NATIONAL DRINKING WATER ADVISORY COUNCIL

MEETING SUMMARY

DECEMBER 14-15, 2006

THE RENAISSANCE WORTHINGTON HOTEL
200 MAIN STREET
FORTH WORTH, TX 76102

PREPARED FOR:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF GROUND WATER AND DRINKING WATER
1201 CONSTITUTION AVENUE, NW
WASHINGTON, DC 20004

JANUARY 2007

Members of the National Drinking Water Advisory Council (NDWAC) in Attendance
Brian Ramaley, Director, Newport News [VA] Waterworks, and Chair of NDWAC
Michael Baker, Chief, Division of Drinking Water and Ground Waters, State of Ohio, EPA
Nancy Beardsley, Director, Drinking Water Program, Maine Dept. of Health Services
Bruce Florquist, Small Systems Consultant, Windsor, CO
Dr. Jeffrey Griffiths, Director, Graduate Programs in Public Health, Tufts University School of Medicine, Boston, MA
Gregg L. Grunenfelder, Assistant Secretary, Division of Environmental Health, Washington State Department of Health
Dr. Rebecca Head, Health Officer & Director, Monroe County Health Dept., Monroe, MI
Dr. Perialwar (Regu) Regunathan, Consultant, Wheaton, IL
David Saddler, Manager, Water/Wastewater and Propane Department, Tohono O'odham Utility Authority, Sells, AZ
Blanca Surgeon, Rural Development Specialist, Rural Community Assistance Corporation, Sante Fe, NM
Jeff Taylor, Deputy Director, Public Utilities Division, City of Houston, TX
Lynn Thorp, National Programs Coordinator, Clean Water Fund, Washington, DC
Brian Wheeler, Executive Director, Toho Water Authority, Kissimmee, FL
John S. Young, Jr., Chief Operating Officer, American Water, Vorhees, NJ

U.S. Environmental Protection Agency Attendees
Pam Barr, Director, Standards and Risk Management Division (SRMD), Office of Ground Water and Drinking Water (OGWDW)
Bill Davis, Water Management Division, Region 6
Jenny Bielanski, Utilities Team Leader, OGWDW
Veronica Blette, Special Assistant to the Director, OGWDW
Cynthia Dougherty, Director, OGWDW
Steve Heare, Director, Drinking Water Protection Division, OGWDW
Nanci Gleb, Deputy Director, OGWDW
Phil Oshida, Deputy Director, SRMD, OGWDW
Designated Federal Officer (DFO)
Clare Donaher, OGWDW (Acting DFO)

Centers for Disease Control and Prevention (CDC) Liaison
Dr. Sharunda Buchanan, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC, Atlanta, GA

Members of the Public
Mary Baiza, Texas State Coordinator, Community Resource Group (CRG), Rural Community Assistance Partnership (RCAP)
Buck Henderson, Texas Commission on Environmental Quality (TCEQ)
Mark Pearson, TX CRG, RCAP
Robert Stewart, Executive Director, RCAP
Sam Wade, Executive Manager, National Rural Water Association (NRWA)

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DECEMBER 2006 MEETING SUMMARY

DAY 1 (December 14th)
(Agenda is found in Appendix A)

OPENING REMARKS

Brian Ramaley opened the meeting and thanked the water system of Midlothian, TX that hosted the group's field trip on December 13th. He noted that the trip was especially interesting because it highlighted the problems that small systems face as a result of rapid population growth (in the span of 10-15 years the system has grown from a very small system to a medium system).

Designated Federal Officer (DFO) Dan Malloy could not attend and designated Clare Donaher as acting DFO for the meeting.

Mr. Ramaley acknowledged the four council members whose terms will expire on December 15, 2006. Three of these members, Nancy Beardsley, Brian Wheeler, and Perialwar (Regu) Regunathan, have completed their first term and all have expressed interest in being re-appointed. Jeff Griffiths, having served on the NDWAC for three terms, cannot be reappointed.

He walked through the meeting's agenda, explaining that of the 17 possible topics identified at the June 2006 NDWAC meeting, eight of them are on the agenda, two have written status reports in the binder, but will not be discussed, and four will be addressed at the Spring 2007 meeting.

Mr. Ramaley introduced Cynthia Dougherty and commended the Office of Ground Water and Drinking Water (OGWDW) for staying on top of a staggering scope of issues.

Cynthia Dougherty emphasized the importance of the NDWAC meetings, stating that the meetings help both EPA and the Council gain a broader understanding of the issues. She added that the field trip was useful, interesting, and highlighted some important issues.

She then welcomed Buck Henderson of the Texas Drinking Water Program and the representatives from technical assistance stakeholders who will be part of a later panel.

The meeting is structured around a series of panel discussions on small system issues and challenges. Five panels are composed of Council members, Office of Ground Water and Drinking Water officials, and other stakeholders. The paper, "Issues Facing Small Drinking Water Systems: New Perspectives on Old Problems," written by Ralph Jones of the Cadmus Group (see Appendix B), framed the small system discussions.

PANEL DISCUSSIONS ON SMALL SYSTEM ISSUES AND CHALLENGES

Mr. Ramaley introduced the Small System Operators Panel members and explained that each panel has been asked to answer a set of questions (see Appendix C) that were derived from the small system issue paper. There are four questions that will be addressed by all panels as well as additional panel-specific questions.

1. Small System Operators

Panel Members: David Saddler, Bruce Florquist

Bruce Florquist explained that while some small systems are able to consolidate and become larger, more efficient systems, other systems do not have that opportunity (because of geography, consumer preference, the desire of the consumers, etc.). The growth of the oil and gas industry in Wyoming has lead to the development of "man camps" (villages of manufactured homes) that strain the communities in which they are located. The water systems in these formerly small communities will have to make changes to meet the increased demand.

He recounted his experience as a key player in the consolidation of the water system of the Town of Sinclair, the Sinclair Oil Corporation, and the City of Rawlins in Wyoming. The consolidation improved service without raising rates. He stressed that consolidation only happens when it is logical and makes economic sense.

David Saddler described his background, explaining that he manages 54 water systems and 30 wastewater systems in Arizona and has been active in the water industry for 35 years. He added that the system visited during the field trip was an atypical small system in that it was a "bedroom community" system on the outskirts of Dallas/Fort Worth.

Addressing the question about the use of Supervisory Control and Data Acquisition Systems (SCADA) as a management tool, he said that SCADA can be an effective monitoring tool, especially in remote areas. He noted that while it cannot replace operators, it can reduce the number of required staff. He stressed that SCADA is a monitoring tool, not a management tool.

Mr. Saddler said he believed that small systems should be eligible for subsidies, noting that many small systems have limited resources. It is difficult, for example, for small systems to pass bond measures. He noted that the majority of federal money goes to large systems, but believes that the resources should be "spread around."

Mr. Saddler predicted that the drinking water industry will change over the next 20 years. When the Safe Drinking Water Act (SDWA) was promulgated, 96 percent of systems were small; now 91 percent are small. Mr. Saddler speculated that this change is an indication that the economies of scale are shifting. However, consolidation is going to take time, especially

because there are many political issues involved in consolidating systems. Mr. Saddler also said that he foresees more for-profit companies trying to take over small systems.

Mr. Saddler said he has seen systems become more responsible and professional in the past ten years and hopes that the National Rural Water Association (NRWA) will help this trend continue into the future. He added that responsible systems will do what they can to handle a changing environment, noting that a system is not necessarily inefficient if it becomes non-compliant when a new regulation is promulgated.

Mr. Florquist noted that despite a general distrust of the federal government on the part of small systems, federal funding is needed to solve some of the problems facing these systems, as they often do not have other sources of funding. He reiterated Mr. Saddler's comment regarding the infeasibility for some systems to consolidate.

Another important issue is the loss of qualified drinking water system operators to higher paid positions. When operators only stay at a small system for 3 or 4 years, systems must constantly be training new operators.

Mr. Saddler said that federal money can be used to install SCADA systems and make other upgrades, but many small systems that need the money do not have the wherewithal to apply for and obtain it.

He went on to cite the issue paper's assertion that treatment for some new regulations (e.g. radionuclides) requires economies of scale. He noted that all system components require economies of scale to be affordable, and small populations often have difficulty implementing new treatment technologies. Federal dollars are most essential to small rural systems that have no other funding options and need subsidies and federal funding to protect public health.

