benefits. While specific funding decisions would be made at that time, several examples of projects that could be considered are:

- Ft. Randall in South Dakota
- Barkley and Wolf Creek in Kentucky
- Center Hill and Old Hickory in Tennessee
- Allatoona in Georgia.

Regulatory



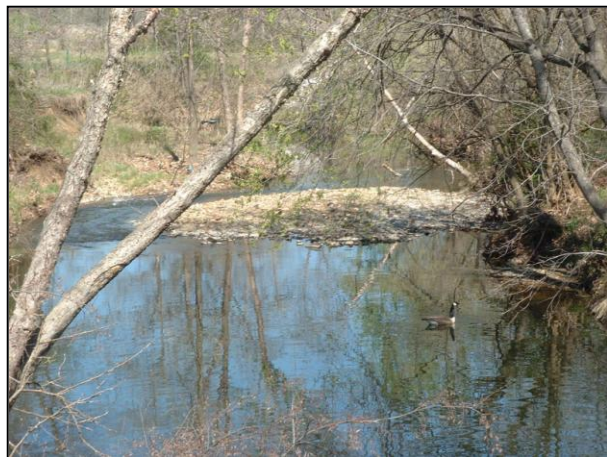
What Does the Regulatory Program Mean to You?

Just a few of the benefits of an effective regulatory program are:

- Cleaner water;
- A healthier environment;
- More jobs; and
- A stronger economy.



Regulatory



Key Statistics in FY10

- ❖ 68,800 public and private activities authorized
 - ❖ 3,700 Standard Permits/Letters of Permission
 - ❖ 13,470 Regional General Permits
 - ❖ 31,900 Nationwide Permits
 - ❖ 3,100 Permits Modified
- ❖ 9,810 No Permit Required Determinations
 - ❖ 275 Applications Denied
 - ❖ 63,100 Jurisdictional determinations completed
 - ❖ Over 80% of actions authorized by General Permits
 - ❖ 92% of General Permits processed < 60 days



Accomplishments

On 30 July 2010, ERDC published the Operational Draft of the Regional Guidebook for the Functional Assessment of High-Gradient Ephemeral and Intermittent Streams in Western West Virginia and Eastern Kentucky. This science-based, rapid, and repeatable hydrogeomorphic (HGM) approach will be used to assess the function of high gradient streams and support mitigation decisions in West Virginia and Kentucky. Implementation of the HGM protocol includes training for Corps and other agency staff and workshops for the public and consulting community. In November 2010, USACE's Engineering Research Development Center (ERDC) invited other agencies and academia to participate in the development of the validation process.

The purpose of validation is to verify the accuracy and reliability of the protocol. The final guidebook will reflect the outcome of the validation process.

The 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual) provides the methodology for delineating wetlands for purposes of CWA §404 jurisdiction. Ten Regional Supplements to the 1987 Manual have been developed to reflect regional differences in wetland characteristics. The last of the Supplements was published in 2010. The 1987 Manual is being updated by a USACE-led interagency team comprised of representatives from USEPA, NRCS, and USFWS to clarify its relationship with the Regional Supplements, to eliminate obsolete and superceded information, and to address emerging issues not considered when it was originally written. A final implementation of the revised manual is expected in 2013.

The National Wetland Plant List (NWPL), a cooperative effort of USACE, USEPA, NRCS and USFWS, lists the wetland indicator status for plants found throughout the U.S. and is used extensively in determining wetland boundaries. The initiative to update the NWPL continues through a new web site that allows experts and interested parties to participate in the process. This information is useful when work is being done to restore wetlands and conducting ecological research.

Deployment of the Regulatory Avatar and video library continues, including on the Headquarters USACE Regulatory website. The Avatar and video library provide interactive modules that lead applicants through the application and permit evaluation process with step-by-step instructions. These comprehensive instructions and educational materials enhances the public understanding of the regulatory program and to enables accurate and appropriate completion of permit applications, which results in a more efficient permitting process.

Future Challenges

The Regulatory program continues to be exciting as development pressures mount and national public awareness of the aquatic environment continues to rise. Appreciation for the contribution of wetlands to the overall natural environment has resulted in greater direct input from the public and environmental interest groups, leading to greater complexity and controversy in the review of permit applications. As the program becomes more complex, delays in making permit decisions increase.

Confusion regarding geographic scope of CWA jurisdiction created by Supreme Court decisions in 2001 and 2007 continues. These decisions caused a significant increase in workload associated with field visits to determine jurisdiction, documentation and coordination on jurisdictional determinations, and resulted in additional time delays for decisions on permit applications. The estimated annual cost to the program is \$30 million; these activities must compete with other, baseline activities for finite resources.

The Regulatory program's regulations have not been updated since 1986. As mentioned above, the dynamic evolution of the program via litigation challenges and public interest has resulted in substantial shifts in certain, specific areas of those regulations in the 25 years since they were

published. These shifts currently captured in separate pieces of guidance and regulation would be best communicated to the regulated public in a newly published, consolidated regulation.

Assessing cumulative effects effectively remains a challenge within the Regulatory program. In FY 10-11, the program developed a framework and strategy to further define expectations of and results from cumulative effects analyses, and how those results could inform permit decisions in the future. Much work remains relative to model development and verification, and implementation at the Regulatory project manager level.

There is a demonstrated need for energy within the U.S. This need comes into conflict with the Regulatory program when permits are needed to support the extraction of resources (e.g. oil, gas, coal), to emplace transmission infrastructure (e.g. wind, solar, gas, oil, nuclear) and to place structures and/or fill in jurisdictional waters (e.g. hydropower, hydrokinetic, wind, solar, oil, gas, nuclear, coal). Often, other Federal agencies provide oversight to these energy-driven projects and enable the Regulatory program to focus time and resources on the aquatic environment. However, as interest and need in renewable energy sources grows, the frequency with which the Regulatory program is the only Federal regulatory agency engaged with private interests on private lands will increase. This will challenge the expertise and resources of the Regulatory program.

Continued advancements of the OMBIL Regulatory Module, version 2 (ORM 2) database is another critical challenge. ORM 2 is a web-based, geospatial database that houses data that enables effective and efficient tracking of regulatory processes. ORM2 has been deployed in all districts. Historic data clean up to improve the ability to analyze past condition to inform future strategic decisions are a continuing need. Standard data entry and report development with companion standard operating procedures for Regulatory project managers continue to be developed to ensure consistent and accurate data entry and reporting. With increasing data accuracy, reflecting program accomplishments in all areas is a foreseeable goal.

Increased pressures and requirements to redevelop the Nation's infrastructure, spur economic growth, and efforts to maintain healthy resources, support ocean and coastal economies, and promote access and sustainable use the nations waters will continue to increase the complexity of the regulatory program. These competing public and private priorities will require careful evaluation, interagency coordination, and will bring continued high levels of litigation to the program.

Program History and Performance

Develop Sound Water Resource Solutions, Sub-objective 2c: Improve Regulatory process to balance development and environmental sustainability; achieve greater consistency and streamline systems; and improve responsiveness and efficiency in decision making directly relate to the Regulatory Program and influence the development of performance measures for the Regulatory Program. The eight performance measures were developed to greatly improve the implementation of the Regulatory Program nationally resulting in increased consistency, improved streamlining and efficiency, and better protection of the aquatic environment, with the overall result of well

balanced decisions, which are also more responsive to customer needs. USACEs' Regulatory program has developed three specific strategic goals that are directly linked to our priorities.

Strategic Regulatory Objective 1: No Net Loss of Aquatic Resources

Strategic Regulatory Objective 2: Avoidance and Minimization of Impacts to Aquatic Resources

Strategic Regulatory Objective 3: Expedite Permit Processing

Performance Measures

USACE measures the acres of wetlands impacted, avoided, and mitigated to confirm that the three goals are being met. However, to confirm that these goals are being met, USACE defined eight performance measures, which are designed to be measured quickly and easily while providing data on the goals. The XX below indicate a blank value; the actual value is in the tables below.

- ❖ **Individual Permit Compliance:** USACE shall complete compliance inspections on XX percent of the number of individual permits issued the preceding fiscal year, and select projects from those constructed within the preceding 5 years.
- ❖ **General Permit Compliance:** USACE shall complete compliance inspections of XX percent of the number General Permits (GPs and NWP) with reporting requirements issued the preceding fiscal year, and select projects from those constructed within the preceding 5 years.
- ❖ **Mitigation Site Compliance**:** USACE shall complete field compliance inspections of XX percent of active mitigation sites each fiscal year. Active mitigation sites are those authorized through the permit process and being monitored as part of the permit process but have not met final approval under the permit special conditions.
- ❖ **Mitigation Bank/In Lieu-Fee Compliance:** USACE shall complete compliance inspections/audits on XX percent of active mitigation banks and in lieu fee programs annually.
- ❖ **Resolution of Non-compliance Issues:** USACE will reach resolution on non-compliance with permit conditions and/or mitigation requirements on XX percent of activities determined to be non-compliant at the end of the previous fiscal year and determined to be non-compliant during the current fiscal year.
- ❖ **Resolution of Enforcement Actions:** USACE shall reach resolution on XX percent of all pending enforcement actions (i.e., unauthorized activities) that are unresolved at the end of the previous fiscal year and have been received during the current fiscal year.
- ❖ **General Permit Decisions:** USACE shall reach permit decisions on XX percent of all General permit applications within 60 days.
- ❖ **Individual Permits:** USACE shall reach permit decisions on XX percent of all Standard permits and Letter of Permission (LOPs) within 120 days. This standard shall not include Individual Permits with Formal Endangered Species Act (ESA) Consultations.

USACEs' Regulatory program has been collecting permit and enforcement data over the past 15 years. Compliance data has been collected only for the last four years in a newer database. A summary of the historic funding and performance data is shown in Table 1.

**** Regulatory program High Priority Performance Goal**

USACEs' Regulatory program has been collecting permit and enforcement data over the past 15 years. Compliance data has been collected only for the last four years in a newer database. A summary of the historic funding and performance data is shown in Table 1.

Table 1: Regulatory Historic Funding and Performance

<i>Fiscal Year</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009*</i>	<i>2010*</i>	<i>2011 Target</i>
Appropriation (\$ Millions)	\$138	\$139	\$143	\$158	\$159	\$176	\$183	\$190	\$193
Individual Permit Compliance	18%	16%	14%	14%	11%	22%	25%	25%	10%
General Permit Compliance	6%	5%	5%	7%	7%	7%	11%	13%	5%
Mitigation Compliance	15%	11%	9%	10%	7%	18%	35%	17%	5%
Mitigation Bank Compliance	25%	20%	19%	25%	63%	39%	45%	34%	20%
Non-compliance Resolution	30%	26%	24%	37%	56%	28%	38%	40%	20%
Enforcement Resolution	25%	37%	23%	58%	82%	34%	37%	38%	20%
General Permit processing	88%	85%	85%	82%	80%	82%	88%	92%	75%
Individual Permit Processing	58%	61%	61%	61%	53%	51%	64%	67%	50%

** Regulatory Program targets we exceeded with the support of the American Recovery Reinvestment Act (ARRA) funds. The program received \$25M dollars.*

Activity Spotlights:

DEEPWATER HORIZON OIL SPILL RESPONSE

The Corps Regulatory Program regulations at 33 CFR 325.2 provide for the use of emergency permit processing procedures. In response to the Deepwater Horizon oil spill incident in the Gulf of Mexico, three Gulf Districts received 120 requests to conduct work under emergency procedures. As of September 30, 2010, 116 were approved, withdrawn or did not require a permit. One request is pending a decision, 2 were denied use of emergency procedures and 1 did not qualify. Authorized work included deploying booms, mooring barges, placing sand or sheet pile in barrier island cuts, and placing fill for barrier island protection. Regulatory also developed publicly accessible mapping tool and tracking reports to allow quick responses to inquiries related to these emergency actions.

SURFACE COAL MINING

The Corps Regulatory Program is working to fulfill commitments under the June 2009 federal interagency MOU signed by the Department of the Army, EPA and DOI to reduce the adverse environmental impacts of surface coal mining in six Appalachian states and this remains a priority. Continued work to strengthen the review of these complex projects includes the development of a technical Regulatory Guidance Letter to improve the ecological success of stream mitigation; the development and implementation of a long-term compliance plan in the districts to prioritize the review of permits issued for surface coal projects; conducting a workshop to provide technical training to state and federal agencies to improve the review of stream mitigation plans; the completion of a cumulative impacts analysis model that will serve as a tool to support decision-making in the field pursuant to Section 404 and NEPA; the validation of and completion of the Draft Operational HGM methodology for high gradient streams in western WV and eastern KY; the continued development of field-level interagency agreements that address the alignment of the Surface Mining Control and Reclamation Act (SMCRA) and Clean Water Act where practicable; and the review of projects pursuant to the Enhanced Coordination Procedures. Further, the preparation of documents in response to on-going legal challenges in both district and appellate courts to multiple permit decisions and the Enhanced Coordination Procedures continues to require coordination with and input from Regulatory.

Base Funding and Performance

The proposed budget for FY11 funding is at \$193 million, which is a \$3 million funding increase over the FY 2010 level. This funding level will result in a reduced level of performance for each of the eight performance measures. With recent national issues concerning mining, shale gas development, clean energy (wind, solar, clean coal, hydropower, nuclear, hydrokinetic), and potential changes to the Clean Water Act jurisdiction, the increase in funding in FY11 does not cover the projected increased workload associated with these actions. In addition, it is estimated that the base operational cost of the program will increase approximately 2% in FY 11 (\$3.8M).

The added workload associated with challenging national issues and changes that may arise from potential changes to the Clean Water Act jurisdiction will continue to pose a significant challenge on Project Managers to meet customer demands for timely permit decisions. The initial funding level would allow continued program work, but at a decreased level of productivity and timeliness, and would not provide sufficient funds to initiate or continue and new strategic objectives for the program, including watershed studies, new SAMPs (Special Area Management Plans), and new State Programmatic General Permits (SPGP's). The performance level for each of the measures is shown below.

Table 2: Regulatory Base Funding and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Appropriation (\$ Millions)	\$ 193	\$ 185	\$ 178	\$ 182	\$187
Individual Permit Compliance	10%	10%	10%	10%	10%
General Permit Compliance	5%	5%	5%	5%	5%
Mitigation Compliance	5%	5%	5%	5%	5%
Mitigation Bank Compliance	20%	20%	20%	20%	20%
Non-compliance Resolution	20%	20%	20%	20%	20%
Enforcement Resolution	20%	20%	20%	20%	20%
General Permit processing	75%	75%	75%	75%	75%
Individual Permit Processing	50%	50%	50%	50%	50%

Enhanced Funding and Performance

The enhanced plan program funding level for FY11 is \$210 million. For this level of funding, the program is in a better position to maintain performance levels, maintain FY 10 execution levels, while addressing potential impacts of Clean Water Act Jurisdiction Guidance and proposed rule making. Additional funding would be used, develop programmatic efficiencies in the permit review processes, the effective implementation of compliance and enforcement activities, and providing clear and concise jurisdictional determinations.

In addition, funding may be made available for Wetlands Regulatory Assistance Program, which assists Districts' Regulatory offices with technical expertise and research. These activities will include continued support of the 1987 Corps of Engineers Wetlands Delineation Manual update, Wetlands Delineation Manual supplements, the National Wetland Plant List, and validation of HGM guidebook for high-gradient streams in western West Virginia and Eastern Kentucky.

The five-year enhanced plan program assumes the program funding starting at \$216 million in 2012 and rising gradually to \$237 million in FY15. Since the USACE Regulatory program is primarily funded for labor, performance would be expected to be sustained as funding rises

slightly below the normal inflation rate (approximately \$6 million per year). Table 3 provides estimates of static performance as funding equivalent to the inflation level.

Initiatives for Enhanced Plan

- ORM 2 Database Enhancements
- Increase Public Access to Regulatory Data
- Cumulative Effects Analysis Model Deployment
- Support of Rule Making Initiatives

Table 3: Regulatory Enhanced Funding and Performance

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 213	\$ 219	\$ 225	\$ 232	\$ 240
Individual Permit Compliance	10%	10%	10%	10%	10%
General Permit Compliance	10%	10%	10%	10%	10%
Mitigation Compliance	10%	10%	10%	10%	10%
Mitigation Bank Compliance	10%	10%	10%	10%	10%
Non-compliance Resolution	15%	15%	15%	15%	15%
Enforcement Resolution	10%	10%	10%	10%	10%
General Permit processing	75%	75%	75%	75%	75%
Individual Permit Processing	50%	50%	50%	50%	50%

Potential Work with “Wedge Money”

The Regulatory Business Program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Recreation

There's a Corps Lake Near You!

Recreation



Key Statistics

- ❖ Largest Federal provider of outdoor recreation services. Over 4,200 recreation areas are located on USACE-managed lands at more than 400 lakes (352 budgeted projects) in 42 states.
 - ❖ Leader in developing partnerships; about 1,800 (43%) of recreation areas are operated and maintained by other entities, such as states and local governments, under a lease or license agreement.
- ❖ Water-oriented recreation served 370 million visits at USACE sites and facilities in 2009
 - ❖ 90% of USACE lakes are near metropolitan areas (within 50 miles of a MSA offering recreation opportunities).

Accomplishments

- 370 million visits per year in 2009 resulted in \$13 billion on total trip expenses and \$5 billion on durable goods including \$8 billion spent by visitors on trips in communities around USACE lakes. This contributes around \$22.4 billion to the national economy with the 'multiplier effect' and supports around 350,000 jobs.
- Recreation opportunities combat one of the nations' most significant health problems: lack of physical activity.
- Recreational programs and activities also help strengthen family ties and friendships; educate the public; provide opportunities for children to develop personal skills, social values, and self-esteem; and improve water safety.

Future Challenges

- All lakes with recreation facilities are struggling to maintain current levels of customer service and park quality in the face of flat budgets.
 - Visitor safety is the highest priority. USACE will continue to commit the necessary resources to programs that provide patrols, water safety education, etc. However, expanding or improving safety programs to accommodate more visitors and add safety is challenging with current funding levels.
 - USACE recreation facilities are 45 years old on average with more than 30% older than 50 years. These facilities need substantial renovations to meet health and safety requirements that would be more costly than annual maintenance.

- Cost increases in contract maintenance, utilities, and operations costs often make service level reductions unavoidable.
- Parks shorten operating seasons, close some day use and camping areas, and reduce visitor services.
- High performing parks need improvements and maintenance. They also need a better funding prioritization process to plan for long-term increase in recreation growth.
- Working with stakeholders and the public to improve business practices and responsiveness to assure quality outdoor recreation is available for future generations

Program History and Performance

The objectives and performance measures for the recreation business program are aligned with Civil Works Goal 3. Performance measures are directed toward three dimensions of the Recreation Program: Customer Service, Asset Management, and Program Efficiency.

Strategic Objective 3.1.7: Provide justified outdoor recreation opportunities in an effective and efficient manner at all USACE-operated water resources projects.

- ❖ **Total NED Benefit Program Efficiency Performance Measure:** contribution of USACE managed parks to National Economic Development (NED) benefits
- ❖ **Benefits/Cost Efficiency Performance Measure:** this is the ratio of NED benefits to actual expenditures or program budget
- ❖ **Cost Recovery Efficiency Performance Measure:** percentage of O&M spending paid through user fees; it is the amount of recreation receipts divided by the recreation program budget.

Strategic Objective 3.1.8: Provide continued outdoor recreation opportunities to meet the needs of present and future generations.

- ❖ **Park Capacity Asset Management Performance Measure:** this is a measure of the capacity of facilities in millions of site days/nights to provide recreation opportunities

Strategic Objective 3.1.9: Provide a safe and healthful outdoor recreation environment for USACE customers.

- ❖ **Health and Safety Services Customer Performance Measure:** the percent of visitors to USACE-managed recreation areas served at acceptable service levels. Activities that impact this measure are facility cleaning, mowing, visitor assistance, ranger patrols, park hosts, reservation services, and repairs.
- ❖ **Facility Condition Asset Management Performance Measure:** this is an average USACE managed recreation area facility condition score, based on a seven point scale 1 = poor to 7 = excellent. Acceptable facility condition standard = 3.5 or better
- ❖ **Facility Service Asset Management Performance Measure:** this is the percent of visitors served at acceptable facility condition standard

The following table presents a summary of the program's funding and performance. Performance information provided in the table is incomplete because the systematic program performance monitoring was initiated until 2004 with the development of Rec-BEST (Budget Evaluation SysTem) to support the budget development process.

Table 1: Recreation Historic Funding and Performance

Fiscal Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
Appropriation (\$ Millions)	\$261	\$274	\$262	\$270	\$268	\$267	\$267	\$271	\$283
Visitor Health and Safety Services	NA	NA	NA	51%	50%	49%	48%	47%	47%
Park Capacity (millions of days)	NA	NA	NA	74	74	74	74	74	74
Facility Condition (Based on seven point scale: 1=poor to 7=excellent)	NA	NA	3.7	3.7	3.7	3.7	3.6	3.6	3.7
Facility Service (% of visitors served at 'acceptable' parks)	NA	NA	NA	48%	48%	48%	47%	44%	51%
National Economics Development (NED) Benefits (\$ Millions)	NA	NA	1,223	1,242	1,271	1,353	1,452	1,500	1,610
Program Efficiency (Benefit/Cost Ratio)	NA	NA	4.22	4.25	4.46	4.49	4.70	4.30	4.47
Cost Recovery (% of total Recreation Receipts to Budget)	13%	14%	16%	17%	17%	16%	15%	16%	16%

Project Spotlight: Partnering at Lake Ouachita, Arkansas

District: Vicksburg

Location: On the Ouachita River near Royal, Arkansas and at Blakely Dam

Project Type: Memorandum of Understanding (MOU) Partnership with the Lake Ouachita Citizen Focus Committee, Denby Bay Coalition, Arkansas Game and Fish Commission and Montgomery County, Arkansas



USACE's Challenge Partnership Agreement has leveraged funding through partnerships to accomplish needed improvements to natural resources management sites and facilities. Lake Ouachita is one example. Lake Ouachita has crystal-clear waters making the lake a popular site for scuba diving along with numerous camping, fishing, horseback riding, boating, and swimming opportunities. Many of these activities are supported through partnerships including local governments, community groups, volunteers, and other non-federal entities.

Through the efforts of a local partner group, the Denby Bay Coalition, they leveraged USACE's Handshake Partnership Grant into more than \$800,000 in partner contributions to build a trail. The Denby Bay Coalition has completed 14 miles of the Vista Hiking and Biking Trail. The third trail phase is 95% complete adding 6 more miles. The fourth phase is being investigated and volunteer "Pathfinders" are marking trail routes. This phase will be about 8 miles long connecting into the Crystal Springs Recreation Area. Denby Bay Coalition Members and individual volunteers have put in over 2000 volunteer hours assisting on Vista Trail construction, sign placement, bench placement, and initial trail maintenance.

In conjunction the Vista Trail, local grass root support engaged the Denby Bay Coalition to build a trail designed for the physically challenged. This quickly morphed into a Watchable Wildlife trail designed using Americans with Disabilities Act (ADA) principles. The ADA/Watchable Wildlife Trail is underway and will total 1.5 miles, including an elevated walkway exhibiting a wetlands environment.

Arkansas Game and Fish Commission along with project staff developed the ADA/Watchable Wildlife Elevated Trail (650' long X 6' wide) design plan, with Denby Bay Coalition volunteers currently installing the base support post. Montgomery County received a \$33,600 grant from the Arkansas Highway Department for the trail. The Arkansas Game and Fish Commission officially authorized and issued a \$150,000 grant for installing the elevated portion, and interpretive exhibits for the entire ADA/Watchable Wildlife trail. Through these partnerships, new alliances have been forged with local and state organizations for the betterment of Lake Ouachita, Montgomery County and the customers we serve.

Base Funding and Performance

The recreation program focuses on providing acceptable service levels to visitors at USACE operated parks; however, the funding level will lead to declining service levels. Customer satisfaction is projected to steadily decline from decreasing Visitor Health and Safety Services, Site and Facility Condition, as a result of projected budget shortfalls. As part of customer satisfaction, the program will prevent essential recreation infrastructure loss for disabled visitors and mandated access. However, water safety initiatives will remain unfunded.

In regards to Asset Management, USACE will maintain public outdoor recreation opportunities nationwide with total recreation unit days available near 60 million annually as measured by Park Capacity. This is a reduced availability due to resource constraints. Strategy includes a combination of reduced service levels and reduced recreation opportunities implemented through partial and/or complete closures. The Facility Condition will slightly decline; funding is targeted at critical maintenance activities to keep key recreation infrastructure functioning.

Regarding Program Efficiency, service levels at individual recreation sites will be maintained and/or adjusted to reflect the level of visitation, relative to the cost of such maintenance, at those sites. Program efficiency, as measured by a Benefit/Cost Ratio, will decline under the Base Plan program.

Table 2: Recreation Base Funding by Account and Performance

Fiscal Year	2011	2012	2013	2014	2015
Operation and Maintenance (O&M)	\$ 264	\$ 256	\$ 244	\$ 250	\$ 251
MRT O&M	\$ 16	\$ 12	\$ 15	\$ 15	\$ 15
Appropriation (\$ Millions)	\$ 280	\$ 268	\$ 259	\$ 265	\$ 266
Visitor Health and Safety Services	47%	47%	47%	47%	47%
Park Capacity (millions of days)	74	74	74	74	74
Facility Condition (Based on seven point scale: 1=poor to 7=excellent)	3.7	3.7	3.7	3.6	3.6
Facility Service (% of visitors served at 'acceptable' parks)	51%	50%	50%	49%	48%
National Economics Development (NED) Benefits (\$ Millions)	1,483	1,419	1,372	1,404	1,409
Program Efficiency (Benefit/Cost Ratio)	4.41	4.34	4.27	4.20	4.14
Cost Recovery (% of total Recreation Receipts to Budget)	16%	16%	16%	16%	16%
Note: Includes CAP and Remaining Items					

Base Plan Initiatives

The following initiatives are directed to improve program efficiency, sustainability and customer service:

- The Recreation Program Performance Improvement Initiative (RPPII) is directed toward
 - a) implementing new guidance toward park operations (including potential park closures),
 - b) developing guidance for modernization projects,
 - c) developing a suite of detailed management performance measures to improve program execution, and
 - d) sharing best practices using the Natural Resource Management Gateway to improve operational efficiencies.
- Civil Works Asset Management initiatives for recreation are directed toward optimizing infrastructure investment to support program objectives under the following activities
 - a) annually monitor the condition and utilization of recreation facilities to inform budget decisions, and
 - b) use critical maintenance indicator in Rec-BEST to inform budget decisions.
- A 'Customer Service Performance Measure' initiative will be established to
 - a) benchmark USACE service levels with other agencies and program partners,
 - b) develop minimum service levels (required for public health and safety) below which parks will be closed, and
 - c) review and, if necessary, adjust acceptable levels of service based on the results of items a and b above.

Project Spotlight: Impacts to Operations and Partnerships

District: Vicksburg

Locations: Lakes Ouachita, Greeson, and DeGray, Arkansas in the region about 50 miles southwest of Little Rock.

Lake Ouachita, Greeson, and DeGray are all located within about an 80-mile radius from each other. Lake Ouachita is described in the above project spotlight. Lake Greeson is on the Little Missouri River and has hunting, fishing, camping, swimming and boating opportunities. The lake is a wintering site for bald eagles. A nature trail

allows the visitor to reach a cinnabar mine site that has red colorations from mercury ore. There is also a 31-mile-long cycle trail and the Chimney Rock geological formation. DeGray Lake is on the Caddo River in the foothills of the Ouachita Mountains. It is known for its camping facilities and geological formations; however, visitors also enjoy boating, fishing, swimming and scuba diving. A group camp area, which includes a dining hall and eight sleep shelters, is also available. The project offers a visitor center and a State park with a swimming pool, marina, lodge, and golf course.



–Lake DeGray

Like many USACE lakes, these lakes are facing the challenges of how to allocate limited program resources. Each project is evaluating options to serve as many customers as possible by focusing resources on the parks and campgrounds that receive the highest visitation. Options include reducing the service levels, limiting summer ranger hires, shorten operating seasons, partial area closures, and as a last resort permanent recreation area closures. The Vicksburg District and representatives of Federal, state, and local interests decided to modify services through a stakeholders' agreement on February 11, 2008. This would reduce costs, and open all Class A and B campgrounds at all three lakes starting on March 1, 2008. The modified services include less frequent trash pickup, janitorial services and grass mowing. Class C and D campgrounds will remain open with no service. Modifications would continue if the summer season can be sustained at these levels.

This operation plan also provides an opportunity for visitors to volunteer at these campgrounds to supplement the modified services. More volunteering and partnership will help keep costs lower



while providing more services. Leasing campgrounds is also being considered to sustain future campground availability. Despite these funding constraints, the Vicksburg District is committed to providing the best recreation opportunity to the visiting public at all USACE managed areas and will continue to do so in the most efficient ways with the resources available.

–Lake Greeson

Enhanced Funding and Performance

The five-year performance projections reported under this scenario are based on estimates provided by field managers in Rec-BEST during the past four years. Visitor Health and Safety Services are expected to remain at the same level resulting from the flat budget after considering inflation. The downward trend in Facility Condition projected under the Base Plan program will be reversed and facility condition will be slowed down as a result of investments in high performing parks. Visitors served at facilities rated at “acceptable” or better will be virtually the same under Facility Service. Service levels at individual recreation sites will be maintained and/or adjusted to reflect the level of visitation, relative to the cost of such maintenance to improve program efficiency. Program efficiency, as measured by Benefit to Cost Ratio, will also remain flat or decrease slightly due to the deteriorations of park facilities. A combination of reduced service levels and reduced recreation opportunities implemented through partial and/or complete park closures will continue.

Table 3: Recreation Enhanced Funding by Account

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Investigations	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -
Mississippi River and Tributaries (MRT) Project	\$ -	\$ -	\$ -	\$ -	\$ -
Operation and Maintenance (O&M)	\$ 274	\$ 275	\$ 281	\$ 285	\$ 276
MRT O&M	\$ 12	\$ 16	\$ 16	\$ 17	\$ 16
Total	\$ 286	\$ 291	\$ 297	\$ 302	\$ 290
Note: Includes CAP and Remaining Items					

Initiatives for Enhanced Plan

- Improve Visitor Health and Safety Services, such as:
 - Hiring additional temporary park rangers during peak season to conduct water safety programs and increase patrols in beach areas and USACE operated parks.
 - Modernize electrical service at high performing campgrounds
 - Improve operational efficiency
 - Improve access to facilities for disabled visitors
- Surveys to maintain monitoring capability of visitation levels at USACE projects

Table 4: Recreation Enhanced Funding and Performance

Fiscal Year	2011	2012	2013	2014	2015
Appropriation (\$ Millions)	\$ 286	\$ 291	\$ 297	\$ 302	\$ 290
Visitor Health and Safety Services	46%	48%	48%	48%	47%
Park Capacity (millions of days)	74	74	74	74	74
Facility Condition (Based on seven point scale: 1=poor to 7=excellent)	3.7	3.7	3.7	3.7	3.6
Facility Service (% of visitors served at 'acceptable' parks)	51%	50%	50%	49%	48%
National Economic Development (NED) Benefits (\$ Millions)	1,439	1,556	1,588	1,615	1,551
Program Efficiency (Benefit/Cost Ratio)	4.46	4.38	4.31	4.24	4.18
Cost Recovery (% of total Recreation Receipts to Budget)	16%	16%	16%	16%	16%
Note: Includes CAP and Remaining Items					

Potential Work with “Wedge Money”

The Recreation Program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Emergency Management



Emergency Management



Key Statistics

- ❖ Over 700 personnel supported 15 flood events during FY10 with more than 21,000 person days.
- ❖ Trained 1,000 personnel during FY10 for emergency management.
- ❖ Supported 13 FEMA disaster responses in FY10

Accomplishments

- Ensure USACE activities are ready, trained and equipped to respond to a broad range of disasters and emergencies.
- Coordinate, plan, and conduct response exercises with key local, state and federal stakeholders/ partners under USACEs' statutory authorities
- Conducted flood fighting/emergency operations (PL 84-99) in California, Arizona, Minnesota, North Dakota, New York, Rhode Island, Connecticut, Massachusetts, New Hampshire, Kentucky, Tennessee, Indiana, Iowa, Illinois, Montana, Wyoming, Missouri, South Dakota, Nebraska, and Wisconsin during FY10.
- Execution of the Supplemental Flood Control and Coastal Emergency (FCCE) Appropriations funded Louisiana and Mississippi eligible project repairs; Missouri River and Texas flood infrastructure repairs, and provided Drought Assistance.
- The Critical Infrastructure Protection and Resilience (CIPR) program completed the development of a conditional risk assessment methodology (Common Risk Model for Dams) for risk and vulnerability assessment of Corps critical projects to manmade threats. In addition, implemented a Consequence-Based Top Screening (CTS) methodology for identification and prioritization of high-consequence (critical) across the Corps portfolio using an all-hazards approach. The CIPR program implemented regional resilience efforts supporting the development of an integrated regional strategy to improve disaster preparedness and resilience in collaboration with Green River Valley public/private stakeholders (2010 Dams Sector Exercise Series – Green River Valley).

Future Challenges

- Assessing, managing, and communicating flood risk to the impacted population in understandable terms, and generally improving the nations' resilience to flood events. Additionally, a major challenge remains in how to achieve a sensible balance between our responsibility to inform without increasing terrorist target attractiveness, and our responsibility to protect the public.
- Ongoing levee inventory, inspections, maintenance, and communication are essential. Trees and other woody vegetation can create structural and seepage instabilities, prevent adequate inspection, cause levee failure, and create obstacles to maintenance and flood fighting/flood control activities. Public dialogue is essential to communicate risks and consequences.
- Assessment and quantification of consequences associated with dam failures, levee breaches, or navigation lock disruptions needs consistency measures, particularly regarding the estimation of population at risk, loss of life, and quantification of direct and indirect economic impacts.
- Breaking traditional stakeholder and government agencies molds to create better collaboration and integrated processes for emergency planning.
- Maintaining a consistent preparedness level, training and credentialing requirements, and increased rehabilitation costs due to an aging flood control infrastructure.
- Implement an integrated risk assessment and management framework for critical infrastructure protection and resilience that is fully supported by effective inter- and intra-agency collaboration. This includes full integration of outcomes with USACE risk-informed life-cycle portfolio management (asset management) strategies.
- Achieve corporate understanding that critical infrastructure protection and resilience includes facility-specific actions and also addresses portfolio-wide resilience-enhancing programs.
- USACE is now implementing its Readiness XXI concept which further integrates and synchronizes civil and military contingency preparedness and response operations for much improved synergy, effectiveness, and superior performance. We are doing this through:
 - rigorous education, training, and credentialing programs for individuals, units, and expeditionary teams
 - optimizing our organizational structure for anticipatory response and recovery
 - improved Life Cycle Risk Management doctrine that clearly codifies how we think about response, recovery, mitigation, and preparation / training for natural and man-made emergencies
 - a state-of-the art Critical Infrastructure Protection and Resilience program of R&D, an all-hazards risk assessment protocol, physical inventories and assessments, and public-private recommended solutions
 - regional and National scenario-based exercises with our local, regional, National, and International partners that galvanize unified effort for domestic incidents and military contingencies in support of the Army, Department of Defense (DoD), Department of Homeland Security (DHS), Department of State (DOS), North Atlantic Treaty Organization (NATO), and the Nation.

- To maintain the current high standards of performance, our Major Subordinate Commands continue to develop, update, and implement standard operating procedures (SOPs); properly staff and train their assigned expeditionary teams; and meet established critical readiness metrics.

History of Funding and Performance

The emergency management program focuses its support on Civil Works Strategic Goal 4. The underlying purpose of this goal is to manage the risks associated with all hazard types and to increase the responsiveness to disasters under this program in support of Federal, state, and local emergency management efforts. Disaster preparedness and response capabilities are not limited to water-related disasters; it also encompasses a broad range of natural disasters and national emergencies which draw on the engineering skills and management capabilities of the organization. Readiness to respond to disasters and emergency incidents is critical to national security.

Performance Measures

The measures below include CIPR. CIPR was a recently added program to Emergency Management, and evolved from the initial Critical Infrastructure Security Program (CISP) established in 2004. CISP primary focused on the implementation of the Baseline Security Posture at USACE projects. The Baseline Security Posture (BSP), as defined by USACE's Office of Homeland Security, established the initial steps for physical security upgrades for those critical projects initially identified through the Risk Assessment Methodology for Dams (RAM-D) assessment evaluations, and was completed in April 2008.

- ❖ **Planning Response Team Status:** USACE has established designated Planning & Response Teams (PRT) that is organized to provide rapid emergency response for a specific mission area. Percent of time that Planning Response Teams for a given mission area are in "Green" readiness state (trained, fully staffed, ready to deploy).
- ❖ **Planning Response Team Performance:** Percent of time that the performance of the deployed PRT is rated at or above Highly Successful in support of FEMA under the National Response Plan
- ❖ **Flood Response Team Status:** Percent of time that PL 84-99(Flood) Response Teams are in the "Green" readiness state (trained, fully staffed, ready to deploy) at the beginning of flood/hurricane season.
- ❖ **Deployable Tactical Operation Status:** Percent of time that the National Deployable Tactical Operations System equipment and teams are in "Green" readiness status (trained, fully staffed, ready to deploy)
- ❖ **Inspections Performed:** USACE performs repairs of flood control projects damaged by flood or storm under authority of P.L. 84-99. Percent of annual, scheduled inspections performed for all non-Federal Flood Control Works in the Rehabilitation and Inspection Program (RIP), as required by ER 500-1-1. This measure is determined by the percentage of projects damaged during a fiscal year that are repaired prior to the next flood season.

- ❖ **Inspected Project Status:** Under USACE RIP, inspected projects are given condition ratings that characterize the project maintenance condition. Cumulative percent of Federal and non-Federal projects in the RIP with satisfactory ratings (minimally acceptable or higher rating).
- ❖ **Infrastructure Repairs:** Percent of time solutions are developed and implemented (either repaired to pre-flood conditions or possible non-structural alternative) prior to the next flood season. The five year plan only covers preparedness activities therefore accomplishment of this function is completely dependent on supplemental appropriations.
- ❖ **Effective execution of the National Training Program (USACE-wide) readiness life cycle.** Funding only covers minimum baseline training, new requirements would be impacted.
- ❖ **CIPR Consequence-based Portfolio Screening:** Implement portfolio-wide consequence-based prioritization to identify critical facilities using the Dams Sector Consequence-Based Topp Screen (CTS) methodology.
- ❖ **Regional All-Hazards Exercises:** Implement multi-jurisdictional efforts aimed at enhancing resilience and preparedness within a region.

The Emergency Management program is funded mostly from the Flood Control and Coastal Emergency (FCCE) account. Unlike other Civil Works accounts for which funding requirements are programmed based on scheduled work, the FCCE account can only project funding requirements for preparedness activities. The frequency and magnitude of emergency events determines the resources needed for actual emergency response in any given fiscal year, as does the obligation rate of FCCE funds. There has not been a regular appropriation for the Flood Control and Coastal Emergency Account since the 2003 appropriation of \$14.9 million. Performance measures for this program were established in FY04. Table 1 below shows program funding and performance measures for FY 05 through FY 10.

Table 1: Funding and Performance History

<i>Fiscal Year</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010 Target</i>
Flood Control and Coastal Emergency (FCCE) Regular Appropriation (\$ Millions)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Flood Control and Coastal Emergency Supplemental Appropriation (\$ Millions)	\$348	\$5,408	\$1,561	\$3,608	\$754	\$20
Operation and Maintenance Regular Appropriation (\$ Millions)	\$5	\$5	\$5	\$4.70	\$5.458	\$6.652
Operation and Maintenance Supplemental Appropriation (\$ Millions)	\$ -	\$ -	\$ -	-	-	-
Total Appropriations (\$ Millions)	\$353	\$5,413	\$1,566	\$3,613	\$759	\$26
Planning Response Team Status (% of time in "Green" readiness state for a given mission)	82%	92%	72%	92%	83%	87%
Planning Response Team Performance (% of time team is rated highly successful)	86%	95%	100%	90%	95%	100%
Flood Response Team Status (% of time in "Green" readiness state for a given mission)	92%	92%	75%	90%	75%	82%
Deployable Tactical Operations Status (% of time in "Green" readiness state)	NA	92%	93%	92%	90%	90%
Inspections Performed (% of scheduled inspections performed)	96%	93%	97%	94%	67%	77%
Inspected Project Status (% of inspections with satisfactory rating)	94%	95%	90%	92%	79%	67%
Infrastructure Repair (% of time solutions are implemented prior to the next flood season)	92%	65%	29%	90%	14%	61%
Effective execution of the National Training Program (USACE-wide) readiness life cycle	94%	74%	83%	90%	90%	90%

Project Spotlight: Hurricane Storm Damage Risk Reduction System

<p>Location: Greater New Orleans Metropolitan Area</p> <p>District: New Orleans District</p>
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Under USACE Public Law (PL) 84-99 authority, a task force was established in the aftermath of Hurricane Katrina, September 2005. This was to repair the Greater New Orleans Federal hurricane and flood protection system from Hurricane Katrina damages to pre-storm conditions by 1 June 2006. The repair and restoration of 220 miles of floodwalls and levees has been completed to date. The repaired system included: 2.3 miles of new floodwalls, 22.7 miles of new levees, 195.5 miles of scour repair, 3 interim gated closure structures, and 4 closure structure repairs. Originally, USACE had identified 169 miles of levees and floodwalls to be repaired and restored. By the time the repairs and new construction was finished, 220 miles of levees and floodwalls had been repaired or restored. In addition, floodwall deficiencies were corrected and un-constructed portions of authorized projects were accelerated. USACE is currently undertaking work to provide the authorized level of protection for existing project facilities, and then to improve the system to provide 100-year storm protection.

Base Plan and Performance

The funding level is \$43 million in FY11 and includes Base Plan funding FCCE preparedness (\$30 million), NEPP programs (\$7 million), and the CIPR (\$6 million). Consequently, this amount represents baseline readiness, and \$0 for response and recovery costs activities such as emergency operations during flood and hurricane seasons; repairs to flood damage reduction and hurricane shore protection projects damaged by floods or storms; drought assistance; and advance measures activities. Funding for response and recovery activities relies on supplemental appropriations. USACE has broad authority to transfer funds from other accounts to address emergency response situations, but response and recovery funding needs that exceed this reprogramming authority must rely on supplemental appropriations, which may also be used to repay funds transferred from other activities. Constrained funding is projected to result in a slight downward trend in program performance for actions related to preparedness activities. Other impacted preparedness activities include: additional training and exercises for the planning and response teams and for Public Law (PL) 84-99 training.

Table 2: Emergency Management Base Plan Funding by Account

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Flood Control and Coastal Emergency (FCCE) Regular Appropriation (\$ Millions)	\$ 30	\$ 29	\$ 28	\$ 28	\$ 29
Operation and Maintenance Regular Appropriation (\$ Millions)	\$ 13	\$ 12	\$ 12	\$ 13	\$ 13
Total (\$ Thousands)	\$ 43	\$ 41	\$ 40	\$ 41	\$ 42
Note: Supplemental Appropriation is not included as it is funded during certain events.					

Base Plan Highlights

- Coordination and planning with key local, State and Federal stakeholders/partners under USACE statutory authorities and in support of the Federal Emergency Management Agency (FEMA), Department of Homeland Security.
- Develop/update disaster response plans.
- Purchase and stockpiling of critical supplies and equipment and support facilities for Emergency Operations Centers. Readiness funding would pay personnel costs for Emergency Management personnel assigned to centers, and manage Crisis Management Teams, Crisis Action Teams, Planning and Response Teams, Special Cadres, and Levee Inspection Teams.
- Maintain Deployable Tactical Operating System (DTOS) units.
- Continuity of Operations Plan (COOP), Continuity of Government (COG) and critical Catastrophic Response Planning Initiatives.
- Critical Infrastructure Protection and Resilience (CIPR) Program:
 - Continue portfolio screening implementation using a Consequence-Based Top Screening (CTS) methodology to identify and prioritize high-consequence (critical) facilities.
 - Continue development of Consequence Assessment Studies at USACE Civil Works projects in support of screening efforts.
 - Conduct FY2011 pilot of Common Risk Model for Dams (CRM-D) methodology at a representative number of USACE critical facilities identified and prioritized as a result of the CTS screening process.
 - Complete DSES-10 regional resilience efforts (DSES-10 Regional Resilience Strategy).

Table 3: Emergency Management Base Funding and Performance Measures

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Total Appropriations (\$ Millions)	\$ 43	\$ 41	\$ 40	\$ 41	\$ 42
Planning Response Team Status (% of time in “Green” readiness state for a given mission)	63%	41%	30%	30%	30%
Planning Response Team Performance (% of time team is rated highly successful)	63%	41%	30%	30%	30%
Flood Response Team Status (% of time in “Green” readiness state for a given mission)	77%	65%	55%	45%	35%
Deployable Tactical Operations Status (% of time in “Green” readiness state)	80%	41%	30%	30%	30%
Inspections Performed (% of scheduled inspections performed)	40%	0%	35%	35%	35%
Inspected Project Status (% of inspections with satisfactory rating)	60%	0%	35%	35%	35%
Infrastructure Repair (% of time solutions are implemented prior to the next flood season)	35%	35%	35%	35%	35%
Effective execution of the National Training Program (USACE-wide) readiness life cycle	35%	30%	30%	30%	30%

Note: The five year plan only covers preparedness activities therefore the above measures reflect accomplishments from supplemental appropriations. Regular appropriations only covers minimum baseline training; therefore, any, new requirements would be impacted. Performance Measures only apply to FCCE and NEPP. Other performance measures are being developed for the funds allocated to CISP.

Enhanced Funding and Performance

The enhanced budget includes funding the remaining FCCE preparedness program and emergency response, NEPP and CIPR program. Consequently, this amount represents an additional amount for preparedness and response.

The enhanced budget provides funding for training and exercise to meet minimal levels of training for all persons who deploy to respond to floods and in support of FEMA to hurricanes and other natural disasters. It provides funds for emergency response and inspection of non-Federal flood control works.

Table 4: Emergency Management Enhanced Funding by Accounts

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Flood Control and Coastal Emergency (FCCE) Regular Appropriation (\$ Millions)	\$ 50	\$ 51	\$ 53	\$ 55	\$ 56
Operation and Maintenance Regular Appropriation (\$ Millions)	\$ 12	\$ 13	\$ 13	\$ 13	\$ 14
Total (\$ Thousands)	\$ 62	\$ 64	\$ 66	\$ 68	\$ 70
Note: Supplemental Appropriation is not included as it is funded during certain events.					

Enhanced Plan Highlights

- Conduct training, and develop and maintain credential emergency management workforce and emergency management accreditation program.
- Conduct response exercises with key local, State and Federal stakeholders/partners under USACE statutory authorities and in support of the Federal Emergency Management Agency (FEMA), Department of Homeland Security.
- Maintain training for Deployable Tactical Operating System (DTOS).
- Purchase and stockpiling of critical supplies and equipment and support facilities for Emergency Operations Centers. Readiness funding would pay personnel costs for Emergency Management personnel assigned to centers, Crisis Management Teams, Crisis Action Teams, Planning and Response Teams, Special Cadres, and Levee Inspection Teams.
- Inspect non-Federal flood damage reduction facilities to determine eligibility for rehabilitation.
- Limited response includes emergency operations during flood and hurricane seasons and advance measures activities
- Continuity of Operations Plan (COOP), Continuity of Government (COG) and critical Catastrophic Response Planning Initiatives.
- Critical Infrastructure Protection and Resilience (CIPR) Program:
 - Augment the number of USACE critical facilities where FY2011 pilot of Common Risk Model for Dams (CRM-D) methodology will be conducted identified and prioritized as a result of the CTS screening process.

