The Horinko Group Water Summit Proceedings Sustaining Our Water Resources Through Collaboration Summit Connecting Water Leaders Across Watersheds April 13, 2010 Washington, DC

PURPOSE AND OVERVIEW

Seventy leaders from public, non-profit, and private sector water organizations gathered at The Horinko Group's offices in Washington, DC to hear about ways that these entities are collaborating to promote sustainable outcomes for water. Forty-five percent of the attendees were from the private/non-profit sector, thirty percent from Federal agencies, and the remaining twenty-five percent from a number of sectors including academia, Congress or the Congressional Research Service, interstate organizations, and state government (refer to Attachment I: Final Attendee List). Case studies about collaborative efforts on iconic water systems, including the Chesapeake Bay and the Mississippi River, as well as examples fostered by the federal government (the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Federal Emergency Management Agency) were presented to provide examples of public-private partnerships that can serve as collaborative models and exemplars. The general tone of the discussion addressed challenges in policy and governance in sustaining our water resources and accounted for the role that communities and individual civic responsibility will play in the future. The Horinko Group convened this summit to further the conversation about ways to enhance the economic, environmental, and social conditions via sustainability of our nation's water resources, collaboratively. As Marianne Horinko, President of The Horinko Group, stated in her welcoming remarks, "Civic engagement, commitment, and leadership are critical to sustainability. Innovation and collaboration make things happen for the good of our water resources - they make the true difference."

The agenda for the Summit outlined opening remarks of senior executives with the Department of the Army and the U.S. Environmental Protection Agency, a keynote speech about new models for collaboration by an esteemed water resources professional with state and federal government and now private sector experience, and three panels of speakers from the public and private sectors who are engaged in collaboration around shared goals with diverse stakeholders (refer to *Attachment II: Summit Agenda*). The day closed with an offer to carry forward important conversations about specific water topics and partnership opportunities in *Water Salons* facilitated by The Horinko Group (refer to *Attachment III: Water Salons*).

OPENING REMARKS

In his opening remarks, **Mr. Terrance (Rock) Salt, Principal Deputy Assistant Secretary of the Army for Civil Works** echoed the importance of transparency, accountability, and collaboration in the federal government's management of water resources and called attention to efforts by the U.S. Army Corps of Engineers to pursue integrated water resources management (IWRM) as the path forward. He cautioned, however, that the success of the federal government in moving toward IWRM depends on the government, especially the Office of Management and Budget, moving beyond current narrow rules for evaluating and crediting the worthiness of water resources projects; these rules emphasize national economic development over regional economic development, single purpose over multi-purpose, and undervalue other positive environmental quality and social effects of otherwise potentially important projects. He noted that the proposed revised Principles and Guidelines for the formulation and justification of federal water projects across all **federal water agencies** will **emphasize** 1) **collaboration** across government levels (federal, state, and local) and with non-governmental entities to account for the prominent role that states and non-federal interests can and should play in state water resources planning; 2) multi-purpose and integrated water resources project **development** through greater alignment among federal agencies on project development and management in common watersheds; and 3) attention to **blending diverse federal** organizational authorities and cultures for common aims. The key to success, he said, is to consider many variables in a **watershed context** within a rigorous risk-informed analytic framework that accounts for uncertainty, additionally with attention to the learning benefits of adaptive management. The collaboration among the Corps, FEMA, and nongovernmental entities on floodplain management policies and practices in the nation's eight "Great Ecosystems" is a step in this direction, as is the Corps' collaboration with EPA and other federal agencies on EPA's Urban Waters Initiative to create urban renewal and better habitat along the river in appreciation for reconnecting people to the river.

Mr. Peter Silva, Assistant Administrator of the Office of Water in the U. S. Environmental Protection Agency noted Administrator Lisa Jackson's emphasis on how water affects people and communities. He touted EPA's efforts to foster **collaboration to build sustainable communities and healthy watersheds** in concert **with states** through a smarter and more integrated way of doing business – a **watershed approach integrating land and water**. EPA is working with local communities to register instream flows, with other federal agencies on the Urban Waters Initiative to direct funding more holistically to benefit project outcomes, on the California Bay-Delta to find more integrated solutions, with the U.S. Department of Agriculture on ways to address stormwater runoff and nonpoint source pollution, with states to establish total daily maximum loads (TMDLs) in the Chesapeake Bay, and with states and federal agencies to coordinate funding for the Mississippi Nutrient Management Program for targeted pollution reduction outcomes. Refreshing the Clean Water Act provides an opportunity to work with states and others on nonpoint source pollution reduction within a watershed context.

KEYNOTE ADDRESS

Mr. G. Tracy Mehan, III, a principal with The Cadmus Group, delivered the keynote address to focus attention on "Public-Private Partnerships: The Good, the Bad, and the Untested." Pointing to Garrett Hardin's classic 1968 essay, "The Tragedy of the Commons," he pointed out that the traditional binary choice between regulation or complete privatization, when people fail to work for the common good but rather seek to maximize their personal gain, is giving way to new models and more collaborative approaches, such as that proposed by Elinor Ostrom of Indiana University. This Nobel laureate for economics said that the **new models are collectives or commons that encourage self-monitoring norms of behavior, sophisticated rules for decision making, resource management, and enforcement mechanisms based on the principle that what you can take out of the commons (place) is a function of what you put into it. The larger the geographic scale, however, the more difficult it is to govern these norms, behaviors, and rules. The true challenge** we face **today**, Mr. Mehan stated, is

"managing ourselves" – the issue of governance. Market-based solutions are not necessarily the answer. Public-private partnerships may be a more worthy approach in an era of a growing economy and population. Such partnerships enable everyone to have a say about the rules. This fits with the American inclination to form associations for all kinds of purposes. We Americans have a genius for voluntarism and collaboration; we should draw on this strength, said Mr. Mehan, as we **seek collaborative ventures to improve the quality of our water resources in our watersheds**. Self-governance through associations also promotes monitoring of abuses and conflict resolution over sanctions, which in turn suggests a continued role for government.

