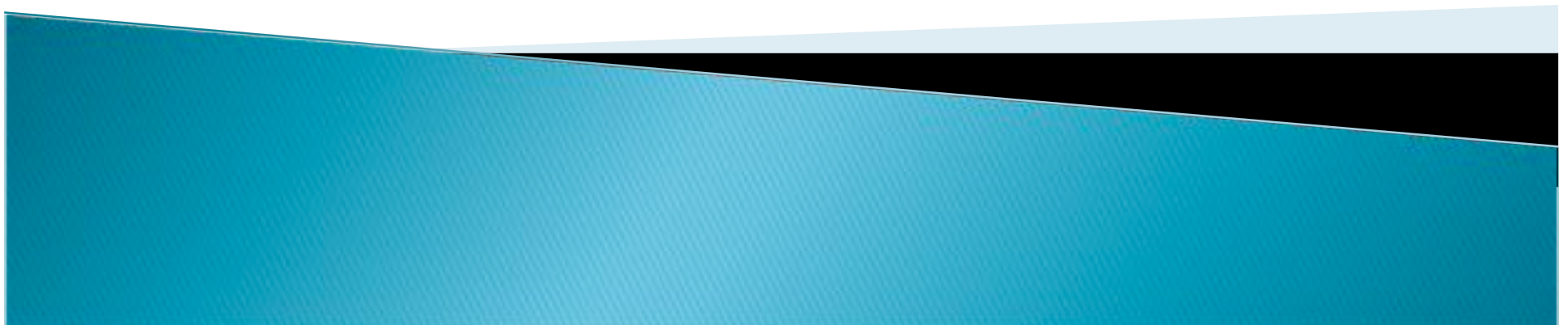


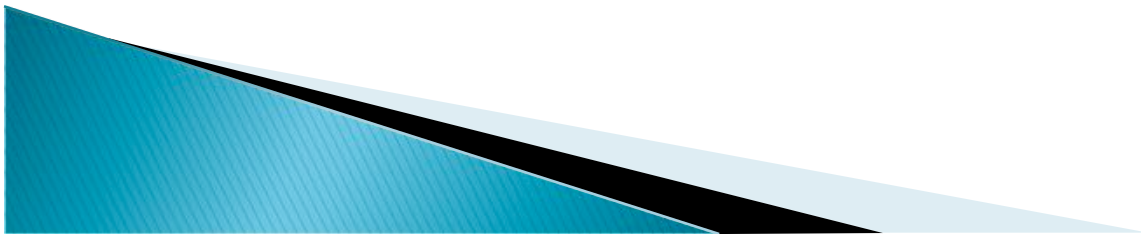
Networks, Coalitions, and the Function of Social Capital in Addressing Water Quality, Availability, and Management

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Presentation Outline

- ▶ Part 1: Why we need more dynamic social relationships in solving water problems
 - Social relationships and water disasters
 - What water means and how that impacts sectors
 - Sectors, agencies, and divisions
 - Cross connections—solving problems



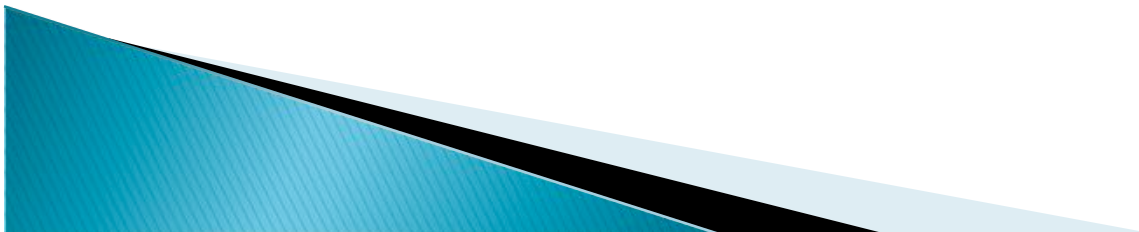
The Not-So-Happy Anniversary



- ▶ Katrina – When water is mismanaged, tragedy can strike ...
 - Freudenburg, et al. → Growth Machine, MRGO and the Katrina tragedy
 - Harry Shearer → New movie – damning USACE, but...why?
 - Was the problem Federal or Local? Yes!

The coming era requires moving beyond cell 1 thinking

- ▶ Cell 1 thinking = reductionist problem solving (Marcuse 1968)
- ▶ It is the endless search for “silver bullets”
- ▶ Problems faced:
 - Tiling, corn and hypoxia
 - Shrinking cities and unutilized infrastructure
 - Infrastructure depreciation
 - Flood plain settlement and risk
 - Nutrient management and water quality
 - Corn–cattle complexes and groundwater availability
 - Climate change and modeled rainfall variability
 - CSO; SSO.



What's in the Water

- ▶ The water management has traditionally been dependent on one's disciplinary/statutory lens
 - USGS managed based on geomorphology, hydrology
 - ACoE; BLM for flood control, navigation, supply for settlement and economic development
 - EPA for clean water and drinking water quality
 - NRCS for agricultural watershed management practices?