Table 5: Emergency Management Enhanced Funding and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Total Appropriations (\$ Millions)	\$ 62	\$ 64	\$ 66	\$ 68	\$ 70
Planning Response Team Status (% of time in “Green” readiness state for a given mission)	68%	70%	72%	74%	76%
Planning Response Team Performance (% of time team is rated highly successful)	68%	70%	72%	74%	76%
Flood Response Team Status (% of time in “Green” readiness state for a given mission)	68%	70%	72%	74%	76%
Deployable Tactical Operations Status (% of time in “Green” readiness state)	70%	72%	74%	76%	79%
Inspections Performed (% of scheduled inspections performed)	71%	73%	75%	77%	80%
Inspected Project Status (% of inspections with satisfactory rating)	70%	72%	74%	76%	79%
Infrastructure Repair (% of time solutions are implemented prior to the next flood season)	35%	35%	35%	35%	35%
Effective execution of the National Training Program (USACE-wide) readiness life cycle	54%	56%	57%	59%	61%

Note: The five year plan only covers preparedness activities therefore accomplishment of this function is completely dependent on supplemental appropriations. Funding only covers minimum baseline training, new requirements would be impacted. Performance Measures only apply to FCCE and NEPP as other performance measures are being developed for the funds allocated to CISP.

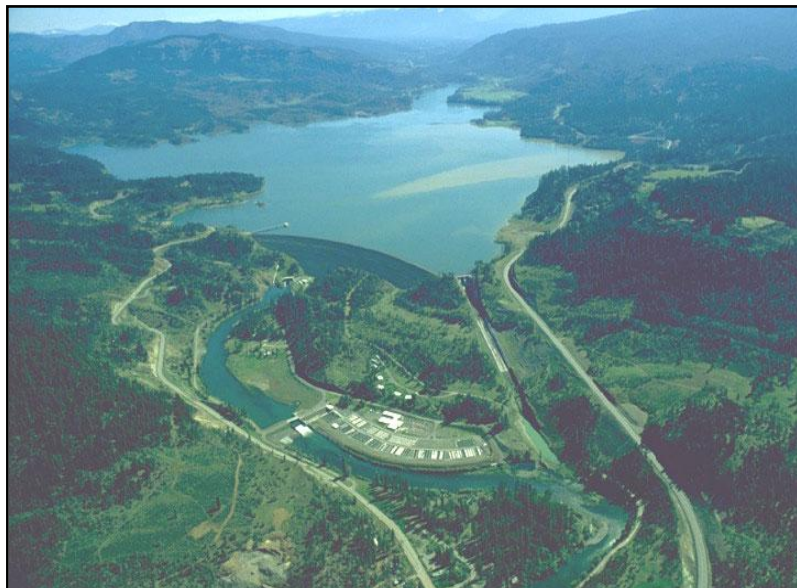
Potential Work with “Wedge Money”

The Emergency Management Program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Water Supply



Water Supply



-Lost Creek in Oregon

Key Statistics

- ❖ 11.1 million acre-feet of storage space
- ❖ Water storage located in 133 multi-purpose reservoirs in 26 states
- ❖ 320 Water Supply Agreements
- ❖ \$1.5 billion in project costs being returned to the U.S. Treasury

Accomplishments

- Provide storage space sufficient to meet about 2% of the nation's total municipal and industrial water supply needs.
- About 94% of total storage allocated to water supply is under repayment agreements.
- Return revenues to the U.S. Treasury through repayment agreements for project construction costs as well as annual operation and maintenance expense. Since becoming a business program in fiscal year 2005, the average amount collected for principal, interest and O&M has been about \$40 million dollars per year. With a budget of about \$4 million per year, the program more than pays for itself.

Future Challenges

- Meeting the increasing competition for available water supplies as a result of rapid population and economic growth, including through reallocation of existing storage.
- Meeting this growing demand will require more efficient use of existing water supplies.
- Primacy over water supply development and management has been and will continue to reside with states and localities.

- Continue to play a significant role in helping non-Federal entities to secure and manage water supplies, including assisting states and other non-Federal interests in the preparation of comprehensive water resources development and drought management plans.
- Establishing and updating water supply agreements with local entities withdrawing water from USACE reservoirs.

History of Funding and Performance

In partnership with non-Federal water management plans and consistent with law and policy, manage USACE reservoirs to provide water supply storage in a cost-efficient and environmentally responsible manner. Performance is measured by (1) acre-feet of storage under contract versus acre-feet available and (2) percent of costs covered by revenues returned to the U.S. Treasury.

Water supply has been reported in appropriations accounts going back to the requirements of Government Performance and Results Acts (GPRA) since the mid-90s. However, the FY05 budget was the first year that the USACE restructured the budget process to focus on the individual business program, including Water Supply, as the initial building blocks for development of the budget.

Table 1: Water Supply Historic Funding and Performance

Fiscal Year	2005	2006	2007	2008	2009	2010	2011
Operation and Maintenance (Rounded in \$ Millions)	1.7	2.2	2.5	3.8	6.0	3.8	4.2
Billings, Collections & Project OM&R	1.0	1.5	2.1	2.3	2.7	2.4	2.7
Studies	0.7	0.7	0.3	0.6	0.5	0.4	0.4
ESA BiOps Program	0	0	0.1	0.6	2.1	0	0
Joint Costs @ Hydro Projects	0	0	0	0	0.4	0.4	0.5
National Portfolio Assessment	0	0	0	0.3	0.3	0.6	0.6
Investigations (\$Millions)	0.4	0.6	0	0	0	0	0
Appropriations (\$Millions)	2.1	2.8	2.5	3.8	6.0	3.8	4.2
Acre-Feet under Contract versus Acre-Feet Available							
Acre-Feet Available (Millions)	9.76	[1]	[1]	[1]	11.1	11.1	[2]
Acre-Feet Under Contract (Millions)	9.36	[1]	[1]	[1]	10.5	10.5	[2]
Percent of Available Storage under Contract	95.9	NA	NA	NA	94.6	94.6	[2]
Principal Costs to be Recovered versus Costs Recovered							
Costs to be Recovered (\$ Millions)	1,459.8	[1]	[1]	[1]	1,420.0	1,453.0	[2]
Costs Recovered (\$ Millions) [3]	1,096.1	[1]	[1]	[1]	901.0	808.0	[2]
Percent Recovered	75.1	[1]	[1]	[1]	63.5	55.6	[2]
Notes:							
[1] Prior to water supply becoming a business line in 2005, data were collected only on a case by case periodic basis. Beginning in 2006 an action was initiated to develop a water supply module in the Operation and Maintenance Business Information Link (OMBIL). This module will permit the required data to be collected on an annual basis through an automated system. During the development of this module water supply data were not collected.							
[2] Database for 2011(which will be current as of 31 December 2010) under development.							
[3] Prior to 2010, costs recovered was a reflection of the value of the storage space under a present use water supply agreement compared to the total water supply storage space available. Due to the development of the OMBIL water supply module, the actual remaining principal is recorded through financial data and as a result a more accurate value is permissible.							

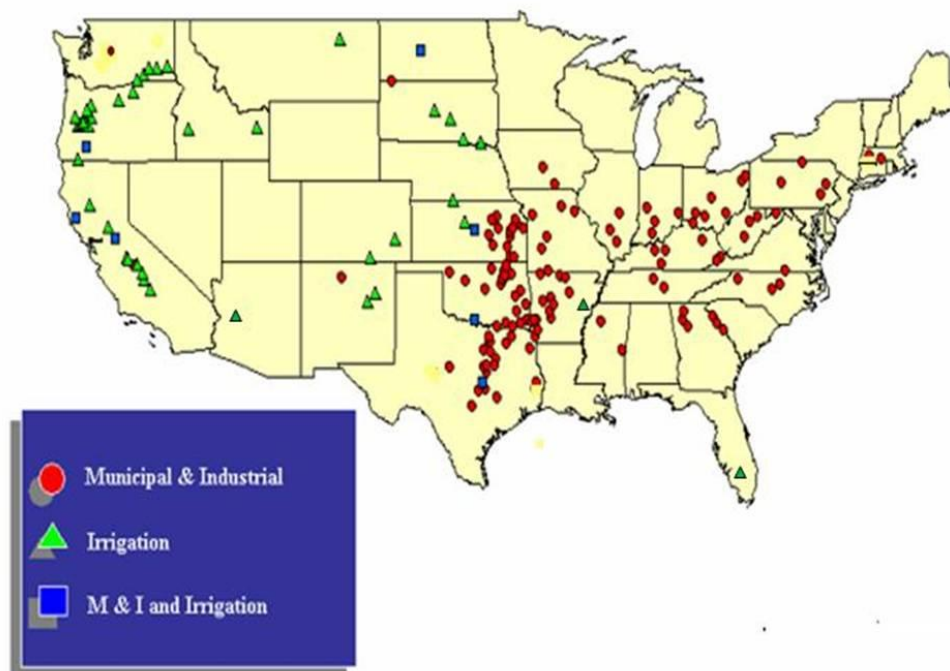


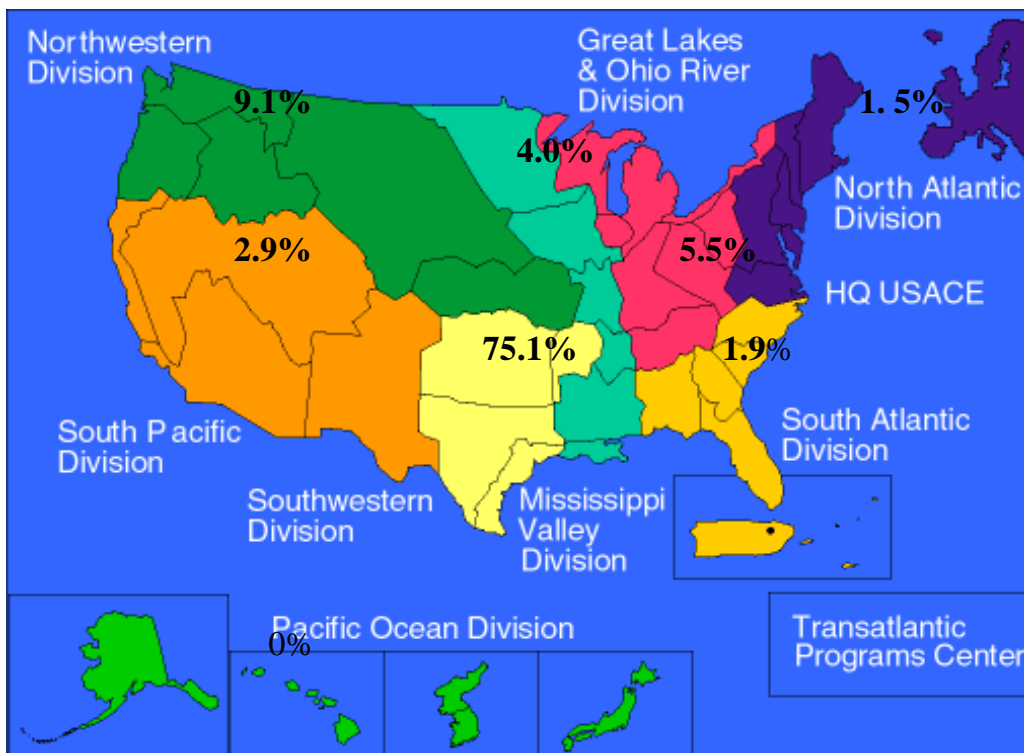
Figure 1: Water Storage for Municipal and Industrial (M&I) Water Supply

This picture displays the location of the 133 reservoir projects that contain storage space for municipal and industrial water supply and the 48 projects that contain irrigation storage. Irrigation at Corps reservoir projects in the western United States are administered by the Bureau of Reclamation.

Project Spotlight: A “Typical Project”

Out of the USACEs’ 136 reservoir projects, which include Municipal & Industrial (M&I) Water Supply, there is not a “typical” project, but rather “examples” of projects. Such examples include projects where water supply was originally authorized and where storage has been reallocated from a previously authorized purpose to water supply. There are projects where we have one water supply agreement for the total storage space and there is one project where we have signed 34 agreements. We have signed M&I water supply agreements with states, Federal/Interstate commissions, river basin commissions, counties, cities, industries, private interests and individuals. Our agreements range in size from over 1.4 million acre-feet down to 1 acre-foot.

Distribution by % of Authorized M&I Storage Space by MSC



6

Figure 2: M&I Storage Space, Major Subordinate Command (MSC) Distribution by Percent

This picture shows by percent the distribution of the storage space in Corps reservoir projects set aside for municipal and industrial water supply. As shown, the vast majority, about 75 percent is located in our southwestern division covering the states of Texas, Oklahoma and parts of Kansas, Missouri and Arkansas.

Base Funding and Performance

The Base Plan program for O&M includes funding sufficient to meet minimum legal responsibilities for the operation and maintenance of the project facilities needed specifically for water supply as well as the development and renegotiation of water supply agreements and the billing and collection of payments and repayments. The FY11 program for O&M also includes the costs of two ongoing studies (the Alabama-Coosa-Tallapoosa / Apalachicola-Chattahoochee-Flint study and the Texas Water Allocation Assessment). The program also includes the joint costs allocated to water supply in the O&M budget as well as funding for the National Water Supply Portfolio Assessment. In FY 2010, the Portfolio Assessment program was increased to include an increment to fund the Sustainable Rivers project.

Water supply performance targets, percent of acre-feet under contract versus acre-feet available and percent of costs recovered versus costs to be recovered are impacted primarily by the negotiation, collections and billings portion of the O&M budget. This value is the same for the budget and enacted plans. While studies, surveys and investigations for water have the potential to increase the absolute number of acre-feet available for contracting and the potential revenues to be returned to the Treasury, this action can only take place through the normal planning process. This process consists of two steps: (1) a preliminary assessment funded through the O&M budget at Federal expense and (2) a feasibility study funded through the Investigation budget with costs shared 50/50 between the Federal Government and the local sponsor. If favorable, this investigation results in a water supply agreement between the parties with the local sponsor responsible for the assigned cost of storage and the annual OMRR&R expenses. The Federal billing and collection of these expenses are assigned to the O&M budget.

The performance targets for the two water supply performance measures are shown in Table 2 below.

Table 2: Water Supply Base Funding by Account
(\$ Millions)

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Investigations	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -
Mississippi River and Tributaries (MRT) Project	\$ -	\$ -	\$ -	\$ -	\$ -
Operation and Maintenance (O&M)	\$ 4	\$ 4	\$ 5	\$ 5	\$ 5
MRT O&M	\$ -	\$ -	\$ -	\$ -	\$ -
Total (Round in \$ Millions)	\$ 4	\$ 4	\$ 5	\$ 5	\$ 5

Initiatives for Base Plan

The Portfolio Assessment for Water Supply was a new initiative included under Remaining Items in the FY08 Budget. This initiative developed a set of criteria to guide project or basin specific water reallocation studies. A portfolio of these studies was developed that showed the best studies on a national basis to justify further review. The assessment program also developed alternate funding arrangements that rely on program beneficiaries to provide the funding for any follow-up studies. The recommended plan required legislation to implement. Data collected during the survey for the National Portfolio Assessment and data developed during a combined survey on sedimentation and water management is currently being further developed and analyzed to develop procedures for the Corps to better manage our project with M&I water supply. The Portfolio Assessment initiative was expanded in 2010 to include an increment on the Sustainable Rivers project. This project supports the definition of environmental flow needs through model application and defines needed operational changes through monitoring at selected Sustainable Rivers project pilot sites.

Table 3: Water Supply Base Funding and Performance

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Appropriation (Rounded in \$ Millions)	\$ 4	\$ 4	\$ 5	\$ 5	\$ 5
Acre-Feet under Contract versus Acre-Feet Available (% of Available Storage under Contract)	94.6%	95.0%	95.5%	96.0%	96.5%
Costs to be Recovered versus Costs Recovered (% Recovered)	55.6%	60%	65%	70%	75%

Enhanced Funding and Performance

While municipal and industrial water supply is primarily a state and local responsibility, and it is not a major mission of USACE, an enhanced funding plan for this business program is included as it would return additional revenues to the U.S. Treasury. Under this program well-justified O&M studies and investigations for water supply could be undertaken. In out years it is anticipated additional studies could be initiated as follow-on to the nationwide portfolio assessment. Records indicate that water supply is a well justified business program with at least \$10 returned to the U.S. Treasury for every \$1dollar expended. The Enhanced Funding and Performance Table for water supply follows:

**Table 4: Enhanced Funding and Performance
(\$ Millions)**

<i>Fiscal Year</i>	2011	2012	2013	2014	2015
Investigations	\$	\$	\$	\$	\$
Construction	\$ -	\$ -	\$ -	\$ -	\$ -
Mississippi River and Tributaries (MRT) Project	\$ -	\$ -	\$ -	\$ -	\$ -
Operation and Maintenance (O&M)	\$ 7	\$ 7	\$ 7	\$ 8	\$ 8
MRT O&M	\$ -	\$ -	\$ -	\$ -	\$ -
Total (Round in \$ Millions)	\$ 7	\$ 7	\$ 7	\$ 8	\$ 8

Initiatives for Enhanced Plan

If “wedge” money for new starts was received for this business program, additional projects could be considered. While specific funding decisions would be made at that time, several examples of projects that could be considered are:

- Funding of the Middle Brazos, TX Water Supply Initiative
- Big Sandy River Watershed Re-evaluation, OH
- Willamette River Basin Review, OR
- Green River Water Supply Reallocation study, KY
- Rough River Water Supply Reallocation study, KY

For water supply the performance measures are based on storage space placed under contract and revenues collected. The water supply budget, regardless of the funding level always includes the minimum required to bill and collect revenues. While the absolute numbers of storage placed under contract and revenues to be collected may increase, the percent is what is measured. Future initiatives will impact targets much later on and the base/enhanced have the same existing projects.

Potential Work with “Wedge Money”

The Water Supply Program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Executive Direction and Management



Executive Direction and Management



Key Statistics

- ❖ Provides for executive direction and management (ED&M) of the Civil Works Program, under the Director of Civil Works.
- ❖ ED&M is accomplished through 5 functions: command and control, policy and guidance, program development, national coordination, and quality assurance
- ❖ Authorized strength under USACE 2012 is 76 uniformed Army personnel and 997 civilian full-time equivalents (FTEs).

Accomplishments

- **Command and Control,** Led development, defense, and execution of an \$11.6 billion Civil Works Program for FY10.
- **Policy and Guidance**
 - Produced documents detailing Civil Works' management activities, FY12 Program Development Engineering Circular (EC), FY10 Program Execution EC, and Engineering Manuals (EMs).
- **Program Management**
 - Developed FY11 President's Program of \$4.6 billion.
 - Justified and defended, before Congress, the FY11 President's Budget.
 - Managed execution of the FY10 Civil Works Program through monthly Project Review Board (PRB) reviews, quarterly Directorate Management Reviews (DMRs), and Command Management Reviews (CMRs).
 - Lean Six Sigma: Business transformation and process reevaluation.
- **National Coordination.**
 - Tracked and maintained database of more than 80 recurring national events including the Native American (Tribal Nation) Program; Inland Waterways Users Board; National Waterways Conference Budget/Legislative Summit.
- **Quality Assurance:** Executing Asset Management (AM) Program and the Quality Management Plan scope of Work (SOW).

Future Challenges

- Evaluate and establish future performance measures that demonstrate program values to the nation through planned efficiency, outputs and outcome performances, rather than the current justification based on asserted resource needs.
- Improve Quality Assurance (QA) Assessments. Division offices perform one QA assessment per quarter and they have become more “virtual” and less “boots on the ground”, as operational funds have diminished.
- Strengthen Community of Practice (COP). The purpose is to develop a capable workforce for today and for the future. The workforce will be comprised of well motivated, functional Program Development Teams. The goal is to share workloads regionally ensuring expertise at all levels. Insufficient ED&M funding has caused a lack of division manpower and funding for travel, making it impossible to efficiently and adequately develop and staff necessary CoPs.

History of Funding and Performance

The overall Strategic Plan is considered in all functions. The Program Account funds activities essential to supporting the Civil Works Program mission, including several USACE Strategic Plan Goals:

Strategic Goal 1: This is supported through DoD strategies and guidance for security cooperation by assisting in the development of civil/military emergency management competence, disaster preparedness, and consequence management.

Strategic Goal 2: This is supported through implementing the President’s Management Agenda for managing and operating assets. External contract support will assist in the execution of a national risk management framework, program management support, data integration support and other logistical services.

Strategic Goal 5: USACE will ensure its ability to accomplish civil works missions, and to provide expert scientific and engineering technical assistance to the Army, Department of Defense, other Federal agencies, and internationally. A solid technical foundation in core competencies while promoting organizational effectiveness, and fiduciary integrity will be maintained. The Program Account improved technical guidance, criteria documents, design, and construction standards. Additionally, the E-Government initiative supports Budget Formulation and Execution; USACEs’ share of the Federal Line of Business Initiatives and Recreation-One Stop.

Funding for the Expenses Program has not kept pace with inflation rates or program growth. Since 1995, Civil Works business programs grew, but the Expenses budget authority has remained flat in nominal terms. Over this time frame, USACE has reduced the number of Divisions from 11 to 8. FY08 funding supported approximately 60 military personnel and 876 Full Time Equivalents (FTE).

Table 1: ED&M Funding and Performance History

<i>Fiscal Year</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Appropriation (\$ Millions)	\$154	\$159	\$166	\$154	\$167	\$177	179	185

Base Funding and Performance

The Five-Year base program provides funding levels which will continue to force the Executive Direction and Management (ED&M) program to undertake its activities with constrained resources, even though the budget has increased in nominal terms in recent years. At this funding level, the ED&M staffing could decline from 895 full-time FTEs in FY09 to approximately 799 FTE over five years. This increases individual workload particularly to our program and project management, national and regional coordination, and quality assurance functions.

Work plans in FY11 and out-years will be developed in accordance with the following priorities:

- Improving of program justification statements and program documentation;
- Improving budgeting and financial performance;
- Increasing training to retain, maintain and improve technical competence;
- Becoming a more efficient and effective organization through technology (E-government);
- Strengthening dam safety and levee safety and risk management;
- Strengthening business program management for the navigation, environmental restoration and hydropower programs.

Table 2: ED&M Five-Year Base Funding Plan

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 185	\$ 185	\$ 171	\$ 175	\$ 179

Base Plan Initiatives

- Review positions to determine need and priority.
- Consider need for new labor capability.
- Determine which existing labor capability can be “traded out” for needed additional and/or new labor capability.

Enhanced Funding and Performance

The added funding would be used to improve the performance of management functions and to increase the level of effort on management initiatives. The enhanced level of funding provides investment opportunities that will allow USACE to better align with the USACE 2012 concept, which creates more integrated teams. The five-year enhanced funding for this program would enable the program to improve the performance of management functions and to increase the level of effort on management initiatives.

Table 3: ED&M Five-Year Enhanced Funding Plan

<i>Fiscal Year</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	<i>2015</i>
Appropriation (\$ Millions)	\$ 195	\$ 200	\$ 206	\$ 213	\$ 220

Enhanced Plan Initiatives

- Filling several key positions with responsibilities extending across most of the ED&M organizations.
- Reducing the backlog and processing time for water project review of Project Cooperation Agreements.
- Improving planning capabilities through the development and update of planning guidance and training.
- Expanding stakeholder coordination at the regional and national levels.
- Increasing training to retain, maintain and improve technical competence.
- Managing business process transformation.






Potential Work with “Wedge Money”

This program is not included in the assumptions for potential wedge funding in this Five Year Development Plan.

Appendix

Appendix A: FY11 Relative Risk Ranking Matrix

Relative Risk Ranking Matrix						
Condition		Condition Classification				
		F	D	C	B	A
Consequence		(Failed)	(Inadequate)	(Probably Inadequate)	(Probably Adequate)	(Adequate)
Consequence Category	I	1	2	4	7	18
	II	3	5	8	11	20
	III	6	9	12	14	22
	IV	10	13	15	16	24
	V	17	19	21	23	25

	High Consequence, Low Reliability (Failed)
	Med-High Consequence, Low-Med Reliability (Inadequate)
	Medium Consequence, Medium Reliability (Probably Inadequate)
	Low Consequence, Med-High Reliability (Probably Adequate)
	Minimal Consequences, High Reliability (Adequate)

Performance Reliability Assessment Standards	
Condition Classification	Definitions
A Adequate	<p>There is a high level of confidence that the feature will perform well under the designed operating conditions. This confidence level is supported by data, studies or observed project characteristics which are judged to meet current engineering or industry standards.</p> <p>There is a limited probability that the verified degraded conditions will cause an inefficient operation, or degradation or loss of service.</p>
B Probably Adequate	<p>There is a low level of confidence that the feature will perform well under designed operating conditions, and may not specifically meet engineering or industry standards. The feature may require additional investigation or studies to confirm adequacy.</p> <p>There is a low probability that the verified degraded conditions will result in inefficient operation, or degradation or loss of service.</p>
C Probably Inadequate	<p>There is a low level of confidence that the feature will not perform well under designed operating conditions, and may not specifically meet engineering or industry standards. The feature may require additional investigation or studies to confirm adequacy. The feature does not meet current engineering or industry standards.</p> <p>There is a moderate probability that the verified degraded conditions will result in inefficient operation, or degradation or loss of service</p>
D Inadequate	<p>There is a high level of confidence that the feature will not perform well under designed operating conditions. Physical signs of distress and deterioration are present. Analysis indicates that factors of safety are near limit state. The feature deficiencies are serious enough that the feature no longer performs at a satisfactory level of performance or service.</p> <p>There is a high probability that the verified degraded conditions will result in inefficient operation, or degradation or loss of service.</p>
F Failed	<p>The feature has FAILED</p> <p>Historically the feature regularly experiences scheduled or unscheduled closures or loss of service for repairs.</p>

Category	CONSEQUENCES
I	PAR → >100,000, TPAR → >1,000 National to Multi-Region/Basin disruption of essential facilities and access. Economic Impact-Massive Losses (>\$1B). Impact-National Massive environmental mitigation cost.
II	PAR → 50,000 to 100,000, TPAR → 500 to 1,000 Multi-Regional/Basin disruption of essential facilities and access. Economic Impact-Multi-regional losses. (\$500M to \$1B) major public and private facilities. Very large environmental mitigation cost.
III	PAR → 25,000 to 50,000, TPAR → 250 to 500 Regional disruption of essential facilities and services Economic Impact-Regional losses, (\$250M to \$500M). Large environmental mitigation cost.
IV	PAR → 10,000 to 25,000, TPAR → 125 to 250 Local to Regional disruption of essential facilities and access. Economic Impact-local to regional (>\$125M to \$250M). Medium Environmental mitigation cost.
V	PAR → <10,000, TPAR → <125 Local disruption of essential facilities and access. Economic Impact-local to regional (<\$125M). Minimal to no Environmental mitigation cost.

Appendix Tables

The tables in this section are as follows:

- ❖ I-1 Five-year funding schedules under the Base Plan Scenario for the studies, preconstruction engineering and designs (PEDs), and Remaining Items funded from the Investigations account in the FY11 budget. No new studies or new PED phases are displayed after FY11. The amounts displayed after FY11 for the studies and PEDs represent “capability” level funding, that is, the maximum that USACE could efficiently use for the studies and PEDs. Remaining Items are allocated among business programs. Remaining funding is displayed in a consolidated line item for “Additional Study and PED Activities (including Remaining Items)” that initiates in FY12, when such funding would first become available. This line item represents the additional funding available in each fiscal year after FY11 for new studies, new PED phases, and increased effort on Remaining Items.
- ❖ I-2 Five-year funding schedules under the Enhanced Plan Scenario for the studies, PEDs, and Remaining Items funded from the Investigations account in the FY11 budget. The schedules differ from those in the Base Plan in that the individual studies and PEDs are funded at the capability level in FY11 as well as the out-years, and the line item for “Additional Study and PED Activities (including Remaining Items)” begins in FY11 and is higher in the out-years due to the overall funding level.
- ❖ C-1 Five-year funding schedules under the Base Plan Scenario for the projects, Continuing Authority Programs (CAPs), and Remaining Items funded from the Construction account in the FY11 budget. FY11 budget policy, including the construction funding guidelines, is assumed for all fiscal years. No new projects or resumptions are displayed. The amounts displayed after FY11 represent capability level funding. The CAPs and the Remaining Items are allocated among business program. Remaining funding is displayed in a consolidated line item for “Additional Projects and Programs (including CAPs and Remaining Items).” This line item represents the additional funding available in each fiscal year after FY11 for the initiation, continuation, or resumption of additional projects and programs, and for increased effort on CAPs and Remaining Items.
- ❖ C-2 Five-year funding schedules under the Enhanced Plan Scenario for the projects, CAPs, and Remaining Items funded from the Construction account in the FY11 budget.
- ❖ M-1 Five-year funding schedules under the Base Plan Scenario for the investigations and construction projects funded from the Mississippi River and Tributaries (MR&T) account in the FY11 budget. This table follows the procedures outlined above for Tables I-1 and C-1. However, there is no line item for additional construction projects because the projects in the FY11 budget could use all of the construction funds available for the account.
- ❖ M-2 Five-year funding schedules under the Enhanced Plan Scenario for the investigations and construction projects funded from the MR&T account in the FY11 budget. This table follows the procedures outlined above for Tables I-2 and C-2. However, there is no line item for

additional construction projects because the projects in the FY11 budget could use all of the construction funds available for the account.

**Table I-1: Investigation Account, Base Plan Scenario
(\$ Thousands)**

DIV	PROJECT NAME	State	2011	2012	2013	2014	2015
POD	MATANUSKA RIVER WATERSHED, AK	AK	100	100	200	900	-
POD	YAKUTAT HARBOR, AK	AK	450	100	450	300	-
SPD	CALIFORNIA COASTAL SEDIMENT MASTER PLAN, CA	CA	900	900	-	-	-
SPD	COYOTE & BERRYESSA CREEKS, CA	CA	500	800	640	-	-
SPD	MALIBU CREEK WATERSHED, CA	CA	210	210	188	187	-
SPD	SAC-SAN JOAQUIN DELTA ISLANDS AND LEVEES, CA	CA	468	468	468	8,322	9,062
SPD	SOLANA BEACH, CA	CA	307	307	826	-	-
SPD	SUTTER COUNTY, CA	CA	339	339	5,000	4,250	3,750
SPD	UPPER PENITENCIA CREEK, CA	CA	177	177	3,500	3,000	3,000
SAD	LAKE WORTH INLET, PALM BEACH COUNTY, FL	FL	340	293	-	-	-
SAD	AUGUSTA, GA	GA	578	600	500	500	-
SAD	SAVANNAH HARBOR EXPANSION, GA	GA	600	600	600	4,000	-
SAD	TYBEE ISLAND, GA	GA	200	300	200	117	200
POD	ALA WAI CANAL, OAHU, HI	HI	408	550	800	800	800
LRD	DES PLAINES RIVER, IL (PHASE II)	IL	500	500	500	-	-
MVD	ILLINOIS RIVER BASIN RESTORATION , IL	IL	400	400	2,100	421	600
LRD	INTERBASIN CONTROL OF GREAT LAKES- MISSISSIPPI RIVER AQUATIC NUISANCE SPECIES, IL, IN, OH & WI	IL	400	400	3,780	5,000	1,000
LRD	INDIANA HARBOR, IN	IN	300	1,000	-	-	-
NWD	TOPEKA, KS	KS	100	569	273	273	-
MVD	BAYOU SORREL LOCK, LA	LA	2,000	2,000	-	-	-
MVD	CALCASIEU LOCK, LA	LA	1,000	1,000	-	-	-
MVD	LOUISIANA COASTAL AREA ECOSYSTEM RESTORATION, LA	LA	16,595	12,120	-	-	-
NAD	PILGRIM LAKE, TRURO & PROVINCETOWN, MA	MA	100	113	-	-	-
NAD	ANACOSTIA RIVER & TRIBUTARIES COMPREHENSIVE PLAN, MD	MD	183	-	-	-	-
NAD	EASTERN SHORE, MID CHESAPEAKE BAY ISLAND, MD	MD	483	169	1,000	2,758	-
LRD	GREAT LAKES NAV SYST STUDY, MI, IL, IN, MN, NY, OH, PA & WI	MI	400	400	250	-	-
MVD	MINNESOTA RIVER WATERSHED STUDY, MN & SD (MINNESOTA RIVER AUTHORITY)	MN	350	350	350	350	1,207
NWD	KANSAS CITIES, MO & KS	MO	500	-	-	-	-

**Table I-1: Investigation Account, Base Plan Scenario Continued
(\$ Thousands)**

NWD	MISSOURI RIVER DEGRADATION, MO	MO	600	600	500	500	644
NWD	YELLOWSTONE RIVER CORRIDOR, MT	MT	200	500	-	-	-
SAD	CURRITUCK SOUND, NC	NC	300	300	250	300	200
SAD	NC INTERNATIONAL PORT, NC	NC	104	104	104	104	1,692
SAD	NEUSE RIVER BASIN, NC	NC	200	200	450	250	250
SAD	SURF CITY AND NORTH TOPSAIL BEACH, NC	NC	300	795	-	-	-
MVD	FARGO-MOORHEAD METRO, ND	ND	15,150	15,150	9,750		
MVD	RED RIVER OF THE NORTH BASIN, ND, MN, SD & MANITOBA, CANADA	ND	433	433	433	234	-
NAD	MERRIMACK RIVER WATERSHED STUDY, NH & MA	NH	200	200	400	306	100
NAD	DELAWARE RIVER COMPREHENSIVE, NJ	NJ	290	290	290	290	241
NAD	HUDSON - RARITAN ESTUARY, HACKENSACK MEADOWLANDS, NJ	NJ	200	100	500	-	-
NAD	HUDSON - RARITAN ESTUARY, LOWER PASSAIC RIVER, NJ	NJ	200	200	500	500	800
SPD	RIO GRANDE BASIN, NM, CO & TX	NM	500	300	500	157	-
NAD	HUDSON - RARITAN ESTUARY, NY & NJ	NY	200	223	1,000	531	177
NAD	JAMAICA BAY, MARINE PARK AND PLUMB BEACH, NY	NY	170	170	500	-	-
NAD	LAKE MONTAUK HARBOR, NY	NY	172	250	700	-	-
NAD	WESTCHESTER COUNTY STREAMS, NY	NY	200	250	350	350	350
NWD	LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION, OR & WA	OR	300	750	639	500	1,000
NWD	WILLAMETTE RIVER ENVIRONMENTAL DREDGING, OR	OR	220	750	500	500	-
NWD	WILLAMETTE RIVER FLOODPLAIN RESTORATION, OR	OR	153	413	700	500	500
NAD	SCHUYLKILL RIVER BASIN, WISSAHICKON CREEK BASIN, PA	PA	214	200	73	-	-
LRD	UPPER OHIO NAVIGATION STUDY, PA	PA	749	749	749	749	10,000
SAD	EDISTO ISLAND, SC	SC	114	100	75	-	-
LRD	MILL CREEK WATERSHED, DAVIDSON COUNTY, TN	TN	50	50	50	50	50
SWD	BRAZOS ISLAND HARBOR, BROWNSVILLE CHANNEL, TX	TX	726	726	726	835	840

**Table I-1: Investigation Account, Base Plan Scenario Continued
(\$ Thousands)**

SWD	DALLAS FLOODWAY, UPPER TRINITY RIVER BASIN, TX	TX	700	700	2,977	6,880	7,201
SWD	GIWW, HIGH ISLAND TO BRAZOS RIVER REALIGNMENTS, TX	TX	200	200	756	700	1,200
SWD	GUADALUPE AND SAN ANTONIO RIVER BASINS, TX	TX	600	600	2,300	2,135	2,397
SWD	LOWER COLORADO RIVER BASIN, TX	TX	425	425	966	828	1,125
SWD	NUECES RIVER AND TRIBUTARIES, TX	TX	250	250	250	1,077	1,077
SWD	SABINE PASS TO GALVESTON BAY, TX	TX	200	200	500	180	831
SAD	JOHN H KERR DAM AND RESERVOIR, VA & NC (SECTION 216)	VA	300	300	435	300	365
NAD	LYNNHAVEN RIVER BASIN, VA	VA	50	300	-	-	-
NAD	UPPER RAPPAHANNOCK RIVER BASIN COMPREHENSIVE, VA	VA	200	200	100	100	200
NWD	MOUNT SAINT HELENS, WA	WA	225	225	225	925	-
NWD	PUGET SOUND NEARSHORE MARINE HABITAT RESTORATION, WA	WA	400	400	400	400	2,100
	Total - INVESTIGATIONS (Listed under States)		54,383	52,368	50,273	51,359	52,959
	Remaining items		49,617	47,632	45,727	46,642	48,041
	Additional Studies and PEDS (including Remaining Items)		0	0	0	0	0
	Total Investigations Appropriations		104,000	100,000	96,000	98,000	101,000

**Table I-2: Investigation Account, Enhanced Plan Scenario
(\$ Thousands)**

DIV	PROJECT NAME	State	2011	2012	2013	2014	2015
POD	MATANUSKA RIVER WATERSHED, AK	AK	100	1,000	200	-	-
POD	YAKUTAT HARBOR, AK	AK	450	100	450	300	-
SPD	CALIFORNIA COASTAL SEDIMENT MASTER PLAN, CA	CA	900	900	-	-	-
SPD	COYOTE & BERRYESSA CREEKS, CA	CA	500	800	640	-	-
SPD	MALIBU CREEK WATERSHED, CA	CA	210	210	188	187	-
SPD	SAC-SAN JOAQUIN DELTA ISLANDS AND LEVEES, CA	CA	468	2,624	10,000	5,000	-
SPD	SOLANA BEACH, CA	CA	307	1,133	-	-	-
SPD	SUTTER COUNTY, CA	CA	339	339	5,000	4,250	3,750
SPD	UPPER PENITENCIA CREEK, CA	CA	177	577	3,000	3,000	3,000
SAD	LAKE WORTH INLET, PALM BEACH COUNTY, FL	FL	340	293	-	-	-
SAD	AUGUSTA, GA	GA	578	600	500	500	-
SAD	SAVANNAH HARBOR EXPANSION, GA	GA	600	5,200	-	-	-
SAD	TYBEE ISLAND, GA	GA	200	300	200	117	200
POD	ALA WAI CANAL, OAHU, HI	HI	408	550	800	800	800
LRD	DES PLAINES RIVER, IL (PHASE II)	IL	500	500	500	-	-
MVD	ILLINOIS RIVER BASIN RESTORATION , IL	IL	400	1,000	2,100	421	-
LRD	INTERBASIN CONTROL OF GREAT LAKES- MISSISSIPPI RIVER AQUATIC NUISANCE SPECIES, IL, IN, OH & WI	IL	400	6,400	1,000	1,000	1,000
LRD	INDIANA HARBOR, IN	IN	300	1,000	-	-	-
NWD	TOPEKA, KS	KS	100	569	273	273	-
MVD	BAYOU SORREL LOCK, LA	LA	2,000	2,000	-	-	-
MVD	CALCASIEU LOCK, LA	LA	1,000	1,000	-	-	-
MVD	LOUISIANA COASTAL AREA ECOSYSTEM RESTORATION, LA	LA	16,595	12,120	-	-	-
NAD	PILGRIM LAKE, TRURO & PROVINCETOWN, MA	MA	100	113	-	-	-
NAD	ANACOSTIA RIVER & TRIBUTARIES COMPREHENSIVE PLAN, MD	MD	183	-	-	-	-
NAD	EASTERN SHORE, MID CHESAPEAKE BAY ISLAND, MD	MD	483	169	1,000	2,758	-
LRD	GREAT LAKES NAV SYST STUDY, MI, IL, IN, MN, NY, OH, PA & WI	MI	400	400	250	-	-
MVD	MINNESOTA RIVER WATERSHED STUDY, MN & SD (MINNESOTA RIVER AUTHORITY)	MN	350	1,000	1,257	-	-
NWD	KANSAS CITIES, MO & KS	MO	500	-	-	-	-

**Table I-2: Investigation Account, Enhanced Plan Scenario Continued
(\$ Thousands)**

NWD	MISSOURI RIVER DEGRADATION, MO	MO	600	750	500	500	494
NWD	YELLOWSTONE RIVER CORRIDOR, MT	MT	200	500	-	-	-
SAD	CURRITUCK SOUND, NC	NC	300	300	250	300	200
SAD	NC INTERNATIONAL PORT, NC	NC	104	1,004	1,000	-	-
SAD	NEUSE RIVER BASIN, NC	NC	200	450	450	250	-
SAD	SURF CITY AND NORTH TOPSAIL BEACH, NC	NC	300	795	-	-	-
MVD	FARGO-MOORHEAD METRO, ND	ND	15,150	23,700	1,200		
MVD	RED RIVER OF THE NORTH BASIN, ND, MN, SD & MANITOBA, CANADA	ND	433	1,100	-	-	-
NAD	MERRIMACK RIVER WATERSHED STUDY, NH & MA	NH	200	300	400	306	-
NAD	DELAWARE RIVER COMPREHENSIVE, NJ	NJ	290	400	400	301	10
NAD	HUDSON - RARITAN ESTUARY, HACKENSACK MEADOWLANDS, NJ	NJ	200	100	500	-	-
NAD	HUDSON - RARITAN ESTUARY, LOWER PASSAIC RIVER, NJ	NJ	200	500	500	500	500
SPD	RIO GRANDE BASIN, NM, CO & TX	NM	500	300	500	157	-
NAD	HUDSON - RARITAN ESTUARY, NY & NJ	NY	200	400	1,000	531	-
NAD	JAMAICA BAY, MARINE PARK AND PLUMB BEACH, NY	NY	170	170	500	-	-
NAD	LAKE MONTAUK HARBOR, NY	NY	172	250	700	-	-
NAD	WESTCHESTER COUNTY STREAMS, NY	NY	200	250	350	350	350
NWD	LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION, OR & WA	OR	300	750	639	500	1,000
NWD	WILLAMETTE RIVER ENVIRONMENTAL DREDGING, OR	OR	220	750	500	500	-
NWD	WILLAMETTE RIVER FLOODPLAIN RESTORATION, OR	OR	153	413	700	500	500
NAD	SCHUYLKILL RIVER BASIN, WISSAHICKON CREEK BASIN, PA	PA	214	200	73	-	-
LRD	UPPER OHIO NAVIGATION STUDY, PA	PA	749	5,363	7,900	8,100	8,400
SAD	EDISTO ISLAND, SC	SC	114	100	75	-	-
LRD	MILL CREEK WATERSHED, DAVIDSON COUNTY, TN	TN	50	200	-	-	-
SWD	BRAZOS ISLAND HARBOR, BROWNSVILLE CHANNEL, TX	TX	726	1,108	519	750	750

**Table I-2: Investigation Account, Enhanced Plan Scenario Continued
(\$ Thousands)**

SWD	DALLAS FLOODWAY, UPPER TRINITY RIVER BASIN, TX	TX	700	3,500	9,855	5,000	
SWD	GIWW, HIGH ISLAND TO BRAZOS RIVER REALIGNMENTS, TX	TX	200	700	756	700	700
SWD	GUADALUPE AND SAN ANTONIO RIVER BASINS, TX	TX	600	800	2,300	2,135	2,197
SWD	LOWER COLORADO RIVER BASIN, TX	TX	425	950	966	828	600
SWD	NUECES RIVER AND TRIBUTARIES, TX	TX	250	1,000	800	800	254
SWD	SABINE PASS TO GALVESTON BAY, TX	TX	200	800	500	148	463
SAD	JOHN H KERR DAM AND RESERVOIR, VA & NC (SECTION 216)	VA	300	365	435	300	300
NAD	LYNNHAVEN RIVER BASIN, VA	VA	50	300	-	-	-
NAD	UPPER RAPPAHANNOCK RIVER BASIN COMPREHENSIVE, VA	VA	200	400	100	100	-
NWD	MOUNT SAINT HELENS, WA	WA	225	225	225	925	-
NWD	PUGET SOUND NEARSHORE MARINE HABITAT RESTORATION, WA	WA	400	1,700	500	-	-
	Total - INVESTIGATIONS (Listed under States)		54,383	91,790	62,451	43,087	25,468
	Remaining items		49,617	47,632	45,727	46,642	48,041
	Additional Studies and PEDS (including Remaining Items)		76,000	45,578	80,822	105,272	129,491
	Total Investigations Appropriations		180,000	185,000	189,000	195,000	203,000

**Table C-1: Construction Account, Base Plan Scenario
(\$ Thousands)**

Program Code Name	State	2011	2012	2013	2014	2015
AKUTAN HARBOR, AK*	AK	7,000	0	0	0	0
AMERICAN RIVER WATERSHED (COMMON FEATURES), CA	CA	4,200	4,200	15,000	15,000	1,581
AMERICAN RIVER WATERSHED (FOLSOM DAM MODIFICATIONS), CA	CA	78,000	78,000	132,000	93,000	10,141
AMERICAN RIVER WATERSHED (FOLSOM DAM RAISE), CA	CA	500	8,500	24,000	30,000	27,000
HAMILTON AIRFIELD WETLANDS RESTORATION, CA	CA	20,000	20,000	20,000	15,000	12,000
NAPA RIVER, SALT MARSH RESTORATION, CA	CA	12,000	10,000	6,000	1,500	1,200
OAKLAND HARBOR (50 FOOT PROJECT), CA	CA	4,330	350	1,400	1,400	1,400
SACRAMENTO DEEPWATER SHIP CHANNEL, CA	CA	12,500	12,500	24,000	24,000	25,325
SACRAMENTO RIVER BANK PROTECTION PROJECT, CA	CA	10,000	10,000	10,000	10,000	10,000
SANTA ANA RIVER MAINSTEM, CA	CA	25,000	25,000	25,000	10,190	25,000
SOUTH SACRAMENTO COUNTY STREAMS, CA**	CA	4,800	5,000	0	0	0
SUCCESS DAM, TULE RIVER, CA (DAM SAFETY)	CA	500	18,000	100,000	100,000	80,000
WEST SACRAMENTO, CA*	CA	5,000	0	0	0	0
DELAWARE BAY COASTLINE, ROOSEVELT INLET TO LEWES BEACH, DE	DE	350	6,800	6,200	36	37
BREVARD COUNTY, CANAVERAL HARBOR, FL	FL	350	5,000	5,400	0	500
DADE COUNTY, FL*	FL	11,000	20,000	0	0	0
DUVAL COUNTY, FL	FL	7,500	100	93	310	186
FERNANDINA HARBOR, FL*	FL	350	0	0	0	0
HERBERT HOOVER DIKE, FL (SEEPAGE CONTROL)	FL	104,800	85,000	105,000	105,000	123,480
JACKSONVILLE HARBOR, FL	FL	6,000	7,000	0	300	77,250
MANATEE COUNTY, FL*	FL	100	100	0	0	0
MARTIN COUNTY, FL*	FL	8,000	0	0	0	0
NASSAU COUNTY, FL	FL	350	700	80	12,200	20
SOUTHERN FLORIDA ECOSYSTEM RESTORATION, FL	FL	180,000	63,500	15,936	12,188	24,439
ST. JOHN'S COUNTY, FL	FL	350	700	4	160	13,160
TAMPA HARBOR, FL*	FL	1,000	3,000	0	0	0
RICHARD B RUSSELL DAM AND LAKE, GA & SC	GA	1,000	3,200	1,000	1,000	1,000
SAVANNAH HARBOR, GA*	GA	400	0	0	0	0
ALTON TO GALE ORGANIZED LEVEE DISTRICTS, IL & MO*	IL	150	10,500	3,000	201	0
CHAIN OF ROCKS CANAL, MISSISSIPPI RIVER, IL (DEF CORR)*	IL	5,385	4,250	435	0	0
CHICAGO SANITARY AND SHIP CANAL DISPERSAL BARRIER, IL*	IL	5,200	5,200	5,200	5,200	5200