There are many successful examples of public-private partnerships between traditional water resources entities and others: citizens, businesses, homeowners, military bases, woodlot owners, ranchers, foresters, and farmers at a watershed scale, e.g.:

- The Milwaukee Metropolitan Sewerage District (MMSD) (http://v3.mmsd.com and http://v3.mmsd.com/Sustainbility.aspx), where a utility took the lead, with the assistance of a university professor (facilitator) for stakeholder consultation and deliberation and the Milwaukee Regional Partnership and a grant from the local Joyce Foundation for watershed governance in six sub-watersheds – to address urban wet weather issues under the Clean Water Act. Plagued by releases of massive amounts of wastewater during big-storm events resulting from infrastructure design that allowed sewage and stormwater to convey via the same pipes to treatment plants – a problem when the pipes overflowed into receiving waters (Lake Michigan), thus causing wastewater to disrupt biological treatment processes and to close beaches. MMSD decided to pursue a collaborative land-based "green" infrastructure approach to watershed management to reduce flow coming from stormwater and nonpoint sources, specifically to restore water quality in six sub-watersheds and to issue a watershed-based permit to control both point- and non-point source pollution across several municipal jurisdictions. Capital cost-savings have been achieved through green and grey infrastructure approaches for stormwater control and best management practices for agricultural nonpoint source pollution reduction: disconnecting downspouts; using rain barrels, vegetated swales, and cisterns; green roofs; urban reforestation; and reducing flow through infiltration, retention, and evapotranspiration at the site level. This "Greenseams" program also involves collaborating with the Conservation Fund to buy and restore floodplains to manage flooding and reduce stormwater flows and with a range of stakeholders – surburban communities, business and agriculture, environmental groups, universities – and applying for grants. One result is the formation in 2008 of the "Sweet Water Trust" in southeast Wisconsin to focus on integrated water resources management and to implement regional Watershed Restoration Plans in each sub-watershed aimed at promoting ecological benefits, leveraging funding, reaching out to agriculture interests, and recommending policies and investments in support of sustainable outcomes. This example **suggests a new non**governmental organization: a voluntary public-private, not-for-profit partnership for the purpose of improving land use practices.
- The Chicago Wilderness (<u>http://www.chicagowilderness.org</u>) is an alliance of over 240 members interested in protecting and restoring biodiversity in urban, suburban, and rural areas in/around the metropolitan Chicago region. It plays a role to raise awareness/educate about nature, healthy ecosystems, biological resources (especially prairie landscapes), increase public participation and stewardship, build alliances among diverse constituencies, share information and best management practices, and facilitate applied natural and social science research.

- The Great Rivers Land Trust (GRLT) (<u>http://www.greatriverslandtrust.com</u>) is working to preserve open space and habitat in the Mississippi watershed in the Alton, Illinois area north of St. Louis, Missouri. The GRLT has a partnership with the American Farmland Trust and the Illinois American Water (a local water utility) – a partnership initiated by government but implemented by locals – which funded efforts to establish a point-nonpoint source trading program to address the difference in costs for end-of-pipe water treatment with landfilling and land-based best management practices control sediment runoff and discharge of sediments back into the Mississippi River in the Piasa Creek Watershed. Adding the local Soil and Water Conservation District to the partnership enabled agreements to be reached with local farmers to reduce sedimentation; by the end of the contractual agreement, 6,600 tons/year of sediments were eliminated. The point is that partnerships among a host of actors – local governments, farmers, transportation departments, real estate developers, and industrial and municipal actors, who actually are the traditional big dischargers – can make a difference in reducing sedimentation and stormwater runoff.
- The Potomac Conservancy is working to protect the Potomac and Chesapeake Bay watersheds through acquisition of easements on 11,000 acres in the upper reaches of these watersheds for stormwater control with the help of local governments and through aligned water quality objectives and control of emerging contaminants with stakeholders in the entire region.

Mr. Mehan's bottom-line point is that **it is necessary to "reinvent the watershed as a social reality" across diverse actors who share water issues and aims through diverse communications and networking technologies.** Public-private **partnerships** provide one example and indeed **may be a necessity. The examples provided above work because a strong sense of place unites efforts and stimulates a collective intelligence for action.** As Wallace Stegner said, "If you don't know where you are, you don't know who you are." A place denotes where people are born, grow up, work, and die; places shape individuals, families, neighborhoods, and communities. This provides a solid foundation for thoughtful action and agreement. It stimulates a collective genius for effective governance. Our challenge is to see and hear the poetry in **collective partnerships in iconic places throughout America**.

Additional case studies of public-private partnerships in significant American watersheds provide shared visions, lessons learned, instances of the role of "pathfinders," and potentially replicable models for successful and new water approaches and solutions.

PANEL PRESENTATIONS

<u>Panel 1</u> – *Meeting the President's Chesapeake Bay Protection and Restoration Executive Order* – introduced the notion that efforts to protect and restore the Chesapeake Bay can be enhanced by concerted collaboration across federal agencies and the contribution of the private sector. Alex Beehler, former *Acting Under Secretary for Installations and Environment in the U.S.* **Department of Defense**, moderated a discussion among those with both public and private sector experience noted below. The discussion was timely in the face of the recent *Presidential Executive Order 13508 (May 12, 2009) on the Chesapeake Bay Protection and Restoration (http://edocket.access.gpo.gov/2009/pdf/E9-11547.pdf)* that calls for shared federal leadership for the benefit of one of America's treasured ecosystems led by the U.S. Environmental Protection Agency. Progress to date in and on the Bay can be improved.

- Mr. Charles J. Fox, Senior Advisor to the Chesapeake Bay Program in the U.S. Environmental Protection Agency, noted that the EPA and Chesapeake Bay team are focused on water quality to meet quantitative goals for pollution reduction of contaminants such as nitrous oxide, phosphorous, and sediments and governance issues. Whereas we may have achieved an A+ grade for controlling wastewater, a B for managing air sources, and a C for agricultural waste, we are getting a D heading toward an F grade on urban and suburban runoff given increasing growth and development. This time the effort is focusing on collaboration with signatory states to the Chesapeake Bay Agreement to set a TMDL standard for the entire Bay and develop enforceable implementation plans with accountability programs to achieve rigorous and binding standards for pollution reduction/control and urban/suburban runoff within a watershed context. This revitalized focus involves a combined land and water strategy with states and agricultural interests. New thinking is needed on mechanisms to regulate or monitor for clean water.
- Mr. Donald Schregardus, Deputy Assistant Secretary for Environment, U.S. **Department of the Navy**, spoke about how the Department of Defense (DOD) is engaged in steps to improve the Chesapeake Bay, in collaboration with other federal agencies, to set goals and objectives, and has a Strategic Action Plan for installation management across the military services consistent with national goals and specific targets to improve water quality and sustain ecosystems in the Bay. Using the U.S. Navy as an example, he recounted how the Navy (and other services) is (are) working with state governments and local communities. Goals include targets to minimize a net increase in nonpoint source pollution, particularly stormwater nutrients and solids in pipes of Navy facilities. The services want to **lead by example** and recently co-hosted a summit with EPA to discuss stormwater management on federal properties in concert with the Departments of the Interior and the Agriculture, who are large landholders. For instance, a new policy requires the services to meet the ESA 438 mandates in all construction activities. The services are collaborating on doing installation-wide assessments to collect relevant installation-specific data on their lands (e.g., about stormwater management practices) for display in a GIS-based information system. EPA will use these data to determine baseline pollutant loadings for meeting TMDL requirements. The data will also support decisions for project investments, project priorities, and use of nonstructural strategies to manage properties and reduce contaminant loadings. Federal-state implementation plans will facilitate planning, budgeting, and tracking investments and results of interventions for facilities and land management and conservation practices on military property. The DOD and Department of the Interior (DOI) will identify specific overlapping lands they manage for coordinated land management practices. The Federal Action Plan is due in September 2010 with an annual progress report due in 2012; specific waste allocation and facility-specific load allocations should be set by 2010 and 2011, respectively.
- Mr. Dan Nees, Director of the Chesapeake Fund, spoke about market-based opportunities and mechanisms that go beyond federal and state regulation to achieve water quality/pollution reduction and ecosystem management targets. The heart of the problem can be financing (or the lack of funds). The private sector can help fill the gap between funds needed and funds available. The Chesapeake Fund supports reduction of nutrients in the Chesapeake Bay in concert with other non-governmental organizations such as the World Resources Institute. The Fund desires to establish a system of markets and public-private partnerships, which is supported by the 2009 Executive Order on the Chesapeake Bay Protection and Restoration. Clearly, the voluntary compliance with standards/targets approach has not worked; the private