He said he does not believe that subsidies enable systems to be inefficient. Most systems are trying to do the best they can with the resources they have. Many are moving towards developing Capital Improvement Plans (CIPs) and consolidation. In addition, federal funding is not given to poorly managed water systems; systems must demonstrate their financial and managerial capacity before receiving a grant or loan. He noted that there may be a need to restructure some enforcement policies, however. For example, tickets and fines (in reasonable amounts) should be issued for failure to take monthly bacteriological samples.

Blanca Surgeon asked Mr. Florquist and Mr. Saddler to comment on the greatest need of small communities for the next 20 years.

Mr. Florquist replied that more low cost treatment processes need to be identified, as they are critical to small systems. Effective technologies should be available without the system having to pay for an engineer to design a solution for a specific problem. Industry providers need to become more involved to make this a reality.

Mr. Saddler said that he has observed a national movement to educate operators about changing technologies. Operator training is crucial and needs to continue. Because some operators are unable to travel, it is helpful to bring the training to them. In addition, consumers and the local government officials who govern rate increases should be educated about the costs associated with providing safe drinking water.

Given that only two percent of water consumed domestically is used for drinking water, Mr. Saddler proposed having different water standards for non-potable water (e.g., do not treat water used to wash a car). In addition, Mr. Saddler said that bottled water should have the same regulations as tap water.

Ms. Dougherty observed that there are different types of small systems. For some small water systems, providing water is their primary job, but for others, like manufactured housing communities or condominium associations, the delivery of *water safe to drink* is an ancillary concern.

Mr. Saddler stressed communication, training, and education as the keys to responsible water system operation. Many small systems are poorly managed because they do not realize that they are a water system. He emphasized that these systems need to be educated about the importance of providing safe drinking water.

Mr. Ramaley acknowledged Mr. Saddler's suggestion about dual water standards for small systems, adding that this might be more feasible for new systems, as it would be capital-intensive for existing systems to implement. In response to Mr. Florquist's call for less expensive, off-the-shelf technologies, he mentioned that the issue paper called drinking water the most capital-intensive of all utilities or public services. Consumers often do not realize the cost associated with drinking water because of the longevity of the facilities.

Mr. Ramaley said that there is a point at which water systems achieve "critical mass" and have enough customers to generate the revenues needed to sustain the infrastructure. It is important to understand where the breakpoint occurs. He disagreed with the issue paper, which stated that some small systems continue because of "good fortune."

Mr. Ramaley also introduced the issue of fire protection. Larger cities often take for granted the fire protection services that a water system provides. Often, small systems cannot afford to install and maintain the large volume pumps and tanks required for adequate fire protection. Fire prevention is a key provision of municipal water systems, but they cannot provide this protection until they reach a certain size.

Mr. Saddler asserted that the critical mass for a water system is 2,000 service connections and agreed that fire protection is a critical issue for small communities. Fire protection can be a good selling point for restructuring systems, as it can be more easily built into a larger regional system than a small community system. He added that in rural America telephone

service is underwritten by the government, and suggested that the federal government's priorities be reconsidered.

Mr. Ramaley asked about the advantages, other than consolidated oversight, of consolidation for systems separated by five to ten miles and inquired if it is physically possible or economically viable to install pipes between systems this geographically separate.

Mr. Florquist responded that consolidation is a question of the community's needs and desires. In his experience with consolidated systems, one operator supervised multiple systems. He added that if the customers are willing and understand that there is a problem, they will always spend the money to improve the system. If consolidation will improve the system, it is not a hard sell.

Brian Wheeler said that he has been dealing with rural water systems for 30 years. His county has decided to form a larger system by consolidating all the area's small systems. An effective way for systems to consolidate is for larger systems to operate small systems as satellite systems. He agreed that the vast majority of small rural water systems were not intended to be water systems; rather they were the product of a housing or resort development. There are two types of systems: systems run by people just looking to "make a buck" (who often walk away from the system), and those that are trying to be responsible water systems. He added that the key element to operating a successful small system is operator training. If operators do not know how to operate the technology, then the technology is useless. Mr. Wheeler asserted that the circuit rider program is critical for operator training.

Sharunda Buchanan asked about the interaction of small system operators with local health officials, especially regarding the potential health implications of poor quality rural water systems. In addition, she asked who is "minding the store" as the water system operators are aging.

Mr. Saddler replied that consolidation can be a viable alternative to reducing the number of entry points and to lower the cost of compliance. It can also be used as a marketing tool to improve local development. Fire protection should be built into the process. He noted that there are federal funds available for fire protection.

He continued, noting that in his 54 water systems, there has only been one public health issue related to drinking water, although drinking water is often blamed when there is a public outcry related to health issues (although food is more often the culprit). He stressed that it is important to communicate with customers to keep them informed and instill confidence in the system. Customers can help advocate for the system if they are informed.

Mr. Florquist added that he receives many phone calls related to public health issues. The calls are usually the result of a doctor's suggestion that water may have caused the illness. Mr. Florquist has made an effort to talk with local public health officials and encouraged them to call the system before suggesting that the water is unsafe.

In response to the second part of Dr. Buchanan's question, **Mr. Saddler** explained that training is essential to ensuring that systems are operated safely and effectively. He stressed that effective management is essential and added that many operators would benefit from basic management training.

Jeff Taylor inquired about the work force composition of rural water system operators and the imminent shortage of operators.

Mr. Florquist explained that in his municipal system there are three water treatment plant operators and two wastewater operators. All of the operators work together, with the wastewater operators serving as backup treatment plant operators. He agreed that the issue of aging operators is a serious concern, noting that over 50 percent of operators are within seven to ten years of retirement. The loss of operators from small systems might be a function of the systems' inability to provide the benefits and other incentives that are more affordable to larger employers.

2. Technical Assistance Providers

Panel Members: Mary Baiza, Mark Pearson, Robert Stewart, Blanca Surgeon, Sam Wade

Sam Wade said that he disagrees with some of the small system issue paper's assumptions. He agreed, however, that new regulations are increasing the cost of operating a water system and that economies of scale help consumers accept rate increases.

Robert Stewart explained that his background is delivering training to rural water systems. This targeted training has great results and can lay the groundwork for systems to improve other infrastructure needs. He conceded that the Rural Community Assistance Partnership (RCAP) and the National Rural Water Association (NRWA) are not perfect, but they have made significant improvements in compliance with a moderate expenditure of funds.

Mr. Stewart disagreed with the issue paper, stating that he did not think enough money is spent on training. He observed that states often develop programs and tools that duplicate programs and tools already developed by RCAP or NRWA.

Ms. Surgeon agreed with the issue paper that economies of scale are required so that treatment is affordable. She added that she has observed communities working together, recognizing the importance of collaboration to decrease costs.

Mary Baiza stated that, where viable, water systems should consider consolidation. Small, out-of-compliance systems that are surrounded by larger, wealthier systems would benefit from consolidation, but the wealthier systems often do not want to assume the liability. She noted that consolidation can also improve fire protection.

In response to the economies of scale issue, **Mark Pearson** explained that decisions should not be made on a subset of systems. Regionalization often is related to the density of systems. Consolidation is not feasible for most geographically isolated systems in Texas or the West because infrastructure is too costly. In addition, there is not sufficient available financing, and there are issues with the rate of dispersing Drinking Water State Revolving Fund (DWSRF) loans and Community Development Block Grants (CDBGs). He stressed regionalization as only a partial answer to the challenges facing small systems.

Mr. Wade commented that 10 years ago, small systems were resistant to consolidation. Now, there is more consolidation based on the cost of compliance. Technical assistance providers are important because they provide expertise that systems could not afford on their own.

Ms. Surgeon concurred that small systems are more willing to consolidate now than they were in the past. It is expensive to regionalize, however, and there is not enough money to meet the demand.

Mr. Stewart agreed that consolidation is difficult. Other important issues related to small systems are the new treatment requirements, the expense of transmission and distribution lines, and the need for qualified operators. Although EPA has allocated some money for the training and certification of operators through the Expenditure Reimbursement Grant (ERG) Program, the program needs to be refunded at its expiration.

