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SAB Science Integration for Decision Making Fact Finding Interviews
January 20, 2010

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Schedule for January 20, 2010

11:00 - 1 2:30	Meeting with Office Director and Management Team , Office of Wastewater Management, EPA East Room 7124
12:45 - 2:00	Meeting with Office Director and Management Team, Office of Groundwater and Drinking Water, EPA East Room 2203
2:15 - 3:30	Meeting with Scientific and Technical Staff, Office of Groundwater and Drinking Water, EPA East Room 2203
3:45 - 5:00	Meeting with Acting Office Director and Management Team, Office of Wetlands, Oceans and Watersheds, EPA East 7129-Rappahannock

Logistics

Please meet in the SAB Staff Offices, Suite 3500, Woodies Building, 1025 F. Street, N.W. at 9:30 for a coordination discussion and arrangements for lunch.

SAB Science Integration for Decision Making Fact-Finding Meeting
Office of Water, Office of Wastewater Management
Meeting with the Office Director and Management Team
EPA East, Conference Room 3500
Call-in Number for SAB subgroup: 866-299-3188, access code 343-9981 and press
the # sign.
January 20, 2009, 11:00 a.m. - 12:30 p.m.

Draft Agenda

Purpose of Interview: to help SAB Committee members learn about the Office of Office of Wastewater Management's current and recent experience with science integration supporting EPA decision making so that the SAB can develop advice to support and/or strengthen Agency science integration efforts.

1. Introductions facilitated by the SAB Staff Office
2. Discussion facilitated by SAB Members
 - Practices for integrating science to support decision making
 - Consideration of public, stakeholder, external scientific, and other input in science assessment
 - Drivers and impediments to implementing past recommendations for science integration
 - Ways program receives feedback on how science is used in decision-making
 - Workforce to support science integration for decision making
3. Identification of any follow-up actions

Planned participants:

EPA Office of Wastewater Management

Mr. James Hanlon, Director

Mr. Randall Hill, Deputy Director

Ms. Sheila E. Frace, Director, Municipal Support Division

Ms. Deborah Nagle, Associate Division Director of the Water Permits Division

SAB Committee on Science Integration Committee Members

Dr. James Johnson, Howard University

Dr. Gary Saylor, University of Tennessee

Dr. Wayne Landis, Western Washington University (by telephone)

Dr. Thomas Theis, University of Illinois at Chicago (by telephone)

SAB Staff Office

Dr. Anthony Maciorowski, Deputy Director

Dr. Angela Nugent, Designated Federal Officer

Biosketches of Managers, Office of Wastewater Management

James A. Hanlon Director Office of Wastewater Management

James A. Hanlon was appointed Director of the Office of Wastewater Management (OWM) in the Office of Water in April 2002. OWM is responsible for the management of the National Pollutant Discharge Elimination System (NPDES) program which permits municipal and industrial wastewater discharges, and the administration of Federal financial and technical assistance for publicly owned wastewater treatment works.

Mr. Hanlon is a career civil servant with over 30 years of government service with the Environmental Protection Agency (EPA). In 1984, he was appointed to the position of Director, Municipal Construction Division, and was responsible for the management of EPA's national construction grants and state revolving fund programs, providing assistance to municipalities in their wastewater infrastructure construction programs. He was appointed to the position of Deputy Director of the Office of Science and Technology in the Office of Water in 1991. In this capacity, Mr. Hanlon was responsible for the scientific and technical basis of the federal water quality and safe drinking water programs. From January 2001 to April 2002, Mr. Hanlon served as Acting Deputy Assistant Administrator for the Office of Water.

Mr. Hanlon earned a Bachelor of Science Degree in Civil Engineering from the University of Illinois and a Master of Business Administration Degree from the University of Chicago. He is also a registered Professional Engineer in the State of Illinois.

Randolph L. ("Randy") Hill

Randy Hill is currently the Deputy Director of EPA's Office of Wastewater Management, where he helps to oversee the management of EPA's clean water permitting and municipal wastewater infrastructure programs. Prior to that, he spent nearly 6 years as Deputy Director of EPA's Office of Civil Enforcement, helping to manage the civil enforcement of all the major environmental statutes except CERCLA. Randy also served from January to June, 2009 as the Acting Principal Deputy Assistant Administrator for Enforcement and Compliance Assurance, with responsibility for all of EPA's enforcement and compliance efforts. Randy also briefly served as Acting Director of EPA's Toxic Release Inventory Program Division in 2003. Randy was selected to EPA's SES Candidate Development Program in 2002, the only attorney in EPA's Office of General Counsel to be selected.

From 1997 to 2003, Randy was an Assistant General Counsel in the Water Law Office of the Office of General Counsel, where he led a team of attorneys responsible for counseling and litigation arising under the Clean Water Act and Safe Drinking Water

Act. Prior to that, he was a staff attorney in the same office for nearly ten years, where he served as the Agency's national legal expert in a number of areas related to the Clean Water Act, Safe Drinking Water Act, and RCRA. He has received a number of Agency honor awards, including two EPA Gold Medals and one EPA Silver Medal.

In 1995, Randy went on sabbatical from EPA to teach at the Tulane University School of Law. He has also taught nearly every summer since 1998 in the environmental law program at the Vermont Law School. Randy is a contributing author on the second edition of the ABA's Clean Water Act handbook and has published several law review articles on topics related to the CWA and RCRA.

Randy obtained his J.D. (1987) and a Master of Public Policy degree (1986) from the University of California, Berkeley and was elected to the Order of the Coif. He obtained his B.A. in Economics and Political Science, with a minor in Computer Science, from the University of California, San Diego and was elected to Phi Beta Kappa; he also attended Dartmouth College. He is a member of the bars of the District of Columbia, California (currently inactive), and the U.S. Supreme Court, as well as several federal circuit courts.

Randy's wife, Kirsten, is a homemaker and social worker. They have a son, Ryan, born in 2000. In addition to work and family life, Randy has been an active member of the Board of Directors of his homeowners' association for nearly fourteen years. He also volunteered as a adult reading tutor for the Literacy Council of Northern Virginia from 1995-2000, and hopes to take up tutoring again when his son is older. In what spare time he has left, he enjoys running, hiking, movies, and all manner of games and puzzles.

