Clean water
education in
the community
It all starts here

Clean water and
innovation
Can they join forces on
Cleveland’s lakefront to
make an economic impact?

GREATEST MEDICAL BREAKTHROUGH?

Could this be the best medicine
since 1840? Sanitation, clean
water top recent poll

BY KIM JONES
clean water
Editorial a letter from the Executive Director and Board President

Clean water: Can’t live without it

Some say that the heart of Cleveland can be found in sports, while others are drawn to our museums. But open up any visitors guide and you will almost always see a common theme poised as the backdrop to one of the nation’s most underrated cities: clean water.

After decades of neglect and decay, Cleveland’s waterways are vastly improved due in large part to the Northeast Ohio Regional Sewer District. Residents across the region are able to take advantage of the benefits clean water has to offer, and by improving water quality, we hope to encourage our region to further explore the possibilities of these beautiful resources.

The significance of clean water in our region strongly contrasts its absence in third-world countries. Approximately one billion people around the world do not have access to clean water, and roughly 135 million people will die from water-borne diseases by 2020. Yet due to the District’s work, nearly one million in Northeast Ohio alone are protected from these harsh realities.

For 35 years, we have protected and improved area water resources throughout greater Cleveland. Our commitment to excellence is visible throughout the community as economic opportunities reliant upon water have become the new focus of Cleveland’s potential business market. Furthermore, we have embarked upon a journey to educate the public on the importance of clean water matters.

So we ask you to start your journey with this publication. Although our work remains an essential component of daily life, we must not forget the investments that must continuously be made in order to preserve the quality and safety of clean water in our region, and perhaps in yours, too.

THIS YEAR’S ANNUAL: As our 2006 report, we hope this publication takes a creative look at clean water matters. From brief articles to the “parody” ads that draw attention to our efforts, the message is as critical as the value of clean water itself.

Ronald D. Sulik
Board President

Erwin J. Odeal
Executive Director

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Cover: Photo illustration by John Gonzalez, images © Dieter Spears & TheImageArea, istockphoto.com
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Wastewater treatment topped a recent international poll conducted by the British Medical Journal as the greatest medical breakthrough since 1840. The process trumped a shortlist of medical discoveries that included antibiotics, anesthesia, vaccines and DNA.

Although some of the 11,000 voters (which included doctors and members of the public) felt the discoveries of anesthesia and antibiotics were more significant, other voters considered sanitation and wastewater treatment a deserving winner.

“Consider that in the 18th century, infectious diseases led to huge numbers of deaths, including those from cholera, tuberculosis, diphtheria, measles, smallpox and typhoid” explained Professor Johan Mackenbach of Erasmus University Medical Center. “The general lesson still holds that passive protection against health hazards is often the best way to improve population health.”

University College in London’s medical historian Ann Hardy said sanitation has provided “the key building block for public health.”

On this side of the Atlantic, wastewater treatment dates back to the mid-1800s when homes began replacing outhouses with water closets; but early sewers simply transported wastewater away from cities, rather than towards treatment. This was true in northeast Ohio, as well.

As a result, a cholera epidemic struck Cleveland in 1849 and again in 1852. People first attributed the outbreaks to sin, then with the advance of medical knowledge, recognized filthy water as the culprit.

This realization led to the city’s first attempt at wastewater treatment in the early 1900s. It was around this time that the City of Cleveland’s Easterly treatment facility began capturing floating debris from sewers discharging into Lake Erie. In a few short decades, the treatment process expanded to include surface skimming, sediment removal, the introduction of living organisms to consume harmful bacteria, and disinfection.

Not surprisingly, each improvement in wastewater treatment produced a notable drop in the incidents of water-borne diseases. That development provides the foundation for the results of this poll.

After reading the findings, a number of Regional Sewer District employees admitted that they felt the importance of their work had been publicly validated. “People often forget that clean water is vital to public health,” said Executive Director Erwin J. Odeal. “Sometimes it takes something surprising, like these unexpected survey results, to point out the obvious.”
Treatment plant performance data

**From dirty work to clean water**

Treatment plants have permit limits that indicate the acceptable criteria for clean water to re-enter the environment. The blue arrows below are those upper limits for these criteria; any readings above those limits is bad, and anything below those arrows is good. The blue bar is our actual 2006 performance.

