

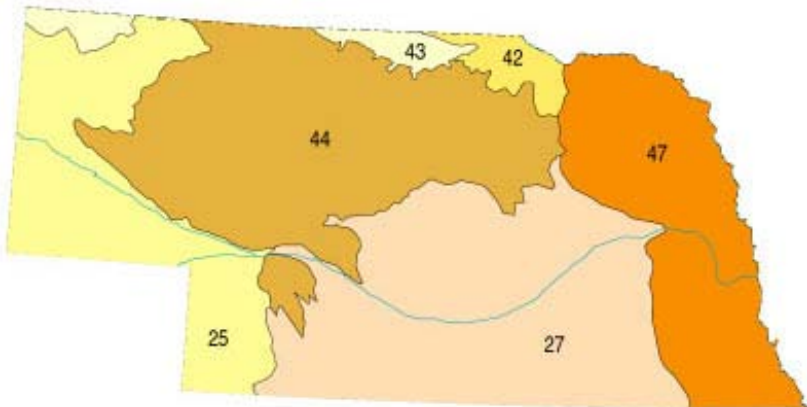
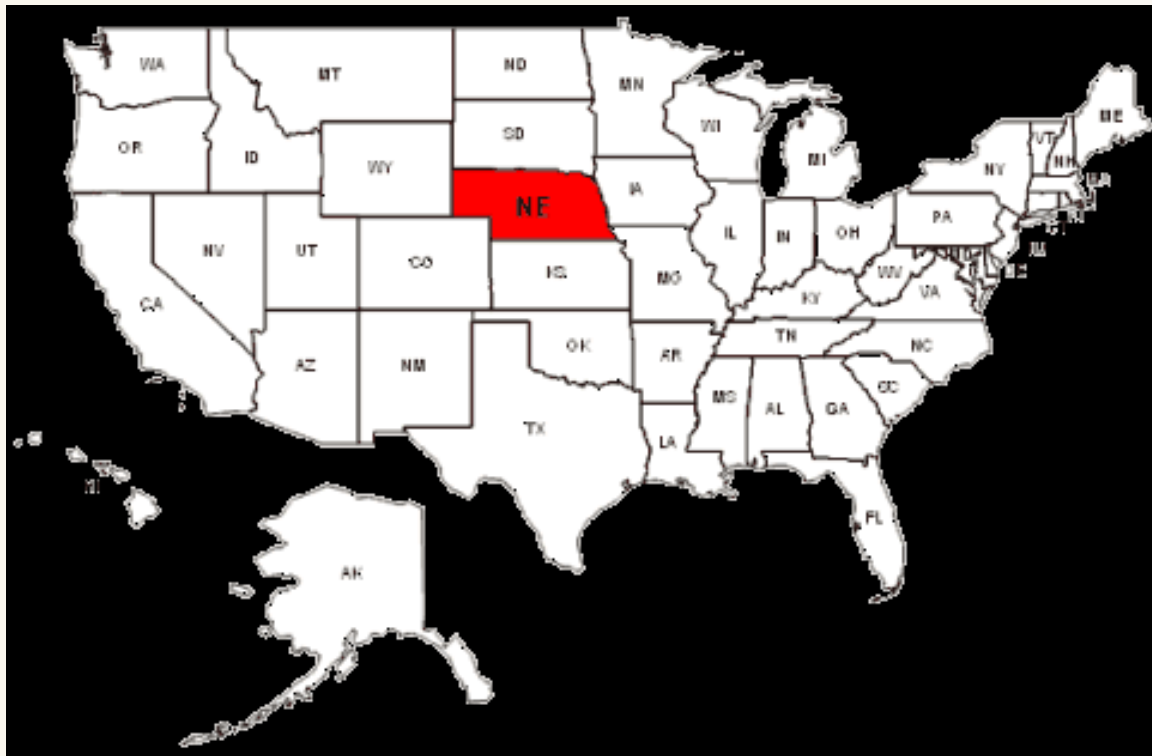
A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