Sheila E. Frace
Director, Municipal Support Division

Sheila Frace is Director of the Municipal Support Division within EPA's Office of Water. The Division has broad responsibility for a variety of programs affecting local government management of water infrastructure, including national direction and oversight of the Clean Water State Revolving Loan Funds. The Division's number one priority is helping the nation to achieve sustainable wastewater infrastructure to ensure that the gains of the past 30 years are sustained and surpassed. The Division runs programs and activities to promote effective utility management, promote water efficiency, and help communities enjoy clean and safe water.

These programs range from the Agency's new WaterSense partnership program, to training and technical assistance on key topics affecting the management of wastewater systems (including on-site septic systems), to a variety of water and wastewater funding programs for disadvantaged populations (Mexican Border, Alaskan Native Villages, and (for wastewater only) Native American Tribes.

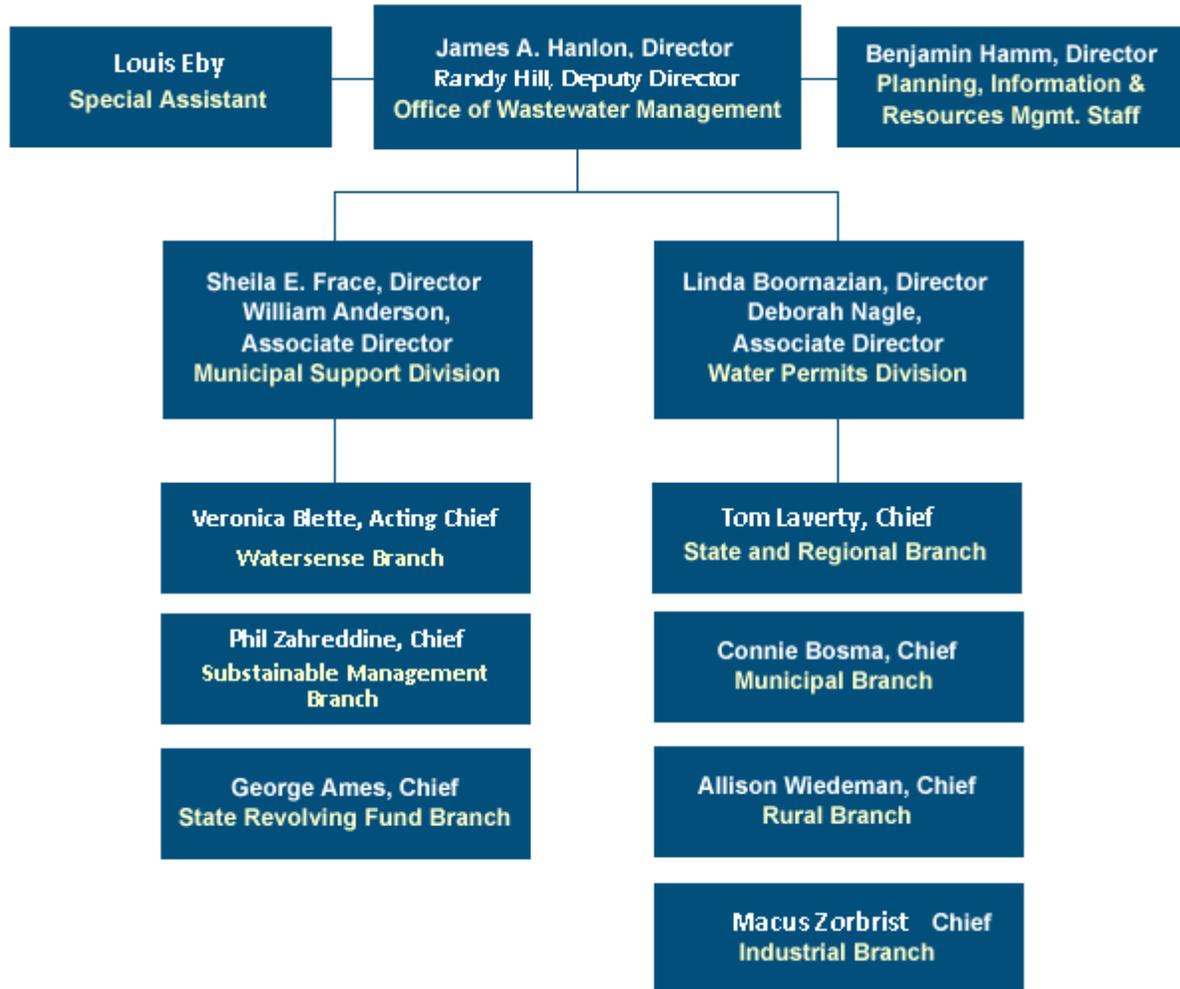
Ms. Frace holds a bachelor's degree in Environmental Engineering from Penn State. She has worked on water issues at EPA for 26 years, earning the Presidential rank of Meritorious Executive in 2004. Her experience includes managing the development of

technology-based regulations for industry, implementing environmental regulations through permitting and enforcement, and encouraging the adoption of non-regulatory solutions through incentives and assistance.

Deborah Nagle

Deborah G. Nagle was worked in a variety of Water Programs at the EPA since 1989 as an environmental engineer and later as a manager. Most significantly, from February 2003 until December 2008 she was the Industrial Branch Chief of the Water Permits Division, where she served as the National Program Manager for all industrial permitting issues related to direct and indirect dischargers, which included the stormwater program. She currently serves as the Associate Division Director of the Water Permits Division. In this capacity, she is responsible for developing national policy, regulations and training material for implementing the National Pollutant Discharge Elimination System (NPDES) permit programs under the Clean Water Act. Prior to working at the EPA, Ms. Nagle served seven years with the US Army Corps of Engineers. She is a 1982 graduate of the U.S. Military Academy at West Point with a degree in engineering and continues to hold the rank of Colonel in the U.S. Army Reserves.

Office of Wastewater Management Organizational Chart



OFFICE OF WASTEWATER MANAGEMENT RESPONSIBILITIES:

The Office of Wastewater (OWM) supports the Federal Water Pollution Control Act and the Clean Water Act by promoting effective and responsible water use, treatment, disposal and management. and by encouraging the protection and restoration of watersheds.