sector is thus stepping in to compel action and accountability to reduce TMDLs where it counts and in transparent ways. For example, the Fund has supported the state of Maryland in creating a system of accountability so as to know how money is spent and the difference it makes. This system will provide a way to monitor and provide oversight. Accountability, transparency, and oversight are the three underpinnings of this public-private partnership. Whereas government sets the targets and parameters for water quality improvements, the private sector partner identifies and funds opportunities for real demonstrations to make limited resources go a long way.

Questions & Answers (Q&A)

- Q (*Lynn Scarlett, Environmental Defense Fund*): Noted that the current regulatory structure is not aligned to support prevention of pollution versus treatment. What steps can we take to facilitate greening, for instance, in this regulatory context? How are the effects of climate change being factored into government planning and thinking?
 - A (*Chuck Fox*): Municipal runoff should be seen as a point source of pollution but urban runoff generally is seen as a nonpoint source. We can define the source more specifically for permitting; they currently do not reflect runoff. We need to be more precise in permitting for MS4 municipal areas (this is largely done by the states) and look at the contribution and accountability of big box stores. We also have to adapt how we monitor, adapt, and permit impervious areas; maybe we need a 95% (vs. current 90%) infiltration standard for projects and to compare hydrologic profiles pre-development vs. post-development.
 - A (*Donald Schregardus*): We need to budget around load allocations. We need incentives and disincentives to manage stormwater effectively. We need cost-effective ways to reduce loads by 40%. Good examples help; such as the Navy boot camp in Chicago (Great Lakes) where a new training building has a system to capture 100% of the rain and a collection pond for rain overflow over two inches.
- Q: There is a nutrient trading theme in the new Cardin bill [Senator Cardin of Maryland introduced legislation to reauthorize the Chesapeake Bay cleanup in the 2009 Chesapeake Bay Ecosystem Restoration Act of 2009]. What is your perspective on this?
 - A (*Dan Nees*): The bill has become more prescriptive. We agree that water quality trading has the potential to reduce costs but I get nervous when we try to codify programs for water quality when we don't know how they work. North Carolina has some incipient examples. The new Executive Order will toughen the current system of accountability even if we don't move to water quality trading, and the Cardin bill will reinforce this.
 - A (*Chuck Fox*): We didn't think that we had a lot to trade, but now we have some headroom in that states can earn credits; the Executive Order is a way to provide states with capacity and transparency. But we need a system of transparency and accountability so that we create a program with audit activities. There is a lot of potential for us to get more rigorous; let's think about this.
- Q: What does the individual farmer see in terms of load allocations?
 - A (*Chuck Fox*): Farmers say that they do not get credit for what they do in models to predict how the Bay will respond in terms of TMDLs. The model is actually used for broad decisions regarding ultimate allocations of nitrogen

phosphate; it doesn't get down to the farm level. But for permitting or a trading system to work, we must get down to a more specific level for pointand nonpoint sources of nutrients in our permitting. It's the future of the national program.

- Q (Ad*am Krantz, Clean Water Alliance*): We are concerned about how aggressive EPA is becoming in implementing nonpoint source standards. The states may not be able to ramp up fast enough, forcing EPA to step in. What counsel would you give us regarding our worries?
 - A (*Chuck Fox*): The worries are about additional controls that will be imposed for point sources. We have ultimate pound (load) reductions that we must achieve. If states rely on a load allocation that we don't think is credible, yes, we will issue permits with targets. EPA and the states have to work together to ensure that WHIPs (Wildlife Habitat Incentive Programs) meet the test.

Panel 2 – The Mississippi River: The Systems Approach: A Grassroots *Perspective* – explored a collaborative grassroots initiative on the Mississippi River system that is building community water awareness that in turn is creating local advocacy for system improvements. The moderator, Patrick McGinnis, Water Resources Team Leader for The Horinko Group, noted that each of the panelists works for water across spatial, cultural, organizational, and jurisdictional boundaries at a grassroots level. This enables them to examine how citizens and communities are engaged with water, provides real lessons learned about collaboration, and signals a call for broader civic engagement to raise popular awareness about water. Tackling short-term objectives with a variety of partners built the confidence and energy to tackle long-term goals for a region located near the center of the Mississippi River Basin 30 minutes north of St. Louis. The region - referred to as the "Riverbend" - is a natural confluence where the Mississippi, Illinois, and Missouri Rivers come together to link 13 adjacent riverside municipalities with a combined population of 100,000 on the Illinois side of the Mississippi River. Keys to success of activities in and for the Riverbend is **a core** group of civic leaders as conveners, the Riverbend Growth Association as coordinator, the Lewis and Clark Community College in Godfrey, IL, the Great Rivers Land Trust, and the U.S. Army Corps of Engineers St. Louis District and the Corps' Rivers Project field office in West Alton, MO as primary supporting enablers. This group of municipal, federal, economic development, and community services are promoting collaborative water resource development, tourism, and public open space stewardship in the region. The story shows an interesting evolution of deep interest and thought among a collection of public and private sector entities with a shared vision and dedicated commitment and strategic alignment of their resources.