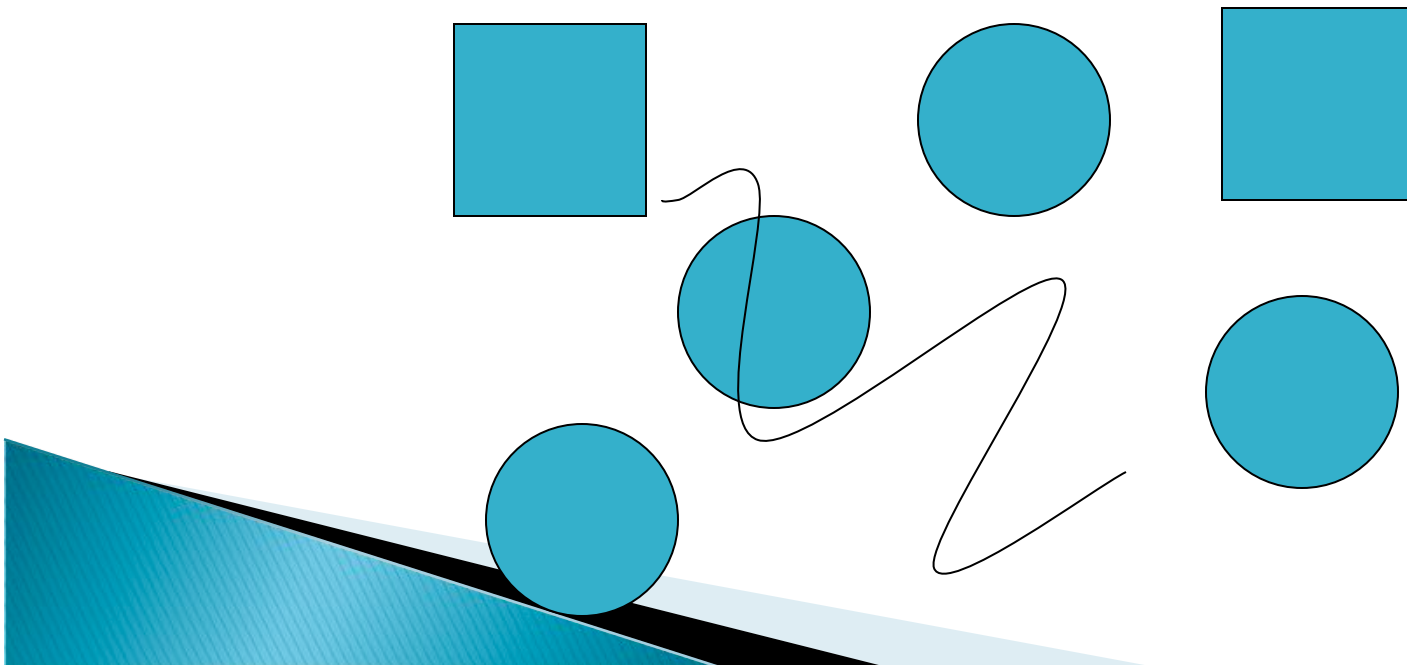
Water, Communities, and Society

- ▶ As long as we divide the world in to sectors, water, has different meanings
 - The reason for settlement
 - A source of water
 - A source of recreation
 - An input for economic development
 - An externality for economic development (mining, quarries)
 - A key ingredient to culture
 - The defining resource for Institutional Structures



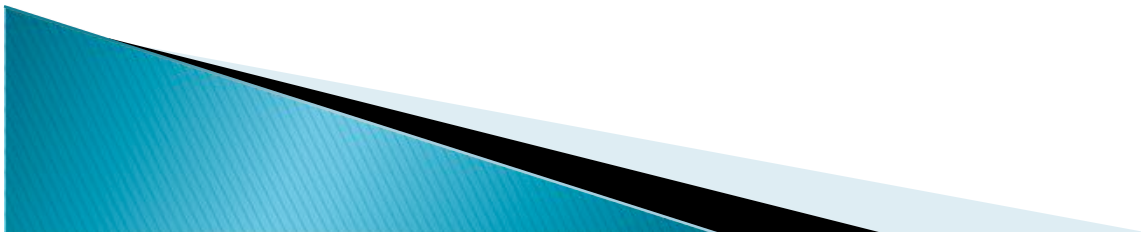
Thinking of Watersheds and Social Networks

- ▶ The problem: mono-sectoral water management
- ▶ Watershed initiatives sometimes lack appropriate connections among local and extra local forces.



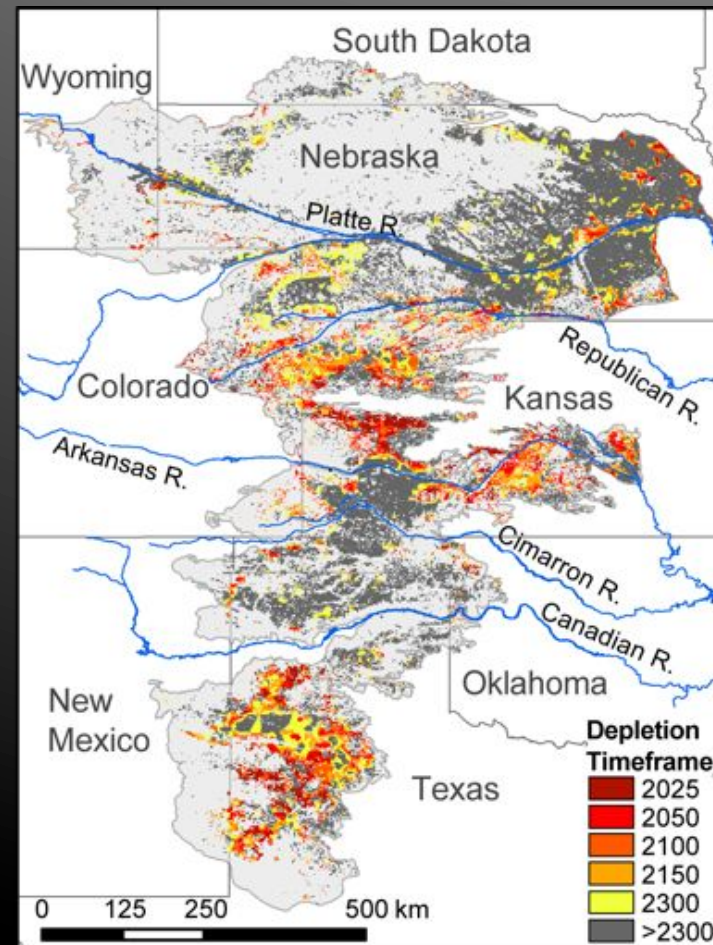
Social networks as bridges

- ▶ Social capital refers to the networks of trust and reciprocity among people
- ▶ Putnam among others uses this as a proxy for building social capital
- ▶ Social Networks – Valente, Frank, etc.
 - Addresses the relationships among people
 - Who is talking to whom – how does this shape the perception of information – the FRAME
 - Who is accountable to whom: What are the pressures that influence behavior



Problems of Cell 1 Thinking and Systems: Irrigation and Groundwater

- The High Plains region hosts some of the most productive irrigated agricultural land in the United States...covers more than 450,000 km² of 8 states including South Dakota, Wyoming, Nebraska, Colorado, Kansas, Oklahoma, Texas, and New Mexico and is on a fundamentally unsustainable path, having been drawn down by over 300 cubic km since the 1930s (USGS).