Responsibilities of the Office include:

- directing the National Pollutant Discharge Elimination System (NPDES) permit, pretreatment, and municipal biosolids management (including beneficial use) programs under the Clean Water Act (CWA);
- managing and overseeing water infrastructure financing programs, including the Construction Grants, the Clean Water State Revolving Fund, Indian Setaside and Alaska Native Villages programs, as well as infrastructure assistance to colonias, special populations, and, in coordination with the Office of International Activities (OIA), communities along the Mexican Border;
- providing national leadership for the orderly completion and closeout of the Construction Grants program; promoting efficient water use through education and product review;
- developing and disseminating technical information and assistance on community water resource management, especially to under-served communities;
- evaluating Regional municipal point source abatement and control programs including related water quality and cost effectiveness issues,
- developing program policy, guidance, and regulations for permitting, sludge management, compliance assistance, and pretreatment activities;
- evaluating regional permitting and pretreatment compliance assistance programs;
- managing Clean Water Act Section 106 (State Water Quality Program Grants) and 104(b) (Water Quality Cooperative Agreements) grant programs;
- providing outreach, education, training, coordination, liaison, and information exchange with Regions, States, Indian Tribes, cities, other Federal agencies, Congress, environmental, industrial, citizens' interest groups, international groups, and other nations.

ORGANIZATION: OWM consists of an Immediate Office of the Director, the Water Permits Division (WPD), the Municipal Support Division (MSD) and the Planning, Information and Resources Management Staff (PIRMS).

MUNICIPAL SUPPORT DIVISION. The Municipal Support Division (MSD) conducts activities related to the national management of the construction grants (CG), CWA Indian Set Aside (CWA ISA), special appropriations acts (including needy cities, Mexican Border, Colonias, and Alaska Native Villages) and Clean Water State Revolving Fund (CWSRF) programs, and the ongoing oversight of these assistance programs. The division implements the strategy for successful completion and closeout of the CG program; maintains and regularly updates inventories and cost estimates of existing and needed future municipal wastewater treatment works and capital investments to meet the goals of the CWA; coordinates with the Office of the Inspector General (IG)

on a continuing program of investigations and audits of SRF programs to prevent waste, fraud, and mismanagement; oversees management by the States of the construction grant and CW SRF programs; promotes alternative financing methods for construction and upgrade of environmental infrastructure facilities, financial management techniques, and methods of encouraging "public-private partnerships," and alternative financing schemes for State water quality programs; promotes the beneficial use of biosolids; reviews technologies which deal with infiltration/inflow correction, small alternative wastewater treatment systems, biosolids and toxic management, industrial pretreatment, and secondary treatment; promotes State-based municipal water pollution prevention programs; manages a national outreach and technical assistance program to help small communities and Indian Tribes find the help they need to meet their wastewater treatment needs; manages cooperative agreements/grants that fund the activities of the National Small Flows Clearinghouse, National Environmental Training Center for Small Communities, and national onsite wastewater demonstration projects; manages a national operations and maintenance program for small communities and Indian Tribes; coordinates an EPA effort to incorporate water conservation principles into Agency programs to establish a national ethic of efficient water use, reduce overall water use, and increase reclamation and reuse of wastewater for various applications.

PERMITS DIVISION. The Water Permits Division provides national program direction to the National Pollutant Discharge Elimination System (NPDES) permit, pretreatment, and sewage sludge management programs under sections 401, 402, and 405 of the Clean Water Act, including: development of regulations, policy and guidance, development of national strategies, implementation management, compliance assurance and overview of regional and State operation; develops and coordinates regulations, national policy, priorities and strategies for developing, approving, implementing, modifying and overseeing state NPDES, pretreatment, and sludge management programs; reviews State applications for administration of the NPDES, pretreatment, and sludge management programs and major modifications to approved State programs; provides program direction to the national pretreatment program including local pretreatment program development, review, and implementation; reviews and redesigns the NPDES, pretreatment, and sludge management programs to be responsive to statutory and court ordered mandates and changes in Agency policy; develops model approaches for management of the NPDES program which consider changes in national priorities (such as water quality-based controls and the watershed approach); and develops new and unique policies, methods, procedures, or types of permits for controlling combined sewer overflows, sanitary sewer overflows, run-off of storm water from industry, commerce and cities, confined animal feedlots, mines, and other water pollution sources. The Division also coordinates with the Office of Science and Technology (OST) in the development of national standards for point source controls, indirect dischargers, and sludge use and disposal which are implemented through the NPDES, pretreatment and sludge management programs; provides technical support and training to regions and states for all aspects of the NPDES permit, pretreatment, and sludge management programs; oversees regional and State performance in implementing the NPDES permit, pretreatment, and sludge management programs; develops and coordinates national NPDES policy, priorities and strategies and regulatory changes necessary to reflect the

RCRA and CERCLA responsibilities of the Office of Water; works closely with the ORD to develop, implement and monitor research and development support for NPDES permit, sludge management and pretreatment activities, in cooperation with OST; develops and revises NPDES permit application forms.

PLANNING, INFORMATION AND RESOURCES MANAGEMENT STAFF.

PIRMS serves as the staff office to the Office Director and leads a wide range of administrative functions for the Office. These include matters relating to policy, budget, administration, information management, strategic planning, technology, regulatory development and legislation. The staff also manages the Clean Water Act Section 106 State, Interstate and Tribal water quality grant programs; supports administrative processes such as performance systems, space, training and travel; conducts Federal Managers' Financial Integrity Act (FMFIA) processes; and coordinates the development and negotiation of the Information Collection Budget. Ensures appropriate purchase and maintenance of office equipment including computer workstations and other electronic communications devices.

**Specification Development in the WaterSense Program; Background for SAB
Committee on Science Integration for Decision Making
January 2010**



What is WaterSense?

WaterSense is an ongoing partnership program sponsored by EPA, seeking to protect the future of our nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs, and practices. Generally, products bearing the WaterSense label will:

- Perform as well or better than their less efficient counterparts.
- Be about 20 percent more water-efficient than average products in that category.
- Realize water savings on a national level.
- Provide measurable water savings results.
- Achieve water efficiency through several technology options.
- Be effectively differentiated by the WaterSense label.
- Be independently certified.

In order to be considered for the WaterSense label, products must be tested and certified to meet the criteria in the WaterSense specification for water efficiency and performance.

How does the program select products for specification development?

When identifying and prioritizing products, EPA takes into consideration number of units sold, water savings potential (potential gallons saved nationally), cost effectiveness (dollars per gallon saved), and other relevant characteristics that help EPA conduct an initial screening for candidate products or product categories. Once a product or product category has been identified, the WaterSense team develops a technical and market research report (research report). The technical research focuses on what is currently on the market and how the water efficiency and performance aspects of those existing products work. The market research section of the research report addresses major use sectors, current incentive programs, and influences on the purchasing patterns of the public. This information enables EPA to gauge the potential demand for water-efficient products.

