



*The Johnson Foundation Environmental Forum
Working Session #2: Examining U.S. Freshwater Systems and
Services - Infrastructure and the Built Environment*

May 20-22, 2009

Wingspread Conference Center, Racine WI

Meeting Highlights

Background

The Johnson Foundation Environmental Forum (Forum) is designed to focus national attention on how the U.S. manages freshwater resources and services. Through a series of in-depth forums, The Johnson Foundation is working to build a platform of broad understanding, collaboration and cooperation around priorities for addressing the challenges that threaten our nation's freshwater resources and the health of our communities. The Forum will bring visibility to the complex issues facing the nation's freshwater resources, illuminate possible solutions and catalyze a wide range of actions that together will result in change.

A cornerstone of the Environmental Forum will be The Johnson Foundation Freshwater Summit, to be held on June 8 and 9, 2010, at the historic Wingspread Conference Center. At the Summit, approximately 30 national leaders will convene to deliberate and highlight the priority goals the U.S. must meet to attain freshwater resilience by 2025. A national call to action on freshwater is expected to be issued at the end of the meeting.

To ensure that the deliberations at the Freshwater Summit are based upon the best possible information and options, The Johnson Foundation is convening a series of working sessions comprised of eminent scientists, policy makers, and practitioners of diverse perspectives. The outcomes of these sessions will inform discussions at the Summit and build the platform for creating a national agenda. The first session, "Impacts of Climate Change on Freshwater Resources and Services," focused on understanding the

available science and relevant expertise at the intersection of climate change and freshwater resources. Participants explored what we know and where the gaps are in our understanding of the challenges emerging for freshwater resources and how climate change does or does not exacerbate them.

The outcomes of the first working session informed the Johnson Foundation's determination of which freshwater issues are particularly urgent and ripe for our nation's leaders to address in the coming years. The balance of this document provides highlights from Working Session #2, "Examining U.S. Freshwater Systems and Services – Infrastructure and the Built Environment." Future working sessions will concentrate on additional priority topics including water and agriculture, and water and energy.

Working Session #2 Overview

Working Session #2, Examining U.S. Freshwater Systems and Services – Infrastructure and the Built Environment, focused on what it will take to achieve resilient water systems in the built environment, specifically the infrastructure systems and services that support our urban and suburban areas in the U.S. A diverse group of practitioners participated in the meeting, representing municipal, federal, NGO, private sector and academic perspectives from all regions of the country. Participants were asked to work together to develop options for future water infrastructure and services in the U.S. The discussion was framed by an acknowledgement that it is important to take into consideration water quality, public health needs, and water quantity, as well as ecosystem services and the energy needed to fuel the water sector. The discussion was specifically focused on achieving the following objectives:

- Clarify our understanding of the challenges to U.S. freshwater systems and services that are associated with urban infrastructure and the built environment;
- Identify key elements of a more resilient vision for freshwater systems and services relative to the built environment; and
- Identify key elements of a national agenda for creating more resilient water infrastructure and services.

The meeting program and list of participants are included in Attachments A and B, respectively.

Summary of Meeting Outcomes

Working Session #2 increased understanding of the challenges we face and distilled important insights on solutions through the thoughtful exchange of this diverse group. The group found significant common ground among their views on urgent needs and

ripe opportunities for improving water quality and reducing the negative impacts of our urban infrastructure and built environment on freshwater systems and services. Meeting participants expressed broad agreement on a number of priority needs, while also generating a number of other important outcomes.

Priority Needs

- Upgrade and redesign our urban drinking water, wastewater and stormwater infrastructure using innovative strategies and technologies (e.g., environmental management systems, context-sensitive solutions, environmental site design, low impact development or green infrastructure) and revamped environmental standards that address the water quality and quantity problems affecting many of the nation's cities (e.g., contaminated tap water, CSOs, polluted runoff, flooding).
- Expand and improve real-time monitoring and assessment of water quality to understand and communicate the costs and benefits of new and innovative mitigation approaches, designs and technologies accurately.
- Encourage full-cost pricing schemes that reflect the actual value of water – volume used, capital and operating costs of delivery, treatment, management; and externalities associated with water use (e.g., ecosystem services and impacts) – while protecting America's freshwater resources and keeping water affordable for low-income households .
- Integrate drinking water, wastewater and stormwater services to facilitate the pursuit of comprehensive and cost-effective management approaches.
- Break down institutional barriers that inhibit innovation and rapid change in addressing priorities, while applying creative thinking and enhanced collaboration to overcome other barriers.
- Emphasize and advocate long-term thinking and vision on freshwater issues by leaders at the national, state and local levels.
- Identify, promote and implement messages and mechanisms to catalyze widespread behavior change in the ways consumers use water in all sectors of society, including underscoring the essential links between water and the health of the nation's residents, economy, communities, and the environment.
- Disseminate information about existing successful models from around the U.S.

