NORTHEAST OHIO REGIONAL SEWER DISTRICT

1985 ANNUAL REPORT

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About the Cover
An inspector for a testing laboratory checks the condition of one of the 132-inch diameter concrete pipes that will become part of the Heights/Hilltop Interceptor. When completed, this project and its sister project, the Southwest Interceptor, will help to ensure a healthful environment and continued protection of our most precious natural resource — our water.

Lois M. Epstein, Editor
1985 Annual Report
Northeast Ohio Regional Sewer District

1985 BOARD OF TRUSTEES

John Petruska
President

Mayor John Petruska was first appointed to the Board by the Suburban Council of Governments in March 1975. He is mayor of the City of Parma.

Lester C. Ehrhardt

Appointed to the Board by the Suburban Council of Governments in February 1984, Mr. Ehrhardt served as mayor of the City of Lyndhurst, from 1964 until 1980.

Edward J. Rawlins
Vice President

Mr. Rawlins was appointed to the Board by the Cuyahoga County Commissioners in March 1983. He retired in 1983 after 32 years with the City of Cleveland Fire Department.

Edward H. Richard

Mr. Richard was appointed to the Board in March 1984 by the mayor of Cleveland. He is chief administrative officer of the City of Cleveland.

Anthony C. Amato
Secretary

First appointed to the Board by the mayor of Cleveland in 1980, Mr. Amato is risk manager of the City of Cleveland and has served in that capacity since 1981.

William J. Reidy

Mr. Reidy was appointed to the Board by the mayor of Cleveland in 1983. He is a general practice partner in the Cleveland office of the certified public accounting firm of Coopers & Lybrand.

Ronald D. Sulik

Mayor Sulik was appointed to the Board by the Suburban Council of Governments in January 1985. He is mayor of the Village of Newburgh Heights.

PRESIDENT'S MESSAGE

Mayor John Petruska
President

Looking back at 1985, there are some very special events that I would like to highlight.

I am personally gratified that after many years of planning, 1985 saw initiation of construction of the Heights/Hilltop and Southwest Interceptors. And I know that the other Board members share that pleasure with me.

At groundbreaking ceremonies for the interceptors, we were joined by local, state and federal officials, all gratified that many long-standing problems were finally on the way to being solved.

But the interceptors alone cannot stop all of this area's water pollution problems and incidences of sewer overflows. So, another event that occurred during 1985 was also of major significance.

Late in the year, the members of the Board reviewed at length and then approved a set of new rules and regulations formulated by the District's planning engineers for inclusion in our Sewer Use Code. This code requires control of overflows and regulates and limits the types and amounts of wastewater that enters our facilities. The new rules will ensure that all municipalities that we serve will be afforded the maximum benefits of our wastewater treatment plants.

During the year, we were pleased to hear that the City of Middleburg Heights had officially agreed to connect to the Southwest Interceptor when it is ready to serve that community. Until that time, Middleburg Heights will continue to operate and maintain its own wastewater treatment facilities.

Another event of 1985, in which we all took great pleasure, was the purchase of a building to house our Administrative Offices. The move took place in December and was accomplished with a minimum of pain. The rehabilitated building is a source of pride both to us and to the area in which it is located.

These are just some of the high-points of 1985. It was an eventful year. We expect that the near-term future will be extremely difficult due to federal funding limitations. But our mandate, as a Board, remains the same — to continue to provide the best possible water pollution control services at the lowest possible price.

DIRECTOR'S MESSAGE

Erwin J. Odeal
Director

While the District continues to make progress in its water pollution abatement program, it is faced with the challenge of coping with declining federal financial support.

In the past, our massive U.S. EPA-mandated capital improvement program was assisted by a level of federal funding that demonstrated a national priority for the restoration and protection of our lakes and other waterways.

But today, we encounter a very different set of circumstances. The 75 percent federal funding that helped us totally rebuild two of our wastewater treatment plants, renovate another, and initiate our interceptor sewer program is now being slashed.

The Heights/Hilltop and Southwest Interceptors, on which construction began during 1985, were planned to be built over a 10 to 15 year period, utilizing 75 percent federal funding. These projects were awarded initial grants prior to September 30, 1984.

That was the date established by Congress after which future projects would receive a lower level of funding. However, drastic cuts are being proposed for the federal construction grants program. Consequently, these projects, ranked first and third on Ohio EPA's priority list, will now receive federal grant amounts far short of actual needs.

The interceptors are not the only major claims on the District's resources. The U.S. EPA has mandated that the District build a number of intercommunity relief sewers (regional sewers which cross municipal boundaries and thus serve two or more communities). These sewers, which were not included in the District's capital improvement planning budget, are currently estimated to cost approximately $82 million, all of which will have to be paid from local funds, since these projects are not eligible for any federal funding. Further adding to the local area's financial burden, is the U.S. EPA requirement that 16 communities in the Heights/Hilltop and Southwest Interceptor service areas must make their own sanitary sewer system improvements currently estimated to cost a total of $47 million.

We have received strong community support for the interceptors from our Congressional delegation in Washington, the Governor, from local area mayors, residents and other community leaders. And we are committed to moving ahead with these projects. However, without some mitigating action, we believe that user charges may ultimately have to rise to an unacceptable and burdensome level.

We strongly urge the U.S. EPA and Congress to re-evaluate national clean water timetables in light of local financial capabilities, obligations and resources. We also urge Congress to promptly reauthorize the construction grants program on a long-term basis.

We remain firm in our obligation to provide exceptional facilities to protect our precious water resources. But at the same time, we must be flexible enough to extend time schedules for completion of projects to reduce the burden on the individual ratepayers and municipalities.

First Contract Awarded for Heights/Hilltop Interceptor Project

On March 28, 1985, the District awarded a $5.1 million contract to the Albert M. Higley Company of Cleveland for construction of the first section of the Heights/Hilltop Interceptor.

This interceptor is projected to cost $187 million over the 15-year course of construction.

The entire project is divided into nine separate contracts, with the first, Contract 1A, to be completed by September 30, 1987.

The interceptor is designed to reduce potentially harmful incidences of sewage backing up into basements and overflowing into streams and rivers. These incidences are caused by wastewater flows larger than can be handled by existing municipal sewer systems.

The 28-mile long interceptor is projected to serve 252,000 residents of 13 eastern suburbs by transporting wastewater from those areas directly to the District's Easterly Wastewater Treatment Plant.

While not affecting construction of initial segments, a proposal to decommission existing pump stations in the northeastern suburbs in favor of a new gravity interceptor remains an issue. Ohio EPA has supported the proposal, however, U.S. EPA has not granted its approval.

Groundbreaking Held on May 30

Governor Richard Celeste, Congressman Edward Feighan, and members of the District's Board of Trustees were among the speakers at the May 30, 1985 groundbreaking ceremony. The ceremony was held on the grounds of the Easterly Wastewater Treatment Plant, where construction of the interceptor began.

