

*I slept and dreamt that life was joy.
I awoke and saw that life was service.
I acted and behold, service was joy.*

—Rabindranath Tagore

Debra Shore, Commissioner
Metropolitan Water Reclamation District



2007 ANNUAL REPORT

Greetings friends—

Here is a modest report on my first year in office as a member of the Board of Commissioners of the Metropolitan Water Reclamation District (MWRD). I owe you deepest thanks for sending me into public service in this elected role. It is everything I hoped it would be, and more: substantive, engaging, rewarding, big.

I want to thank, too, my fellow members of the Board—President Terry O’Brien, Vice-President Kathleen Therese Meany, Finance Chair Gloria Majewski, Frank Avila, Patricia Horton, Barbara McGowan, Cynthia Santos, and Patricia Young. Their devotion and wise stewardship has resulted in a balanced budget, far-reaching master plans for the treatment plants, and an admirable collegiality.

District Accomplishments

Health Benefits Extended for Domestic Partners of MWRD Employees

This one was easy. When I inquired why the MWRD did not offer domestic partner benefits to its employees, I was told “No one asked.” So I asked, the Personnel Dept. conducted a review, and the decision to offer health benefits to domestic partners of our employees passed by a unanimous vote.

Unlike some other government agencies, the MWRD took the additional step of offering benefits to opposite sex partners of District employees as well as to same sex partners. During the benefit enrollment period last June, I am told that seven opposite sex couples and three same sex couples applied to receive these benefits. To have a hand in doing something that tangibly improves the lives of people—that feels good.



Purchase of Electric Cars

The MWRD purchased 30 all-electric vehicles for use by tradesmen at our treatment plants. These cars will reduce greenhouse gas emissions by thousands of pounds a year and represent the largest purchase of electric vehicles by a government agency. The MWRD has also placed orders for several hybrid vehicles for its fleet and is conducting an overall analysis of fleet performance and use.

Greening the Agency

Superintendent Dick Lanyon, other members of the Board, numerous employees, and I have been pushing the District to become more “green.” Happily, I can report a number of initiatives that are underway to show we are moving in this direction.

Rain Barrels

In 2007 the District purchased 1,000 rain barrels for sale and distribution to residents of Cook County, part of our effort to change how we view—and manage—the rain that falls on our urbanized landscape. Sold for the bargain price of \$40 each, these 50-gallon barrels collect rain from residential rooftops, which can then be used to water lawns and gardens, and wash cars.

Using rainwater in this manner means you are not using—or paying for—filtered, treated drinking water. And the captured rain, when used to water your garden during a dry spell, then helps to recharge our underground aquifers rather than flowing into the sewers as it would during a storm. The District plans to purchase additional rain barrels in 2008 and will resume the sale of these in February. What a great gift for Earth Day, Mother’s Day or any old day!

▶ Visit mwrld.org/mo/barrel for ordering information



District Accomplishments

Green Infrastructure

Green infrastructure—it's a phrase you'll be hearing a lot about in years to come. In simplest terms, green infrastructure refers to our natural landscape, the "interconnected network of open spaces and natural areas, such as greenways, wetlands, parks, forest preserves and native plant vegetation, that naturally manages stormwater, reduces flooding risk and improves water quality."

With respect to stormwater management, the question is, "How can we capture rainwater where it falls and treat it as a precious natural resource, instead of managing it as a waste product, a nuisance?"

As the EPA notes, by protecting ecologically sensitive areas such as forests, prairies, floodplains and wetlands, communities can improve water quality while providing wildlife habitat and opportunities for outdoor recreation.

Permeable Paving

Some of the "green infrastructure" techniques that are being implemented across the country include the use of permeable paving (to allow rainwater to infiltrate the ground and recharge underground water supplies), rain gardens, rain barrels and cisterns, bioswales, and green roofs. The Center for Neighborhood Technology in Chicago has produced a green values toolbox to assist homeowners and developers in calculating the benefits and costs of managing stormwater in various ways.

▶ [Visit greenvalues.cnt.org](http://greenvalues.cnt.org)

Green infrastructure is rooted in the premise that keeping rain water out of the waste stream is better for nature, better for people, and costs less in the long run. Porous (or permeable) pavement, for example, reduces stormwater overflows, promotes groundwater recharge, improves water quality, and eliminates the need for detention basins.

As the MWRD assumes its role as stormwater management agency for Cook County, it is bringing its expected engineering rigor to these new approaches—seeking data on performance, costs, and benefits.

In 2008, the District plans to spend more than \$800,000 to install several test plots of permeable paving surfaces in the parking lot at the Stickney Wastewater Treatment Plant. District engineers will monitor performance over time, including infiltration rates and maintenance requirements.