Other Important Outcomes / Needs

- Participants from all sectors committed to specific actions to accelerate the pace of change toward more resilient water systems and services. (see Attachment C)
- Identification of examples of successful urban water infrastructure innovation and resilience in the U.S. and internationally to promote as models.

- Enhanced understanding of best practices in water policy, conservation, re-use, and stormwater management with links to climate change goals and adaptation needs.
- Establishment of aspirational metrics that communicate freshwater goals in a meaningful and engaging way that motivates consumers, policymakers, etc.

The results of Working Session #2 will inform a framework for actionable steps that The Johnson Foundation will carry forward into the additional working sessions and the Summit.

This document is intended to serve as a tool for sharing the content and results of the discussions at Working Session #2 with others who did not have the opportunity to participate in this gathering and for moving the national dialogue forward on these critical issues. The meeting highlights are organized around the following themes:

- Understanding the Problems We Face
- Freshwater Essentials for Creating Healthy, Safe and Resilient Communities
- Reframing the End Goal
- Exploring the Forces of Change
- Priority Actions for Achieving for More Resilient Water Policies and Practices

Understanding the Problems We Face

To initiate the deliberations, several meeting participants offered opening perspectives on the challenges to and opportunities for resilient water systems and services. The presentations and ensuing discussions revealed the shared view that the U.S. is facing a range of significant and mounting problems due to aging and inadequate wastewater, stormwater and drinking water infrastructure in our urban and suburban areas. The status quo, if not altered soon, will pose increasingly acute public health, economic and environmental risks. Specific problems associated with water infrastructure and the built environment discussed during Work Session 2 include:

- Runoff (urban stormwater and agricultural) is the leading cause of freshwater pollution in many parts of the country. Urban storm sewer systems often carry untreated sanitary sewage that leaks into storm sewers from failing sanitary sewer infrastructure.
- Aging water infrastructure faces significant infiltration and exfiltration challenges, thus exacerbating pollution and public health concerns tied to storm events.
- The hardening of our landscape and the encasement of tributary streams into storm sewers and/or cemented channels has disrupted local hydrologic and

ecologic regimes and eliminated public access to surface waters in most urban settings.

- Increasingly frequent and intense storm/flood events, which may be attributable to climate change, are exceeding the capacity of existing systems. For example, increased storm intensity will increase the frequency and severity of combined sewer overflows (CSOs), a major water quality problem in older cities with combined sanitary and stormwater sewers.
- Short-term financial concerns are compromising long-term planning needs, and institutional barriers often block innovative solutions.
- Many cities and towns continue to design renovation and expansion of their water infrastructure to old standards, rather than implementing new standards that drive innovation and better environmental outcomes. Large-scale centralization of sewage treatment facilities is energy intensive, capital intensive, and frequently shifts water downstream or into saltwater estuaries, destabilizing the local hydrologic regime.
- Water pricing schemes do not reflect the real cost of water services, and frequently create perverse incentives for decisions and behavior that amplify and perpetuate problems.
- Source controls at the manufacturing level are insufficient to prevent the introduction of a wide array of compounds that are potentially harmful to the environment and human health.
- New contaminants such as pharmaceuticals are entering our freshwater systems with worrisome potential health impacts, and creating complex new challenges for scientists, policymakers, public health officials, utilities and water resource managers.
- Climate change is accelerating a variety of problems associated with water systems and services with significant implications for human and ecosystem-health. Given the unknowns associated with climate change, leaders will be called on to make decisions about water systems and services under conditions of uncertainty.
- Water-intensive power generation in many parts of the country compounds freshwater problems.