- 1. The context (real events) provided opportunities:
 - a. Real needs and projects, i.e.,
 - i. Replacement and expansion of a major lock and dam (Melvin Price Locks and Dam #26) and an attendant effort to rehabilitate floodplain habitats;
 - ii. Completion of a visually striking highway bridge over the Mississippi River linking Missouri and Illinois;
 - b. The relocation of much of the infrastructure and half of the residents in Grafton, IL after the 1993 flood;
 - c. Learning from collaborative experience, which bred a mindset and skill set for collaboration and building consensus; a savvy about sharing resources and working with federal and state water program managers, non-government

organizations, and elected officials to get things done; and targeting and achieving tangible results;

- d. Persistence and active outreach.
- 2. Opportunities to collaborate to boost tourism and promote environmental stewardship produced many impactful and popular outcomes, including raised awareness of the importance of the river's natural capital:
 - a. A 150-ft. tall confluence viewing tower;
 - b. Appreciation for how the 33-mile national scenic byway (the length of the Riverbend) provides opportunities for river-themed activities and education, a river recreation destination, and nature-based tourism, which led to a dedicated marketing effort for recreation, tourism, and research;
 - c. Establishment of a riverside nature center by the Audubon Society at the U.S. Army Corps of Engineers at the Riverlands Migratory Bird Sanctuary, a 3,500-acre bottomland restoration effort adjacent to the Mel Price Lock and Dam, (<u>http://www.greatriverroad.com/Cities/wAlton/Riverlands.htm</u>);
 - d. A variety of water-resource themes festivals and events to promote awareness about the Riverbend region and environmental needs and achievements;
 - e. Renewed commitment to tackle difficult infrastructure challenges, as evidenced by:
 - i. A strong presence by the private-sector American Water Company, based in New Jersey, that provides high-quality water and wastewater services in 35 states and Manitoba and Ontario, Canada (http://www.amwater.com);
 - ii. A new state-of-the-art water plant;
 - iii. A national call center;
 - iv. A major national water testing laboratory;
 - v. The activities of two communities in the Riverbend area to tackle combined sewer overflow challenges, new treatment facilities, storm detention measures, and to construct a wetland treatment site.
- **3. Committed and active outreach and public education**, and the "**water thread**" that connected people and plans/actions gave a popular voice to the story of the Riverbend and the three Great Rivers, raised awareness of the interdependence of water and other resources, and strengthened appreciation for the potential of the Rivers' natural capital, and the alignment of goals across institutions. Success has bred attention and more success.

4. Deepening recognition that sustained success is influenced by the overall health of the watershed, and the grounding of watershed decisions in solid information.

5. The water thread connecting key stakeholders is enhancing the relationship between people and water to build livable communities in the Riverbend area, and is **moving planning and management from a reactive bent toward seizing opportunities and reinforcing strategic thinking and planning**. The result is that the Riverbend is becoming a major water center for water resource management and research anchored by a freshwater research institution – the National Great Rivers Research and Education Center (NGRREC) – a partnership among Lewis and Clark Community College, the University of Illinois at Urbana-Champaign, and the Illinois Natural History Survey to "advance our understanding of the great rivers and their floodplains and watershed for the purpose of sustaining the plan, animal and human

communities that depend upon them (<u>www.ngrrec.org</u>)." NGRREC selected a site on Corps property leased from the U.S. Army Corps of Engineers in Alton, IL, downstream of the Melvin Price Locks and Dam to build a new river ecology field station: the Confluence Field Station

(<u>http://www.conferences.uiuc.edu/mississippiriver/docs/cfs_brochure.pdf</u>), which is slated to open in October 2010

(http://environmentalalmanac.blogspot.com/2010/01/confluence-field-station-willenhance.html).

- Dr. Dale Chapman, Chairman, the National Great Rivers Research and Education Center (NGRREC) and President of Lewis and Clark Community **College**, expressed that the success in the Riverbend area is due to **the concept of a** powerful idea. It attracts capital. NGRREC and the University of Illinois Confluence Field Station speak with one voice. Another element of success is **thoughtful marketing** – the ability to market in concert with the state of Illinois; it is attracting international attention. The University of Illinois recognized the commitment of Lewis and Clark Community College to community engagement and believed that the College could serve as a hub for an entrepreneurial initiative. Early on, Dale Chapman took some good advice from Conoco Phillips executives, whom he approached to offer technical training: understand the culture of the organization you are collaborating with and try to **think strategically about the relationship**. This thinking led to a strategic partnership with the U.S. Army Corps of Engineers to promote a conclave to study the Mississippi River within a sustainability context, that then led to an aquatic research and social science research program at Lewis and Clark Community College under NGRREC, that led to a remarkable college internship program that over the last seven years has drawn students from as far away as the University of Hawaii, and a green design orientation (the new Confluence Field Station features green design and will be LEED certified). NGRREC's conferences and symposia around a **shared focus on** system sustainability and livable communities and our success at outreach and collaboration convinced the University of Illinois to collaborate on a \$30 million state-of-the-art research center and Platinum-level green building at the hub of the Riverbend area at the Mel Price Lock and Dam on Corps property. This project has enjoyed the full support of the State of Illinois and the federal legislative body in Illinois. The research center will host scientists, researchers, and students via grants, contracts, a reimbursable support for others agreements, and the assistance of partnering institutions. Success is a function of a powerful idea and the ability to work with public and private partners strategically. One of the primary objectives is to enable research to inform a systems approach to water resource management, public water awareness, and public policy.
- Dr. Richard Warner, Director, Office of Sustainability, University of Illinois at Urbana-Champaign. The University of Illinois is a large land grant college. UIUC aspires to be a leader that can address critical issues like the food-water nexus globally and in an interdisciplinary way across colleges and departments (e.g., Agriculture, Engineering, Information Technology) and through real-time visioning and modeling. The UIUC's backyard is a unique setting. Although the university is a top research institution, it continues to face the challenge of reconnecting at the community level to bring the power of its research capacity on issues that effect communities. When the university looked around for where to locate its next field research station, the institution realized that the value of the Riverbend setting was not just the setting but the staying power of a place-based group of people. The university was able to create a hybrid through its land grant Extension Service and a progressive community college partner and turn it into a community-based foundation that gave us a lot more

opportunities and a competitive edge. A key is **the university's ability to connect to real concerns and systems, which gives it staying powe**r.