You Can't Drink Ethanol

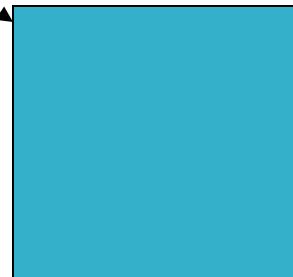
Exploring Community Water System Capacity and Biofuel Facilities



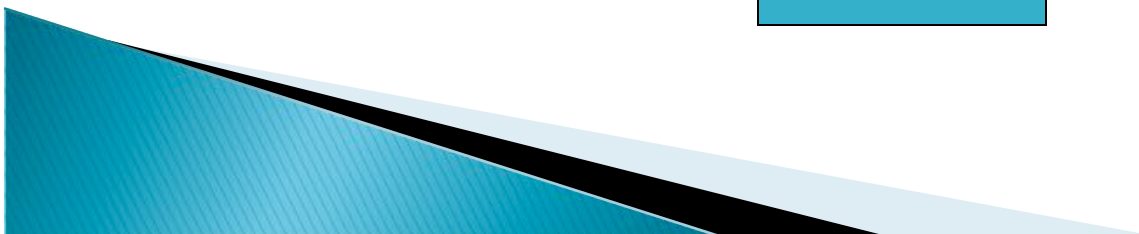
Does Information Lead to Better Decision Making and Action Around Water?

- ▶ But often models and scientific assessment = information that is filtered through a frame that is reinforced by social networks

Scientifically based
Assessments →
Consumer Confidence
Reports



Community Action To
Protect Source Water

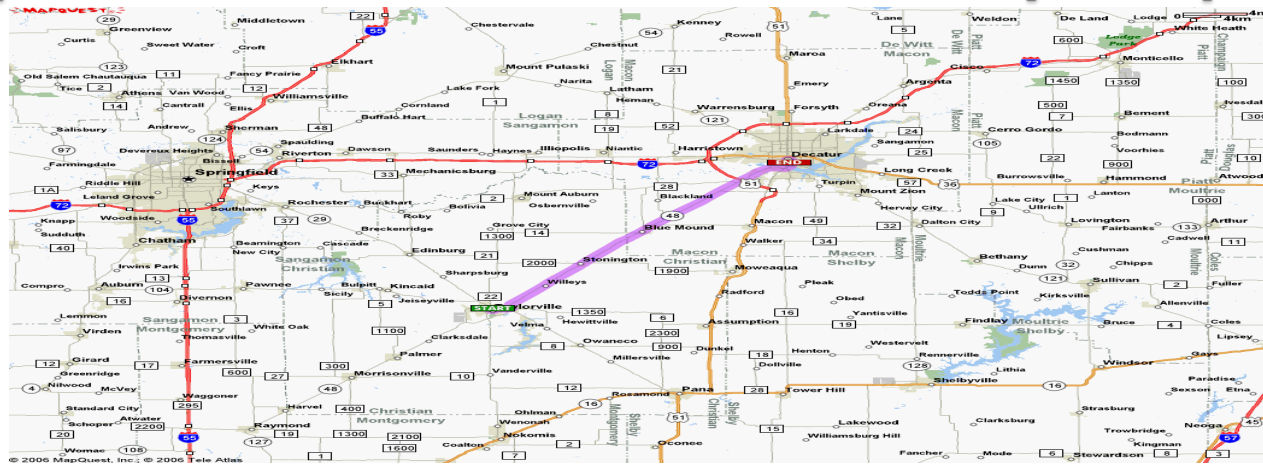


Carroll County, MD

- ▶ 1980s “science based” groundwater protection plan
- ▶ Little civic society input—built on existing farmland protection ordinances
- ▶ Late 1990s coalition forms around property rights
- ▶ Protracted fight with Baltimore over withdrawal increases given non-compliance with smart growth and watershed management



Taylorville–Macon County Aquifer



- Major threats from feed lots, septic systems, above ground storage tanks, underground storage tanks, livestock waste treatment facilities, treated wood/lumber yards, wells (such as irrigation wells), and lagoons.
 - Worked with the local Natural Resources Conservation Service and Soil & Water Conservation Service to promote the United States Department of Agriculture's Conservation Reserve Program.
 - Created educational outreach brochures for distribution to those who live and work within the communities' recharge areas. – Utilized disaster management moneys to covers well in GIS system as part of tracking SW threats. Important in sharing blame and moving to solutions.
- Included BMPs for farmers and landowners—but also planning, ordinances and policies.

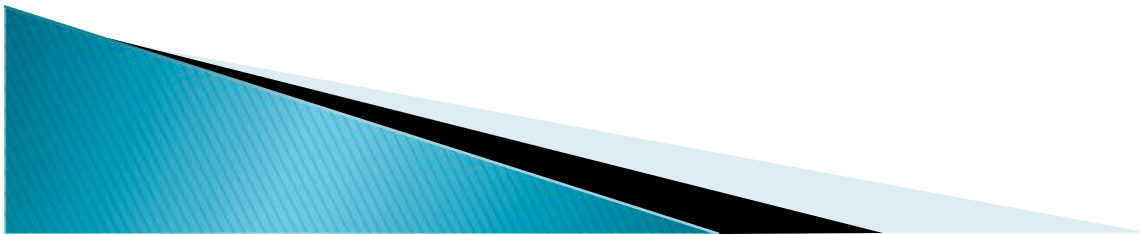
Questions

- ▶ In what ways do social networks provide opportunities?
- ▶ What are challenges in creating networks across sectors?
- ▶ How do we promote and nurture the kinds of networks (collaborations and partnerships) that move society beyond cell 1 thinking?



