

Collaborative Approach to 21st Century Challenges Posed by Global Change

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Hella, Iceland

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US Army Corps of Engineers
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3% of Nation's Electricity; \$800 M + in sales

Stewardship of 11.7 M Acres of Public Lands

926 Harbors

Environmental Restoration

~11,750 miles of Levees

12,000 miles of Commercial Inland Waterways

400 miles of Shoreline Protection

50% cost of Rail; 10% cost of Trucks Lower Emissions

Recreation Areas 370 M visitors / yr

Generate \$18 B + 500 K jobs

Emergency Response

72,000 Regulatory Permits

- US Ports and Waterways convey >2B Tons of Commerce
- Foreign Trade alone creates >\$160 B in Tax Revenues

2

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Water Resources Challenges

Climate Change

Governance
Federal Budget
Legislative Changes

Demographic Shifts

Energy

Persistent Conflict

Increasing Demand for Water

Declining Biodiversity

Environmental Values

Globalization

Disaster Preparedness and Response

Aging Infrastructure

Water needed to produce one liter of beverage (three 100% juice drinks):

- Coffee: 122
- Wine: 132
- Apple juice: 132
- Orange juice: 132
- Beer: 132
- Tea: 132
- Filtered water: 132

Water needed to produce one liter of beverage (three 100% juice drinks):

- Accounting: 132
- Leather shoes: 132
- Microchip: 132
- Cotton t-shirt: 132
- Tea: 132
- Cheese: 132
- Beaver: 132
- Public library: 132
- Sheet paper: 132

USACE's Campaign Plan

Goal 1:
Deliver USACE support to combat, stability and disaster operations through forward deployed and reach back capabilities.

Objective 1a:
USACE is ready, responsive and reliable in delivering high performance, all-hazard, contingency mission execution in a world-wide theater of operations.

Objective 1b:
Prepare Theater Engineer Commands (TEC) to support Combatant Commands throughout the spectrum of operations.

Objective 1c:
Establish human resources and family support programs that promote readiness and quality of life.

Objective 1d:
Institutionalize USACE capabilities in interagency policy and doctrine.

Goal 2:
Deliver enduring and essential water resource solutions through collaboration with partners and stakeholders.

Objective 2a:
Deliver integrated, sustainable, water resources solutions.

Objective 2b:
Implement collaborative approaches to effectively solve water resource problems.

Objective 2c:
Implement Streamlined and Transparent Regulatory Processes to Sustain Aquatic Resources.

Objective 2d:
Enable Gulf Coast Recovery.

Goal 3:
Deliver innovative, resilient, sustainable solutions to the Armed Forces and the Nation.

Objective 3a:
Deliver sustainable infrastructure via consistent and effective military construction & real estate support to customers.

Objective 3b:
Improve resilience and lifecycle investment in critical infrastructure.

Objective 3c:
Deliver reliable infrastructure using a risk-informed asset management strategy.

Objective 3d:
Develop and apply innovative approaches to delivering quality infrastructure.

Goal 4:
Build and cultivate a competent, disciplined, and resilient team equipped to deliver high quality solutions.

Objective 4a:
Identify, develop, maintain, and strengthen technical competencies in selected Communities of Practice.

Objective 4b:
Communicate strategically and transparently.

Objective 4c:
Standardize business processes.

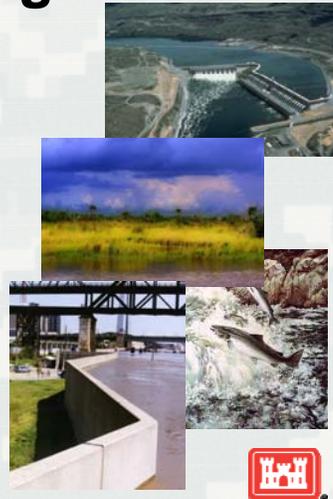
Objective 4d:
Establish tools and systems to get the right people in the right jobs, then develop and retain this highly skilled workforce.