- Mr. Dan Whyte, Vice President, Government and Stakeholder Relations, Brookfield Renewable Power, spoke about his global asset management company that owns Class A commercial property in America and Austria, and Chile for example, including ports, transmission systems, hydroelectric facilities, and renewable energy credits. Brookfield Renewable Power acts globally but tries to think locally. They consider themselves neighbors and members of a community and thus are committed to local assets and pay attention to building sustainable river communities that can/do make a living on the river. For example, they try to substitute vegetable-based oils for petroleum-based oils in moving parts on hydropower infrastructure. They see the Riverbend area as an asset between Minneapolis and Louisiana, where they have a presence, and thus have invested in capital programs and have provided a scholarship fund with NGRREC.
- Ms. Anne Lewis, Founder, America's Waterway, reiterated key themes of Panel 2 presenters, i.e.,
 - A powerful idea can bring people together and enable them to collaborate;
 - Strategic alliances are important because they connect people to missions and create opportunities for collaboration;
 - Land-grant institutions have the value of being tied to local resources, but there is also an issue of size;
 - The importance of living on the water and being close to your assets (and its culture, heritage, economic development ties) to give people a stake in the future of the river. It is important to look at the people on the river as an asset, to capitalize on an American's ability to create associations, as a fundamental part of the American fabric.
 - A sense of place is an important part of civic engagement a starting point for civic action.
 - Technology is enabling people to engage and network collectively across boundaries. Ms. Lewis' organization, America's Waterway, partners with AmericaSpeaks to use small groups and technology to engage people along the Mississippi River to form a constituency for the whole River and to leverage that social capital on the River's behalf. Public advocacy and social networking tools are being used by groups for advocacy, educating, and informing.
 - This technology can facilitate environmental planning between the federal government, industry and others, for example on the Chesapeake Bay and with Riverbend communities for the Mississippi River.
 - Collaboration tools and technologies go beyond conflict resolution to facilitate innovation and breakthrough thinking with a focus on the future and the entire system.
- Q&A:
 - Q (*Beth Pitrolo, U.S. Army Corps of Engineers, St. Louis District*): Given that we know that your success was a function of a diverse group in the confluence project, a shared goal, community engagement, and an entrepreneurial spirit, what were your biggest impediments?
 - A (*Pat McGinnis*): It was working across institutional boundaries. Someone at the table has to be willing to go beyond the call, acting as translator and convener. You have to be willing to get outside your lane in a good way and hold the idea above your own organization's self-interest. Balancing the needs of the collaborative enterprise with the traditional interests of your own

organization can place individuals involved at some risk from those within your organization who simply can't connect the dots and see the big picture beyond immediate near-term organizational interests.

- A (*Dale Chapman*): Establishing trust. Strategic alignment of our missions.
- A (*Dan Whyte*): Avoid perceived barriers. Optics are important; they need to look welcoming. The behavior landscape needs to invite capital development.
- A (*Anne Lewis*): Committing funds to specific locations on the river (vs. the whole river confluence).
- Q: (*Lynn Scarlett, Environmental Defense Fund*): Is NGRREC's mission for the whole system, i.e., an integrated research mission, or do you identify different research sets?
 - A (*Dale Chapman*): We have the ability to access university personnel on particular research issues and can generate research topics. Also, we are in conversation with people at the policy level to get a sense of the research needed. Our public awareness/education role helps too. We try to find ways to engage all types of entities on research and then find ways to reveal the work to inform management and policy. We engage a fair forum on what we need to research and where we have disagreements.
- Q: (*Lynn Scarlett, Environmental Defense Fund*): What is the governance mechanism (e.g., cross-jurisdictional governance) to manage the collective, given that you are trying to manage different localized issues?

A (*Pat McGinnis*): Theoretically, IWRM will be the unifying mechanism to work on common issues. People are clamoring for restoration, which too often expresses itself as local placed-based rehabilitation/reclamation projects. We need more attention given to governance and stewardship. Stringing together individual location restoration projects is not enough. We need to think about a stewardship platform to advance restoration using sustainable adaptive approaches. The beginning could be a nesting of restoration efforts within an overarching program of stewardship, utilizing an adaptive management platform that integrates planning and management across Federal private and public land programs in the floodplain. People are searching for unifying mechanisms to work on common aims. I personally think we should use an Environmental Stewardship Community of Practice approach to test drive a networked governance approach. Many of the pieces are already in place.

- Q: How do you export collaboration across natural boundaries?
 - A (*Anne Lewis*): Collaboration is adaptable to different cultures.
 - A (*Dale Chapman*): Identify similar problems that exist across boundaries. Search for good teaching examples for collaboration like the Great Lakes work between the U.S. and Canada.

<u>Panel 3</u> – *The Challenge of Implementing Integrated Water Resources Management in the Federal Sector* – Moderator, Dr. Joe Manous, Team Leader for Future Directions at the U.S. Army Corps of Engineers Institute for Water **Resources**, emphasized that meetings like this can help people learn from each other and work together based on commonalities. The Corps of Engineers is an organization that is trying to change internally to be more collaborative rather than consider "compromise" a bad word or to connote a loss. One of the things that handicaps collaboration and integrated water resources planning and management is that different federal agencies have different visions for water resources management. Organizational culture is important to fostering collaboration and integration. It is impossible to teach people to be good partners; one must plant seeds and engage people. Selfless service to the nation will help shape future organizations in both the public and private sectors. The panelists provided examples of how they are moving collaboratively in the direction of more integrated water resources management.

- Mr. Robert (Bob) Pietrowsky, Director, Institute for Water Resources, U.S. **Army Corps of Engineers**, provided historical context for collaborative problem solving (refer to the PowerPoint presentation: http://thehorinkogroup.org/pubs/Pietrowsky Collaboration Summit 2010.04.13.pdf). Scarcity of resources, to include funding, and population growth in the U.S. and globally imply: work harder and better together to make collaborative decisions. In this respect, the Corps is adopting a role as facilitator to foster holistic and integrated watershed planning and management. Under the leadership of Ms. Ada Benavides, the Corps initiated a series of regional workshops and a national workshop to examine how the federal government can collaborate better with states for water planning with the states in the lead, beginning with **getting the federal** resource agencies to consolidate and share data/information about water and to assist states with research and comprehensive planning. Albeit threatening to some, a national vision may support this aim. IWR is part of an International Center for Integrated Water Resources Management (ICIWaRM) UNESCO of the United Nations, universities, and non-governmental agencies to promote clean water around the world collaboratively. Foreign trade, including the energy-food-water nexus, requires collaboration. Pay attention to sustainability and adapt to climate change. Interagency working groups, such as that which produced USGS Circular 1339 on climate change among the Corps, NOAA, the USGS, and the Bureau of Reclamation within a construct of non-stationarity, are examples of this; get a road show going. Tools to do probabilistic thinking in the face of uncertainty are needed, e.g., risk-informed decision making and communication, knowledge management, and asset management. Some tools exist, like Shared Vision Planning to draw in stakeholders and to work with complex concepts. Define success as integrated and sustainable systems. Leadership must be multidisciplinary and intergovernmental. There must be a culture change in the Corps.
- Dr. Gerry Galloway, Glenn Martin Professor of Engineers, University of Maryland and former Corps of Engineers general officer, volunteered that he is not as pleased with the progress made to date (refer to following PowerPoint presentation: <u>http://thehorinkogroup.org/pubs/G_Galloway_UMD.pdf</u>). The way ahead is to deal with watersheds in a holistic manner rather than piece by piece, sector by sector. This means taking into account effective and balanced flood damage reduction via structural and non-structural solutions, focusing on both water quality and water supply, thinking about sediment management and infrastructural renewal, and addressing both stormwater and flooding all at the same time. Yet there is no good example where integrated water resources management has worked. There are obstacles: the disenfranchised at the lower levels of organizations and society; states and localities fight each others; politics gets in the way; there are silos because no one, especially navigation interests, wants to give up anything; the national approach to dealing with water is ad hoc; federal programs tend to be managed by earmarks. The attempt to bring an entire community together, like in Louisiana, is running into roadblocks even after Hurricane Katrina. What to do? Look at the water box and see who is influencing those in it. **Take the time to educate and** link those who are outside the water box who influence or affect those inside