Rain Gardens

Rain gardens—natural areas populated by native plants that thrive in wet conditions—are another way to capture rain water and keep it in the natural hydrologic cycle. By retarding runoff, promoting infiltration, evapotranspiration and evaporation, these areas help to keep stormwater from flowing into sewers, where it gets contaminated and we then pay to treat it.

I am happy to report that in 2008, the District also plans to spend \$200,000 to support installation of rain gardens at several high schools throughout Cook County. This project will help us teach others about the importance of our freshwater resources and serve as a model for people throughout the County.

Green Procurement Policy

The District's Purchasing Department is developing a "Green Procurement Policy" to be presented to the Board sometime in 2008. My hope is that this policy will provide a filter through which we can view all the purchases made by the District—from our electricity to our chemicals, from our office supplies to our vehicle fleet.

Inventory of Greenhouse Gas Emissions

The District uses a LOT of energy. The electric bill last year was roughly \$30 million, most of that used by the pumps and blowers in our wastewater treatment operations. What few people know is that the District also produces electricity in a renewable form through hydropower generated at the Lockport powerhouse for the last 100 years. (This energy, close to \$2 million a year, is currently sold back to ComEd.)

The process of treating sewage produces other greenhouse gases, notably methane and nitrous oxide, which are even more potent in their heat-trapping function than carbon dioxide. Today the District is able to capture and reuse approximately 82 percent of the methane generated by the anaerobic digestion of sludge. Our challenge now is how to capture and use the 18 percent that is still being flared off into the atmosphere.

The District is conducting an inventory of its greenhouse gas emissions with a report due in 2008. This will help us develop plans to capture and reuse significantly more of our emissions in the future.

Initiatives Begun in 2007

Safe, Secure Disposal of Unused and Expired Pharmaceuticals

Here's the rub: We used to be told to dispose of expired or unused medicines by flushing them down the toilet, right? That way we wouldn't have medicines accumulating in our cabinets where kids could get their hands on them or where we might accidentally mix drugs.

Now it turns out that wastewater treatment plants can't remove all the chemicals that enter the treatment stream, either from drugs being flushed down the toilet, or from antibacterial soaps that are becoming ever more popular (and are not effective—but that's another story), or from the drugs we take but don't fully absorb in our systems. Studies at some sites downstream from treatment plants in other states are beginning to show detrimental effects to aquatic life from exposure to these chemicals, including feminization of fish.

▶ [Download ucowr.siu.edu/updates/pdfn/V120_A1.pdf](http://ucowr.siu.edu/updates/pdfn/V120_A1.pdf) for research findings



These chemicals are still only found in minuscule quantities in the treated wastewater released from the District's plants—and the District continues to send samples of its influent (the waste stream coming into the plants), effluent (the treated wastewater discharged in the Chicago area waterways), and downstream waters to the Johns Hopkins University School of Public Health for analysis. So far, there is no evidence that their presence in our waterways is in any way harmful to public health.

But the harm to fish is only one reason to find a safe, secure way to dispose of our medicines. Medicines accumulating in our homes pose a threat to humans—teenagers combing through cabinets looking for drugs, seniors who accidentally mix prescriptions or, because of high cost of drugs, trade pills among themselves.

What's to be done? First of all, don't flush! Right now, the best way to dispose of medicines is to take them to an organized hazardous waste collection facility, such as the city of Chicago's on Goose Island (1150 N. North Branch; Open Tuesdays, 7 a.m. to noon; Thursdays, 2 p.m. to 7 p.m., and the first Saturday of every month, 8 a.m. to 3 p.m), or to a periodic hazardous waste collection day in your community. MWRD sponsors two of these in suburban locations each year. Check our Web site in March for our 2008 collection day locations: [▶ mwrld.org](http://mwrld.org)

Task Force Formed

To address the problem of drug disposal, the MWRD has formed a Pharmaceutical Task Force composed of representatives from many groups, including the EPA, Chicago and suburbs, Friends of the River and the Sierra Club, the Illinois Poison Center, and more. Commissioner Patricia Horton, chair of MWRD's Industrial Waste and Pollution Committee, sponsored a study session on this topic last year. Working with the UIC School of Public Health, the MWRD plans to support a survey of public attitudes and behavior regarding drug disposal. The results of this survey will help us to design an effective public information campaign and, perhaps, a pilot collection program.