Getting New Technologies Accepted

- *ITRC*
- *SERDP/ESTCP*



www.itrcweb.org



- 25. Western High Plains
- 27. Central Great Plains
- 42. Northwestern Glaciated Plains
- 43. Northwestern Great Plains
- 44. Nebraska Sand Hills
- 47. Western Corn Belt Plains

A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

- The Great State of Nebraska
- In the geographic center of the U.S.
- 77,000 sq. mi.
- 17th largest state in the U.S.
- 37th in population (1,800,000)
- The Breadbasket



A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

■ The Breadbasket

- Double the Population by 2050
- 4th Largest Ag Economy in the U.S.
- \$22.6 Billion toward the State's GDP
- 1st in Irrigation
- 93% of our land is devoted to Agriculture (18,413,196 ha.)
 - 1st in Red Meat Production
 - 1st in Great Northern Beans
 - 2nd in Cattle and Calves
 - 3rd in Corn
 - 4th in Soybeans
 - 6th in Hog



A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

■ Why this is important

- Environmental issues persist
- Environmental issues affect everyone

■ What is the problem?

- Climate Change/Energy Use/Water
- Legacy contamination
- Emerging environmental issues

■ Why is it so hard to adopt new technologies?

■ A better process to use

- ITRC
- SERDP/ESTCP

■ Conclusions/Recommendations



A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

■ Why this is important

- Persistent
- Ubiquitous
- Cost
- Use of resources
- We are only as good and healthy as our environment
- **It is our responsibility**





A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

■ What is the problem

- **Water**
 - Safety
 - Availability
- **Air Quality**
 - National Ambient Air Quality Standards
 - Transport
- **Waste**
 - Consumption
 - Legacy disposal
- **Climate Change, Energy Use, Legacy Contamination, Emerging Issues....**



A SUCCESS STORY: ENVIRONMENTAL DECISION MAKING

- Why is it so hard to adopt new technologies, or why is it so hard to convince my wife that 84th Street is a better way home?