Part II: How Social Capital Influences System Thinking

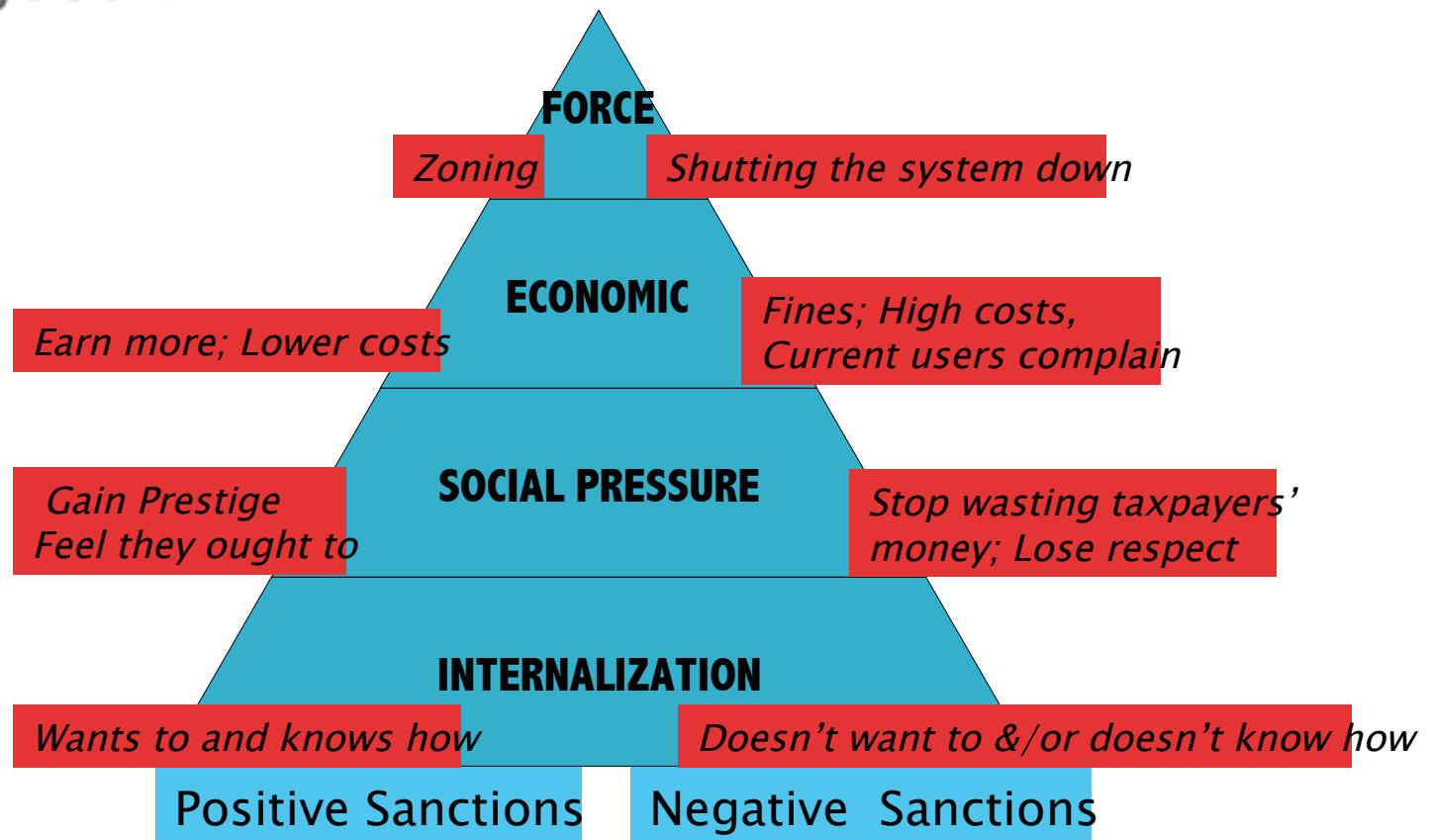
- ▶ Moving from cell one to system thinking
- ▶ Civic Engagement – Public Participation
- ▶ Beyond panaceas– adaptive management
- ▶ System thinking
- ▶ Community Capitals
- ▶ Improved management?



Why Engage Communities

What Leads to Behavior Change

Why to people and institutions act for the “public good”?



