Flood Risk Management and Silver Jackets

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National Water Resource Challenges

- Energy
- Persistent Conflict
- Aging Infrastructure
- Environmental Values
- Governance
- Federal Budget
- Legislative Changes
- Demographic Shifts
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- Persistent Conflict
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- Increasing Demand for Water
- Declining Biodiversity
- Disaster Preparedness and Response
- Globalization
National Challenge: Competing Water Uses

- Navigation
- Aquatic Ecosystem Restoration
- Water Supply
- Fish & Wildlife
- Indian Treaty Rights
- Hydropower
- Flood & Coastal Storm Damage Reduction
- Recreation
USACE Water Resources Infrastructure

- 12000 miles of inland waterway
- 926 harbors
- 2.4 B tons of commerce/year
- 263 M cubic yards dredged/yr

- 383 reservoirs
- ~11,750 miles of levees
- Prevent $6 in damage for every $1 invested

- 75 projects, 21,747 MW capacity
- 3% of total US electric energy
- $800M in sales to Treasury

- 97 projects protect
- 284 miles of shoreline
- Use of dredged material from navigation projects

- 4,641 sites at 422 projects
- 370 M visits/year
- $18 B to local economies

- 153 projects supply cities
- Including Wash. DC area
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National Challenge: Aging Water Infrastructure

- Half of locks 50+ years old
- Investments in water resources infrastructure declining in real terms
- Result: more frequent closures for repairs, decreased performance & costly delays

Crumbling lock wall, Lower Mon 3, opened in 1907

Leaking spare miter gates, Upper Miss Lock 19

Concrete deterioration at Chickamauga could result in lock failure
National Challenge: Water Transportation System

- Demands on Marine Transportation System to double by 2020
- System can barely accommodate current traffic
- Aging infrastructure
- Deferred operation and maintenance
- Current backlog of $9 B of improvements.
National Challenge: Flood-Prone Areas

• Development continues to increase
• Rapid growth in at-risk coastal areas
• Investments decreased by ~70% in real terms over past 3 decades.
• Over $15 billion awaiting construction

Greenville, MS, Matfield
National Challenge:
Environmental Sustainability

- Balance between economic development, environmental stewardship
- Water quality threatened on 8% of nation’s rivers and streams
- Corps has authority and programs for ecosystem restoration.
  - South Florida example

Riverlands Demonstration Area at Mel Price Lock & Dam (L&D 26)
Alton, IL
National Challenge:
Integrated Water Resources Management

- Planning based on watershed / regional approach
- Ecosystem restoration
- Environmental sustainability
- Interagency coordination
- Involve all stakeholders
National Challenge:
Asset Management & Infrastructure Recapitalization

• Deliver reliable infrastructure through use of risk-based assessments
• Risk-informed strategy applied to budget process
• Optimize use of limited resources across multiple business lines
National Challenge: Creating Jobs

- Every $1 billion in USACE spending funds an estimated 30,000 jobs.
  - Direct creation of ~8,000 private sector jobs
  - Additional 22,000 jobs in industries supplying construction and O&M activities and sell goods and services to new workers and their families.
USACE Disaster Support

U.S. Army Corps of Engineers Civil Authorities

Civil Works Authorities
- Reservoir Operations
- Dam / Lock Operations

Public Law 84-99 (Flood Control & Coastal Emergency Act of 1955)
- Disaster Preparation
- Emergency Operations
- Rehabilitation
- Water Assistance
- Advance Measures
- Hazard Mitigation

Support to
Department of Homeland Security
and
Federal Emergency Management Agency

Stafford Act
PL 93-288 (National Response Framework)
- Disaster Preparation
- Coordinating Agency ESF #3
- Public Works and Engineering
- Primary Agency ESF #3
- Support Agency ESF #6, ESF #9, ESF #14

Support to the
Department of Defense

Domestic Support to NORTHCOM / ARNORTH

Overseas Operations
- Iraq / Afghanistan
- Civil - Military Engagement

Field Force Engineering
USACE Authorities and Activities

PL 93-288 “The Stafford Act”

- Defines the Federal Multi-agency Disaster Response System
- Activates to Augment State and Local Capabilities
- Plans and Executes Immediate, Comprehensive Help to Save Lives and Protect Property
- The “National Response Framework” Integrates 27 Federal Agencies & Departments Plus the Red Cross

A Federal Partnership for Civil Disaster Crisis Response
USACE National Response Framework Responsibilities

Coordinating Agency
ESF#3 Public Works and Engineering

Primary Agency
ESF#3 Response

Support Agency
ESF#6 Mass Care and Housing
ESF#7 Logistics Mgmt and Resource Support
ESF#9 Search and Rescue
Public Law 84-99
Flood Control and Coastal Emergencies

Prepare: Before an Event
- Train PRT, TL, ATL, Flood Fight Teams
- Support exercises & coordination activities
- Provide EM personnel staff, ESF3 cadre/SMEs, ACI contracts, essential services, supplies & equipment
- Inspect non-Federal flood control works