- Education/Knowledge
- Certainty
- Cost
- The Fear of Failure



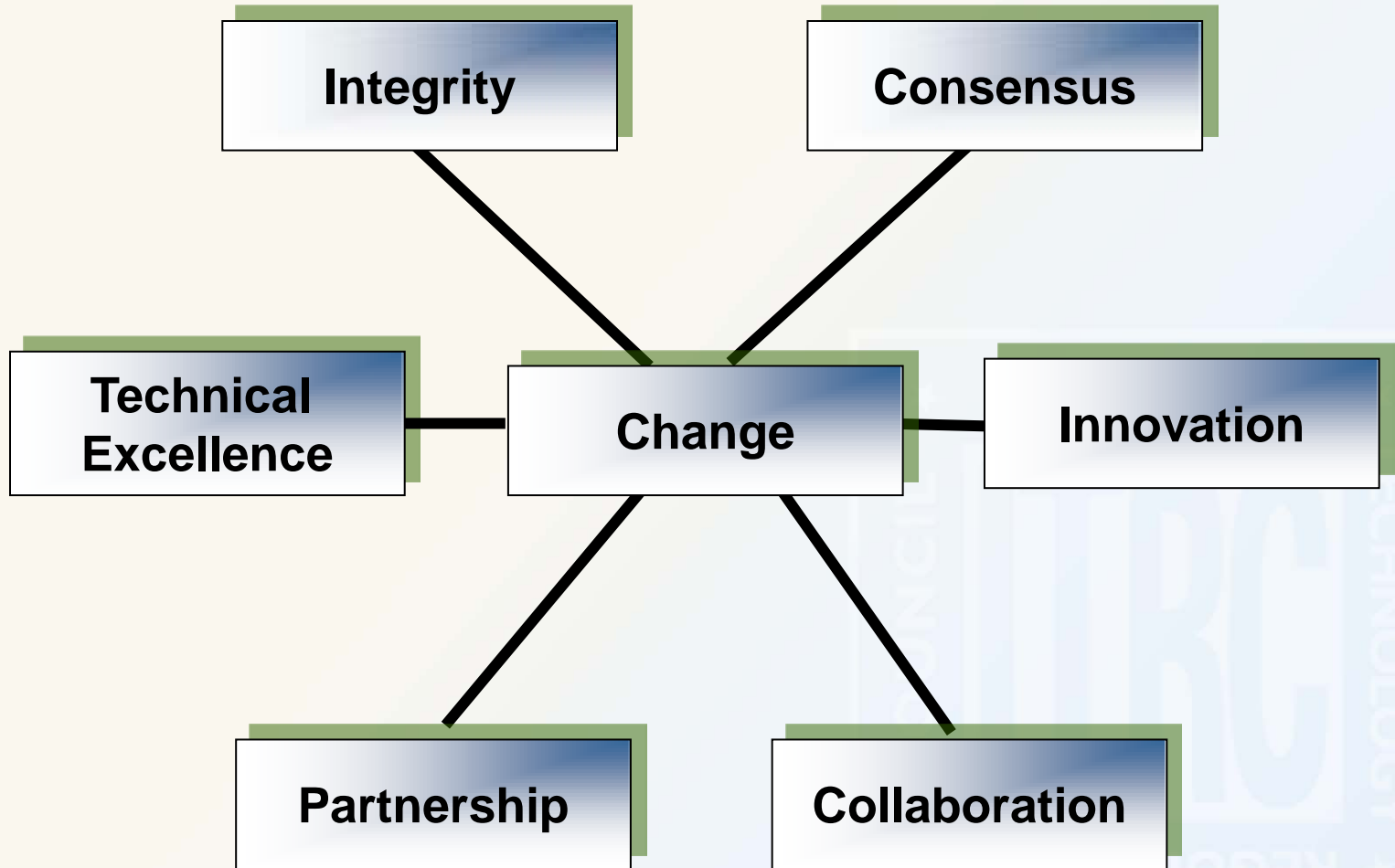
What is ITRC?

ITRC is a state-led coalition working to advance the use of innovative environmental technologies and approaches.



ITRC
translates
good science
into better
decision
making

ITRC Values





ITRC Purpose & Mission

- **ITRC Purpose**

To advance innovative environmental decision making

- **ITRC Mission**

Develop information resources and help break down barriers to the acceptance and use of technically sound innovative solutions to environmental challenges through an active network of diverse professionals





ITRC Key Strategies

- ITRC looks to future environmental challenges and focuses resources on developing innovative solutions to address those challenges.
- ITRC develops quality products that meet the needs of customers.
 - Tech/Reg
 - Training
- ITRC conducts outreach to demonstrate value and increase visibility to funding sponsors.
- ITRC emphasizes collaboration and cooperation as a way to foster consensus.



Typical Project Schedule

Overview Document
State Survey

**Reviewed by all
membership
sectors**

Technical regulatory
guidance

Training modules





Power of ITRC's Unique Network



Environmental Council of the States (ECOS)

Federal Government

Public/Tribal Stakeholders



Industry

Academia



TETRA TECH, INC.



Infrastructure, environment, facilities



ITRC Role in the Environmental Community



**Reduce
barriers**

**To the use of innovative
environmental
technologies**



**Improve
cleanup**

**By educating on
innovative environmental
technologies**



**Provide a
national
consensus**

**On approaches to
implementing innovative
environmental technologies**



Benefits to States

- Information and technology transfer – states make ITRC guidance their own
- Free training and knowledge on how to use innovative environmental technologies/approaches
- Access to peers and experts in other regulatory agencies
- Shortened learning curve by obtaining advance knowledge of innovative technologies/approaches
- Cost-effective involvement in demonstrations conducted in other jurisdictions
- Sounding board for problem solving
- Leadership and professional development