**Table C-1: Construction Account, Base Plan Scenario Continued
(\$ Thousands)**

DES PLAINES RIVER, IL*	IL	6,500	11,000	5,000	1,760	0
EAST ST LOUIS, IL*	IL	1,000	8,100	16,997	0	0
LOCK AND DAM 27, MISSISSIPPI RIVER, IL (MAJOR REHAB) *	IL	350	200	0	0	0
MCCOOK AND THORNTON RESERVOIRS, IL	IL	40,000	40,000	15,000	67,613	2,000
OLMSTED LOCKS AND DAM, OHIO RIVER, IL & KY	IL	136,000	75,000	63,000	63,000	86,800
UPPER MISSISSIPPI RIVER RESTORATION, IL, IA, MN, MO & WI	IL	21,150	33,170	33,170	33,170	33,170
WOOD RIVER LEVEE, IL*	IL	1,098	6,230	3,600	2,877	0
INDIANA HARBOR, CONFINED DISPOSAL FACILITY, IN*	IN	8,000	0	0	0	0
LITTLE CALUMET RIVER, IN	IN	10,000	15,000	500	337	0
MISSOURI R FISH AND WILDLIFE RECOVERY, IA, KS, MO, MT, NE, ND & SD	IO	78,400	78,400	100,000	100,000	162,688
TURKEY CREEK BASIN, KS & MO	KS	8,000	4,000	4,000	4,000	6,000
KENTUCKY LOCK AND DAM, TENNESSEE RIVER, KY	KY	2,868	33,980	50,000	82,170	64,060
MARKLAND LOCKS AND DAM, KY & IN (REHAB)*	KY	5,400	0	0	0	0
WOLF CREEK DAM, LAKE CUMBERLAND, KY*	KY	134,000	100,000	31,300	32,000	0
J BENNETT JOHNSTON WATERWAY, LA	LA	1,500	2,000	2,000	2,000	2,000
LAROSE TO GOLDEN MEADOW, LA (HURRICANE PROTECTION)*	LA	5,500	20,300	0	0	0
LOUISIANA COASTAL AREA ECOSYSTEM RESTORATION, LA	LA	19,000	50,000	50,000	100,000	100,000
WEST BANK AND VICINITY, NEW ORLEANS, LA*	LA	5,000	0	0	0	0
MUDDY RIVER, MA*	MA	500	5,000	10,000	0	0
ASSATEAGUE, MD	MD	1,000	2,000	2,000	2,000	2,000
CHESAPEAKE BAY OYSTER RECOVERY, MD & VA	MD	5,000	5,000	5,000	5,000	3,500
POPLAR ISLAND, MD	MD	1,530	13,200	18,765	20,255	16,100
BLUE RIVER CHANNEL, KANSAS CITY, MO	MO	4,500	3,000	3,000	1,000	1,000
CHESTERFIELD, MO	MO	3,439	6,571	9,947	6,420	2,526
CLEARWATER LAKE, MO*	MO	40,000	40,000	2,246	-	-
KANSAS CITYS, MO & KS	MO	700	3,000	3,101	4,075	5,112
MISS RIVER BTWN THE OHIO AND MO RIVERS (REG WORKS), MO & IL	MO	4,345	10,120	12,560	12,560	12,560
ST LOUIS FLOOD PROTECTION, MO*	MO	100	200	0	0	0
``	NC	1,800	2,543	6,000	6,000	6,000
GARRISON DAM, LAKE SAKAKAWEA, ND*	ND	11,088	0	0	0	0
CAPE MAY TO LOWER TOWNSHIP, NJ	NJ	200	200	2,400	200	16,500
GREAT EGG HARBOR INLET AND PECK BEACH, NJ	NJ	500	500	1,220	9,721	1,300
LOWER CAPE MAY MEADOWS, CAPE MAY POINT, NJ	NJ	8,920	13,050	0	0	0
RARITAN RIVER BASIN, GREEN BROOK SUB-BASIN, NJ	NJ	1,000	1,000	46,200	41,235	33,322
RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE, NM	NM	10,000	10,000	9,000	9,000	9,000
ATLANTIC COAST OF NYC, ROCKAWAY INLET TO NORTON POINT, NY	NY	300	100	4,100	3,000	4,100

**Table C-1: Construction Account, Base Plan Scenario Continued
(\$ Thousands)**

FIRE ISLAND INLET TO MONTAUK POINT, NY	NY	1,100	1,100	9,700	9,500	18,700
LONG BEACH ISLAND, NY	NY	300	5,000	10,000	10,000	10,000
NEW YORK AND NEW JERSEY HARBOR, NY & NJ*	NY	57,000	57,800	53,000	0	0
DOVER DAM, MUSKINGUM RIVER, OH (DAM SAFETY ASSURANCE)**	OH	36,000	5,000	2,561	0	0
CANTON LAKE, OK*	OK	24,334	4,000	21,040	21,670	0
LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION, OR & WA	OR	4,700	7,950	8,100	9,250	450
EMSWORTH LOCKS AND DAM, OHIO RIVER, PA*	PA	11,500	10,000	6,000	1,100	0
LOCK AND DAMS 2,3, AND 4, MONONGAHELA RIVER, PA	PA	2,000	10,000	10,000	10,000	35,280
PRESQUE ISLE PENINSULA, PA (PERMANENT)	PA	1,000	1,500	1,000	1,000	1,000
PORTUGUES AND BUCANA RIVERS, PR	PR	39,539	45,000	2,250	4,500	575
RIO PUERTO NUEVO, PR	PR	12,000	34,000	17,000	17,000	23,500
CENTER HILL LAKE, TN*	TN	77,800	78,700	13,512	0	0
BRAYS BAYOU, HOUSTON, TX	TX	7,740	7,740	43,247	137,513	22,076
LOWER COLORADO RIVER BASIN (WHARTON/ONION),TX	TX	10,000	10,000	12,000	10,000	13,943
AIWW, BRIDGES AT DEEP CREEK, VA*	VA	1,590	4,410	0	0	0
JOHN H KERR LAKE, VA & NC*	VA	6,000	0	0	0	0
LEVISA AND TUG FORKS AND UPPER CUMBERLAND RIVER, VA, WV, & KY	VA	19,500	20,100	6,000	6,000	6,000
NORFOLK HARBOR AND CHANNELS, CRANEY ISLAND, VA	VA	1,000	1,000	50,000	52,216	139,000
ROANOKE RIVER UPPER BASIN, HEADWATERS AREA, VA*	VA	1,075	2,275	1,079	0	0
CHIEF JOSEPH DAM GAS ABATEMENT, WA *	WA	200	0	0	0	0
COLUMBIA RIVER FISH MITIGATION, WA, OR & ID*	WA	137,615	137,615	42,996		0
COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR & WA*	WA	500	3,500	0	0	0
DUWAMISH AND GREEN RIVER BASIN, WA	WA	5,500	7,142	10,096	12,334	13,134
HOWARD HANSON DAM, WA	WA	500	30,000	32,000	100,000	100,000
LOWER SNAKE RIVER FISH & WILDLIFE COMPENSATION, WA, OR & ID	WA	1,500	1,500	3,000	3,500	5,000
MOUNT SAINT HELENS SEDIMENT CONTROL, WA	WA	800	800	3,045	5,800	20,722
MUD MOUNTAIN DAM, WA	WA	1,000	1,000	21,116	21,135	21,155
BLUESTONE LAKE, WV*	WV	15,000	15,000	55,000	0	0
Total - Construction (Listed under States)		1,571,596	1,501,596	1,443,596	1,478,596	1,439,191
Additional Projects and Programs (including CAP's and Remaining Items)		0	0	0	0	76,405
Continuing Authorities Programs		40,969	40,969	40,969	40,969	40,969
Remaining Items		77,435	77,435	77,435	77,435	77,435
Total - Construction Appropriations		1,690,000	1,620,000	1,562,000	1,597,000	1,634,000

**Table C-2: Construction Account, Enhanced Plan Scenario
(\$ Thousands)**

DIV	Program Code Name	State	2011	2012	2013	2014	2015
POD	AKUTAN HARBOR, AK*	AK	7,000	0	0	0	0
SPD	AMERICAN RIVER WATERSHED (COMMON FEATURES), CA	CA	4,200	4,200	15,000	15,000	1,581
SPD	AMERICAN RIVER WATERSHED (FOLSOM DAM MODIFICATIONS), CA	CA	78,000	78,000	132,000	93,000	10,141
SPD	AMERICAN RIVER WATERSHED (FOLSOM DAM RAISE), CA	CA	500	8,500	24,000	30,000	27,000
SPD	HAMILTON AIRFIELD WETLANDS RESTORATION, CA	CA	20,000	24,300	20,000	15,000	12,000
SPD	NAPA RIVER, SALT MARSH RESTORATION, CA	CA	12,000	10,000	6,000	1,500	1,200
SPD	OAKLAND HARBOR (50 FOOT PROJECT), CA	CA	4,330	350	1,400	1,400	1,400
SPD	SACRAMENTO DEEPWATER SHIP CHANNEL, CA	CA	12,500	12,500	24,000	24,000	25,325
SPD	SACRAMENTO RIVER BANK PROTECTION PROJECT, CA	CA	10,000	10,000	10,000	10,000	18,000
SPD	SANTA ANA RIVER MAINSTEM, CA	CA	25,000	41,432	25,000	86,812	88,146
SPD	SOUTH SACRAMENTO COUNTY STREAMS, CA**	CA	4,800	5,000	0	0	0
SPD	SUCCESS DAM, TULE RIVER, CA (DAM SAFETY)	CA	500	18,000	100,000	100,000	80,000
SPD	WEST SACRAMENTO, CA*	CA	5,000	0	0	0	0
NAD	DELAWARE BAY COASTLINE, ROOSEVELT INLET TO LEWES BEACH, DE	DE	350	6,800	6,200	36	37
SAD	BREVARD COUNTY, CANAVERAL HARBOR, FL	FL	350	5,000	5,400	0	500
SAD	DADE COUNTY, FL*	FL	11,000	20,000	0	0	0
SAD	DUVAL COUNTY, FL	FL	7,500	100	93	310	186
SAD	FERNANDINA HARBOR, FL*	FL	350	0	0	0	0
SAD	HERBERT HOOVER DIKE, FL (SEEPAGE CONTROL)	FL	104,800	85,000	105,000	105,000	123,480
SAD	JACKSONVILLE HARBOR, FL	FL	6,000	7,000	0	300	77,250
SAD	MANATEE COUNTY, FL*	FL	100	100	0	0	0
SAD	MARTIN COUNTY, FL*	FL	8,000	0	350	0	0
SAD	NASSAU COUNTY, FL	FL	350	700	80	12,200	20
SAD	SOUTHERN FLORIDA ECOSYSTEM RESTORATION, FL	FL	180,000	63,500	15,936	12,188	24,439
SAD	ST. JOHN'S COUNTY, FL	FL	350	700	4	160	13,160
SAD	TAMPA HARBOR, FL*	FL	1,000	17,100	0	0	0
SAD	RICHARD B RUSSELL DAM AND LAKE, GA & SC	GA	1,000	3,200	1,000	1,000	1,000
SAD	SAVANNAH HARBOR, GA*	GA	400	0	0	0	0
MVD	ALTON TO GALE ORGANIZED LEVEE DISTRICTS, IL & MO*	IL	150	10,500	3,000	201	0
MVD	CHAIN OF ROCKS CANAL, MISSISSIPPI RIVER, IL (DEF CORR)*	IL	5,385	4,250	435	0	0
LRD	CHICAGO SANITARY AND SHIP CANAL DISPERSAL BARRIER, IL*	IL	5,200	48,675	1,500	1,000	
LRD	DES PLAINES RIVER, IL*	IL	6,500	11,000	5,000	1,760	0

**Table C-2: Construction Account, Enhanced Plan Scenario Continued
(\$ Thousands)**

LRD	EAST ST LOUIS, IL*	IL	1,000	8,100	16,997	0	0
MVD	LOCK AND DAM 27, MISSISSIPPI RIVER, IL (MAJOR REHAB) *	IL	350	200	0	0	0
LRD	MCCOOK AND THORNTON RESERVOIRS, IL	IL	40,000	53,000	15,000	67,613	2,000
LRD	OLMSTED LOCKS AND DAM, OHIO RIVER, IL & KY	IL	136,000	75,000	148,604	178,396	173,760
MVD	UPPER MISSISSIPPI RIVER RESTORATION, IL, IA, MN, MO & WI	IL	21,150	33,170	33,170	33,170	33,170
LRD	WOOD RIVER LEVEE, IL*	IL	1,098	6,230	3,600	2,877	0
LRD	INDIANA HARBOR, CONFINED DISPOSAL FACILITY, IN*	IN	8,000	0	0	0	0
LRD	LITTLE CALUMET RIVER, IN	IN	10,000	15,000	500	337	0
NWD	MISSOURI R FISH AND WILDLIFE RECOVERY, IA, KS, MO, MT, NE, ND & SD	IO	78,400	94,930	100,000	100,000	146,158
NWD	TURKEY CREEK BASIN, KS & MO	KS	8,000	4,000	4,000	4,000	6,000
LRD	KENTUCKY LOCK AND DAM, TENNESSEE RIVER, KY	KY	2,868	33,980	86,246	82,170	64,060
LRD	MARKLAND LOCKS AND DAM, KY & IN (REHAB)*	KY	5,400	0	0	0	0
LRD	WOLF CREEK DAM, LAKE CUMBERLAND, KY*	KY	134,000	100,000	31,300	32,000	0
MVD	J BENNETT JOHNSTON WATERWAY, LA	LA	1,500	20,000	25,000	25,000	25,000
MVD	LAROSE TO GOLDEN MEADOW, LA (HURRICANE PROTECTION)*	LA	5,500	20,300	0	0	0
MVD	LOUISIANA COASTAL AREA ECOSYSTEM RESTORATION, LA	LA	19,000	102,420	100,000	100,000	100,000
MVD	WEST BANK AND VICINITY, NEW ORLEANS, LA*	LA	5,000	0	0	0	0
NAD	MUDDY RIVER, MA*	MA	500	5,000	10,000	0	0
NAD	ASSATEAGUE, MD	MD	1,000	2,000	2,000	2,000	2,000
NAD	CHESAPEAKE BAY OYSTER RECOVERY, MD & VA	MD	5,000	5,000	5,000	5,000	3,500
NAD	POPLAR ISLAND, MD	MD	1,530	13,200	18,765	20,255	16,100
NWD	BLUE RIVER CHANNEL, KANSAS CITY, MO	MO	4,500	3,000	3,000	1,000	1,000
MVD	CHESTERFIELD, MO	MO	3,439	6,571	9,947	6,420	2,526
MVD	CLEARWATER LAKE, MO*	MO	40,000	40,000	2,246	-	-
NWD	KANSAS CITYS, MO & KS	MO	700	11,400	3,101	4,075	5,112
MVD	MISS RIVER BTWN THE OHIO AND MO RIVERS (REG WORKS), MO & IL	MO	4,345	10,120	12,560	12,560	12,560
MVD	ST LOUIS FLOOD PROTECTION, MO*	MO	100	200	0	0	0
SAD	WILMINTGTON HARBOR, NC	NC	1,800	2,543	6,000	6,000	6,000
NWD	GARRISON DAM, LAKE SAKAKAWEA, ND*	ND	11,088	0	0	0	0
NAD	CAPE MAY TO LOWER TOWNSHIP, NJ	NJ	200	200	2,400	200	16,500
NAD	GREAT EGG HARBOR INLET AND PECK BEACH, NJ	NJ	500	500	1,220	20,000	1,300
NAD	LOWER CAPE MAY MEADOWS, CAPE MAY POINT, NJ	NJ	8,920	13,050	0	0	0
NAD	RARITAN RIVER BASIN, GREEN BROOK SUB-BASIN, NJ	NJ	1,000	1,000	46,200	41,235	33,322
SPD	RIO GRANDE FLOODWAY, SAN ACACIA TO BOSQUE DEL APACHE, NM	NM	10,000	10,000	9,000	9,000	9,000
NAD	ATLANTIC COAST OF NYC, ROCKAWAY INLET TO NORTON POINT, NY	NY	300	100	4,100	3,000	4,100

**Table C-2: Construction Account, Enhanced Plan Scenario Continued
(\$ Thousands)**

NAD	FIRE ISLAND INLET TO MONTAUK POINT, NY	NY	1,100	10,650	9,700	9,500	9,700
NAD	LONG BEACH ISLAND, NY	NY	300	10,300	10,000	10,000	10,000
NAD	NEW YORK AND NEW JERSEY HARBOR, NY & NJ*	NY	57,000	57,800	53,000	0	0
LRD	DOVER DAM, MUSKINGUM RIVER, OH (DAM SAFETY ASSURANCE)**	OH	36,000	5,000	2,561	0	0
MVD	CANTON LAKE, OK*	OK	24,334	4,000	21,040	21,670	0
NWD	LOWER COLUMBIA RIVER ECOSYSTEM RESTORATION, OR & WA	OR	4,883	7,950	8,100	9,250	450
LRD	EMSWORTH LOCKS AND DAM, OHIO RIVER, PA*	PA	11,500	10,000	6,000	1,100	0
LRD	LOCK AND DAMS 2,3, AND 4, MONONGAHELA RIVER, PA	PA	2,000	60,625	103,000	103,000	70,000
LRD	PRESQUE ISLE PENINSULA, PA (PERMANENT)	PA	1,000	1,500	1,000	1,000	1,000
SAD	PORTUGUES AND BUCANA RIVERS, PR	PR	39,539	45,000	2,250	4,500	575
SAD	RIO PUERTO NUEVO, PR	PR	12,000	34,000	17,000	17,000	23,500
LRD	CENTER HILL LAKE, TN*	TN	77,800	78,700	13,512	0	0
SWD	BRAYS BAYOU, HOUSTON, TX	TX	7,740	102,359	86,243	137,513	22,076
SWD	LOWER COLORADO RIVER BASIN (WHARTON/ONION),TX	TX	10,000	20,000	12,000	10,000	3,943
NAD	AIWW, BRIDGES AT DEEP CREEK, VA*	VA	1,590	4,410	0	0	0
SAD	JOHN H KERR LAKE, VA & NC*	VA	6,000	0	0	0	0
LRD	LEVISA AND TUG FORKS AND UPPER CUMBERLAND RIVER, VA, WV, & KY	VA	19,500	63,800	44,500	46,096	29,500
NAD	NORFOLK HARBOR AND CHANNELS, CRANEY ISLAND, VA	VA	1,000	1,000	139,000	100,000	100,000
SAD	ROANOKE RIVER UPPER BASIN, HEADWATERS AREA, VA*	VA	1,075	2,275	1,079	0	0
NWD	CHIEF JOSEPH DAM GAS ABATEMENT, WA *	WA	200	0	0	0	0
NWD	COLUMBIA RIVER FISH MITIGATION, WA, OR & ID*	WA	137,615	42,996			0
NWD	COLUMBIA RIVER TREATY FISHING ACCESS SITES, OR & WA*	WA	500	3,500	0	0	0
NWD	DUWAMISH AND GREEN RIVER BASIN, WA	WA	10,482	5,710	10,096	12,334	13,134
NWD	HOWARD HANSON DAM, WA	WA	3,700	30,000	50,000	100,000	100,000
NWD	LOWER SNAKE RIVER FISH & WILDLIFE COMPENSATION, WA, OR & ID	WA	3,000	1,500	3,000	3,500	3,500
NWD	MOUNT SAINT HELENS SEDIMENT CONTROL, WA	WA	800	12,400	3,045	5,800	8,722
NWD	MUD MOUNTAIN DAM, WA	WA	1,000	1,000	21,116	21,135	21,155
LRD	BLUESTONE LAKE, WV*	WV	15,000	15,000	55,000	0	0
Total - Construction (Listed under States)			1,581,461	1,817,596	1,873,596	1,880,573	1,585,287
Additional Projects and Programs (including CAP's and Remaining Items)			194,135	0	0	63,023	432,309
Continuing Authorities Programs			40,969	40,969	40,969	40,969	40,969
Remaining Items			77,435	77,435	77,435	77,435	77,435
Total - Construction Appropriations			1,894,000	1,936,000	1,992,000	2,062,000	2,136,000

**Table M-1: Mississippi River and Tributaries, Base Plan Scenario
(\$ Thousands)**

Project	ST	2011	2012	2013	2014	2015
INVESTIGATIONS						
Survey and Collection and Study of Basic Data						
COLDWATER RIVER BASIN BELOW ARKABUTLA LAKE, MS	MS	246	261	241	249	259
MEMPHIS METRO AREA, STORM WATER MGMT STUDY, TN	TN	100	96	92	94	96
COLLECTION AND STUDY OF BASIC DATA	NA	500	475	458	468	478
Subtotal investigations		846	832	791	811	833
Additional Studies and PEDs		0	0	0	0	0
Total Investigations		846	832	791	811	833
CONSTRUCTION						
ATCHAFALAYA BASIN, FLOODWAY SYSTEM, LA	LA	2,631	2,521	2,434	2,488	2,543
ATCHAFALAYA BASIN, LA	LA	6,300	6,038	5,828	5,959	6,090
CHANNEL IMPROVEMENT, DIKES, AR, IL, KY, LA, MS, MO & TN	MS	7,674	7,354	7,098	7,258	7,418
CHANNEL IMPROVEMENT, REVETMENT OPERATIONS, AR, IL, KY, LA, MS, MO & TN	LA	39,535	37,888	36,570	37,394	38,217
MISSISSIPPI RIVER LEVEES, AR, IL, KY, LA, MS, MO & TN	LA	29,150	27,935	26,964	27,571	28,178
Total Construction		85,290	81,736	78,893	80,670	82,447
Total Maintenance (Project Specific Listing Omitted)		153,864	147,448	142,317	145,519	148,720
Total Mississippi River and Tributaries (MR&T) Account		240,000	230,016	222,000	227,000	232,000

**Table M-2: Mississippi River and Tributaries, Enhanced Plan Scenario
(\$ Thousands)**

Project	ST	2011	2012	2013	2014	2015
INVESTIGATIONS						
Survey and Collection and Study of Basic Data						
COLDWATER RIVER BASIN BELOW ARKABUTLA LAKE, MS	MS	246	261	268	277	167
MEMPHIS METRO AREA, STORM WATER MGMT STUDY, TN	TN	100	106	109	113	116
COLLECTION AND STUDY OF BASIC DATA	NA	500	531	545	564	582
Subtotal investigations		846	898	922	953	865
Additional Studies and PEDs		0	0	0	0	119
Total Investigations		846	898	922	953	984
CONSTRUCTION						
ATCHAFALAYA BASIN, FLOODWAY SYSTEM, LA	LA	2,631	2,793	2,868	2,965	3,062
ATCHAFALAYA BASIN, LA	LA	11,537	12,246	12,577	13,003	13,428
CHANNEL IMPROVEMENT, DIKES, AR, IL, KY, LA, MS, MO & TN	MS	7,674	8,146	8,366	8,649	8,932
CHANNEL IMPROVEMENT, REVETMENT OPERATIONS, AR, IL, KY, LA, MS, MO & TN	LA	38,298	40,652	41,751	43,164	44,576
MISSISSIPPI RIVER LEVEES, AR, IL, KY, LA, MS, MO & TN	LA	29,150	30,942	31,778	32,853	33,929
Total Construction		89,290	94,779	97,341	100,634	103,928
Total Maintenance (Project Specific Listing Omitted)		153,864	163,323	167,737	173,412	179,088
Total Mississippi River and Tributaries (MR&T) Account		244,000	259,000	266,000	275,000	284,000

INTRODUCTION TO FUNDING OUTLINE

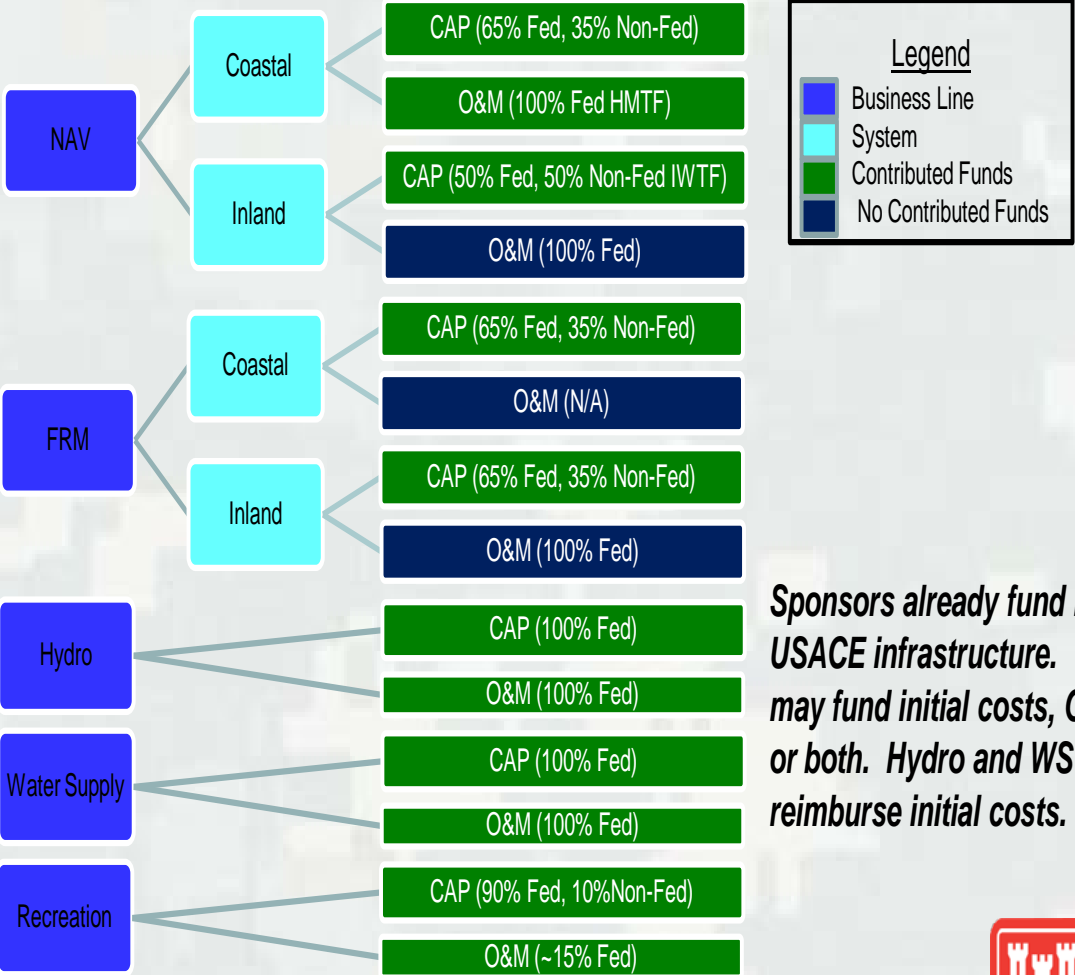
A LONG TERM FUNDING/FINANCING PLAN FOR WATER RESOURCES ASSETS THROUGHOUT THEIR SERVICE LIFE

1. INTRODUCTION

- a. Historically, USACE assets funded through appropriations. Over time users have been required to pay more. Today, all project sponsors or beneficiaries pay some portion, up to 100% of the cost of creating and maintaining these assets.
- b. Situation
 - i. Most USACE infrastructure is in need of recapitalization. See ASCE Report: Roads, bridges, water supply, water treatment, airports, All entities than manage infrastructure are seeking additional funding; better management.
 - ii. Difficult time to seek funds: National Debt
 - iii. Assume no additional appropriated funds in the foreseeable future. (OMB FY12/13 budget guidance)
 - iv. Assume, therefore, additional funds will be from non-federal sources or that federal funds may be used to seed non-federal capital, but will have to be repaid.
 - v. USACE must consider funding sources to develop, maintain or recapitalize its infrastructure throughout its life cycle. Even funds to O&M are insufficient. Therefore, report will consider possibilities throughout the project life cycle.
 - vi. Some beneficiaries are already paying (Create Table)
- c. Category of USACE assets. Categorized as below because each group serves a different client/customer/stakeholder implying we must seek funding from different stakeholder groups.
 - i. Navigation
 1. Inland
 2. Coastal
 - ii. Flood Risk Management
 1. Inland
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 - iii. Aquatic Ecosystem Restoration
 - iv. Hydropower
 - v. Recreation
 - vi. Water Supply
- d. Organization of Report and Recommended Organization of Funding Proposals: Capitalization, O&M, Recapitalization/Divestiture

- 2. CAPITALIZATION OF NEW INFRASTRUCTURE**
 - a. Situation
 - b. Legislative Opportunities
- 3. OPERATION AND MAINTENANCE**
 - a. Situation
 - b. Legislative Opportunities
- 4. END OF SERVICE LIFE**
 - a. Divestiture / Deauthorization
 - i. Situation
 - ii. Legislative Opportunities
 - b. Recapitalization
 - i. Situation
 - ii. Legislative Opportunities
- 5. APPENDICES**
 - a. **FIGURE 1 -- CURRENT SOURCES OF FUNDS**
 - b. **TABLE 1 -- LEGISLATIVE OPPORTUNITIES**
 - c. **TABLE 2 -- PROPOSED FY2013 APPROPRIATIONS LEGISLATION**
- 6. NEXT STEPS**
 - a. **OMB selects, deletes, adds proposals for development of legislation**
 - b. **USACE:**
 - c. **Drafts Report Language along the lines of the above outline**
 - d. **Develops language as directed**
 - e. **Estimates annual/5-year savings or potential revenue increase**
 - f. **Briefs ASA/OMB; submits additional information as requested**
 - g. **OMB makes final choices, briefs upward. USACE supports as requested**

RECAPITALIZATION OF USACE CW INFRASTRUCTURE CURRENT SOURCES OF FUNDS



Sponsors already fund most USACE infrastructure. They may fund initial costs, O&M, or both. Hydro and WS reimburse initial costs.



LEGISLATIVE OPPORTUNITIES

Infrastructure Category	Beneficiary	Current Payments	Pays For	Realistic Opportunities	Status
Inland Nav	Waterways Operators	Fuel Tax IWTF	50% Construction Cost	1. Larger share of construction 2. Portion of O&M	1. Admin proposal 2. IWUB proposal
Coastal Nav	Ports	Share of Plng/Construction Costs	1. 50% Planning Cost 2. 35-85% Construction Cost	1. Larger share of construction 2. Contributed Funds	1. 3 Ports contributing
	Shippers	Ad Valorem Tax (HMTF)	100% O&M	Greater access to IWTF	1. RAMP proposal
Inland FRM	Protected Communities	Share of Construction Costs (65:35)	1. 50% Planning cost 2. 35% Construction Cost	1. Larger share of construction 2. Share of O&M 3. Contributed Funds	None
Coastal FRM	Protected Communities	Share of Construction Costs (65:35)	1. 50% Planning Cost 2. 35% Total Cost (no O&M)	1. Larger share of construction 2. Contributed funds	None
Ecosystem Restoration	Local/Regional Communities	Share of Construction Costs (65:35)	50% Planning 50% Construction Cost	1. Contributed funds	None
Hydropower	Power Marketing Agencies	Reimburse Construction Cost (100%) O&M (100%)	100% Construction and O&M	1. Contributed Funds 2. Option to use ESPC-based PPP	1. PMAs agreed to fund recap (SWPA)
Recreation	Users	User Fee Variable ~\$35 mil/yr total	Use	1. Higher User Fees 2. Return Fees, or portion, to Parks	1. Legislation proposed in past
Water Supply	Users	Reimburse Construction Cost (100%) O&M (100%)	100% Construction and O&M	1. Contributed Funds	1. Users may be willing to pay for some recap

PROPOSED FY2013 APPROPRIATIONS LEGISLATION

Project Life Cycle	Legislation		Who Pays	Notes
CAPITALIZATION				
---Planning	Authority to accept <i>contributed</i> funds > cost share—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	1. Currently in House Appns Bill 2. *Only one 'authority' provision for all project phases: planning, O&M, design, construction
	Authority to accept <i>advanced</i> funds in excess of Local share		Project Sponsor	1. Payees would like credits to be applied during construction
	Authority to accept funds from foreign governments		Foreign Government	1. Modify Sec 234 of WRDA 86 which specifies
---Construction	Authority to accept <i>contributed</i> funds > cost share—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	1. * Three Ports have already contributed (Miami, Corpus Christi-Rincon Channel(bend easing), Matagorda * WRDA 2007 Section 5001 (10 ports) * 33 USC 701 (h) * 33 USC 2325 2. *Only one 'authority' provision for all project phases: planning, O&M, design, construction
	Authority to accept funds to study deepening; authority to assist with study; General Authority to assume maintenance for port construction;	+ / -	Project Sponsor	* Many examples: WRDA 2007 Section * Could allow acceptance based on Port studies * Would include authority for USACE to accept Port funds to perform or assist with studies (currently prohibited by Thomas Amendment. Also, authority states sponsors must do the work "on their own".)
OPERATIONS & MAINTENANCE				
	Retain 50% recreation fees to Project	0	User Fees	Land & Water Conservation Fund of 1965; Combine with FLREA of 2004? No add'l revenue unless fees increased
	Authority to accept <i>contributed</i> funds—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	* Some ports already simply perform maintenance at low-use commercial channels. * Some states may be willing to use water supply revenues/bonds to insure MU-FRM project safety and operations

	Extend authority to accept contributed funds to expedite permit processing indefinitely	+	Project Sponsor seeking permit	WRDA 2000, Section 214(c). Current authority expires in 2016
END OF SERVICE LIFE				
---Recapitalization	Authority to accept funds from FERC pre-licensees and licensees for support activities	+	Hydro Developers and Operators	
	Authority to accept funds (or alternatively) authority for the Administrators of PMAs to provide receipts from sale of hydro power to the SecArmy to fund hydropower operations	+		<ul style="list-style-type: none"> * See same provision below under Recapitalization. Enables PMA to directly fund USACE through an MOA without having to go through a 3rd party agreement, eg the Jonesboro Agreement * Avoids use of 3rd party arrangements e.g. the Jonesboro Agreement. * PMAs, esp SWPA has agreed to finance entire Recap total of \$XX
	IWTF-Admin Proposal	+	Waterway Users and federal revenues if compromise	Resubmit Administration proposal or a compromise version between Admin & IWUB proposal
	(POLICY STATEMENT) Direct USACE to implement process improvements in IWUB Report	0	Waterway Users	USACE committed to implement anyway; implementation underway. Nevertheless industry would appreciate Administration support and indication that Administration is committed to these improvements
	Energy Savings Performance Contract ESPC Authority for USACE Hydropower	+	<ul style="list-style-type: none"> * Private Investment Funds *Hydro Design & Construct Firms 	<ul style="list-style-type: none"> * Energy Bill * Exists for DoD/Other Agencies Being pursued by private sector * Language drafted by industry; lobbying ongoing
---Deauthorization				
	Deauthorization <i>process</i> for previously constructed projects	0	N/A	Would mirror language in Sec 1001b(2) of WRDA 86 that deauthorizes projects never funded

	Deauthorization <i>process</i> for previously constructed projects <i>that enables SecArmy to transfer property directly to other parties</i>	0		Would enable direct transfer outside normal federal property transfer regulations and avoid need for specific project by project language. Would apply only to cases where a 3 rd party assumes project operations.
	Deauthorize selected projects that no longer serve authorized purposes (~150-200)	0	N/A	See List
	Deauthorize selected inactive and deferred construction projects (~15-29)	0	N/A	See List

NOTES: + = non-federal revenues
 - = would require additional federal appropriations
 0 = no impact on revenues or appropriations, but increase in efficiency of asset management

INTRODUCTION TO FUNDING OPPORTUNITIES OUTLINE

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- a. Situation
- b. Legislative Opportunities

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- a. Situation
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- a. Divestiture / Deauthorization
 - i. Situation
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 - i. Situation
 - ii. Legislative Opportunities

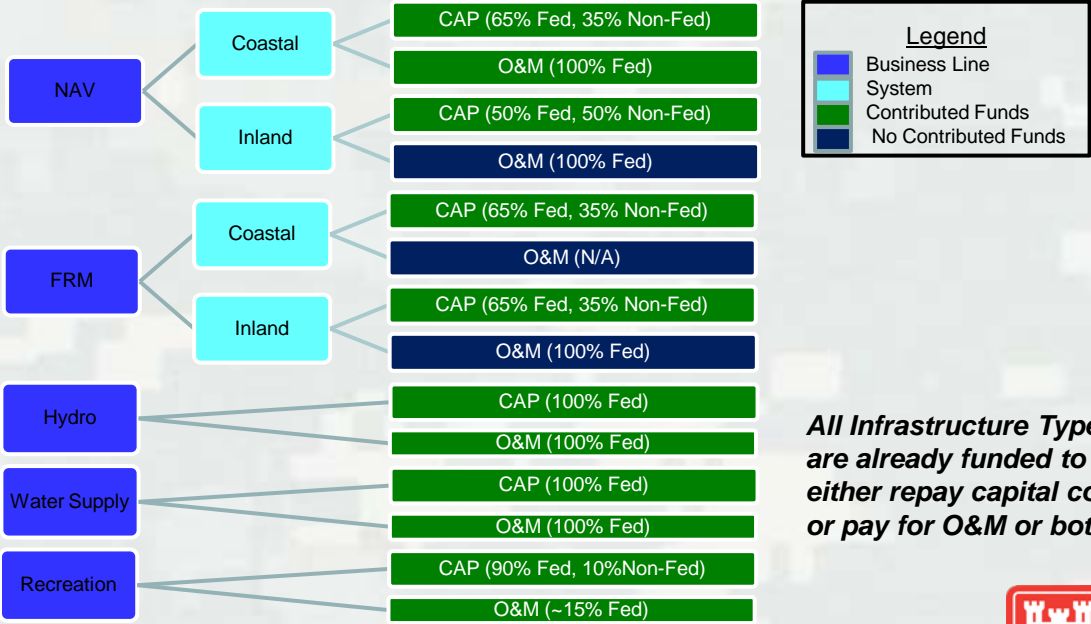
5. APPENDICES

- a. **FIGURE 1 -- CURRENT SOURCES OF FUNDS**
- b. **TABLE 1 -- LEGISLATIVE OPPORTUNITIES**
- c. **TABLE 2 -- PROPOSED FY2013 APPROPRIATIONS LEGISLATION**

6. NEXT STEPS

- a. **OMB selects, deletes, adds proposals for development of legislation**
- b. **USACE:**
- c. **Drafts Report Language along the lines of the above outline**
- d. **Develops language as directed**
- e. **Estimates annual/5-year savings or potential revenue increase**
- f. **Briefs ASA/OMB; submits additional information as requested**
- g. **OMB makes final choices, briefs upward. USACE supports as requested**

RECAPITALIZATION OF USACE CW INFRASTRUCTURE CURRENT SOURCES OF FUNDS



All Infrastructure Types are already funded to either repay capital costs or pay for O&M or both



LEGISLATIVE OPPORTUNITIES--SUMMARY

Infrastructure Category	Beneficiary	Current Payments	Pays For	Realistic Opportunities	Status
Inland Nav	Waterways Operators	Fuel Tax IWTF	50% Construction Cost	1. Larger share of construction 2. Portion of O&M	1. Admin proposal 2. IWUB proposal
Coastal Nav	Ports	Share of Plng/Construction Costs	1. 50% Planning Cost 2. 35-85% Construction Cost	1. Larger share of construction 2. Contributed Funds	1. 3 Ports contributing
	Shippers	Ad Valorem Tax (HMTF)	100% O&M	Greater access to IWTF	1. RAMP proposal
Inland FRM	Protected Communities	Share of Construction Costs (65:35)	1. 50% Planning cost 2. 35% Construction Cost	1. Larger share of construction 2. Share of O&M 3. Contributed Funds	None
Coastal FRM	Protected Communities	Share of Construction Costs (65:35)	1. 50% Planning Cost 2. 35% Total Cost (no O&M)	1. Larger share of construction 2. Contributed funds	None
Ecosystem Restoration	Local/Regional Communities	Share of Construction Costs (50:50)	50% Planning 50% Construction Cost	1. Contributed funds	None
Hydropower	Power Marketing Agencies	Reimburse Construction Cost (100%) O&M (100%)	100% Construction and O&M	1. Contributed Funds 2. Option to use ESPC-based PPP	1. PMAs agreed to fund recap (SWPA)
Recreation	Users	User Fee Variable ~\$35 mil/yr total	Use	1. Higher User Fees 2. Return Fees, or portion, to Parks	1. Legislation proposed in past
Water Supply	Users	Reimburse Construction Cost (100%) O&M (100%)	100% Construction and O&M	1. Contributed Funds	1. Users may be willing to pay for some recap

10 NOV 11 DRAFT OF LEGISLATIVE POSSIBILITIES

Project Life Cycle	Legislation		Who Pays	Notes
CAPITALIZATION				
---Planning	Authority to accept contributed funds > cost share—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	1. Payees would like credits
	Expand authority for sharing water data			<p>Expand provisions in Sect 2017 of WRDA 2007</p> <p>SEC. 2017. ACCESS TO WATER RESOURCE DATA.</p> <p>(a) IN GENERAL.—The Secretary shall carry out a program to provide public access to water resources and related water quality data in the custody of the Corps of Engineers.</p> <p>(b) DATA.—Public access under subsection (a) shall—</p> <p>(1) include, at a minimum, access to data generated in water resources project development and regulation under section 404 of the Federal Water Pollution Control Act (33 U.S.C.1344); and (2) appropriately employ geographic information system technology and linkages to water resource models and analytical techniques.</p> <p>(c) PARTNERSHIPS.—To the maximum extent practicable, in carrying out activities under this section, the Secretary shall develop partnerships, including cooperative agreements, with State, tribal, and local governments and other Federal agencies.</p> <p>(d) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section \$3,000,000 for each fiscal year.</p>
---Construction	Authority to accept contributed funds > cost share—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	<p>* Three Ports have already contributed (Miami, Corpus Christi-Rincon Channel(bend easing), Matagorda</p> <p>* WRDA 2007 Section 5001 (10 ports)</p> <p>WRDA 2007 Sec. 5001: Sec can dredge in response to a request. Presumably, requester will reimburse.</p> <p>TITLE V—MISCELLANEOUS</p> <p>SEC. 5001. MAINTENANCE OF NAVIGATION CHANNELS.</p> <p>(a) IN GENERAL.—Upon request of a non-Federal interest, the Secretary shall be responsible for maintenance of</p>

		<p>the following navigation channels and breakwaters constructed or improved by the non-Federal interest if the Secretary determines that such maintenance is economically justified and environmentally acceptable and that the channel or breakwater was constructed in accordance with applicable permits and appropriate engineering and design standards: [e.g.(1) Manatee Harbor basin, Florida].</p> <p>* 33 USC 701 (h)</p> <p>Contributions by States and political subdivisions</p> <p>US Code - Title 33: Navigation and Navigable Waters Linked as: <input type="text" value="http://us-code"/></p> <p>The Secretary of the Army is authorized to receive from States and political subdivisions thereof, such funds as may be contributed by them to be expended in connection with funds appropriated by the United States for any authorized flood control or environmental restoration work whenever such work and expenditure may be considered by the Secretary of the Army, on recommendation of the Chief of Engineers, as advantageous in the public interest, and the plans for any reservoir project may, in the discretion of the Secretary of the Army, on recommendation of the Chief of Engineers, be modified to provide additional storage capacity for domestic water supply or other conservation storage, on condition that the cost of such increased storage capacity is contributed by local agencies and that the local agencies agree to utilize such additional storage capacity in a manner consistent with Federal uses and purposes: Provided, That when contributions made by States and political subdivisions thereof, are in excess of the actual cost of the work contemplated and properly chargeable to such contributions, such excess</p>
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			<p>contributions may, with the approval of the Secretary of the Army, be returned to the proper representatives of the contributing interests.</p> <p>*33 USC 2325 - Sec. 2325. Voluntary contributions for environmental and recreation projects</p> <p>US Code - Title 33: Navigation and Navigable Waters</p> <p>Linked as: http://us-code.vlex.com/vid/voluntary-contributions-environmental-19224546</p> <p>a) Acceptance In connection with carrying out a water resources project for environmental protection and restoration or a water resources project for recreation, the Secretary is authorized to accept contributions of cash, funds, materials, and services from persons, including governmental entities but excluding the project sponsor.</p> <p>(b) Deposit Any cash or funds received by the Secretary under subsection (a) of this section shall be deposited into the account in the Treasury of the United States entitled "Contributions and Advances, Rivers and Harbors, Corps of Engineers (8862)" and shall be available until expended to carry out water resources projects described in subsection (a) of this section</p>
	<p>General Authority to assume maintenance for port construction; authority to accept funds</p>	<p>+ / -</p>	<p>Project Sponsor</p> <p>* Many examples: WRDA 2007 Section * Could allow acceptance based on Port studies * Would include authority for USACE to accept Port funds to perform or assist with</p>

				studies (currently prohibited by Thomas Amendment)
OPERATIONS & MAINTENANCE				
	Retain 50% recreation fees to Project	0	User Fees	<p>Land & Water Conservation Fund of 1965; Land and Water Conservation Fund</p> <p>http://www.access.gpo.gov/uscode/title16/chapter1_subchapterlxix_partb.html</p> <p>Land and Water Conservation Fund Act of 1965, Public Law 88-578 Title 16, United States Code Selected Relevant Parts – State Assistance Program for full code section: http://www.access.gpo.gov/uscode/title16/chapter1_subchapterlxix_partb.html</p> <p><i>§ 460l-4. Land and water conservation provisions; statement of purposes</i> The purposes of this part are to assist in preserving, developing, and assuring accessibility to all citizens of the United States of America of present and future generations and visitors who are lawfully present within the boundaries of the United States of America such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation and to strengthen the health and vitality of the citizens of the United States by (1) providing funds for and authorizing Federal assistance to the States in planning, acquisition, and development of needed land and water areas and facilities and (2) providing funds for the Federal acquisition and development of certain lands and other areas.</p> <p><i>§ 460l-5. Land and water conservation fund; establishment; covering certain</i></p>

		<p><i>revenues and collections into fund</i></p> <p>During the period ending September 30, 2015, there shall be covered into the land and water conservation fund in the Treasury of the United States, which fund is hereby established and is hereinafter referred to as the “fund”, the following revenues and collections:</p> <p>(a) Surplus property sales All proceeds (except so much thereof as may be otherwise obligated, credited, or paid under authority of those provisions of law set forth in section 572 (a) or 574 (a)–(c) of title 40 or the Independent Offices Appropriation Act, 1963 (76 Stat. 725) or in any later appropriation Act) hereafter received from any disposal of surplus real property and related personal property under the Federal Property and Administrative Services Act of 1949, as amended, notwithstanding any provision of law that such proceeds shall be credited to miscellaneous receipts of the Treasury. Nothing in this part shall affect existing laws or regulations concerning disposal of real or personal surplus property to schools, hospitals, and States and their political subdivisions.</p> <p>(b) Motorboat fuels tax The amounts provided for in section 4601–11 of this title.</p> <p>(c) Other revenues (1) In addition to the sum of the revenues and collections estimated by the Secretary of the Interior to be covered into the fund pursuant to this section, as amended, there are authorized to be appropriated annually to the fund out</p>
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		<p>of any money in the Treasury not otherwise appropriated such amounts as are necessary to make the income of the fund not less than</p> <p>2</p> <p>\$300,000,000 for fiscal year 1977, and \$900,000,000 for fiscal year 1978 and for each fiscal year thereafter through September 30, 2015.</p> <p>(2) To the extent that any such sums so appropriated are not sufficient to make the total annual income of the fund equivalent to the amounts provided in clause (1), an amount sufficient to cover the remainder thereof shall be credited to the fund from revenues due and payable to the United States for deposit in the Treasury as miscellaneous receipts under the Outer Continental Shelf Lands Act, as amended (43 U.S.C. 1331 et seq.): Provided, That notwithstanding the provisions of section 4601-6 of this title, moneys covered into the fund under this paragraph shall remain in the fund until appropriated by the Congress to carry out the purpose of this part.</p> <p><i>§ 4601-7. Allocation of land and water conservation fund for State and Federal purposes</i></p> <p>There shall be submitted with the annual budget of the United States a comprehensive statement of estimated requirements during the ensuing fiscal year for appropriations from the fund. Not less than 40 per centum of such appropriations shall be available for Federal purposes. Those appropriations from the fund up to and including \$600,000,000 in fiscal year 1978 and up to and</p>
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		<p>including \$750,000,000 in fiscal year 1979 shall continue to be allocated in accordance with this section. There shall be credited to a special account within the fund \$300,000,000 in fiscal year 1978 and \$150,000,000 in fiscal year 1979 from the amounts authorized by section 4601-5 of this title. Amounts credited to this account shall remain in the account until appropriated.</p> <p>Appropriations from the special account shall be available only with respect to areas existing and authorizations enacted prior to the convening of the Ninety-fifth Congress, for acquisition of lands, waters, or interests in lands or waters within the exterior boundaries, as aforesaid, of—</p> <ol style="list-style-type: none"> (1) the national park system; (2) national scenic trails; (3) the national wilderness preservation system; (4) federally administered components of the National Wild and Scenic Rivers System; and (5) national recreation areas administered by the Secretary of Agriculture. <p>Combine with FLREA of 2004? The Federal Lands Recreation Enhancement Act (in P.L. 108-447) authorizes five federal agencies to charge fees at recreation sites through December 8, 2014. It provides for different kinds of fees, criteria for charging fees, public participation in determining fees, and the establishment of one national recreation pass. The agencies can use the collections without further appropriation, and most of the money is for improvements at the collecting site. This program supersedes, and seeks to improve upon, the Recreational Fee Demonstration</p>
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				<p>Program. Recreation fees continue to be controversial. The agencies have begun implementing the new law, and Congress is overseeing implementation. This report will be updated as circumstances warrant.</p> <p>No add'l revenue unless fees increased</p>
	Authority to accept contributed funds—expand authority to include all USACE water resource development projects; all phases	+	Project Sponsor	<p>* Some ports already simply perform maintenance at low-use commercial channels.</p> <p>* Some states may be willing to use water supply revenues/bonds to insure MU-FRM project safety and operations</p>
	Extend authority to accept funds to expedite permit processing	+	Project Sponsor seeking permit	<p>WRDA 2000, Section 214(c) SEC. 214. FUNDING TO PROCESS PERMITS. (a) IN GENERAL.—In fiscal years 2001 through 2003, the Secretary, after public notice, may accept and expend funds contributed by non-Federal public entities to expedite the evaluation of permits under the jurisdiction of the Department of the Army. (b) EFFECT ON PERMITTING.—In carrying out this section, the Secretary shall ensure that the use of funds accepted under subsection (a) will not impact impartial decisionmaking with respect to permits, either substantively or procedurally.</p>
	Authority to accept funds to perform 408 reviews of proposed alterations of Corps projects	+	Project Sponsor seeking permit	<p>Payees would likely be similar to those supporting Section 214 (c) positions. Submit alone or with S. 214 proposal</p>

	Authority to increase Shoreline Mgmt Pgm (SMP) to recover costs of pgm management	+	Owners of lake front property	<p>Step 1. Using admin authority (10 USC 2695), ASA(IE&E) raise existing fees. Total ~ \$10.2 mil</p> <p>Step 2. Legislation to recover admin costs + costs of inspections and monitoring. Total ~ \$13.6 mil (full cost recovery)</p> <p>§ 2695. Acceptance of funds to cover administrative expenses relating to certain real property transactions</p> <p>(a) Authority To Accept.— In connection with a real property transaction referred to in subsection (b) with a non–Federal person or entity, the Secretary of a military department may accept amounts provided by the person or entity to cover administrative expenses incurred by the Secretary in entering into the transaction.</p> <p>(b) Covered Transactions.— Subsection (a) applies to the following transactions involving real property under the control of the Secretary of a military department:</p> <ul style="list-style-type: none">(1) The exchange of real property.(2) The grant of an easement over, in, or upon real property of the United States.(3) The lease or license of real property of the United States.(4) The disposal of real property of the United States for which the Secretary will be the disposal agent.(5) The conveyance of real property
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				under section 2694a of this title. (c) Use of Amounts Collected.— Amounts collected under subsection (a) for administrative expenses shall be credited to the appropriation, fund, or account from which the expenses were paid. Amounts so credited shall be merged with funds in such appropriation, fund, or account and shall be available for the same purposes and subject to the same limitations as the funds with which merged
	Authority to accept in-kind services for routine O&M and capital improvements	0	State/local agencies can provide some services at less cost	This is a problem now because accepting services is treated like a 'sole source' contract.