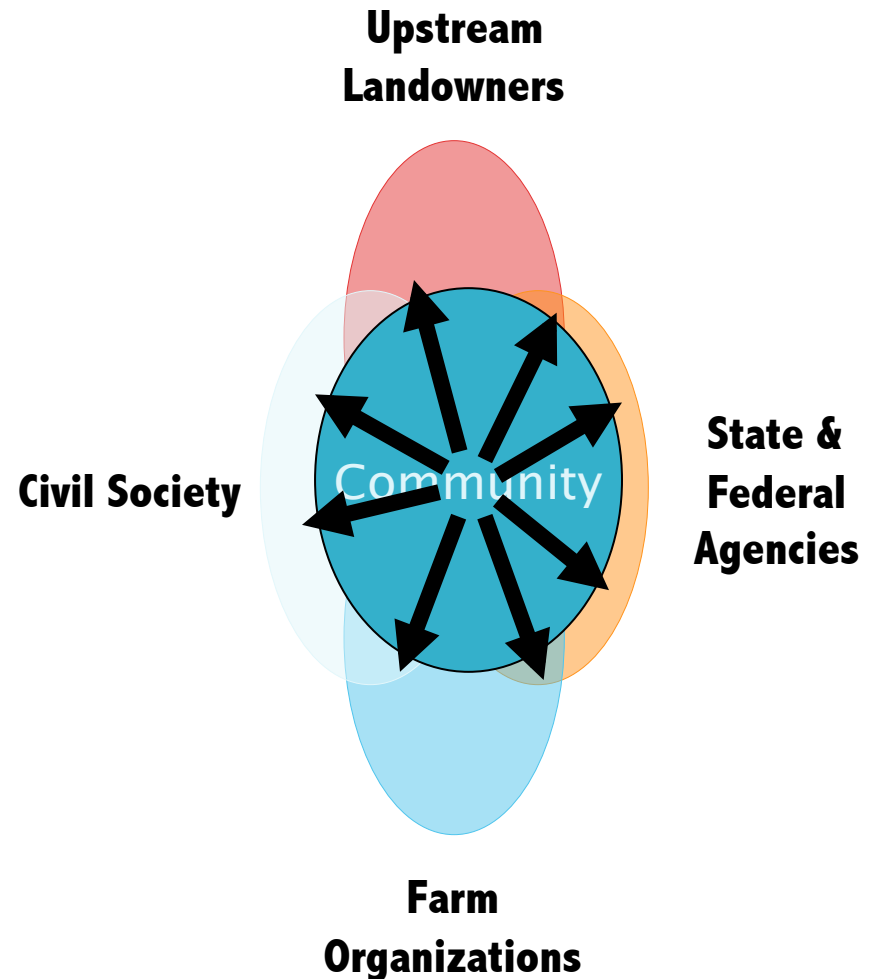
Peoria Area, IL



- ▶ Community GW Recharge in Farm Field
- ▶ Utility and farmer reached agreement
 - Farmer doesn't plant in exchange for utility mowing
- ▶ Deal killed by city council
 - which didn't want taxpayer "wasted"

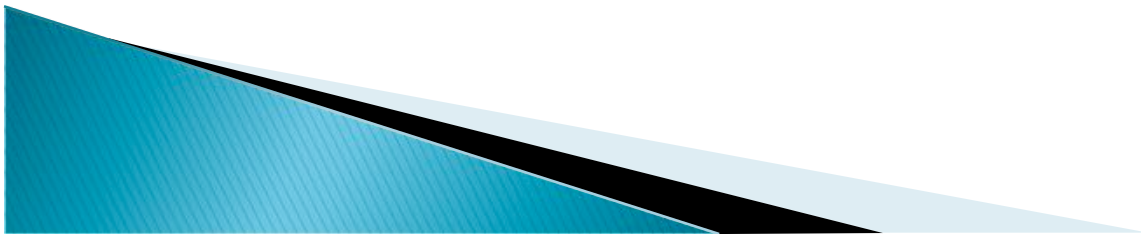
Beyond the Tragedy

- ▶ Hardin's "Tragedy of the Commons"
 - – A problem of unfettered local, self interest
 - Need for strict regulation or privatization?
- ▶ Ostrom's polycentric governance...
 - Local Institutions CAN manage the commons
 - But through nested systems
 - Local governance IS possible but local power can be exploitative!
 - Calls for Nested Systems of Governance



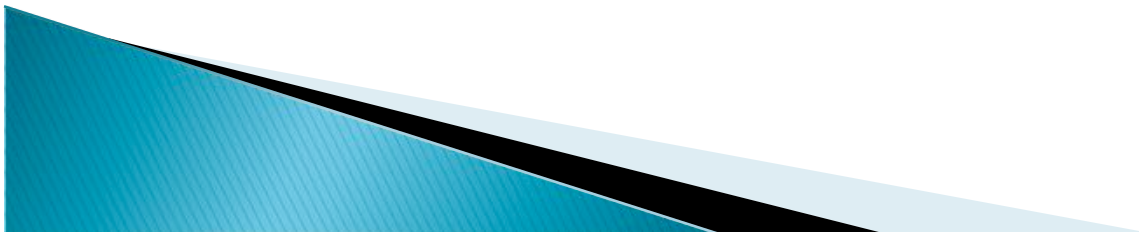
More Inclusion–More Participation

- ▶ My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of **transparency, public participation, and collaboration**. Openness will strengthen our democracy and **promote efficiency and effectiveness in Government**. (Barack Obama, Memorandum for the Heads of Executive Departments and Agencies on Transparency and Open Government, http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/)



Networks and Public Engagement

- ▶ The National Coalition for Dialogue and Deliberation Core Principles
 - Careful planning and preparation
 - Inclusion and Demographic Diversity
 - Collaboration and Shared Purpose
 - Openness and Learning
 - Transparency and Trust
 - Impact and Action
 - Sustained Engagement and Participative Culture



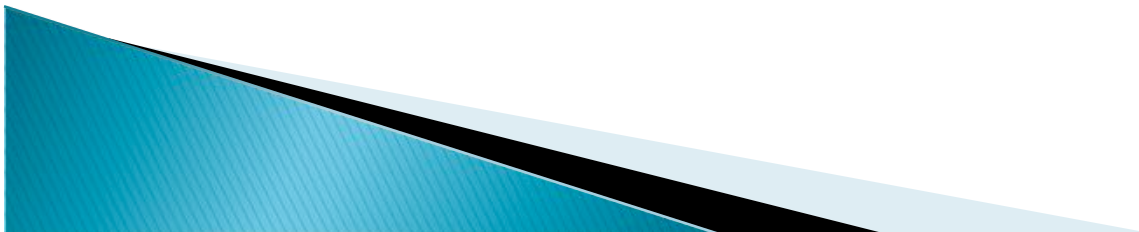
New, More Integrative Approaches

- ▶ Watershed or Basin Level Management
- ▶ Adaptive Management
- ▶ Integrative Water Resources Management
- ▶ Total Water Management
 - The packaging and context is different, but all have similar characteristics
 - Holistic design – consideration of multiple sectors
 - Engineering as inclusive of the solution, but not the total
 - Sustainability and Resilience of human and ecological systems
 - Inclusion of multiple stakeholders – public engagement