Initiatives Begun in 2007

Epidemiological Study to Determine Health Risks of Recreational Exposure to Chicago Area Waterways

Because the volume discharged from our wastewater treatment plants makes up the bulk of the river water in most places, the Chicago Area Waterways are considered “effluent dominated.” Though the quality of the Chicago River, the Cal-Sag Channel, and the Sanitary and Ship Canal has improved markedly in recent years—largely due to the MWRD’s treatment system, pollution control, and stormwater capture by Deep Tunnel—these waters are still not fit for fishing or swimming. Even so, recreational use by canoeists, kayakers and other boaters has been on the rise.

The question is, What are the health risks, if any, of incidental exposure to the Chicago waterways? What happens if a kayaker falls in? When a canoeist gets splashed by river spray and ingests some of the water? What happens to crew teams on the North Shore Channel if a hand blister gets wet repeatedly? We don’t know beyond anecdotes.

To try to determine the answer to those questions, the MWRD is supporting a \$3 million epidemiological study conducted by the UIC School of Public Health that began last year.

This research will be the first U.S. study to address the health of individuals who engage in limited contact water recreational activities, such as boating, fishing, canoeing, kayaking, and rowing. The study has three objectives: 1) to determine the rate of illness attributable to limited contact recreation on the Chicago Area Waterways, 2) to characterize the relationship between microbe concentrations in the water and illness rates among study participants, and 3) to identify pathogens which cause illnesses. UIC plans to enroll 9,300 study volunteers over three years, recruited from three different activity groups: 1) people who have no water contact during recreation; 2) people who boat, fish, canoe, kayak, or row in Lake Michigan, the Skokie Lagoons and the North Shore Channel upstream of the North Side Water Reclamation Plant; and 3) people who engage in these activities in all other Chicago Area Waterways.

The study will probably take three years to complete but updates will be posted on the District’s Web site: [▶ mwrld.org](http://mwrld.org)



Looming Issues

Disinfection and Other Factors to Improve Water Quality in Chicago Waterways

In late November, the Illinois EPA proposed new standards for the Chicago Area Waterways, the result of a periodic assessment of the “attainable use” of the state’s waterways mandated by the federal Clean Water Act. As expected, the new standards, if adopted by the Illinois Pollution Control Board, will require the MWRD to install disinfection technology at its three largest plants to kill more of the bacteria still present in the treated effluent and to increase dissolved oxygen in the waterways to improve habitat for aquatic life.

▶ Visit chicagoareawaterways.org/proposed-standards to review the proposed standards

Many of the conservation organizations in the Chicago metropolitan area support the requirement to disinfect the District’s effluent. Indeed, the MWRD is one of only a handful of wastewater agencies that does not currently do so at its largest plants, principally because the Chicago waterways are not the primary drinking water supply for any cities nearby and because the agency was not required to do so.

Installing disinfection technology will cost millions of dollars and will have its own environmental downsides. The technique most likely to be selected by the District is to expose effluent to ultraviolet radiation, which requires a lot of energy. However, if the District does eventually disinfect its effluent, there will be a marked improvement in the quality of our waterways. So a major public policy issue will be unfolding over the course of 2008.

The Illinois Pollution Control Board has set hearings on this matter in January and March. I plan to send periodic updates via my electronic newsletter.

▶ Sign up for the newsletter mailing list at debrashore.org or email debra@debrashore.org

Stormwater Management

Over the next 18 months, the MWRD will be developing a Watershed Management Ordinance for Cook County to set minimum standards for stormwater management and to serve as a guide for municipalities in managing water resources as they develop or redevelop land in the urban core. This will be another vital public policy decision and will, I hope, engage the public in a lively discussion about how we manage rainwater in our metropolitan region.

Currently the MWRD has commissioned six detailed watershed studies for the six major watersheds in Cook County and has contracted with Environmental Resource Associates to draft the new ordinance.

Stay tuned.

Climate Change

“Mitigation is an option; adaptation is not.” This was a statement I heard at a corporate climate response symposium I attended last fall. Some would argue that mitigation—the attempts to alter our behavior and



practices in order to reduce the potential impacts of global climate change—is also NOT an option. But for a public agency with limited funds and a large impact on our environment, how should decisions about where to devote resources be made?

The city of Chicago has been preparing a Climate Change Action Plan and District representatives have been involved in shaping that. Water and wastewater infrastructure will be vitally important. Some projections of local effects of climate change suggest there will be more intense rain events. Will the District’s flood control plans be adequate?

I plan to post more on this topic later in 2008.

Other News

Field Museum ECCo Fellow

Last fall I was honored to be named one of the first five Fellows by The Field Museum's Division of Environment, Culture, and Conservation (ECCo).

The fellowship was created to foster active collaborations with other institutions and recognizes the contributions of individuals who work closely with ECCo staff on projects that support the division's mission: conservation and cultural understanding both in the United States and Latin America.