**EASTERLY**

Located on the Lake Erie shore, our Easterly plant treated 94 million gallons per day in 2006.

**SOUTHERLY**

Southerly sits atop a 288-acre swatch of Cuyahoga Heights and treated more than 125 million gallons per day last year.

**WESTERLY**

Edgewater Beach is the home of Westerly’s efforts, which include more than 26 million gallons of treated flow per day returning to Lake Erie.

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**Knowing what the numbers mean**

**CARBONACEOUS BIOCHEMICAL OXYGEN DEMAND (CBOD)** is a measurement of the amount of dissolved oxygen needed to break down carbon-containing compounds in the water. High levels of CBOD deprive aquatic life of oxygen.

**TOTAL SUSPENDED SOLIDS** measures the amount of insoluble solids floating or suspended in water.

**TOTAL PHOSPHORUS** is the sum of all forms of phosphorus, an essential nutrient for aquatic life. But large amounts may stimulate growth of harmful quantities of algae, which can negatively affect the aquatic environment.
What do Cleveland’s clean-water resources have to offer? Discover the adventure in these local natural attractions.

**Visit a beach, walk a stream-side trail, cast a line and immerse yourself. You can enjoy all of these pleasures and more in the clean-water resources throughout northeast Ohio. While protecting your health and environment, the Northeast Ohio Regional Sewer District positively impacts many aspects of nature. Allow us to feature a few of the locations that even locals take for granted.**

**Edgewater Beach Lake Erie Cleveland, Ohio**

Lake Erie is one of the largest freshwater bodies in the world. Located within the Cleveland Lakefront State Park, Edgewater Beach is nestled on the northern border of the historic Lake Erie shoreline. A recreational haven—especially for fishermen—visitors of all ages travel from across the country to catch the region’s most prominent fish species, including perch, walleye, and bass.
Great lake, great places

Mill Creek Falls Garfield Heights
Cleveland Metroparks, Garfield Park
A historic landmark, the falls originally served as a power source to early residents

Whether you’re an explorer at heart or just a passerby, you’ll enjoy the serenity of Mill Creek Falls, located on Cleveland’s east side. The tallest of its kind in Cuyahoga County, the falls—also known as Cataract Falls—stands 45 feet high and feeds directly into Mill Creek, a tributary of the Cuyahoga River.

DISTRICT CONTRIBUTIONS:
In 2002, the District rerouted and sealed a 52” combined sewer overflow (CSO) pipe, originally mantled atop the falls, as part of a modernization and combined sewer overflow control program. The Mill Creek Tunnel—a large wastewater and stormwater storage tunnel under construction since 1997—will prevent approximately 500 million gallons of CSO from reaching Mill Creek once complete in 2008. Under this project, the District has already alleviated CSOs to Mill Creek at 19 locations.

Doan Brook University Circle
Rockefeller Park, Cleveland

A culmination of history and city-life combined, Rockefeller Park is one of five parks in the region with the perfect setting for a walk around the meandering Doan Brook. Encompassed by urbanized development, the park proudly sustains the region’s Cultural Gardens—approximately twenty in all—landscaped in the early 1900s, as well as the Rockefeller Park Lagoon.

DISTRICT CONTRIBUTIONS:
In 1998, with the help of a US EPA grant, the District conducted a watershed study of Doan Brook to look at numerous issues impacting the stream and its biological communities, including pollution, flooding, bank erosion, and man-made changes to the natural habitat.

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Four management plans were strategically developed for the communities located in Doan Brook. These plans include managing wastewater, monitoring the watershed’s biotic community, addressing channel and floodplain issues, and reducing stormwater runoff. The study also led to the development of a Doan Brook Watershed Partnership—a collaboration of communities, local and national experts, and researchers—to develop and implement a practical watershed action plan.

Since the study, the District has also taken numerous steps to address community-based concerns. The CSO control program, including the construction of the Heights-Hilltop Interceptor, has already reduced CSOs entering Doan Brook.

**Gordon Park, Lake Erie**
*Cleveland, Ohio*

Also located within the Cleveland Lakefront State Park, Gordon Park is nestled on the northeast border of the historic shoreline. Much like Edgewater Park, fishermen love the area, which can also be a great spot for wintertime fishing: enthusiasts find steelhead and salmon in these waters.