He also noted that regional operation of systems by county governments is not feasible in many states, although it should be encouraged where possible. And, while SCADA has many advantages, it will not take the place of having an operator on-site.

Mr. Wade likened SCADA for a small system to a hybrid car: if you can afford it, you probably do not need to save money on gas.

Mr. Ramaley clarified that the paper refers to oversight and enforcement by counties, not operation.

Mr. Pearson responded that there is a basic distrust of government in some regions of the country and as a result there is a reluctance to give counties more responsibility. He added that county oversight should be encouraged where possible.

In regard to the question about subsidies for small systems encouraging inefficient behavior, **Mr. Pearson** commented that there are many subsidies for large systems. Also, large systems receive far more resources from the DWSRF Program than small systems, yet large systems have the ability to issue bonds with low interest rates. Small communities do not have access to the same resources and often cannot float bonds. In addition to the incentives for small systems to consolidate, large systems need to be encouraged to incorporate small systems.

Mr. Pearson stated that some counties (especially small or rural ones) do not have the capacity to take on the management of water systems. He suggested encouraging larger systems to look to private markets for funding, and directing all subsidies to small systems. He said that counties have different incomes and populations, and subsidized funding should be targeted to the systems most in need.

Ms. Surgeon said that there should be a subsidy to pay local project managers to provide guidance and recommendations during the initial phase of consolidation.

Mr. Ramaley noted that systems cannot achieve financial sustainability until they reach their critical masses.

Ms. Baiza commented that communities are coming together to build new systems following contamination of residential wells, but there is not enough funding or a large enough customer base to finance these systems.

Mr. Pearson asserted that people in rural communities are willing to pay for their water system, but subsidies are needed. In addition, technical assistance providers need to work with systems to develop, implement, and monitor their rates to ensure that systems can cover costs and meet debt service requirements. He reiterated that the government should subsidize water utilities just as it subsidizes the electricity, oil, and telephone industry.

Dr. Griffiths commented that discussions surrounding subsidies have changed over the past 10 years. He noted that small systems are heterogeneous, and introduced the concept of micro-financing. This is a new way of financing in which small loans are made, outside of a traditional bank, to low-income communities. He stressed the need to explore and utilize other funding models with a new approach to credit-worthiness.

Mr. Pearson explained that RCAP and NRWA operate revolving funds that provide small ($100,000-$150,000) loans to small water systems and urged EPA and Congress to fund these types of loan programs. He acknowledged that it is difficult for the DWSRF to give small loans because there is too much paperwork and supported the idea of a third party lender.

Ms. Baiza commented that the Texas DWSRF Program has given a number of small loans that have been successful.

Mr. Taylor said that the ultimate issue for small systems is money. He agreed that a new money model is needed and suggested that the water industry moves toward longer-term financing in the private market. This would mediate the short-term impact on water system rates. He also suggested that customers band together as a unit to collectively underwrite loans.

Mr. Wade replied that many customers do band together, but there is simply not enough money. NRWA has developed a different model to leverage public financing that will provide an alternative funding source to water systems.

Nancy Beardsley commented that states can use up to 30 percent of their DWSRF annual allotment as principle forgiveness for disadvantaged systems. In Maine, the State uses a precise method to determine whether a system is "disadvantaged." There are other mechanisms within the DWSRF to help disadvantaged systems, such as extending loan repayment. She noted that the purpose of the DWSRF is to protect public health, and states should use the program to help struggling systems.

Ms. Dougherty explained that principle forgiveness is essentially a grant. It reduces the amount that the state can capitalize, but it can help to resolve immediate affordability issues.

Michael Baker noted that small system subsidization can take many forms including direct, financial subsidies, although there are other ways to subsidize drinking water systems. He supports further discussions to advance this topic.

He stated that although the majority of DWSRF funds are going to larger systems, in Ohio, the majority of loans are made to small systems. These loans are mostly small loans, in the hundreds of thousands of dollars. Loans alone will not solve all the small system problems, however. There are also concerns that longer-term loans only delay problems; and there is an issue when debt outlives the infrastructure it financed. Ohio's DWSRF also uses other tools such as zero percent interest rates, extended repayment periods, and loan forgiveness to help disadvantaged communities. He emphasized that states need to be creative.

Mr. Saddler observed that small systems are often reluctant to deal with state governments and suggested that the government guarantee small system loans. There are few defaults on small system loans; the more important issue is getting access to loans.

Rebecca Head agreed that it is important to be creative. She also stated that political entities differ from state to state. In Michigan, several communities can form an authority that runs the water or wastewater facilities.

Perialwar (Regu) Regunathan commented that in India there are many small organizations that provide interest-free micro loans to women. This has been a successful program and could be expanded to serve small systems.

Mr. Florquist described an alternate method of financing in which a tax is placed on capital utilities, and the revenue is applied to specific projects (e.g., water system improvements).

Ms. Surgeon noted that in the past 10 years there has been considerable change in rural communities. More systems are being managed proactively and as businesses, but many

systems lack the capacity to build and manage investments. In the next 20 years, there needs to be an effort to recruit and retain operators. Communities can help in this effort.

Mr. Wade said he believes the future is bright for small systems. Many small systems are growing, which requires more infrastructure, but also creates a larger customer base to finance the improvements.

Mr. Stewart stressed the need to improve public education on the costs involved in providing safe water. Operators deserve greater compensation, but to do this the public needs to be convinced of their value.

3. Investor-Owned Systems

Panel Member: John Young

John Young stated that 15 percent of the United States is served by investor-owned utilities. American Water has the largest holding of water systems, including many small systems. He agreed with the previous panels that there is no simple answer to small system issues because "one size does not fit all."

Sometimes it is difficult to make a business case for installing SCADA, as it does not reduce the cost of operation. If used properly, SCADA can improve the quality and reliability of a system's performance and improve process controls.

Mr. Young commented that although he does not believe in subsidies, they are necessary. Alternatives to subsidies also require money. Water utilities cannot be consolidated in the same way that gas and electric utilities have been because water is heavy, and thus expensive to transport, and water quality changes over time. In addition, because water is ingested, it can affect public health.

He then explained the three levels of consolidation and the associated benefits he has observed.

> **Independent Systems:** At the request of a state American Water assumes responsibility for a small system with no other options. The benefit of this type of consolidation is reduced commodity costs, which do not necessarily result in operating efficiencies. American Water can also give operators a career path, i.e., they can transfer to bigger systems if they are willing to relocate. He added that operators are extremely valued.
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> **Cluster Systems:** Small systems that are close to each other join together. If American Water operates the consolidated system, it can offer procurement savings and access to capital. Consolidated systems may still experience rate shock if major improvements need to be made, however.

Fringe Systems: A large system becomes a "hub" and consolidates with the small systems around it. This is the most successful form of consolidation. These systems receive procurement savings, access to capital, operation efficiencies, and minimized rate shock (because costs can be spread over all communities in the consolidated system).

Mr. Young said that Connecticut's regionalization plan, which was implemented in the 1980s, was not very successful. He reiterated that the "spokes from a hub" type of consolidation is the most effective type of consolidation. He said that he was not optimistic about the future of small systems. Politics, not the desires of the water system, drive consolidation.

Mr. Ramaley summarized that physical consolidation only makes sense for small systems that are clustered with other small systems or on the fringes of larger systems (in which case there may be political impediments to consolidation). If systems can reach the critical mass at which they are self-sufficient, then they likely will never consolidate. In addition, for many systems, consolidation is not the answer.

Mr. Taylor agreed that large systems are reluctant to consolidate with nearby small systems that are failing. He summarized a pending regulation in Texas that will give a system that takes over another system a few years before it is penalized for the compliance of that system (now, the system is liable for compliance on the first day). The regulation will also provide systems with funding to offset the financial impact of taking over a failing system.

Mr. Young noted that investor-owned utilities also have to manage issues related to maintaining a brand: a company is "only as good as its weakest system," and consumers in systems of all sizes expect the same level of service (e.g., access to a call center).

Lynn Thorp said that "strings" can be attached to federal money to achieve a desired result, as was done for wastewater systems. However, she cautioned that the consequences of such policy decisions should be carefully researched.

