

THE PEOPLE OF THE NORTHEAST OHIO REGIONAL SEWER DISTRICT

1988 Annual Report

JOHN ABBOTT • JANET ABDALLAH • DAVID ADAMANY • MICHAEL ADAMS • BOB ADKINS
LARRY ADLOFF • LEE ALDRICH • FREELON ALEXANDER • HARRY ALEXANDER
MICHELE ALEXANDER • PRESTON ALEXANDER • CHARLES ALLEN • RICHARD ALLISON
FRANK ANDERKO • ROBERT ANGIOCCHI • JONATHAN ANIELSKI • WAYNE ANIELSKI
RICHARD ARMSTRONG • KEVIN ARTH • JOHN ATKINS • JOHN AUGUSTINE • GEORGE AULT
JEAN BAACH • BETH BADZIK • ALEX BALAZS • ALFRED BALEWSKI • LEONARD BALTER
JAMES BARACZ • JOSEPH BARBERIC • NURU BARKARI • BRUCE BARRETT
THOMAS BARRETT • ROBERT BARSIC • JOHN BARTONE • PERRY BATTAGLIA
LILLIE BATTLE • ROBERT BATTLE • MARK BAUER • WILL BAYLIS • ALFREDRIC BEAMAN
TOM BECKA • RICHARD BELCHER • RUSSELL BELL • GREGORY BENN • CHARLES BENYO
MICHAEL BERNAS • ERNEST BERTOK • LEON BEY • SUNIL BHATNAGAR • MICHAEL BILEK
ROBERT BIRCH • HERMAN BISHOP • JOSEPH BITONTI • RAYMOND BLAIR
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DAVID BOHLER • MARGERY BOHNE • SANDRA BOING • JOHN BONNELL
ROBERT BONNETT • FRANK BOONE • PATRICIA BOONE • JEFFREY BORUSZEWICZ
GEOFFREY BOSS • ALLAN BOYD • CHARLES BOYD • JAMES BRAATZ
BARTHÉLMAS BRAND • JEFFREY BREITMOS • TODD BRICHMAN • ROCHELLE BRICKER
JOSEPH BRILLA • BRUCE BROA • FRED BROWN • JOSEPH BROWN • PETER BROWN
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ROGER CERANKOWSKI • LINDA CERNY • RICHARD CHAMBERS • JAMES CHAMPION
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MICHAEL CHEETHAM • FRANK CHILINSKI • WILLIAM CHIMELEWSKI • JOSEPH CHINN
DANNY CHISHOLM • MARK CHONKO • THOMAS CIHA • LAWRENCE CINADR
KENNETH CLANCY • HAYSE CLEVINGER • LARRY CLIFFORD • JAMES CLIPPER
JACQUELINE COATS • KELLY COBBIN • SIMMON COBBINS • DONALD COBBS
RICHARD COCKRELL • CHARLES COFIELD • NEIL COHILL • JAMES COLLINS
GARY COLLUM • CARMEN COMBER • HOWARD COMBS • KEVIN CONNELLY
RICHARD CONNELLY • RICHARD CONRAD • RENATO CONTIPELLI • JOHN COOPER
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EUGENE COSTELLO • DONALD COWLING • CLAYTON COX • STEPHEN CREA
RUTH CROWL • FRANK CUFFARO • MARIAN CUNNINGHAM • ROBERT CVAROVSKY
MICHAEL CYRUS • RONALD CZERSKI • MICHAEL DaDANTE • THOMAS DANIK
SYLVESTER DANKO • TEDDY DAVID • ELLIOTT DAVIS • MARK DAVIS • MYRNA DAYTON
SAM DeANGELO • LEWIS DEBEVEC • ANDREW DEBITZKY • ROSEMARIE DeJOHN
DAVID DeMARCO • DALE DENNIS • VERNON DENNIS • JACK DENSON • DAVID DERBIN
KLEMENS DERBIN • RONALD DiCENZI • DAVID DICK • TIMOTHY DOBRIANSKY
RONALD DOMBROWSKI • ROBERT DOMINAK • JAMES DOMZALSKI • JAMES DONAHUE
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ESPERANZA ESPINOSA • GARY ESSES • SHEILA FANTROY • RONALD FARINE
JOHN FAZIO • JAMES FELDKIRCHER • TERESA FERGUSON • MICHAEL FIALA
ROBERT FIRST • JOHN FISH • THOMAS FITZMAURICE • CHARLES FLOWERS
FRANK FOLEY • KENNETH FORD • VERNON FORD • JOHN FOREMAN • DUANE FORTE
CATHY FOSTER • WILLIE FOWLKES • DEBORAH FRANKS • GARY FRANZ
EDWARD FRINGER • LOU GAETA • FRANK GAGLIONE • EDWARD GAIDA • STEVEN GALISH
FRANCIS GALLAGHER • PATRICK GALLAGHER • WILLIAM GALLITZ • CHRISTY GANNON
MARY GARAPIC • MARTINEZ GARCIAS • LaVERNE GASDICK • GLENN GASPARD
KAZIMIERZ GECA • LARRY GEMBICKI • GERALD GERHARD • WILLIAM GERRICK
DENNIS GHANN • LAWRENCE GIBBONS • EARL GIBBS • ERNEST GIBSON
BOBBY GILLESPIE • RAYMOND GIRCZYK • ANDREW GLADYS • GREGORY GLOVER
NAOMI GODBEY • JOSEPH GODINSKY • ROBERT GOODE • ROBERT GORSICA
TRUZELLER GOUDY • ROBERT GOW • RUSSELL GRABE • DEBRA GRACE • JOHN GRAVES
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ELIZABETH GRIFFIN • JOHN GRUBER • JEROME GRUSZCZYNSKI • DAVID GUARNERA
ROBERT GUILFOYLE • LARRY GUK • ROBERT GULAN • ORA GUNN • HARRY GUNVALSEN
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MILTON HALL • O'HOMER HALL • EDWARD HALLER • DIANE HAMILTON
JACQUITA HAMILTON • ROBERT HANDLOVICS • RAYMOND HANNIKMAN
GEOFFREY HANSON • WINFRED HARDIN • ALPHERT HARDY • FRED HARRIS
WILLIAM HARRISON • RONALD HARTER • LAURA HARTON • ROBERT HASMAN
ARLENE HASQUIN • EVA HATVANI • EDWARD HAVRILLA • WILLIAM HAZEL