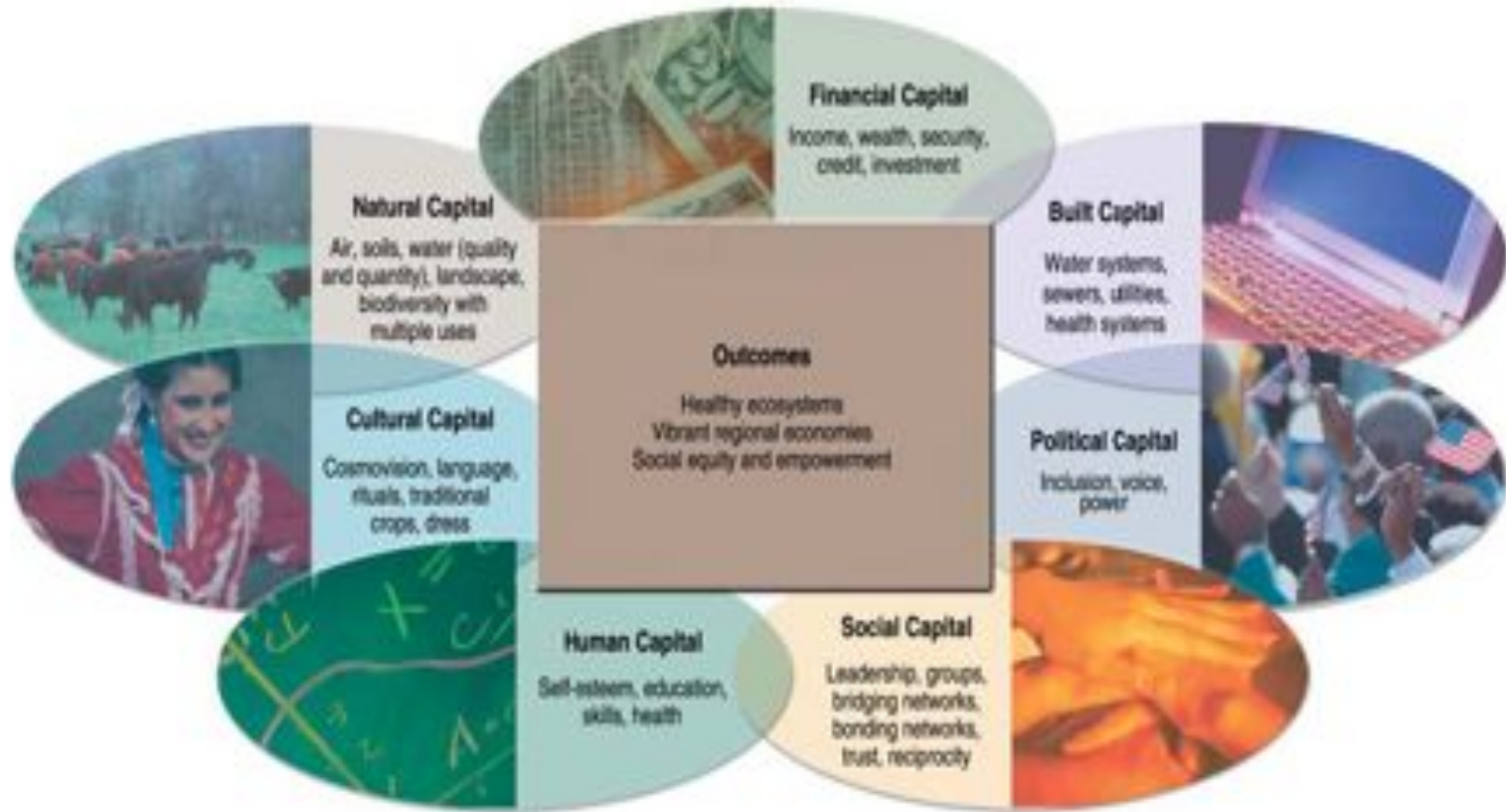
The Problem of Panaceas

- ▶ Water is a critical common pool resource – and we increasingly recognize its vulnerability
- ▶ As with engineering – we have kept looking for A BETTER MANAGEMENT SOLUTION
 - Watershed Management
 - Integrated Water Resources Management
 - Water Users Association
 - Private Sector Participation
 - Community Management
 - Conservation Management



How To Engage Residents

The Import of Looking at the Systems



NCRCRD. 2005. Community Capitals Diagram. Retrieved from <http://www.ncrcrd.iastate.edu/projects/commcap/7communitycapitalsfigure.pdf>, on Sept. 23, 2007