Benefits to DOD and DOE

- Encourages use of innovative environmental solutions
- Increases reliance on cost-effective cleanup approaches
- Reduces review and approval times for innovative approaches to environmental problems
- Facilitates interactions between federal managers and state regulators
- Increases consistency of regulatory requirements for similar cleanup problems in different states
- Can help reduce uncertainties when preparing cleanup plans
- Addresses DOD and DOE unique environmental needs (e.g. munitions, radionuclides, chlorinated solvents)



Benefits to EPA

- Provides knowledge transfer to states for better environmental protection
- Encourages use of innovative environmental solutions by states and others
- Increases state reliance on cost-effective cleanup approaches
- Facilitates idea sharing between federal managers and state regulators
- Provides a mechanism for identifying and integrating regulatory performance expectations among states
- Unique and cost-effective approach for demonstrating and deploying new technology/approaches



Benefits to the Private Sector

- Cutting-edge information on innovative environmental technologies and approaches
- Opportunities to author national guidance documents and participate in training courses
- Insight into the regulatory world
- Access to multiple state and federal government entities
- Opportunity for broader review of technology
- National approach to demonstration and deployment of new technology
- Mechanism to identify and integrate regulatory performance expectations among states



A Success Story: Environmental Decision Making

Since 1995, ITRC has expedited quality regulatory decision making, while protecting human health and the environment.

<http://www.itrcweb.org/>

Success hinges on **COLLABORATION**

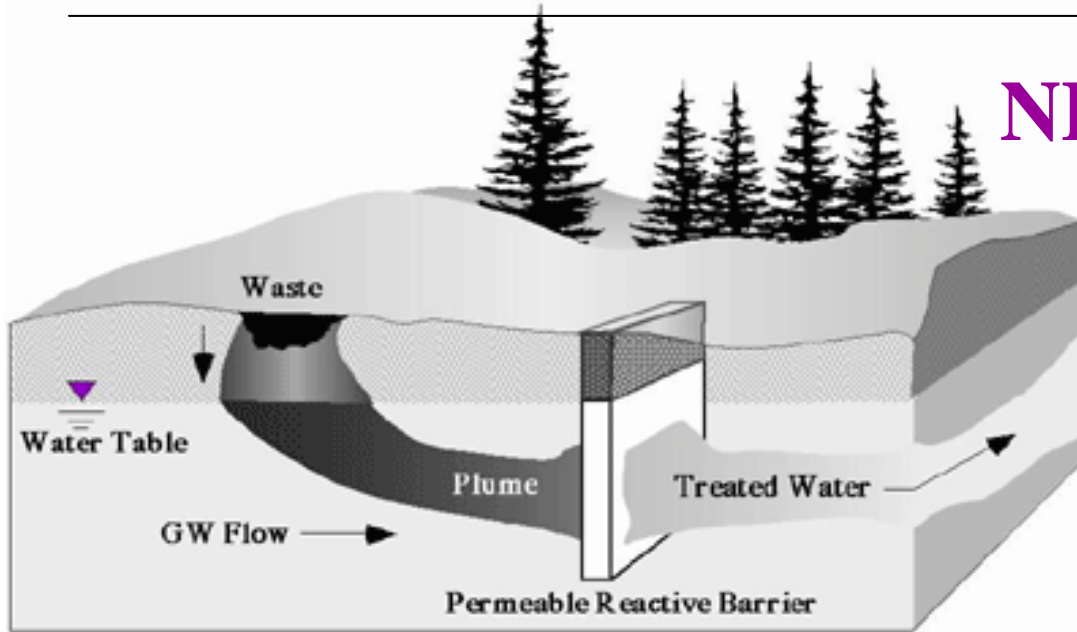
Success hinges on **COMMUNICAION**

Success hinges on **CONSENSUS**

And you have to be **TRANSPARENT**



Permeable Reactive Barriers (PRB)