About The Northeast Ohio Regional Sewer District

The Northeast Ohio Regional Sewer District (the District) is an independent political subdivision of the state of Ohio. Originally named the Cleveland Regional Sewer District, it was created in 1972 for the purpose of assuming the operation and management of certain wastewater collection, treatment and disposal facilities serving the Cleveland Metropolitan area. Prior to 1972, these facilities were owned by the City of Cleveland.

The District provides wastewater treatment and interceptor sewer facilities to the city of Cleveland and 46 surrounding communities. This service area encompasses 295 square miles and has a population in excess of one million.

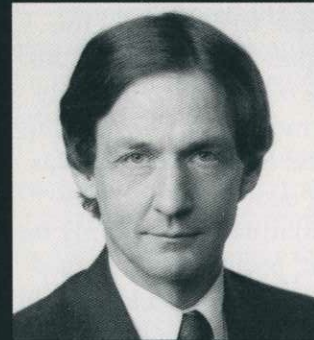
The system operated by the District includes three major wastewater treatment plants (Southerly, Westerly and Easterly), two smaller community plants (Berea and Strongsville "A") that will be abandoned when interceptor sewers now being constructed are completed, a network of interceptor sewers (large regional sewers that convey wastewater directly to one of the District's plants), and other associated water pollution control facilities located throughout the service area.

Administrative Office
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Lois M. Epstein, Editor
1988 Annual Report
Northeast Ohio Regional Sewer District

1988 Board of Trustees



William J. Reidy
President

Mr. Reidy was appointed by the Mayor of Cleveland in January 1983.



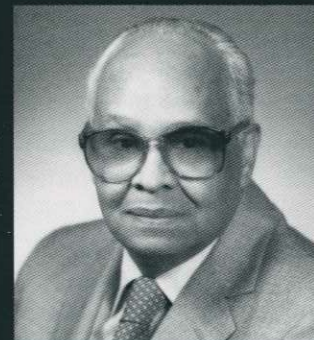
Lester C. Ehrhardt
Vice President

Mr. Ehrhardt was appointed by the Suburban Council of Governments in February 1984.



Rosemarie F. DeJohn
Secretary

Mrs. DeJohn was appointed by the Cuyahoga County Commissioners in March 1987.



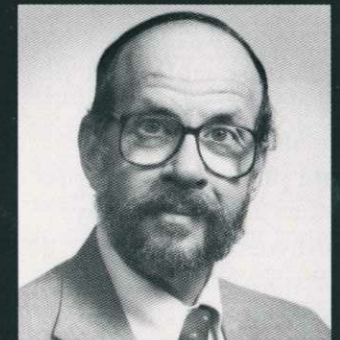
Harry Alexander

Mr. Alexander was appointed by the Mayor of Cleveland in March 1987. He passed away on August 23, 1988.