the box, and involve people who are beyond the box because they don't understand those inside the box (*note*: refer to the PowerPoint presentation for further description of the water box). This will take a comprehensive national water policy that fosters agreement about the direction to head.

Mr. Mike Grimm, Deputy Director, Risk Reduction Agency, Mitigation Directorate, Federal Emergency Management Agency (FEMA) noted the linkage between FEMA mitigation (designed to avoid or reduce losses) and response and recovery operations, which are all brought together in a risk management framework (refer to the PowerPoint presentation:

http://thehorinkogroup.org/pubs/M Grimm FEMA.pdf). There is a responsibility to help people understand what mitigation is, which will involve federal-state coordination to address how people perceive and respond to risks, small to catastrophic, how individual behavior translates into action, and how the federal sector can better influence perception of risk, how public policy should help reduce (vs. subsidize) risk taking. There are obstacles: the lack of a federal policy to discourage people from living and building in hazardous areas; the many agencies at odds regarding hazardous risk because of their respective missions; 55 agencies with implementing regulations that imply doing things differently; different perspectives about what constitutes acceptable risk and about loss avoidance; the public expectation for a free ride from the federal government. (refer to FEMA's Executive Order 11988 on Floodplain Management at http://www.fema.gov/plan/prevent/floodplain/eo_11988.shtm).

As moderator, Dr. Joe Manous summarized a common theme: a vision (national or federal) is needed to know where we are going, where we ought to go. Organizational issues involve risk, systems, and leadership. Despite the aim to influence those outside the water box, those on the outside have no common guiding vision to promote well-being. Dr. Manous asked attendees, "How do we find a common way to frame our discussion about our water future?"

- Q&A:
 - Q: A top-down approach has to give way to a grassroots approach. How do we promote individual commitment to become water stewards rather than water users?
 - A (*Gerry Galloway*): The answer is education. We need a technological and educational revolution among the top (e.g., financiers) and at the bottom among youth who understand. It will take time and will be difficult. We've done it with littering and recycling.
 - Comment (*Donald Hey, The Wetlands Initiative*): We allow people to build in high-risk areas and have taken responsibility away from the individual. We should put an emergency spillway on every levee. The current policy externalizes the costs; we lack the courage to change this.
 - Response (*Bob Pietrowsky*): We need to change the expectations people have.
 - Response (*Gerry Galloway*): We need to do what the Chief of Engineers said: get people to think about levees as reducing risk, not necessarily protecting people 100% all the time.
 - Q (*Lynn Scarlett, Environmental Defense Fund*): The press for change runs toward low-cost options, such as more insurance. Change comes down to political will. Do you see political and governing institutional arrangements that could set us down the right path?

- A (*Mike Grimm*): We won't change things politically. There is a lot of conflict regarding our recommendations for change; comments on our report are all over the place.
- Comment (*Lynn Scarlett, Environmental Defense Fund*): States will step in if they perceive that their citizens are vulnerable.
- A (*Gerry Galloway*): California passed the "Stupid Decision Bill" that holds the community that puts its citizens at risk liable, not the developer. The only thing that will allow progress is a BRAC-like "take it or leave it" process.

CONCLUSION AND PATH FORWARD

Marianne Horinko, President of The Horinko Group (THG) and host for the Summit, noted that the group heard a lot of things about governance models, about innovation, and about passion. "What we heard today provides encouragement to those working more collaboratively across sectors and levels of government for sustainable outcomes," she said. She added, "This is the beginning of a continuing dialogue. We plan to follow up with *Water Salons* to focus on particular issues for smarter approaches and solutions." We have several key take-aways from today we can build on:

- ✤ INCENTIVE AND DEINCENTIVE VERSUS REGULATION, STRIKING THE RIGHT BALANCE
- ✤ A BOTTOM-UP VERSUS TOP-DOWN APPROACH TO SHAPING SYSTEM PRIORITIES
- NEED FOR A GRASSROOTS EFFORTS TO MOVE CITIZENS FROM BEING WATER USERS TO WATER STEWARDS
- ✤ WE LEARNED FROM PRACTITIONERS THAT INTEGRATED WATER RESOURCE MANAGEMENT BEGINS WITH LEARNING TO WORK ACROSS INSTITUTIONAL BARRIERS TOWARD SOME COMMON ALIGNMENT OF EFFORT AND PURPOSE
- ✤ ADDITIONAL DISCUSSION IS NEEDED ON GOVERNANCE AND ADAPTIVE MANAGEMENT STRATEGIES THAT COULD LEAD TO BREAKTHROUGHS REGARDING SYSTEM STEWARDSHIP
- ✤ WE HEARD ABOUT THE OVERALL IMPORTANCE OF CIVIC ENGAGEMENT AND BRINGING MORE OF US INTO THE WATER CONVERSATION
- AND WE HEARD ABOUT BRIDGING SCIENCE AND MANAGEMENT AND THE WISDOM OF HAVING OUR MAJOR LAND GRANT UNIVERSITIES WORKING WITH LOCAL COMMUNITY COLLEGES TO BRING THE POWER OF MAJOR RESEARCH PROGRAMS MORE SQUARELY TO BEAR ON THE LIVABILITY OF OUR COMMUNITIES.

In closing, I want each of you to know that in the upcoming weeks, The Horinko Group will be posting the results of today's Summit. The results of which will shape our upcoming Water Salon series.

I hope to see you at our reception. Thank you for coming.