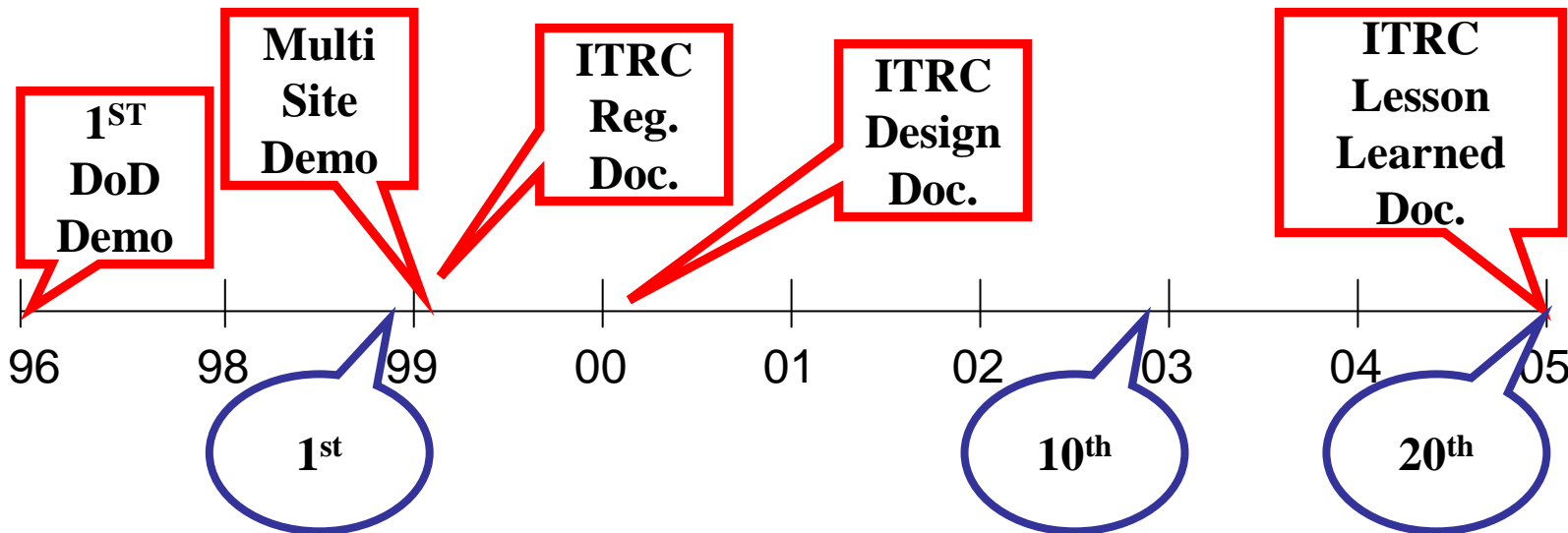


NPV Saving > \$150 M

Passive In Situ Treatment

- Chlorinated solvents treatment
- 21 DoD full scale systems

ESTCP Support



DoD's Environmental Technology Programs



Science and Technology

Demonstration/Validation

■ DoD, DOE, EPA Partnership

- Advanced technology development to address near-term needs
- Fundamental research to impact real world environmental management

- Demonstrate Innovative Cost-Effective Environmental and Energy Technologies
- Promote Implementation
 - Direct Technology Insertion
 - Partner with End User and Regulator



Strategic Environmental Research and Development Program (SERDP)

- Established by Congress in FY 1991
 - DoD, DOE, and EPA partnership
- SERDP is a requirements driven program that:
 - Identifies high-priority environmental science and technology investment opportunities that address DoD requirements
 - Advanced technology development to address near term needs
 - Fundamental research to impact real world environmental management