Governor Richard Celeste told the crowd of local, state and federal officials; District Board members and employees; and radio, television and newspaper reporters that the Ohio EPA will recommend to U.S. EPA that it pay 75 percent of the total cost for building the interceptor. "We will work together to make sure we get all the federal dollars we need," he said. "What we are doing here is more than simply solving a water pollution problem, we are creating an opportunity for the suburbs for economic growth."

In his comments as master of ceremonies, Parma Mayor John Petruska, president of the District's Board of Trustees, said he was pleased that after all the years of planning, the District was finally at the stage of actual construction of the interceptor.

Congressman Feighan thanked the governor for his interest and commitment to the project and to the residents of the communities who will benefit from the interceptor. He also commented on the administration of the District saying: "This is a group of people who in the past ten years has effectively and efficiently directed the construction of over $600 million of sewer facilities."

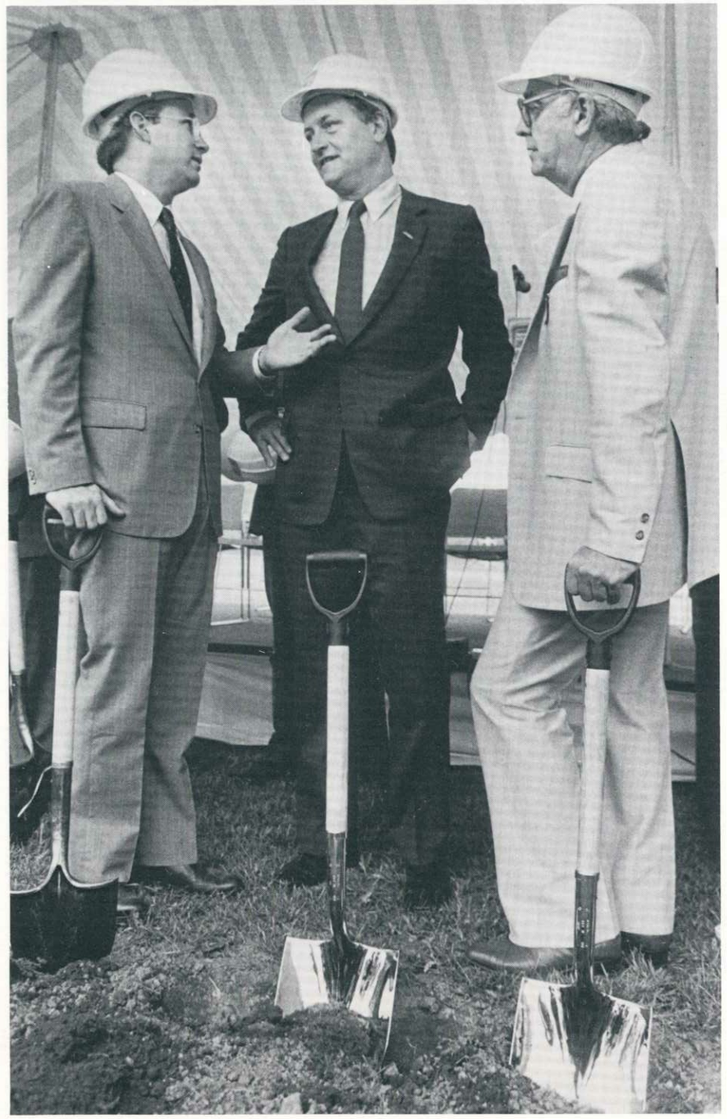
Construction Underway

In the spring, excavation for Contract 1A began on Lake Shore Boulevard, in front of the Easterly Wastewater Treatment Plant, where approximately 720 feet of box conduit (a box-shaped concrete pipe) 9 feet wide by 11 feet high was constructed.

The box conduit will be tied into a 132-inch diameter circular pipe that will be tunneled in a westerly direction under the I-90 exit/entrance ramp; open-cut along the north side of I-90; and then tunneled under I-90 itself in a southerly direction. The length of this reinforced concrete pipe will be about 2,100 feet.

The contract also includes modifications to the headworks (where the wastewater enters the plant) to accommodate the additional flow the interceptor will carry.

At the end of the year, Contract 1A was 44 percent complete. The headworks modifications were in the last stages of completion. Open-cut construction for the 132-inch diameter sewer had begun, but tunneling under the interstate had not been initiated.



Following the groundbreaking ceremony for the Heights/Hilltop Interceptor, Congressman Edward F. Feighan, left; Governor Richard Celeste, center; and Mayor John Petruska, exchange a few words regarding the benefits that the interceptor will bring to this region.

First Contracts Awarded for Southwest Interceptor

On April 11, 1985, the District awarded a $9.44 million contract to Clevecon, Inc. to construct the first section of the Southwest Interceptor. On May 2, a $2.75 million contract was awarded to the Albert M. Higley Company to construct the second section. Both of these contracts are to be completed by July 31, 1987.

The $142 million project is divided into nine separate contracts with construction extending over a nine-year period.

The main leg of the interceptor will serve portions of Brooklyn Heights, Seven Hills, Parma, North Royalton, Parma Heights, Brook Park, Cleveland, Brooklyn and Cuyahoga Heights.

Completion of the main leg will relieve the presently overtaxed Big Creek Interceptor, built in the 1920's, which overflows during heavy rainstorms.

The west leg of the interceptor is designed to serve portions of Berea, Brook Park, Middleburg Heights, Strongsville, Olmsted Falls, Olmsted Township and Columbia Township.

When the west leg is completed, a number of small wastewater treatment plants now serving the area will be decomissioned. It would not be cost-effective to upgrade these plants to meet the stringent final permit discharge limits required to restore and maintain good water quality in the Rocky River.

Groundbreaking Held on September 6

On September 6, 1985, after more than a decade in the planning stages, ground was broken for the Southwest Interceptor. Public officials and District personnel gathered at the Southerly Waste water Treatment Plant to mark the occasion.

Speaking at the event were Governor Richard Celeste; Cuyahoga County Common Pleas Court Judge George J. McMonagle; District Board President John Petruska, mayor of Parma; Alan Kosen, representing Congresswoman Mary Rose Oakar; Dan Clark, representing Congressman Edward Feighan; and Jay Marshall, representing Congressman Louis Stokes.

Judge McMonagle recounted some of the history which led to his establishment of the Sewer District, by court order, on June 15, 1972.

"The success of this organization has been outstanding," Judge McMonagle said. "We can now boat and fish in Lake Erie. As a citizen, I appreciate what the people of the District have done. Keep up the good work."

Mayor Petruska thanked the area's Congressional representatives saying that they had eliminated many roadblocks and red tape by working with Governor Celeste. "Without your cooperation," he said, "this occasion would never have taken place."