Water quality challenges are threatening human and ecosystem health in many communities across the U.S. Many regions of the country, East and West of the Mississippi, are experiencing water quantity shortages. There is a dramatic lack of public awareness and understanding about where water comes from and where it goes, which perpetuates detrimental behavior. Research suggests we are meeting and exceeding tipping points for our water resources in some regions, beyond which problems become more complex or irreversible.

The breadth and severity of the freshwater infrastructure challenges facing the U.S. amount to a “freshwater crisis” and there needs to be a greater, more widespread sense of urgency to act quickly. Decision makers and the public must be made aware of the potentially severe human, ecosystem and economic consequences of inaction.

Freshwater Essentials for Creating Healthy, Safe and Resilient Communities

Well-managed water resources are critical to healthy communities, and water policies and practices are key tools for creating livable and resilient communities. In terms of freshwater, this usually means clean sources of drinking water and healthy surface and groundwater systems are available for human consumption, economic use and to ensure the integrity of natural resources. To achieve this, communities need to understand and manage human water use and natural systems in an integrated way. A complex and integrated (“whole systems”) approach to freshwater management and decision-making must consider costs and benefits as well as short and long-term factors for both human and ecosystem needs. The challenge is that people need to see tangible improvements in their own quality of life, community well-being or public health to recognize the value of investing in a public good or natural resource.

Characteristics of integrated, sustainable and resilient water systems at the community level include a system that:

- Is inclusive and affordable to all segments of the community;
- Has a balanced water budget;
- Keeps water as a “local” resource;
- Integrates human settlements and related development with the local hydrological regime;
- Has the capacity to anticipate and adapt effectively to the increased volatility and uncertainty of storm events expected to result from climate change;
- Is increasingly efficient in the way that it utilizes the natural resources it requires to operate, particularly energy resources;
- Has reduced dependence on other systems and resources such as energy; and
- Incorporates the values and input of the community.

Existing examples of alternative and resilient water infrastructure around the country indicate that there is significant opportunity to design, test and implement creative, integrated freshwater management strategies in urban and suburban landscapes. Drawing on the expertise of diverse stakeholders, from builders to environmentalists and others, communities across the nation are developing and implementing environmental site design (ESD) and low-impact development strategies, water reuse, urban agriculture, wetlands management, stream restoration and many other techniques to:

- Reduce runoff;
- Control pollution;
- Increase and improve water supply;
- Reduce costs; and
- Reduce energy demand.

Specific techniques will vary widely depending on the region, climate, and socio-political factors, but the knowledge and technology exist to improve the management of stormwater and wastewater and improve the overall quality of freshwater systems. However, the benefits to freshwater resources alone are unlikely to motivate policy and behavior change. The path forward for addressing the freshwater crisis needs to integrate a range of factors that come together to create healthy and sustainable communities that provide tangible public benefits. The challenge of scaling up best practices currently being implemented by leading communities will require assessing, measuring and documenting the long-term environmental and financial benefits of these approaches and communicating and promoting them on a large scale.

Reframing the End Goal

Well-managed water resources are critical to healthy communities, but our society does not fully value them as a priority asset. Urban dwellers are less likely to understand the significance of well-managed (or poorly managed) water resources because it is something they typically don't see. Many people think of water as a right – something for which they should not have to pay. For these reasons, there is a need to reframe the goal of achieving healthy freshwater systems and services so its monetary and other values are apparent to the public. One way to do this is to communicate and celebrate the value of healthy freshwater systems in ways that relate to people's personal values, such as illustrating how clean and plentiful freshwater is fundamental to safe, healthy and livable communities. Abundant freshwater resources afford America's communities healthy food, schools and homes, access to natural places for recreation, and resilience in the event of disaster.

Exploring the Forces of Change

Almost everything we need to do to address the burgeoning freshwater crisis is being implemented somewhere, but we lack the integrated vision at the national and community level that will allow solutions to propagate exponentially.

The following paths were discussed for accelerating the pace of change toward more sustainable communities through water policies and practices.