The WaterSense team (including contractors) performs a detailed review of existing and proposed efficiency and performance standards, both in the U.S. (federal, state, local), American National Standards Institute (ANSI) and internationally, for each product and includes this information in the technical and market research report. Whenever possible, the WaterSense team examines the possibility and practicality of adopting existing water efficiency and performance testing methodologies. Therefore, the team includes in the research report the methods currently in place for product efficiency and performance testing, including the costs and limitations.

How are specifications developed?

Developing a WaterSense specification involves establishing specific water efficiency and performance criteria and specific test methodologies necessary to assess conformance

with the requirements in the specification. When the program makes a decision to move forward with a specification for a product, the WaterSense team distributes a notification of intent to appropriate general and industry-sector contacts. Specifically, the notification of intent contains a statement that the WaterSense Program intends to develop a specification for a specific product or product category. In addition, the notification of intent contains water efficiency and performance options that the WaterSense Program is considering for inclusion in the specification and a list of key technical issues that need to be resolved through input from interested parties. The notification of intent also provides an explanation for why WaterSense is moving forward with a specification for the particular product or product category and solicits participation of interested parties in the specification development process. In some cases, the program will need to conduct additional research to answer key questions about the performance of the product. Where possible, this research is conducted in cooperation with manufacturers to achieve program cost savings and buy-in.

The water efficiency and performance criteria and test methodologies are packaged in a draft WaterSense specification and presented to the public for comment. In certain circumstances, EPA may coordinate its specification development process with the efforts of consensus-based standards development groups sponsored by ANSI, American Society of Mechanical Engineers (ASME), or other appropriate organizations. EPA will evaluate the potential for the success of this approach based on the technical focus and anticipated development schedule of any such consensus-based standards development efforts. EPA considers all comments received before issuing a final specification and includes a response to comment document to support the final release.

What sources of information/research are used in the program?

To date, the WaterSense program has not used information and/or research developed by EPA researchers because there is no formal program within the Agency focused on this area. When developing technical and market research reports, the program identifies relevant information through literature searches, participation in industry standard groups, and by asking stakeholders through the notice of intent and draft specification processes. The program has sometimes used information derived from grants funded through the programs. However, looking forward, the program sees a minimal role for grants due to issues with EPA restrictions related to the Agency directly benefiting from grant-funded activities.

Specifically the program has used information from the DOE Energy Information Administration about the uses of water in residential and commercial buildings. We also have relied on industry survey data from market research organizations and trade groups. We also use information from water purveyor studies on water use trends in certain sectors, building types or products.

Scientific Integration into Environmental Decision Making for EPA's 2008 Vessel General Permit

1/12/2009

Background: Under the Clean Water Act (CWA), it is generally unlawful to discharge pollutants into waters of the U.S. except as may be authorized by an NPDES permit issued under the Act. The CWA requires that NPDES permits impose technology-based effluent limitations representing the applicable levels of technology-based control. In addition, under the CWA water quality-based effluent limitations are required where the technology-based limitations are not sufficient to meet applicable water quality standards, including designated uses.

As a result of a 2006 court ruling, thousands of non-recreational vessel owners and operators who were exempt from the Clean Water Act NPDES requirements for the last 35 years for incidental discharges (e.g., ballast water, bilge water) are now subject to NPDES permitting. In response to the ruling, in December 2008, EPA issued the Vessel General Permit (VGP) covering:

- Discharges incidental to the normal operation of a vessel other than ballast water from all commercial vessels 79 feet or longer, except commercial fishing vessels
- Ballast water discharges from all commercial vessels, including all commercial fishing vessels and commercial vessels less than 79 feet.

For additional information on the VGP, please see www.epa.gov/npdes/vessels.

The Vessel General Permit was developed, proposed, and finalized on a compressed schedule (approximately 14 months from start to finish). For EPA, the permit was a first in its kind effort for numerous reasons, including:

- **Scope** - the permit regulates an estimated 70,000 vessels which range from 80 foot tug boats to 1200 foot oil tankers.
- **Novelty** – EPA had no programmatic experience regulating incidental discharges from vessels. While some of the discharges covered by the VGP were already regulated by other federal or state law, many discharge types had no existing limitations.
- **Compressed Schedule** – A large general permit normally requires more than 2 years to develop from start to finish. A new general permit may take up to 6 years to develop.

For these reasons, EPA used and adapted existing scientific information to better understand potential environmental impacts caused from vessel discharges and to develop control measures for these vessel discharges. Furthermore, where detailed information was lacking, the Agency used general scientific/technical theory for refining permit conditions.

Integrating Science: When EPA was first charged with drafting an NPDES permit for incidental discharges, the Agency was operating in an information limited environment. In order to gather additional information, characterize vessel discharges, and develop effluent limits and best management practices, EPA used, among other things:

- Peer Reviewed Journal Articles on topics such as

- Vessel Pollution from certain discharges (e.g., ballast water, anti-foulant hull coatings)
- Environmental impacts caused by pollutants and other constituents expected in those discharges
- The impact of Invasive Species on aquatic ecosystems
- Technologies for mitigating certain pollutants and constituents of concern
- Conference and workshop proceedings
- EPA and other government and international organization reports on topics such as
 - Reports and discharge data for cruise ship and military vessel discharges
 - Reports and analyses on characteristics and impacts of ballast water and other pollutants to US waters
 - Reports on characteristics of US waters
 - International standards, guidelines, and information
- Information from US government databases, particularly in regard to vessel numbers and types, and economics of vessel operations.
- Advice from other federal technical experts (in addition to the contribution of EPA scientists), EPA sought, including
 - Marine Engineers and Architects from the US Maritime Administration (MARAD)
 - Aquatic biologists from the US Coast Guard
- Public submittals, including
 - Information on the number and type of vessels
 - Descriptions of vessel discharges, and how they are generated
 - How vessels conduct operations and address environmental concerns

Many of the sources used in development of the VGP are listed in the attached bibliography (Attachment 1).