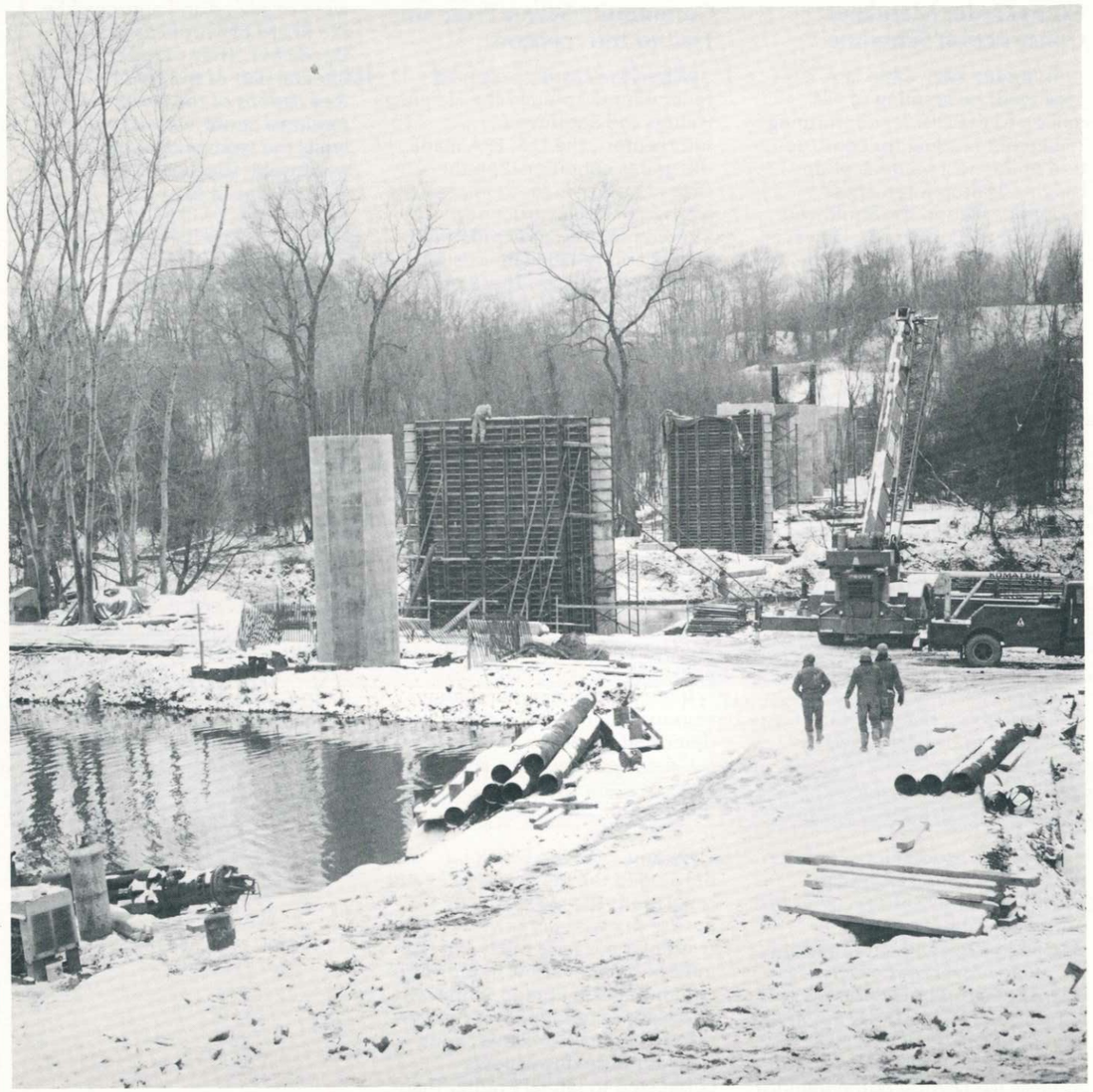
Construction Begins on First Contract

Construction on Southwest Interceptor Contracts 1 and 2 began in May. Contract 1 consists of a 114-inch diameter sewer constructed in a tunnel from the Southerly Wastewater Treatment Plant westerly to the east bank of the Cuyahoga River, for a distance of seven-tenths of one mile. From the west bank of the Cuyahoga River, the contract continues westerly to a point just east of Schaaf Lane and Van Epps Road, a distance of four-tenths of one mile.

Contract 2 will provide an aerial structure and the 114-inch diameter steel pipe to carry the interceptor across the Cuyahoga River Valley. This is a distance of 1,156 feet. Thirteen concrete piers and a 180-foot truss bridge are being constructed to support the interceptor.

This aerial structure joins the east and west portions of the Southwest Interceptor, that are being constructed under Contract 1.

At the end of the year, Contract 1 was 30 percent complete; and Contract 2 was 48 percent complete.



Construction of the Southwest Interceptor continued throughout the winter of 1985. These concrete piers will carry the interceptor across the Cuyahoga River and the Cuyahoga River Valley.

Court Order Mandates Construction Schedule

In August 1985, Ohio EPA approved the granting of $24 million to the District constituting 75 percent funding for construction of the next sections of the Heights/Hilltop Interceptor (Contract 1B) and the Southwest Interceptor (Contract 3). However, U.S. EPA refused to release the grants because the District's project construction schedule, reflecting the size and cost of the interceptors, did not anticipate completion until the late 1990's.

However, U.S. EPA finally released the funds for the projects as a result of a suit brought against the District by Ohio EPA.

On September 24, Judge George J. McMonagle, of the Cuyahoga County Court of Common Pleas, issued a court order that mandated a specific schedule for completing each section of the interceptors.

The entire Southwest Interceptor is to be completed by June 30, 1994. The Heights/Hilltop Interceptor schedule includes some variables, but the project is scheduled to be completed by May 30, 2000.

The court order also assessed a $1.5 million civil penalty against the District.

Following negotiations between the District, Ohio EPA and the court, Judge McMonagle (who had ordered establishment of the District in 1972, and who retains jurisdiction over it), permitted the District to substitute a number of improvements equalling, but in lieu of, the cash penalty.

The District agreed to purchase additional analytical equipment for the laboratory facility, to rehabilitate an existing grease reactor at the Easterly Wastewater Treatment Plant, and to improve and modernize three pump stations.

Community Sewer Program Tied to Interceptors

When the District accepted federal funds to build the Heights/Hilltop and Southwest Interceptors, the U.S. EPA made the grants conditional on the District's agreement to implement a program to construct new intercommunity and community sewers and rehabilitate existing community sewers. These projects are necessary to eliminate additional sources of water pollution.

Intercommunity relief sewers are new sewers needed to transport wastewater across municipal boundaries. The District identified the need for more than 50 of such projects. They are located throughout the service areas of the Heights/Hilltop and Southwest Interceptors. The District is responsible for constructing these sewers which are projected to cost $82 million and are ineligible for federal grants.

Individual communities are responsible for rehabilitating deteriorated sewers and for building new ones that are needed to serve their own residents. These projects are also ineligible for federal grants.