Mr. Ramaley commented that a guiding principle in the water supply field , as was taught by Dan Okun at the University of North Carolina, has been that those who derive benefits should bear the costs.

4. States

Panel members: Michael Baker (OH), Nancy Beardsley (ME), Gregg Grunenfelder (WA), Buck Henderson (TX)

Ms. Beardsley provided some background on the small systems in Maine. She reiterated that Maine is using the DWSRF to help small, disadvantaged systems. Since 1998 Maine has committed $100 million to small systems. Maine works with other funding agencies (outside of the DWSRF) to find the best solution for systems, and the State tries to identify systems

most in need of funding. Every system that receives disadvantaged assistance also receives asset management training.

Consolidation is often not an option in Maine because of geography (the systems are far apart).

As a result of the operator certification program, there has been an increase in skills and professionalism among operators. Ms. Beardsley commended small system operators for their hard work and noted that they take pride in and ownership of their systems. Maine funds two circuit rider positions, which is a significant financial investment and has helped bring systems into compliance by providing technical assistance. Manufactured housing communities bear the greatest burden, as they must meet all the regulations but have the fewest resources.

Political will is required to take the State of Alabama's approach as described in the issue paper. She added that it is difficult to generalize small system issues.

Mr. Ramaley asked for clarification on the subsurface geology of Alabama (to which the first question for the state panel refers). **Dr. Head** answered that she assumed the geology is karst, which can contribute to drinking water contamination and poor drinking water quality.

Gregg Grunenfelder gave background information on the water systems in Washington. The majority of water systems are small, and 70 percent of the state's DWSRF loans are granted to systems serving fewer than 3,300 persons.

He said he does not support subsidies without responsibilities. He has observed that infrastructure financed by a loan is often better operated and managed than infrastructure financed by a grant.

He also noted that consolidation does not always mean physical consolidation; it can also take the form of oversight or operation and maintenance.

He predicted more frustration regarding small system issues in the next 20 years. Washington is currently looking to improve water efficiency through leakage standards, metering, and the wise use of water. The greatest opposition to these programs is from small systems.

A viable DWSRF program is vital, he noted. There should be a continued investment in operator training and certification, and technical assistance is critical to help small systems with compliance issues. EPA needs to be patient in understanding the amount of time it takes systems to come into compliance with new regulations, which are presenting major struggles for small systems. New technologies that help small systems with affordability are also important.

Although smaller counties lack the resources, Washington's larger counties help implement the drinking water program. He advocated regionalizing the public health structure.

Buck Henderson gave his background and described the composition of Texas' water systems. Texas is working with cities to take over small, failing systems, but there are many complications. He noted that there needs to be financial incentives for large systems to take control of these small systems. In the past, Texas regulators had problems with "six pack developers" that build no more than six homes sharing a common well to avoid the requirements of a public water supply (PWS). Texas has worked to reduce this practice.

He went on to say that it is sometimes legally difficult to take over the property of a failing water system; the State must demonstrate that every possible effort was attempted to help the system come into compliance. Unfortunately, assistance (to come into compliance and develop a rate structure) is voluntary and systems do not always take it. He agreed that a rate structure should be tied to capacity requirements.

Mr. Baker commented that although there is variation across states on issues facing small systems, there are also similarities. Ohio is relatively densely populated, which has facilitated regionalization. He stated that non-community water systems (NCWSs) are a significant public health threat. Many NCWSs and some community water systems (CWSs) are privately-held businesses, which presents a unique set of challenges, especially about subsidies. To address immediate public health issues, there are times when subsidies are necessary.

He agreed that while SCADA can provide additional coverage, it will not replace operators. He urged states to think about how to promote the water system operator profession and said there needs to be a "robust" operator certification program across the country.

Mr. Baker said he foresees more regionalization in the future. In Ohio, 200-300 systems are absorbed every year. Regionalization should take into consideration the water resources infrastructure planning approach.

Mr. Ramaley asked the panel if county officials are able to oversee and/or administer enforcement for drinking water systems.

Mr. Henderson replied that most counties in Texas have limited resources and legal authority and would not be able to take on this responsibility.

Mr. Baker said there is huge variability in the competence of county health departments in Ohio. Counties could be part of the solution, but not the whole solution.

There is also variation in county health programs, **Mr. Grunenfelder** noted, although the State is working to provide more equity.

Maine does not have county health entities, **Ms. Beardsley** said.

Dr. Head stated that district health departments have been successful in Michigan. These departments must have the necessary capacity and funding, which involves local political will and partnerships between local and state officials.

Dr. Griffiths commented that the public health infrastructure in New England is town-based, rather than county-based.

Ms. Surgeon said that in New Mexico, counties are the best entities to perform regional planning activities. She noted that the issue of water rights is another concern.

In response, **Mr. Henderson** described Texas's ground water "rule of capture," according to which an entity can capture as much water as possible under the land it owns. In some parts of Texas, people are buying up land just for the water rights.

Mr. Ramaley stated that Virginia now requires every town, city, and county to perform comprehensive water supply planning (i.e., identify existing and potential water sources and competing uses/needs).

5. EPA Officials

Panel Members: Jenny Bielanski, Bill Davis (Region 6), Cynthia Dougherty, Steve Heare

Ms. Dougherty said that the SDWA Amendments of 1996 added many provisions for small systems. The Amendments also established the DWSRF, because there was no existing funding mechanism. There are three "bins" of effectiveness for the programs in the SDWA: effective, unknown, and not effective.

Effective

- Overall, the DWSRF has been an effective tool, and although most money goes to larger systems, more loans go to small systems. Many states are funding smaller loans and taking advantage of the principle forgiveness set-aside options to support small systems. States can also use DWSRF funds for technical assistance. Recently, the rate at which DWSRF funds are being spent has been scrutinized.

- Each state administers its own ERG program; ERG funds have helped cover the costs of small system operator training.

- The Amendments require EPA to look at the costs and benefits of new regulations and to assess the burden a regulation places on small systems.

Unknown

- It has been difficult to evaluate the effectiveness of the Capacity Development Program. States need a Capacity Development Program to receive DWSRF allocations, and systems must demonstrate adequate capacity before receiving a DWSRF loan.

Not Effective

- EPA is making an effort to use all the available tools (e.g., variances, exemptions) before resorting to enforcement, but affordability variances have not yet been implemented.

- Many issues related to financing are covered under the DWSRF program, but all states are not taking advantage of the program. In addition, there have been complaints about the cost involved with applying for a DWSRF loan. EPA is looking at ways to streamline the process.

In the long-term, EPA wants to focus on sustainability to ensure that systems can continue to provide safe water. Ms. Dougherty urged that states should continue focusing on EPA's sustainable infrastructure initiative in order to help systems continue to improve their infrastructure.

She said that while there may not always be federal funding for the DWSRF, Congress has committed to funding the program through 2018. In addition, the ability to use the DWSRF to fund technical assistance providers for the long-term is also uncertain.

There is political pressure to allow NCWSs to achieve compliance using bottled water. Two tier standards based on affordability and exempting small systems from regulations unless there is full grant funding to help the system come into compliance have also been proposed by some stakeholders.

Steve Heare said that the Gap Analysis revealed a $500 billion gap in water and wastewater needs and funding for the next 20 years, and the 2003 Needs Survey placed the needed infrastructure improvements for drinking water systems at $270 billion. The government's discretionary spending is decreasing, and sustainable infrastructure is now EPA/Office of Water's top priority. While efficiency is critical, consolidation is one tool that can be used to increase sustainability and efficiency.

Bill Davis stated that he supports a one tier approach with flexible implementation, noting that most Regions oppose a two tier approach because they prefer to be consistent and keep a strong stance on public health. He stressed the need to measure the effectiveness of programs.

In addition, it is important to invest in competent employees who can help systems plan strategically for the future. It should be recognized that when there are new regulations, violations increase while system operators and managers learn the new implementation requirements. As systems receive technical assistance, awareness and compliance rates improve.

Jenny Bielanski stated that she is very concerned about the workforce issues facing the drinking water industry because systems cannot function without certified operators.