The other Fellows named are Michael Cepek (Anthropology Department, University of Texas-San Antonio), Clark Erickson (Anthropology Department, University of Pennsylvania), Gabriela Nuñez (Department of Biological Sciences, University of Illinois at Chicago), and Melinda Pruett-Jones (Executive Director, Chicago Wilderness).

I have already visited the Museum for a brown bag lunch talk about water and wastewater in our region and will be helping to plan local tie-ins to a major water exhibit coming to the Museum in July 2009.

Delegate for Barack Obama

I have been slated to be a delegate for Senator Barack Obama from Illinois' 9th Congressional District, which means I am on the ballot on Feb. 5 in the Democratic primary and hope to attend the Democratic National Convention in Denver in August.

Legislative Gains

The District supported a bill that passed the Illinois General Assembly last year that requires the gradual phase-out of phosphorus from automatic dishwashing detergent sold in Illinois by 2010.

Plant Tours

Want to tour the world's largest sewage treatment plant (at Stickney) or the plant that treats your family's wastewater? In 2007, the Metropolitan Water Reclamation District re-opened its treatment plants to public tours by school groups and others. (Some restrictions apply.)

► [Download mwrd.org/Press_Releases/tour/tour_guidelines.pdf](http://Download.mwrd.org/Press_Releases/tour/tour_guidelines.pdf)
for more information

Resources

Metropolitan Water Reclamation District: Information on tours, rain barrel purchases, board meetings and agendas, employment opportunities, combined sewer overflows and technical reports:

▶ mwrld.org

Water Conservation ▶ h2ouse.org

Family Water Audit ▶ wateruseitwisely.com/familywater

Green Infrastructure ▶ greeninfrastructure.net

Green Values Stormwater Toolbox

▶ greenvalues.cnt.org/green-infrastructure

Environmental Protection Agency

▶ cfpub.epa.gov/npdes/home.cfm?program_id=298

**Catching the Rain: a Great Lakes Resource Guide
to Natural Stormwater Management**

▶ americanrivers.org/site/DocServer/CatchingTheRain.pdf?docID=163

Recycling and Hazardous Waste ▶ chicagorecycling.org

Intergovernmental Panel on Climate Change ▶ ipcc.ch

Chicago Metropolitan Agency for Planning ▶ cmapp.illinois.gov/summit

Chicago Green Festival • May 17–18, 2008: More than 350 diverse local and national green businesses displaying and selling eco-friendly, fair trade and sustainable products at Navy Pier ▶ greenfestivals.org

Chicago Sustainability Action Guide ▶ believechicago.org/guide

Reflections on My First Year

As I mentioned at the beginning of this report, I have found serving on the Board of Commissioners to be intellectually challenging, deeply satisfying, and largely humbling. I like it a lot.

The agency is well-run, fiscally sound, and has many very able and devoted employees. The MWRD does a largely hidden job remarkably well.

That said, I do believe we are at a singular moment in the history of this agency, a fourth major turning point, if you will.

The first occurred more than 100 years ago with the decision to dig the Sanitary and Ship Canal and the Cal-Sag Channel and reverse the flow of the Chicago River. The second grand achievement was the construction of the sewage treatment plants beginning in the early 1900s bringing modern sanitation to the city and suburbs. The third was the decision in the late 1960s to build Deep Tunnel—the system of underground storage tunnels (completed in May 2006) and additional reservoirs still being excavated that have dramatically reduced pollution in Chicago area waterways and saved Cook County residents millions of dollars in flood damages.



Here I am more than 300 feet underground touring the District's Mainstream Pumping Station. The large circle behind me is the size of the largest portions of Deep Tunnel.

Now, I believe, we stand on the cusp of a fourth great moment in the District's history that can define this agency for the 21st century. It has to do with stormwater management. Will this agency see itself as a garbage collector, gathering a waste product (stormwater) and disposing of it as expeditiously as possible? Or will it see itself as a bank, collecting deposits of precious liquid assets (rainwater) and investing them wisely in our communities?

That's the challenge that lies before us. It is a cultural challenge. It is an engineering challenge. It is a political challenge. I believe we are up to it, but we will need your help.

Thank you again and again for giving me the opportunity to serve.



If you have questions about any matters in this report, or others, please do not hesitate to contact me. [▶ Email `debra.shore@mwr.org`](mailto:debra.shore@mwr.org)

You may also contact me at my personal e-mail and sign up for my periodic electronic newsletters offering news from the front.

[▶ Email `debra@debrashore.org`](mailto:debra@debrashore.org)

If you would like to become a part of the Friends of Debra Shore organization, please visit my Web site: [▶ Visit `debrashore.org`](http://debrashore.org)

I hope to see you at our summer solstice celebration event in June!

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