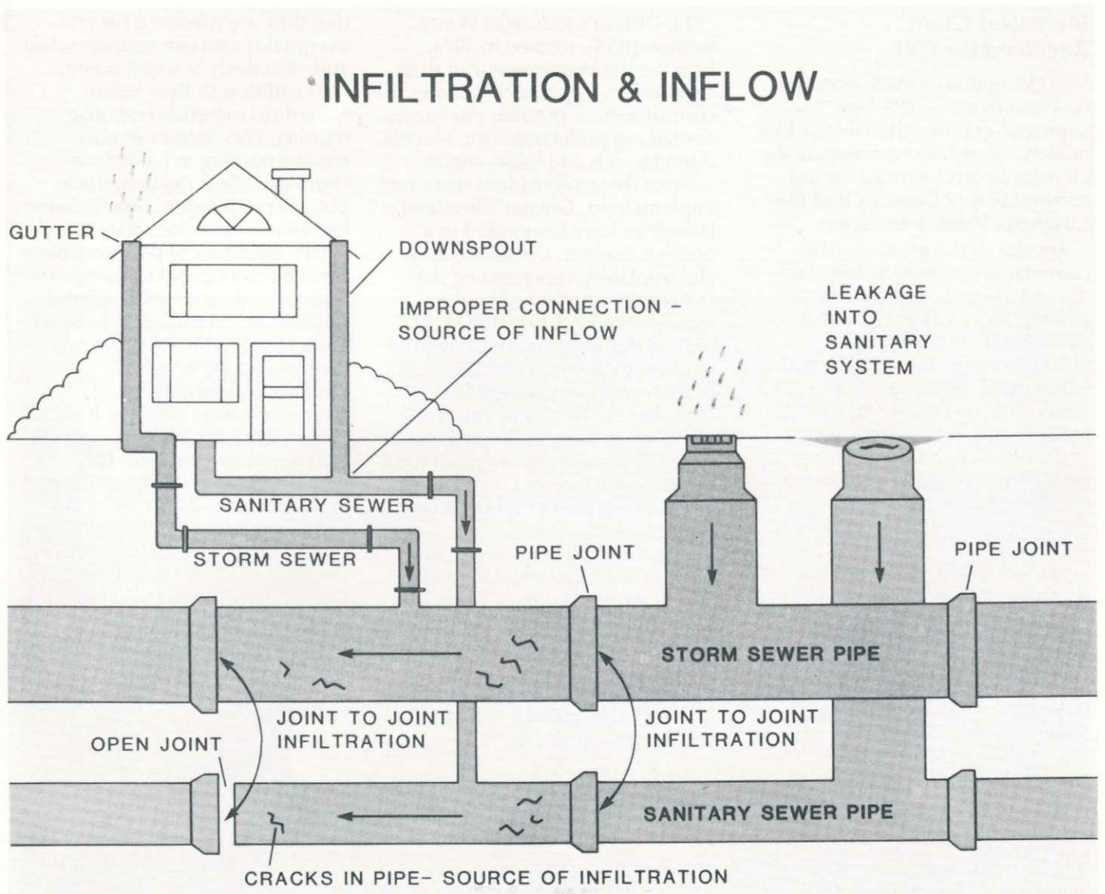
During 1985, the District developed the necessary rules and regulations that will serve to ensure that sanitary sewer overflows are controlled and that infiltration and inflow in individual communities is limited. (Inflow is rainwater entering sanitary sewers through improper connections, such as house downspouts connected to sanitary rather than to storm sewers. Infiltration is rainwater entering sanitary sewers through leaking manholes and/or sewer joints.)

Following public meetings, the completed rules and regulations were reviewed and approved by the Board of Trustees, in December. They thus became an integral part of the *Code of Regulations of the Northeast Ohio Regional Sewer District*, which limits the types and amounts of wastewater that enters the District's facilities.

The District will issue individual community discharge permits to each affected community which will then be expected to meet schedules consistent with the availability of the intercommunity relief sewers and interceptors.

Because the relief sewer and rehabilitation program is mandated by EPA, it is crucial that municipal officials and residents fully understand the ramifications of the program's requirements.

Toward that end, the District engaged in a number of activities during 1985, including: presentations to mayors, city councils, city engineers and service directors; two rounds of public meetings; media briefings; and production of the first issue of a quarterly newsletter, *The Pipeline*, which focuses on community sewer rehabilitation and is mailed to over 1,700 individuals.



This diagram illustrates how rainwater enters sanitary sewers through improper connections (inflow) and leaking manholes and sewer joints (infiltration). When large volumes of rainwater enter sanitary sewers, the sewers back up into basements and overflow into waterways. To address this problem, the U.S. EPA is requiring the District to enforce a program of community sewer rehabilitation as a condition for receiving grants to build the Southwest and Heights/Hilltop Interceptors.

Increased Grant Received for CVI

In December of 1985, word was received that U.S. EPA had approved granting the District $5.5 million to partially compensate for increased costs incurred during construction of Contract B of the Cuyahoga Valley Interceptor.

Receipt of the grant was the culmination of years of ongoing discussions and negotiations among the contractor, the District, consultants, and Ohio and U.S. EPA following a tunnel collapse in February of 1979. Extensive research determined that the collapse had been precipitated by unstable soil conditions. These conditions existed in one section of the tunnel. Although soil borings had been taken, they did not disclose the condition.

The additional work necessary to complete the project increased the cost of that contract from $3.7 million to $17 million and extended the construction period from the original completion date of July 29, 1979 to December 30, 1984.

Industrial Pretreatment Program Approved

On September 1, 1985, the District became one of the first major water pollution control agencies in the state of Ohio to receive Ohio EPA approval for its industrial pretreatment program.

The District thus became responsible for enforcement of the federal rules regulating types and amounts of industrial wastewater that may be discharged into the public sewer system.

While many agencies and municipalities have only recently developed their programs, the District has controlled industrial discharges since 1975, when its Sewer Use Code was established.

The District's Industrial Waste Section (IWS), formed in 1974, became the implementor of that code which requires companies to control and/or pretreat discharges containing pollutants such as acids, cyanides, oils and heavy metals.

Since these regulations were first implemented, Greater Cleveland's industries have responded in a positive manner. Cleveland area electroplaters, representing the industry most affected by the regulations, have invested several million dollars in pollution control systems. By the end of 1985, most of these companies were in compliance. Those not yet in compliance were in the initial stages of installation and operation of their pretreatment systems.

The combination of industrial pretreatment systems and improved wastewater treatment plant operations has produced a significant reduction of heavy metals in the discharges of the District's four wastewater treatment plants.

District Responds to Chemical Spills

During 1985, Industrial Waste personnel provided emergency assistance at the scene of 41 chemical spills, 25 of which involved flammable or explosive liquids such as gasoline, solvents or diesel fuel.

The Cleveland Fire Department notifies the District's Industrial Waste Section in the event of spills of chemicals that could reach the sewer system or in any way endanger or interfere with the operation of the treatment plants.

IWS has also developed working relationships with the U.S. Coast Guard, area municipal fire departments and emergency response personnel from Ohio EPA.

The IWS response teams receive frequent and ongoing training so that they are prepared for any eventuality and can operate safely and effectively at a spill scene.

In addition to their other hazardous materials response training, IWS personnel also receive training in hazardous chemicals identification, truck placard recognition, first response techniques, and site safety.