There is a need to evaluate the operator training and ERG program to improve marketing and create new solutions to help operators obtain the training they need. For example, states should consider bringing training to operators, as it is sometimes difficult for operators to attend training sessions. Delaware RWA built a mobile training unit, and other states are looking to implement similar programs with ERG funding. EPA is gathering information on innovative approaches and will disseminate them to interested Regions and states. Finally, she warned that ERG funds are finite.

Consumer education is another key issue. This can be facilitated by Capacity Development Programs, which focus, among other things, on improving communication. Ms. Bielanski sees the Capacity Development as a proactive approach to efficiently implement new regulations while maintaining compliance rates.

Efforts to support system sustainability and use effective tools should be connected to the receipt of federal funding (e.g., from the DWSRF).

Mr. Davis commented that as part of Region 6's tribal Total Coliform Rule (TCR) strategy, Region 6 partnered with the Environmental Finance Center (EFC) in New Mexico. The EFC changed the operator training curriculum to address the operator's weaknesses and cover only the information relevant to their systems. This targeted training was more effective.

Mr. Florquist asked about the push to allow grants for construction and operation costs and cautioned that this is a "slippery slope." He then asked if the Government Accountability Standards Board (GASB) 34 asset management approach has been worthwhile.

Ms. Bielanski responded that in order to push sustainability, utilities need to understand how to implement asset management, the complexity of which differs with system size.

Mr. Saddler noted that there may be other, more affordable options for non-transient non-community water systems (NTNCWSs) than a two tier system. These options include deferring enforcement or establishing modified maximum contaminant levels (MCLs).

Ms. Thorpe commented that any improvement in public health protection is better than no improvement. She suggested that the NDWAC could guide EPA to support small systems, but the resulting policy should not be driven by "fringe" systems (outlier systems that are not likely to benefit from traditional technical assistance).

Mr. Wheeler noted that not all small system issues are tied to affordability and that affordability is also a problem within large, urban systems. He noted that there is not one solution and advised giving states flexibility in their solutions to these problems.

Dr. Regunathan cautioned that a two tier system could result in a double standard that does not respect small systems as equal counterparts in the industry. Bottled water or point-of-use (POU) devices are not always viable solutions. However, new manufactured housing

communities could be fitted with POU devices, and old homes could be retrofitted. This may be less expensive than treating 100 percent of the system's water. The idea of dual water systems (i.e., a system that serves both potable and non-potable water) is appropriate but will be costly and difficult to implement in existing communities.

Ms. Dougherty said that the 1996 Amendments to the SDWA recognized POU and point-of-entry (POE) devices as compliance technologies. Several POU technologies have been approved for arsenic removal.

Mr. Young asked what policies are in place to prevent the proliferation of small systems in the future.

Ms. Surgeon responded to Dr. Regunathan and said that small systems would not support a two tier approach. Due to cultural beliefs and lack of consumer education, many consumers would buy bottled water because they do not trust the safety of the water supply. She added that in developing countries, the poorest people pay the highest price for safe water because they do not have access to safe drinking water and must purchase bottled water.

She recommended that a workgroup be formed to address small community issues and come back to the NDWAC with recommendations.

(A suggestion was made that a discussion on the formation of a workgroup occurs after all items on the Agenda for Day 1 were addressed. The Council agreed and the recommendation was tabled.)

Dr. Griffiths said that the issue of affordability is substantial, and water affordability represents a small piece of the overall puzzle. He summarized that isolated systems have few options for relief, although POU devices might be an option. There is a need to look at innovative financial processes. The answer is not a two tier system. Increased rates and taxes are one way to address the problem. It is important to remember that not all rural water systems are the same.

Mr. Grunenfelder commented that a two tier system would halt current efforts to get all systems to the same level of compliance. EPA needs to put effort into developing sound, risk-based MCLs and acknowledge that it takes time to achieve compliance across the board. If there is a double standard, it will be difficult to convince legislatures to invest in small systems. He suggested increasing the time systems are given to come into compliance.

It will be difficult to convince customers to use bottled water (the biggest complaint about boil water notices is the burden of trying to consume only bottled water). Bottled water use also places an added burden on CWSs and states.

Mr. Ramaley summarized that there are many differences between urban and rural systems, including the level of fire protection. Fire protection is a public health concern for which

there is no federally mandated standard. He agreed that a working group might be necessary to identify the range of issues, and possible solutions, facing small systems.

UPDATE ON DRAFT RULE ON AIRLINES WATER SUPPLIES, UIC ACTIVITIES, AND EARLY IMPLEMENTATION OF M-DBP RULES

Update on Draft Rule on Airlines Water Supplies

Mr. Heare gave a presentation (see Appendix D) detailing the background and provisions of the draft rule on airlines water supplies. Ensuring that aircraft comply with drinking water regulations stipulated by the SDWA is a joint responsibility of EPA and the US Food and Drug Administration (FDA). While water boarded domestically is regulated by EPA, the Agency does not have jurisdiction to monitor water boarded internationally. On board, FDA has jurisdiction over water used for food preparation and hand washing, while EPA has jurisdiction over other uses.

There are 4,000-5,000 airplanes that are subject to drinking water regulations because they carry more than 25 people a day, which qualifies these aircraft as NTNCWSs. The majority of these planes travels internationally and takes on source water from countries outside of EPA's jurisdiction.

EPA developed a guidance document for aircraft water quality, but in 2004 the Office of General Counsel (OGC) determined that the guidance was illegal because it undermined existing regulations. At that time, airlines were not sampling their water, and there was no regulatory framework in place for the on-board water. In 2003, 265 aircraft water supplies were sampled, and 2.7 percent of the samples tested positive for total coliforms. Later, EPA sampled 327 aircrafts and found 15 percent of the water supplies had total coliform-positive samples.

In response to these results, EPA has worked with the Office of Enforcement and Compliance Assurance (OECA) to place all airlines under Administrative Orders of Consent. These Orders require routine disinfection, sampling, monitoring plans, and data collection that will be used to develop the regulation.

EPA is developing the regulation using a collaborative stakeholder process facilitated by OGC's dispute resolution contractor. The regulation will only apply to domestic carriers although international guidelines are being developed by international organizations. The rule will be designed to use the multiple barrier approach to assess and manage the risks. The proposed rule is scheduled for publication in December 2007.

Ms. Surgeon asked about security concerns related to water boarded in foreign countries. **Mr. Heare** agreed that this is a concern and explained that the international airline organizations are trying to deal with these issues.

Dr. Griffiths asked if the regulation covered other types of aircrafts, such as military planes, and **Mr. Heare** replied that the rule will cover large corporate airplanes as well as companies that lease large jets. Many smaller airplanes do not serve enough people each day to be considered a water system under current regulations. Additionally, the regulation is not intended to address military aircraft.

Dr. Regunathan inquired about the multiple barrier approach (see Slide 16). **Mr. Heare** replied that the philosophy behind the SDWA is that water systems are better off with many safety checks. The barriers include prevention, treatment, monitoring and compliance, and individual action.

Mr. Ramaley asked if it would be feasible to use only bottled water on airplanes.

Mr. Heare responded that due to weight restrictions, use of bottled water on long flights is not feasible. Right now bottles of water are refilled with tap water on these types of flights. In addition, according to FDA regulations, if there are bathrooms, there must be water for hand washing, and the sinks must be potable in any establishment that serves food or ice.

Dr. Regunathan asked about the potential for installing water filtration systems on aircrafts.

Mr. Heare noted that some large aircrafts have filters on the coffee pots to improve the taste and said that a company is working to build a small ozone system that can be retrofitted onto planes. The next generation of planes might include this technology.

Update on Underground Injection Control (UIC) activities

Mr. Heare gave a brief background on the UIC program, explaining that it was established in the 1974 SDWA to protect underground sources of drinking water. Recently, the UIC program has been working with EPA's Climate Protection Division to develop a framework that allows for the safe and effective injection and sequestration of liquid carbon dioxide (CO_2) into deep saline aquifers. The Department of Energy (DOE) researched and implement the technology. These injection wells are subject to the UIC program, falling under Class V wells.

There are currently 25 pilot projects with permits to test this technology. EPA believes these pilot projects will provide valuable information to improve the regulatory framework and is working with oil and gas companies to develop a guidance document for this practice. This technology will be applied commercially in the future (pumping CO_2 into the ground enhances oil recovery), and there needs to be a rigorous framework in place to regulate the practice. One challenge is that the UIC program has received only $11 million annually from the federal government for the past 16 years, which makes implementation of the program difficult.