When the information was directly comparable, (e.g., cruise ship data on cruise ship graywater discharges), EPA used that data directly to set the effluent limits. Where the information was reasonably comparable (e.g., data from deck runoff on a military vessel compared to deck runoff from a civilian vessel) EPA used the comparable data whenever possible to extrapolate as to what we should expect from the discharge.

Using Science moving Forward: For the next iteration of the VGP (due to be finalized before December, 2013), in addition to utilizing most or all of these sources discussed above, EPA is also convening expert panels to assist in developing the scientific theory for establishing numeric limits for ballast water.

EPA hopes that these panels will further our ability to draft both technology and water quality based effluent limits which are firmly supported by science.

Please contact Dr. Ryan Albert at (202) 564-0763 for additional information.

Attachment 1: Sources used in development of EPA's Vessel General Permit

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**SAB Science Integration for Decision Making Fact-Finding Meeting
Meeting with the Office Director and Management Team, Office of Water, Office of
Ground Water and Drinking Water
EPA East, Conference Room 2203**

**Call-in Number for SAB subgroup: 866-299-3188, access code 343-9981 and press
the # sign.**

January 20, 2009, 12:45 a.m. - 2:00 p.m.

Draft Agenda

Purpose of Interview: to help SAB Committee members learn about the Office of Office of Ground Water and Drinking Water's current and recent experience with science integration supporting EPA decision making so that the SAB can develop advice to support and/or strengthen Agency science integration efforts.

1. Introductions facilitated by the SAB Staff Office
2. Discussion facilitated by SAB Members
 - Practices for integrating science to support decision making
 - Consideration of public, stakeholder, external scientific, and other input in science assessment
 - Drivers and impediments to implementing past recommendations for science integration
 - Ways program receives feedback on how science is used in decision-making
 - Workforce to support science integration for decision making
3. Identification of any follow-up actions

Planned participants:

EPA Office of Ground Water and Drinking Water

Ms. Cynthia Dougherty, Director, Office of Ground Water and Drinking Water

Ms. Pamela Barr, Director, Standards and Risk Management Division

Mr. Steve Heare, Director, Drinking Water Protection Division

SAB Committee on Science Integration Committee Members

Dr. James Johnson, Howard University

Dr. Gary Saylor, University of Tennessee

Dr. Wayne Landis, Western Washington University (by telephone)

Dr. Thomas Theis, University of Illinois at Chicago (by telephone)

SAB Staff Office

Dr. Anthony Maciorowski, Deputy Director

Dr. Angela Nugent, Designated Federal Officer

**SAB Science Integration for Decision Making Fact-Finding Meeting
Meeting with Technical Staff, Office of Water, Office of Ground Water and
Drinking Water**

EPA East, Conference Room 2203

**Call-in Number for SAB subgroup: 866-299-3188, access code 343-9981 and press
the # sign.**

January 20, 2009, 2:15 p.m. - 3:30 p.m.

Draft Agenda

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Planned participants:

EPA Office of Ground Water and Drinking Water

Eric Burneson, Chief, Target Analysis Branch

Jeanne Briskin, Chief, Standards and Risk Reduction Branch

Gregory Carroll, Director, Technical Service Center

Stig Regli, Senior Scientist, Standards and Risk Management Division

SAB Committee on Science Integration Committee Members

Dr. James Johnson, Howard University

Dr. Gary Saylor, University of Tennessee

Dr. Wayne Landis, Western Washington University (by telephone)

Dr. Thomas Theis, University of Illinois at Chicago (by telephone)

SAB Staff Office

Dr. Anthony Maciorowski, Deputy Director

Dr. Angela Nugent, Designated Federal Officer



Understanding the Safe Drinking Water Act



SAFE DRINKING WATER ACT • 1974-2004 • PROTECT OUR HEALTH FROM SOURCE TO TAP

The Safe Drinking Water Act (SDWA) was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply.

The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)

SDWA authorizes the United States Environmental Protection Agency (US EPA) to set national health-

All public water systems must have at least 15 service connections or serve at least 25 people per day for 60 days of the year.

Drinking water standards apply to water systems differently based on their type and size:

Community Water System (there are approximately 54,000) - A public water system that serves the same people year-round. Most residences including homes, apartments, and condominiums in cities, small towns, and mobile home parks are served by Community Water Systems.

Non-Community Water System - A public water system that serves the public but does not serve the same people year-round. There are two types of non-community systems:

Non-Transient Non-Community Water System (there are approximately 20,000) - A noncommunity water system that serves the same people more than six months per year, but not year-round, for example, a school with its own water supply is considered a non-transient system.

Transient non-community water system (there are approximately 89,000) - A non-community water system that serves the public but not the same individuals for more than six months, for example, a rest area or campground may be considered a transient water system.



based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. US EPA, states, and water systems then work together to make sure that these standards are met.

Millions of Americans receive high quality drinking water every day from their public water systems, (which may be publicly or privately owned). Nonetheless, drinking water safety cannot be taken for granted.

There are a number of threats to drinking water: improperly disposed of chemicals; animal wastes; pesticides; human threats; wastes injected underground; and naturally-occurring substances can all contaminate drinking water.

Likewise, drinking water that is not properly treated or disinfected, or which travels through an improperly maintained distribution system, may also pose a health risk.

Originally, SDWA focused primarily on treatment as the means of providing safe drinking water at the tap. The 1996 amendments greatly enhanced the existing law by recognizing source water protection, operator training, funding for water system improvements, and public information as important components of safe drinking water. This approach ensures the quality of drinking water by protecting it from source to tap.

1996 SDWA Amendment Highlights:

Consumer Confidence Reports All community water systems must prepare and distribute annual reports about the water they provide, including information on detected contaminants, possible health effects, and the water's source.

Cost-Benefit Analysis US EPA must conduct a thorough cost-benefit analysis for every new standard to determine whether the benefits of a drinking water standard justify the costs.

Drinking Water State Revolving Fund States can use this fund to help water systems make infrastructure or management improvements or to help systems assess and protect their source water.

Microbial Contaminants and Disinfection Byproducts US EPA is required to strengthen protection for microbial contaminants, including *Cryptosporidium*, while strengthening control over the byproducts of chemical disinfection. The Stage 1 Disinfectants and Disinfection Byproducts Rule and the Interim Enhanced Surface Water Treatment Rule together address these risks.

Operator Certification Water system operators must be certified to ensure that systems are operated safely. US EPA issued guidelines in February 1999 specifying minimum standards for the certification and recertification of the operators of community and non-transient, noncommunity water systems. These guidelines apply to state Operator Certification Programs. All states are currently implementing EPA-approved operator certification programs.