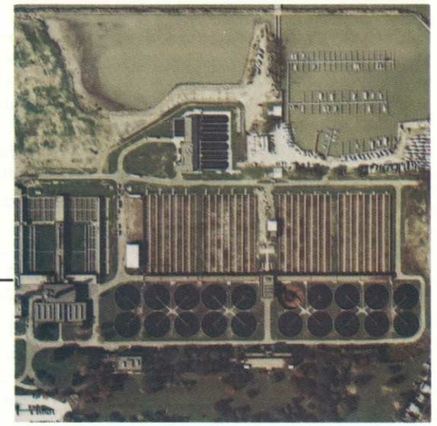
Five members of IWS have been certified to respond to transportation-related incidents involving radioactive materials. To enhance these capabilities, IWS recently received $5,000 worth of radioactivity monitoring equipment from the Cuyahoga County Disaster Services Agency.

In September of 1985, IWS helped plan and then participated in a major training exercise that was coordinated through the U.S. Coast Guard in cooperation with the State of Ohio Fire Marshall's Office. Participants included six area fire departments, several hazardous material response teams and two police departments.

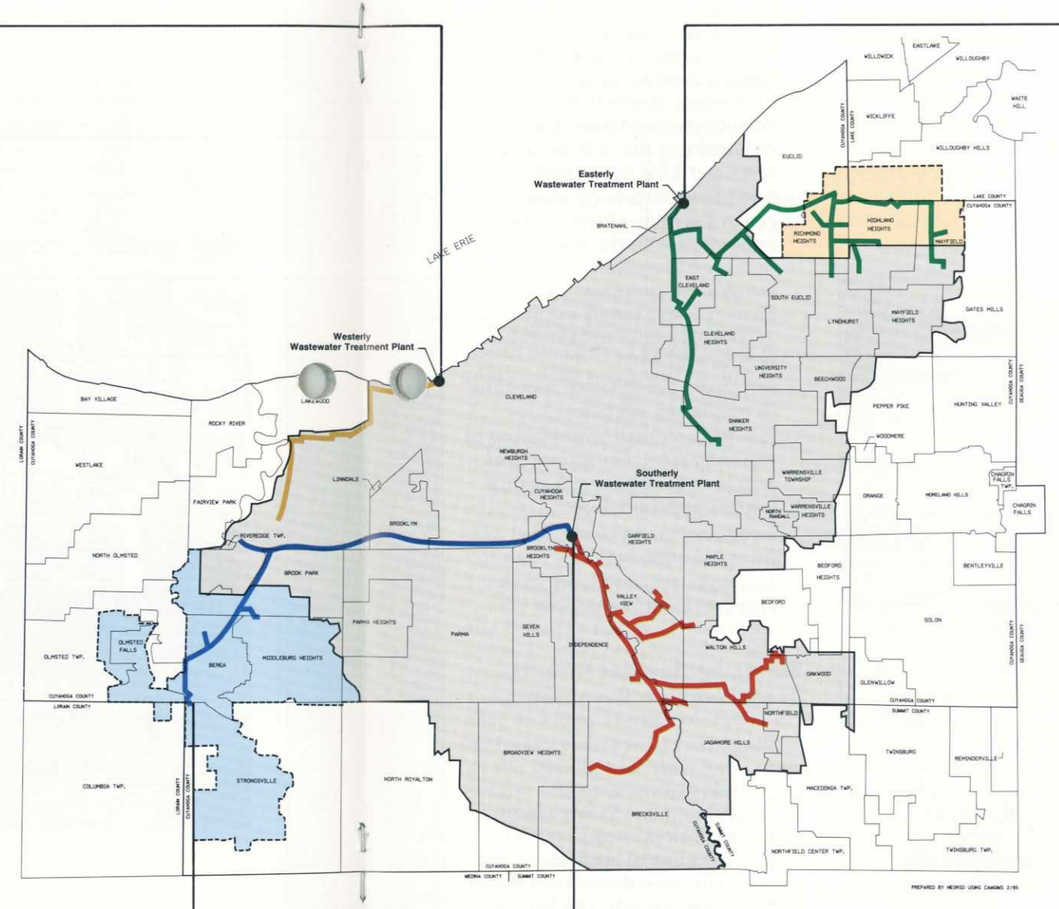
At this simulated accident, fire fighters direct a fine spray of water on a tanker truck leaking hydrochloric acid. Personnel from the District's Industrial Waste Section participated in this training exercise that focused on the types of accidents that frequently occur in Northeast Ohio.

Northeast Ohio Regional Sewer District
Service Area and Facilities

Westerly Wastewater Treatment Plant



Easterly Wastewater Treatment Plant



Strongsville "A" Wastewater Treatment Plant

Southerly Wastewater Treatment Plant

Innovative Approach Used by Sewer Control Systems

Among their duties, employees of the District's Sewer Control Systems are responsible for performing maintenance and minor repairs on the interceptor sewers and for overseeing major repairs.

While this work is generally of a routine nature, one repair project which took place during 1985 required an innovative approach.

On September 18, 1985, an Industrial Waste investigation discovered a dry weather overflow to the Big Creek in the vicinity of the Cleveland Metroparks Zoo. Sewer Control personnel were notified and found that the cause of the overflow was the partial collapse of a brick weir (a device used to divert wastewater flow) in a section of the Big Creek Interceptor.

Access to the location was through a manhole approximately 10 feet from the weir. However, after viewing a television inspection film of the site, Sewer Control personnel agreed that it would not be safe to attempt to make the repair from inside the interceptor due to the depth of the wastewater and the deteriorated condition of the sewer and manhole.

An alternative plan was devised which entailed drilling a 30-foot deep, 66-inch diameter vertical shaft adjacent to the overflow sewer downstream of the weir, breaking into the side of the overflow sewer, and repairing the weir from the shaft.

A company was called in to do soil borings and reported that soil conditions were indeed favorable for such a project.

Since the situation required immediate attention, Sewer Control was permitted to hire a contractor from the District's list of emergency contractors. This list, which is updated yearly, consists of contractors willing to rent their equipment at a predetermined price schedule and to be available to make a repair within 24 hours of notification.

Following the construction plan devised by Sewer Control Systems, the contractors successfully accomplished the drilling and repair over a four-day period.

The remaining work — constructing a concrete cap with manhole access for the shaft; removing debris from the overflow, and restoring the work area was accomplished in one additional day.

District Developing New Management Information System

In 1983, the District began to develop a Management Information System (MIS), mandated by the state of Ohio.

The MIS is to include, but not be limited to, computerized and integrated fixed assets control, inventory control, preventive maintenance and financial management.

To implement the first phase of the project, the District engaged a consulting firm to assess the District's needs and develop a plan. A conceptual design and needs assessment survey was completed in 1984.

In 1985, the District surveyed 115 sewerage agencies throughout the country regarding their MIS experience. Fifty-eight agencies responded. Three of the District's staff members then visited five of those agencies to review their systems and to discuss their implementation process.

Late in 1985, the District engaged an independent consultant to serve as the project leader for a planning team of three consultants who will complete the second phase: design and implementation of the MIS, including the identification, acquisition and implementation of appropriate hardware and software.