Investment Approach

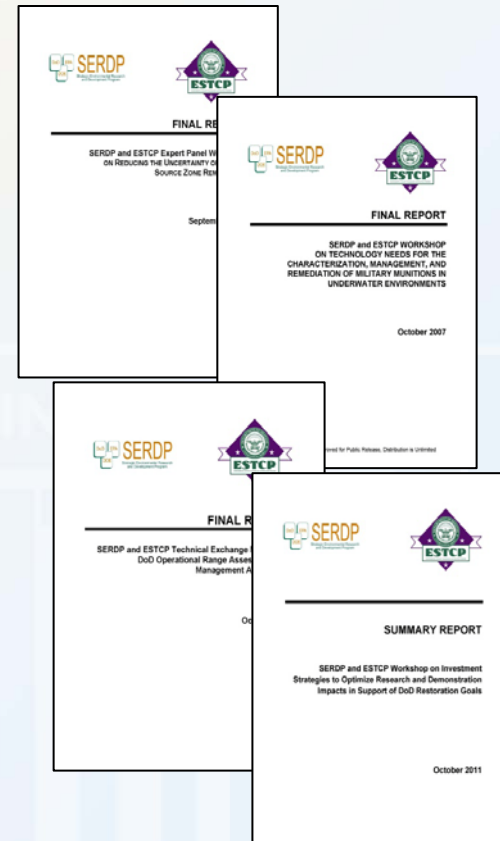
■ SERDP's Investments Are Structured Through Annual Statements of Need (SON)

● SON reflect:

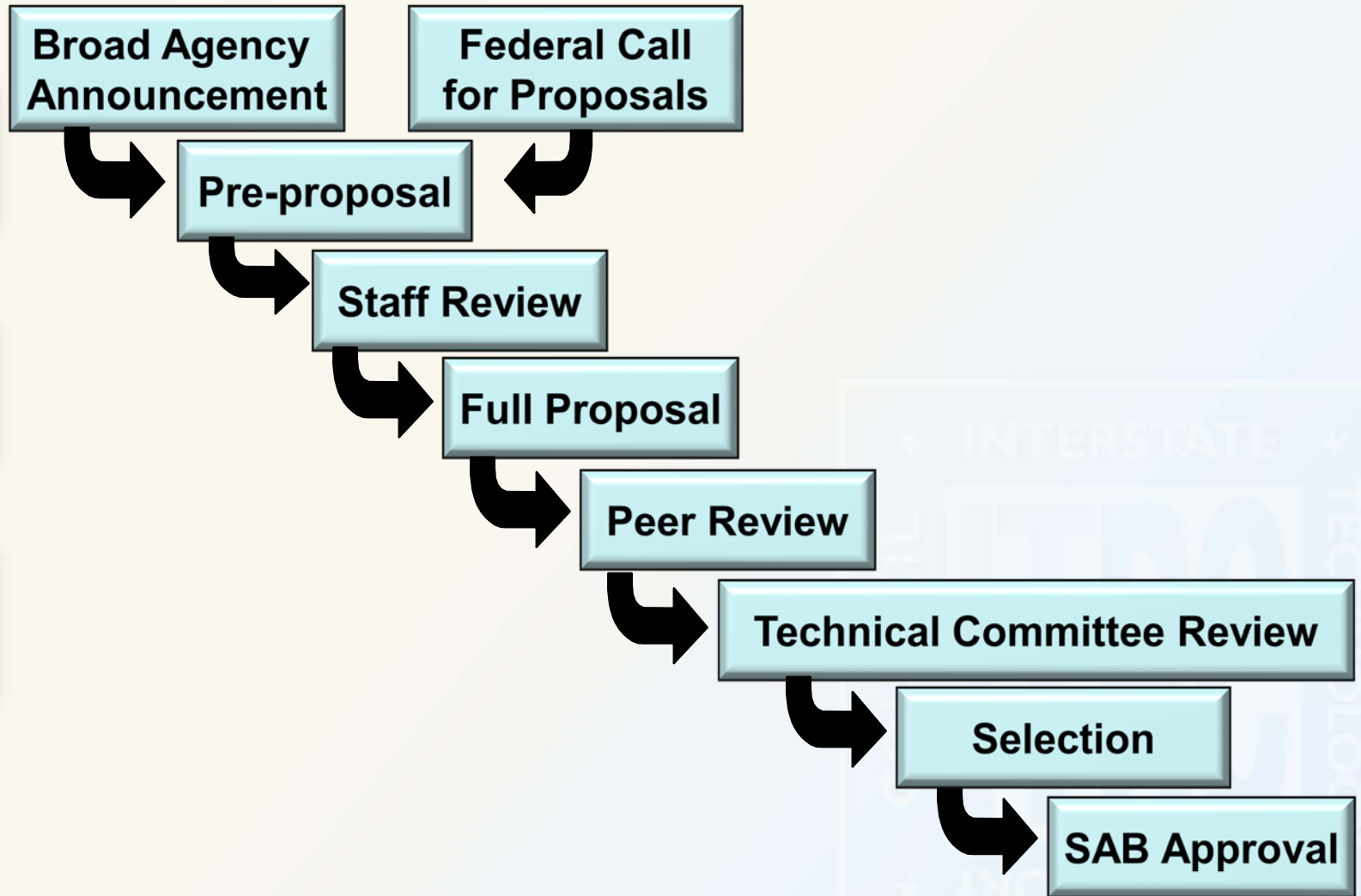
- ◆ Longer term strategic plans to address high priority requirements
 - Groundwater liability, live fire ranges, UXO, marine mammals and sonar, eliminating Cr⁺⁶ etc.
 - Issue-specific workshops form basis for strategic plans