END OF SERVICE LIFE	Authority to accept funds from FERC pre-licensees and licensees for support activities	+	Hydro Developers and Operators	
---Recapitalization	Authority to accept funds (or alternatively) authority for the Administrators of PMAs to provide receipts from sale of hydro power to the SecArmy to fund hydropower operations	+		See same provision below under Recapitalization. Enables PMA to directly fund USACE through an MOA without having to go through a 3 rd party agreement, e.g the Jonesboro Agreement Bonneville Power has authority to direct fund the Corps, but the other PMAs do not. Bonneville Power from Budget Appendix fy12 BPA will finance its operations with a business-type budget under the Government Corporation Control Act, 31 U.S.C.9101–10, on the basis of the self-financing authority provided by the Federal Columbia River Transmission System Act of 1974 (Transmission Act) (Public Law 93–454) and the U.S. Treasury borrowing authority provided by the Transmission Act, the Pacific Northwest Electric Power Planning and Conservation Act (Pacific Northwest Power Act) (Public Law 96–501) for

				<p>energy conservation, renewable energy resources, capital fish facilities, and other purposes, the American Recovery and Reinvestment Act of 2009 (Public Law 111–5), and other legislation. Authority to borrow from the U.S. Treasury is available to the BPA on a permanent, indefinite basis. The amount of U.S. Treasury borrowing outstanding at any time cannot exceed \$7.70 billion. BPA finances its approximate \$4.7 billion annual cost of operations and investments primarily using power and transmission revenues and loans from the U.S. Treasury.</p> <p><i>Power Services.—</i> This activity provides for payment of the operation and maintenance (O&M) costs allocated to power the 31 U.S. Army Corps of Engineers and U.S. Bureau of Reclamation hydro projects, and amortization on the U.S. Bureau of Reclamation capital investment in power generating facilities and irrigation assistance at Bureau facilities.</p>
	IWTF-Admin Proposal	+	Waterway Users [and federal revenues if compromise]	Resubmit Administration proposal or a compromise version between Admin & IWUB proposal
	Enable Direct PMA funding from power sales	+		<ul style="list-style-type: none"> * Avoids use of 3rd party arrangements e.g. the Jonesboro Agreement. * PMAs, esp SWPA has agreed to finance entire Recap total of \$XX
	(POLICY STATEMENT] Direct USACE to implement process improvements in IWUB Report	0	Waterway Users	USACE committed to implement anyway; implementation underway. Nevertheless industry would appreciate Administration support and indication that Administration is committed to these improvements
---Deauthorization	Energy Savings Performance Contract ESPC Authority for USACE Hydropower	+	<ul style="list-style-type: none"> * Private Investment Funds * Hydro Design & Construct Firms 	<ul style="list-style-type: none"> * Energy Bill * Exists for DoD/Other Agencies Being pursued by private sector * Language drafted by industry; lobbying ongoing
	Expand Authority of SecArmy to modify project purposes to meet changing needs.	0		SecArmy currently has authority to modify purpose up to 15% of pool. Delegated to Dist Engineer up to 15% of pool or 5,000 ac-ft
	Deauthorization <i>process</i> for previously	0	N/A	Would mirror language in XXX that deauthorizes projects never funded

	constructed projects			
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	Deauthorization <i>process</i> for previously constructed projects that enables SecArmy to transfer property directly to other parties	0		Would enable direct transfer outside normal federal property transfer regulations and avoid need for specific project by project language. Would apply only to cases where a 3 rd party assumes project operations.
	Deauthorize selected projects that no longer serve authorized purposes (~150-200)	0	N/A	See List
	Deauthorize selected inactive and deferred construction projects (~15-29)	0	N/A	See List

NOTES: + = non-federal revenues

- = would require additional federal appropriations

0 = no impact on revenues or appropriations, but increase in efficiency of asset management

Summary of USACE Civil Works Business Programs USACE Alternative Finance Workshop

USACE Civil Works Business Programs – Overview List

- Navigation*
- Flood Risk Management*
- Environment (consisting of: Aquatic Ecosystem Restoration*, Environmental Stewardship, Formerly Utilized Sites Remedial Action Program)
- Hydropower*
- Regulatory
- Recreation*
- Emergency Management
- Water Supply*

**Major Business Programs to be Evaluated*

NAVIGATION

The navigation program is responsible for providing safe, reliable, efficient and environmentally sustainable waterborne transportation systems for the movement of commercial goods and for national security needs. The navigation program is vital to the nation's economic prosperity: 75 percent of America's overseas international trade moves through its ports. The nation's marine transportation system (MTS) encompasses a network of navigable channels, waterways and infrastructure maintained by the USACE, as well as publicly- and privately-owned vessels, marine terminals, intermodal connections, shipyards and repair facilities. The MTS consists of approximately 12,000 miles of inland and intra-coastal waterways; approximately 926 coastal, Great Lakes and inland harbors; 207 lock chambers at 171 sites; and channel projects comprising 13,000 miles, maintained by USACE.

FLOOD RISK MANAGEMENT

Through both structural and non-structural measures, the Flood Risk Management Program serves as a vehicle to reduce the risk to human safety and property from riverine and coastal flooding. Upon completion, and with the exception of reservoirs, most of the federally constructed infrastructure (levees, dams, floodwalls, etc.) has been transferred a non-Federal, cost-share sponsor to operate and maintain.

In implementing the Flood Risk Management Program, the Corps has demonstrated its commitment to lead the nation away from the mindset of controlling floods to a more comprehensive approach of managing the risks associated with floods and coastal storms. This shift in perspective acknowledges the complexities and dynamics of flood plains and the Corps' commitment to the partnerships necessary to apply effective flood plain and coastal flood risk management practices.

ENVIRONMENT

The Environmental Program includes three sub-programs: Aquatic Ecosystem Restoration, Environmental Stewardship and the Formerly Utilized Sites Remediation Action Program. Each of these sub-programs has separate goals and objectives and performance measures.

ENVIRONMENTAL: AQUATIC ECOSYSTEM RESTORATION (AER)

The USACE mission in the area of aquatic ecosystem restoration is to help restore aquatic habitat to a more natural condition in ecosystems whose structures, functions and dynamic processes have become degraded. The emphasis is on restoration of nationally- or regionally-significant habitat where the solution primarily involves modifying the hydrology and geomorphology.

ENVIRONMENTAL: ENVIRONMENTAL STEWARDSHIP

The environmental stewardship program focuses on the management, conservation and preservation of natural resources on 12 million acres of land and water at 456 multipurpose USACE projects. Among other environmental activities, program personnel monitor water quality at USACE dams and operate fish hatcheries in cooperation with state wildlife agencies. The program includes compliance measures to ensure that USACE projects meet federal, state and local environmental requirements; prevention; and conservation.

ENVIRONMENTAL: FORMERLY UTILIZED SITES REMEDIATION ASSISTANCE PROGRAM (FUSRAP)

Under the FUSRAP, USACE cleans up former military sites and civilian hazardous waste sites under the Environmental Protection Agency Superfund program.

HYDROPOWER

USACE multipurpose authorities provide hydroelectric power as an additional benefit of dam projects built for navigation and flood control. USACE is the largest owner-operator of hydroelectric power plants in the United States and one of the largest in the world. USACE operates 353 generating units at 75 multipurpose reservoirs, mostly in the Pacific Northwest; they account for about 24 percent of America's hydroelectric power and approximately 3 percent of the country's total electric-generating capacity. Its hydroelectric plants produce nearly 70 billion kilowatt-hours each year—sufficient to serve about 75 million households equal to 288 cities the size of Washington, DC. Hydropower is a renewable source of energy and one of the least environmentally disruptive sources of electric power, producing none of the airborne emissions that contribute to acid rain or the greenhouse effect.

REGULATION OF WETLANDS AND WATERWAYS

In accordance with the Rivers and Harbors Act of 1890 (Sec. 10) and the Clean Water Act of 1972 (Sec. 404), as amended, the Army Civil Works Regulatory Program regulates the discharge of dredged and fill material into U.S. waters, including wetlands. USACE implements many of its oversight responsibilities by means of a permit process. Throughout the permit evaluation process, the USACE complies with the National Environmental Policy Act and other applicable environmental and historic preservation laws. In addition to federal statutes, USACE must also consider the views of other federal, tribal, state and local governments and agencies; interest groups as well as the general public when rendering its final permit decisions.

RECREATION

USACE is an important provider of outdoor recreation, which is an ancillary benefit of its flood risk management and navigation projects. The USACE recreation program provides quality outdoor public recreation experiences in accordance with its three-part mission: 1) serve the needs of present and future generations; 2) contribute to the quality of American life; and 3) manage and conserve natural resources consistent with ecosystem management principles.

USACE administers 4,240 recreation sites at 422 projects on 12 million acres of land. During fiscal year 2010, 365 million people visited a USACE recreation site. These visitors spent \$16 billion pursuing their favorite outdoor recreation activity, supporting 270,000 full- and part-time jobs.

EMERGENCY MANAGEMENT

Throughout USACE history, the United States has relied on the civil works program for help in times of national disaster. Emergency management continues to be an important part of the civil works program that supports the Department of Homeland Security in carrying out the National Response Framework. It does this by providing emergency support in the areas of public works and engineering, and by conducting emergency response and recovery activities under authority of Public Law 84-99. USACE responds to more than 30 presidential disaster declarations in a typical year, and its highly-trained workforce is prepared to deal with both man-made and natural disasters.

USACE not only contributes to domestic emergency management efforts, but also plays a major role on the international stage through its participation in the civil military emergency preparedness program. In support of the Department of Defense (DoD), USACE shares emergency management knowledge and expertise with U.S. Allies and partners in the former Soviet Republics and Eastern Europe. This valuable program brings together key leaders and builds relationships among nations in direct support of the National Defense Strategy.

WATER STORAGE FOR WATER SUPPLY

Conscientious management of the nation's water supply is critical to limiting water shortages and lessening the impact of droughts. USACE has an important role in ensuring that homes, businesses and farms, nationwide, have enough water to meet their needs. USACE has the authority for water supply in connection with construction, operation and modification of federal navigation; flood damage reduction; and multipurpose projects.

USACE National Infrastructure Strategy – Financing Potential

Ed Hecker
Gary Loew
Asst to Director, Civil Works
HQUSACE

8 November 2011



US Army Corps of Engineers
BUILDING STRONG®



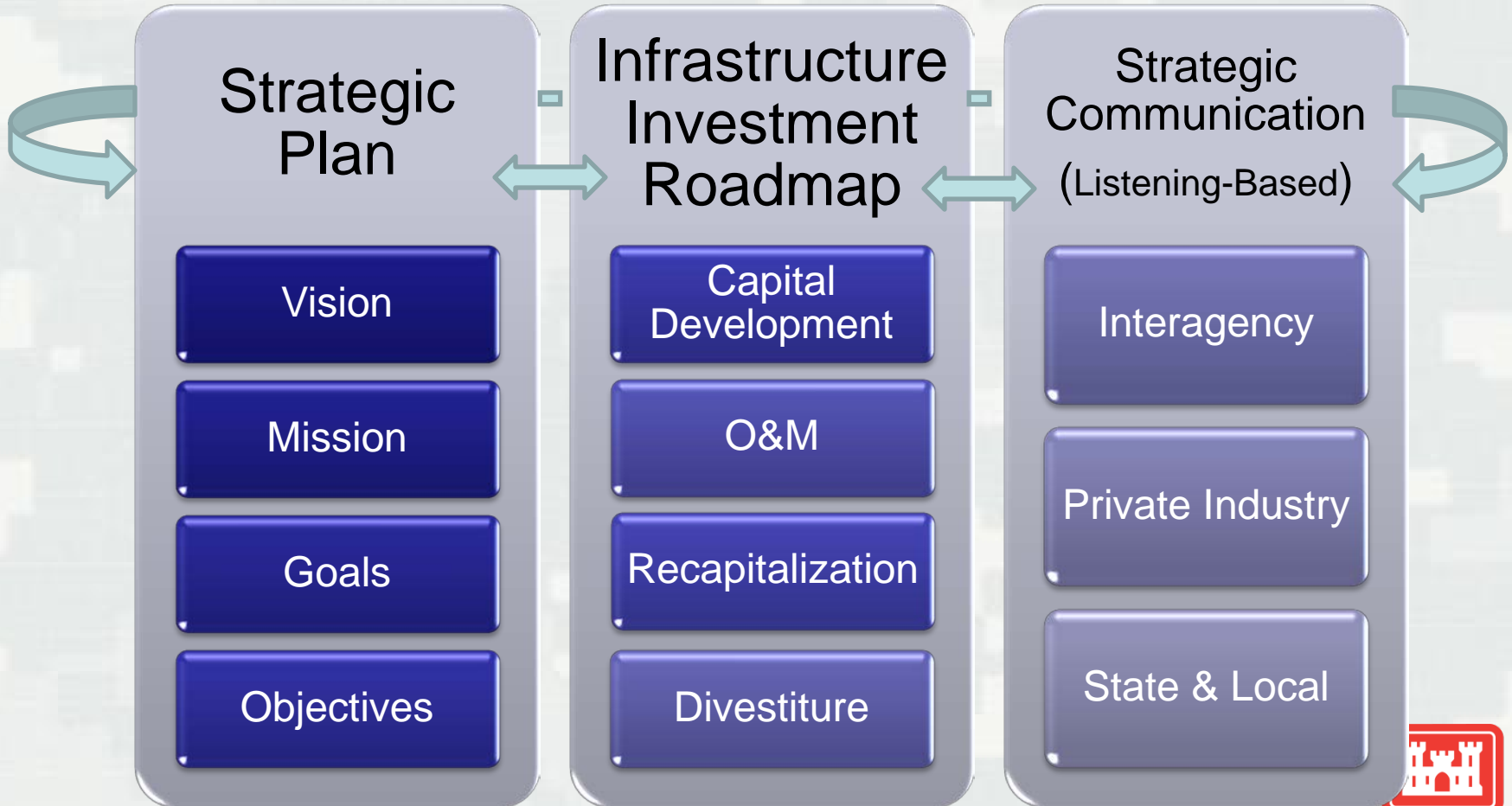
Purpose of this Brief

- Provide overview of Recap/Asset Management (AM) Senior Oversight Group (SOG) direction and objectives
- Update on financing and long term investing ideas and concepts
- Determine plan for next meeting with OMB



Framework

USACE Infrastructure Strategy



SWOT Analysis of USACE Infrastructure Strategy Appendix A

Objective: Wisely manage the portfolio of aging CW infrastructure while fulfilling our various mission requirements and effectively allocating (likely) constrained funds.

Strengths internal to USACE

- A. Abundance of project data for Dam Safety Program (DSP) is already collected
- B. Infrastructure inventory near completion
- C. Application of Facilities and Equipment Maintenance (FEM) System
- D. Asset Management for Navigation is mature
- E. Team has expertise from all levels of USACE
- F. Contracting mechanisms that can access external expertise

Opportunities of external environment

- A. Large pool of private funds available
- B. Potentially much private industry interest in expanded financial involvement with Corps O&M/Cap/Recap
- C. Potential local interests enthusiastic for expanded financial involvement
- D. Stakeholders interested and often easy to engage
- E. Engage federal agencies with similar missions

Weaknesses internal to USACE

- A. Disparate metrics across Business Lines (BL)
- B. Numerous and varied risk models/tools available which can cause confusion and BL separation
- C. Unified HQUSACE vision not yet matured
- D. Lack of in-house financial expertise of private sources
- E. Internal communication not integrated
- F. Strategy requires unknown funding levels for long term sustainability at this time

Threats of external environment

- A. With emphasis on deficit reduction, divestiture of assets could result in a reduction in Corps budget
- B. Uncertain fiscal climate, unreliable funding streams:
 - 1. Decreased appropriations
 - 2. Uncertain passage of Reform Bill
 - 3. Unforeseen restrictions from OMB
 - 4. Funding disaster recoveries from existing budget



OMB Questions

- What does Recapitalization mean?
- What is USACE doing?
- Legislation?



Life Cycle Asset Management (Senior Oversight Group (SOG))

- Create Asset (Capitalization)
- Operate and Maintain
- Recapitalize or Divest (Deauthorize)



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (1/3)

- Funding potential is specific to Infrastructure type
- Consider funding both for recapitalization and for O&M
- Recapitalization costs include planning, design, construction
- Alternative financing must consider change in traditional cost share
- Funding solutions must consider both local/partner cost and federal costs
 - Assisting local costs implies increase in federal cost-share
- Alternative financing may include advanced contributions, contributions in excess of existing cost share amount, donations, credits, loans, grants, infrastructure bank loans, bonding authority
 - Loan incentives include direct loans and loan guarantees
 - States have bonding authority now



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (2/3)

- All Public Private Partnership (PPP) solutions require a long term, low risk source of funds to repay the capital loaned. Loan period may be 10-30+ years. Examples:
 - Highway tolls to repay cost of construction and/or maintenance
 - Tipping fees for disposal of dredged material, use of port facilities
 - Recreation, Water Supply, Electricity fees
 - Bonds that fund state/local cost of facility construction or O&M
- USACE will likely need to revisit boundary between Recap and Maintenance
- There are other incentives to enable Recap e.g. the Energy Savings Performance Contracts (ESPCs—enable PPP for energy saving projects and operations)
 - The savings generally cover 100% of costs
 - Federal revenue is still required to repay the PPP capital



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (3/3)

- Solutions might range from cash to complete facility transfer
- General solutions should enable local variations
 - Give Districts authority to negotiate local solutions
 - As an incentive for Districts to generate project savings, allow them to reallocate funds to high priority requirements at the District or MSC.
- Recapitalized projects may be ‘repurposed’
- Revenue possibilities should include current uses and beneficiaries; not just currently ‘authorized’ purposes
 - Multiple purpose projects present a challenge
- Life cycle solutions include:
 - Careful selection of new projects (planning, design and construction)
 - Financing/Alternative Financing for
 - Recapitalization
 - O&M
 - Divestiture of projects that no longer serve authorized purposes or are no longer consistent with national priorities



RECAPITALIZATION OF USACE CW INFRASTRUCTURE INFRASTRUCTURE TYPES

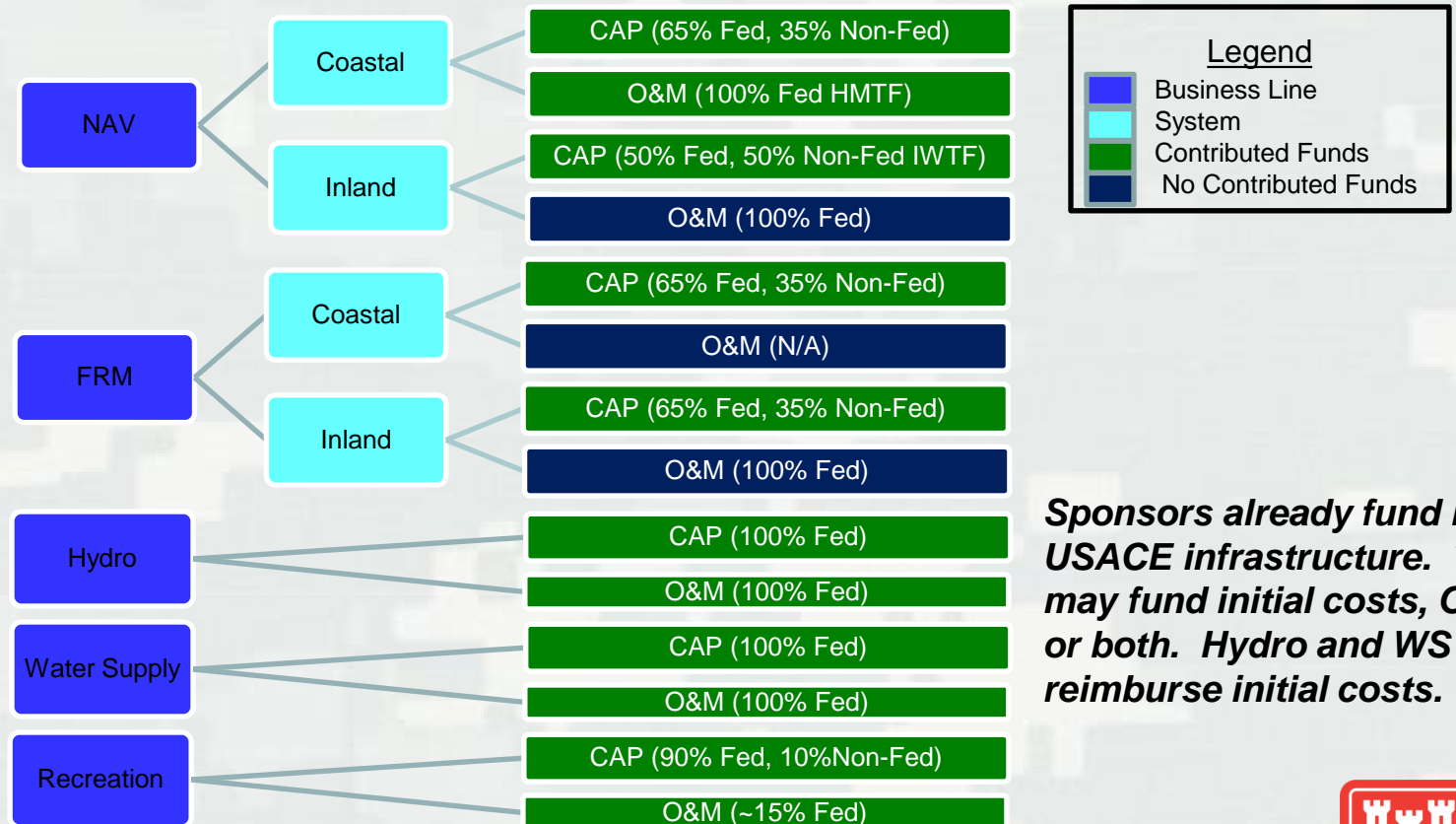
- **NAVIGATION** (Recapitalization & O&M)
 - COASTAL
 - INLAND
- **FLOOD RISK MANAGEMENT**
 - COASTAL
 - INLAND
- **AQUATIC ECOSYSTEM RESTORATION**
 - Not Applicable—projects are self-sustaining
- **HYDROPOWER**
- **WATER SUPPLY**
- **RECREATION**

Notes:

- Most projects are multiple purpose
- Users Pay Principle implies that funding solutions are specific to beneficiaries of each infrastructure type—no silver bullet



RECAPITALIZATION OF USACE CW INFRASTRUCTURE CURRENT SOURCES OF FUNDS



Sponsors already fund most USACE infrastructure. They may fund initial costs, O&M, or both. Hydro and WS reimburse initial costs.



Life Cycle Asset Management Appendix A

Enablers

■ CAPITALIZATION

- ▶ Planning—More deliberate selection of studies to meet program objectives. More efficient studies, esp for navigation
- ▶ Engineering—Improved Program and Project Management (See IWUB Report for list of 18 improvements)

■ OPERATIONS AND MAINTENANCE

- ▶ Risk-Informed, Systems-based Asset Management to prioritize work

■ RECAPITALIZATION

- ▶ More funds—long term
- ▶ Stakeholder and Partner relations
- ▶ Development of a Long Term Capital Budget Plan
 - NOTE: Capital Plans exist now for Dams (Dam Safety Report), Inland Waterways (IWUB Report) and Hydropower (HMI Report)
- ▶ Review of projects, esp. reservoirs, for updated needs and uses

■ DIVESTITURE

- ▶ Legislation to create a process to deauthorized operating projects no longer required. It can mirror existing legislation used to deauthorize projects never constructed and not funded for 5 years



The Way Ahead

- Continue to Engage Industry and Stakeholders
 - ▶ Berger Proposals, Workshop and White Paper on PPP Alternatives
 - ▶ CH2M Hill/Shaw Group/Industry Forums
 - ▶ NRC Colloquium
 - ▶ Workshops with federal/state/local interagency partners
- State of USACE Infrastructure Report
- Synchronize with CW Transformation in FY13 and FY14 Budgets
- Go to Next Level and Propose
 - ▶ Legislation
 - ▶ Policy and Program Management Changes
- Brief OMB on Recommendations (See proposals)



BACKUP SLIDES



US Army Corps of Engineers
BUILDING STRONG®



AM / Recapitalization Senior Oversight Group

Appendix A

Intent of SOG as laid out by HQUSACE

“Our current approach is unsustainable.”

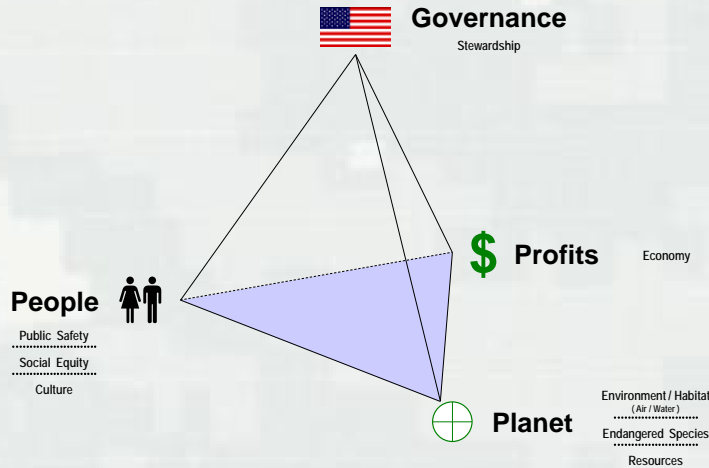
- Enable the management of the portfolio of aging Civil Works infrastructure while fulfilling our various mission requirements and effectively allocating (likely) constrained funds
- Fully mature AM in all CW business lines corporately, quickly, strategically, and efficiently
- Use the results of our AM / ReCap program to help better [inform our budget](#) decisions to preserve our Nation’s economy, security, and quality of life
- Conduct AM / ReCap as [transparent, integrated efforts](#) which encompass the full life-cycle of CW projects, cutting across business-lines and functional areas towards the objective of ensuring the long term sustainability of CW missions and programs
- (SOG) Address the analytical decision support, policy development, financing, and strategic communication aspects of ReCap with the Corps’ many partners, customers, and stakeholders
- (SOG) Guide and facilitate the [seamless integration](#) of AM and ReCap efforts towards one unified strategic vision and initiative
- (SOG) Help [accelerate the integration](#) of the dam and levee safety programs, the national levee assessment, and all remaining Corps business lines into the AM / ReCap efforts to serve as the foundation for a reformed CW budget development and defense process
- (AM / SOG) Concurrently inform the budget development process to facilitate alignment of CW priorities with national goals and the accompanying specific objectives associated with the CW Strategic Plan and various business lines

Specified Tasks laid out by HQUSACE

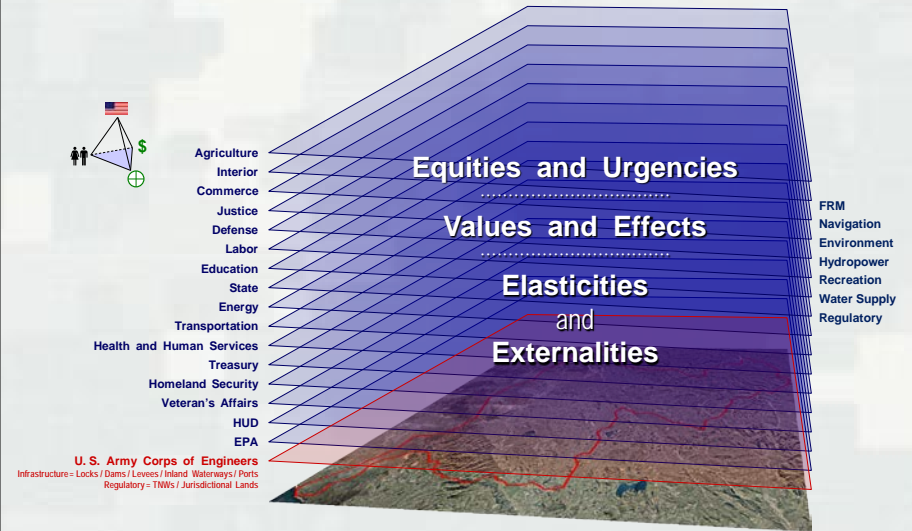
- ✓ (31 Aug 11) Designate a dedicated PM / Executive Director (SOG)
- (30 Sep 11) Advise / Assist preparing the Condition and Performance of the Nation’s Civil Works Infrastructure; provide review of 70% draft product (SOG)
- (1 Oct 11) Finalize the AM PgMP / (IWR) Draft a ReCap PgMP and brief the DCG-CEO / DCW (AM)
- (30 Nov 11) Complete a detailed “bottom up review” of expected outcomes / objectives / efforts and finances to date devoted to the AM effort since its inception (AM/SOG)
- (1st Q / FY12) Develop alternatives / recommendations w/ PID and CW Directorates to synchronize the SOG w/ CW Business Line Managers and annual budget processes (SOG)
- With DCW / PID / CW Team Leaders, [develop a potential WRDA 2013 and a long term financing action plan](#) for CW infrastructure which anticipates and supports the future needs of AM and ReCap recommendations (SOG)
- (31 Dec 11) Develop: 1) near and long term assessment of AM / ReCap Strategic Plan; 2) unified vision and internally consistent definitions of AM / ReCap components; and 3) recommendations on how they connect and mutually support new CW Strategic Plan and USACE Campaign Plan (SOG)
- (31 Dec 11) Use the CW Investment Decision Tool (C-WIDT) to develop / defend the FY14 CW budget; apply the WIDT within the FY14 Budget EC (31 Mar 12); assist AM w/ integrating inland navigation system condition assessment data in the WIDT (IWR)
- (30 Sep 12) [Develop / implement an action plan for fully synchronizing National Dam Safety and Levee Safety Programs](#) (and National Levee Inventory and Assessment Database) w/ AM and ReCap (SOG)
- (31 Jan 12) Develop a strategic communication plan (STRATCOM) that considers views / perspectives of users, stakeholders, legislative and government officials, industry and commercial interests, other Federal, state and local agencies, professional societies (SOG)

Civil Works Vision

Stakeholder / System Analysis



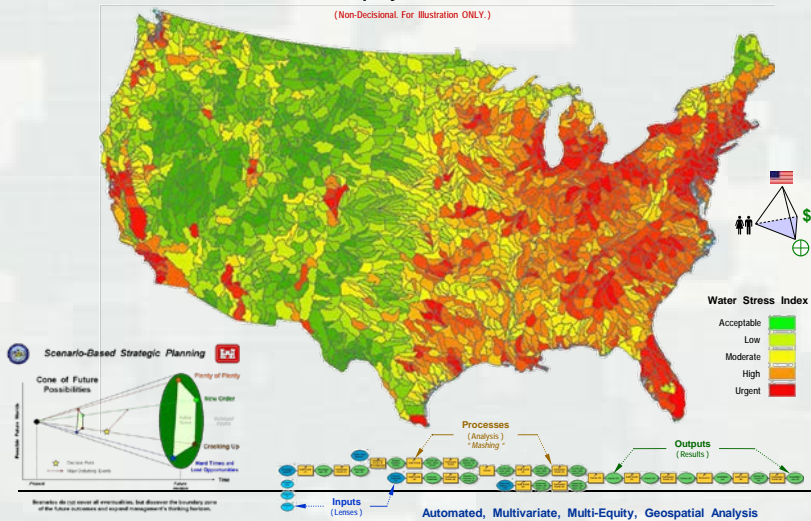
Value to the Nation "Lenses"



Value to the Nation "Baseline"

Multi-Equity Water Stress

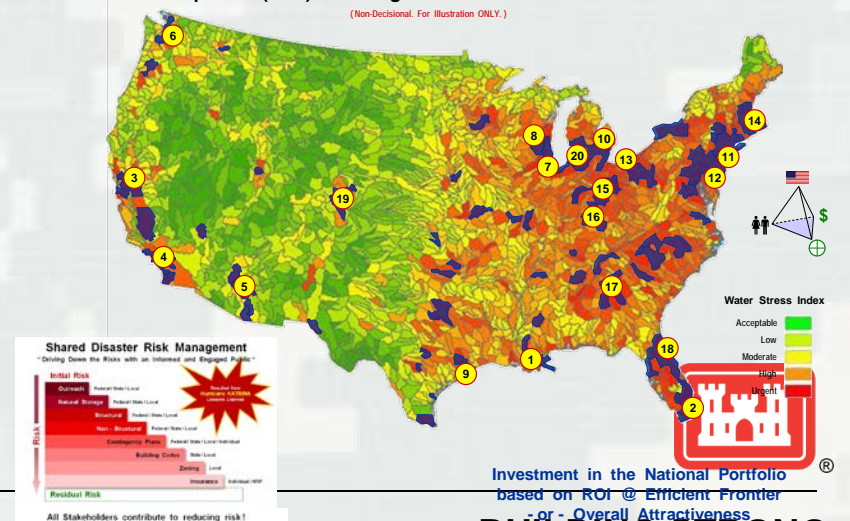
(Non-Decisional. For Illustration ONLY.)



Value to the Nation Portfolio

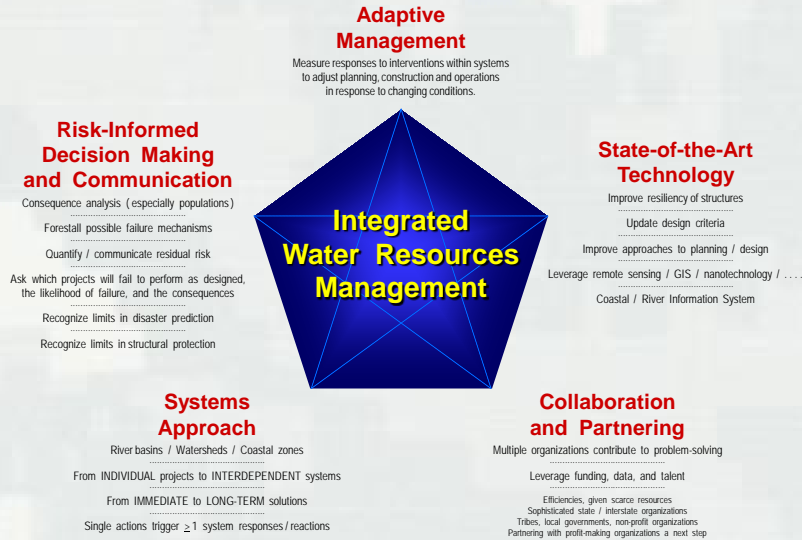
"Top 20" (1%) with Highest ROI / Overall Attractiveness

(Non-Decisional. For Illustration ONLY.)



Civil Works Doctrine

Overarching Approach

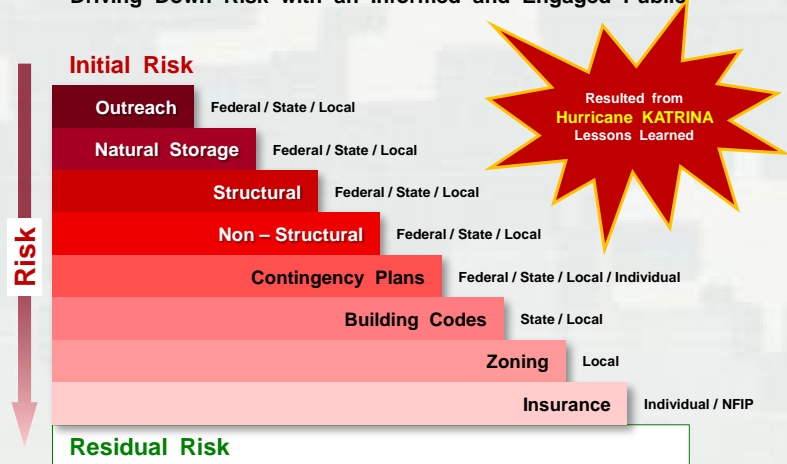


Life-Cycle Risk Management



Risk Management – A Shared Responsibility

“ Driving Down Risk with an Informed and Engaged Public “



All Stakeholders contribute to reducing risk!

Risk-Informed Decisionmaking

RISK = expected value of an unwanted event which may or may not occur

Step 1: Screening Step 2: P (Consequence | Threat) Step 3: P (Threat)

$$\text{Consequences} \times \text{Vulnerability} \times \text{Threat}$$

(“Threat – Agnostic”) (Internal) (External)

A rigorous process of:

- “Threat-Agnostic” Consequences Prioritization
- “Threat-informed” Vulnerability Assessment
- Probabilistic Prioritization of Investments
- Consistent Analysis of Alternatives
- Common Operating Picture
- Systems / Portfolio “Mastery”

		Condition Classification				
		A	B	C	D	F
		Adequate	Probably Adequate	Probably Inadequate	Inadequate	Failed
Consequence Category	I	11	16	20	23	25
	II	7	12	17	21	24
	III	4	8	13	18	22
	IV	2	5	9	14	19
	V	1	3	6	10	15

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RECAPITALIZATION OF USACE CW INFRASTRUCTURE SUMMARY

- Beneficiaries of each infrastructure type vary
- Funding solution for each type is different
- Some funding initiatives would work for several types (e.g. advanced funding, contributed funds, donations, etc.)
- DA should seek *authorities* that provide options whenever possible as opposed to authorities that dictate solutions, e.g. option to contribute funds.
- Multiple use FRM projects are the challenge—to define potential revenue sources that could repay loans
- Some USACE activities are already 100% funding (hydropower, water supply, coastal navigation O&M). Users will not agree to these solutions in the future unless they retain control of the use of funds (e.g. PMAs)
 - The corollary is that users will want complete control or oversight of any voluntary or legislated solution that involves their money.
 - USACE will need to identify what it must control and what it can let go.
- FRM/Multiple Purpose Projects are the challenge
- Suite of solutions/funding authorities/funding sources will be required
- Divestiture of infrastructure is an important part of the total program



RECAPITALIZATION OF USACE CW INFRASTRUCTURE STATUS OF SOLUTIONS

INFRASTRUCTURE TYPE	COMMENTS	STATUS
NAV-COASTAL (CAP)		No solution at this time
(O&M)		Cost 100% funded; Industry proposed HMTF solution
NAV-INLAND (CAP)	Range of projects is 103 (max) – 26(min) Need to clarify Recap/O&M	Capital costs 50% funded Admin and Industry proposals active. Include user fees, increased fuel tax
(O&M)		Admin proposal includes O&M?
FRM-COASTAL (CAP)		No solution at this time
(O&M)	N/A	N/A
FRM INLAND (CAP)	About 300+ projects? Need to clarify Recap/O&M Need to improve prioritization methodology	No solution at this time
(O&M)		No solution at this time
HYDROPOWER (CAP)	PMA concurrence req'd N/A to Bonneville System	Cost 100% reimbursed PMA's verbal to fund more Pvt Firm seeking ESPC legislation
(O&M)	PMA concurrence req'd N/A to Bonneville System	Cost 100% funded now; not to USACE. PMA's already funding some and verbal to fund more
WATER SUPPLY	Emerging payee; esp in southwest/west	Cost ~ 30% reimbursed now;
AQUATIC ECOSYSTEM RESTORAION	N/A for CAP – Projects are self sustaining (Some O&M)	N/A
RECREATION	User fees collected, but into Treasury; other Fed agencies retain 50% collections;	Legislation has been proposed



RECAPITALIZATION OF USACE CW INFRASTRUCTURE

ALTERNATIVE FUNDING SOLUTIONS AND THEIR APPLICABILITY TO USACE INFRASTRUCTURE

Appendix A

	NAV*	FRM*	HYDRO	WATER SUPPLY	AER
ADVANCED CONTRIBUTIONS	√		√		
DONATIONS	√ (Miami, Corpus)	√	√ (PMAs)		
BONDING AUTHORITY	√	√			
RECAP BANK	√	√			
LOAN GUARANTEE	√	√			
GRANTS	√	√			
USER FEES	HMTF 100% for Coastal Nav O&M IWTF 50% for CAP		100% reimbursed for CAP and O&M	√ - 100% reimbursed for CAP and O&M	
SPECIAL TAXING DISTRICT		√			
CREDITS	√	√			
ASSUMPTION OF PLNG/DESIGN/CONTRUC TION/O&M	√	√			
PPP-(LOAN)			√ ESPC could fully fund some projects		
REVISE COST SHARE	√	√	√	√	
REPURPOSE PROJECT; REVISE COST SHARE	√	√		√	
DIVESTITURE	√		√	√	



* Need to identify potential revenue sources and determine how to apply to multiple purpose projects

Examples of Financing Alternatives

- Working: HMTF, IWTF, Hydropower Contributions, Hydropower ESPCs, Retention of Rec User Fees
- Hydropower: Take Hydropower off-line, e.g. Bonneville Power, TVA
- “Donations” (Miami Harbor, Corpus Christi-Rincon Channel)
- Credits for WIK or for PIng/Design/Construction in excess of cost-share
- Water Supply: Non-federal-funded studies
- Water Supply: Contributions towards Recap Projects that would extend project life]
- Water Supply: Expand authority for USACE to execute projects for sedimentation management and dredging
- Water Supply: Refine, clarify cost of storage methodology to enable reallocation
- Multiple Purpose: Authorize USACE to provide credit to non-fed sponsors for work related to O&M activities



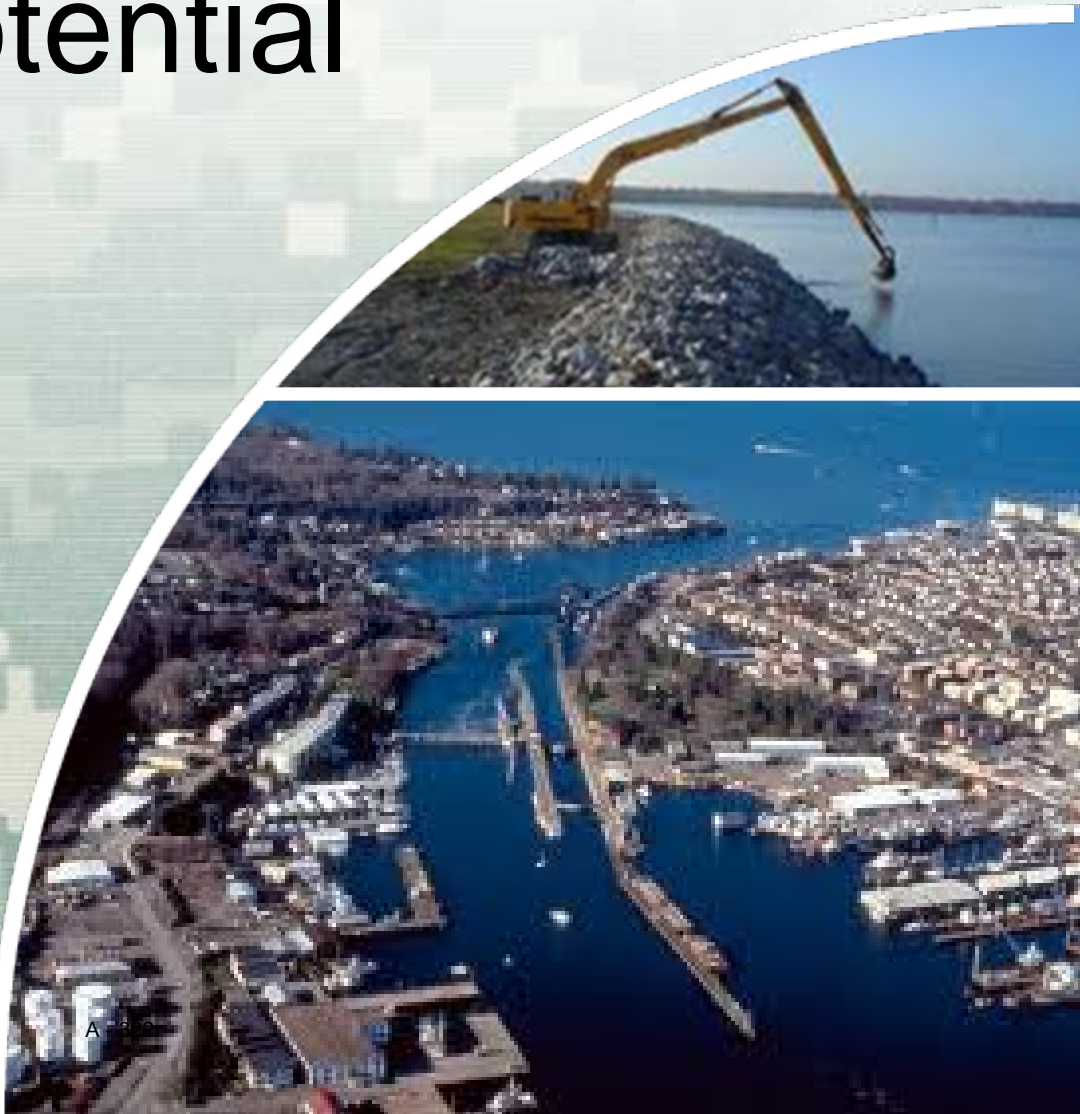
USACE Infrastructure Financing Potential

Gary Loew
Asst to Director, Civil Works
HQUSACE

6 October 2011



US Army Corps of Engineers
BUILDING STRONG®



Purpose

- Common understanding of scope of options and limitations
- Seek feedback and guidance



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (1/3)

- Funding potential is specific to Infrastructure type
- Consider funding both for recapitalization and for O&M
- Recapitalization costs include planning, design, construction
- Alternative financing must consider change in traditional cost share
- Funding solutions must consider both local/partner cost and federal costs
 - Assisting local costs implies increase in federal cost-share
- Alternative financing may include advanced contributions, contributions in excess of existing cost share amount, donations, credits, loans, grants, infrastructure bank loans, bonding authority
 - Loan incentives include direct loans and loan guarantees
 - States have bonding authority now



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (2/3)

- All PPP solutions require a long term, low risk source of funds to repay the capital loaned. Loan period may be 10-30+ years.