Public Information & Consultation SDWA emphasizes that consumers have a right to know what is in their drinking water, where it comes from, how it is treated, and how to help protect it. US EPA distributes public information materials (through its Safe Drinking Water Hotline, Safewater web site, and Water Resource Center) and holds public meetings, working with states, tribes, water systems, and environmental and civic groups, to encourage public involvement.

Small Water Systems Small water systems are given special consideration and resources under SDWA, to make sure they have the managerial, financial, and technical ability to comply with drinking water standards.

Source Water Assessment Programs Every state must conduct an assessment of its sources of drinking water (rivers, lakes, reservoirs, springs, and ground water wells) to identify significant potential sources of contamination and to determine how susceptible the sources are to these threats.

Roles and Responsibilities:

SDWA applies to every public water system in the United States. There are currently more than 170,000 public water systems providing water to almost all Americans at some time in their lives. The responsibility for making sure these public water systems provide safe drinking water is divided among US EPA, states, tribes, water systems, and the public. SDWA provides a framework in which these parties work together to protect this valuable resource.

US EPA sets national standards for drinking water based on sound science to protect against health risks, considering available technology and costs. These National Primary Drinking Water Regulations set enforceable maximum contaminant levels for particular contaminants in drinking water or required ways to treat water to remove contaminants. Each standard also includes requirements for water systems to test for contaminants in the water to make sure standards are achieved. In addition to setting these standards, US EPA provides guidance, assistance, and public information about drinking water, collects drinking water data, and oversees state drinking water programs.

The most direct oversight of water systems is conducted by state drinking water programs. States can apply to US EPA for "primacy," the authority to implement SDWA within their jurisdictions, if they can show that they will adopt standards at least as stringent as US EPA's and make sure water systems meet these standards. All states and territories, except Wyoming and the District of Columbia, have received primacy. While no Indian tribe has yet applied for and received primacy, four tribes currently receive "treatment as a state" status, and are eligible for



primacy. States, or US EPA acting as a primacy agent, make sure water systems test for contaminants, review plans for water system improvements, conduct on-site inspections and sanitary surveys, provide training and technical assistance, and take action against water systems not meeting standards.

To ensure that drinking water is safe, SDWA sets up multiple barriers against pollution. These barriers include: source water protection, treatment, distribution system integrity, and public information. Public water systems are responsible for ensuring that contaminants in tap water do not exceed the standards. Water systems treat the water, and must test their water frequently for specified contaminants and report the results to states. If a water system is not meeting these standards, it is the water supplier's responsibility to notify its customers. Many water suppliers now are also required to prepare annual reports for their customers. The public is responsible for helping local water suppliers to set priorities, make decisions on funding and system improvements, and establish programs to protect drinking water sources. Water systems across the nation rely on citizen advisory committees, rate boards, volunteers, and civic leaders to actively protect this resource in every community in America.

Protection & Prevention:

Essential components of safe drinking water include protection and prevention. States and water suppliers must conduct assessments of water sources to see where they may be vulnerable to contamination. Water systems may also voluntarily adopt programs to protect their watershed or wellhead, and states can use legal authorities from other laws to prevent pollution. SDWA mandates that states have programs to certify water system operators and make sure that new water systems have the technical, financial, and managerial capacity to provide safe drinking water. SDWA also sets a framework for the Underground Injection Control (UIC) program to control the injection of wastes into ground water. US EPA and states implement the UIC program, which sets standards for safe waste injection practices and bans certain types of injection altogether. All of these programs help prevent the contamination of drinking water.



US EPA sets primary drinking water standards through a three-step process:

First, US EPA identifies contaminants that may adversely affect public health and occur in drinking water with a frequency and at levels that pose a threat to public health. US EPA identifies these contaminants for further study, and determines contaminants to potentially regulate. Second, US EPA determines a maximum contaminant level goal for contaminants it decides to regulate. This goal is the level of a contaminant in drinking water below which there is no known or expected risk to health. These goals allow for a margin of safety. Third, US EPA specifies a maximum contaminant level, the maximum permissible level of a contaminant in drinking water which is delivered to any user of a public water system. These levels are enforceable standards, and are set as close to the goals as feasible. SDWA defines feasible as the level that may be achieved with the use of the best technology, treatment techniques, and other means which US EPA finds (after examination for efficiency under field conditions) are available, taking cost into consideration. When it is not economically or technically feasible to set a maximum level, or when there is no reliable or economic method to detect contaminants in the water, US EPA instead sets a required Treatment Technique which specifies a way to treat the water to remove contaminants.

Setting National Drinking Water Standards:

US EPA sets national standards for tap water which help ensure consistent quality in our nation's water supply. US EPA prioritizes contaminants for potential regulation based on risk and how often they occur in water supplies. (To aid in this effort, certain water systems monitor

for the presence of contaminants for which no national standards currently exist and collect information on their occurrence). US EPA sets a health goal based on risk (including risks to the most sensitive people, e.g., infants, children, pregnant women, the elderly, and the immuno-compromised). US EPA then sets a

legal limit for the contaminant in drinking water or a required treatment technique—this limit or treatment technique is set to be as close to the health goal as

feasible. US EPA also performs a cost-benefit analysis and obtains input from interested parties when setting standards. US EPA is currently evaluating the risks from several specific health concerns, including: microbial contaminants (e.g., *Cryptosporidium*); the byproducts of drinking water disinfection; radon; arsenic; and water systems that don't currently disinfect their water but get it from a potentially vulnerable ground water source.

Funding and Assistance:

US EPA provides grants to implement state drinking water programs, and to help each state set up a special fund to assist public water systems in financing the costs of improvements (called the drinking water state revolving fund). Small water systems are given special consideration, since small systems may have a more difficult time paying for system improvements due to their smaller customer base. Accordingly, US EPA and states provide them with extra assistance (including training and funding) as well as allowing, on a case-by-case basis, alternate water treatments that are less expensive, but still protective of public health.

Compliance and Enforcement:

National drinking water standards are legally enforceable, which means that both US EPA and states can take enforcement actions against water systems not meeting safety standards. US EPA and states may

issue administrative orders, take legal actions, or fine utilities. US EPA and states also work to increase understanding of, and compliance with, standards.