In addition, petroleum companies, electric utilities, and environmental groups, which guardedly support the practice as a necessary tool, collaborated on this issue.

Mr. Heare gave a brief update on the Florida rule related to the disposal of residuals from desalination and/or water treatment to comply with the arsenic and radionuclide regulations in response to a lawsuit by the Sierra Club and utilities. The UIC program is investigating how to safely use underground injection wells for residual disposal. EPA plans to publish a guidance document in early 2007.

Update on Microbials and Disinfection Byproduct (M-DBP) Early Implementation

Mr. Heare said that the Stage 2 Disinfectants and Disinfectant Byproduct Rule (Stage 2 DBPR) and the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) are unique in that they both require actions from systems early in the implementation process. These actions and the associated costs are a concern for states, so EPA is taking on a considerable amount of this work at the Regional and Headquarters levels. Headquarters staff are working on the Data Collection and Tracking System (DCTS), which tracks early implementation activities and provides reports for states and Regions. There have been many challenges related to the DCTS. EPA will use SDWIS to maintain compliance information, but the early implementation requirements warrant a unique tracking system.

Mr. Florquist asked if the US Geologic Survey (USGS) is involved in the UIC program, noting that injecting materials into the subsurface has caused earthquakes. **Mr. Heare** confirmed that EPA is partnering with the USGS.

In response to an observation by Ms. Beardsley that none of the pilot carbon sequestration projects are located in the Northeast, **Ms. Dougherty** explained that the pilots are proximate to coal power plants because CO_2 cannot be transferred long distances.

Ms. Thorp cautioned that it is necessary to explore the potential consequences of carbon sequestration (e.g, for water supplies, earthquakes) and that the practice should be carefully implemented.

Ms. Dougherty reassured the group that OGWDW is working tirelessly to ensure that drinking water sources are protected. However, some entities disagree that the UIC program should be involved in this issue.

Mr. Baker commented that financial incentive is driving interest in this practice. In addition, EPA's determination to regulate these wells under the UIC program is supported at the state level. The permitting/fee structure may have to be modified in the future if the requests for permits increase dramatically.

Ms. Dougherty added that some stakeholders have said that EPA is not moving fast enough on this issue.

PUBLIC PARTICIPATION

Mary Baiza (CRG) said that the health of rural populations will be compromised if a two tiered regulatory system is implemented. It would also counteract the benefits resulting from the implementation of current regulations. She emphasized the need for patience in working with communities, explaining that systems want to comply with the regulations.

UPDATES ON GROUND WATER RULE AND CCL3

Ground Water Rule (GWR)

Pam Barr stated that the Ground Water Rule was signed on October 11, 2006 and published on November 8, 2006. There are four main components of the rule: periodic sanitary surveys, source water monitoring, corrective actions, and compliance monitoring. EPA is working to develop guidance documents, which should be available by late winter, 2007.

Ms. Dougherty added that there is no early implementation for this Rule as the first deadlines are in December 2009.

Contaminant Candidate List 3 (CCL3)

Ms. Barr presented an update on the CCL3. Developing the list was an extensive process for which EPA used recommendations from the National Academy of Sciences (NAS) and the NDWAC. A large universe of potential contaminants (both chemical and microbial) was narrowed to a preliminary list and finally to the CCL.

Chemical
First, EPA used over 280 data sources to identify 6,000 chemicals with adverse health effects and the potential to occur in drinking water. Next, EPA used the principles from the NDWAC report, *NDWAC Report on CCL Classification Process*, to create screening criteria to develop the preliminary list, which contained several hundred contaminants. EPA intends to build classification models to develop the CCL. The goal is to have the models complete by mid-2007.

Microbial
There were fewer sources of information on microbial contaminants, but 1,400 human pathogens were identified. The screening criteria examined the potential for the waterborne contaminants to transmit disease. The preliminary list contained roughly 100 microbials. This list will be narrowed by expert review rather than models, but the process will be transparent.

Both NAS and the NDWAC advocated more public input on CCL3. EPA asked the public for nominations and data on occurrence and health effects, and will analyze all nominated contaminants during the CCL process.

To obtain expert input, there will be four workshops (three on chemicals and one on microbials) as well as a review of the CCL in March 2007. The proposed list will then go to the Science Advisory Board for review.

Mr. Ramaley commented that he served on the workgroup that made recommendations for CCL and is pleased that EPA is following the recommended model.

Dr. Regunathan added that going through this process with CCL3 will make developing the CCL4 easier; **Ms. Barr** agreed.

Ms. Dougherty added that the Unregulated Contaminant Monitoring Rule 2 will be out shortly and the CCL2 regulatory determinations are in process.

NATIONAL DRINKING WATER ADVISORY COUNCIL
DECEMBER 2006 MEETING SUMMARY

DAY 2 (December 15th)

REVIEW OF DAY 1

Mr. Ramaley thanked the group for the interesting and stimulating discussions of the previous day. He noted that it is apparent that no easy solutions exist to resolve the issues facing small systems, especially considering the heterogeneity of small systems. He said he is optimistic that the drinking water community can help EPA identify the range of issues, the particular differences among and needs of small systems, and potential approaches to technology issues and regulatory compliance. The update on the CCL3 was encouraging, especially for members of the CCL workgroup.

STATUS OF TOTAL COLIFORM RULE (TCR) REVISION

Ms. Barr gave a brief background on the status of the revisions to the TCR. A review of the TCR identified distribution systems as an area of concern when the results of the TCR were reviewed. Last summer, EPA met with stakeholder groups interested in the revisions. The next step is a technical workshop, which will be announced in the **Federal Register** and held in January or February 2007 in Washington D.C. Potential topics for the workshop include decision-making processes; EPA's risk assessment/risk management paradigm; presentations by National Resources Defense Council (NRDC) and the American Water Works Association (AWWA) on distribution system issues (e.g., cross connections, backflow, contamination during main repair); indicators related to the TCR rule; monitoring strategies; compliance analysis; and current use of distribution system tools to reduce exposure. EPA is still identifying workshop participants, and Council members are encouraged to contact Clare Donaher if they are interested in attending the workshop or if they can recommend people to attend or present at the workshop.

White papers were written on some of the issues surrounding the TCR revisions, and drafts will be available online. NAS has also issued two reports related to public health and distribution systems that will be discussed at the workshop.

Mr. Ramaley asked if the decision was made to move forward with a Federal Advisory Committee Act (FACA), to which **Ms. Barr** replied that this decision will be made after the workshop.

Ms. Dougherty added that the scope of the revisions needs to be better defined. In addition, if there is not enough available information to make decisions, there will be no need for a FACA.

Mr. Ramaley stated that it is important for a FACA to have specific areas on which to focus.

Ms. Dougherty agreed and added that the workshop will help identify these areas and/or other areas for which more information is needed.

Dr. Griffiths asked about the timeline for the revisions. **Ms. Barr** replied that by statute, EPA must identify the rules it is planning to revise every six years. A time frame for the revision is not stipulated by the statute, and the timeline cannot be estimated until the scope of the revisions is known.

Ms. Dougherty added that this is a several year process. She hopes that potential FACA members will attend the workshop, which should expedite the process. **Mr. Ramaley** clarified that a NDWAC member will not necessarily be on the FACA.

Mr. Ramaley commented that the preparation (e.g., the white papers) for this process is an improvement over the M-DBP process. The people chosen to participate in this process should be capable, broad-minded, and constructive, at least partially, because they may emerge as future leaders in the water community as have many participants in the M-DBP FACA.

Mr. Young said he worked on the white papers, and a concern of the water industry is the lack of good information on distribution systems. There is also a concern that the regulation will regulate operating practices rather than just water quality.

Ms. Dougherty expressed optimism that an agreement on the approach to be taken and the additional research required will follow the workshop.

Dr. Head asked if outcomes will be performance- or process-based. **Ms. Dougherty** commented that it is a struggle to use performance-based outcomes for microbials because they cannot be measured in real time.

Dr. Griffiths commented that technology to allow for real time measurements is being studied and will likely be available in the future.