Respond: Natural Disaster
- Advance Measures
- Save life and property
- Temporary in nature
  - Emergency Debris
  - Emergency Infrastructure

Recover: Rehabilitation
- Levees, floodwalls, channels, hurricane shore protection projects

Mitigate
- Identify mitigation opportunities
- Intergovernmental TF (Silver Jackets)
Silver Jackets

“Operationalizing” Inter-Agency Flood Risk Management

- **State-Led (Voice of our Customers)**
  - States set priorities for Interagency Federal support

- **Interagency Method of Delivery (MOD)**
  - Collaboration across agencies / levels of government
  - Universal / Tailorable for all Agencies / Programs
  - Leverage resources: talent, data, funding

- Continuous, not project-specific

- **Life-Cycle Risk Management**

- **Watershed Perspective**
  - State teams facilitate regional, state-to-state flood risk management

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As of: 15 AUG 2011

BUILDING STRONG®
Silver Jackets Accomplishments

FY 08 – 12 Results ( ~ $1 MIL / year )

- State-led Silver Jackets teams are currently active in thirty-five (35) States
  - Continuing efforts to establish teams in remaining fifteen (15) states

- Developed / assisted States in implementing flood risk management solutions that:
  - provided unified federal front
  - leveraged existing information and resources
  - improved public risk communication, and
  - collaboratively solved flood risk management issues

- Community of Practice workshop, 20-24 AUG 2012 ( Harrisburg, PA )
  - “Integrating People and Programs”, with purpose of effecting action at the individual, community, watershed, state and Federal levels.

- Eighteen (18) Ongoing Interagency Pilot Projects in eighteen (18) states totaling $1.5 MIL

- Thirty-nine (39) Interagency Project requests from twenty-four (24) States totaling > $4 MIL
Tornado Damage

Tuscaloosa, AL

Joplin, MO
North & South Dakota Flooding Response

Souris River Basin, SD

Minot, ND
Hurricane Irene

- Ascutney Mill Dam on Kennedy's Pond in Windsor, Vt
- Waitsfield, VT
- Hattaras Island, NC
- New Bern, NC
- Ocean City, MD
- Norfolk, VA
- Providence, RI
- Washington, DC
- Tornado Lewes, Del
- Tornado Sandbridge, VA
- South Hampton, NY
- Prime Hook National Wildlife Refuge Del
Tropical Storm Lee

Lafitte, LA (3 September 2011)

West End section of New Orleans

Louisiana Coast

Lafitte, LA (4 September 2011)

Southern Louisiana

Satellite Image of Tropical Storm Lee

Orange Beach, AL
Northeast Snow Storm

Staten Island, NY
Rockland City, Upstate NY
Massachusetts
Glastonbury, CT
Newton, NJ
Graniteville, NY
Mississippi River
World’s 3rd Largest Watershed
Drainage basin for 41% of the United States
Project Design Flood

2 New Madrid Floodway

5 West Atchafalaya Floodway

3 Bonnet Carré Spillway

1 Old River

4 Lower Atchafalaya Floodway

Missouri River

Upper Mississippi River

Ohio River

Tennessee River

Arkansas City

New Orleans

Lake Pontchartrain

Gulf of Mexico

Lower Atchafalaya Floodway

Morganza Floodway

Wax Lake Outlet

30/70 Split

Baton Rouge

Natchez

Vicksburg

Greenville

Memphis

Cairo

St. Louis

Helena

540,000

400,000

250,000

620,000

550,000

100,000

150,000

2,890,000

2,250,000

490,000

440,000

1,060,000

1,500,000

600,000

1,500,000

600,000

1,250,000

250,000

1,250,000

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Operating the Birds Point-New Madrid Floodway

Protecting a Broad Range of Land Uses
Blown Levees (BP/NM)
Levee Repair: MR&T

Before...

...After
• Basin drains 539,000 square miles (one sixth of the US)
• More than half of all Missourians receive their drinking water from the river and its alluvium.
2011 Spring Flooding
Missouri River Basin

- Snowpack peaked late, 135 to 140% of normal
- Huge rain event over two weeks – 300-600% of normal
- Reservoirs full, timing of the snowmelt runoff and reservoir releases critical
- USACE provided Advance Flood Fight Measures in ND, SD, MT, WY, NE, and numerous tribes
Missouri River Flood Repairs

Interstates 680 & 29 July 2011

Interstates 680 & 29 September 2011

Interstates 680 & 29 October 2011

Interstates 680 & 29 November 2011
Missouri River Repairs
(as of 15 April 2012)
Where Do We Go From Here?

- Critical repairs – ongoing
- System Performance & Evaluation – a post-flood assessment of the overall performance of the system
- Operational Assessment – restore full functionality of the system
- Interagency Recovery Task Forces -