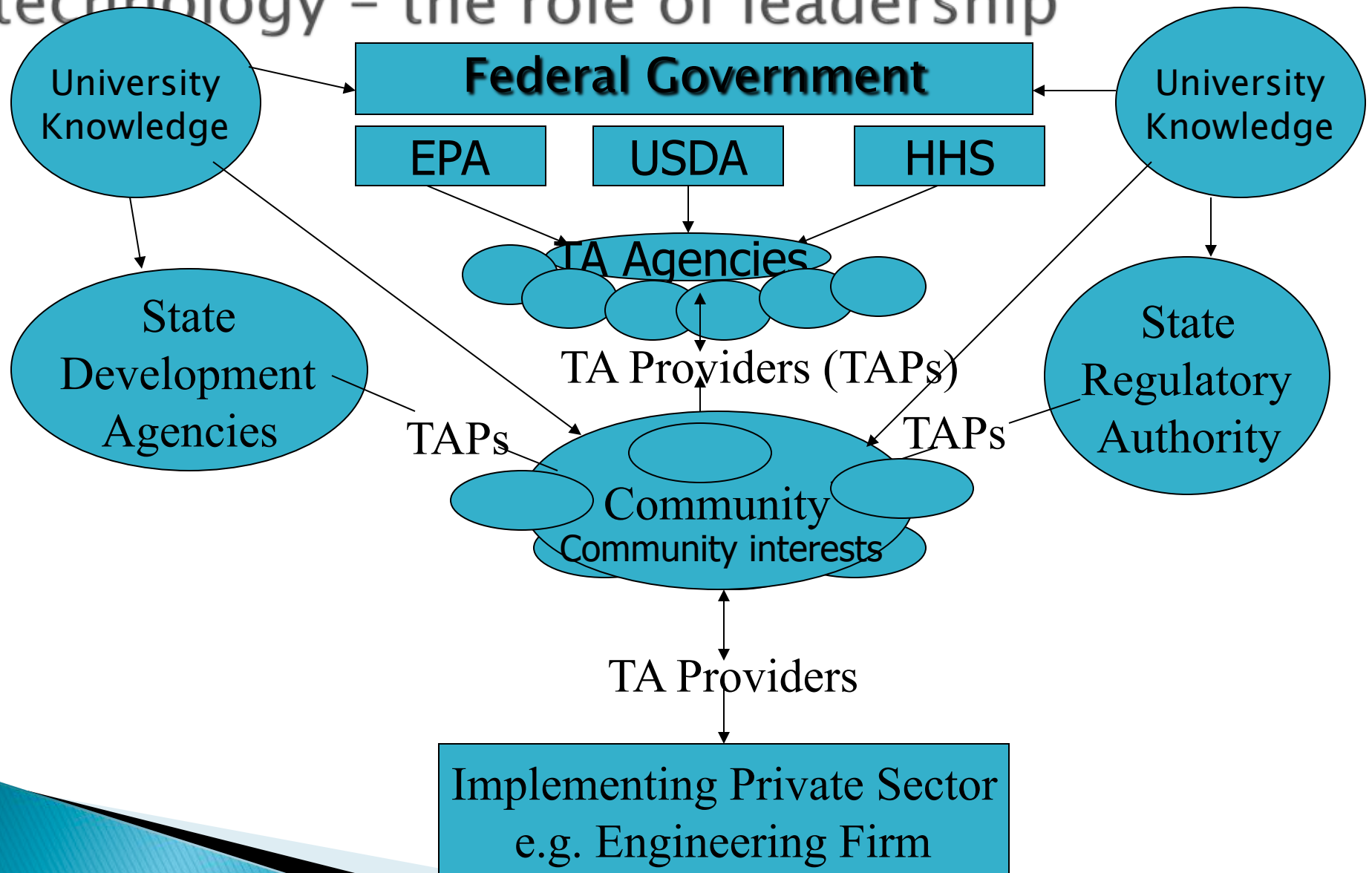
Issues at the Community Level

Will Necessitate Interactions in and outside the community

- Community participation
 - Support from the community governing body—to approve financing, placement, etc.
 - Development of a water board/management entity
- Negotiation with multiple external entities
 - State Department of Health – health inspections and approvals
 - State EPA/DNR/DEQ – environmental certification, financing
 - Rural Development – financing, engineering oversight
 - Engineering firm

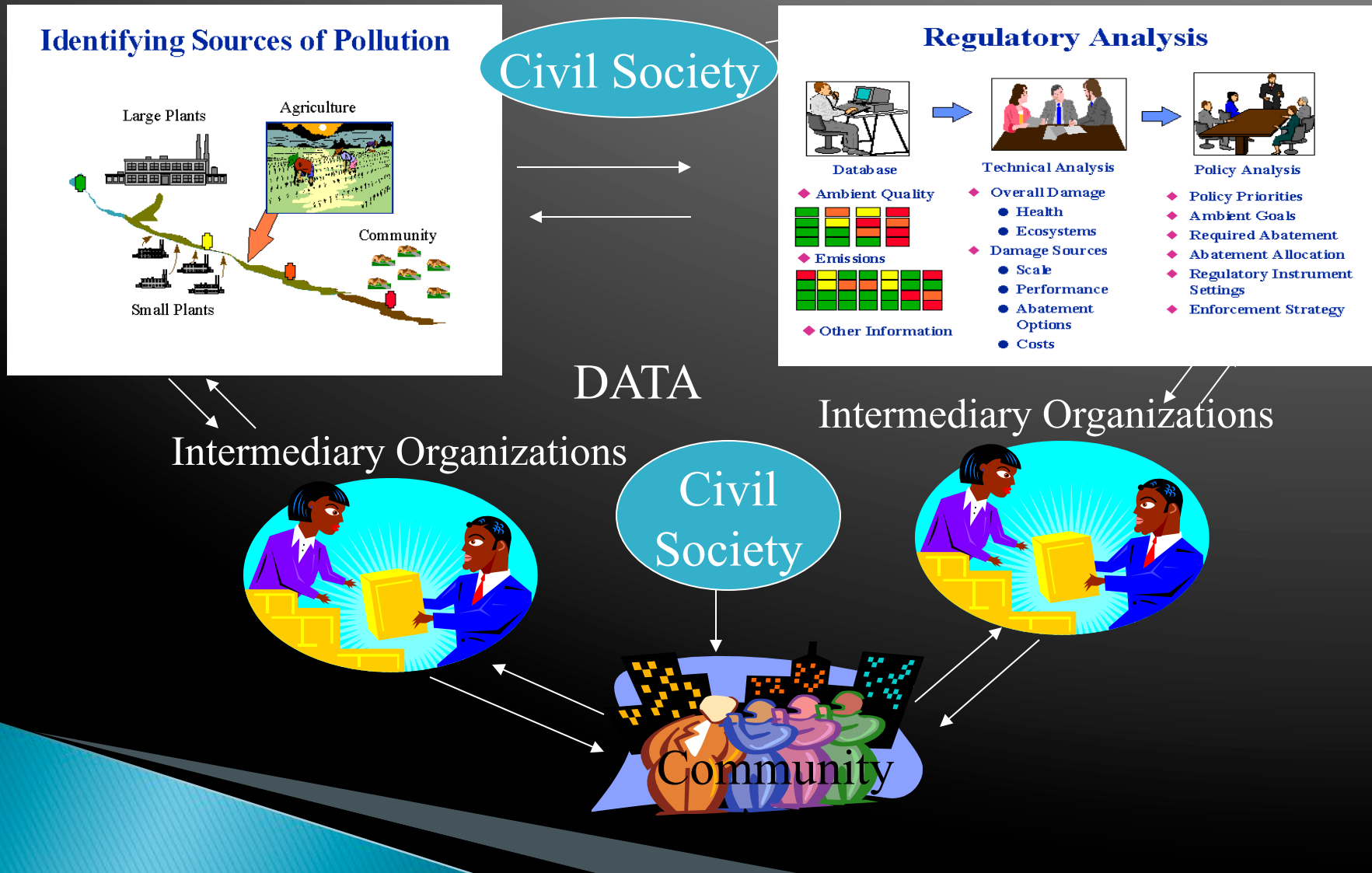


Community Infrastructure is more than technology – the role of leadership



Infrastructure Quality and Institutional roles

Civil Society and Intermediary organizations are key to the U.S. Regulatory System