- Reforming fragmented institutions and governance structures
- Undertaking legal, regulatory, and policy reforms
- Rationalizing financial structures, pricing and economic factors
- Encouraging innovation in technology and delivery of services
- Mimicking natural systems
- Fostering regionalism & community-wide capacity
- Expanding monitoring and assessment of water quality and water use
- Educating and communicating what's at stake

Institutional/Governance – There is a need to break down institutional barriers and cut across traditional institutional boundaries between water supply and treatment and other public services to create cost/resource sharing opportunities among non-traditional partners. Significant “co-benefits” can result from integrated strategies with transportation, public health, energy, open space and environmental quality, housing and public works departments. Aesthetic improvements, community cohesion, improved health, beneficial traffic and street designs can be achieved while also better managing stormwater drainage. Many of the project opportunities could be accomplished with an integrated approach, but funding barriers need to be removed to repurpose funds (e.g. allow health and transportation funds to be used for green infrastructure). At the municipal level, capital programming has been a successful means of implementing site-specific green infrastructure. Funding structures can be used to incentivize cooperation, alignment and realignment.

The organizational structure of government agencies, universities and professional associations tend to reinforce fragmentation between disciplines and inhibit implementation of innovative approaches to freshwater management. Engineering and designing urban development and redevelopment in new, more sustainable ways requires an integrated approach. The professional practice of water resource engineering needs to be reinvented and updated to integrate multi-disciplinary, integrated solutions for managing an increasingly scarce resource. Federal agencies also need to restructure to break down the silos among the disciplines of flood management, water supply and pollution control all of which currently operate independent of one another.

The integration of drinking, waste and stormwater across institutions (federal, municipal, educational, professional) would force people to think less about where the water comes from and more about how it is being managed at all points in a comprehensive freshwater system. Integrating utilities, incentivizing cooperation among large and small water utilities would help to encourage watershed-scale operations and promote integrated

planning and management to reduce conflict and create regional integration.

Legal and Regulatory Policy – The current political climate is generating several regulatory opportunities in the freshwater arena. The possible reauthorization of the Clean Water Act was identified as an important and galvanizing opportunity to improve regulatory mechanisms, specifically the opportunity to align drinking water and water quality goals, and surface and groundwater regulation, and revitalize a continuous planning process. Encouraging planning at the basin level, area-wide and facility level are key factors, and need to be emphasized through this regulatory framework.

A range of other recent developments indicate that there is a burgeoning opportunity to better integrate the U.S. regulatory framework for freshwater resources. A President’s Council on Water and/or a Water Czar was suggested as a means of developing a more integrated national policy. A new Sustainable Cities Act is under consideration which may create a legal anchor for agencies to function in a more integrated way. EPA as well as environmental advocates are now broadly supporting green infrastructure and water re-use strategies and practices. At the local level, there is widespread need to reevaluate and revise local codes and zoning ordinances to permit implementation of green infrastructure, a task on which a number of cities around the nation are making significant headway. There are significant barriers to water reuse in some states where private property and water law make water capture and reuse illegal, but there is growing interest in the method nevertheless.

Financial structures, pricing and economic factors – The importance of water to all sectors of the economy has been overlooked in the U.S., and the looming crisis has the potential to be a very destabilizing force. Current water pricing structures create perverse incentives that are counterproductive to a healthy freshwater system. Implementation of full-cost pricing structures is required to recover the total costs of water service, including the cost of infrastructure maintenance and upgrades, water processing, environmental externalities, and equity issues. The value of ecosystem services and the cost of their degradation also need to be assessed and integrated into the full cost of water. Assessment and monitoring is another important missing piece needed to justify pricing and economic considerations.

Savings relative to water may be captured or realized through external markets (e.g. energy). The frame of reference is too narrow if we focus on just water. By doing so, solutions become constrained to the traditional model of adding more pipes and staff to address problems. If we look at cost savings through variables such as energy reduction and/or transportation improvements then the savings could be significantly greater. Capital investments should be dealt with differently because of the massive costs associated with them. Existing maintenance costs should be separated out.

Social equity, access and affordability issues need to be addressed through the design of pricing and financial structures. Electric power and natural gas utilities provide models for protecting disadvantaged individuals from steep price increases. There are some cases where there needs to be better pricing that recoups infrastructure replacement and maintenance costs, and that incentivizes conservation. In other cases, affordability and access are more of a problem, and government must play a role in balancing out the costs.