Thomas J. Longo

Garfield Heights Mayor Longo was appointed by the Suburban Council of Governments in March 1988.



Edward H. Richard

Mr. Richard was appointed by the Mayor of Cleveland in March 1984.



Ronald D. Sulik

Newburgh Heights Mayor Sulik was appointed by the Suburban Council of Governments in January 1985.



John Petruska

Mr. Petruska was appointed by the Suburban Council of Governments in March 1975. He retired on March 1, 1988.

President's Message

To continue to provide quality service at affordable rates for our customers is a major goal and commitment of the District's Board of Trustees.

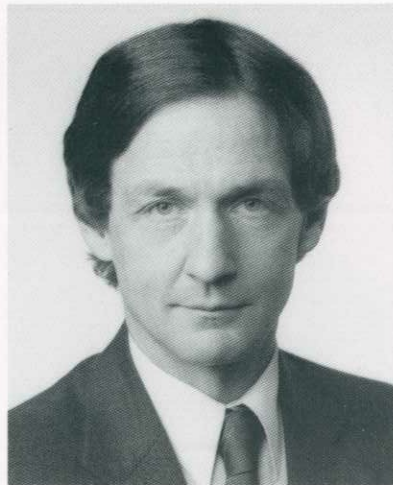
And I am pleased to report that with the help of sound financial management practices, successful cost-containment strategies, and a strict bill collection policy we have been able to project that a rate increase will not be necessary during 1989.

In fact, the last increase, in October 1986, restored only half of a decrease of \$1.40 per mcf, which had become effective on January 1, 1983.

These reasonable rates, in the face of the \$729 million upgrade of the wastewater treatment plants and construction of the Cuyahoga Valley and Northwest Interceptors, were possible because of 75 percent grant assistance from the federal government.

But now we are approaching the termination of federal construction grants in 1990, and we have a substantial portion of two major federally-required construction programs remaining — the \$360 million interceptor sewer program and the \$115 million intercommunity relief sewer program.

To help us meet the future financial challenges, the Board has contracted with a rate study consultant who will work with the District's administration and our financial advisor to develop a five-year capital improvement program and financial plan to project



William J. Reidy

the agency's needs for the years 1989 to 1993.

Of course, protection of this area's water resources is the business and goal of the Northeast Ohio Regional Sewer District, and 1988 saw major progress toward achieving that purpose.

The Board authorized the award of the fourth contract of the Heights/Hilltop Interceptor, in the amount of \$12,266,150. Also awarded was Contract 5 of the Southwest Interceptor in the amount of \$8,628,660.

We also saw progress on the intercommunity relief sewer program with the Board's authorization to take bids to begin construction of the Pearl Road Relief Sewer.

In October, the Board authorized acceptance of a U.S. EPA grant in the amount of \$19,048,425 for continued construction of the Southwest Interceptor. With this grant amount, the District will initiate the sixth of the ten contracts required to complete this project.

These were some of the more glamorous items on the agenda of our twice-monthly Board meetings. The ongoing business of our meetings was mostly concerned with the more routine, but certainly important, purchases of replacement parts, chemicals, materials and supplies to operate our facilities, authorizing and approving construction change orders, approving service contracts and authorizing and approving the thousands of items of business that went into running this organization in 1988.

The Board itself saw major changes during the year. Former Parma Mayor John Petruska, an appointee of the Suburban Council of Governments, resigned from the Board in March after 13 years of dedicated and conscientious service. He was replaced by Thomas J. Longo, Mayor of Garfield Heights.

In August, we lost a valued member of our Board and a major contributor to the betterment of the Greater Cleveland area when William "Harry" Alexander passed away.

Harry was named to our Board in 1987 by Cleveland Mayor George Voinovich.

He was the President and Chief Operating Officer of P.W. Publishing Co., Inc., publisher of the Cleveland Call & Post newspaper.

He will be greatly missed.

Director's Message

There is something very special about the "People of the Northeast Ohio Regional Sewer District."

We see it at all levels of the organization. It's a very real concern for the environment. It's about commitment to a job and pride in the work that we do to protect and preserve our waterways.

In this 1988 Annual Report we focus on a few of our more recent employees as well as some long-timers. The quality of their work and attitude is representative of all of our 698 employees.

Much of the work summarized in this report will be continuing into 1989. For example, we will be implementing the Financial Management portion of our Management Information System. And, of course, we will be continuing our training program. People are the backbone and strength of this organization, and training is the fuel whereby they can acquire and maintain the necessary skills in this ever-increasing environment of specialization.