**DISTRICT CONTRIBUTIONS:**
The District keeps Lake Erie free of debris and floatable materials through the use of ten netting facilities throughout the Northeast Ohio region.

One of these netting facilities is located at Gordon Park, where netting equipment, with a 90% capture rate, helps reduce litter and debris from entering the waterways during a combined sewer overflow event.

While protecting Lake Erie and the surrounding environment, netting facilities also guard fish species and wildlife from debris destructive to aquatic habitats.

The District’s netting facilities captured approximately 12 tons (24,000 pounds) of debris in 2006 that would have otherwise entered the waterways.

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**Walk.**

**Swim.**

**Watch.**

**Breathe.**

**Feel.**

**Enjoy the outdoors again.**

Go ahead. Don’t be afraid to get the most out of the environment. The Northeast Ohio Regional Sewer District has been improving the environment and protecting public health since 1972, and WATER® has been making these improvements possible.

Ask your doctor about the benefits of WATER®.
Or visit us online at www.neorsd.org/water

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*(dihydrogen monoxide)*

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*photo courtesy amy kimball / www.istockphoto.com*
Lake Erie and the Cuyahoga River lured early settlers with the promise of travel and commerce. After leveraging the industrial capacity of our waterways to the point of exhaustion, the District has spent the past 35 years restoring our waterways to environmental health.

Now as luck and hard work would have it, Greater Cleveland has renewed opportunities to tap into the entrepreneurial capacity of our most precious natural resource. However, this time we can do it while keeping our environmental integrity intact.

A late-2006 report urged Ohio officials to harness Lake Erie’s winds as a homegrown energy source. Wind energy would create jobs, protect farmland and add to the growing need of energy independence, the report stated. Overall, Ohio has the chance to gain 22,000 new manufacturing jobs if we pursue this promising new technology – many of those here in northeast Ohio.

Ohio’s manufacturing base could serve as a foundation for this technology’s development. Wind turbine manufacturers want to install the machines close to their assembly sites to avoid huge transportation costs; that motivation could jump-start a unique manufacturing base in Northeast Ohio and along the Lake Erie shoreline.

The physical reality that wind speeds are greatest over bodies of water doesn’t hurt our prospects either. Of course as with any new technology, there are obstacles we must first overcome. For example, windmills tend to generate most of their power during fall and spring, when demand is low. But the potential payoff for pursuing wind turbine technology is well worth the effort.
Connecting with neighbors from across the region—and the globe—the Northeast Ohio Regional Sewer District takes education, outreach, and partnerships as seriously as we take our clean-water work.

We continue to identify and evaluate community-involvement opportunities that connect with our mission to protect public health and our environment.

The District would like to thank all 2006 Community Outreach participants. For an up-to-date list of community outreach events for 2007, visit www.neorsd.org

We helped establish several partnerships critical to the region last year, including a robotics pilot program at one Cleveland school. Volunteer employees helped seventh-graders by promoting math, science, and communication skills in a robot-building competition known as Aquabots.

As a contributor to Cleveland’s economy, the District offered more than 60 students the chance to acquire on-the-job work experience last year. A Success at Work workshop for all of its summer students and co-ops provided basic guidelines for students to follow as they enter the professional workforce.

Tours and special presentations help communicate our message: In 2006, we hosted more than 20 facility tours, including a 300-feet-underground tunnel tour for Cleveland City Council’s Public Utilities Committee.

Community involvement during the 2006 National Clean Beaches Week brought city leaders and community environmental groups together for the betterment of Greater Cleveland and our Great Lake.
The Sewer District employs more than 600 men and women across northeast Ohio, and those are the faces of clean water in our region. With a vision for future opportunities and challenges, our team of Trustees and Senior Staff members will continue to work with staff and our neighbors to assure clean water for a Greater Cleveland.

Facing the clean-water facts
From a burning river to lakefront development, from an environmental disaster to a recreational destination, The Northeast Ohio Regional Sewer District has helped rejuvenate Cleveland’s Lake Erie and Cuyahoga River, and the progress continues. We are proud of our contributions to this rebirth, and will continue to promote our natural water resources as places of healthy water quality, beauty and promise.

Visit us on the world wide web www.NEORSD.org