Public Information:

SDWA recognizes that since everyone drinks water, everyone has the right to know what's in it and where it comes from. All water suppliers must notify consumers quickly when there is a serious problem with water quality. Water systems serving the same people year-round must provide annual consumer confidence reports on the source and quality of their tap water. States and US EPA must prepare annual summary reports of water system compliance with drinking water safety standards and make these reports available to the public. The public must have a chance to be involved in developing source water assessment programs, state plans to use drinking water state revolving loan funds, state capacity development plans, and state operator certification programs.



For More Information:

To learn more about the Safe Drinking Water Act or drinking water in general, call the Safe Drinking Water Hotline at 1-800-426-4791, or visit US EPA's Office of Ground Water and Drinking Water web site: www.epa.gov/safewater.



SAB Science Integration for Decision Making Fact-Finding Meeting
Office of Water, Office of Wetlands, Oceans and Watersheds
Meeting with the Office Director and Management Team
EPA East, Conference Room EPA East 7129-Rappahannock
Call-in Number for SAB subgroup: 866-299-3188, access code 343-9981 and press the #
sign.
January 20, 2009, 3:45 a.m. - 5:00 p.m.

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 - Workforce to support science integration for decision making
3. Identification of any follow-up actions

Planned participants:

EPA Office of Wastewater Management

Ms. Suzanne Schwartz, Deputy Director, OWOW
Mr. Darrell Brown, Associate Director, Oceans and Coastal Protection Division
Ms. Lynda Hall, Acting Associate Director, Wetlands Division
Mr. Robert Wood, Acting Associate Director, Assessment and Watershed Protection Division (AWPD)
Mr. Dov Weitman, Chief, Nonpoint Source Control Branch, AWPD
Mr. Susan Holdsworth, Chief, Monitoring Branch, AWPD

SAB Committee on Science Integration Committee Members

Dr. James Johnson, Howard University
Dr. Gary Sayler, University of Tennessee
Dr. Wayne Landis, Western Washington University (by telephone)
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SAB Staff Office

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Available OWOW Management Biosketch

Suzanne Schwartz has served as the Deputy Director of OWOW since April 2007. She has been in the Acting Director role for almost a year. Previously, she was the Director for EPA's Oceans and Coastal Protection Division. In this capacity she was responsible for the Clean Water Act Nation Estuary Program; the regulation of disposal of wastes in the ocean, and other ocean, marine and coastal programs. Since Suzanne joined EPA in 1980 she has worked on a number of water issues in a variety of staff and management positions. Prior to coming to EPA, Suzanne was the founding editor of the Environmental Law Institute's National Wetlands Newsletter. She holds a law degree from Columbia University School of Law.

OWOW Mission and Priorities

The Office of Wetlands, Oceans and Watersheds promotes a watershed approach to manage, protect, and restore the water resources and aquatic ecosystems of our marine and fresh waters. This strategy is based on the premise that water quality and ecosystem problems are best solved at the watershed level and that local citizens play an integral role in achieving clean water goals. Through its many programs, OWOW provides technical and financial assistance and develops regulations and guidance to support the watershed approach.

Office Responsibilities (generally):

- Manage water quality and watershed assessment, inventory, and monitoring programs
- Manage the TMDL & nonpoint source pollution programs
- Implement wetlands protection (through regulatory & cooperative programs) in coordination with the Army Corps of Engineers
- Manage oceans & coastal protection programs (including National Estuary Program)

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<u>OWOW Priorities</u>					
Nonpoint Source (NPS) Pollution	NPS pollution, including such leading sources of water pollution as agriculture, hydromodification and habitat modification, urban runoff in non-MS4 areas, and forestry, is the leading cause of water quality impairment in the United States today.	NPS pollution, particularly from agriculture and stormwater, is a priority for the Administrator			
<i>Priority action: Issue policy paper/ clarification on reasonable assurance</i>	Addresses the need to improve implementation of TMDLs, drive greater accountability for nonpoint sources, and clarify agency position.		Draft policy paper available for AA review Spring 2010. State review/ comment by Early Summer 2010. Finalize by end of FY10		Policy action <ul style="list-style-type: none"> • Set clearer expectations for reasonable assurance demonstration in state and EPA issued TMDLs. • Part of the Agency response to the Pinto Creek decision.
<i>Priority action: Additional targeted funds for NPS control</i>					Budgetary action <ul style="list-style-type: none"> • Increase national NPS program funding to \$600M, with \$400M for the implementation of watershed-based plans to restore impaired waters. • The incremental funds would only be available to those States that have established sufficient accountability systems in their programs to ensure effective implementation such as enforcement authorities or adequate financial incentives (e.g., funds provided through not only 319 but also through State Revolving Loan Funds, USDA,

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					state/local funds, non-profit funding organizations, or property owners) backed by enforceable contracts, that will assure the success of the implementation effort.
Geographic/Place-Based Programs	Focus on particular ecosystem types and/or geographic areas (e.g., Large Aquatic Ecosystems and National Estuary Programs)				
Priority action: <i>National policy for oceans, coasts and Great Lakes</i>	Wide range of coastal and ocean degradation/health issues.	Geographic/placed-based programs; nutrients/NPS pollution; coastal wetlands protection; climate change adaptation	Issuance of USG policy through EO or other mechanism Early 2010. Specific action plan on land-based sources due Early-Mid 2010.	Announcement at release of EO, Action Plans	National policy action <ul style="list-style-type: none"> • Establish national/regional governance structure. • Government-wide implementation plan. • One of the areas of emphasis is land-based sources of pollution.
Priority action: <i>Strengthening wetlands protection at the Federal level</i>	Significant degradation of aquatic resources by some dredge and fill actions permitted under Section 404, as well as resulting impairment of water quality by these actions	Effective implementation and enforcement of CWA	ECP Surface mine permit reviews. December 2009 Policy actions.	Announcement of actions under Mining MOU.	Policy action <ul style="list-style-type: none"> • More assertive use of EPA regulatory authorities; more direct engagement at Senior levels with Army Corps, other involved Agencies, and project proponents; review and revision of existing policies and regulations. • While mining projects surface coal mining and hardrock mining) are most prominent now, there are other large scale projects that also have potential for great harm to aquatic resources.
Priority action: <i>Enhance the Capacity of State and Tribal Wetlands</i>	Addresses the reality that EPA and other Federal Agencies cannot by themselves	Forge new partnerships and re-examine and strengthen existing	Work with a minimum of one State per Region to		Policy action <ul style="list-style-type: none"> • Implementation of the "Enhanced State/Tribal Program" (ESTP) initiative, which combines EPA and State/Tribal