Mr. Ramaley noted that the cost-effectiveness of this technology is still unknown. New technologies may come after an open public discussion on this topic, **Ms. Dougherty** said.

Mr. Saddler and **Mr. Wheeler** confirmed Mr. Young's fears about regulating operating procedures.

Mr. Ramaley commented that the M-DBP rules pose tremendous challenges for primacy agencies.

Mr. Baker said that there are implementation issues with the current TCR Rule. There is a concern that the revised rule will be more complicated from an implementation standpoint even if it provides more protection.

Mr. Ramaley agreed and said that he regrets that the M-DBP rules are so complicated but no simple rule could be derived based on the complexity of issues confronting the FACA.

Ms. Dougherty commented that by nature of the negotiations involved in a FACA, the end result is more complicated than if a FACA were not used.

Mr. Ramaley explained that the complexity is a result of concessions, compromises, and agreements and can be detrimental to the overall value of a rule. He suggested that simplicity should be the goal of this FACA. He encouraged those who have participated in previous FACAs to serve this FACA in an advisory capacity.

NEXT STEPS: DRINKING WATER PERFORMANCE MEASURES

Ms. Dougherty directed the group to the relevant section in the binder for a comprehensive update on the performance measures. She also acknowledged concern over the recommendations of the NDWAC on short-term performance measures to the Office of Water in November 2005. At its June 2006 meeting, the Council extended the charge of the Performance Measures Subgroup for 12 months so that the Subgroup can focus exclusively on Step 3 of the Subgroup's mission, i.e., to identify future performance measures that need additional development. In addition to the NDWAC efforts, OGWDW has been busy addressing the Office of Management and Budget (OMB)'s challenge to develop performance measures. Specifically, the Standards and Risk Management Division (SRMD) is working to develop a measure to track water borne disease occurrence over time as it relates to drinking water contamination. OGWDW has been collaborating with the Office of Research and Development (ORD), the Centers for Disease Control and Prevention (CDC), and the Indian Health Service (IHS) to develop a model to measure the change in regulated pathogens over time. SRMD is also considering the expansion of its efforts to include chemicals.

EPA would like to see the NDWAC Subgroup reinvigorated. It is important to be able to describe the effectiveness of programs over time. OGWDW hopes to include performance measures in EPA's 2009 Strategic Plan.

OGWDW is working with CDC to improve the outbreak surveillance system. One improvement is the transition to electronic reporting. ORD, CDC, and the Council of State and Territorial Epidemiologists (CSTE) are hosting a workshop with state epidemiologists to discuss waterborne disease outbreaks and ways to identify them.

Dr. Head said that there needs to be more connection at the local and state levels, noting that in many states the public health agency and environmental agency are divided. Information on disease outbreaks that is kept in a public health agency database might not reach the

environmental agency. She noted that the environmental health tracking program is effective, although it is more focused on chemicals.

Mr. Taylor expressed frustration that the basic concepts developed by the NDWAC Subgroup were not incorporated by EPA.

Ms. Dougherty replied that no changes can be made to EPA's short-term approach, but the Subgroup has yet to give recommendations for the long-term, which would be very valuable to OGWDW. She encouraged the group to move past this issue and noted that the short-term recommendation to follow the Office of Air and Radiation (OAR) model was not implemented because the Office of Management and Budget (OMB) no longer wants modeled measures.

Mr. Grunenfelder said that the May 2007 meeting might be an opportunity to match environmental measures with health outcomes. There are some grant-funded biological monitoring processes underway which may make progress on this difficult topic.

Dr. Buchanan added that it is important to get the right people at the table. A workgroup of the Association of State and Territorial Health Officials (ASTHO) is helping determine the best course of action during a public health outbreak.

Ms. Dougherty reiterated that OGWDW is working closely with CDC on developing performance measures and tracking outbreaks. There also needs to be a way to identify, measure, and describe endemic levels of disease.

Dr. Head mentioned a national project to establish the framework for the national accreditation of local and state public health entities. This effort could be connected to performance measures, as it could help integrate key players.

Mr. Baker strongly supports revitalizing the NDWAC Subgroup on this issue and suggested involving Subgroup members in any other ongoing efforts.

Ms. Dougherty expressed the need to communicate with OMB early and often in this difficult process. She hopes that a representative from OMB will attend the Spring 2007 NDWAC meting. In addition, she suggested having a face-to-face Subgroup meeting in late February/early March 2007.

Dr. Griffiths identified several levels of thinking about this issue, noting that performance measures required by OMB can also help integrate public health and environmental agencies. Developing measures also raises the issue of how to monitor a population. He suggested asking NAS about the long-term direction for these measures. Performance measures might be useful in that they cross boundaries and can apply principles from one agency or area to another.

Mr. Ramaley commented that one reason OGWDW is struggling to develop performance measures because they are looking backwards. A more valuable approach for the long-term would be to integrate the public health, environmental, and medical communities in the development of performance measures for future rules. Future rules should begin with a discussion of the health outcomes the rule is designed to affect.

Mr. Baker agreed that it is critical to collaborate with other agencies, especially on health monitoring. He encouraged tying the measures to specific applications such as decision making or linking them to specific rules. The added technology and monitoring related to performance measures can be used to improve security as well.

He then asked for more information on accomplishment 5 ("Accountability Project") from the summary in the meeting binder.

Ms. Dougherty explained that ORD is working to develop environmental health indicators. **Ms. Barr** added that one project involves looking for antibodies from microbial indicators in saliva swabs.

Dr. Buchanan asked if EPA is familiar with CDC's indicators and how EPA's indicators will differ, and **Ms. Dougherty** replied that ORD is looking at CDC's indicators as part of its research.

Mr. Ramaley clarified that this effort is measuring potential, not actual, health outcomes.

The NDWAC Subgroup on performance measures will be reinvigorated, and a face-to-face meeting will be arranged. A conference call will be held in early January 2007.

Mr. Young commented that he has been involved with a water security report. He asked how EPA would use the report and how quickly Web-based reporting will be established.

Ms. Dougherty said EPA is still working on this time frame. Systems need to be able to report information without providing the information to the public. The Department of Homeland Security (DHS) must approve collection of this information. OGWDW needs to develop performance measures and then determine how to protect the information within the construct of the DHS regulations.

Ms. Dougherty told the group that the binder includes excerpts from EPA's 2006-2011 Strategic Plan (the entire document is available online). There are three cross-agency principles: results accountability, innovation and collaboration, and best available science. Assistant Administrator Ben Grumbles' overarching strategies are: core programs, sustainable/secure water infrastructure, and watershed restoration and protection.

The drinking water approach has the same strategic targets, with two major changes:

1. The sub-objective 2.1.1 (*Water Safe to Drink*) target population has decreased from 95 percent to 91 percent. This decrease is a result of new regulations and was recommended by states.

2. A new strategic target that systems be compliant for 96 percent of a person month was added. Previously if a system was out of compliance for one hour than it was not considered in compliance for the whole year. This new system should give a sense of the scope of the non-compliance that occurs.

The definition of the surface water measure has also changed.

Because some words were left off the last page of the strategic plan summary in the meeting binder, EPA will distribute a revised version.

OGWDW works with Regional offices to help systems maintain compliance, return to compliance, and come into compliance with new regulations. Based on information in SDWIS, systems are having the most difficulty with the TCR.

Mr. Taylor thanked OGWDW for using "person months" as a measure. This concept was developed by a workgroup and will yield a closer representation of system compliance. He asked when states will begin to measure in this way. **Ms. Dougherty** replied that this will take effect in Fiscal Year 2008 (October 2007).

Mr. Grunenfelder inquired if extending the funding for the DWSRF, at the current or an increasing level, is a priority for EPA. In addition, he asked how long funds are committed for the Clean Water State Revolving Fund (CWSRF).

Ms. Dougherty replied that EPA is working to increase the funding for the DWSRF. Congress has committed to funding the CWSRF through 2011. The CWSRF administrators have asked that the annual allocation be reduced but the funding be extended.

Mr. Grunenfelder commented that the DWSRF will build up with time and asked if there is a formula that takes this into consideration.

Ms. Dougherty explained that the build-up of the fund is based on a formula that makes assumptions over a 40-year timeline.