Examples:

- Highway tolls to repay cost of construction and/or maintenance
- Tipping fees for disposal of dredged material, use of port facilities
- Recreation, Water Supply, Electricity fees
- Bonds that fund state/local cost of facility construction or O&M
- USACE will likely need to revisit boundary between Recap and Maintenance
- There are other incentives to enable Recap e.g. the Energy Savings Performance Contracts (ESPCs—enable PPP for energy saving projects and operations)
 - The savings generally cover 100% of costs
 - Federal revenue is still required to repay the PPP capital



RECAPITALIZATION OF USACE CW INFRASTRUCTURE OBSERVATIONS (3/3)

- Solutions might range from cash to complete facility transfer
- General solutions should enable local variations
 - Give Districts authority to negotiate local solutions
 - As a incentive for Districts to generate project savings, allow them to reallocate funds to high priority requirements at the District or MSC.
- Recapitalized projects may be ‘repurposed’
- Revenue possibilities should include current uses and beneficiaries; not just currently ‘authorized’ purposes
 - Multiple purpose projects present a challenge
- Life cycle solutions include:
 - Careful selection of new projects (planning, design and construction)
 - Financing/Alternative Financing for
 - Recapitalization
 - O&M
 - Divestiture of projects that no longer serve authorized purposes or are no longer consistent with national priorities



RECAPITALIZATION OF USACE CW INFRASTRUCTURE INFRASTRUCTURE TYPES

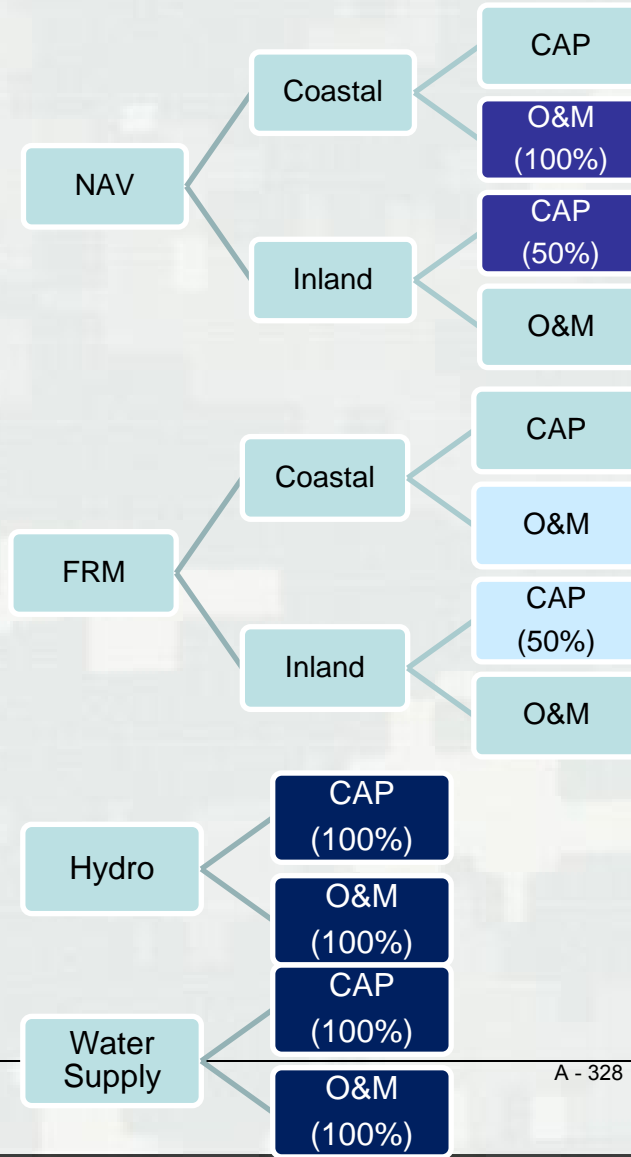
- **NAVIGATION** (Recapitalization & O&M)
 - COASTAL
 - INLAND
- **FLOOD RISK MANAGEMENT**
 - COASTAL
 - INLAND
- **ACQUATIC ECOSYSTEM RESTORATION**
 - Not Applicable—projects are self-sustaining
- **HYDROPOWER**
- **WATER SUPPLY**
- **RECREATION**

Notes:

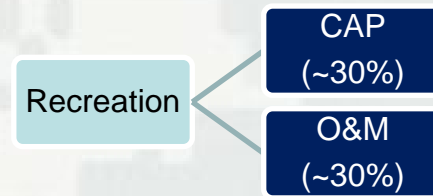
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RECAPITALIZATION OF USACE CW INFRASTRUCTURE CURRENT SOURCES OF FUNDS

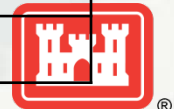


8 of 14 Infrastructure Types are already funded to either repay capital costs or pay for O&M or both



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The Way Ahead

- Continue to Engage Industry and Stakeholders
 - ▶ CH2M Hill/Shaw Group/Industry Forums
 - ▶ NRC Colloquium
 - ▶ Workshops with interagency partners
 - ▶ LBG Workshop and White Paper on PPP Alternatives
- State of USACE Infrastructure Report
- Synchronize with CW Transformation/FY13 and FY14 Budgets
- Go to Next Level and Propose
 - ▶ Legislation
 - ▶ Policy and Program Management Changes



White Paper: Potential Financing Strategies

- Compilation of strategies for further research and workshop discussion
 - ▶ Techniques for Increasing Capitalization and Recapitalization (partnerships and finance strategies)
 - ▶ Fee Enhancement (to support partnerships and local cost share)
 - ▶ Techniques for Lowering Cost of Program Delivery (effective practices to promote savings and efficiency)
 - ▶ Techniques for Expanding and Optimizing Cost Sharing (federal and local agencies)



Capitalization: Public Private Partnership (PPP) Strategies

- PPP Delivery Methods
 - ▶ Long Term Leases/Concessions, including Design Build Operate Maintain + Finance (DBOM+F) (*goals: asset divestiture, raise funds for recapitalization*)
 - ▶ Availability Payment Program with DBOM (*goal: pay over time for immediate recapitalization*)
 - ▶ Design Build (*goal: transfer cost and delivery risk with firm-fixed price*)
 - ▶ Maintenance Program (*goal: transfer cost escalation risk with firm-fixed price*)



Capitalization: Public Private Partnership (PPP) Strategies

- **Financing to Facilitate PPPs**
 - ▶ Credit Assistance/Enhancement Program (examples: USDOT TIFIA and RRIF programs)
 - Loan Guarantees and Bond Insurance
 - Construction-Period Loans and Long-Term Subordinate Loans
 - Reserve Funding or Guarantees
 - ▶ Bond Solutions (Private Activity Bonds or direct underwriting)
 - ▶ Revenue Source Authorization/Assistance
 - ▶ Investment Tax Credit Program
 - ▶ Infrastructure Bank (to organize all financing initiatives)
 - Seed funding through appropriation, asset divestiture, or trust fund revenue
 - Additional leverage (3:1 or 4:1) through issue of bank bonds or sale of loans
 - Administer Credit Assistance Program or Bond Solutions (as above) for additional leverage through private equity investment
 - Detailed credit evaluation and project prioritization



Fee Enhancement

- Raise funds for recapitalization through fees to dedicated trust funds, PPP support, or infrastructure bank
 - ▶ *Key target:* Freight User Fees (ad valorem taxes, container fees, docking surcharges or access fees, lock user fees, fuel taxes, waterway tolls)
 - ▶ Value Capture Program (fees to capture benefits to users of FRM, Recreation and FUSRAP investments)
 - Tax Increment Finance Districts
 - Developer Fees
 - Special Improvement or District
 - ▶ Asset Divestiture (upfront fee or annual lease/license)
 - ▶ Technology Transfer (royalty for use of innovative technology or fees for technical assistance or services)
 - ▶ Easements and Branding Rights (right of way easements, license of naming rights or advertising)



Lowering the Cost of Program Delivery

- Initiatives to promote efficiency and value based on effective USDOT practices
 - ▶ Special Experimental Program Delivery (authorization for pilot testing of innovative techniques)
 - ▶ Advanced Construction Program (authorization for full recognition of advanced construction)
 - ▶ LIFE (Long-lasting, Innovative, Fast, and Efficient) program to promote efficient construction techniques, innovative materials, or effective life-cycle maintenance approaches.
 - ▶ Budget flexibility (redefine maintenance versus preservation to allow flexibility in transfer of program funds)



Expanding and Optimizing Cost Share

- Change in Cost Share Standard (innovative finance justifies and enables higher local share)
 - ▶ USACE support through innovative finance toolkit, technical assistance, and credit enhancement
 - ▶ USACE shifts focus to project planning and technical assistance
- Project prioritization based on level of non-federal match (USACE sets minimum/maximum or removes cap)
- Promote Donations and Not-for-Profit Partnerships (e.g., conservancy program for recreation facilities)
- Federal Agency Coordination and Cost Sharing
 - ▶ Overlapping responsibilities and multi-use facilities
 - ▶ Consider actual use not just authorized purpose
 - ▶ Multi-modal corridor programs for goods movement





Workshop Agenda: Analysis of Alternative Finance Mechanisms

Workshop Objective: To further understand the perspective and requirements of potential future financing partners and the critical information needed for the implementation of alternative finance mechanisms particularly as each applies to the water infrastructure business lines of the USACE.

- 8:30 AM - Welcome & Opening Remarks – Steve Stockton
- 8:40 AM - Introductions, Administrative Information, and Workshop Objectives
- 8:50 AM - Overview of USACE Infrastructure Strategy and Overall Objectives, Challenges, and Opportunities -- Jim Hannon
- 9:00 AM - Q & A with Jim Hannon
- 9:25 AM - Brief introduction to major roles, players and stakeholders -- Lowell Clary
- 9:30 AM - Three fifteen minute Case Study/Proposal Presentations by the Finance Sector Guests.
- 10:15 AM - Moderated panel with the Finance Presenters – Application to USACE work and projects
- 11:00 AM - Break
- 11:10 AM - Four 10-15 minute Case Study Presentations by Transportation Infrastructure Finance and Innovation Act (TIFIA) and State Infrastructure Bank (SIB) Guests
- 12:00 Noon - Moderated panel with SIB and TIFIA Presenters – Application to USACE work and projects
- 12:30 PM - Lunch in the Conference Room (Provided at \$10 per person)
Roundtable discussion during lunch (20-30 minutes): Rating agencies, financial advisors, and legal perspectives
- 1:30 PM - Introduction to Afternoon Agenda – Moderated Group Discussions
- 1:40 PM - Moderator led discussion identifying several likely application projects or scenarios
- 2:10 PM - Each of the application projects will be explored for the most promising financing mechanisms, objectives and goals (benefits) of each of the participants involved in the financing mechanism and the corollary requirements that accompany those benefits, steps for implementation and action plan
- 2:15 PM - Application 1
- 3:00 PM - Application 2
- 3:45 PM - Application 3 – (if there is time)
- 4:30 PM - Summary and Next Steps
- 5:00 PM - Adjourn



Analysis of Alternative Finance Mechanisms Workshop

Date: Tuesday, December 4th, 2012
 Location: Louis Berger Group DC Office Conference Room
 1250 23rd Street NW, Washington, DC 20037

Workshop Objective: To further understand the perspective and requirements of potential future financing partners and the critical information needed for the implementation of alternative finance mechanisms particularly as each applies to the water infrastructure business lines of the USACE. Moderated panels and case study projects will provide the structure for evaluating the most promising financing mechanisms for the USACE and identifying the specific obstacles and strategies for implementing alternative financing for these and other USACE water infrastructure projects.

Agenda:

- 8:30 AM - Welcome & Opening Remarks – Steve Stockton
- 8:40 AM - Introductions, Administrative Information, and Workshop Objectives
- 8:50 AM - Overview of USACE Infrastructure Strategy and Overall Objectives, Challenges, and Opportunities -- Jim Hannon (Presentation will establish the parameters to be discussed during the workshop)
- 9:00 AM - Q & A with Jim Hannon
- 9:25 AM - Brief introduction to major roles, players and stakeholders by Lowell Clary- Lenders, Investors, rating agencies, for-profit and non-profit partners
- 9:30 AM - Three fifteen minute Case Study/Proposal Presentations by the Finance Sector Guests. Case studies will give an example of a financing project, what aspects of that project would translate to alternative financing of a water infrastructure project, and what elements would need to be addressed to apply the model to water infrastructure projects
 - P3 example: Nick Greenwood. Financial Advisor to Public and Private entities, KPMG. Case study: West of Hudson Hydroelectric Project (See Attachment A, Case Study Descriptions)
 - Lender perspective: Bob Prieto/David Horner (TBA)
 - Investor perspective: Joe Aiello, North America CEO, Meridiam. Case study: Revenue risk based P3
- 10:15 AM - Moderated panel with the Finance Presenters – Applying the knowledge to USACE work and projects
- 11:00 AM - Break



- 11:10 AM - Two 15 minute Case Study Presentations by TIFIA and State Infrastructure Bank (SIB) Guests – Case studies will share the challenges that need to be overcome for SIB creation and effectiveness, as well as suggestions for creating a SIB for water infrastructure projects. Case studies will describe the process- how they were set up, how they were capitalized, project solicitation and screening, how to underwrite loan applicants, strengths and weaknesses.
- SIB- Melinda Lawrence, SIB Administrator, Ohio.
 - SIB- Lowell Clary Case study: Florida
 - TIFIA- Jorianne Jernberg, USDOT TIFIA representative: How the federal loan program was initiated, describe the credit risk premium and the OMB process.
 - WIFIA discussion
- 12:00 Noon - Moderated panel with SIB and TIFIA Presenters – Applying the knowledge to USACE work and projects
- 12:30 PM - Lunch in the Conference Room (Provided at \$10 per person)
- Roundtable discussion during lunch (20-30 minutes): Rating agencies, financial advisors, and legal perspectives- what they look for
- Legal Perspective: David Horner, Allen & Overy
 - Rating Agencies: Michael McDermott, Managing Director, Global Infrastructure and Project Finance, Fitch Ratings; Grace Drinker, Associate Director, Infrastructure Sector Specialist, Standard and Poors
 - Financial Advisor: Nick Greenwood, Financial Advisor to Public and Private entities, KPMG
 - P3 Perspective: Bob Prieto, Senior Vice President, Fluor Corp
- 1:30 PM - Introduction to Afternoon Agenda – Moderated Group Discussions
- 1:40 PM - Moderator led discussion will determine several likely application projects or scenarios that can provide the framework for discussing the most promising financing mechanisms for the USACE water infrastructure business lines. (See example list below)
- 2:10 PM - Each of the application projects will be explored for the most promising financing mechanisms. The discussion will then revolve around the objectives and goals (benefits) of each of the participants involved in the financing mechanism and the corollary requirements that accompany those benefits.
- For each of the application projects and their accompanying financing mechanism, the group will discuss what steps are necessary for implementation and an outline of an action plan. The group discussion will be moderated by Mr. Al Racciatti and Dane Ismart.



Examples of Potential Application Projects could include:

- Vendible opportunities in hydropower, recreation, & inland waterways
- Pilot for discretionary use of Harbor Maintenance Trust Fund (HMTF)
- Pilot for Partnership between USACE and State Infrastructure Banks in the Great Lakes Region
- Pilot for expanding adoption of not-for-profit partners in recreation and eco-restoration
- Pilot for advancement of Public Private Partnership solution for USACE locks and dams
- Program / Process for asset re-evaluation and disposition

Suggestions for guidelines for selecting case studies for discussion:

- 2:15 PM - Application 1- Monetizing a brownfield (existing) project with SIB/ TIFIA/ WIFIA credit enhancement
- 3:00 PM - Application 2 –Developing a greenfield (new) project with P3 finance and/or SIB/ TIFIA/ WIFIA credit enhancement
- 3:45 PM - Application 3 – (if there is time) – Availability payments- pay over long term life of project with private partner responsible for availability for use and/or Special Experimental Program (SEP) opportunities
- 4:30 PM - Summary and Next Steps:
The results of the moderated group discussion will be incorporated into the Alternative Financing Report which will further develop each of the financing mechanism’s advantages, disadvantages, risks, and opportunities. The Corps will help to identify potential barriers and risks for implementation, statutory and regulatory barriers for possible implementation, whether the mechanisms are consistent with existing policy or would require policy changes, and other policy implications for the report.
- 5:00 PM - Adjourn

Analysis of Alternative Finance Mechanisms

Workshop (Louis Berger Group)

December 4, 2012

Jim Hannon –USACE Chief of Operations

Ed Hecker



US Army Corps of Engineers
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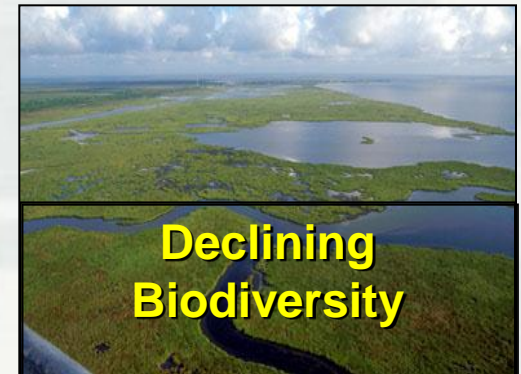
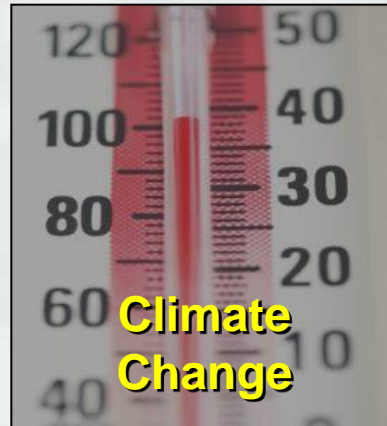
Who We Are

Greatly impacts US Economy

- Navigation
- Flood Risk Management
- Hydropower Generation
- Water Supply Storage
- Natural Resource Management and Recreation
- Ecosystem Restoration



National Water Resource Challenges



Add “*Rivers*” to Infrastructure Discussion



Roads



Railways



Runways



Rivers



Infrastructure Strategy

- **Infrastructure Comprehensive Strategy:** An integrated approach
 - ✓ **Asset Management:** Comprehensive approach
 - ✓ **Life cycle system:** Assess and manage projects well, make funding priorities, sound decision making
 - ✓ **Alternative financing:** Look at all financing options
 - ✓ **CW decision making:** Develop a holistic approach
 - ✓ **Strategic communication:** A robust strategy to increase national attention about water infrastructure

Result: A reliable and sustainable infrastructure!





Initial Alternative Financing Workshop

Appendix A

➤ Overarching Opportunities / Strategies

- Short term lease opportunities
- Infrastructure bank/revolving loan funds: low cost loans
- Customers carry initial investment -- pay upfront – but get money reimbursed
- Identify resources/programs that are or could be vendible and develop business case. Identify industries, business people attracted to business case
- Value Capture (long term strategy) – high long-term potential for USACE



Thank You!



US Army Corps of Engineers

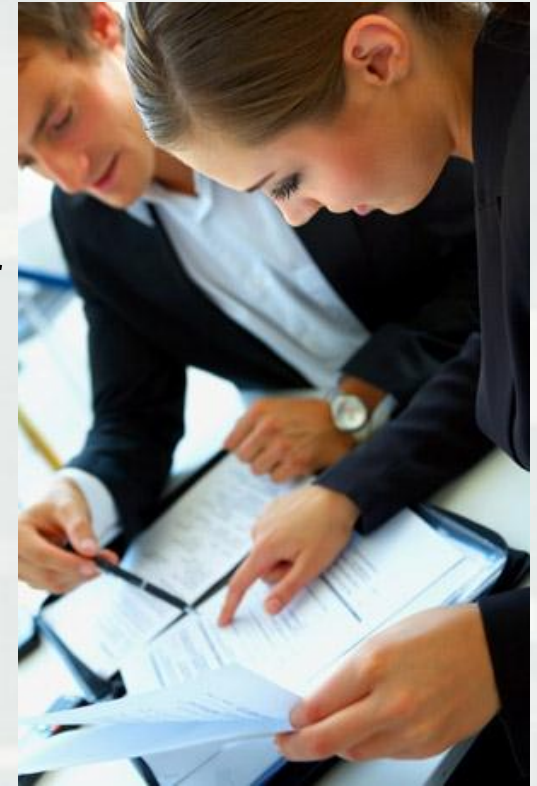
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Budget Transformation

- Goal-oriented approach to budgeting
- Alignment and integration of programs
- Make Civil Works Strategic Direction part of the institution
- Develop a budget that identifies relevant, important and smart decisions
- Improve justification of budget allocations



***Result:* Improved financial options equals
better system**



Pilot Projects

Scope:

The intent of the Pilot Projects is to begin the transformation of our current business model to one that embraces innovative financing alternatives. The scope of this effort is to work with MSCs to identify projects which have the greatest possibility of employing such alternatives and to implement them.



Pilot Projects

Deliverables:

1. Project Evaluation criteria
2. Identification and management of risks/challenges
 - ▶ Challenges-Legal, Legislative, potential manpower reductions, etc.
 - ▶ Risks-Mission, technical competencies, etc.
3. Communication Plan (for stakeholders and internal)
4. Implementation of alternative means of funding (partially or fully) which can include transfer.
5. Recommendation for sharing and storing lessons learned (from this effort as well as what they have previously accomplished in the area of alternative financing).



RECAPITALIZATION OF USACE CW INFRASTRUCTURE ALTERNATIVE FINANCING POTENTIAL

OBSERVATIONS

- Solutions might range from cash to complete facility transfer
- General solutions should enable local variations
 - Give Districts authority to negotiate local solutions
 - As an incentive for Districts to generate project savings, allow them to reallocate funds to high priority requirements at the District or MSC.
- Recapitalized projects may be 'repurposed'
- Revenue possibilities should include current uses and beneficiaries; not just currently 'authorized' purposes
 - Multiple purpose projects present a challenge
- Life cycle solution includes:
 - Careful selection of new projects (planning and d/c)
 - Financing/Alternative Financing for
 - Recapitalization
 - O&M
- ~~Divestiture of projects that no longer serve authorized purposes~~



RECAPITALIZATION OF USACE CW INFRASTRUCTURE ALTERNATIVE FINANCING POTENTIAL

USACE INFRASTRUCTURE TYPES*

- NAVIGATION (Recapitalization & O&M)
 - COASTAL
 - INLAND
- FLOOD RISK MANAGEMENT
 - COASTAL
 - INLAND
- AQUATIC ECOSYSTEM RESTORATION
 - Not Applicable—projects are self-sustaining
- HYDROPOWER
- WATER SUPPLY

Notes:

- Most projects are multiple purpose
- Users Pay Principle implies that funding solutions are specific to beneficiaries of each infrastructure type—no silver bullet



Examples of Financing Alternatives

- Hydropower: Remove Hydropower from the budget and directly fund all 75 projects with revenue from sale of electricity. After O&M and capital expenses are paid, residual resources would return to the General Treasury.
- Navigation: Pass bill guaranteeing HMTF revenues go toward HMTF appropriations.
- Water Supply: Amend federal law that prohibits non-federal sponsors from paying more than 50% of the cost of reallocation studies. Currently, the Senate is considering a bill which would allow sponsors to pay 100% of cost of reallocation studies.
- Authorize Pilot Programs to test:
 - ▶ Return of Recreation Fees in a State/District/River Basin Area w/ funds returned to the Corps or contracted with private sector for OM&R
 - ▶ Return of Hydropower revenues to OM&R hydropower facilities and impoundments where they are located
 - ▶ Bring business line leaders together and challenge them to develop innovative ideas for privately funding their BL partially or in total and what would be required
 - ▶ Bring together consortium to facilitate the development of PP venues to pay for part or all Corps OM&R/Cap/ReCap





USACE

Alternative Financing Workshop

Florida State Infrastructure Bank Overview



History

- Federal SIB program pilot authorized in 1995
- Florida one of 10 “pilot” states authorized
- Deposited initial funds to capitalized Florida “Federal SIB” in 1996 and 1997
- Florida “State SIB” authorized in 2000 and capitalized from State General Funds and Funds Available to Transportation
- Authorized to “bond” the SIB Program in 2003

Florida “Federal SIB”

- Active in Florida since 1996
- Capital Deposits:
 - Federal Highways/Transit - \$48.51M
 - Federal Transit - \$10.81M
 - Federal Highways - \$67.00M
- Loans Made: \$382.69M
- Loans Repaid: \$213.66M, revolved in SIB
- Funds Available June 30, 2012: \$90.59M

Florida “State SIB”

- Capitalization:
 - State General Funds - \$193.5M
 - Florida State Transportation Trust Fund - \$135.5M
 - Planned Future Years - \$10M per year
 - Bond Proceeds - \$109.7M
- Loans Made: \$803.63M
- Loans Fully Repaid: \$126.93M, revolved in SIB
- Funds Available June 30, 2012: \$56.9M

Program Approach

- Florida Federal SIB – restricted to highways and transit only, must be Federal eligible
 - Focused on State and Local projects that meet Federal standards
 - Loans are typically 1 to 10 year terms
- Florida State SIB – very flexible program for all modes of transportation including seaports
 - Focused more on Local projects and can be State or local standards
 - Loans vary from 1 to 35 year terms

Loan Process

- Competitive Process, applications accepted once per year (by August 31, 2012)
- \$50M to \$100M new loans available per year
- Technical and Financial Review of Applications
 - Readiness
 - Financially Sound
 - Technically Sound
 - Priority Project
 - Economic Stimulus – Jobs!

Loan Process (cont)

- Loans “Awarded” After Review by Florida DOT (Mid November 2012)
- Loans included in Florida DOT “Work Program”, and “approved” by Legislature (early May 2013) for availability next fiscal year (July 1, 2013)
- Final Loan Terms Negotiated and Executed
- Project Moves Forward

Leveraging Dollars!

- Loan Payments Revolved back in SIB
- Florida “State SIB” loan portfolio bonded
- SIB Loans Leverage Other Funding
 - “Federal SIB” \$383M supports \$1,248M in total project cost, ratio of \$3.26 to each SIB loan dollar
 - “State SIB” \$804M supports \$7,359M in total project cost, ratio of \$9.15 to each SIB loan dollar
 - In a number of cases SIB loan is the “last dollar” needed to move a project forward

USACE Alternative Financing Workshop

Bob Prieto

Fluor

December 4, 2012



sus·tain·a·bil·i·ty

(suh-stā'n-a-bil-i-tee): meeting the needs of our clients while conducting our business in a socially, economically and environmentally responsible manner to the benefit of current and future generations, thereby creating value for all of our stakeholders

FLUOR[®]

Fluor P3 Models

- ◆ **Not for Profit - 63-20/501 (c) (3)**
- ◆ **For Profit**
 - **Revenue Based Concession**
 - **Availability Based Concession**

Not for Profit - 63-20/501 (c) (3)

- ◆ ***Pocahontas Parkway (Route 895 Connector) – Richmond, Virginia*** - first capital project constructed under the Commonwealth of Virginia's Public-Private Transportation Act of 1995. \$324 million, 8.8 mile divided highway
- ◆ **E-470 Toll Highway** demonstrates our ability to apply value engineering to develop an affordable P3 project, with tax exempt financing, that was the first privately-financed design-build, toll highway project to be completed in the U.S.
- ◆ ***SH 130 Toll Road – Austin, Texas*** - represents the single largest highway project in Texas and one of the largest design-build transportation projects in the United States; first project to use innovative Exclusive Development Agreement
- ◆ **Conway Bypass** – design, build, finance \$386 million, 28.5 mile controlled access highway

For Profit – Revenue Based Concession



- ◆ **Capital Beltway HOT Lanes** is the first surface transportation project to achieve financial close using Private Activity Bonds and the largest P3 concession for new highway capacity in U.S. history.
- ◆ **I-95 HOT Lanes** project in Northern Virginia - \$925 million project broke ground in August
- ◆ **Greater Gabbard Offshore Wind Farm** – 140 wind turbines; 500 MW
- ◆ **JFK International Arrivals Building** – New York, New York - \$1.4 billion redevelopment that included new 140,000-square-meter, three-level terminal
- ◆ **SR 125** - 9.3-mile, 4-lane toll road; 3.2-mi. gap/connector; 28 cast-in-place box girder bridges, and a 190-ft.-high segmental precast bridge
- ◆ **A 8** – German “shadow” tollroad; widening of 38 km of the A8 Autobahn between Augsburg and Munich
- ◆ **Firth of Forth Development** - 3.4 GW of offshore wind farms off the east coast of Scotland

For Profit – Availability Based Concession



- ◆ **High Speed Line-Zuid** demonstrates our ability to form a concessionaire to arrange private financing for a \$1.43 billion P3 rail project, driving the project to financial close, completing construction, support revenue service on-schedule; 25-year concession. Total value - 25 year concession, € 2.6 billion
- ◆ **Eagle Fast Tracks** - first transit project in the United States delivered as an availability model, public-private-partnership project
- ◆ **A59 Freeway – The Netherlands** - The A59 highway upgrade is the first road project in the Netherlands to be procured under a public private partnership.
- ◆ **Highways Agency National Roads Telecommunication Services (NRTS) Project – United Kingdom** - program management, design, construction, financing, and maintenance of an integrated communications system throughout England's motorway and trunk roads network.
- ◆ **Connect London Underground – United Kingdom** - financing, design, and construction of London Underground's communication system.
- ◆ **Windsor-Essex Parkway** - financing, design, construction, operation and maintenance of an 11-km, six-lane, below-grade freeway connector from Windsor, Canada to the planned International Crossing bridge



Won but Died

- ◆ **Florida High Speed Rail – twice!**
- ◆ **Seattle Monorail**
- ◆ **C 470 – not for profit toll road**
- ◆ **I 70**



cutting through complexity™

US Army Corps of Engineers: Alternative Financing Workshop

NYC Department of Environmental Protection

West of Hudson Hydroelectric Projects

4 December 2012

Agenda

- Introduction to P3
- NYC Department of Environmental Protection background
- Project objectives
- Existing assets
- Preliminary project analysis
- Commercial options
- Potential opportunities for USACE

Introduction to P3

What are the principal characteristics of a typical P3 project?

- Public sector client/procurement
- Asset(s) and a service
- Private finance
- Robust project economics
- Appropriate risk transfer between parties

A lot has been achieved through P3 but there is still much that can be done....

NYC Department of Environmental Protection background

- The City provides more than one billion gallons of water each day to more than nine million residents, including eight million in New York City
- The City's water supply system is comprised of three watersheds: Croton, Catskill, and Delaware.
- Throughout the water supply system, DEP has 19 reservoirs and associated flow control structures.
- DEP manages the dams and reservoirs to maximize water supply and to provide pure drinking water to the City and upstate consumers.
- A robust capital upgrade, inspection and maintenance program, and emergency action plan are implemented by DEP to operate a safe dam system.



Specific DEP project objectives

The City has submitted a license application to the Federal Energy Regulatory Commission (“FERC”) for the development of a 14 MW hydroelectric facility and a preliminary permit to allow the DEP to evaluate the development of hydroelectric facilities at two other dams

- Maintain ownership and control of reservoirs, dams and spillways
- Prioritize water supply over energy production
- Leverage existing conservation releases, directed releases, and water that would otherwise spill to create renewable energy
- Obtain environmental attributes of any projects
- Accelerate development of renewable energy and the reduction of greenhouse gas emissions
- Minimize NYC’s upfront project cost and on-going commitment
- Incentivize private sector participation for efficient delivery and operation of the project
- Allocate risks to those best suited to manage them

P3 is being considered as a potential delivery mechanism

Existing dams



Cannonsville

The Cannonsville Dam is located on the West Branch of the Delaware River in the Town of Deposit, Delaware County, New York.

- Drainage area 454 square miles
- Four turbine generator set
- Total flow capacity of 1,500 cfs
- Total station capacity estimated at 14.08 MW
- Annual estimated power generation of 42,281 MWh



Neversink

The Neversink Dam is located on the Neversink River, the longest tributary to the Delaware River, in the Town of Neversink, Sullivan County, New York.

- Drainage area 92.6 square miles
- Single turbine generator set
- Total flow capacity of 100 cfs
- Total station capacity of 0.94 MW
- Annual estimated power generation of 5,457 MWh



Pepacton

The Downsville Dam is located on the East Branch of the Delaware River, in the Town of Colchester, Delaware County, New York.

- Drainage area 372 square miles
- Single turbine generator set
- Total flow capacity of 162 cfs
- Total station capacity of 1.7 MW
- Annual estimated power generation of 9,235 MWh

Existing hydroelectric facilities



East Delaware Tunnel Outlet (EDTO)

- Facility was put into operation in 1958 and consists of a powerhouse, 20 MW turbine generator (18 MW max output) together with transformer and switchgear in an adjacent substation.
- Water for power generation is supplied from Pepacton Reservoir through the 25-mile-long East Delaware Tunnel.
- Francis type hydraulic turbine, with a rated output of 28,000 hp at a net head of 330 ft. The turbine is direct connected to a synchronous generator which is rated at 20,000 KVA and 0.9 power factor.

Neversink Tunnel Outlet (NTO)

- Facility was put into operation in 1952 and consists of a powerhouse, a 25 MW Francis turbine generator together with transformer and switchgear in an adjacent substation.
- Flow from the Neversink Reservoir is directed through a 6-mile tunnel through the Neversink Power Plant into Red Brook, which empties into Chestnut Creek before finally terminating in the Rondout Reservoir.
- Francis turbine with a rated output of 41,000 hp at a net head of 474 ft. The turbine is direct connected to a synchronous generator which is rated at 30,000 KVA.

Preliminary project analysis

- Costs estimates for each development are indicative and may vary based on design and configuration
- Construction estimates for proposed new facilities and development costs for existing facilities (real, 2010 \$ million)
- Average annual gross revenue of new development and existing facilities

Facility	Cost (real, \$ million)	Revenue (real, \$ million)
Cannonsville	40 – 45	2 - 4
Pepacton	7.4 – 10	0.5 – 1
Neversink	6 – 8	0.2 - 0.5
EDTO	2 – 3	5 – 7
NTO	1.5 - 2	2 – 4

Potential opportunities for USACE

Hydropower in the U.S.

- 2,500 dams provide 78 GW of conventional and 22 GW of pumped-storage hydropower

DoE report “An Assessment of Energy Potential at Non-Powered Dams in the United States”

- Adding power to non-powered dams (NPDs) has potential to add up to 12 GW of new renewable capacity
- Approximately 8 GW of clean, reliable hydropower could be contributed from just 100 NPDs. 81 of the top 100 NPDs are U.S. Army Corps of Engineers facilities
- The top 10 facilities have the potential to add up to 3 GW of new hydropower



THANK YOU

Presentation by Nick Greenwood

Managing Director

KPMG

Infrastructure Advisory

Cell: (01) 571 353 9033

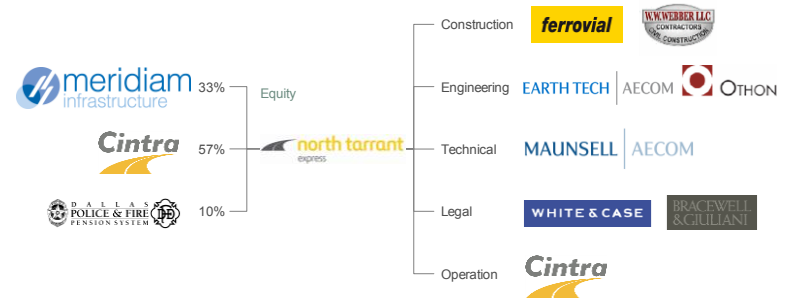


INTERNAL USE ONLY

INVESTING FOR
THE COMMUNITY

North Tarrant Express – Project Brief

October 2012

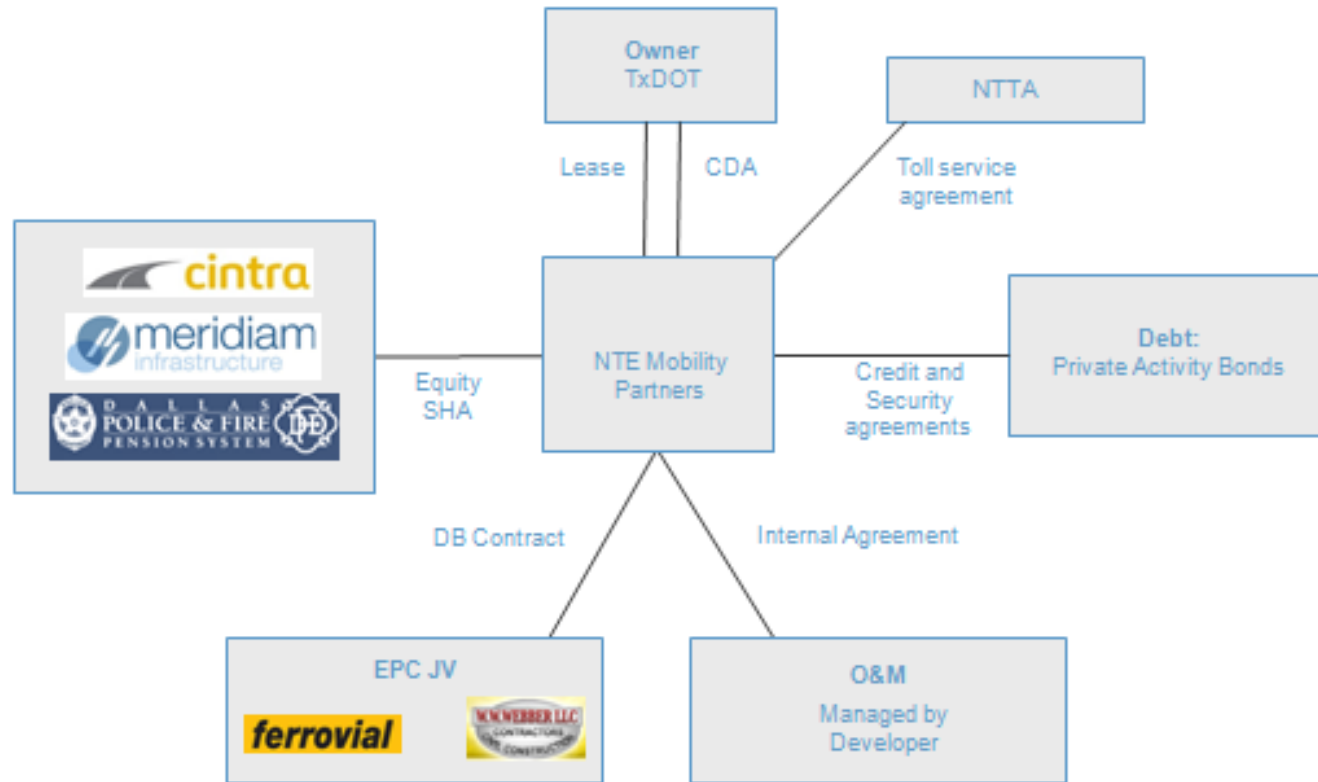


and

- In December 2009, the North Tarrant Expressway Mobility Partners, a consortium comprising Meridiam, Cintra and Dallas Police and Fire Pension System reached financial close on the North Tarrant Expressway in Tarrant County, Texas
- The project involves the extension of existing lanes and construction of new managed toll lanes on 15 miles of congested roads in the Fort Worth area of Dallas
- Managed toll lanes are an increasingly used form of congestion control, in which the road user chooses between existing non-tolled lanes and newly constructed tolled lanes

- The project benefits from a long term, innovative and sound financing structure including public grants, Private Activity Bonds (“PABS”) and a TIFIA lending facility, removing the risk of refinancing. The project has achieved an investment grade rating by 2 rating agencies
- Demand risk is mitigated through the location of the road on a heavily congested network and by a high portion of revenues coming from up-front annual sales
- One of the first PPP in the US to involve a direct equity investment by a domestic public pension scheme, the Dallas Police and Fire Pension System
- Named Infrastructure Journal Awards 2009 Global Transport Deal of the Year

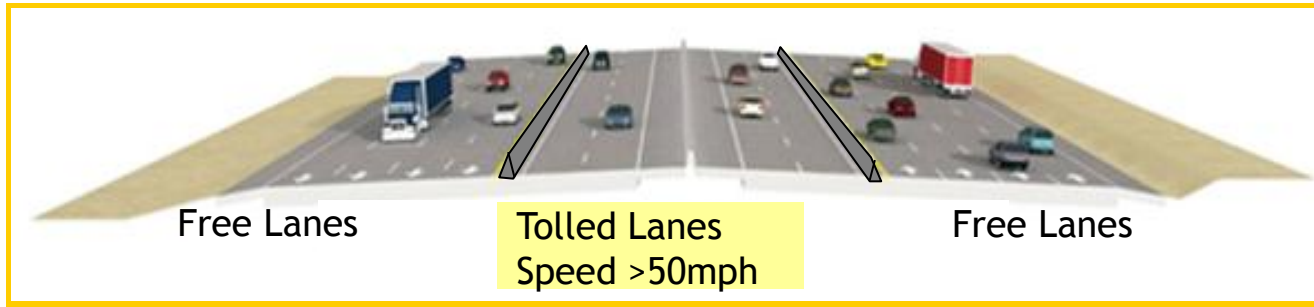
Contractual Structure



Financial Structure

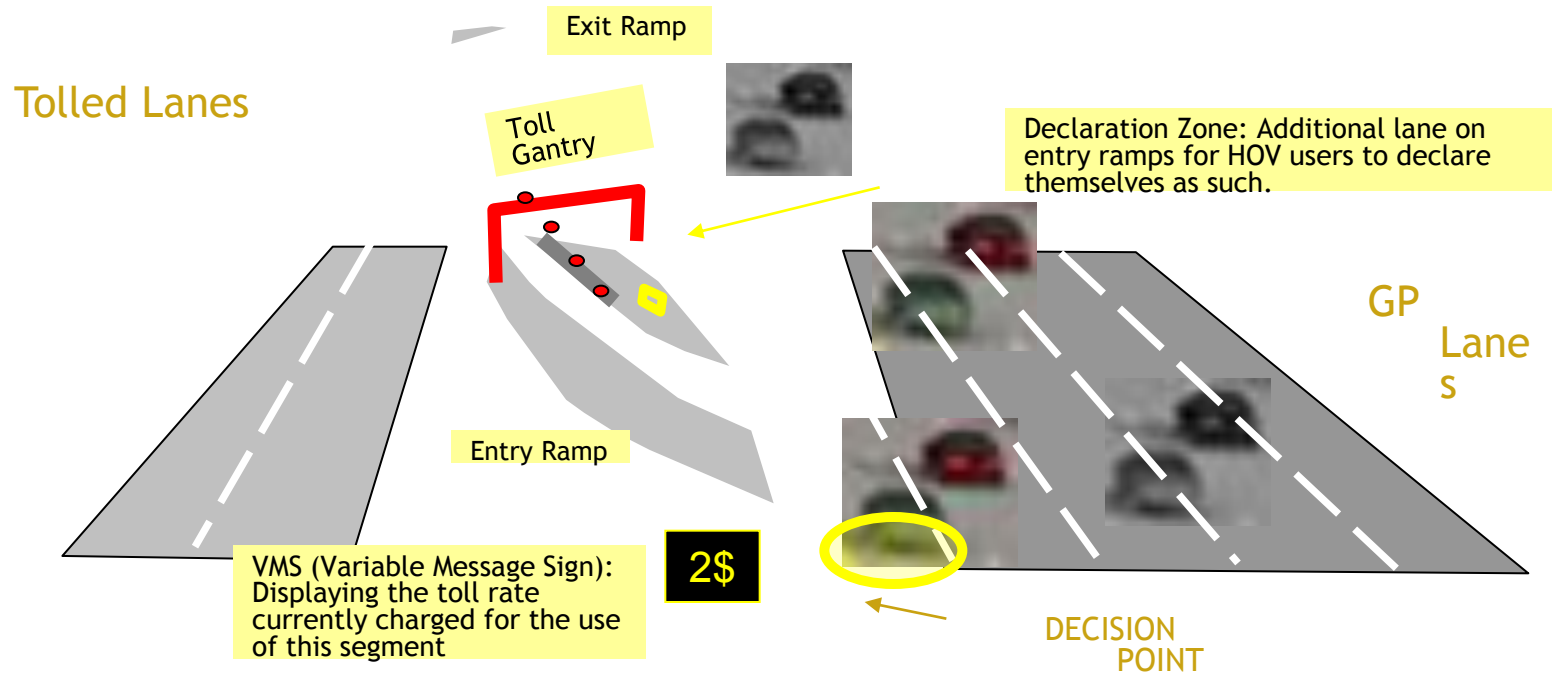
Sources	US\$000s	%	Uses	US\$000s	%
Bank Debt	-	0%	Construction Cost	1,801,897	86%
PABs	397,775	18.9%	Interest	202,182	9.5%
TIFIA Loan	650,000	30.9%	Transaction Costs	32,000	1.5%
TIFIA Loan - Interest	54,198	2.6%	Debt Fees	2,789	0%
Subtotal	1,101,973	52.4%	Upfront Reserves Funding	60,000	3%
Equity Contribution	425,922	20.3%	TIFIA Subsidy / Fees	1,586	0%
Subtotal	425,922	20.3%	TxDOT initial refinancing gain	170	0%
Public Funds	572,730	27.3%			
Total Sources of Funds	2,100,624	100%	Total Uses of Funds	2,100,624	100%

Managed Lanes Concept



- "Express Tollway within an Existing Highway"
- Solution to congestion on existing corridors through active management of the new added capacity.
- The additional lanes are operated under a dynamic tolling regime for an improved level of service (speeds >50mph at all times).
- Main objectives:
 - Provide users with faster and always reliable travel times in return for toll payments.
 - Tolls can be modified at any time to control speeds on the new lanes:
 - The level of service is always maintained → Contract Obligation.
 - As demand grows and capacity becomes scarce, pricing power increases. Effectively there is no limit to tolls chargeable.
- They are physically separated from the free lanes and have controlled access (on-off ramps at selected locations).
- Examples of Managed Lanes in operation: SR-91 (LA), I-15 (San Diego), MN394(MN), I-25(Denver)

Managed Lanes Concept



- Drivers will make their decision based on congestion (perceived delays on the free lanes), and the Toll in place on the ML.
- At all entry ramps, vehicles will enter a Declaration Zone (DZ), where drivers declare themselves as a Single-Occupancy Vehicle (SOV) or High-Occupancy Vehicle (HOV) for purposes of toll charging.
- The toll collection system will collect the tolls electronically, via transponder or License Plate Recognition (LPR) cameras mounted on the toll gantry



OHIO DEPARTMENT OF TRANSPORTATION

State Infrastructure Bank (SIB)

Ohio Department of Transportation
Melinda Lawrence, SIB Administrator
Division of Finance
December 2012

History & Background

- Created in 1995 by U.S. Congress
 - Title XXIII Eligible Highway & Transit Projects
- Ohio Pilot State
 - Enabling Legislation
 - First highway & transit loans in the nation
- Ohio Legislature expanded SIB Authority
 - State funded projects
 - Aviation
 - Local Roads
 - Rail
 - Seaport

History & Background

- National Highway System (NHS) Act of 1995
- Cooperative Agreement – FHWA & FTA
- Ohio Revised Code (ORC)
 - 5531.09
 - 5531.10
- Ohio Administrative Code (OAC)
 - Chapter 5501:6.1
- ODOT Policy

History & Background

- **Fund Capitalization** **\$137 m**
 - Federal Funds \$87 m
 - State General Revenue Funds \$40 m
 - State Motor Fuel Tax \$10 m
- **As of 9/30/12 – Federal Loans**
 - 100 loans
 - \$301,611,371 in financings
 - 53 loans and \$60,726,111 outstanding
- **As of 9/30/12 – State GRF Loans**
 - 47 loans
 - \$64,119,692 in financings
 - 22 loans and \$20,109,417 outstanding

Federal Capitalization

Date	FFY	Amount	Total
9/27/1996	1996	\$10,000,000.00	
1/21/1997		\$10,000,000.00	\$20,000,000.00
5/28/1997	1997	\$15,000,000.00	\$15,000,000.00
10/22/1997	1998	\$1,260,000.00	
10/22/1997		\$6,900,000.00	\$8,160,000.00
10/5/1998	1999	\$40,000,000.00	
11/19/1998		\$1,920,000.00	\$41,920,000.00
10/28/1999	2000	\$600,000.00	\$600,000.00
10/18/2000	2001	\$360,000.00	\$360,000.00
10/19/2001	2002	\$360,000.00	\$360,000.00
3/24/2003	2003	\$240,000.00	\$240,000.00
9/29/2005	2004	\$360,000.00	\$360,000.00
			\$87,000,000.00

Funding Accounts

- **Federal – 1st Generation**
 - Original federal funds that capitalized the bank.
 - Anything that is repaid by original federal loans
 - Metropolitan Planning Organizations (MPO)
 - County Engineer's Association of Ohio (CEAO)
 - All federal regulations must be followed, including eligibility and authorization.
- **Title XXIII – 2nd Generation (“Washed Funds”)**
 - Funds repaid from borrowers that used 1st generation funds.
 - The only federal regulation is the project qualifies as Title XXIII eligible.