Innovative federal funding mechanisms exist through environment, transportation, energy and housing agencies to align and leverage change. The repurposing of funds intended for different but related uses to pay for green infrastructure, for example, may be a controversial approach in some jurisdictions. However, calculating the costs and price of service based on usage can be compelling and mutually beneficial.

Business Innovation – The role of the private sector is an important factor. If we effectively and objectively measure the financial and environmental benefits of new approaches, and reexamine regulatory barriers, it will incentivize private sector innovation and creativity. There are opportunities to create new businesses, including outsourcing non-core activities of utilities to isolate and recoup costs (e.g. tree planting and maintenance). We also can capitalize on companies setting up their own water systems, creating new markets and alleviating some of the capital strain on municipalities.

Natural Systems – An important goal is to replicate, mimic and restore natural hydrologic systems to the way they functioned pre- development and “concretization” to the greatest extent possible as we design (and redesign) our communities and our freshwater infrastructure. Many of our problems result from the degradation of natural ecosystem services that provide flood control and water treatment (e.g. wetlands). Tax credits can provide incentives for landowners to conserve and preserve ecosystem services on their property.

Regionalism & Community – Land use decisions at the local and regional level need to consider impacts on freshwater resources in a more explicit way as low-density and moderate-density sprawl are all-too-common and severely damage our watersheds.

To accelerate the pace of change, we need leaders who can help citizens envision a better future for their communities and are willing to cross traditional boundaries to understand and integrate respective interests. Vision helps communities overcome institutional and personal inertia when it resonates with values. If citizens are directly involved in creating the vision for the future of their communities, they are more likely to get engaged in achieving that vision. Water policies and practices need to reflect that vision, while incorporating measurable indicators that lead the way to that vision.

Watershed-based planning possesses the potential to integrate site-specific needs across jurisdictions and can create economies of scale and scope. However, local constraints can create challenges in community and/or regional planning processes. There is a need to build capacity at the community level in areas such as adaptive management, revising local codes, understanding the land use-water use connection, the water and energy connection and other critical interrelationships.

Monitoring & Assessment – Monitoring and assessment is a critical component of addressing the freshwater crisis facing the nation. It is needed to help us understand what strategies, techniques and technologies are resulting in positive environmental outcomes. It is critical for building the case for policy and regulatory reform and communicating it effectively with credible evidence. Real-time data are an effective tool for widely promoting awareness and affecting behavior change (e.g., “river-casts” which are used in San Antonio as part of the weather forecast). We still have a lot to learn about what works and would benefit from application of metrics, benchmarks and new technologies. Metrics can help us to manage and monitor resources, and achieve the goals that people care about like reducing water-borne disease, protecting human health, and reducing carbon footprints. For example, better data are needed to quantify embedded water value on a regional basis and link it to the carbon footprint so that we can capitalize on national carbon reduction requirements. Livability indicators tied to water will also help reinforce the move toward sustainability.

As metrics are developed, it is important to emphasize regional differentiation, as we are not looking for a one-size fits all solution. Rather we need the analytical tools to identify regionally appropriate solutions. At the same time, we all benefit from overarching standards that can effectively transcend regional differences.

Education and Communication – There is a need to identify models and success stories that are scalable, and disseminate and replicate those models (pricing, governance, green infrastructure, etc.). The message needs to link to issues that people care about like good health, clean air, and climate. It also needs to help people understand what source water is and how it can be polluted as well as protected. The message (e.g., “*smart management of America’s freshwater wealth*”) can be communicated effectively through existing social networks and communications channels (schools, churches, master gardeners, community radio).

Priority Actions for Achieving for More Resilient Water Policies and Practices

Participants recognized the significant opportunity presented by the investments coming out of the American Recovery and Reinvestment Act and a political climate emphasizing long-term infrastructure improvements and addressing environmental concerns. It is critical to seize this opportunity to get it right. Specific ideas were suggested for acting on

the opportunities that exist to accelerate change toward *a cleaner, healthier and better life for all by responsible regeneration and smart management of America's water wealth*. Participants identified actions at the national, regional, state and organizational level that would support the implementation of the vision and principles reflected in the deliberations.