4

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Our Strategy: Integrated Water Resources Management

IWRM = a holistic focus on water resource challenges and opportunities that reflects **coordinated development and management** of water, land and related resources that maximizes economic services and environmental quality, ensures public safety, and provides for the sustainability of vital ecosystems

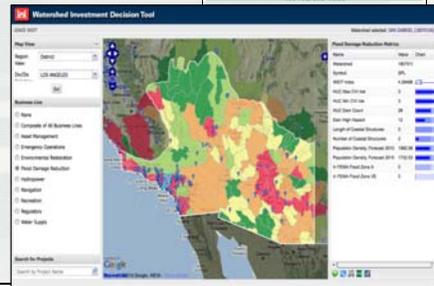
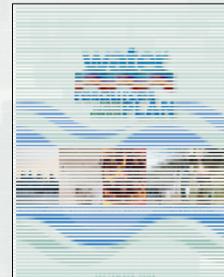


5

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IWRM = Systems Approach

- Look at river basins, watersheds and coastal zones as a whole
- Shift focus from individual projects to interdependent system
- Change emphasis from immediate answers to portfolio approach including long-term solutions
- Recognize that any single action triggers one or more responses and reactions in other parts of the system



6

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IWRM = Collaboration & Partnering

- Encourage many organizations to work together in problem-solving
 - Federal agencies with similar mission components
 - Sophisticated state and interstate organizations
 - Tribes, local governments, non-profit organizations
 - Public-Private Partnerships
- Leverage funding, data and talent to gain efficiencies given scarce resources



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7

Examples of Collaborative Partnerships

- Building Strong Relationships for a Sustainable Water Resources Future Initiative
- Water Management Agencies
- Climate Change and Water Working Group
- National Working Groups



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8

Building Strong Collaborative Relationships for a Sustainable Water Resources Future

- Series of workshops in 2009 to:
 - Identify opportunities for improved collaborative efforts
 - Identify roles and opportunities synergy
 - Create a joint national dialogue water priorities
 - Leverage Federal resources to assist states in their water resources planning and management



<http://www.building-collaboration-for-water.org/>⁹

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Partnerships – Key to Success

- Work with local or regional agencies to develop watershed management plans
- Facilitate discussion among stakeholders with complementary or competing water needs
- Partner with other Federal agencies to address regional water issues
- Share data and information
- Provide technical assistance
- Improve watershed models in cooperation with others

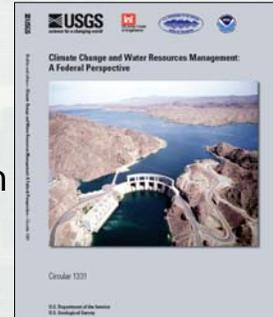


10

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Water Management Agencies: USGS Circular 1331

- 4 water agencies working together:
 - Operating agencies: USACE, Bureau of Reclamation
 - Science agencies: USGS, NOAA
- Evaluate how to incorporate climate change considerations into water resources management from the perspective of federal agencies
- Provide foundation for future policies



<http://pubs.usgs.gov/circ/1331/>

11

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Climate Change & Water Working Group (CCAWWG)

- Purpose: A federal interagency workgroup providing technical collaboration in support of water resources management as climate changes
- Action: Developing and implementing a multi-agency research and knowledge transfer agenda that spans the hydrologic cycle and is driven by water management and planning decisions



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12

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Climate Change & Water Working Group (CCAWWG)

- Develop user-defined requirements
 - Collaborative effort of the water management and scientific communities to develop, test, and apply new methods, tools, and capabilities
- International Nonstationarity Workshop
 - Addressed the issues raised by the recognition that while the assumption of stationarity is flawed, we do not know what, if any, alternative methods should be used as a replacement



FEMA

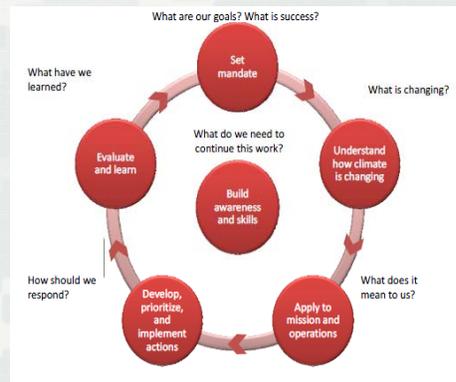


13

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National Working Groups

- There is no single climate change adaptation approach appropriate for all agencies
- A flexible framework is required
- The flexible framework will help agencies identify and address climate vulnerabilities and opportunities to build resilience to climate change



14

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Summary

- Global changes that result in local impacts and responses are the major challenge of the 21st Century
- Close collaboration, both nationally and internationally, is the most effective way to develop practical, nationally consistent, and cost-effective measures to reduce potential vulnerabilities resulting from global changes
- We can lead the way collaboratively



15

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Background



16

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