ATTACHMENT I: FINAL ATTENDEE LIST

Keith Admire Director Natural Resources Conservation Center, National Water Management Center

Shannon Ames Director of Government Affairs Brookfield Renewable Power

Dr. Steve Ashby Director, SMART Program Engineer Research and Development Center U.S. Army Corps of Engineers

Dr. Donna Ayres Senior Consultant The Horinko Group

Alex Beehler Senior Consultant B&D Consulting

Ada Benavides Deputy Director (Civil Works) for Regional Integration Team, South Pacific Division U.S. Army Corps of Engineers

Jennifer Browning Executive Director Biodiversity Project (1 Mississippi)

Dr. Dale Chapman Board Chairman National Great Rivers Research and Education Center

Isaac Chapman Project Coordinator The Horinko Group

Don Clay Senior Consultant Koch Industries, Inc.

Betsy Cody National Water Policy Journalist Congressional Research Office

Claudia Copeland Clean Water Regulations and Funding Congressional Research Office Sarah Davidson International Marine & Freshwater Policy Advisor The Nature Conservancy

Steven Davis Watershed Staff Specialist, Northeastern Area U.S. Forest Service

Tad Davis Deputy Assistant Secretary Environmental Health & Safety U.S. Department of the Army

Michael Deane Executive Director National Association of Water Companies

Mike Demissie Head, Erosion and Sedimentation IL Water Survey

Jon Devine Program Director, Water Natural Resources Defense Council

Alex Echols Director, Special Programs Sand County Foundation

Dick Engberg Technical Director, Water Policy American Water Resource Association

Dr. Beth Fleming Director, Environmental Laboratory Engineer Research and Development Center U.S. Army Corps of Engineers

Charles J. (Chuck) Fox Senior Advisor on the Chesapeake Bay and Anacostia River U.S. Environmental Protection Agency

Angela Freyermuth Outreach & Customer Relations Specialist Rock Island District U.S. Army Corps of Engineers

Dr. Gerry Galloway **Glenn Martinell Professor of Engineers** U of Maryland

Mark Gorman **Policy Analyst** Northeast-Midwest Institute

Sarah Greenberger Legislative Counsel U.S. Senator Ben Cardin's Office

Mike Grimm **Deputy Director Risk Reduction Division Mitigation Directorate** Federal Emergency Management Agency

Malia Hale Director, National Recreation and Water **Resources Campaign** National Wildlife Federation

Donald Hey President The Wetlands Initiative

Joseph Hoffman **Executive Director** Interstate Commission on the Potomac River Water Resources Team Leader Basin

Marianne Horinko President The Horinko Group

Tinka Hyde Director, Office of Enforcement and **Compliance** Assurance U.S. Environmental Protection Agency, Region 5

Chris Kearney President Kearney & Associates

Marc Kodack Senior Fellow Army Environmental Policy Institute U.S. Department of the Army

Adam Krantz **VP**, **Programs** Clean Water Alliance

Gena Leathers Global Technology Leader Water/Wastewater, Landfills **Environmental Technology Center** The Dow Chemical Company

Anne Lewis Founder America's Waterway

Dr. Joe Manous **Future Directions Team Leader** Institute for Water Resources U.S. Army Corps of Engineers

Col Robert Mayberry Fellow U.S. Army War College Army Environmental Policy Institute

Brendan McGinnis Water Division Chief The Horinko Group

Patrick McGinnis The Horinko Group

G. Tracy Mehan III Principal The Cadmus Group

Erik Meyers VP, Sustainable Programs The Conservation Fund

Lisa Morales Senior Advisor for Strategic Partnerships U.S. Army Corps of Engineers HQ

Dan Nees Director Chesapeake Bay Fund

Bridget O' Grady Policy and Legislative Affairs Manager Association of State Drinking Water Administrators

Justin Oberst Managing Partner The Horinko Group

Darrell Osterhoudt Regulatory Affairs Manager Association of State Drinking Water Administrators

Robert Pietrowsky Director Institute for Water Resources U.S. Army Corps of Engineers

Beth Pitrolo Assistant District Attorney Office of Counsel, St. Louis District U.S. Army Corps of Engineers

Natalie Roy Executive Director Clean Water Network

Terrence (Rock) Salt Principal Deputy Assistant Secretary of the Army for Civil Works U.S. Army Corps of Engineers

Lynn Scarlett Senior Consultant Environmental Defense Fund

Donald Schregardus Deputy Assistant Secretary, Environment U.S. Department of the Navy

Risa Shimoda East Coast Representative River Management Society

Peter Silva Assistant Administrator Office of Water U.S. Environmental Protection Agency

Dr. Richard (Rip) Sparks Director of Research The National Great Rivers Research and Education Center *William (Art) Spratlin* Director, Water, Wetlands and Pesticides U.S. Environmental Protection Agency, Region 7

Mayes Stark Senior Technical Consultant, Water Georgia-Pacific LLC

Robert Summers Deputy Secretary Maryland Department of the Environment

Paul Swartz Executive Director Susquehanna River Basin Commission

Dr. Marc Taylor Vice Chairman River Network

Shana Udvardy Director, Flood Management Policy River Restoration Program American Rivers

Tom Wall Special Assignment Chesapeake Bay U.S. Environmental Protection Agency

Dr. Richard Warner Director, Office of Sustainability U of Illinois at Urbana-Champaign

Dan Whyte VP, Government & Stakeholder Relations Brookfield Renewable Power

Tom Wolfe Executive Director Northeast-Midwest Institute

Julie Ziino Congressional Liaison St. Louis District U.S. Army Corps of Engineers

ATTACHMENT II: SUMMIT AGENDA

Sustaining Our Water Resources Through Collaboration Summit Connecting Water Leaders Across Watersheds April 13, 2010 Washington, DC

Registration12:00 – 12:45pmWelcome, Objectives, Introductions1:00 – 1:05pmMaster Facilitator1:00 – 1:05pm

<u>Master Facilitator</u> Marianne L. Horinko, President, The Horinko Group

Opening Remarks

Terrence (Rock) Salt, Principal Deputy Assistant Secretary of the Army (Civil Works), U.S. Army Corps of Engineers

Peter Silva, Assistant Administrator, Office of Water, U.S. Environmental Protection Agency

Keynote Address – *Public-Private Partnerships: The Good, the Bad, and the Untested* 1:30 – 2:00pm

<u>Speaker</u> G. Tracy Mehan III, Principal, The Cadmus Group

Panel One – Meeting the President's Chesapeake Bay Protection andRestoration Executive Order2:00 – 3:00pm

<u>Moderator</u> Alex Beehler Former Acting Under Secretary, Installations & Environment, U.S. Department of Defense