Develop and communicate clear and aspirational metrics – Establish aspirational metrics that set the bar high and communicate freshwater goals in a meaningful and way that motivates consumers, policymakers, etc. The metrics should be couched in layperson's terms that resonate with people's values and household activities/uses so that they raise awareness across a broad spectrum of the public. For example, "all water outputs will be clean enough for our child to drink (because they will)."

Build off existing models – Illuminate real success stories that are compelling. Document success and replicate widely. Look to [Architecture 2030](#) as a model – create Water 2030 as a component of that goal and integrate the principles, tools and metrics into policymaking efforts at the state and federal level.

Shape national-level policy – Take advantage of a favorable administration by strategically targeting important changes at the national policy level such as:

- Reform of the Clean Water Act;
- Integration of water elements into climate legislation;
- Develop a water agenda for the Council on Environmental Quality that pulls together numerous federal agencies, with potential to influence a Presidential directive and actions out of the White House;
- Reform EPA's role and integrate regulatory structures and mechanisms to break down silos;
- Encourage EPA to develop innovative stormwater management and green infrastructure programs and activities as well as best practice guidelines that support implementation of low impact development and other innovative green infrastructure measures throughout the country;
- Integrate water research and development into the role of the government;
- Better integrate the role of U.S. Fish and Wildlife Service and other federal agencies into water systems and services issues; and
- Create trading institutions and banks for stormwater and wetland mitigation.

Increase coordination and capacity at the state level – The role of states is critical on many levels. State conferences, such as those held in Washington and North Carolina, can help fuel focus on the intersection of land and water use, and land and energy use, and integration of surface and groundwater management. How land was used and will be used is critical and the message needs to be strengthened. States may be able to institute state commissions on freshwater issues and reform enabling statutes that govern water

resource allocations and use. States also need to be encouraged to allocate adequate funding for regulatory activities and issue a call to implement full-cost pricing in a way that protects the needs of America's freshwater resources and most vulnerable people.

Integrate water throughout other sectors – The water sector has traditionally been managed independently of other public services, with the aforementioned silos also existing within the water sector itself. The independence of the water sector has led to a wide range of problems because of the lack of due consideration for water impacts associated with other sectors, such as transportation. To affect radical change in the management of freshwater in the U.S. and achieve positive environmental outcomes, other sectors must integrate water considerations into their decision making. For example, water use and impacts should be woven into several of the most prominent issues in the current political landscape – energy, infrastructure, agriculture, economic stimulus.

Attachment C summarizes the set of specific actions identified by Working Session #2 participants to move us closer to the goal of *a cleaner, healthier and better life for all by responsible regeneration and smart management of America's freshwater wealth.*

In closing, participants encouraged ongoing deliberation and action to help spread knowledge and understanding about the U.S. freshwater crisis and ways in which we can address it. They acknowledged that there are many challenges to address, and recognized the Working Session as an important step in an ongoing effort to tackle them. The group saw the Johnson Foundation Environmental Forum as an opportunity to bring needed attention to freshwater issues and encouraged initiation of national, regional, state and local efforts to expand the conversation around the principles outlined during the Working Session.



THE JOHNSON FOUNDATION
Wingspread Conference Center

MEETING PROGRAM

The Johnson Foundation Environmental Forum

Working Session #2

Examining U.S. Freshwater Systems and Services: Infrastructure and the Built Environment

May 20-22, 2009

Wingspread Conference Center, Racine, WI

Objectives:

- Clarify our understanding of the challenges to U.S. freshwater systems and services that are associated with urban infrastructure and the built environment.
- Develop a common vocabulary to better understand the elements of resilience associated with urban infrastructure and the built environment.
- Identify key elements of a more resilient vision for freshwater systems and services relative to the built environment.
- Identify key elements of a national agenda for creating more resilient water infrastructure and services.

Outcomes:

- Recommendations for more resilient water infrastructure and services.
- Topics to consider for future work sessions.
- Topics to consider for 2010 Forum.