The MIS is scheduled to be completed and in operation by July 5, 1989. It is expected to meet the following objectives:

- Provide a maintenance management system for scheduling preventive, predictive and corrective maintenance and for determining the availability of spare parts for equipment.
- Provide an improved inventory control system which will be integrated with the maintenance management and financial accounting systems.
- Provide more timely information as to what equipment is out of service and why.
- Automate compliance reporting to regulatory agencies.
- Provide automatic monitoring of expenditures, requisitions and purchase orders issued against budget appropriations.
- Integrate operational and financial information.
- Maintain detailed fixed asset cost and location records.

Billing Settlement Results in $1.9 Million Payment

When the District was created, it contracted with the Utilities Department of the City of Cleveland to provide sewer billing and collection services.

Under the initial agreement and subsequent amendments in effect through August 1984, the Utilities Department paid the District the amounts billed to the customers, less estimated amounts for uncollected billings.

In August 1984, the Utilities Department implemented a new billing system and began paying the District only that amount actually collected from District customers.

Because estimates of uncollected accounts were made prior to August 1984, it was necessary to reconcile amounts withheld to actual uncollectable accounts. The City and the District jointly engaged an accounting firm to make a statistical analysis of the outstanding accounts and determine the appropriate settlement. The analysis was completed in 1985 and resulted in a one-time payment to the District of $1.9 million.

District Increases Public Awareness

In communicating information about the District to the general public, 1985 was a year of firsts — the first District annual report, the first District participation in a major public exhibition and the first quarterly newsletter.

By participating in the 1985 Cleveland Home and Flower Show (the largest show if its kind in the country) staff had the opportunity to meet the public first-hand.

Fifty-eight employees manned the District's booth, in four-hour shifts, from February 22 through March 3. The major component of the exhibit was a 12-foot display that included a large color map of the service area and photographs of the District's facilities.

One section of the display photographically compared the deteriorated condition of Lake Erie and its beaches, prior to the District's creation, with the immensely improved situation today. There were aerial views of the three major wastewater treatment plants and photographs of associated programs showing the District's excellent laboratory facilities and industrial waste activities.

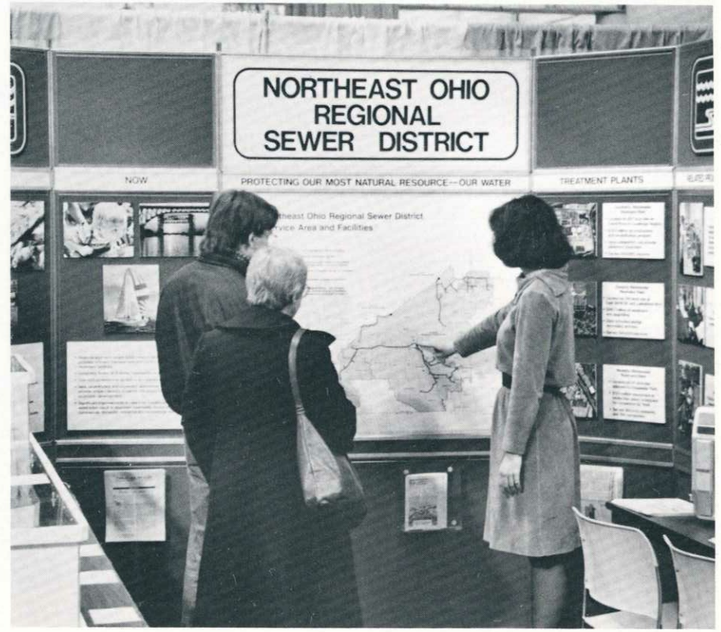
A narrated slide show and a piece of automated laboratory equipment completed the exhibit. There was also a variety of informative literature available for distribution.

The 1984 annual report, published in 1985, was replete with photographs showing staff in their working environments. The report included an historical perspective which traced the circumstances leading to the creation of the District in 1972 and the enormous improvements that have been made in the area's water quality since that time.

The report was distributed to local, state and federal officials, representatives of regulatory agencies and environmental groups, the media, and community leaders and organizations. Each of the District's 650 employees also received a report.

The quarterly newsletter "The Pipeline" was launched during 1985. Its primary function is to inform and educate municipal officials and residents regarding the U.S. EPA-mandated community sewer rehabilitation requirements and progress of the program.

It is sent to area mayors, service directors, city engineers, the media and interested residents.



A District employee points out the location of the Southerly Wastewater Treatment Plant to two visitors at the District's booth at the 1985 Cleveland Home and Flower Show.

Southerly Plant Nearing Completion

The Southerly Wastewater Treatment Plant, largest of the District's facilities, occupies a 200-acre site in the Village of Cuyahoga Heights.

In 1975, the District began reconstruction, expansion and rehabilitation of Southerly's 115-million-gallon per day (mgd) secondary treatment facilities. When construction is completed, in 1987, design capacity will be increased to 175 mgd average flow with 400 mgd peak flow receiving biological treatment and filtration. During wet weather, an additional 335 mgd will receive primary treatment.

The project now being constructed (Contract 16-1) consists of rehabilitation of the primary, aeration, and settling tanks from the old plant and constructing new settling tanks and compressed air facilities.

During 1985, construction proceeded on Contract 16-1A which includes modifying the old primary tanks, constructing a settled sewage channel from the primary tanks to the modified aeration tanks, constructing a new compressor building, and modifying the aeration tanks and galleys and old circular clarifiers and associated equipment.

SOUTHERLY WASTEWATER TREATMENT PLANT
Plant Characteristics and 1985 Operating Highlights

TYPE OF PLANT: Primary and Secondary Treatment (Conventional Activated Sludge) with Effluent Filtration and Solids Handling
RESIDENTS SERVED: 605,000
NUMBER OF PERSONNEL: 251
PLANT DESIGN CAPACITY: 175 mgd, dry weather; 400 mgd peak
TOTAL GALLONS OF WASTEWATER TREATED: 41.5 billion; Average: 114 mgd
TOTAL SLUDGE FILTER CAKE PROCESSED: 79,112* wet tons
TOTAL SLUDGE INCINERATED: 73,000 wet tons
TOTAL SLUDGE HAULED TO LANDFILL: 6,112 wet tons
OPERATING COST: $14,312,117
EFFLUENT DISCHARGES TO: Cuyahoga River

**Includes 599 millions of Easterly sludge pumped to and processed by Southerly and 6,358 tons hauled from Strongsville "A".*

During the year the old primary tank equipment was demolished and new equipment installation began. Renovation of the aeration tanks was 80 percent complete by the end of the year.

Construction of the new final settling tanks, a major portion of Contract 16-1B, was approximately 65 percent complete by the end of the year. Sludge pumps were installed and the mechanical piping system was partially complete.

Other construction activities during 1985 included:

- demolition of equipment in the old final circular clarifiers
- receipt of new pumps
- completion of foundation for new compressor building

A natural gas well, drilled by the District on Southerly property during 1984, was put into production in July of 1985. Natural gas is used at Southerly for firing the incinerators, operating the boilers and for heating the buildings. The District realized a savings of $79,560 in the cost of gas used at the plant during 1985, and that savings is expected to continue in the future.