● Increasing Focus on Sustainability and O&M Costs

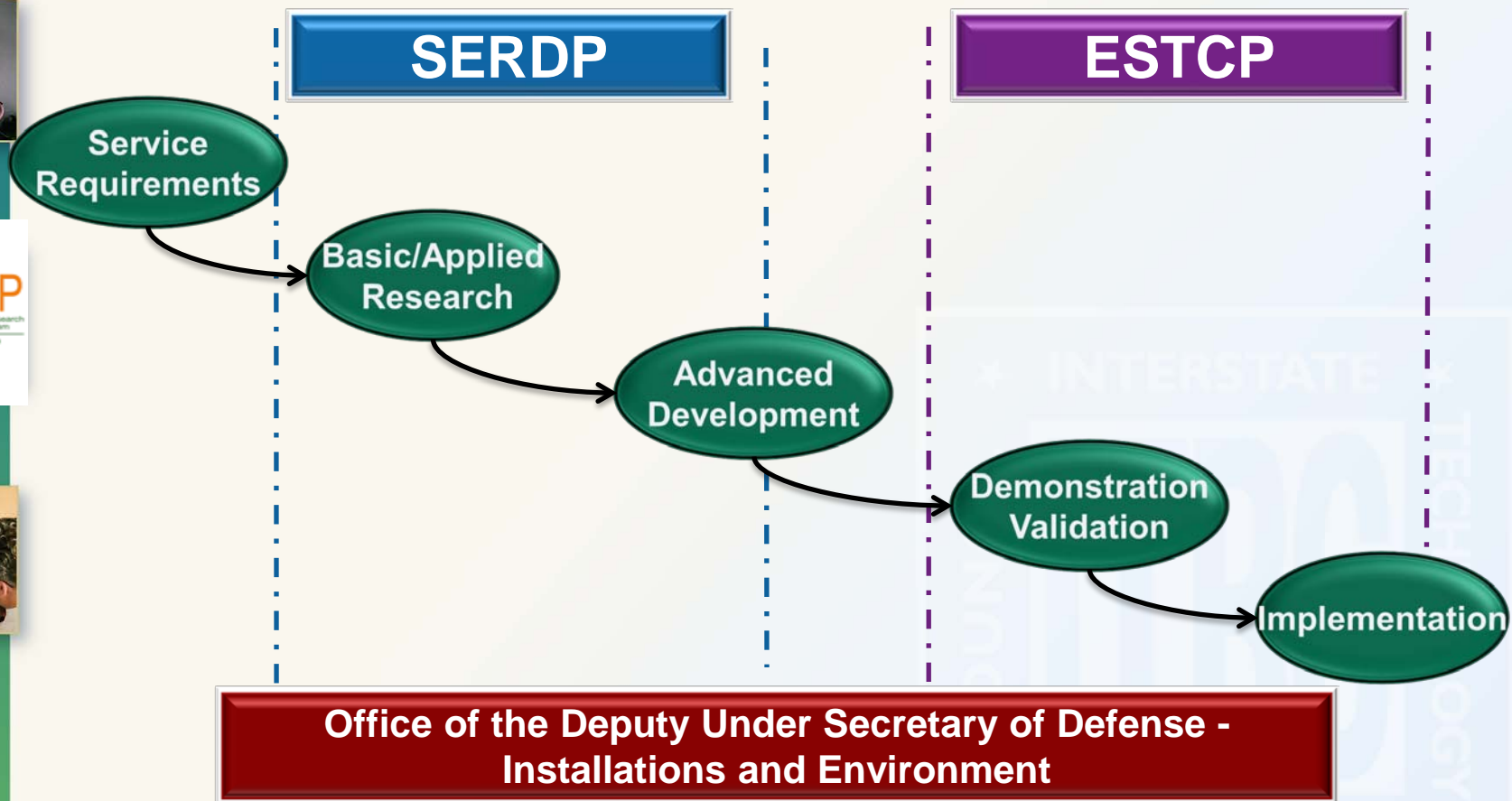
- ◆ Success at reducing costs of legacy liabilities
- ◆ Need to reduce costs and long term vulnerability at installations and ranges