“You never want a serious crisis to go to waste”
Rahm Emanuel

Wednesday, May 20, 2009

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| 12:00 – 2:30 p.m. | Buffet Luncheon for early arrivals | Guest House |
| 3:45 p.m. | Hospitality | Guest House |
| 4:00 p.m. | Plenary Session | The House |
| | <u>Welcome to Wingspread</u> Lynn E. Broaddus, Director, Environment Programs Roger C. Dower, President The Johnson Foundation | |
| 4:15 p.m. | <u>Conference Goals, Agenda Review and Introductions</u> John R. Ehrmann, Facilitator Meridian Institute | |
| 4:30 p.m. | Presentation: <u>Managing Freshwater Systems and Services Resiliently: The Challenges of Infrastructure and the Built Environment</u> <ul style="list-style-type: none">• Stephen P. Allbee, Project Director, Gap Analysis, Municipal Support Division, Office of Wastewater Management, USEPA (15 minutes)• Facilitated group discussion (30 minutes) <p><i>Follow-up questions for the group:</i> What priority issues should be included in a national agenda for addressing the needs of water and wastewater infrastructure in the U.S. so that our freshwater resources will be more resilient?</p> <p><i>Outcome:</i> Preliminary list of priority challenges for further discussion later in the agenda.</p> | |
| 5:15 p.m. | Presentation: <u>Managing Freshwater Systems and Services Resiliently: What Does It Mean to Be Resilient in an Urban Setting?</u> <ul style="list-style-type: none">• Howard Neukrug, Director, Office of Watersheds, City of Philadelphia (15 minutes)• Facilitated group discussion (30 minutes) <p><i>Follow-up question for the group:</i> Where are the opportunities for building more resilient water and wastewater systems? (Regulatory policy, water management policy, technology innovation, institutional change, etc.)</p> <p><i>Outcome:</i> Preliminary input from the group on the priority opportunities that can be discussed in more detail on Day 2.</p> | |
| 6:00 p.m. | <u>Day 1 Wrap-up</u> <ul style="list-style-type: none">• Brief highlights of Day 1• Identify language and definitions that need clarity as they apply to water systems and services (e.g. resilience)• Discussion of priority topics for Day 2 discussion | |
| 6:30 p.m. Wingspread | Hospitality and Optional Tour of Wingspread | |
| 7:15 p.m. | Dinner | |

8:30 p.m. Evening Hospitality Guest House

Thursday, May 21, 2009

Breakfast will be available from 6:30 a.m. to 8:15 a.m. in the Living Room of the Guest House.

The agenda for Day 2 will be refined based on the results of Day 1.

8:30 a.m. Plenary Session The House

Welcome and Review of the Agenda for the Day

John R. Ehrmann, Meridian Institute

8:45 a.m. Presentation: Restoration and Resilience in the West: The Role of Low Impact

Development in Addressing Water Quality, Supply, and Energy

Where are we seeing promise in the efforts underway around the U.S. to address the unique challenges we are facing?

- David Beckman, Senior Attorney and Co-Director, Water Program, Natural Resources Defense Council (15 minutes)
- Facilitated group discussion (30 minutes)

Outcome: Preliminary input from the group on the priority opportunities that can be discussed in more detail throughout the day.

9:30 a.m. Discussion of Priority Issues Identified During Group Discussions
Facilitated group discussion to distill the themes that have been emerging as key topics for deliberation.

10:00 a.m. Break

10:30 a.m. Continued Discussion of Themes

12:00 noon Luncheon The House

12:30 p.m. Breakout Session
Topics to be determined in group deliberation

2:30 p.m. Break

2:45 p.m. Plenary Discussion of the Breakout System Results
Report back to the group

3:45 p.m. Plenary Discussion: Where are the Gaps and Most Pressing Needs?
Facilitated group discussion: *Identifying the key elements of a national agenda for action based on the priority needs for urban infrastructure.*

4:30 p.m. Plenary Discussion: Developing a Vision for Resilient Urban Infrastructure
Facilitated group discussion: *Synthesis of the small group discussions to pull key elements and goals for urban infrastructure that support more resilient freshwater systems.*

5:15 p.m. Day 2 Wrap-up

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|-------------------------|---|-------------|
| discussion | Brief highlights of Day 2 and discussion of priority topics for Day 3 | |
| 5:30 p.m. | Adjourn Day 2/Leisure | |
| 6:30 p.m. Wingspread | Hospitality | |
| 7:00 p.m. | Dinner | |
| 8:00 p.m. | Evening Hospitality | Guest House |
| | <i>Optional: Movie Night: "Poisoned Waters" or other water-related movie.</i> | |

Friday, May 22, 2009

Breakfast will be available from 6:30 a.m. to 8:15 a.m. in the Living Room of the Guest House.