SOUTHERLY WASTEWATER TREATMENT PLANT
1985 Performance Data Summary
(in milligrams per liter)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Biochemical Oxygen Demand (BOD)	9	12	10	11	10	3	4	4	5	7	4	4
Suspended Solids	3	5	3	3	3	2	2	2	2	2	3	3
Phosphorus	1.3	.89	.73	.57	.90	.82	1.17	.88	.78	.95	.71	.71

National Pollution Discharge Elimination System (NPDES) Limitations: BOD — 20 milligrams per liter; Suspended Solids — 12 milligrams per liter; Phosphorus — 1.0 milligrams per liter

This photograph, taken in July 1985, shows the construction site for the four final settling tanks, operating tunnels and the influent channel —all part of Southerly Contract 16-1B. The settling tanks will have a total water surface area of three acres.

Easterly Implements Energy Savings Plan

EASTERLY WASTEWATER TREATMENT PLANT
Plant Characteristics and 1985 Operating Highlights

TYPE OF PLANT: Primary and Secondary Treatment (Activated Sludge, Step Aeration)
RESIDENTS SERVED: 540,000
NUMBER OF PERSONNEL: 73
PLANT DESIGN CAPACITY: 155 mgd dry, weather; 330 mgd peak
TOTAL GALLONS OF WASTEWATER TREATED: 43 billion; Average: 118.1 mgd
TOTAL SLUDGE PUMPED TO SOUTHERLY FOR PROCESSING: 599 million gallons
OPERATING COST: $3,963,498
EFFLUENT DISCHARGES TO: Lake Erie

The Easterly Wastewater Treatment Plant is situated on a 110-acre site on the northeast side of Cleveland between Lakeshore Boulevard and Lake Erie at East 140th Street.

The original primary treatment plant began operations in 1922. In 1938, the plant was upgraded to a 123 mgd activated sludge secondary process.

Expansion and upgrading to improve the plant's efficiency began in 1978, and is essentially complete. These improvements have increased Easterly's dry weather flow capacity to 155 mgd with a wet weather, or peak flow, capacity of 330 mgd.

As part of an ongoing program to reduce operating costs, the District hired a consultant to make an energy conservation study at the Easterly Plant. The study was to make specific recommendations regarding methods for conserving energy used for heating, ventilating, air conditioning and lighting.

The recommendations were received and implemented during 1985 and resulted in a savings of $21,076.

During that same time, plant management initiated steps to conserve energy used by the various wastewater treatment processes. These efforts resulted in a reduction of $188,134 in electric power costs and $9,003 in natural gas costs.

EASTERLY WASTEWATER TREATMENT PLANT
1985 Performance Data Summary
(in milligrams per liter)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Biochemical Oxygen Demand (BOD)	16	14	12	9	14	22	21	22	22	20	16	16
Suspended Solids	7	7	8	6	4	4	3	5	5	5	6	6
Phosphorus	.50	.43	.30	.29	.35	.22	.32	.40	.25	.21	.28	.28

National Pollution Discharge Elimination System (NPDES) Limitations: BOD — 20 milligrams per liter; Suspended Solids — 20 milligrams per liter; Phosphorus — 1.0 milligrams per liter

Westerly Plant 99.8 Percent Complete

WESTERLY WASTEWATER TREAMENT PLANT
Plant Characteristics and 1985 Operating Highlights

TYPE OF PLANT: Primary and Advanced Wastewater Treatment* (Physical/Chemical) and Solids Handling
RESIDENTS SERVED: 215,600
NUMBER OF PERSONNEL: 87
PLANT DESIGN CAPACITY: 50 mgd, dry weather; 100 mgd peak
TOTAL GALLONS OF WASTEWATER TREATED: 14.9 billion; Average: 41.7 mgd
TOTAL SLUDGE PROCESSED: 57,860 wet tons
TOTAL SLUDGE INCINERATED: 36,578 wet tons
TOTAL SLUDGE HAULED TO LANDFILL: 21,282 wet tons
OPERATING COST: $8,303,462
EFFLUENT DISCHARGES TO: Lake Erie
**During construction, plant is operating as a primary treatment plant with solids handling and disposal.*

Westerly, smallest of the District's three major wastewater treatment plants, is located on a fourteen-acre lakefront site at the foot of West 58th Street and the Memorial Shoreway.

The District is in the process of completing construction of a totally new facility to replace the outdated and inadequate plant originally built in 1922. When in full operation, Westerly will use a physical/chemical process that will be monitored by a central computer and localized control panels. Until construction is finished, Westerly operates as a primary treatment plant with solids handling and disposal.

During 1985, contracts were awarded and construction began on a dust collection system in the sludge incinerator area and a backup grease lubrication system for the pumps. Construction began and was completed on an underground concrete housing for the outfall valves as well as a froth spray system that sprays water on the recarbonation basin to suppress foam.

The contract to furnish and install granular activated carbon for the carbon columns, which began in 1981, was completed in 1985.

The contract to furnish, install and test the carbon regeneration system, which began in 1977, was 98 percent complete as of December 31, 1985. The only element of that project still uncompleted is the regeneration of carbon.

As the year came to a close, the entire construction program at Westerly was 99.8 percent complete.

Associated with the plant is a Combined Sewer Overflow Treatment Facility (CSOTF) that began operating during 1983. The CSOTF is capable of handling 300 mgd and is designed to temporarily store and treat flow that exceeds the plant's capacity during wet weather. This capability reduces the incidences of overflows of untreated wastewater into Lake Erie.

WESTERLY WASTEWATER TREATMENT PLANT
1985 Performance Data Summary
(in milligrams per liter)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Biochemical Oxygen Demand (BOD)	90	93	79	84	63	49	62	51	69	64	51	53
Suspended Solids	23	30	47	45	24	19	26	25	24	29	27	33
Phosphorus	.52	.72	1.72	.81	.65	.55	.86	.63	.61	.68	.65	.72

National Pollution Discharge Elimination System (NPDES) Limitations: BOD — 40 milligrams per liter; Suspended Solids — 30 milligrams per liter; Phosphorus — 1.0 milligrams per liter

Strongsville "A" Concentrates on Maintenance Work

The Strongsville "A" Wastewater Treatment Plant, smallest of the District's facilities, is located on Sprague Road in the City of Strongsville.

The plant, built in 1967, was operated by Strongsville until 1977 when it was transferred to the District. This action was taken in anticipation of decommissioning the plant when the District's Southwest Interceptor is completed.

At the time the District assumed operations, the plant was functioning as an extended aeration process plant with a capacity of 1.0 mgd. It was overloaded both hydraulically and organically and did not have facilities for either processing or removing excess sludge.

The District has completed a two-phase expansion and upgrading. Phase I, completed in 1981, includes sludge storage, return sludge pumps, two new final clarifiers, one new blower, chlorine contact tank, phosphorus removal and sludge thickeners. Total cost for this work was $1,000,000. Phase II, completed in 1982, included sludge conditioning and moving an existing belt filter press from Southerly, and was completed at a cost of $59,000.