Funding Accounts

- **State Funds**
 - General Revenue Funds (GRF), aviation, port authority
 - Motor Fuel Tax (MFT) for road projects only; used to match original federal funds

Eligibility

■ Eligible Borrowers

- All Public Entities
- No Private Entities

■ Eligible Projects

- Federal, State, & Local Transportation Infrastructure
- Transit
- Port Facilities
- Airports
- Bicycle Paths/Rails to Trails
- Railroads

Loan Program Features

- 100% Financing Available
- Maximum Term – 10 years
- Interest Rate – Below Market Value
- Closing costs can be financed into the loan
- Deferred Repayment Options
 - First year interest free
 - Second year no payments
 - Excludes MPO/CEAO
- Process takes 30 to 60 days
- Applications accepted year round
- Prepayment Penalty

Eligible / Ineligible Costs

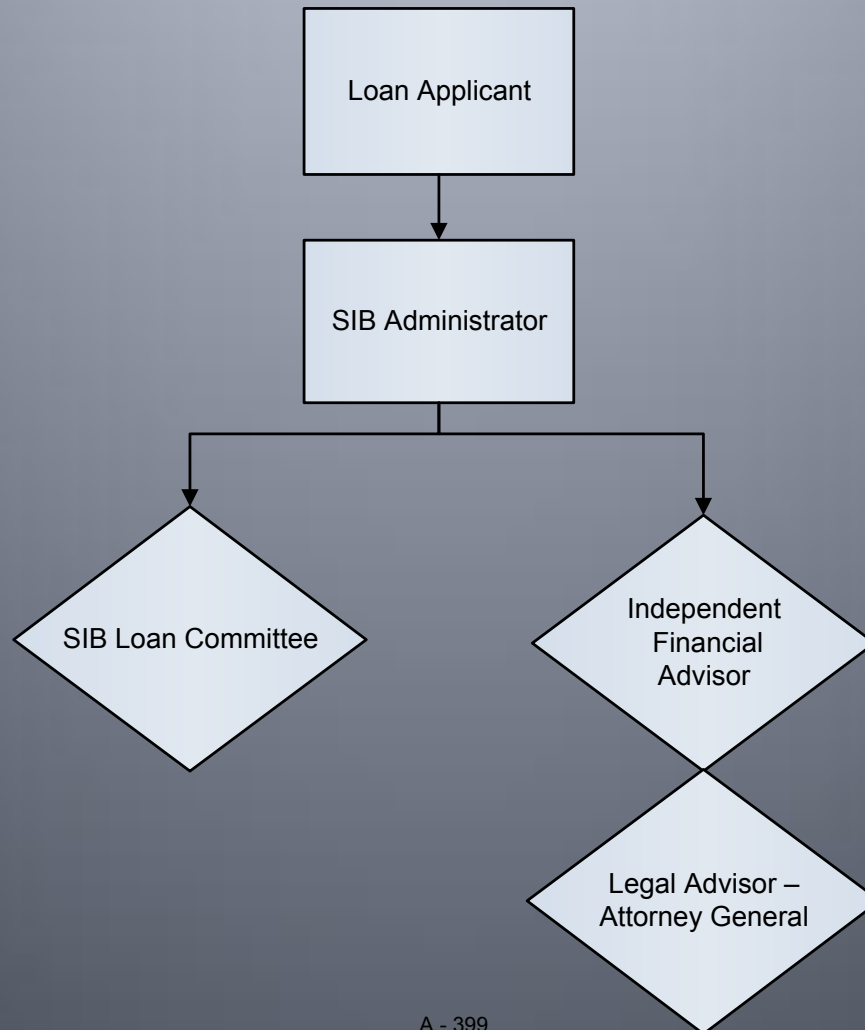
ELIGIBLE

- Right of Way
 - Appraisal
 - Acquisition
- Construction
 - Engineering/Inspection

INELIGIBLE COSTS

- Environmental
- Design
 - Preliminary (PE)
 - Detailed
- Administration

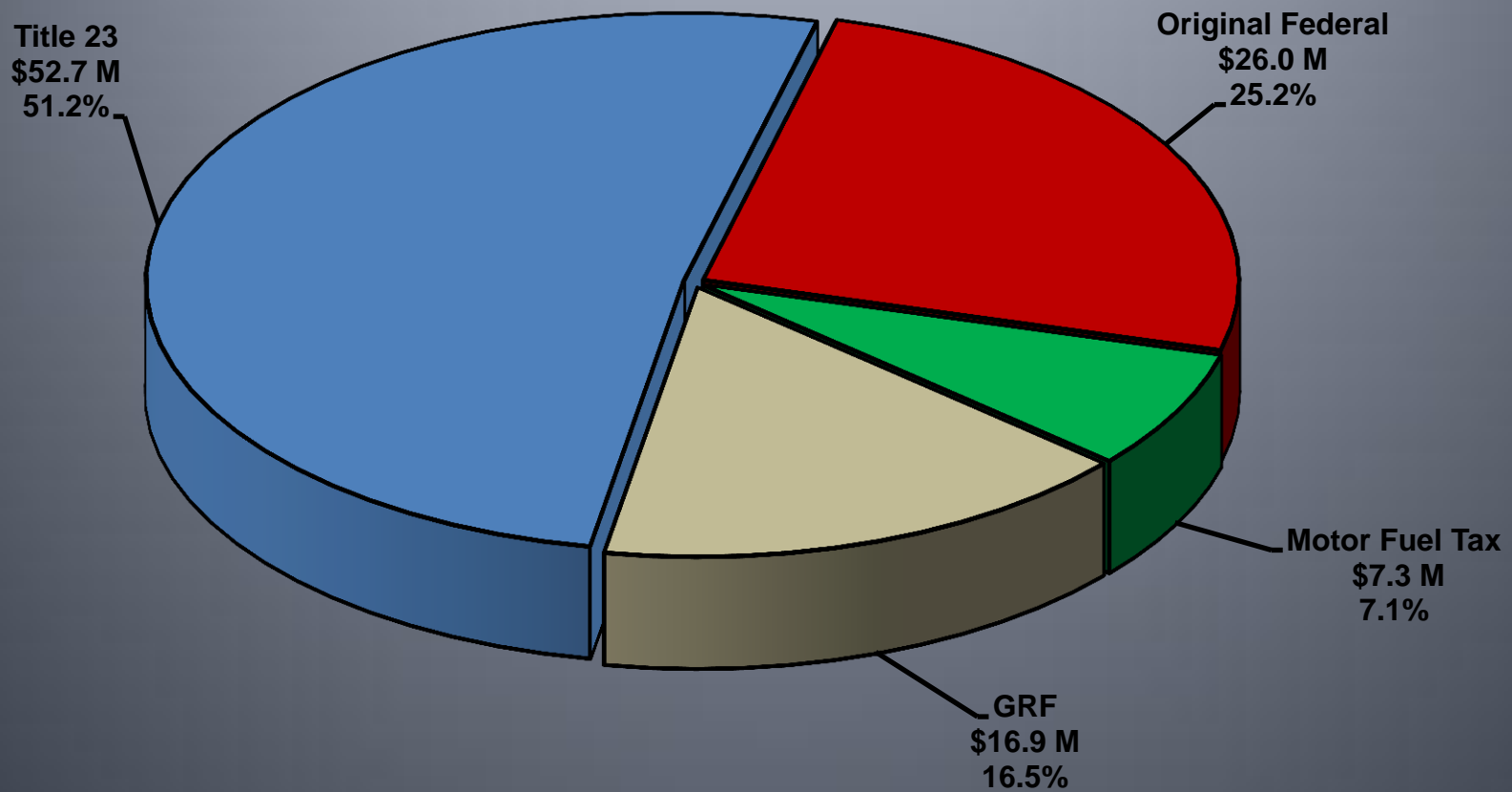
Loan Application Process



SIB Balances Available

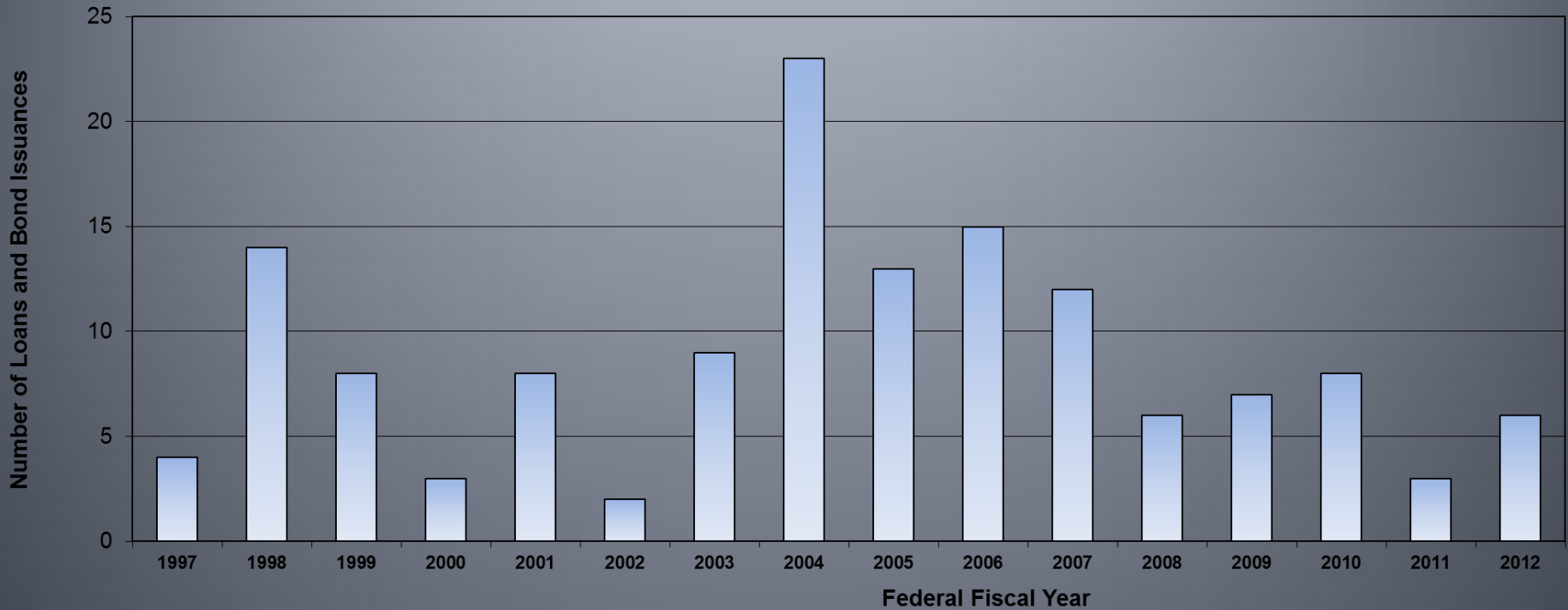
as of September 30, 2012

Total Available to Lend: \$102.9 M



State Infrastructure Bank Loans and Bond Issuances

State Infrastructure Bank Loans and Bonds

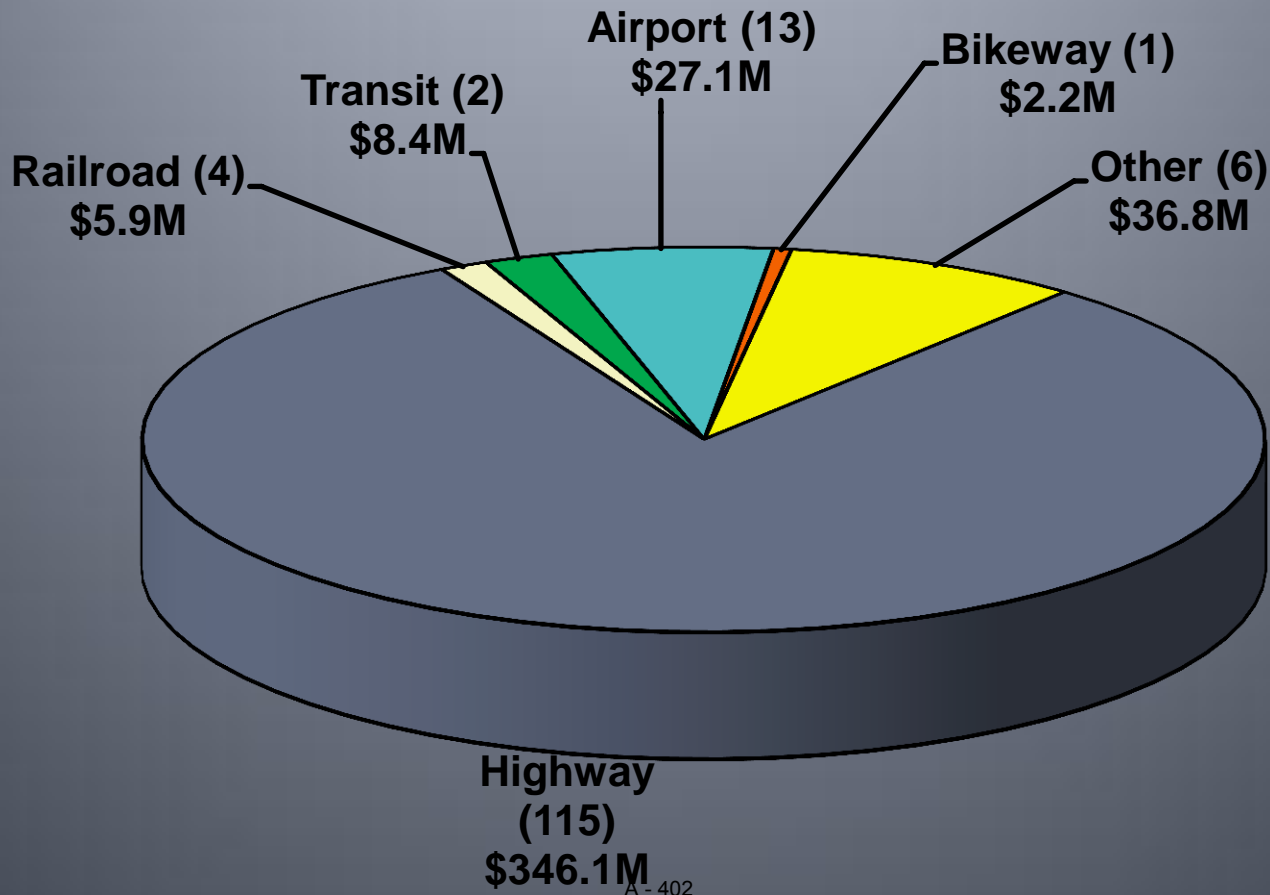


Federal Fiscal Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
# of Loans	4	14	8	3	8	2	9	23	13	15	11	6	6	8	3	5	138
\$ of Approved Loans (in millions)	\$42.8	\$47.7	\$30.2	\$26.0	\$14.3	\$12.4	\$21.2	\$55.2	\$31.7	\$46.7	\$20.6	\$9.0	\$8.6	\$18.6	\$5.5	\$7.8	\$398.5
# of Bonds											1		1			1	3
\$ of Approved Bonds (in millions)											\$6.8		\$11.7			\$9.4	\$28.0

Number of Loans: 138
 Number of Bonds: 3
Total: 141

Amount of Approved Loans: \$398.5
 Amount of Approved Bonds: \$28.0
Total: \$426.5

Number of SIB Loans and Bonds by Mode approved as of September 30, 2012



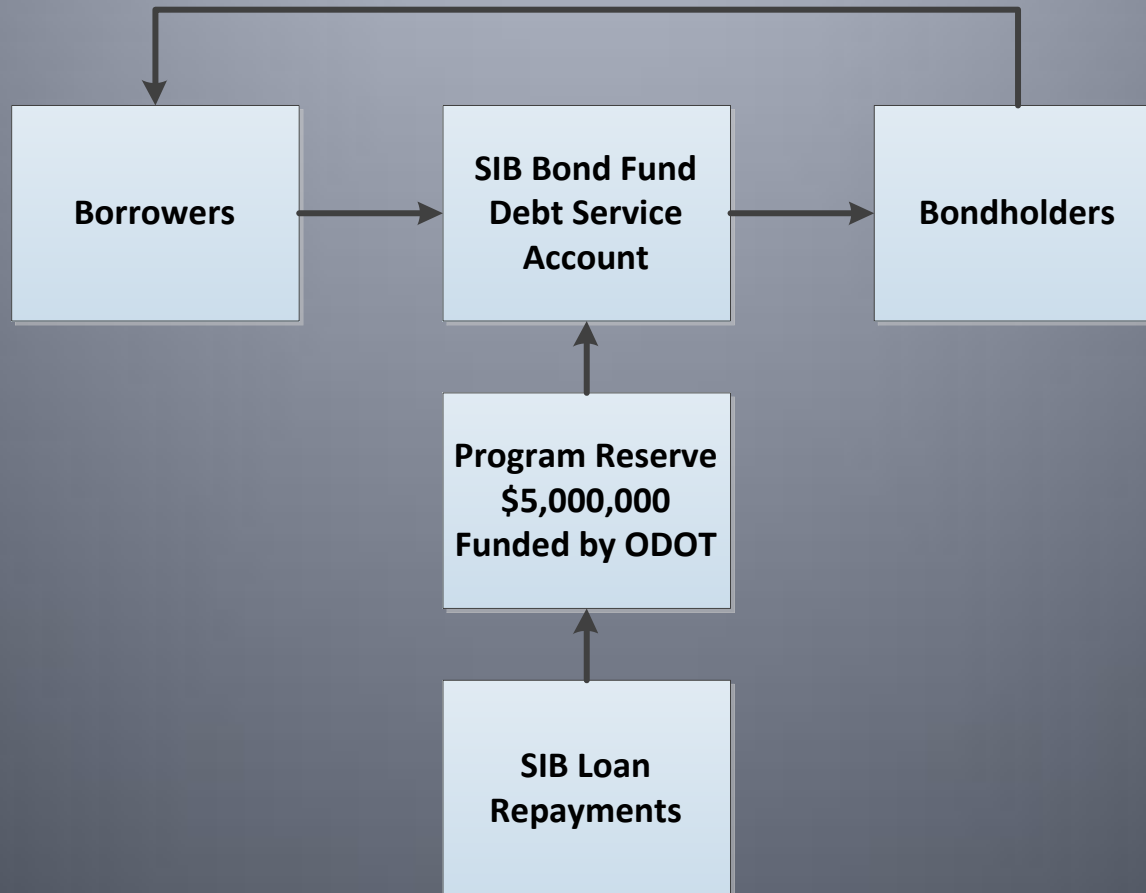
Bond Fund Programs

- Fund larger loans
- Investment grade rated bonds = low interest rates
- Quick and easy to access
- Favorable terms
 - Tax-exempt revenue bonds
 - Long term fixed rates
 - Annual appropriation pledge
 - Does not apply to debt limitation
- Closing within 60 to 90 days
- Same criteria as loan program for borrowers eligible costs & projects

Bond Programs Features

- 100% Financing Available
- Maximum Term – 20 years
- Interest = Current Market Rates
- Bond Amounts
 - \$2,000,000 to \$20,000,000
- Transaction Costs
 - 1% to 3% depending on size of issue
- Payments begin immediately

Bond Fund Program Flow of Funds



Bond Fund Programs

COMPARISON OF SIB LOAN AND BOND FUND PROGRAMS

	LOANS	BONDS
AMOUNTS	\$50,000-\$4,000,000	\$2,000,000-\$20,000,000
TERM	10 year maximum	5-20 years
INTEREST RATE	3%	Market
REPAYMENT	<ul style="list-style-type: none"> • First year free • Second year accrued interest 	<ul style="list-style-type: none"> • No free interest period • Up to three years of capitalized interest
TRANSACTION FEES	\$2,000-\$10,000 (financial advisor fee)	1-3% of bond issuance amount
ELIGIBLE BORROWERS	Same	Same
ELIGIBLE PROJECTS	Same	Same
REPAYMENT PENALTY	Yes, first 36 months	N/A
PROCESS TIME (Application submittal to loan closing)	30-60 days	60-90 days
APPLICATIONS	Accepted year round	Accepted year round

Lessons Learned

- Borrowers
- Loan Term
- Fees
 - Outside Counsel
 - Administrative Fee
- Prepayment Penalty
- Eligible Project Costs

Federal Government

- SIB Flexibility
- Capitalized interest
- Federal Funds

State Infrastructure Bank Contact Information

Ohio Department of Transportation
1980 W. Broad St., 4th Floor
Columbus, Ohio 43223
614-644-7255

Melinda Lawrence, SIB Administrator
melinda.lawrence@dot.state.oh.us



Innovative Program Delivery

Transportation Infrastructure Finance and Innovation Act (TIFIA)



Jorianne Jernberg, Financial Analyst
TIFIA Credit Program
Federal Highway Administration
Department of Transportation



TIFIA Program Creation

Innovative Program Delivery

- Purpose
- Objectives
- Eligibility
- Requirements
- Benefits



Washington Metro Capital Improvement Program



Cooper River Bridge





Program Purpose

Innovative Program Delivery

- **Program Purpose:**
The Transportation Infrastructure Finance and Innovation Act was established under TEA-21 to leverage limited Federal Government resources and stimulate private capital investment in transportation by providing credit assistance to projects of national or regional significance





TIFIA Program Objectives

Innovative Program Delivery

■ Program Objectives:

- Leverage limited Federal resources and stimulate Capital Market investment
- Facilitate projects with significant public benefits
- Encourage new revenue streams and private participation
- Fill capital market gaps for secondary/subordinate capital
- Be a flexible, “patient” investor willing to take on investor concerns about investment horizon, liquidity, predictability and risk
- Limit Federal exposure by relying on market discipline





Types Credit Assistance

Innovative Program Delivery

- **Secured (Direct) Loan**
 - Maximum term of 35 years from substantial completion
 - Repayments must start 5 years after substantial completion

- **Loan Guarantee**
 - Guarantees a project sponsor's repayments to non-Federal lender
 - Loan repayments to lender must commence no later than 5 years after substantial completion of project

- **Line of Credit**
 - Contingent loan available for draws as needed up to 10 years after substantial completion of project





Eligible Sponsors & Projects

Innovative Program Delivery

ELIGIBLE SPONSORS

State Governments

Private Firms

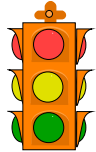
Special Authorities

Local Governments

Transportation Improvement Districts

ELIGIBLE PROJECTS

Highways and Bridges



Intelligent Transportation Systems

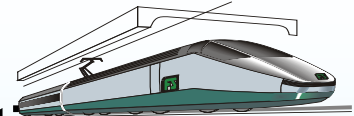
Intermodal Connectors

Transit Vehicles and Facilities



Intercity Buses and Facilities

Freight Transfer Facilities



Passenger Rail Vehicles and Facilities



Benefits of TIFIA

Innovative Program Delivery

- Long term, fixed cost, permanent, up-front financing
- Borrower may be minimum investment grade
- Non recourse financing—project cash flow supported
- Funds drawn as needed
- Senior or Subordinate Lien
- Flexible amortization
- No pre-payment penalty
- Low interest rates

Low Interest Rate -
Interest rate on 12/3 was
2.84%





TIFIA Requirements

Innovative Program Delivery

- Minimum anticipated project costs > \$50M
- 49% of reasonably anticipated eligible project costs
- Senior debt must receive 2 investment grade ratings from nationally recognized credit rating agencies
- The project must be included in the relevant State's transportation planning and programming cycle
- The project must have a dedicated revenue source, such as tolls or other user fees, that are pledged to secure debt service payments for both the TIFIA and senior debt financing





TIFIA Funding

Innovative Program Delivery

- **How TIFIA Funding Works**
- **TIFIA Application Process**



Pocahontas Parkway



IH 635





How TIFIA is Funded

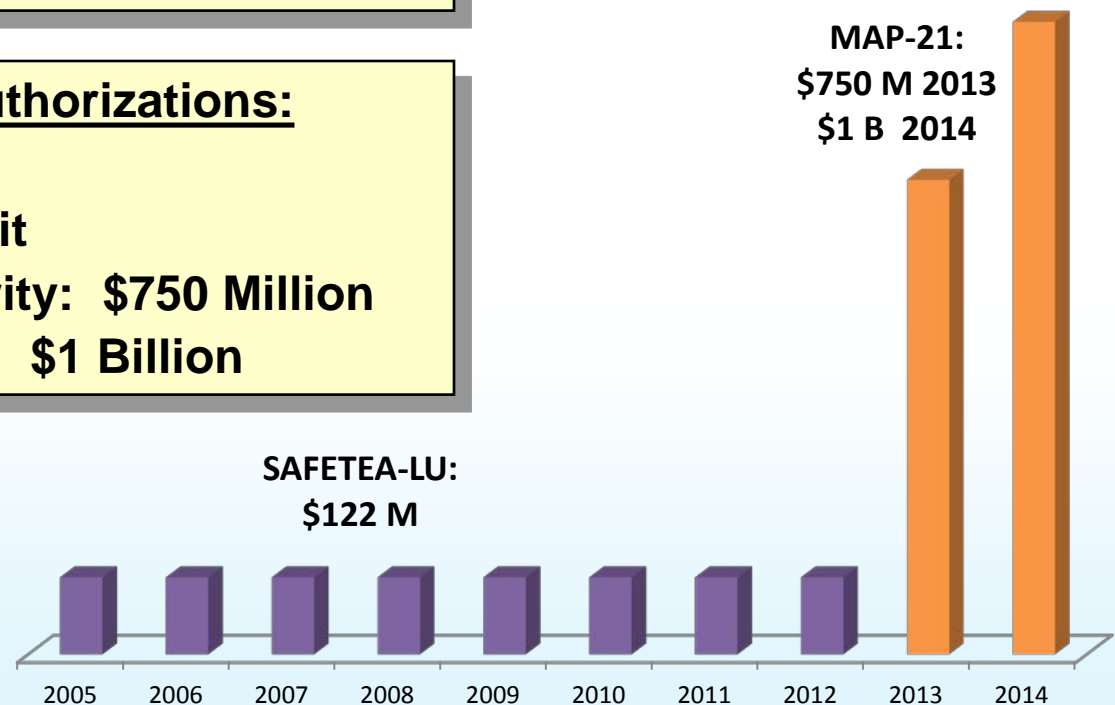
Innovative Program Delivery

SAFETEA-LU Annual Authorizations:

- FY 2005 – 2009
- Extended through FY 2012
- Credit Amount: No limit
- Budgetary Authority: \$122 Million

MAP-21 Annual Authorizations:

- FY 2013 and 2014
- Credit Amount: No limit
- 2013 Budgetary Authority: \$750 Million
- 2014 Budget Authority: \$1 Billion





TIFIA Funding and Leverage

Innovative Program Delivery

- MAP-21 authorizes \$1.75 billion over 2 years to cover the subsidy cost of providing credit assistance
- TIFIA sets aside a portion of these monies for each project based on its level of risk
- The remainder of the loan amount is borrowed from Treasury
- As a rule of thumb, \$1 in budget authority can be leveraged to provide \$10 in credit assistance
- DOT estimates that under MAP-21, TIFIA could extended \$17 billion in credit assistance





TIFIA Application Evaluation

Innovative Program Delivery

- Focus on the credit evaluation
 - Construction plan (schedule, procurement, sources of funds)
 - Strength of revenue pledge (ability to repay TIFIA debt)
 - Project economics
- Determination that the project can be constructed and can repay Federal debt
- Recommendation of award of TIFIA credit assistance presented to the DOT Credit Council
- Secretary makes final decision





Innovative Program Delivery

TIFIA Portfolio



South Bay Expressway



North Tarrant Express



TIFIA Credit Agreements – Since 1999

as of 11-30-12

Slide 14

Appendix A

Innovative Program Delivery

- **13:** states plus DC & Puerto Rico have projects with TIFIA
- **29:** TIFIA direct loans
- **1:** TIFIA loan guarantee
- **0:** TIFIA lines of credit
- **41.8:** billions of dollars invested in TIFIA projects
- **10.4:** billions of dollars of TIFIA credit assistance

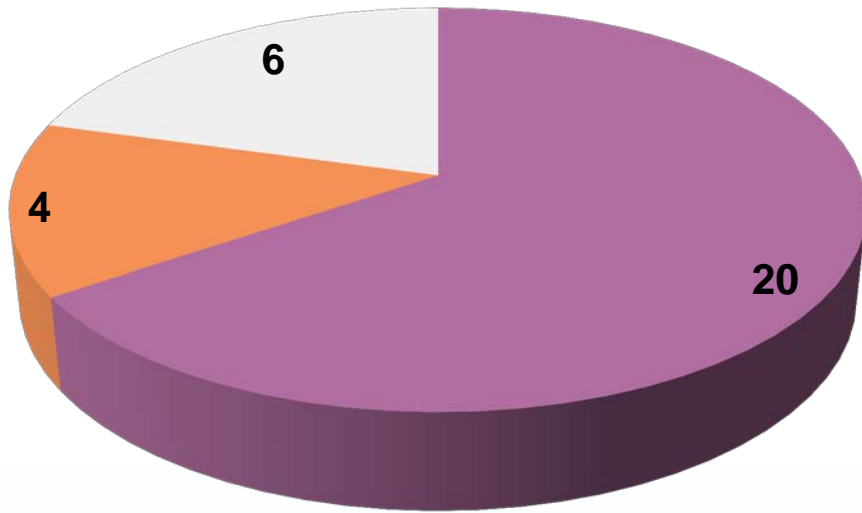




TIFIA Portfolio Statistics

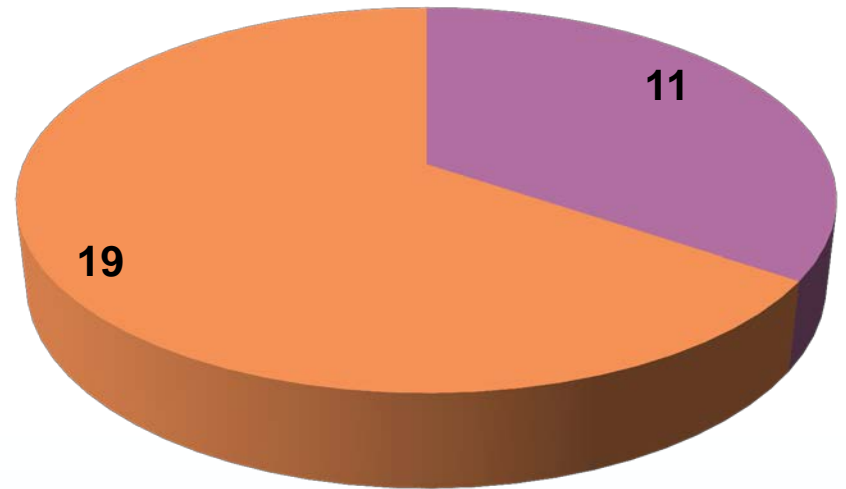
Innovative Program Delivery

TIFIA Portfolio by Mode



■ Highway Projects ■ Intermodal Projects ■ Transit Projects

TIFIA Portfolio and P3 Financings



■ P3 Projects ■ Public Projects



TIFIA Repayment: Revenue Pledges

Innovative Program Delivery

User-backed Financings	Pledged Revenues
Miami Intermodal Center RCF	Rental car customer facility charges
South Bay Expressway	Facility tolls
Central Texas Turnpike	Facility tolls
Warwick Intermodal Station	Rental car customer facility charges
Pocahontas Parkway	Facility tolls
I 495 Capital Beltway/Hot Lanes	Facility Tolls
SH-130 (Segments 5-6)	Facility Tolls
Intercounty Connector	Facility Tolls
Triangle Expressway	Facility Tolls
North Tarrant Express	Facility Tolls
Tax-backed Financings	Pledged Taxes
Miami Intermodal Center GP	State fuels excise taxes
Washington Metro CIP	Local government contributions
Tren Urbano	Various commonwealth taxes
Cooper River Bridge	State and county contributions
Transbay Transit Center	Tax increment financing
Denver Union Station	Local sales taxes and tax increment financing
Other	Pledged Payments
Staten Island Ferries and Terminals	Tobacco settlement payments
Port of Miami Tunnel	Availability Payments
I-595 Corridor Roadway Improvements	Availability Payments

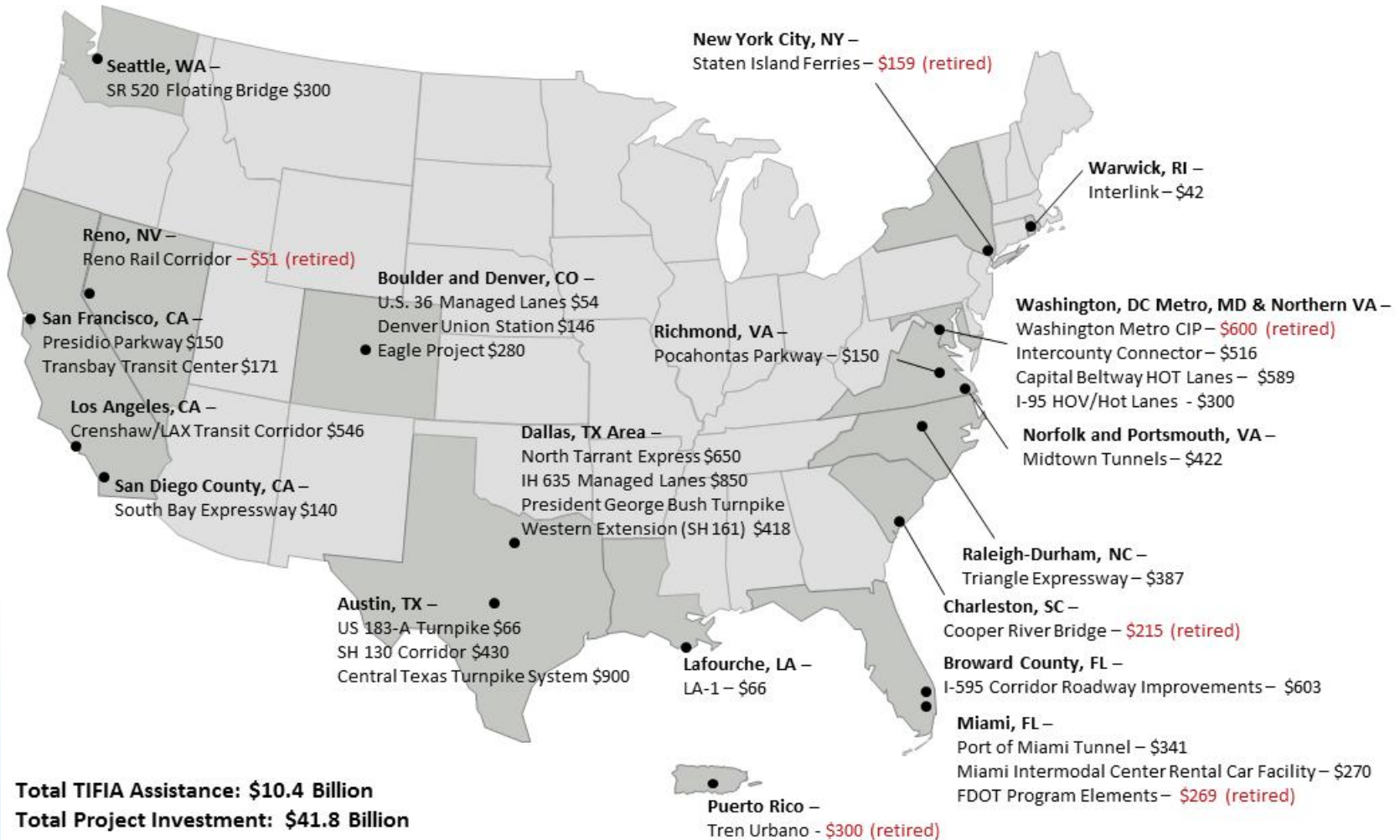




States with Executed Credit Agreements

(TIFIA Instruments in \$ millions as of 11/30/2012)

Innovative Program Delivery





For More Information

Innovative Program Delivery

Office Website:

www.fhwa.dot.gov/ipd/tifia

Office Mailbox:

TIFIAcredit@dot.gov

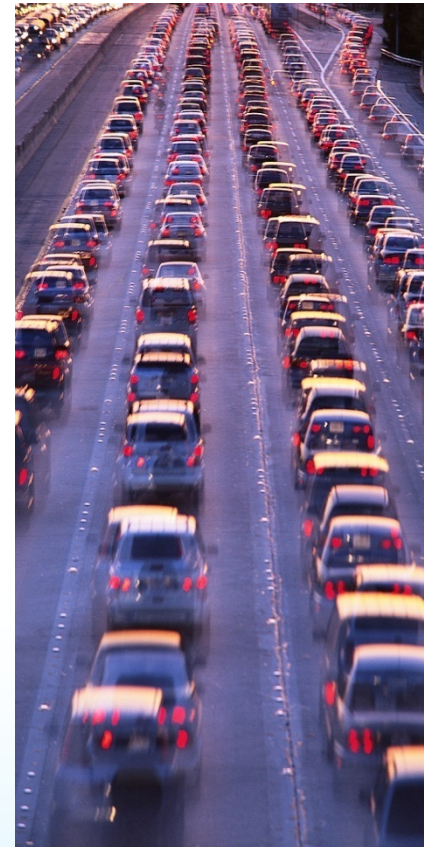
Jorianne Jernberg

Financial Analyst,

TIFIA Credit Program

(202) 366-0459

jorianne.jernberg@dot.gov





List of Attendees

No.	Name	Title	Organization / Place
1	Joe Aiello *	North American CEO	Meridiam
2	Bob Prieto */**	Senior Vice President	Fluor Corp
3	Stephen Browning	Senior VP and Program Manager	CH2M
4	Todd Wang	Senior Program Manager, Global Water Business Group	CH2M HILL
5	David E. Anderson	Executive VP- Public Institutions, National Director	Jones Lang LaSalle
6	Barry Scribner	Co-President, Public Institutions Group	Jones Lang LaSalle
7	Kevin Wayer	Co-President, Public Institutions Group	Jones Lang LaSalle
8	Charlotte Kaiser	Manager, Conservation Notes	TNC
9	Robert Crear	Chairman, FFP Development LLC, and Member of the Board of Free Flow Power Corporation	Free Flow Power
10	Dan Irvin	Chairman of the Board	Free Flow Power
11	Nick Greenwood */**	Managing Director	KPMG
12	Mark Smith	Deputy Director of TNC's North American Freshwater Program	TNC
13	Lowell Clary *	1) Chairman 2) President	1) Transportation Research Board Revenue and Finance Committee 2) Clary Consulting
14	Jorianne Jernberg *	TIFIA Program Manager	USDOT representative from TIFIA
15	Melinda Lawrence *	Division of Finance, Budget and Forecasting	Ohio State Infrastructure Bank
16	Grace Drinker **	Associate Director, Utilities & Infrastructure	Standard & Poor's
17	David Horner **	Senior Counsel	Allen & Overy
18	Dan Borges	Senior Policy Advisor for Water Resources at TNC	The Nature Conservancy (TNC)
19	Joung Lee	Associate Director for Finance and Business Development	AASHTO
20	Lowell Pimley	Director of Technical Service Center	Bureau of Reclamation
21	Greg Gotthardt	Managing Director	Alvarez & Marsal Real Estate Advisory Services, LLC
22	Ed Watford	Director of Civil Works	Tetrattech
23	Mike Betteker	Vice President	Tetrattech
24	Shane Imwalle	Vice President	Woolpert
25	Aaron Willis	Social Scientist at Institute for Water Resources	US Army Corps of Engineers
26	Ed Hecker	Special Advisor	US Army Corps of Engineers
27	Susan Greenwood	Senior Counsel for Legislation	US Army Corps of Engineers
28	Jan Rasgus	Senior Policy Advisor	US Army Corps of Engineers
29	Aaron Watkins	<i>(information not provided)</i>	US Army Corps of Engineers
30	Meg Gaffney-Smith	Chief, Regulatory Branch	US Army Corps of Engineers
31	Tim Tomastik	<i>(information not provided)</i>	US Army Corps of Engineers
32	Deb Larson	Institute of Water Resources	US Army Corps of Engineers
33	Pat Mutschler	Economist	US Army Corps of Engineers
34	Scott Whiteford	Director of Real Estate	US Army Corps of Engineers
35	Wen Chang	Water Resources Economist	US Army Corps of Engineers
36	Dane Ismart	Senior Associate	Louis Berger Group
37	Albert Racciatti	Associate Vice President	Louis Berger Group
38	Raed El-Farhan	Vice President, Operations	Louis Berger Group
39	Deborah Matherly	Principal Planner	Louis Berger Group
40	Illika Sahu	Intern, Assistant Planner	Louis Berger Group

* Speaker/ Presenter

** Participating in Roundtable Discussion



Summary of USACE Civil Works Business Programs USACE Alternative Finance Workshop

USACE Civil Works Business Programs – Overview List

- Navigation*
- Flood Risk Management*
- Environment (Consisting of: Aquatic Ecosystem Restoration*, Environmental Stewardship, Formerly Utilized Sites Remedial Action Program)
- Hydropower*
- Regulatory
- Recreation*
- Emergency Management
- Water Supply*

**Major Business Programs to be Evaluated*

NAVIGATION

The navigation program is responsible for providing safe, reliable, efficient and environmentally sustainable waterborne transportation systems for the movement of commercial goods and for national security needs. The navigation program is vital to the nation's economic prosperity: 75 percent of America's overseas international trade moves through its ports. The nation's marine transportation system (MTS) encompasses a network of navigable channels, waterways and infrastructure maintained by the USACE, as well as publicly- and privately-owned vessels, marine terminals, intermodal connections, shipyards and repair facilities. The MTS consists of approximately 12,000 miles of inland and intra-coastal waterways; approximately 926 coastal, Great Lakes and inland harbors; 207 lock chambers at 171 sites; and channel projects comprising 13,000 miles, maintained by USACE.

FLOOD RISK MANAGEMENT

Through both structural and non-structural measures, the Flood Risk Management Program serves as a vehicle to reduce the risk to human safety and property from riverine and coastal flooding. Upon completion, and with the exception of reservoirs, most of the federally constructed infrastructure (levees, dams, floodwalls, etc.) has been transferred a non-Federal, cost-share sponsor to operate and maintain.

In implementing the Flood Risk Management Program, the Corps has demonstrated its commitment to lead the nation away from the mindset of controlling floods to a more comprehensive approach of managing the risks associated with floods and coastal storms. This shift in perspective acknowledges the complexities and dynamics of flood plains and the Corps' commitment to the partnerships necessary to apply effective flood plain and coastal flood risk management practices.

ENVIRONMENT

The Environmental Program includes three sub-programs: Aquatic Ecosystem Restoration, Environmental Stewardship and the Formerly Utilized Sites Remediation Action Program. Each of these sub-programs has separate goals and objectives and performance measures.

ENVIRONMENTAL: AQUATIC ECOSYSTEM RESTORATION (AER)

The USACE mission in the area of aquatic ecosystem restoration is to help restore aquatic habitat to a more natural condition in ecosystems whose structures, functions and dynamic processes have become degraded. The emphasis is on restoration of nationally- or regionally-significant habitat where the solution primarily involves modifying the hydrology and geomorphology.

ENVIRONMENTAL: ENVIRONMENTAL STEWARDSHIP

The environmental stewardship program focuses on the management, conservation and preservation of natural resources on 12 million acres of land and water at 456 multipurpose USACE projects. Among other environmental activities, program personnel monitor water quality at USACE dams and operate fish hatcheries in cooperation with state wildlife agencies. The program includes compliance measures to ensure that USACE projects meet federal, state and local environmental requirements; prevention; and conservation.

ENVIRONMENTAL: FORMERLY UTILIZED SITES REMEDIATION ASSISTANCE PROGRAM (FUSRAP)

Under the FUSRAP, USACE cleans up former military sites and civilian hazardous waste sites under the Environmental Protection Agency Superfund program.

HYDROPOWER

USACE multipurpose authorities provide hydroelectric power as an additional benefit of dam projects built for navigation and flood control. USACE is the largest owner-operator of hydroelectric power plants in the United States and one of the largest in the world. USACE operates 353 generating units at 75 multipurpose reservoirs, mostly in the Pacific Northwest; they account for about 24 percent of America's hydroelectric power and approximately 3 percent of the country's total electric-generating capacity. Its hydroelectric plants produce nearly 70 billion kilowatt-hours each year—sufficient to serve about 75 million households equal to 288 cities the size of Washington, DC. Hydropower is a renewable source of energy and one of the least environmentally disruptive sources of electric power, producing none of the airborne emissions that contribute to acid rain or the greenhouse effect.

REGULATION OF WETLANDS AND WATERWAYS

In accordance with the Rivers and Harbors Act of 1890 (Sec. 10) and the Clean Water Act of 1972 (Sec. 404), as amended, the Army Civil Works Regulatory Program regulates the discharge of dredged and fill material into U.S. waters, including wetlands. USACE implements many of its oversight responsibilities by means of a permit process. Throughout the permit evaluation process, the USACE complies with the National Environmental Policy Act and other applicable environmental and historic preservation laws. In addition to federal statutes, USACE must also consider the views of other federal, tribal, state and local governments and agencies; interest groups as well as the general public when rendering its final permit decisions.

RECREATION

USACE is an important provider of outdoor recreation, which is an ancillary benefit of its flood risk management and navigation projects. The USACE recreation program provides quality outdoor public recreation experiences in accordance with its three-part mission: 1) serve the needs of present and future generations; 2) contribute to the quality of American life; and 3) manage and conserve natural resources consistent with ecosystem management principles.

USACE administers 4,240 recreation sites at 422 projects on 12 million acres of land. During fiscal year 2010, 365 million people visited a USACE recreation site. These visitors spent \$16 billion pursuing their favorite outdoor recreation activity, supporting 270,000 full- and part-time jobs.

EMERGENCY MANAGEMENT

Throughout USACE history, the United States has relied on the civil works program for help in times of national disaster. Emergency management continues to be an important part of the civil works program that supports the Department of Homeland Security in carrying out the National Response Framework. It does this by providing emergency support in the areas of public works and engineering, and by conducting emergency response and recovery activities under authority of Public Law 84-99. USACE responds to more than 30 presidential disaster declarations in a typical year, and its highly-trained workforce is prepared to deal with both man-made and natural disasters.

USACE not only contributes to domestic emergency management efforts, but also plays a major role on the international stage through its participation in the civil military emergency preparedness program. In support of the Department of Defense (DoD), USACE shares emergency management knowledge and expertise with U.S. Allies and partners in the former Soviet Republics and Eastern Europe. This valuable program brings together key leaders and builds relationships among nations in direct support of the National Defense Strategy.

WATER STORAGE FOR WATER SUPPLY

Conscientious management of the nation's water supply is critical to limiting water shortages and lessening the impact of droughts. USACE has an important role in ensuring that homes, businesses and farms, nationwide, have enough water to meet their needs. USACE has the authority for water supply in connection with construction, operation and modification of federal navigation; flood damage reduction; and multipurpose projects.