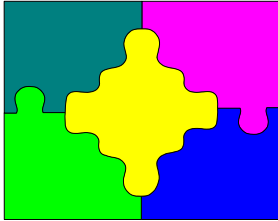


Community and Civic Leadership



How to Engage Communities

Modeling



Desired community Future



**Advocacy
Coalition**

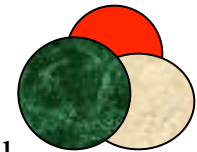


Regulatory Conditions

Points of agreement



Economic



Natural

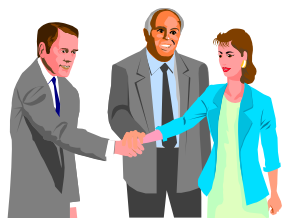
Social

Indicators

**Water quality and
quantity—relation to
social and economic goals**

Outcomes

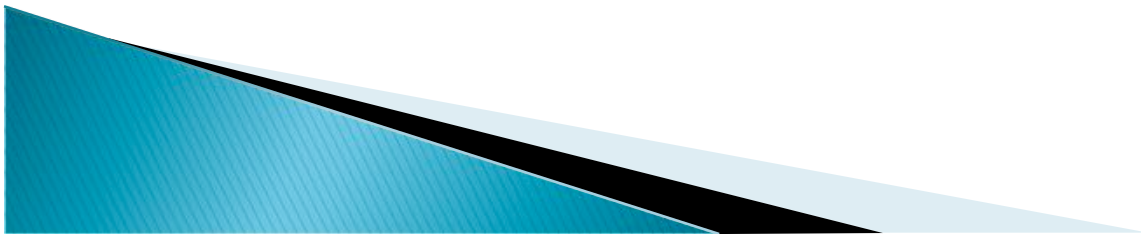
Activities



**Citizen
Advisory
Group**

Import of Social Capital

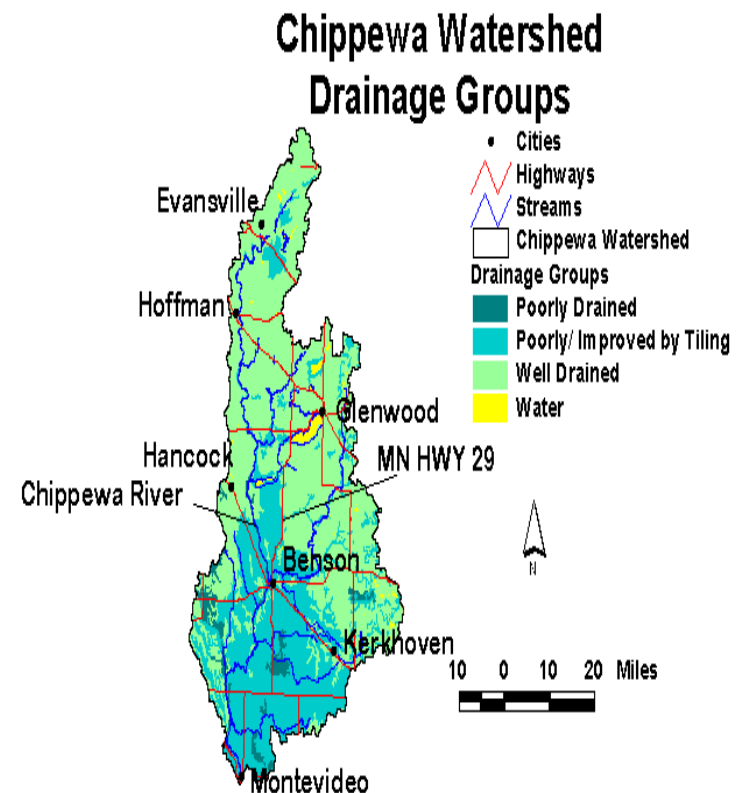
- ▶ Asset approach that can allow us to focus on multiple resources – and as such to discuss critical assets and tradeoffs
- ▶ Social capital/culture as key bridging elements
- ▶ Asset approach allows for the development of indicators



From information provision to building networks—social capital

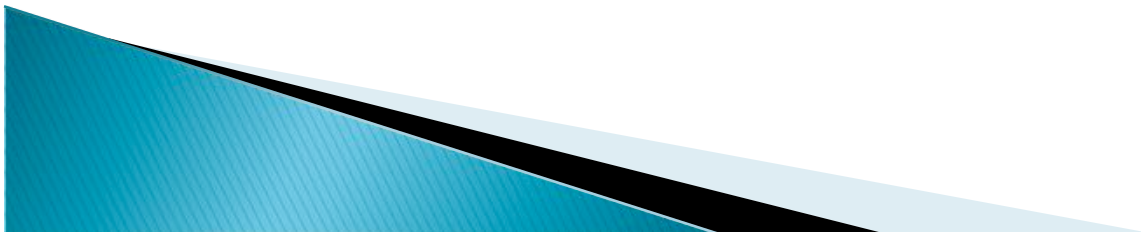
-- Chippewa Watershed

- ▶ 1994 top down watershed initiative—MN River Basin Initiative
- ▶ Local activists urge step back with initial local resistance
- ▶ Intensive public participation process that leads to discussion not just of water quality, but local economic development, preservation of place, alternatives for farmers



Key questions

- ▶ How might assessments of assets (capitals; stocks) lead to opportunities to address water problems?
- ▶ Is this a framework that could inform improved assessment?
- ▶ What are barriers to holism? What are the barriers to thinking broadly about solving water management problems?
- ▶ Might CCF be helpful in creating breakthroughs?



Questions and Contact Information

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