With the upgrading and expansion completed, the plant is capable of treating 2.6 mgd. Activities at the plant now concentrate on maintenance and repair.

STRONGSVILLE "A" WASTEWATER TREATMENT PLANT
Plant Characteristics and 1985 Operating Highlights

TYPE OF PLANT: Conventional Activated Sludge and Solids Handling
RESIDENTS SERVED: 19,300
NUMBER OF PERSONNEL: 6
PLANT DESIGN CAPACITY: 2.6 mgd average; 7.2 mgd peak
TOTAL GALLONS OF WASTEWATER TREATED: 830.46 million
Average: 1.41 mgd
TOTAL SLUDGE FILTER CAKE PROCESSED: 6358.46 wet tons
TOTAL SLUDGE HAULED TO SOUTHERLY FOR FURTHER PROCESSING: 6358.46 tons
OPERATING COST: $599,082
COST PER MILLION GALLONS TREATED: $721.39
EFFLUENT DISCHARGES TO: Blodgett Creek, tributary to Rocky River

District Operating Seven Pump Stations

The District is responsible for operating seven pump stations located throughout the service area. These facilities contain pumps, valves and other mechanical and electrical equipment for lifting wastewater over areas of high elevation so that it can flow by gravity, through interceptors, to the wastewater treatment plants.

The Beech Hill and Wilson Mills Pump Stations service the Hilltop area of the eastern suburbs. The Euclid Creek Pump Station serves residential areas of the City of Cleveland.

Activities at all these facilities during 1985 centered on repair and maintenance.

On November 1, the District accepted three additional pumping stations from the City of Cleveland. Named for their locations, the pump stations are the Dille Road, Division Avenue and Jennings Road.

STRONGSVILLE "A" WASTEWATER TREATMENT PLANT
1985 Performance Data Summary
(in milligrams per liter)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
Biochemical Oxygen Demand (BOD)	17	14	11	13	11	8	10	13	15	14	15	15
Suspended Solids	16	14	12	10	10	8	6	7	10	10	13	13
Phosphorus	.76	.71	.61	.62	.57	.45	.65	.88	.67	.64	.53	.53

National Pollution Discharge Elimination System (NPDES) Limitations: BOD — 30 milligrams per liter; Suspended Solids — 30 milligrams per liter; Phosphorus — 1.0 milligrams per liter

NORTHEAST OHIO REGIONAL SEWER DISTRICT
Balance Sheets
December 31, 1985 and 1984
(In thousands of dollars)

	1985	1984
ASSETS		
Property, Plant and Equipment:		
Wastewater Treatment Plants	$432,560	$412,809
Interceptor Sewers	118,684	109,552
	551,244	522,361
Less: Accumulated Depreciation	(92,800)	(72,710)
	458,444	449,651
Construction in Progress	113,252	107,634
Net Property, Plant & Equipment	571,696	557,285
Unamortized Bond Issue Costs & Discount	3,219	3,550
Construction Fund	95,460	92,489
Revenue Bond Debt Service and Sinking Funds	23,942	19,340
Current Assets:		
Cash & Short Term Investments	22,648	20,768
Billed & Unbilled Sewage Service Fees Receivable	29,155	25,140
Grants Receivable	13,123	10,963
Inventory and Other Assets	2,605	2,390
Total Current Assets	67,551	59,261
Total Assets	$761,848	$731,925
LIABILITIES, CONTRIBUTIONS AND RETAINED EARNINGS		
Capitalization:		
Retained Earnings	$247,767	$225,012
Long-Term Debt	106,220	107,085
Total Capitalization	353,987	332,097
Contribution in Aid of Construction — Federal Grants	387,273	378,913
Current Liabilities:		
Accounts Payable	12,115	10,960
Accrued Liabilities	5,554	7,417
Long-Term Debt Due Within One Year	2,919	2,538
Total Current Liabilities	20,588	20,915
Total Liabilities, Contributions and Retained Earnings	$761,848	$731,925

A copy of the detailed financial statement may be obtained by writing to: Comptroller, Northeast Ohio Regional Sewer District, 3826 Euclid Avenue, Cleveland, Ohio 44115.

District Purchases Building for Administrative Offices

Early in 1985, the District began investigating alternative space for housing the Administrative Offices.

Following an extensive search that included evaluating numerous locations and proposals, on June 20 the Board of Trustees approved the purchase of a three-story building located at 3826 Euclid Avenue. This purchase will provide long-term cost savings to the District.

The purchase price of $2,231,000 included total rehabilitation of the property; demolition of an adjacent vacant structure, the old Belmont Hotel; and construction of parking facilities.

The rehabilitation included a new roof; new facade; retrofit of the heating, ventilating and air conditioning system; interior design, including wall coverings, carpeting, space planning — even installation of the phone system and the flag pole.

The "new" building, in move-in condition, was turned over to the District for occupancy on December 2.

The Administrative Offices are located in the City of Cleveland, a short distance from downtown, in a section known as the Mid-Town Corridor. With a dedicated group of local businessmen sparking a major campaign, this one-square mile area of formerly blighted and vacant buildings has been undergoing a steady revitalization.

The District is pleased to be counted among this group of pioneers involved in bringing life and vitality back to the Mid-Town Corridor.

Glass and metal panels covered the front of the former Mavec Building, now the Administrative Offices of the Northeast Ohio Regional Sewer District.

The long-vacant Belmont Hotel was demolished to make way for the employee and visitor parking lot for the Administrative Offices.

With its new facade of rust-colored stucco accented by cream-colored stripes, the District's Administrative Office building has taken on an entirely new look.

SENIOR STAFF

Erwin J. Odeal
Director

William B. Schatz
Chief Counsel

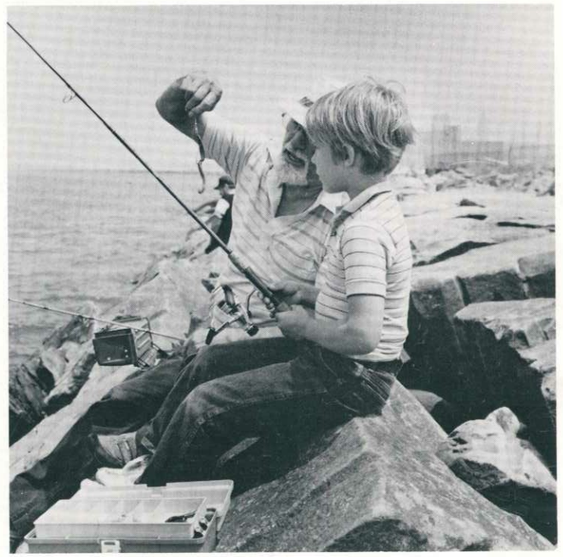
David A. DeMarco
Comptroller

Dale F. Patrick
Chief of Operations

Charles J. Vasulka
Chief Engineer

Kenneth A. Pew
Chief of Support Services

NORTHEAST OHIO
REGIONAL
SEWER DISTRICT



NORTHEAST OHIO REGIONAL SEWER DISTRICT
3826 EUCLID AVENUE
CLEVELAND, OHIO 44115