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<i>Programs, in all "core elements", including wetlands monitoring</i>	comprehensively protect and restore the Nation's wetlands resources.	ones	strengthen their Wetland program – FY10		peer technical assistance with more effective Wetlands Program Development Grant (WPDG) assistance, including incentives for longer-term program planning, and new authority to support program implementation activities.
Watershed Approach					
<i>Priority action: Water Quality Planning To Meet 21st Century Challenges</i>	Addresses the fact that States do not have active and cohesive processes to support comprehensive water quality planning and implementation allowing them to target limited state resources more effectively.	Sustainability	.	Announce that EPA will work with the States, regional planning agencies, environmental organizations, and other interested parties (e.g. water resource planning agencies), to revive, reinvigorate, and strengthen the national water quality planning process	Regulatory and Policy action <ul style="list-style-type: none"> Develop policies [and regulations] that will call upon the States to develop and implement new continuous planning process that identify and prioritize existing source of water quality impairments and threats as well as those watersheds that are healthy and in special need of protection.
<i>Priority action: Raise the profile of the Healthy Watersheds Initiative</i>	Addresses the need to greatly improve our efforts to protect and maintain the nation's remaining healthy watersheds so that they do not become impaired.	Forging new partnerships and re-evaluating existing ones		EPA joins with key Federal agencies and leading NGO's to announce a Statement of Intent to Identify, Protect and Conserve Healthy	Policy action <ul style="list-style-type: none"> Work with other Federal agencies (e.g., NRCS, USGS, and FS), as well as leading State organizations (e.g., ASIWPCA) to integrate Healthy Watersheds into state watershed planning and implementation programs, including collaboration on several state pilot projects. Work with other Federal agencies to

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				Watersheds.	coordinate Healthy Watersheds initiative with their programs (e.g., USDA's new water resources management strategy; USGS's National Water Census; FHWA's Eco-logical; and other Federal green infrastructure programs) and to work together with NGO's to promote the development and testing of HW tools (e.g., work with the Nature Conservancy to develop statewide instream flow assessments).
Water Quality Monitoring					
<i>Priority action: Maintain/enhance national assessments; monitoring data</i>	Necessary to assess/demonstrate progress, adaptive management.	Effective implementation and enforcement of CWA	Issuance of National Assessments as they are completed.		Policy action: <ul style="list-style-type: none"> Collaborate with States and other Federal agencies to enhance/streamline data collection and management.
<u>OW-Wide Priorities</u>					
Clarify and work to restore "Waters of the U.S." jurisdiction	Uncertainties and reductions in the aquatic resources protected by CWA, in relation to pre-2001 and 2006 Supreme Court cases.	Effective implementation and enforcement of CWA	Clean Water Restoration Act Legislation and/or guidance or regulatory action to address Waters of the U.S.	Technical assistance to Oberstar – House T&I	Legislative and/or regulatory or policy action <ul style="list-style-type: none"> Efficient/effective administration of existing policies and rules; consideration of administrative actions to strengthen/clarify existing policies; and, support for Congressional legislative efforts to restore historic CWA jurisdiction.
Climate Change					
<i>Regulation of sub-seabed geosequestration of CO2</i>	Environmentally, politically, and legally acceptable disposal of CO2 streams from power plants and other point sources	Address climate change	MMS already developing regulations; MPRSA legislative	Possible connection to climate/energy legislation, etc.	Legislative and regulatory action. <ul style="list-style-type: none"> Regulation under CWA and MPRSA (after statutory fix); consistency with London Protocol. Analogous to OGWDW rule for terrestrial geosequestration under

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	may make the ocean option the most preferable		revisions under review.		SDWA.
<i>Climate Ready Estuaries</i>	Support coastal communities (NEPs) in adapting to climate change.			Opportunities for announcements	Policy action
Invasive Species					
<i>Introduction of aquatic nuisance species by vessels (incl. ballast water and hull fouling)</i>	Invasive species in lakes (including Great Lakes), rivers, estuaries, etc.	Great Lakes; clean water			Regulatory action <ul style="list-style-type: none"> Clean Boating Act rule; Vessel General Permit
Mining (see above)					
Nutrients					
<i>Gulf of Mexico Hypoxia Task Force</i>	State and federal partnership to reduce, mitigate, and control hypoxia in the northern Gulf of Mexico and improve water quality (particularly with regard to nitrogen and phosphorus) in the Mississippi/Atchafalaya River Basins.	Geographic/placed-based programs; nutrients/NPS pollution; coastal wetlands; forging new partnerships and re-evaluating existing ones	Next Task Force meeting is scheduled for March 2010, in which results of gap analysis will be presented and next steps discussed in further detail.		Policy action <ul style="list-style-type: none"> Action Plan calls for federal and State nutrient reduction strategies. EPA and the State of Mississippi have one in draft but more effort will be needed to move the development of these strategies forward. New USDA initiative to improve water quality and overall health of the Mississippi River Basin with a \$320M investment over 4 years targeted at high-priority watersheds based on nutrient discharges in a number of states along the Mississippi and Ohio River basins. Follow-up actions from the Task Force meeting include a "gap analysis," to look at the specific proposal needs and matching them up with potential resources or policy changes - technical assistance,

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					new guidance, and funding - that the federal agencies might be able to accommodate.
Urban Waters	Addresses the need to support urban community efforts to restore waterways, promote safe access, and ensure relevancy to community priorities	Urban Water Initiative: Links directly to the Administrator's themes and considerations of: 1. Increased levels of participation, 2. Protecting vulnerable "at risk" populations, and 3. Promoting transparency	TWG Urban Watershed RFP - goes live January 2010, TWG Social Indicators Measures for Grantees - Final Product due May 2010, GIS EJ/Impairments Project - Fall 2010, UW Logic Model and Measures - Winter 2010	Increased cross program office interaction. Sharing of information for robust program development. Increased participation by Regions.	OCPD role: Build Urban Waters into NEP, LAE, marine debris, Howard/MSI initiatives PCRMS - TWG RFP, RFP Advisory Group for 2011, UW Goals & Measures Piece to include Social Indicators, OWOW Policy and Program Integration, Serve on Executive Committee.

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