USACE Civil Works Mission and the Potential for Alternative Financing

Summary of Potential Alternative Finance Strategies

The first phase in the development of a White Paper on alternative finance for USACE is the compilation of an annotated summary of strategies with the potential to expand and enhance funding for the Civil Works Program. The strategies have been drawn from successful examples currently applied by USACE, effective practices at work in other federal agencies, and proposals identified in a review of the literature on innovative finance for infrastructure investment. The strategies can be organized into four overall categories: a) techniques for increasing capitalization; b) opportunities for enhancing user fee collection; c) techniques for lowering the cost of program delivery; and d) techniques for expanding and optimizing cost sharing. The strategies that are candidates for further research and investigation during development of the White Paper are summarized below.

- A. **Techniques for Increasing Capitalization** - Funding for the Civil Works Program has traditionally relied on annual federal government appropriations to provide direct project grants that are used in conjunction with local cost share contributions. The strategies summarized below are designed to leverage federal funds and expand the pool of funds available to recapitalize the vital infrastructure currently maintained by USACE.
1. **Public Private Partnerships (PPPs)** - USACE has entered into a variety of partnerships with private parties (i.e., for-profit firms, not-for-profit organizations, cooperatives) to advance projects and augment federal funds. Examples include site concessions at Corps recreational facilities, hydropower licenses, and partnerships on ecosystem restoration. Additional effective practices can facilitate expansions of PPPs for Civil Works projects. These practices can help USACE leverage federal funding with private capital, transfer the risk of cost and schedule overruns and lifecycle cost escalation, and promote efficiency in project delivery.
 - 1.1. **PPP Project Delivery Methods** - There are several key forms PPPs can take to expand the project delivery options used by the Corps and local government stakeholders.
 - 1.1.1. Long-term lease to operate a facility funded through the collection of fees (Design Build Operate Maintain + Finance – DBOM+F)
 - 1.1.2. Availability Payment program where a private party would be responsible for design, construction, and operations and would be reimbursed by USACE as long as standards are met (DBOM). This allows USACE immediately fund projects through small appropriations stretched over time.
 - 1.1.3. Design Build - USACE would enter into firm fixed price contract for design and construction transferring cost and delivery risk to private party.
 - 1.1.4. Maintenance Program - USACE would contract out ongoing maintenance for firm fixed price. Private partner would adhere to standards and assume risk of O&M cost escalation.
 - 1.2. **Financing to Facilitate PPPs** - Federal and state agencies have identified several effective practices in project finance to encourage and facilitate private partner participation.

- 1.2.1. Credit Assistance/Enhancement Program - Establish a program to encourage PPPs and assist local governments with project finance. Program could be modeled on successful USDOT programs (TIFIA and RRIF). The program could offer the following products.
- 1.2.1.1. *Loan Guarantees* - The program would provide a repayment guarantee for bank loans to substantially reduce the cost of borrowing by PPP participants.
 - 1.2.1.2. *Bond Insurance* - The program would provide guarantees to bonds issued by states, municipalities, and public authorities to reduce the cost of borrowing and increase bonding capacity.
 - 1.2.1.3. *Construction Bridge Loans* - The program would provide construction period funding at reduced cost.
 - 1.2.1.4. *Subordinate Loan* - The program would provide subordinate tranche loans to reduce amount and cost of borrowing for non-federal parties (municipalities and/or private partners in PPPs).
 - 1.2.1.5. *Reserve Funding or Guarantee* - The program could pledge funds to cover project debt service reserve or O&M reserve (bank loan or bond issue).

Rates for these products would be at the federal government cost of borrowing but could include premium or upfront points to cover repayment risk and administrative costs. Rate premium could be set to a sliding scale based on applicant need, credit risk, and project purpose and need. Program rules would ensure priority over disbursements to equity and standards for maintenance and handback of the asset to the government at the end of the lease term.

- 1.2.2. Bond Solutions - USACE could seek legislative authorization to provide new sources of bond financing for projects. This could include the following.
- 1.2.2.1. *Private Activity Bonds (PABs)* - Removal of the allocation cap for PABs for all USACE project purposes (including FRM, water supply, waterborne transport infrastructure). Uncapped PABs authorization (as is current practice in USDOT regulated transportation sector) would allow private partners in PPPs to issue tax-exempt bonds funding through user fee revenue streams.
 - 1.2.2.2. *Bond Underwriting* - Implement government backed bond issues available to municipalities and public authorities modeled after the successful Build America Bonds (BABs) program.
- 1.2.3. Revenue Sources - Non-federal partners, whether private partners or state or municipal authority partners, will require ongoing revenue sources to finance their contribution to project capital and/or maintenance costs. USACE can provide access to or identify sources for these revenue streams to facilitate successful partnerships. These sources include user fees and value capture (see Section 2 – Fee Enhancement, below).

- 1.2.4. Investment Tax Credit Program - To encourage private partners to contribute funds to recapitalization projects, USACE could seek legislative authorization for an investment tax credit program.
- 1.2.5. Infrastructure Bank - An infrastructure bank is a method of organizing access to partnering funds and evaluating and prioritizing project funding. The infrastructure bank could be organized for USACE as a whole or organized by district or business lines. Infrastructure banks have been the subject of recent administration and congressional proposals, and were authorized at the state level through Transportation Equity Act for the 21st Century (TEA-21, Public Law 105-178, as amended by title IX of Public Law 105-206). The bank could contain some or all of the following features.
- 1.2.5.1. *Seed Funding* - Initial capital funds for the infrastructure bank could come from one or more of the following sources 1) one-time appropriation; 2) divestiture or sale of excess no-income USACE property or facilities; 3) Sale to private entities of USACE facilities that produce income (converts income streams to lump sums); fees or trust fund revenues.
- 1.2.5.2. *Revolving Fund* - With the initial capital, a revolving fund is established and loans are made to non-Federal entities for construction of various USACE related facilities. Low interest rates (small premium above the current federal cost of borrowing) would be charged to retain the value of the revolving fund and recapture any administrative costs, and loan repayment risk. As funds are repaid they would be available for other projects reducing need for ongoing appropriations.
- 1.2.5.3. *Leverage* - The initial seed capital could be leveraged in the following ways.
- 1.2.5.3.1. *Bank Bond Issuance* - The infrastructure bank could sell bonds to investors with using its portfolio of loans as collateral. A conservative ratio of 3:1 or 4:1 leverage would be established.
- 1.2.5.3.2. *Loan Packaging or Securitization* - The infrastructure bank could sell packages of its loan portfolio to private investors; also with conservative leverage 3:1 or 4:1 limits.
- 1.2.5.3.3. *Equity Participation* - Federal funds loaned out or pledged to projects would be further leveraged by local matching funds and private equity participation (equity participation in infrastructure projects typically ranges from 20 to 40 percent).
- 1.2.5.4. *Grant, Credit Assistance, and Bond Authority* - The bank could have the authority to make direct grants, or provide credit (see 1.2.1) or bond (see 1.2.3) assistance.
- 1.2.5.5. *Credit Standards and Evaluation* - Loans are disbursed based on application process that evaluates project purpose and need, project implementation plan, and creditworthiness of borrowers. USACE could establish a grant program to cover all or part of the project planning and application cost to encourage participation.

- B. **Fee Enhancement** - A move by USACE away from reliance on appropriations for project funding and toward more innovative mechanisms of finance would require broadening of the fee base to include all users/beneficiaries of USACE projects and funding (including grants, loans, and credit assistance). Changes in the formulation and collection of fees would further facilitate PPP initiatives, expansion of local government partner participation, and USACE control over capital and lifecycle maintenance priorities. Key enhancements could include the following.
1. **Expand Trust Fund Usage** - Establish a trust fund legislatively and capture user fees and other sources of funds that would be dedicated to USACE programs. Establishment of a trust fund would establish USACE budget authority versus contract authority and provide authorization continuity to the program. Current examples include Harbor Maintenance Trust Fund, Inland Waterways Trust Fund, and direct funding of Power Management Authority (PMA) costs as implemented by Bonneville PMA.
 2. **Freight User Fee Enhancement** - Increase current freight user fees or impose new fees to recover construction, operating, and maintenance costs at their true value and to not violate international trade agreements. Conduct studies to ensure that the fees are recovering all costs. Fees could be administered and collected by USACE or USACE could authorize local port authorities or non-federal parties to collect. To ensure that fees are used for valid purposes that would provide benefits to port users rules similar to FAA Passenger Facility Charge (PFC). USACE would conduct studies to determine price elasticity of demand to set caps for total fees and would encourage uniform application of fees to mitigate against undue reduction in cargo shipments or diversion of cargo to competing facilities or modes of shipment. Fees could include the following:
 - 2.1. **Ad Valorem Fee for Bulk Cargo** - Enhancement and expansion of the value-based harbor maintenance fee
 - 2.2. **Docking or Access Fee or Surcharge** - Surcharges to docking and drayage fees collected by port operators could be used to defray costs of dredging or improvements.
 - 2.3. **Container Fee** - Establish a per container fee at maritime ports to raise funds for dredging of deep draft vessels
 - 2.4. **Facility Access Fees or Access Road Charge** - Recover costs for facility improvements by charging for port access (potential for cooperation with federal agency or local partner)
 - 2.5. **Lock User Fees** - Capture cost of lock improvements at individual location through setting fees to cover capital and maintenance needs (users benefit from reliability, speed, and expanded capacity). USACE could revive studies that have examined congestion pricing at locks or the establishment of tradable lockage fees.
 - 2.6. **Fuel Taxes** - Increase in towing vessel fuel taxes to match inland waterway capital needs.
 - 2.7. **Waterway Tolls** - Explore use of real time vessel tracking technology to impose distance fees or waterway tolls for vessels, towing vessels, and/or barges.

3. **Value Capture Program** - USACE can conduct study of feasibility of value capture techniques to recover costs through fees to beneficiaries of FRM, Recreation, FUSRAP, and other programs. These value capture mechanisms could be implemented directly by USACE, or more likely, by non-federal parties to provide ongoing fees to finance projects. For local non-federal implementations of value capture, USACE could provide grant funding and/or technical assistance to conduct the studies required to set and maintain fees. Value capture mechanisms could include the following.
 - 3.1. **Tax Increment Finance Districts** - A tax on the incremental increase on property values that result from a USACE improvement (e.g. major FRM, recreation, or FUSRAP project).
 - 3.2. **Developer Fees** - New developers benefiting from an infrastructure project would contribute a one-time fee based on square footage or number of units to cover anticipated costs.
 - 3.3. **Special Improvement or Tax District** - Business and residents within an area benefiting from infrastructure would be charged a special assessment to contribute to cost.
4. **Asset Divestiture/Privatization** - USACE could study the select divestiture of assets through sale and privatization to raise funds for priority capital programs more closely related to the core Civil Works mission. The divestiture could take the form of outright sale of a public asset to a private party, cooperative, or non-federal governmental authority, or the long-term lease (50-99 year term of an asset with requirement for upkeep and handback condition). Strategies for divestiture may require cooperation with other federal agencies. Divestiture is most applicable to Hydropower (e.g., divestiture of Alaska PMA), recreation, and water storage. Contracts would have to include provision for capital improvement and lifecycle maintenance for multiple use projects (e.g., recreation, waters storage). Divestiture/privatization could take the following general forms.
 - 4.1. **Upfront fee** - A one-time fee for sale or lease of an asset to be applied toward immediate capital needs, trust fund, or infrastructure bank capitalization.
 - 4.2. **Annual Lease Fee/License** - Rent payments to be applied toward immediate capital needs, trust fund, or infrastructure bank capitalization.
5. **Other Revenue Sources** - Effective practices in use by other federal, state, and local infrastructure owners could be adopted by USACE to augment existing revenue sources. These initiatives could include the following.
 - 5.1. **Technology Transfer/Assistance Charges** - Establish a program for fee charges for USACE technology and assistance. This would start to shift USACE away from free assistance model to fee based service model. The program could expand access to Corps services and technology to non-federal parties. Examples include the current Army Technical Assistance Program aimed at private firms seeking overseas contracts; the Construction Engineering Research Laboratory (CERL); and centers of excellence. This program could include the following features.

- 5.1.1. Royalty Program - Non-federal users could employ innovative technology developed by the Corps for a license fee meant to cover R&D and administrative costs.
- 5.1.2. Technical Assistance - Competitive or reduce rate charges for USACE provided technical assistance and or O&M services.

Royalty and fee rates could be based on a sliding scale that considers the non-federal party's ability to pay, the compatibility of the project with USACE goals, and other criteria to further and expand the USACE Civil Works mission.

- 5.2. **Easements** - Sell right-of-way easements (fiber optic access or utilities) or where appropriate air rights. Another example would be selling the rights to locate facilities such as cell towers.
- 5.3. **Branding Rights** - Sell branding rights for various facilities. A corollary would be the federal program for charging commercial entities for putting their logos on way-finding signs.

C. Techniques for Lowering the Cost of Program Delivery - USACE already employs value engineering and related requirements to reduce the cost of program delivery. USACE could seek legislative authorization for additional programs modeled after effective practices in USDOT, including the following.

- 1. **Special Experimental Program Delivery (SEPD)** - Establish legislative authority for a SEPD. This would allow the Corps to develop experimental contractual arrangements apply to a limited amount of projects to determine their effectiveness. This program is similar to the authority that allowed experimenting with the design build program.
- 2. **Advanced Construction Program** - Establish an advanced construction program. Legislatively the Corps would be authorized to permit advance construction by states or other non-federal or private entities to initiate projects. Advance construction would NOT create an obligation by the USACE but rather would allow non-federal entities to initiate projects prior to federal funding authorization. After funding is made available the project would be permitted to be converted to an obligated project. The non-federal agency would be responsible for any cost incurred and carry the risk if no future federal funds become available. The process would allow projects to be initiated in advance of federal fund availability. This would expand and enhance Section 204(e) of the Water Resources Development Act (1986).
- 3. **LIFE (Long-lasting, Innovative, Fast and Efficient) program** - Establish a program modeled after FHWA's program to reduce construction time and lower construction costs. Program includes financial incentives to project sponsors to promote the following.
 - 3.1. Adoption of technology or methods for efficiencies in construction.
 - 3.2. Value engineering and streamlining in the project development process.
 - 3.3. Adoption of innovative technologies and techniques to enhance project life or reduce life-cycle costs.

The program could expand and enhance current USACE efforts through Diffusion of Innovative Technologies (DoIT) work unit of Dredging Operations and Environmental Research (DOER).

4. **Budget Flexibility** - Redefine maintenance versus preservation and allow greater flexibility for transfer program funds.
- D. **Techniques for Expanding and Optimizing Cost Sharing** - Even in the absence of PPP, fee enhancement or other initiatives, USACE could explore change in cost sharing with local partners and other federal agencies to promote timely and efficient delivery of projects and a coordinated approach to capital planning. Potential initiatives could include the following.
1. **Change Cost Share Standards** - Implementation of innovative finance techniques would allow for an increase in the non-federal cost share through provision of a variety of mechanisms to facilitate municipal finance or encourage PPPs. This could be justified based on following.
 - 1.1. Non-federal partners would be given access to toolkit of innovative finance techniques to mix and match methods to meet cost share.
 - 1.2. USACE could establish a technical assistance service to guide non-federal partners in implementing the toolkit.
 - 1.3. Corps policy on grants/appropriation funds would be focused on project planning and technical assistance.
 - 1.4. Project prioritization could be based on level on non-federal funds leveraged for the projects (match could slide from a minimum to maximum level or be uncapped).
 2. **Prioritize Local Contributions** - Consider the level of matching funds from non-federal organizations as one of the criteria used for selection project criteria in discretionary programs. Establish programs where the state and local agencies (including multi-stated consortiums propose projects and compete for discretionary programs.
 3. **Promote Donations and Not-for-Profit Partnerships** - Promote donation of funds through a conservancy program. USACE could expand and enhance existing initiatives in Recreation, allowing private not-for-profit organizations to raise funds to cover or contribute to project costs. The Corps could also enter into agreements with these organizations to provide ongoing maintenance and life-cycle renewal through ongoing donations and/or work in kind contributions.
 4. **Explore Cost Sharing and Coordination with Other Federal Agencies** - Strategies for a coordinated federal approach to infrastructure planning and funding could include the following.
 - 4.1. Explore opportunities for eliminating overlapping responsibilities with other Federal agencies. For example agencies identified as part of the Watershed Approach collaborative program, including Environmental Protection Agency, U.S. Fish and Wildlife Service, National Resources Conservation Service, Bureau of Reclamation, and U.S. Geological Survey.

- 4.2. Explore opportunities for cost sharing for multi-use facilities. Cost sharing opportunities would be across Federal and State agencies.
- 4.3. In federal and non-federal cost sharing and in revenue identification, explore opportunities to consider actual use, not just authorized purpose.
- 4.4. Legislatively establish and participate with other agencies in cost sharing of freight multimodal corridor programs.

White Paper: USACE Civil Works Mission and Potential for Alternative Funding and Finance

1. INTRODUCTION

USACE operates, maintains, and manages almost \$240 billion worth, or about one-third, of the nation's water resource assets.¹ River and coastal navigation are a central element of the Civil Works mission, but over the years, Congress has expanded USACE responsibilities to include hydropower generation, flood risk management, ecosystem restoration, outdoor recreation, and related functions. USACE assets range from small boat launches to massive dams, extensive levee systems, and complex locks, all of which contribute to the nation's economy, safety, and security. Many of these vital assets, built decades ago, are reaching or exceeding their original design lives. Limited resources and increasing age have contributed to a decline in the overall value of USACE capital stock, which has decreased from a value of \$250 billion in 1980 to \$165 billion in 2011.² As assets age, unplanned and scheduled outages at the nation's inland waterway locks and dams and hydropower facilities have increased, driving down the reliability of the services these public works provide.

USACE assets generate revenue through lease income and a variety of user fees. This revenue is reinvested in capital projects and ongoing operations and maintenance through annual Congressional appropriations. USACE also seeks to share costs with state and local government partners for capital investment projects. Current levels of appropriations and cost share contributions are not sufficient, however, to keep pace with pressing recapitalization as well as operating and maintenance needs. To bridge the gap, USACE is considering innovations in revenue generation, project finance, asset management, and the leveraging of federal investment through expanded partnerships with public and private entities.

To promote consideration of a wide range of innovative techniques and effective practices, USACE engaged The Louis Berger Group, Inc. (LBG) to organize an Alternative Finance Workshop with USACE Civil Works leadership and outside experts in project finance. The Workshop was held on February 21 and 22, 2012 in Washington, DC. This White Paper documents the key strategies recommended for further study by participants. USACE intends to use this document as a base for additional workshop discussions and research efforts focused on implementation of short and long-term strategies.

1.1. Purpose and Objectives

The objective of the Workshop was to engage USACE senior leaders and external experts in a discussion on USACE funding and finance challenges and to assist the USACE in exploring alternative financing mechanisms. The workshop presented a variety of alternative funding mechanisms used by various

¹ USACE, *USACE Makes the Case for Improving the Nation's Water Assets, U.S. Army Corps of Engineers: Building Strong, Serving the Nation and the Armed Forces*, 2011-2012.

² Committee on U.S. Army Corps of Engineers Water Resources Science, Engineering, and Planning, National Research Council, *National Water Resources Challenges Facing the U.S. Army Corps of Engineers*, National Academy of Sciences, 2011.

federal, state, and local agencies as well as the private sector for transportation infrastructure projects. Invited experts who have applied these techniques made presentations during the workshop.

Following presentations on effective practices and lessons-learned from case study examples, a series of moderator led discussions were held. It was a goal of the workshop for the participants to provide input on the following questions.

1. Are there alternative options for funding and finance that are viable options for USACE? What activities in each business line might be suitable for alternative funding and finance strategies?
2. What are the opportunities and constraints of various alternative finance mechanisms within the context of the USACE operations?
3. What are the most promising finance mechanisms that should be evaluated as part of the White Paper?
4. What are the next steps forward? What are the most promising financial alternatives for early and long-term implementation? What USACE administrative or legal steps are necessary for implementing the identified financial alternatives?
5. What additional issues should be addressed as part of the study White Paper?

1.2. Workshop Overview

The two day workshop provided a productive forum for discussion of effective practices and ideas for near-term and long-term implementation that merit further study. The workshop agenda, a list of workshop participants, workshop presentations and notes on workshop activities and action items are presented in Appendix A.

The workshop began with an introduction by Steven Stockton, Director of Civil Works, who emphasized the fiscal constraints facing USACE in the performance of its mission. With a backlog in necessary recapitalization projects (new projects and major rebuilds) of over \$60 billion competing for approximately \$2 billion in annual funding, he noted that the current balance between capital projects and asset O&M was unsustainable. He provided the charge for the two day workshop session: innovative ideas to transform the current appropriations-dependent funding plan and implementable strategies to contribute to recapitalization priorities.

The workshop continued with an overview of innovative funding and finance techniques identified through the initial phases of the study designed to serve as a base for discussion on effective practices and options (see Appendix B for Overview of Alternative Finance and Funding Strategies). The initial presentation was followed by effective practice and case study examples provided by representatives from government agencies and private parties active in project finance: the American Association of State Highway and Transportation Officials (AASHTO), Clary Consulting, Macquarie Group, Abeima/Abengoa, LBG, and Jacobs Engineering.

Through an in-depth discussion on Public Private Partnership (PPP) experience in USACE Hydropower, and a matrix exercise on strategy opportunities and constraints, participants arrived at a set of long-term funding and finance strategy goals and short-term pilot projects. Long-term strategies identified by the group are outlined in Section 3 of this paper. Experimental pilot programs with potential for short-term implementation are discussed in Section 4.

2. BACKGROUND AND KEY ISSUES

The U.S. Army Corps of Engineers managed water resources are an immense accumulation of assets found in all 50 states.³ USACE's infrastructure provides 24 percent of U.S. hydropower, 11,000 miles of levees for flood damage reduction, 329 million acre-feet of water storage capacity that meets 18 percent of the nation's household water consumption, 343 recreation projects in 43 states that serve 370 million visits a year, and facilitate the effective and efficient transportation of 78 percent of the U.S. domestic and international cargo. The majority of the Army Civil Works program today is focused on the operation, maintenance, repair and replacement of major navigation, flood risk management and hydropower infrastructure systems, as well as on the environmental mitigation and restoration of natural resources affected in the past by these systems. As the infrastructure that USACE operates ages, it often becomes more difficult and more expensive to maintain these systems to meet performance goals and efficiently provide the economic and environmental benefits for which they were designed and constructed. The Army is adopting new practices to improve management of large and costly projects and is considering additional proposals to advance those efforts. USACE's plan for maintaining and improving infrastructure outlines specific actions to communicate a vision for synchronized investment in critical waterway and other infrastructure construction and maintenance that will help the U.S. maintain global competitiveness.

Current expectations for appropriations to support the USACE budget in the near term indicate recent levels of investment in recapitalization (new construction and major rehabilitation) and O&M will not be met.⁴ Figure 1 presents the FY 2011 five-year outlook. The Base Plan Scenario, where share of the overall expected federal budget is maintained, indicates an overall reduction in funding, even before inflation is considered.

Figure 1: USACE 2011 Civil Works Base and Enhanced Plans by Fiscal Year (\$ in millions)

³ Discussion excerpted from: USACE, *Strong Point: Maintaining and Improving Infrastructure: To Maintain Economic Prosperity, National Security and Social Well Being*, February 13, 2012.

⁴ USACE, *Fiscal Year 2011 Civil Works Program Performance Work Plan*, April 2011.

Source: LBG, 2012 from USACE, *Civil Works Program Five-Year Development Plan FY2011-FY2015*, April 2011.

In its five-year budget outlook, USACE also proposes an Enhanced Plan Scenario where appropriations are increased to mitigate against erosion in value due to inflation, particularly in O&M and Mississippi River and Tributaries (MRT) maintenance. The Enhanced Plan recognizes “wedge” funds made available due to the completion of budgeted capital projects and applied to Business Line priorities.

It is important to note that even in the Enhanced Plan Scenario, the level of recapitalization funding is not sufficient to substantially reduce the backlog of capital project needs. Under the Base Plan, recapitalization spending is lower overall, and asset maintenance is deferred. In Navigation, for example, past levels of operations and maintenance appropriations have not been sufficient to achieve substantial improvement in key performance measures. Base Plan funding levels will result in an increase in unscheduled closures of inland navigation locks and decrease in channel availability. Critical maintenance funding will keep most key navigation infrastructure functioning; however, overall facility condition will continue to decline.

Following development of the Five-Year Plan, USACE has received appropriations somewhat in excess of the Base Scenario through FY2013, but not at levels sufficient to offset inflation, as envisioned in the Enhanced Plan.

Although USACE assets and operations generate revenue, USACE is dependent exclusively on Congress for annual appropriations and cost sharing in its spending. In some cases, revenues collected do not flow immediately back to USACE or to recapitalization needs of users paying fees. Appropriations from the Harbor Maintenance Trust Fund (HMTF), for example, have lagged far behind the revenues for many years. In 2008, shippers utilizing the nation’s ports contributed \$1.467 billion to the HMTF; however, only \$787 million was spent on maintaining the federal channels and other harbor maintenance activities.⁵ Two bills have been introduced in the 112th Congress to provide for dedication of future HMTF receipts to harbor maintenance needs.

2.1. Goals for Application of Alternative Strategies

Given the fiscal challenges facing the Civil Works mission, the emphasis that USACE leadership has placed on identification of alternative finance methods designed to move beyond the dynamic where O&M and recapitalization are linked to the competition for scarce resources inherent in the annual appropriations process. Goals for innovative techniques are oriented toward capturing value from the Corps’ extensive asset base, dedication and proper prioritization of USACE asset-generated revenues, careful asset management, and leveraging of federal funds through expanded partnerships with public, private, and not-for-profit entities, and long-term project finance. Study research and Workshop discussions indicate several goals that USACE leadership, Office of Management and Budget, Congress and other stakeholders should consider when evaluating alternative funding and finance approaches.

⁵ San Francisco Bay Conservation and Development Commission, *Staff Report and Recommendation on Harbor Trust Fund Legislation*, July 2011.

2.1.1. Bridging Funding Gaps and Leveraging Appropriations

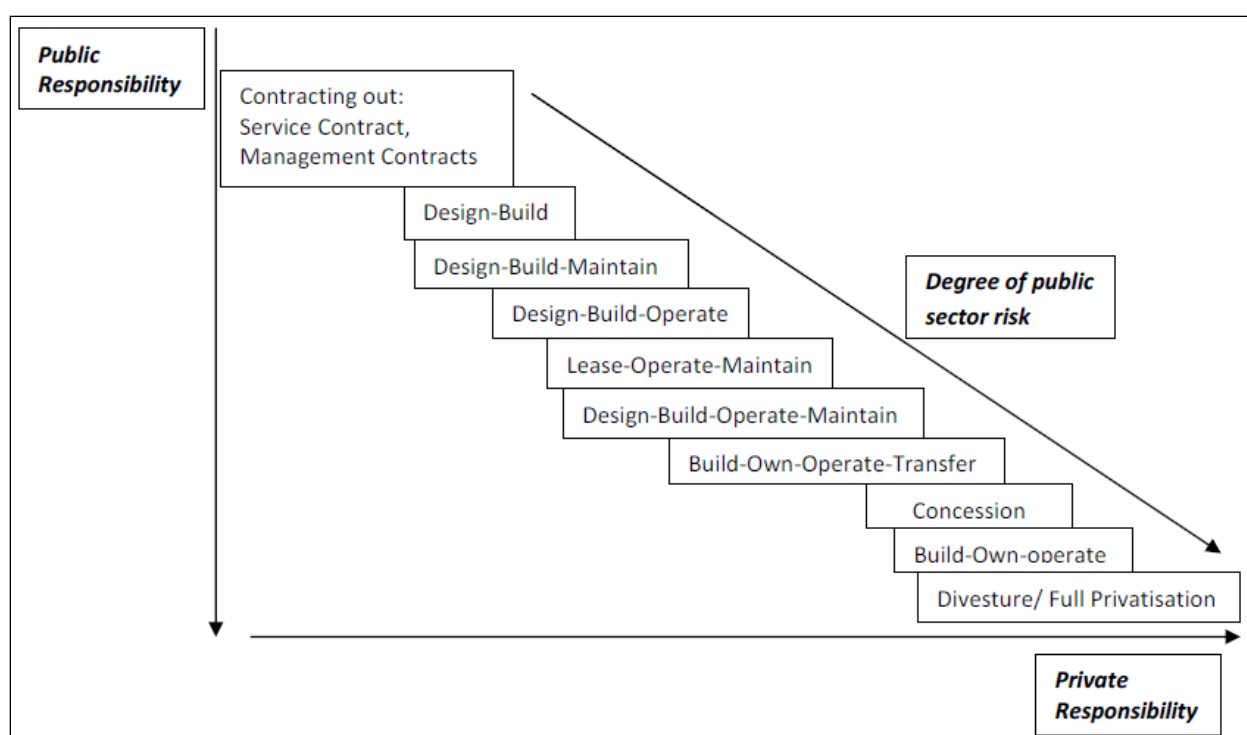
The funding gaps and appropriations challenges outlined in Section 2 point to the need for mechanisms to bridge gaps between outstanding recapitalization and O&M needs and annual appropriations and provide additional leverage to the federal appropriations that are determined by Congress. Workshop participants indicated that innovative techniques in funding and finance should be evaluated for their ability to bring in new sources of funds and provide additional leverage to government investments or reduce the need for government funds overall. The following considerations and examples are relevant to this goal.

- Expansion and enhancement of user fees will likely require more certainty in the dedication of funds and their allocation on a geographic and priority basis. If users are asked to pay the full cost or a larger share of the true cost of the assets and services provided, then they will expect fees paid in to be dedicated to related improvements and benefits, and distributed equitably with demonstrated attention to priorities.
- Public Private Partnerships will require some form of revenue capture or dedication. Fees provided through availability payment or full concession arrangements compensate private partners for providing leveraged funds to projects through equity and debt financing. Workshop participants noted that dedicated funding arrangements are ultimately cheaper for government partners than arrangements where private partners must account for substantial appropriations risk. Local partners (e.g., port district, redevelopment agency) and particularly private entities (i.e., concessionaires) may have more flexibility than a federal agency in regularly adjusting fees to match costs. Arrangements where fees are determined through pre-defined contractual mechanisms (e.g., CPI adjustments and caps) provide more certainty to all parties.
- USACE activities like recreation and particularly flood risk management provide value to surrounding property owners, businesses, and communities that could be leveraged to pay for needed improvements. These value capture mechanisms, most frequently applied in the U.S. for transit and park improvements, could be implemented directly by USACE, or more likely, by non-federal parties to provide ongoing fees to finance projects. For local non-federal implementations of value capture, USACE could provide grant funding and/or technical assistance to conduct the studies required to set and maintain fees. Value capture mechanisms could include the following: Tax Increment Finance Districts, Developer Fees, or Special Improvement Districts (see Section 3.1, below).
- Low interest loans, revolving loan funds, and credit enhancement techniques (see Appendix A, Section 1.2 for more information) provide examples of how the commitment of appropriated funds can be used to leverage private funding, while returning funds (through principal repayment and interest) to government for future use.
- Alterations in the cost share regulations and statutory requirements would provide additional flexibility to leverage non-federal funds to complete projects that would be of substantial local benefit.
- Expansion of partnerships with not-for-profit participants provides leverage for federal investments with lower requirements for return on investment for non-federal capital.

2.1.2. Risk Transfer and Sharing

In addition to the new money and leverage benefits noted above, PPPs and innovative project finance techniques provide benefits to the government in the form of risk transfer and sharing. Various forms of PPP arrangements allow government to choose which risks to retain and which risks to transfer to the private party. For example, when the government collects user fees and provides an availability payment to a concessionaire it is retaining the risk that revenues could be higher or lower than anticipated and is responsible for collecting fees. When a concessionaire takes on this risk and responsibility it expects a higher return to offset the possibility of losses. When the PPP process is properly structured to promote early involvement and collaboration the private partners provide government with feedback on the level of risk transfer appropriate for the asset. Figure 2 illustrates the degree of risk and involvement associated with various PPP structures.

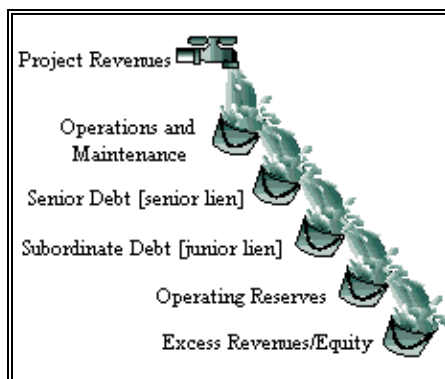
Figure 2: Scale of Public Sector Risk Transfer in Typical PPP Arrangements



Source: Canadian Council for Public Private Partnerships

Risk sharing is also effective in federal government credit enhancement programs such as that provided under the Transportation Infrastructure Finance and Innovation Act (TIFIA – See Appendix A, Section 1.2 for more information). In loans issued under this program the federal government assumes additional risk of non-repayment by subordinating its loan to other private party loans. In this way the cost of these private party loans to the project is greatly reduced. TIFIA loans include provisions which protect government rights in cases of default. Figure 3 provides an illustration of the position of subordinated debt in the cash flow waterfall.

Figure 3: Subordinate Debt Position in the Project Cash-Flow Waterfall



Source: USDOT Innovative Finance Primer, 2004

2.1.3. Project and Service Delivery Streamlining

A key goal in any application of innovative funding or finance techniques is the streamlining of project or service delivery. As frequently cited in research on PPPs, the private partner may have more skills or motivation for completing tasks in a timely fashion.⁶ When properly structured, PPPs can encourage private partners to apply ideas, technologies, and methods, not contemplated by government, that lead to lower costs and better service. This is particularly true in fixed-price contracts with incentives and penalties applying to schedule performance and service standards. Participants in the workshop cited savings to state transportation agencies of 20 percent to 30 percent in service privatization contracts due to competition, efficiencies, and innovation.

2.1.4. Optimizing Local Participation

As noted in the discussion on Value Capture above (see 2.1.1), local communities can benefit in a variety of ways beyond those envisioned in the current user-pays and cost sharing frameworks. Establishing a process to engage local partners in identifying project benefits and capturing revenue to contribute to project funding can be a useful goal for expanding USACE funding options. Other goals, noted by Workshop participants include increased flexibility in cost sharing, advanced construction credit, and mechanisms to encourage not-for-profit partnerships. The addition of competition among local partners (e.g., discretionary funding applications, credit enhancement program applications, consideration of local match in finding distribution) was also discussed, and can help optimize local participation and enhance cost-sharing.

2.1.5. Capitalizing on USACE Expertise (technical advisory, project management)

Through its long history of service and broad base of responsibilities, USACE is a world leader in methods and technology in water resources and related disciplines like environmental stewardship and restoration. USACE has programs and mechanisms in place to share its expertise (see Section 2.2.2, below). The following goals were identified during initial project research and raised by Workshop participants.

⁶ USACE Institute for Water Resources, *Water Resource Outlook: Budget Constraints and the Corps Consideration of Public-Private Partnerships: Where is the Money Going to Come From?* December 2008.

- Technology transfer to encourage/facilitate partnerships and expand the pool of potential partners (e.g., feasibility studies, not-for-profit partner education).
- Transition from an owner to project manager and service provider to focus on core priorities.
- Providing technical assistance free of charge or at cost as an in-kind contribution to project development.
- Providing for-fee technical assistance and services for purposes of revenue generation.

2.1.6. Right-Sizing and Prioritization

In efforts to improve asset management and take a long-range view on project prioritization and asset preservation, USACE is examining mechanisms and structures for limiting the scope of its Civil Works mission to core functions, high-priority needs, and high benefit-cost projects. In this manner, USACE can consider asset transfer, divestiture, and privatization in the larger context of mission benefits and costs in order to optimize its O&M budget and prioritize the use of scarce federal funds. As noted by workshop participants, this goal can also be advanced through partnerships with other federal agencies, flexibility in the definition of authorized purpose, and flexibility in the definition of O&M and recapitalization priorities.

2.2. Existing Examples of Partnerships and Alternative Funding in USACE

The study team's literature review in preparation for the Workshop and the Workshop discussion itself identified several effective examples of partnerships and alternative funding mechanisms already at work in USACE. This section outlines those activities and summarizes comments by Workshop participants on priorities for expansion and enhancement of these efforts. Examples of innovative methods of project finance were not found in the Civil Works program.

2.2.1. Cost Sharing

The sharing of project costs and obligations for non-federal cost share proportions has been an effective way for USACE to leverage federal appropriations investments as well as encourage partners' participation in selecting a viable project. Table 1 outlines the current cost share objectives authorized by Congress.

A few limited general authorities exist that allow non-federal project sponsors using non-federal funds to conduct navigation and flood control studies or perform construction work that would more typically be performed by USACE.⁷ These authorities have been discussed for enhancement in Congressional consideration of WRDA reauthorization and include the following.

- § 211 of WRDA 1996, as amended (P.L. 104-303, 33 U.S.C. § 701b-13) provides that a nonfederal interest may undertake flood control activities, including studies and construction, and later may be reimbursed (subject to the availability of federal funds) or credited for its portion of the work subject to the approval of the Secretary of the Army.
- § 203 of WRDA 1986 (P.L. 99-662, 33 U.S.C. § 2231) provides similar opportunity for credit for non-federal interest in projects for harbors and in-land harbor projects.

⁷ Adapted from Congressional Research Service, *Army Corps of Engineers Water Resource Projects: Authorization and Appropriation*, August 19, 2011.

- § 204 of WRDA 1986, as amended (P.L. 99-662, 33 U.S.C. § 2232) provides opportunity for reimbursement for navigation projects authorized by the Secretary.

These options have not been used widely due to requirements for compliance with federal laws and regulations. In some instances non-federal entities have hired USACE to perform the work to facilitate compliance.

Table 1: Cost Shares for Construction and Operation of New Projects

Project Purpose	Maximum Federal Share of Construction	Maximum Federal Share of O&M
Navigation		
Coastal Ports—		
<20 ft. harbor	80% ^a	100% ^b
20-45 ft. harbor	65% ^a	100% ^b
>45 ft. harbor	40% ^a	50% ^b
Inland Waterways	100% ^c	100%
Flood and Hurricane Damage Reduction		
Inland Flood Control	65%	0%
Coastal Hurricane and Storm Damage Reduction except Periodic Beach Nourishment	65% 50%	0% 0%
Repair of Damaged Flood and Coastal Storm Projects		
Locally Constructed Flood Projects	not applicable	80% ^d
Federally Constructed Flood and Coastal Projects	not applicable	100% ^d
Aquatic Ecosystem Restoration	65%	0%
Multi-Purpose Project Components		
Hydroelectric Power	0% ^e	0%
Municipal and Industrial Water Supply Storage	0%	0%
Agricultural Water Supply Storage	65% ^f	0%
Recreation at Corps Facilities	50%	0%
Aquatic Plant Control	not applicable	50%
Environmental Infrastructure (typically municipal water and wastewater infrastructure)	75% ^g	0%

Source: Congressional Research Service, Army Corps of Engineers Water Resource Projects: Authorization and Appropriation, August 19, 2011. Notes:

- These percentages reflect that the nonfederal sponsors pays (10%, 25%, or 30%) during construction and an additional 10% over a period not to exceed 30 years.
- Appropriations from the Harbor Maintenance Trust Fund, which is funded by collections on commercial cargo imports at federally maintained ports, are used for 100% of these costs.
- Appropriations from the Inland Waterway Trust Fund, which is funded by a fuel tax on vessels engaged in commercial transport on designated waterways, are used for 50% of these costs.
- 33 U.S.C. § 701n. Repair assistance is restricted to projects eligible for and participating in the Corps' Rehabilitation and Inspection Program and to fixing damage caused by natural events, not regular maintenance or betterments.
- Hydroelectric capital costs initially are federally funded and are repaid by fees collected from power customers.
- For the 17 western states where reclamation law applies, irrigation costs initially are funded by the Corps but repaid by nonfederal water users.
- Most environmental infrastructure projects are authorized with a 75% federal cost share; a few have a 65% federal cost share.

Participants in the Workshop noted flexibility and enhancement in cost share authority, specifically the following goals.

- Streamlined advance construction authorization for all USACE activities
- Flexibility in cost-share requirements to allow non-federal share to be used a criterion for project prioritization

Implementation would likely require changes in existing authorities, as noted above.

2.2.2. Technical Assistance

USACE has a long history of providing technical assistance to non-federal project sponsors through General Investigations studies.⁸ These types of studies are undertaken in response to a Congressional Resolution from the House Committee on Public Works and Transportation, The Senate Committee on the Environment and Public Works, or a Public Law. In this program, USACE jointly conducts a study with a non-federal sponsor and, if shown by the study to be feasible, constructs the project. This approach requires that Congress provide the Corps with authority and funds to first accomplish a feasibility study and secondly, to construct the project. Local sponsors share the study and construction costs with the Corps, and usually pay for all operation and maintenance costs.

An example of technical assistance to private firms can be found in Technical Assistance Agreements (TAAs) authorized for U.S. firms operating overseas. ERDC laboratories may provide technical assistance on a non-exclusive basis to assist United States firms that are competing for or have been awarded a contract for planning, designing, or constructing a project outside the United States. TAAs must be coordinated with the U.S. embassy where the project is located, and with the appropriate Army element responsible for the region. 33 U.S.C. 2323 authorizes the Secretary of the Army (with delegation down to the laboratory director) to enter into TAA with U.S. firms in support of overseas work. Technical Assistance includes studies, evaluations, designs, computer and physical modeling and testing, and other engineering and scientific functions for which USACE is uniquely equipped, trained, and authorized by law to perform. The firm must certify that assistance is not otherwise reasonably and expeditiously available from a private sector source and must agree to hold and save the U.S. free from any damages due to any assistance. Cooperative Research & Development Agreements (CRADAs) are an example of two-way research and development information sharing authorized by 15 USC 3710a.

A requirement applicable to all federal agencies is set forth in 31 USC 6505. This provision limits the USACE to performing only those specialized or technical services that cannot be reasonably and quickly provided by the private sector, and it requires the Secretary to certify that USACE is uniquely equipped to perform the services.

Workshop participants discussed some goals for Technical Assistance (see Section 2.1.5) that may require additional Congressional authority.

⁸ USACE, Detroit District, General Investigations Fact Sheet, 2009.

2.2.3. Concessions and Leases

Recreation assets, such as marinas, restaurants, and campgrounds, are routinely leased or sub-leased on USACE property to profit-seeking entities. Prior to entering into the partnership, USACE conducts a market feasibility study to establish needs and concession viability. Competitive proposals are solicited through an established “Notice of Availability” process. Lease terms of 25 years are standard with leasehold improvements to receive USACE approval. Private companies operate, maintain, develop, and improve these facilities during the term of the lease. USACE also has leased federal land to state and local governments who in turn lease to, or partner with, private entities. These “Public Park and Recreation Leases” do not have to be advertised competitively prior to USACE approval—the sublease process is conducted under state regulations. USACE studies have found local and state leases to be more advantageous to taxpayers than direct USACE leases.⁹ USACE lease terms could be more closely aligned with successful state terms and conditions to allow USACE to benefit from additional market demand.

2.2.4. Conservancy, Land Trusts, Contributions, and Fundraising

USACE has several programs that promote partnerships with private citizen volunteers or non-profit organizations. Important examples include the following.¹⁰

- The Volunteer Program, authorized by Public Law 98-63, can accept volunteer services and also provide reimbursement for incidental expenses.
- The Contribution Program allows USACE “to accept contributions from groups and individuals in connection with carrying out water resources projects for environmental protection and restoration or for recreation.”
- The Challenge Partnerships Program established under WRDA 1992 enables partnerships with public and non-Federal groups and individuals to contribute to and participate in the operation and/or management of recreation facilities and natural resources at Corps water resource development.
- USACE has also established the Handshake Partnership Program, which provides “seed money” as an incentive for USACE facilities to use Challenge Partnership agreements. This program provided \$125,000 to 14 facilities in 2008. These locations received up to \$10,000 each to utilize with appropriated funds and partner contributions (in-kind services, supplies, volunteers, etc.) to accomplish a partnership project.
- WRDA 2007 contains provisions which allow non-profit organizations with wetlands restoration expertise to design and construct authorized projects for USACE and become cost-sharing partners on Continuing Authorities and General Investigation Studies. Non-profit sponsors are to act similarly as the Corps’ current sponsors: providing in-kind services, lands, easements, rights-of-way, relocations, and disposal areas for construction, the non-Federal cost share, operations and maintenance.

⁹ USACE Institute for Water Resources, *Water Resource Outlook: Budget Constraints and the Corps Consideration of Public-Private Partnerships: Where is the Money Going to Come From?* December 2008.

¹⁰ USACE Institute for Water Resources (2008).

Workshop participants noted that current partnership programs require heavy involvement of USACE headquarters resources for setup and negotiations, despite the existence of standard model agreements. Participants indicated that goals for enhancement in this area should include delegation of authority to the districts and technical assistance to district personnel and not-for-profits to facilitate participation (see Section 4.2.4, below).

2.2.5. Hydropower PPPs

As noted in previous USACE research on applicability of PPPs to Civil Works, hydropower plants at USACE facilities began as PPPs.¹¹ USACE would pursue project development jointly with electric utility companies. The companies would build the dam and power facilities and the Corps would build the navigation lock. Congress later authorized USACE to build plants where dams were being built for flood risk management, navigation and other purposes. In the 1970s, non-federal hydropower was allowed at Corps project sites totaling nearly 40 completed by municipalities, electric utilities, and independent power producers.

The discussion on expansion of hydropower PPPs during the workshop included the following key considerations.

- As demonstrated by the Bonneville Power Administration, hydropower can be self-sustaining and the direct funding model holds promise beyond Northwest. Power marketing administrations (PMAs) do not currently see the need for change. USACE needs to advance discussion based on implementation of improvements to increase efficiencies and reliability and reduce downtime.
- PMA interest ends at the Power House. USACE should press the case where responsibility includes dam safety and flood control.
- Inquiries from industry continue indicating ongoing interest in partnerships. A mechanism to better channel and explore inquiries is required. Example of current success includes 3-way agreements for O&M.
- Energy Savings Performance Contracting (ESPC) also has potential for PPPs for USACE facilities beyond hydropower.
- Although PMAs have authority (right of first-refusal on future power generation), there is the potential for USACE to partner with other agencies (i.e., Bureau of Reclamation) to make better use of opportunities to expand generating capacity. This could include PPP structures. USACE could also explore arrangements for power generation for other federal agencies' needs.

¹¹ USACE Institute for Water Resources (2008).

3. LONG-TERM STRATEGIES IDENTIFIED FOR FURTHER STUDY

During the course of the Workshop, participants identified key long term strategies that merit further study by USACE. These initiatives would likely require Congressional authorization, substantial USACE internal study, and some level of organizational realignment and training. This section outlines and provides additional information on these long term strategies and implementation requirements.

3.1. User Fee and Trust Fund Enhancement

As noted in Section 2.1.1, revenue generation through long-term changes and enhancements to user fees and the operation of trust funds is an important goal to provide dedicated revenue streams for recapitalization and discretionary authority for project identification and prioritization. Key elements include the following.

- Trust Fund Dedication – Congressional authority, along the lines of bills introduced in the 112th Congress, would be required to dedicate trust fund revenues (e.g. HMTF) to specific purposes related to recapitalization needs of the assets where fees are applied. Use of trust fund balances in annual USACE budgets would subject to periodic Congressional authorization, in a manner similar to USDOT authority for use of Highway Trust Fund. Given current revenue pressures and competing challenges for general fund distributions, this initiative would most likely be limited to future trust fund receipts. This type of initiative has received support from stakeholders and industry groups, but advancement would most likely hinge on provisions for project selection and prioritization, geographic distribution of funds, non-federal share standards, and related issues.
- Revenue Enhancement – With needs for recapitalization that outpace annual appropriations, or even user fee revenues, it is clear that user fees are not adequately aligned with the long-term costs of the assets and services provided. Workshop participants expressed interest in the feasibility of the following strategies for applying or increasing fees for navigation to more closely represent USACE costs for maintaining facilities in line with user expectations for level of service. User fees of particular interest include the following.
 - *Ad valorem* fee for bulk cargo – Enhancement and expansion of the value-based harbor maintenance fee to align with cost of dredging needs.
 - Container fee – Establish a per container fee at maritime ports to raise funds for dredging of deep draft vessels.
 - Lock user fees – Capture cost of lock improvements at individual location through setting fees to cover capital and maintenance needs (users benefit from reliability, speed, and expanded capacity). USACE could revive studies that have examined congestion pricing at locks or the establishment of tradable lockage fees.
 - Fuel Taxes – Increase in towing vessel fuel taxes to match inland waterway capital needs.
 - Waterway Tolls – Explore use of real time vessel tracking technology to impose distance fees or waterway tolls for vessels, towing vessels, and/or barges.