The agenda for Day 3 will be refined based on the results of Day 2.

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| 8:30 a.m. House | Plenary Session | The |
| | <u>Welcome and Review of the Agenda for the Day</u> John R. Ehrmann, Meridian Institute | |
| 8:45 a.m. | <u>Plenary Discussion: Recommendations for Resilient Urban Infrastructure and Freshwater Services</u> Facilitated group discussion: <i>Synthesis of priority recommendations for The Johnson Foundation to advance a national agenda for addressing freshwater challenges in the U.S.</i> | |
| 10:00 a.m. | Break | |
| 10:15 a.m. | <u>Plenary Discussion: Recommendations for Next Steps</u> Facilitated group discussion: <i>What are the key topics that can be addressed in future Wingspread Roundtables or the 2010 Environmental Forum? Who are the key people that need to be invited to make the event successful?</i> | |
| 11:15 a.m. | <u>Wrap-Up and Final Round of Comments</u> John R. Ehrmann, Meridian Institute | |
| 12:00 noon | Conference adjourns | |
| 12:00 p.m. | Buffet Luncheon | Guest House |
| | <i>Transportation departs from the Guest House.</i> | |

Attachment B: List of Participants

Stephen P. Allbee

Project Director, Gap Analysis
Municipal Support Division
Office of Wastewater Management
United States Environmental Protection
Agency
Washington, DC

David Beckman

Senior Attorney
Co-Director, Water Program
Natural Resources Defense Council
Santa Monica, CA

Gordon L. Binder

Senior Fellow
World Wildlife Fund
Washington, DC

Preston D. Cole

Environmental Services Superintendent
Department of Public Works
City of Milwaukee
Milwaukee, WI

Glen T. Daigger

Senior Vice President and Chief
Technology Officer
Civil Infrastructure
CH2M Hill
Englewood, CO

Mary Ann Dickinson

Executive Director
Alliance for Water Efficiency
Chicago, IL

Allan Dietemann

Bellevue, WA

Thomas R. Dunbar

Executive Director
Center for Resilient Cities
Madison, WI

Andrew Fahlund

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Attachment C: Organizational Goals for Affecting Change

Commitments made at the individual, organizational and regional level to advance goals for cleaner, healthier and better life for all by responsible regeneration and smart management of America's water wealth.

Recommendations for the Johnson Foundation

- Key people to invite to the Johnson Foundation Environmental Summit:
 - President Obama
 - Van Jones, Water for All
 - Public health perspectives.
- Link water conversation with cities for the future effort of the International Water Association
- Convene foundations to coordinate, leverage their giving on water issues

Recommendations and Commitments made by other organizations present

- American Institute of Architects, Water 2030 (Gregory)
- American Rivers will focus on water infrastructure as a key priority for the coming year (Fahlund)
- Draft specific requests for water initiatives/green alternatives, coordinate as a multi-stakeholder effort. Approach mayors via conference of mayors (Dietemann)
- Permit demonstration projects that will show how green practices can meet water quality goals more efficiently (Warne)
- Simplify and share messaging: importance of water – link to health, not invisible
- Agree to pursue new partnerships that will help to integrate water into other decision making
- Link technologies as a prototype (Google maps/GIS...) to better communicate data and relevance (Slaughter/MIT students)
- Capitalize on the Sarbanes Oxley requirement that entities must list their Brownfields as liabilities – this may create a possible incentive for change
- Work with local networks to implement public education, behavior change, community awareness, technology innovation etc. (Nichols)
- Prepare a statement of Support for Cities and towns of the future (Schwartz)
- Integrate messages into youth – elementary schools, Jr. master gardeners, etc. (Dunbar)
- More research on performance and costs of green infrastructure; link green infrastructure performance to receiving waters; and improved measuring and monitoring technologies. (Moeller)