As follow-up to the performance measures discussion, **Mr. Baker** suggested looking at Regional measures that have been passed to states. Ohio has translated the Regional goals to district offices so that each manager is accountable for the results. The data can be used to develop a strategy to maintain or improve numbers.

CONTINUATION OF SMALL SYSTEMS DISCUSSION

Ms. Surgeon made a motion to continue the conversation on small systems through a Subgroup of the NDWAC that will make recommendations to EPA. **Dr. Head** seconded the motion.

There are several issues for the Subgroup to discuss:

- Recruiting, retention, and training of operators
- Extending public education efforts to decision makers
- Issues related to rural schools
- Characteristics of small systems and the proliferation of small systems
- Regional differences as they pertain to household incomes, economies of scale, and system dynamics
- New system for classifying small systems (e.g., based on income)
- Addressing small systems for which public health protection is an ancillary concern
- Availability of technical assistance and training
- Duplication of services
- Fire protection
- Financing, including the accountability of grants and loans and innovative financing
- A two tiered compliance system and two tiered financing system
- Alternative technologies and how to encourage the development of more efficient off-the-shelf technologies
- Analysis of the Capacity Development Program

Dr. Buchanan added that the public health angle should be included and reiterated the importance of an interdisciplinary approach (especially for training and technical assistance).

Mr. Baker asked if the proposed group will be a subgroup of the Council or a workgroup that allows for outside participation. He noted that the affordability is a broad topic with many components.

Ms. Dougherty said this should be a subgroup not a workgroup. She added that a Workgroup was already convened on affordability and encouraged the new Subgroup to explore other issues.

Ms. Thorp hoped that the Subgroup is able to help untangle the unique problems for different types of small systems. She noted that poor urban communities also struggle with affordability issues.

Mr. Taylor said he was unsure how these topics and issues translate into something for EPA "to do," noting that there are many professional organizations to support small systems. More regulations might not be the answer to some of these challenges.

Ms. Dougherty replied that EPA does more than regulate. Sustainable infrastructure is a high priority for the Agency. The Subgroup could give recommendations to promote this initiative to small systems.

Mr. Young said that the scope of the Subgroup needs to be narrowed and suggested that narrowing the scope of issues be the Subgroup's charge.

Mr. Wheeler noted that there are some issues that money will not solve and will require an alternate approach. He suggested that the Subgroup separate out these issues.

Mr. Baker added that, whether real or perceived, all small system issues are related to affordability, although the solutions are not always financial. Part of the Subgroup's task should be to make use of previous work on the subject of affordability and develop a focus.

Dr. Head said the first charge of the Subgroup should be to review the affordability report developed by the affordability Subgroup. Affordability issues need to be decoupled from public health issues.

Ms. Blette added that the Subgroup should communicate with OGWDW as it moves forward. She noted that the Inspector General (IG) has a number of small system reports and that other FACAs have small systems issues in mind. One issue is whether subsidies should go to households rather than water systems.

Dr. Buchanan suggested revisiting the Capacity Development Report with an eye for how to incorporate sustainability.

Mr. Ramaley called for a vote on the motion.

Vote – 15 yeas. Motion carries.

The Council members who will serve on this Subgroup are: Mr. Baker, Mr. Florquist, Mr. Grunenfelder, Dr. Head, Mr. Saddler, Ms. Surgeon, Mr. Taylor, and Ms. Thorp. Dr. Buchanan will also participate.

PLANNING FOR THE SPRING 2007 MEETING

Ms. Donaher suggested holding the next NDWAC meeting in mid-May 2007 in Washington D.C.

Potential topics for the spring meeting include:

- Improving the health risk communication aspect of public education (including issues related to immigrant communities and the benefits of a marketing versus an educational campaign)
- Emerging contaminants
- Pandemic flu
- Western states and interbasin transfers (water quality issues)
- Collaborative issues and watershed pillars update
- Update on CCL3
- Update on performance measures
- Fluoridating water (what will EPA do with the NAS report?)
- NDWAC Subgroup's proposal on small systems issues to be addressed by a NDWAC Working Group

Mr. Ramaley adjourned the meeting at 11:49 a.m. and thanked the members for their continuing cooperative and collegial participation.

NATIONAL DRINKING WATER ADVISORY COUNCIL MEETING

AGENDA

Day 1 – Thursday, December 14, 2006

9:00 - 9:30 a.m.	Opening Remarks	**Brian Ramaley, Chair, NDWAC** and **Cynthia Dougherty, Director Office of Ground Water and Drinking Water (OGWDW)**
9:30-10:45 a.m.	Panel Discussions on Small Systems Issues and Challenges	
10:45-11:00 a.m.	**BREAK**	
11:00 -12:30 p.m.	Panel Discussions on Small Systems Issues and Challenges	
12:30 - 1:30 p.m.	**LUNCH**	
1:30 - 3:15 p.m.	Discussion and Wrap-up on Small Systems Issues and Challenges	
3:15 - 3:30 p.m.	**BREAK**	
3:30 - 4:30 p.m.	Update on Draft Rule on Airlines' Water Supplies and Update on UIC Activities and Early Implementation of M-DBP Rules	**Steve Heare, Director, Drinking Water Protection Division/OGWDW**
4:30 - 5:30 p.m.	**PUBLIC PARTICIPATION**	
5:30 – 6:15 p.m.	Updates on: Ground Water Rule CCL3	**Pam Barr, Director, Standards and Risk Management Division/OGWDW**
7:00 p.m.	Group Dinner	

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AGENDA (cont.)

Day 2 – Friday, December 15, 2006

8:30 - 8:45 a.m.	Review of Day 1	**Brian Ramaley**
8:45 - 9:15 a.m.	Status of TCR Revision	**Pam Barr**
9:15 - 10:15 a.m.	Next Steps: Drinking Water Performance Measures	**All**
10:15 -10:40 a.m.	**BREAK**	
10:40 – 11:30 a.m.	Planning for the Spring 2007 Meeting	**All**

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NATIONAL DRINKING WATER ADVISORY COUNCIL
Fall 2006 Meeting

Panel Discussions on Small Systems Issues and Challenges

QUESTIONS

For all Panels

With the availability of modern telemetry and Supervisory Control and Data Acquisition Systems (SCADA), do you believe there is a potential for achieving better operating performance at lower cost through satellite management type arrangements?

Should small systems continue to be eligible for Federal subsidies even if they could lower costs by partnering with other systems but choose not to? Why?

Should a national goal for drinking water be the reliable provision of safe water that meets public health and other social goals *in the most efficient way*? What if efficiency (and least-cost approaches) requires reduction in the number of very small systems?

Looking into your crystal ball, what do you think the future of small systems will be over the next 20 years?

Questions for Small System Operators

The paper asserts that new regulations (radionuclides, arsenic) are increasing treatment requirements for some small groundwater systems, and that treatment (to be affordable) requires some economies of scale. Do you agree?

Do subsidies enable inefficient behavior (e.g., by enabling small systems to avoid facing the need for economies of scale)?

Questions for Technical Assistance Providers

The paper asserts that new regulations (radionuclides, arsenic) are increasing treatment requirements for some small groundwater systems, and that treatment (to be affordable) requires some economies of scale. Do you agree?

Do subsidies enable inefficient behavior (e.g., by enabling small systems to avoid facing the need for economies of scale)?

Would you support a national approach to small systems that emulates the joint efforts of Alabama RWA and ADEM to reduce the number of very small systems?

Questions for Investor-Owned Systems

What can investor-owned utilities contribute to solutions for small system issues?

If a program were developed similar to that in Connecticut, could it be implemented in other states that have substantial numbers of investor-owned systems?

Questions for States

Some would argue that the approach taken by Alabama is due to the unique subsurface geology of Alabama (and, say, Kentucky), but it may not work in all states. If such approach would not work in your State, why not?

A central theme of our description of the Washington State program is greater reliance on county or sub-state governments. This is something that is already used by a lot of states. Could it be expanded in the manner suggested in the paper, to the point where county health departments could become responsible for enforcement of federal water quality standards for CWSs serving populations of less than 500?

Questions for EPA Officials

What aspects of the small systems provisions in the Safe Drinking Water Act (SDWA) are effective? What provisions would you revise and why? What provisions would you recommend be included in the next reauthorization of SDWA?