<u>Panelists</u> Charles J. (Chuck) Fox Senior Advisor to the Chesapeake Bay Program, U.S. EPA

Donald Schregardus Deputy Assistant Secretary, Environment, U.S. Department of the Navy

Dan Nees, Director, Chesapeake Bay Fund

Break

3:00 – 3:15pm

Panel Two – The Mississippi River: The Systems Approach; A Grassroots Perspective 3:15 – 4:15pm

1:05 – 1:30pm

<u>Moderator</u> Patrick McGinnis, Water Resources Team Leader, The Horinko Group

Panelists

Dr. Dale Chapman, Chairman, The National Great Rivers Research and Education Center

Dr. Richard Warner, Director, Office of Sustainability, University of Illinois at Urbana-Champaign

Dan Whyte, Vice President, Government and Stakeholder Relations, Brookfield Renewable Power

Anne Lewis, Founder, America's Waterway

Panel Three – The Challenge of Implementing Integrated Water ResourcesManagement in the Federal Sector4:15 – 5:15pm

<u>Moderator</u>

Dr. Joe Manous, Future Directions, Institute for Water Resources, U.S. Army Corps of Engineers

<u>Panelists</u> Bob Pietrowsky, Director, Institute for Water Resources, U.S. Army Corps of Engineers

Dr. Gerald Galloway, Professor, University of Maryland

Mike Grimm, Deputy Director, Risk Reduction Division, Mitigation Directorate, Federal Emergency Management Agency

The Path Forward

5:15 – 5:30pm

<u>Master Facilitator</u> Marianne Horinko, President, The Horinko Group

Reception

5:30 – 7:00pm

ATTACHMENT III: WATER SALONS

Too often, interested individuals gather to discuss a seemingly complex or intractable problem with some of the pieces missing: the unique subject matter experts, the focused agenda, the creative thinker, a sufficient amount of time, the incentives to take a perception of a situation to the point where action can be taken concertedly toward resolution, or at least sensible next steps toward an actionable outcome.

This comfortable setting infused with the right amount of preparatory work is necessary to ground an enriching and productive exchange. The Horinko Group will create this setting for success by hosting what we refer to as a *Water Salon* – a targeted group convened to examine the complexities of water in ways that foster the energy for practical problem solving and innovation. With subject matter experts lending their diverse perspectives, a facilitator to keep the group on target, the use of collaboration tools, and a summary of the proceedings to capture insights and new ideas, we will ensure this roundtable discussion drives towards solutions and approaches for an actionable path forward.

The Horinko Group's Water Division launches its series of *Water Salons* as a continuation of the dialogue initiated at the April 13 Summit, *Sustaining Our Water Resources Through Collaboration*. We will host a different group of water resources professionals each quarter to define a problem or opportunity meriting deeper thought, creative problem solving, and careful planning. These quarterly Water Salons will introduce a new idea or approach to addressing a range of pressing issues in need of further exploration. Our group will facilitate the discussion through a well-designed meeting process to produce a clear problem statement and path forward for addressing the specific water issue.

2010 WATER SALON SERIES

If you or your organization would like to participate in a current salon we have scheduled, or if there is a topic of interest that you feel warrants a Water Salon focus, please contact Brendan McGinnis at bmcginnis@thehorinkogroup.org. Sponsorship opportunities are available as well.

<u>The Evolution of Water Planning and Decision Making: A Closer Look</u> Special Guest: Dr. Gerald E. Galloway, retired U.S. Army Corps of Engineers Brigadier General June 2010 Washington, DC

The Horinko Group's *Water Salons* series will launch on June 14, 2010 with a presentation by retired U.S. Army Corps of Engineers Brigadier General, Dr. Gerry Galloway. The inaugural *Water Salon* will build on the capstone chapter he authored in a book recently published by the Corps' Institute for Water Resources (IWR), *The Evolution of Water Resource Planning and Decision Making*, a collection of essays edited by Clifford S. Russell and Duane D. Baumann under the sponsorship of IWR's Maass-White Series.

Dr. Galloway will focus on a number of key concepts from his writing, including: the implementation of adaptive management; defining the role of the public; unplumbing federal water policy, legislation, and coordination; and, acknowledging the private sector.

<u>Addressing Water Issues and Finding Common Direction through a Social Capital</u> <u>Framework</u> Special Guest: Dr. Stephen P. Gasteyer, Assistant Professor of Sociology, Michigan State University August 2010 Washington, DC

The Horinko Group's Water Division presents the second installment in the 2010 Water Salon Series with an exploration of a new model for assessing system water issues through a "social capital" framework. Dr. Stephen P. Gasteyer, Assistant Professor of Sociology at Michigan State University offers a framework for sustainable and secure water resources management. In his article entitled "Building Bridges: Community-based Social Networks for Sustainable and Secure Water Management" (published in the *Water Resources Update* by the Universities Council on Water Resources, Issue 127, February 24, 2004, pp. 31-40), Dr. Gasteyer touches on the power of social networking and the value of two variables in a systems model – Human Capital and Social Capital – in addition to Natural Capital and Financial/Built Capital.

The Horinko Group will consider how this model can be applied to analyze water problems and needs and guide efforts for civic engagement and improving popular water resource awareness. How social capital can be used to raise awareness and advocacy for water resources issues and problem-solving approaches, as well as the resources available to do so will be addressed.

<u>Securing a Future for our Aquatic Ecosystems: Investing in Natural Capital to foster Livable</u> <u>Communities</u> Special Guests: Dr. Dale Chapman, Founding Member of the Illinois Community College Sustainability Network; Dr. Richard Warner, Director, Office of Sustainability, University of Illinois at Urbana-Champaign October 2010 Hosted at The National Great Rivers Research and Education Center Field Station Alton, IL

Our Nation's water systems – the Chesapeake Bay, Great Lakes, Everglades, Mississippi River, Gulf region, Columbia River – provide the perfect context for examining how bayside, lakeside, riverside, and gulfside communities work effectively toward sustainable water outcomes. A number of efforts are underway to protect and restore these vast and critical ecosystems. Federal partners are joining with regional, state, and local pathfinders to address storm detection, catchment plans, low-impact development, and protection of open space. Major local investments are being made to reconnect waterside "gateway" communities to their water heritage in order to improve their water position, bolster their quality of life, and diversify their economies for a more sustainable water future.

Community Colleges are deeply rooted in the community and are trusted local institutions. Major Land Grant Universities like the University of Illinois can bring the power of the University's Research Program to bear on the livability of watershed communities and help local leaders discover a sustainable path forward. These systems and opportunities are ripe for a Water Salon to stimulate and focus action to create new pathways forward.