Assessment of the feasibility of changes or implementation of these fees would require detailed study to identify appropriate fee levels, estimate and account for price elasticity of demand

(including reduction of demand, reduction in trade, and potential for diversion to other modes of shipment), determine feasibility and cost of toll collection technology, identify administrative requirements and cost for toll collection, and identify mechanism for use of funds and ongoing performance measurement.

- Value Capture – Fees applied to recover the value of benefits provided to beneficiaries of FRM, Recreation, FUSRAP, and other programs, could provide a new source of revenue to offset the cost of recapitalization projects. These benefits are related to the increased property values and business potential of property owners and private firms protected by FRM projects, located adjacent to desirable recreation facilities, or located in or near developments made possible through FUSRAP. These value capture mechanisms could be implemented directly by USACE, or more likely, by non-federal parties to provide ongoing fees to finance local cost share contributions. For local non-federal implementations of value capture, USACE could provide grant funding and/or technical assistance to conduct the studies required to set and maintain fees. Value capture mechanisms could include the following.
 - Tax Increment Finance Districts – a tax on the incremental increase on property values that result from a USACE improvement (e.g. major FRM, recreation, or FUSRAP project).
 - Developer Fees – New developers benefiting from an infrastructure project would contribute a one-time fee based on square footage or number of units to cover anticipated costs.
 - Special Improvement or Tax District – business and residents within an area benefiting from infrastructure would be charged a special assessment to contribute to cost.

Local redevelopment agencies have demonstrated experience in estimating, applying and collecting these fees to offset the cost of capital projects or provide revenue streams for PPPs. It is important to note, however, that private equity participants see substantial risk and uncertainty in these revenue sources unless combined with other more certain revenue or backed by a general obligation guarantee. Similarly rating agencies often determine that these revenue sources are not suitable to secure investment-grade (BBB-/Baa ratings and above) commercial loans and bond issues without adequate reserve funds and general obligation guarantees.

3.2. Asset Management Review

USACE is actively working toward a resource investment priority system that is based on performance measures and standards that will promote consistent, repeatable, transparent, and auditable evaluation across all project purposes. The process will be informed by assessment and analysis of asset condition and risk. In addition to performance measures, USACE is also developing standards for asset assessment and appropriate disposition with options including 1) Recapitalization with federal and non-federal funding sources, 2) Concession to transfer risk and responsibility 3) Asset Transfer to another federal or non-federal party, and 4) Decommissioning for assets that no longer contribute to the core Civil Works mission. Reports and further information on USACE asset management initiatives are forthcoming. This topic was the subject of interest for a pilot program (see Section 4.2.5, below).

3.3. Infrastructure Bank and Credit Program

A third area of interest for long-term consideration raised by Workshop participants was the development of an infrastructure bank and/or related credit enhancement programs.

3.3.1. Infrastructure Bank

An infrastructure bank is a method of organizing access to partnering funds and evaluating and prioritizing project funding. The infrastructure bank could be organized for USACE as a whole or organized by district or business lines. USACE could also participate in a multiagency national infrastructure bank. Infrastructure banks have been the subject of recent administration and congressional proposals, and were authorized at the state level through Transportation Equity Act for the 21st Century (TEA-21, Public Law 105-178, as amended by Title IX of Public Law 105-206). The bank could contain some or all of the following features.

- Seed Funding – Initial capital funds for the infrastructure bank could come from one or more of the following sources 1) one-time appropriation; 2) divestiture or sale of excess no-income USACE property or facilities; 3) Sale to private entities of USACE facilities that produce income (converts income streams to lump sums); fees or trust fund revenues.
- Revolving Fund – With the initial capital, a revolving fund is established and loans are made to non-Federal entities for construction of various USACE related facilities. Low interest rates (small premium above the current federal cost of borrowing) would be charged to retain the value of the revolving fund and recapture any administrative costs, and loan repayment risk. As funds are repaid they would be available for other projects reducing need for ongoing appropriations.
- Leverage – The initial seed capital could be leveraged through issues of bank bonds sold to investors with using its portfolio of loans as collateral. A conservative ratio of 3:1 or 4:1 leverage would be established. An alternative source of leverage would be loan packaging or securitization. The infrastructure bank could sell packages of its loan portfolio to private investors; also with conservative leverage 3:1 or 4:1 limits.
- Equity Participation – Federal funds loaned out or pledged to projects would be further leveraged by local matching funds and private equity participation (equity participation in infrastructure projects typically ranges from 20 to 40 percent).
- Grant, credit assistance, and bond authority – The bank could have the authority to make direct grants, or provide credit or bond assistance as outlined below.
- Credit standards and evaluation - Loans are disbursed based on application process that evaluates project purpose and need, project implementation plan, and creditworthiness of borrowers. USACE could establish a grant program to cover all or part of the project planning and application cost to encourage participation.

3.3.2. Loans and Credit Enhancement

To promote non-federal investment in Civil Works projects, USACE would investigate the creation of a program to encourage PPPs and assist local governments with project finance. Program could be modeled on successful USDOT programs (TIFIA and RRIF). The program could offer the following products.

- Loan guarantees – the program would provide a repayment guarantee for bank loans to substantially reduce the cost of borrowing by non-federal partners
- Bond insurance – the program would provide guarantees to bonds issued by states, municipalities, and public authorities to reduce the cost of borrowing and increase bonding capacity
- Construction bridge loans – the program would provide construction period funding at reduced cost
- Subordinate loan – the program would provide subordinate tranche loans to reduce amount and cost of borrowing for non-federal parties (municipalities and/or private partners in PPPs).
- Reserve funding or guarantee – the program could pledge funds to cover project debt service reserve or O&M reserve (bank loan or bond issue).

Low interest loans or guarantees offered at the federal cost of borrowing could substantially reduce the cost of borrowing by private concessionaires, private freight operators or facility owners, or public port authorities or redevelopment agencies. This would allow them to raise capital for cost share more easily, leveraging existing revenue streams and preserving their own bonding or borrowing capacity. The TIFIA program, which now offers rates for 35 year terms as low as 3.3 percent, routinely receives many more applications than it can accommodate. To implement the TIFIA program USDOT needed to train and hire staff with project finance backgrounds and engage consultants and project finance advisors to review and evaluate credit application and monitor and audit program performance.

3.3.3. Bond Initiatives

In order to expand the pool of funds available to non-federal partners, USACE could work with other federal agencies and Congress to expand authority for the use of specialized tax-exempt municipal bonds to fund the local cost shares and PPPs. Bonds would not be issued or underwritten by USACE but the authority to issue bonds would be given by IRS and other federal agencies to non-federal partners for authorized USACE projects. Two examples of potentially useful bond initiatives that were successful in other markets include the following.

- Private Activity Bonds (PABs) – Congress would authorize removal of the allocation cap for Private Activity Bonds (PABs) for all USACE project purposes (including FRM, water supply, waterborne transport infrastructure). Uncapped PABs authorization (as is current practice in USDOT regulated transportation sector) would allow private partners in PPPs to issue tax-exempt bonds funding through user fee revenue streams. The adequacy of these revenue streams would be determined by underwriters, rating agencies, and the market of bond investors. USACE would have no role in evaluation or issuance and limited risk exposure but would benefit from enhanced non-federal leverage.
- Subsidized Bonds – Congress would authorize issuance of government backed bond issues available to municipalities and public authorities modeled after the successful Build America Bonds (BABs) program. This program included federal subsidies in the form of direct payment, a subsidy of 35 percent of the interest paid on the bonds to the issuer. Or tax credits a federal subsidy as a refundable tax credit directly to the bondholders. This initiative would require Congressional appropriation to fund the subsidies. BABs were considered a successful element of the federal stimulus program in 2009 and 2010.

3.3.4. TIFIA Partnership

Workshop participants expressed interest in further study of the feasibility of a DOD/USACE partnership with USDOT to authorize use of TIFIA credit program for navigation projects, particularly high-priority deep draft projects accompanied by landside intermodal access improvements. While this credit enhancement capacity would likely increase the ability for local partners to enter into projects and provide cost share contributions, the currently over-subscribed condition of the TIFIA program suggests that expansion of its capital base and additional funding for administrative functions would be necessary to accomplish. This would most likely require Congressional appropriations for USACE contribution and for the increased capacity of the subsidies for the loan program itself.

4. Short-Term Implementation Steps

Through an in-depth discussion of a matrix exercise on strategy opportunities and constraints, Workshop participants arrived at a set of pilot projects with potential for implementation in the near term with the objective of testing and demonstrating the feasibility of innovative funding and finance initiatives. It is anticipated that the pilot programs would require a special experimental program authority as outlined below.

4.1. Special Experimental Program Authority

USDOT and FHWA promoted the use of innovative project delivery methodologies and practices through the application of the provisions of Special Experimental Project Number 14 (SEP-14). Since the inception of SEP-14 in 1990, many processes that were once considered experimental including design-build, cost-plus-time bidding, lane rental and the use of warranties have become mainstream practices across the country. These new areas of interest include alternative ways to accomplish NEPA environmental compliance, right of way acquisition, and financing. In order for FHWA expand adoption of innovative methods; FHWA saw the further need to establish the SEP-15 program. SEP-15 allows for the use of experimental features on Federal-aid projects that will test an innovative project delivery technique that is prohibited by a current provision of title 23 of the United States Code, FHWA regulations or policy. SEP-15 does not replace SEP-14, which is still available to evaluate experimental contract administration methods. The creation of SEP-15 provides a process and the tools for the application of these strategies in an environment that encourages innovation while still maintaining the fundamental objectives FHWA's legislative authorities. In establishing the SEP-15 program, the FHWA recognized that its specific procedures should not be so narrowly construed that they prevent or unnecessarily inhibit a possible project or program where opportunities may exist for innovation. The primary objectives of the SEP-15 program are as follows:

- To encourage tests and experimentation in the entire project development process leading to increased project management flexibility, more innovation, improved efficiency, timely project implementation and potentially new revenue streams;
- To identify impediments to current laws, regulations, and practices to the greater use of public-private partnerships and private investment in transportation improvements;
- To develop procedures and approaches addressing these impediments; and
- To evaluate and propose administrative and statutory recommendations to remove these impediments.

Authority for the Secretary of the Army to authorize USACE to enter into a Special Experimental Program could be grounded in 33 USC 2300 which states:

The Secretary shall study and evaluate the measures necessary to increase the capabilities of the United States Army Corps of Engineers to undertake the planning and construction of water resources projects on an expedited basis and to adequately comply with all requirements of law applicable to the water resources program of the Corps of Engineers. As part of such study the Secretary shall consider appropriate measures to increase reliance on the private sector in the conduct of the water resources program of the Corps of Engineers. The Secretary shall implement such measures as may be necessary to improve the capabilities referred to in the first sentence of this section, including the establishment of increased levels of personnel, changes in project planning and construction procedures designed to lessen the time required for such planning and construction, and procedures for expediting the coordination of water resources projects with Federal, State, and local agencies.

We recommend that USACE or DOD legal counsel evaluate reliance upon existing authority and assess the need for special authorization. Congressional authorization would be expected in the event that individual pilot programs would require appropriations actions.

4.2. Pilot Program Candidates

Workshop participants identified several candidate concepts to test and demonstrate the value of innovative funding and finance options. These concepts are described in further detail below along with likely steps required for implementation.

4.2.1. Pilot for Discretionary Use of Harbor Maintenance Trust Fund

As noted in Section 2, not all annual receipts of the HMTF are appropriated by Congress for use in the USACE budget for navigation recapitalization. Workshop participants noted that approximately \$800m in trust fund receipts are left un-appropriated on an annual basis. At the end of FY2010, HMTF had a surplus of over \$5 billion.

Despite the HMTF surplus, recapitalization and maintenance needs persist in the busiest U.S. harbors. USACE estimates that full channel dimensions at the nation's busiest 59 ports are available less than 35% of the time.¹² Channels not maintained at authorized project depths could result in light-loading of vessels (carrying less cargo to enter shallower drafts), delays waiting for higher tides, diversion to other ports, or using trucking or rail.

Several proposals have been put forth in the 112th Congress for reform of HMTF function. These proposals involve provisions to dedicate HMTF receipts to harbor maintenance projects, tying appropriations to receipts. Reform measures involve eliminating the CBO scoring or mandated savings that apply to general fund appropriations and the current HMTF structure. Similar approaches are used for highway and airport trust funds with success.

The purpose of this pilot program is to reserve a portion of appropriated funds for an application driven, discretionary investment program. This program would have the following features.

¹² Congressional Research Service, *Harbor Maintenance Trust Fund Expenditures*, January 10, 2011.

- Criteria for award would include the level of matching funds brought by local partners or leverage achieved through private partnerships. This promotes the goals of leveraging federal funds and optimizing local participation noted in Section 2.1.
- To demonstrate that funds can meet urgent needs and high use facilities, the program could also contain set-asides for high need / high value projects at major facilities (post-Panamax dredging needs). Applicants would be encouraged to provide detailed justification of need and benefit, which would be considered in the evaluation process.
- The program could set aside funds for projects that are not receiving attention, such as low-use commercial ports. Applicants would be encouraged to provide information on the benefits of recapitalization in terms of economic development, cost of shipment, relief of congestion on other modes of shipment, and ancillary benefits to recreation and related uses.
- The pilot would include performance metrics tied to the evaluation criteria and to current metrics for performance (e.g., channel availability, cost per ton) to demonstrate effectiveness of the invested funds and contribution to business line High Priority Performance Goals.

Workshop participants noted several benefits of the pilot program, as follows.

- The discretionary framework would introduce structured competition for limited federal funds and more clearly incentivize local communities to put forward projects with demonstrated need and utility.
- It would also encourage a higher match to the trust fund money than would be likely through traditional appropriations model.
- The pilot program would serve to demonstrate value of federal expenditures, highlight unmet needs, and incentivize appropriators to release unused trust fund receipts by identifying viable projects with local support.

Implementation of this pilot program would likely be limited to temporary modification of internal policy and procedure. The purpose of these modifications would be a temporary test of new techniques for project identification and prioritization. The pilot program could be implemented via headquarters or at the district level.

4.2.2. Pilot for Partnership Between USACE and State Infrastructure Banks in Great Lakes Region

Workshop participants identified the Great Lakes region as an integrated waterway system that has suffered from under investment and would benefit from a collaborative approach to with surrounding states to identify new funding and finance strategies. The concept for this pilot program involves USACE collaboration with existing State Infrastructure Banks (SIBs) in the region for project development.

A recent Congressional Research Service study outlined the needs in the Great Lakes waterway system.¹³

- Great Lakes shippers and port operators have characterized lack of adequate dredging as a crisis in their waterway system, noting that many ships are carrying less cargo than the ship's capacity to reduce draft

¹³ Congressional Research Service, *Harbor Maintenance Trust Fund Expenditures*, January 10, 2011.

- Drafts have also been affected by lower than normal precipitation in the region.
- The Great Lakes Maritime Task Force, a coalition promoting Great Lakes shipping, estimates \$200 million per year in maintenance funding is needed to restore the system to its authorized dimensions, but have only been appropriated about \$90 million per year.
- While Great Lakes harbors and channels have accounted for 14 percent of total HMTF withdrawals over the last decade, shipping on the Great Lakes represents less than 10 percent of the total tonnage subject to the HMT and is composed of lower value raw materials.

This condition assessment suggests that increased levels of investment may result in efficiencies and improved HMTF revenue and economic activity. Surrounding states and private partners would stand to benefit most from projects and this could be an important opportunity to leverage federal funds.

The pilot project concept would include the following features.

- USACE would provide additional capitalization to SIBs in states surrounding the Great Lakes. This additional capitalization would be used to make loans to port authorities or private parties to be used for projects of regional significance in the Great Lake Region. Capitalization funds would be allocated by formula, proportionate to HMTF revenues generated or an alternative metric to be proposed in negotiation with the SIBs.
- SIBs would set investment priorities and criteria for project selection, loan underwriting, terms and conditions and ongoing performance evaluation in coordination with USACE.
- The project would demonstrate value of seed capitalization in the following manner.
 - Leverage potential of federal funds in combination with state and private contributions
 - Credit worthy projects identified through defined evaluation process
 - Value of recycling of capital as initial funds are repaid, then reinvested
 - Demonstration of benefits of recapitalization in a closed system

A key consideration in the evaluation of the feasibility of this concept is the presence and capabilities of SIBs in the region. Existing SIBs include the following.

- Minnesota DOT Transportation Revolving Loan Fund (TRLF) – This fund was established in 1997 and is jointly administered by MnDOT, the Minnesota Department of Trade and Economic Development, and the Minnesota Public Facilities Authority. Eligible TRLF borrowers include the state, counties, cities, and other governmental entities. Private entities must enter into partnerships. Currently it is open only to surface transportation projects eligible under Title 23 or Title 49 of the United States Code and Minn. Stat. 446A.085 (1998). Eligible projects include, but are not limited to, pre-design studies; acquisition of right-of-way; road and bridge maintenance, repair, improvement, or construction; enhancement items; rail safety projects; transit capital purchases and leases; airport safety projects; and drainage structures, signs, guardrails, and protective structures used in connection with these projects.
- Wisconsin State Infrastructure Bank – Wisconsin DOT operates this fund. Currently it is lightly capitalized with \$700,000 in loan capacity. Projects eligible for consideration are limited by statute to highway and transit improvements. Eligible borrowers include a county, city, village, town or combination thereof, government entities (e.g., Amtrak), a private non-profit organization (sponsored by an eligible community) and Transit Commissions.

- Ohio State Infrastructure Bank – This SIB was capitalized with a \$40 million authorization of state general revenue funds from the Ohio State Legislature, \$10 million in state motor fuel tax funds, and \$87 million in Federal Title XXIII Highway Funds. Any highway or transit project eligible under Title XXIII, as well as aviation, rail and other intermodal transportation facilities is eligible for direct loan funding under the SIB. Qualified borrowers include any public entity such as political subdivisions, state agencies, boards, or commissions, regional transit boards, and port authorities. Publicly dedicated roads and transportation or infrastructure facility projects are eligible but must have a local government sponsor to receive funding. The loan must go to a public entity and be pledged to be paid back with public funds.
- Pennsylvania Infrastructure Bank –The PIB was capitalized with Federal and state funds in 1998, in accordance with 1997 enabling legislation and a Cooperative Agreement between PennDOT and the U.S. Department of Transportation (DOT). The SIB has a current balance of \$60 million and outstanding loans of over \$160 million. Loaned funds are leveraged against over \$300 million in other project funding. The PIB encompasses four separate accounts: highway/bridge, transit, aviation, and rail freight. Loans to eligible projects are made from one of these four accounts. Borrowers include cities, townships, boroughs, counties, transportation authorities, economic development agencies, not-for-profit organizations, and private corporations.

This review of existing SIBs indicates that eligible purposes are currently restricted to surface transportation projects. Existing SIBs established in cooperation with USDOT have not made loans to waterborne transportation projects with the exception of landside intermodal facilities and access.

Implementation of this pilot program would likely require action by both state legislatures (to expand eligible projects to waterborne transportation and allow for additional state capitalization) and Congress to authorize funds for USACE contribution to capitalization. Given these initial challenges, this pilot program concept requires further study before feasibility can be fully determined.

4.2.3. Pilot for PPP Solutions: Allegheny Locks and Dams

In consideration of waterway systems that are potential candidates for innovative funding or finance pilot programs, Workshop participants suggested the Allegheny Locks and Dams in the Pittsburgh District.

USACE constructed eight locks and dams on the Allegheny River in the 1920s and 1930s. They guarantee a minimum 9 foot navigation channel for 72 miles from Pittsburgh to East Brady, Pennsylvania. Four of the facilities host privately owned power generation stations producing from 9MW to 18MW of power annually. Key attributes of the system are outlined in Table 2.

Table 2: Allegheny River Lock and Dam Key Attributes

Facility	Commercial Tows (annual average)	Cargo (annual average in tons)	Recreation Vessels (annual average)	Estimated Annual Transportation Savings	Estimate Annual O&M	Asset Mgmt. Condition Rating
No. 2	1,485	2.2 million	5,912	\$20 million	\$4 million	D
C.W. Young	1,351	2.1 million	2,333	\$19.4 million	\$3 million	C
No. 4	1,747	1.2 million	2,123	\$10.7 million	\$1.7 million	C
No. 5	626	0.5 million	1,517	\$5.1 million	\$1.3 million	C
No. 6	174	0.1 million	969	\$1.2 million	\$2 million	D
No. 7	162	0.1 million	1,203	\$1.1 million	\$0.8 million	D
No. 8	7,755	0.6 million	894	\$4.4 million	\$1.4 million	F
No. 9	8	None	900	N/A	\$0.2 million	D

Source: LBG, 2012 from Port of Pittsburgh Commission.

Workshop participants indicated that this project was a good candidate for early action in promoting PPPs or asset transfer for waterway system preservation and enhancement for the following reasons.

- The facilities provide valuable transportation savings for commercial traffic and are important for regional recreation traffic.
- The facilities have suffered from underinvestment and there is a funding gap—facilities are currently in caretaker status
- There are several logical local partners including the Port of Pittsburgh Commission and the private power operators. There has been expressed private party interest in partnerships.
- There is a 150 acre riverside parcel north of Allegheny 9, (former Pittsburgh Paint and Glass (PPG) Industries site) that has undergone planning and investment as an industrial park and may also be suitable for an intermodal center. Wal-mart has also expressed interest in the site for distribution. This site may be challenged by litigation over hazardous materials during PPG operations. The Armstrong County Industrial Development Council and Greater Ford City Community Development Corporation are also potential partners with respect to joint development opportunities on this site.
- This waterborne transportation system may have renewed importance for commercial traffic to provide cost-effective transportation of bulk and project cargo used in Marcellus Shale gas extraction.

Implementation of this pilot program concept would likely be limited to dedication of USACE headquarters and district resource to further study and discussions with potential partners. This could likely be accomplished under existing authorities.

4.2.4. Pilot for Expansion of Not-For-Profit Partnerships at District Level (Recreation and Environmental Restoration)

Partnerships with not-for-profit entities have proven successful for USACE facilities, and government-owned recreation and environmental projects nationwide. In state and local government operations, park conservancies (e.g., Central Park Conservancy in New York City) have proven particularly valuable in raising private funds, attracting volunteer services, and efficiently administering O&M programs. With a dedicated mission and public benefit orientation, these organizations offer capabilities in leveraging investment and flexibility in expenditures that government operators cannot often provide. Section 2.2.4 outlines successful USACE programs that have attracted donated labor, funds, and in-kind services, and local private partners that are not required to achieve the rate of return or compensation for risk that a for-profit concessionaire might require.

Participants in the workshop outlined several opportunities and needs in promoting USACE not-for-profit partnerships, including need for streamlining, decentralization, and technical assistance to promote participation. With these needs in mind the concept for the pilot program was established with the following features.

- Authority and incentives for entering into partnerships would be decentralized from headquarters to the district level.
- Headquarters would establish performance measures and targets to encourage increased partnership adoption during the pilot project period. Savings expectations and performance improvements for these partnerships would be established through benchmarking against existing USACE operations. Not-for-profit partnerships would be benchmarked against private concession examples, and leases to state and local governments, as well.
- District initiatives would be incentivized by allowing some level of discretion for repurposing of savings achieved through partnerships in current and future budget cycles. This will require a change in USACE policy and flexibility may be limited in budget cycles where all federal agencies must demonstrate cost reduction and savings.
- District level decision-making would be supported through training and knowledge transfer. Program champions would be identified for each district and personnel would be trained. Headquarters would provide mechanisms and contacts for ongoing support for partner identification, agreement negotiation, and ongoing monitoring and troubleshooting.
- Headquarters would disseminate current model agreements, and establish guidelines for flexibility on terms and conditions that would allow district program managers authority to alter model agreements within certain agreed-upon parameters. Headquarters would provide attorney support and review, but process would be streamlined to promote timely review and district-level decision-making wherever possible.
- The program would include availability of seed money for training and development of not-for-profit partners. The objective of this initiative would be expansion of the pool of applicants and to provide potential applicants with knowledge of program goals, benefits, and requirements for successful application and participation.
- Headquarters would set standards and goals for competition in solicitation and common standard for proposal evaluation and concession award.
- The program would be promoted to stakeholders and potential partners through program funds

allocated to development and dissemination of effective practices and lessons learned via web and printed fact sheets. Funding would also be dedicated to stakeholder outreach and information events organized at the district level but supported through headquarters through

This pilot program concept furthers the goals of streamlining in service delivery, risk transfer, leveraging of federal funds outlined in Section 2.1. Implementation of this pilot program would likely be limited to modification of internal USACE policy and procedure and dedication of the funds for headquarters level research, direction, and support, and district-level training and implementation.

4.2.5. Pilot Program/Process for Asset Restoration or Disposition

To promote broader goals for asset management, Workshop participants expressed interest in study of a pilot program to conduct an asset management evaluation for a limited group of USACE facilities and functions. To ensure that the process is manageable, we recommend that a single business line and district be chosen for pilot implementation. The pilot program could be organized as follows.

- Staff at headquarters and district level would be tasked assembling an inventory of assets and related performance measures.
- Staff would also identify baseline fiscal constraints (appropriations projection) and alternative scenarios (e.g., increased appropriations or cost share outlook) as appropriate.
- The evaluation could include a Strengths, Weaknesses, Opportunities, and Constraints (SWOT) evaluation to identify factors outside the performance measurement system that would contribute to decisions on asset disposition (e.g., opportunities for concession PPP in the form of expressed interest or inquiries from private operators; or constraints in the form of legal or political obstacles to decommissioning).
- Based on the performance measurement system, fiscal constraints, and SWOT analysis, staff would produce rankings and recommendations on assets by sorting into four categories: 1) Recapitalization with federal and non-federal funding sources, 2) Concession to transfer risk and responsibility 3) Asset Transfer to another federal or non-federal party, and 4) Decommissioning for assets that no longer contribute to the core Civil Works mission. Rankings could also be assembled for alternative fiscal scenarios to illustrate consequences of increased investment.
- A review committee would be established to review the staff report and determine further next steps. The review committee could contain or be complemented by outside peer panel composed of industry experts or other government agency experts.

Because studies and initiatives on asset management are currently in progress, we recommend further evaluation of this potential pilot program after these evaluations are complete.

5. NEXT STEPS

The two day workshop provided a productive forum for discussion of effective practices and ideas for near-term and long-term strategies for alternative methods of funding and finance. This White Paper has summarized the goals, objectives, strategies, and recommendations discussed in the Workshop along with further information to form the basis for next steps in vetting and prioritizing the strategies. Considerations important in the development of implementation plans have also been provide for both the near term and long-term strategies. There are several planned and recommended next step to further this initiative, as outlined below.

5.1. Additional Workshop

To further advance the consideration of near-term and long-term goals and strategies presented in this White Paper and to promote discussion of additional innovative practices, USACE is planning for a second workshop discussion. This workshop will include senior representatives from USACE Headquarters and IWR project management team, along with outside experts. Special emphasis will be placed on ensuring participation by USACE business line leadership to promote an informed platform for discussion focused on implementation. The agenda and materials for this event are currently under development. The second workshop discussion will also address the issues and questions raised by stakeholders in response to this White Paper (Appendix D).

5.2. Further Study Activities and Products

The recommendations and action items arising from the second workshop event will be documented in detailed notes. The final product of the second phase of the project will be a study report encompassing this White Paper, all workshop materials and notes, and supporting research.

5.3. Pilot Implementation Plans

This report has presented several pilot strategies with varying requirements and level of effort for implementation. After further vetting and prioritization in Phase II of the project, we recommend USACE consider the development of formal implementation plans for pilot programs chosen for advancement.

5.4. Outreach and Coordination

A key aspect to implementation of the strategies identified during the course of this project is outreach and coordination with key stakeholders inside and outside USACE. This outreach would be most effective if it were organized around implementation of the pilot programs or discussion on specific long-term strategies. Following the second workshop, we recommend that USACE consider the development of an outreach and coordination plan to accomplish these objectives.

Appendices

- A. Workshop Presentations and Notes
- B. Alternative Finance Strategies Overview
- C. Other Report and Resource Listing
- D. Issues & Questions for Discussion for Second Workshop

Afternoon Session Workshop Notes**USACE Workshop- December 2012**

Great Lakes- Pacific NW

Inland Waterway with SIBs

Improvements- Project Types-

- Low use harbors-recreational (Pacific-breakwaters/jetties)
- Income/Stakeholders
 - o Localities
 - o States
 - o Commercial boat operators (100s)
 - o Recreational boat operators (10,000s)
 - o (Consortium of Great Lake Governors)
 - o (backlog of proposals-don't make the cut)
 - o 7 governors, advocacy significant- \$100,000+/harbor- seed\$- revolving \$

Historic USACE mission- transfer out but get it done

Multi-use Project(-s)

Hydropower revenues/user fees/water supply revenues

Poss- two or more locations- packaged- (?)

(Permits out there to build/convert locks and dams for hydropower-private sector)- Corps sets obligation to not harm Corps use-some payment for O&M

Modern Fed-Bonneville- aligned with users- Seattle- PMAs

Other Corps-owned- other arrangements- will self-finance/recapitalize-

** \$800 mil-\$1 bil returned to treasury

Water Supply-

Revenue + in-kind services-

- Dam safety problems- may have to lower lake level
- Water recreational users+ water supply users complain
- Lease to state or water supply utility to recapitalize?- SE-SW-S (Pay share of O&M capital construction- storage not water use)-(debt service)
- Unauthorized withdrawals?
- Move project forward by financing Federal share?
- \$Value water system: stored/pumped 100 year asset/match to \$100 year liability-pensions- performance requirements- (water belongs to states (?))

Corps reservoirs-flood control or navigation- other purposes added

(Private/other public dams- operate in flood event)

Corps-transfer- long-term lease- performance specs-

Dam safety issues not likely to make budget- (Don't move troubled assets to private all alone- or bundle with good assets)

Reservoir- robust user groups

Annualized cost > current

Capacity to bear > cost?

Market slice- (in kind or cash. For dogs-don't try to sell)

(in kind- levee repairs or dam repairs)

(Use \$ 8 billion revenues earned- enough to keep system going- even > with leveraging private sector)

Undercapitalized- assets built with federal money

HMTF- to pay for ports-

Recreational users/property taxes/Naming rights for less or/water use/hydropower/navigation

Approach- articulate policy priorities

Rivers and side channels- bundle? Portfolio

System-interdependencies-Looking at it

Budget-looking for system/holistic

WIFIA/WETRA bill?

Upper Allegheny- who are stakeholders? Leased rec areas- all- system of lakes

Olmstead Lock/Dam

Coal \$/Donstruction processes/ Fabricating unit- sink and build- underway

Look Capital Development Plan- Inland waterways- next 3-4 projects after Olmstead

Parameters- Recommend-

Criteria

Process to award- vetted

Certainty

Pipeline

(Bundle- Water for fracking)?

- Authorized by Capitan not in queue
- Safety
- Inland waterways
- Systems

Criteria

Market: Bigger checkbook- undervalues assets

Operator: In position to manage assets

Patience: Finance to take long range- eg. Pensions

Monetize value of water system storage

- Also safety
- Sinking fund- tools to establish future assets-
- X years to state of good repair
- ** Life-safety a game changer- Corps liability x # years- price/retain risk
- Projects for WERTA?
- P3- Availability- all performance-based
- + Lender covenants

Nice

- List/matrix of P3 types
- Cost of capital low-move now?
- Construction/labor very low

GSA Projects went through

USACE: will? Attention? Resources? Small group?

WERTA- desired language for pilot- alternative finance- get into current bill?

Hx-traction when bankers and layers interested

- get them into room

Ready to follow up-simple to begin

Key Principles and Objectives for Workshop (Summary from Initial Speakers)

USACE is engaging in a concerted effort to determine how to maintain what it keeps as its core mission, what and how to divest what is not its core, and how to finance what it retains. Pilot projects provide the opportunity to re-scope, test alternatives, and fill gaps.

The Corps has been criticized in the past for constructing and maintaining a series or set of civil works projects, without acknowledging that the projects are part of something- such as a watershed, a system, or an ecosystem. In the transition to a mission-priority focus on a financially-sustainable set of core USACE systems, one of the challenges is where to invest limited dollars. Ultimately, the Corps needs an integrated infrastructure strategy and future program that delivers visible and recognizable value to the nation.

The key word is integration: bringing in private, state and local partners, reclamation as well as parks and recreation sponsors and advocates, water and hydropower resellers and users, and more. Corps systems are integrated and interdependent with many others' systems. Consider the lifecycles of floods and droughts. Some of the infrastructure is 80 to 100 years old, most is over 50 years old. Also consider the potential impacts of the Panama Canal expansion, and what that will mean to inland waterways. Consider- what is the purpose of recapitalization?

The Corps is responsible for a portfolio of approximately 550 projects. One-half need to be recapitalized within the next 20 years. For example, essential inland waterways have recently been appropriated at \$18 billion per year, against a need of \$50 billion.

Choices and priorities are required: what to keep, what to support with Federal dollars, what to support with alternative financing, and what to divest. Funding sources include Corps debt, appropriations, revenues from locks and water supplies, and more. Some projects have a much higher return on investment (ROI) than others. Currently the Corps has no authority to transfer assets or claim or retain revenue from projects, even from user fees ostensibly charged to maintain assets, such as the Harbor Maintenance Fee. Ultimately legislature will be needed, but demonstration and pilot projects can help make the case.

Demonstration projects are important for two reasons: 1) demonstrate a long-range sustainable "fix" for delayed and deferred maintenance, and 2) demonstrate a model for achieving and maintaining new construction, using and "keeping" Federal and new dollars to solve urgent problems.

Partnerships are not new to USACE- the Corps has longstanding partnerships with the Bureau of Reclamation, National Park Service, state and local partners, and more. Public-private partnerships (P3) are relatively new to the Corps.

Some of the Corps' current endeavors are inefficient- projects and systems could be maintained at a lower cost if they were recapitalized now- but the dollars to invest in recapitalization have not been available from annual appropriations. Congress looks at Cost/Benefit while the private sector looks at ROI and long-term asset management from a finance/ design/ build perspective for new and reinvestment projects.

Finance Sector Perspectives:

Project selection: The Corps will have to be wary going forward, as the private sector will try to “cherry pick” the best investments. The Corps needs to set priorities and frameworks, possibly in packages of projects. Projects must support financially viable revenue streams to pay back reinvestment.

Financing: There are plenty of private sector funds available to recapitalize. For example, private equity pension funds are looking for stable, long term investments in public infrastructure- 25 years or more- investments that provide continuous value over the long term.

There are three key benefits to private investment in public assets (and management of those assets, within the appropriate public sector framework): 1) Get the asset to perform better over the long term than the traditional model (through initial efficiency upgrades and timely life-cycle reinvestments, to keep the asset performing well); 2) provide greater accountability; 3) get a better deal for the taxpayer.

Lessons Learned from Transportation Sector Finance Experience

The Corps is not likely to get immediate legislative authority. TIFIA presented a challenge to states and localities starting in 1996, offering an incentive to move projects with greater local match (local and private) to the head of the queue. After many successful projects, it became institutionalized.

Lessons:

- 1) The government must/ should maintain ownership of the asset- real estate, etc. In Texas and California, even if the initial owners/ financiers of the project have gone into default, for whatever reason, the facility is still available for public use.

- 2) Protect the public trust and public realm. Conduct a “money for value” analysis, developing a formal business case comparing public versus shared ownership and operations.
- 3) Revenue is critical, including who collects, who pays and who controls. There are at least three basic models and relevant examples:
 - a. Miami tunnel- shippers and cruise lines wanted the tunnel free to users, so they agreed to pay. The state anticipated the cost at ~\$70 million/year; it came in at \$40 million a year. (Side benefit of P3- innovative construction and O&M).
 - b. The state / public entity can collect the toll and pay back the developer (a case where locals were uncomfortable with the private sector role).
 - c. The private sector manages and collects revenues within limits set by the public sector- e.g., managed lanes- objective- keep lanes free-flowing at 50 mph, “no” upside limit on tolls at peak periods needed to maintain free flow.
- 4) Find sound equity providers- local if possible. The NTE (Texas consortium) included the Texas Police Pension Fund- a respected local partner.

Key principles:

- 1) Establish a public sector client/ procurement process- provides assurance to investors.
- 2) Provide an asset and a service – pension funds and other investors are looking for stable assets over the long term; long term maintenance and reinvestment must be assured.
- 3) Debt brings discipline to a project- e.g., private finance.
- 4) Robust project economics: The project must achieve an investment grade rating- investors must know about the potential downside as well.
- 5) There must be an appropriate risk transfer among / between parties.
 - a. Risk transfer options (NYC water / hydropower example):
 - i. Annual availability payment- city pays directly, regardless of how much electricity is generated.
 - ii. Variable lease- set price payment agreed beforehand. Therefore it is now a volume based risk.
 - iii. Price risk on private sector as well\

Also: Create an appetite for the deal when you go to the market. Maintain control of the environmental agenda. Incentivize the public sector. Pilot projects are incredibly important in mobilizing the market and helping identify risks and benefits, but mostly investors are looking for a pipeline of opportunities that follow.

Public-Private Partnerships (P3s)

P3s are tools and not ends in themselves- how the Corps uses them for different types of projects will be different.

Main points:

P3s really are a project delivery mechanism (about risk aggregation, and risk transfer)

Require political leadership and will, legislation, transparent process, and realistic priorities- i.e., propose projects (or blended packages of projects with high and low net revenues) with overall positive, investment-grade revenue streams.

Many confuse the meanings between funding and finance! They are very different, but both are important. Funding-where the revenue stream that goes to pay the debt ultimately comes from. Funding is the primary stream of revenue used to offset cost or to support various leveraging options. Finance is the means by which the primary revenue streams are manipulated to make funds available when needed or to reduce the costs of borrowing.

By way of illustration, in the case of bonds issued against revenues from a tax dedicated to transit use (or from tolls or user fees dedicated to an infrastructure investment), the revenue stream from the tax or user fees pledged as security for the bonds would be the funding. The bond proceeds, which concentrate the long-term tax revenues into several years to meet construction expense, would be the financing. Financing is equity/debt advising and securement; TIFIA, Private Activity Bonds (PABs) etc. live here.

On the owners side- the Corps is going to need to change how the current organization operates (to support P3s), AND is going to require new skills. In addition to ROI, think of build/ buy/ rent as options, as well as others.

The private sector has the power to market a project, have a preferred alternative (during NEPA stage)- the public sector can't do that.

If the cost of money is more than cost of escalation, the project should be carried out ASAP (as is the case in the current environment)

Use of financing allows design / build to happen. It also allows leverage to the private player and incentivizes him to act.

Three types of financial models:

- 1) not for profit – e.g. tax exempt senior debt and subordinate debt- E-470 and other early projects.

- 2) for profit- revenue based concessions. E.g., “HOT lanes” providing congestion insurance. Market risk- # users and value of time (VOT) for users.
- 3) For profit- availability based concession. E.g., train available every 6 minutes- incentive to drive down maintenance costs. Analogous to water, power.

The U.S. is a developing country when it comes to P3. Con- haven't done this before, don't have experience. Pro- you get to try new things.

Using demonstration programs/experimental projects to garner interest is important. Earn the right to have more tools and apply them more broadly.

These projects have real financial risk. They don't all happen; some can fall through (e.g., FL high speed rail- twice! Seattle monorail- both political decisions). The Corps needs at least Demonstration authority to try different strategies- e.g. ability to lease locks to a state for increased lock fees? Long term leases require Congressional approval-need to overcome. Note: financing institutions greatly dislike / shy away from post-appropriations risk- when an agreed-upon contract has to go to Congress or a legislative body for approval. They can accept appropriations risk- when funding is part of a routine appropriations process.

What is the private financier looking for?

- Political will
- Well-conceived project
- Life-cycle mindset
- Performance specifications rather than prescriptive specifications- allow/ encourage the private sector to “build a better mousetrap”
- Understanding of risk- to date the Corps has retained risk on rainfall, weather, leakage, etc.- the market needs to be educated on the upsides and downsides of such risks, understand which risks the Corps will retain, which it will transfer.

Other Types of Risks include:

- Construction risk- What liquidities are in place to tackle the risk? How likely are people to make their payments?
- Operational risk- increased maintenance and O &M costs. Get advisors for this. Debt service coverage ratio (try to keep low)
- Counter parties- appropriation risks. Need a public finance advisor

State Infrastructure Banks (SIB) (Federal and State) and TIFIA

SIB loans leverage other funding and the loans get revolved back into the program. SIBs often provide the “last dollars” needed to fund a project. Federal SIBs generally have a ratio of \$3.26 “other”/\$1 SIB; Florida SIB has a ratio of \$9.1 “other”/\$1 SIB. The program is also bonded. Initial seed capital is needed to build a portfolio and generate a steady repayment stream.

TIFIA was established with a clear mission. There is also a lot of flexibility in crafting the loans. They have statutory parameters that they operate within:

- Cap in TIFIA involvement
- Investment grade rating needed

1 They maintain a good relationship with banking and state community in getting the word out. TIFIA is a patient investor. TIFIA limits Fed exposure by NOT taking on sole risk.

Strength from: Very low debts, but also extremely flexible.

Also being able to take a senior or subordinate role as required.

1.1 Sculpt debt payment in terms of revenue and time. Projects typically have a 5 year deferral period for payment after construction is completed, in order to build, ramp up and stabilize the project and revenue.

Varied statutory requirements: e.g., Minimum project costs >50m (most are over \$300 million).

Lessons learned especially for financing a federal program:

It is a struggle- looking at being a banker v/s being a Federal partner. Managing demand is very important for dealing with this. State and local governments select projects.

Struggle and challenge- want to encourage innovations without allowing the innovations for specific projects to become the new “starting point” for other projects. They tend to start almost from scratch on every different project to encourage innovation- they do not strive for or achieve the efficiency of a “cookie cutter” process. Tradeoff- flexibility v/s speed. There is no standard loan process.

WIFIA Discussion:

Two bills before Congress: WERTA(sp?)- minimum loan amount of \$20 million; and WIFIA, (details still under discussion and debate).

Applications and Recommendations for Moving Forward

Basic Principles

- The Corps needs to change its project emphasis and project delivery models to emphasize good life cycle practices and to articulate risks- make them explicit.

- You have to walk before you run (demonstration projects). What do you want to achieve? Not necessarily biggest or best- should address good regulation, processes, and transparencies for the private sector and financial markets. You basically have to change the political environment in order to make any substantial long term change. Therefore the best demonstration projects will be those that address finance and political need.
- Caution: The first deal is expensive to close. Initial investment is expensive. So it's almost better to take on a larger project when you start out. Staff time and consulting time dollars will be comparable (not scalar) for a deal of millions or hundreds of millions.
- Step back and understand clearly who/what the drivers are (economic, political, social, environmental, etc.) Who are likely to benefit from change and who are likely to oppose the project or system (for whatever reason.)
- Get key stakeholders in the room, e.g., the person on the Hill/administration who will want to make the project a "go", government pension funds that are interested in investing in long term projects, ways to deliver now and pay later (in order to entice people).

Basic Steps

1. Identify potential revenue streams.
 - 1.1. Intercept revenue that would otherwise go to Congress (secure authorization if needed or proceed if deemed permissible).
 - 1.2. Investigate new revenue streams: User fees, sales tax, property tax, development districts, etc. Note that revenue doesn't have to be transportation related for SIB purposes. Look at beneficiaries.
 - 1.2.1. Recreation interests are receiving 75% of the benefits for many projects- inland waterways, reservoirs- but paying very little if anything (maybe 10%) towards upkeep.
 - 1.2.2. Would steel and coal companies currently using locks increase fees to pay for maintenance and upgrades or would they shift to other modes?
 - 1.2.3. Would development districts, using tax increment financing or similar mechanisms, pay to reduce flood risk and increase other property values?
 - 1.2.4. If the Corps must reduce services or close operations, will that change the discussion?
 - 1.2.5. The Corps and current and future partners must look at opportunities project by project and system by system.
2. Initiate a systematic, defined study and project selection process to circumvent potential designation as earmark and to prevent "cherry-picking" by private sector.

- 2.1. Identify priority projects from Captains' approved lists.
 - 2.1.1. E.g., Olmsted Lock/ Dam – opportunity to advance construction by several years (or its successor in the Captain's list {Captains' lists?} of approved projects.)
 - 2.1.2. Look at projects that are authorized but not in place
 - 2.1.3. Projects on safety watch
 - 2.1.4. Projects that are in queue for the industry
 - 2.1.5. Projects that are multi-purpose (#3s and #2s)
- 2.2. New renewable power projects – lots of interest at Federal level.
 - 2.2.1. Illustrative example: Non-power dams in the US (many more than powered)- present opportunities for power generation. Many are already tapped or optioned through separate green-power initiative- dam owners may get renovations and some maintenance on the selected dams but typically do not share in revenues. Can this be modified going forward to share revenues?
- 2.3. Focus on parameters (10-12 criteria), not only PROJECTS. If parameters are in place, the market will tell you where to look. Need a fixed/established process for showing certainty (for the private sector).
3. Objectives- factors into project selection:
 - 3.1. Attractiveness to investors over the long term
 - 3.2. Demonstrates value of authorities the Corps does not have but wants to have- examples:
 - 3.2.1. Ability to transfer assets to a state or municipality
 - 3.2.2. Ability to dedicate revenues generated by a project to financing (and maintaining) the project
 - 3.2.3. Ability to finance debt against future appropriations
 - 3.3. Attractiveness to the administration/ something they would support
 - 3.3.1. Need sponsors and partners
 - 3.3.2. Can't be dependent on legislation
 - 3.3.3. The potential for using existing Executive Agency tools
 - 3.3.4. The advantages of pilot authority
 - 3.4. Need several pilots to demonstrate different aspects and different types of finance, life cycle cost, risk, and more
 - 3.5. River systems and side channels
 - 3.5.1. E.g., inland waterways partners asked to increase their fuel taxes from \$.19 to \$.31 per gallon to finance themselves for upgrades and on-going maintenance, as long as the funds were dedicated to that use (Inland Waterways Trust Fund Proposal)

- 3.6. The Harbor Maintenance Trust Fund – could fund much of Corps deficit if appropriated to Corps projects
- 3.7. Priority projects that are stuck that might have potential for user fees- (fallen by way-side because of funding issues)
 - 3.7.1. Low use projects on upper Allegheny and Pittsburgh- opportunities for revenues come from user fees, hydropower, water supply
- 3.8. Multi-use dams, locks, etc. that are owned by Congress
- 3.9. Inland waterway improvement in the Great Lakes possibly with SIBS
 - 3.9.1. Low use harbors (dozens or few hundred) – heavily used
 - 3.9.2. Potential income stream local, state, commercial, and recreational boat users
 - 3.9.3. Potential support from Consortium of the Great Lake Governors
- 3.10. Convert policy into actions for long term leases/partnerships for dams and reservoirs:
 - 3.10.1. Initially Corps reservoirs were constructed for flood control or navigation. There are instances where hydropower dams, etc. are constructed by private/other public— but Congress takes over in times of floods. Therefore it is not too far-fetched to long-term lease existing dams to others.
 - 3.10.2. Look at dams that have serious dam issues that will not be addressed for the next 10-15 years because of financial reasons, BUT don't try to move marginal assets (without a potential, viable revenue stream) to the private sector, because the informed private sector will not be interested.
 - 3.10.3. Consider value of water system as the carrier and holder of increasingly scarce water.

Final notes: It is important to get the following information for preparing legislation and action: from lawyers (how to write language) and from bankers (finance, fees, and how to sell to investors).

It is important to get around the fact that money goes back to the treasury. Cash flow should become a system.