SERDP – Core Solicitation Process



Environmental Technology Development Process



A Requirements-Driven Integrated Program



Partnerships within Projects

- Multiple entry paths – solicitations to allow lead as appropriate to project
 - University
 - Federal Laboratory
 - DoD user
 - Industry
- Single-performer projects are rare



Technical Management

■ Project Selection – Technical Reviews

- External peer review
- Technical committee – SERDP, Services, DOE, EPA experts
- Science Advisory Board approval – distinguished scientists nominated by National Academy

■ Project Management

- Annual In-Progress Review Briefing
 - Brief of technical progress to panel of technical experts from the services
 - Projects on common topics brief together
 - Detailed feedback

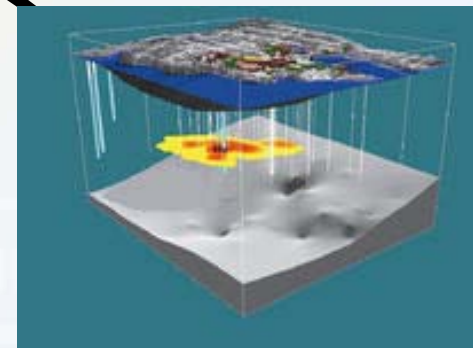


Program Area Management Structure

Weapons Systems & Platforms



Environmental Restoration



Energy & Water



Resource Conservation & Climate Change



Munitions Response

It's The Method **AND** The Model

- The M&M Works for **ANY** Issue
- Get the Right Players at the Table
 - You Need A Top-Notch Team
 - Check Agendas At The Door
- Agree on the Process
 - Define the problem
 - Consensus, not 100% agreement
- Set a Schedule
- Be Accountable
- Be Flexible



A Success Story: Environmental Decision Making

- Joe Francis – Associate Director, Nebraska Dept. of Environmental Quality – joe.francis@nebraska.gov
- Dr. Anne Andrews – Interim Executive Director, SERDP/ESTCP – anne.m.andrews10.civ@mail.mil
- Anna Willett, P.E. – Program Director, ITRC awillett@ecos.org