In this report, we are pleased to note continuing progress on the Heights/Hilltop and Southwest Interceptors, as well as on the Intercommunity Relief Sewer program.

Also, the District has joined a broad range of community groups to develop a Remedial Action Plan (RAP) for the Cuyahoga River. One of the problems which needs to be addressed is the discharges



Erwin J. Odeal

from the area's combined sewers during rainstorms. At Edgewater Park we have demonstrated that carefully planned combined sewer overflow control projects can pay big dividends in increased recreational opportunities.

However, remediation planning is hampered by a serious lack of data. Budget constraints at both Ohio and U.S. EPA have resulted in substantial information gaps about pollutant sources and their effects on the Cuyahoga River and its ecosystem. While local efforts cannot replace the state's role in this area, the District has committed substantial resources to data acquisition in an effort to meet some of the short-term data needs.

The road to water quality restoration is also made more difficult by the phased elimination of the Federal Construction Grants Program. We believe that both the federal government and the state of Ohio have a responsibility to provide financial assistance for

projects which protect the Great Lakes. We note that many of the mandates have been set by international treaty and that the benefits of improved Great Lakes water quality extend to a population far beyond the border of adjoining states.

We are also feeling the effects of a society which is increasingly unwilling to accept environmental risks. But, at the same time, our society continues to demand the consumer goods that create these difficult waste disposal problems.

One of the manifestations of this discrepancy is the enormously complex set of sludge regulations recently issued by U.S. EPA. By requiring stringent regulation of all methods for disposal of municipal wastewater treatment sludge, our costs and the cost of publicly-owned wastewater treatment plants nationwide may rise dramatically.

We strongly believe that as a nation we need to make a greater commitment to research on the fate and effects of disposal of waste products into all elements of our environment—air, water and land.

At the same time, the public needs access to more information about environmental risks and the public's role in creating these risks. Without this dual scientific and educational approach our limited dollar resources may be depleted for results which fall far short of public expectations.

MIS — A Tool For The Future...In Use Today

Many public sector organizations that operate extensive wastewater treatment facilities are finding that it is necessary to operate much like private industry.

With physical assets exceeding \$750 million, the District is one such large public agency that is employing and benefitting from a system devised to help large companies maintain control of their many diverse operations.

The MIS, or Management Information System, is a computerized method for helping personnel manage and respond to operating, maintenance and financial needs. It has two components — The Computerized Maintenance Management System (CMMS) and the Financial Management System (FMS).

The operating requirements of the treatment plants are monitored through the CMMS, which itself is divided into two elements — materials management and maintenance management. The District's financial activities are tracked by the FMS.

The groundwork for the MIS was laid during 1987 when additional personnel were hired, information and data gathered, an IBM System 38 computer and terminals were leased, building modifications were completed, and personal computers were purchased.

CMMS Improves

Modus Operandi At

District Facilities

During 1988 the CMMS was implemented and became operational at the five wastewater treatment plants, pumping stations, Sewer Control Systems and Building Maintenance.

A considerable number of tasks were performed before the CMMS became functional.

First, the Preventive Maintenance Managers identified each piece of equipment and assigned it a number. All information related to the equipment was collected and a parts list was developed. This information was entered into the system along with the existing parts inventory from each stockroom. As a final step, the Preventive Maintenance Managers developed and wrote preventive maintenance schedules so that work orders would be automatically generated by the system.

By having so much information so readily available, literally, at their fingertips, plant personnel have found that the CMMS has changed the way they function in their jobs.

They are now able to be proactive rather than reactive. Because the equipment can be monitored so closely, the necessary actions are taken to keep the equipment operating in good repair. Emergency breakdowns are minimized, equipment life is extended and costs are controlled.

FMS Will Enhance

Information Processing

and Retrieval

The Financial Management System, initiated during 1988, will also change the way that the District's Finance Department performs its functions.

There will be new systems in place for payroll, accounting, purchasing, personnel, budget preparation, and disbursements. It is expected that all of these functions will be vastly improved by increased flexibility and speed and less manual intervention.

Another aspect of the FMS will be in the area of fixed assets control. An inventory of all the District's fixed assets is in the process of being completed. (Fixed assets refers to everything that the District owns: land, equipment, furniture, buildings, machines, structures, vehicles, interceptors, pump stations, roads, and the plants themselves.)

When the completed inventory is entered into the computer, during 1989, a vast storehouse of information will be available. With this data, the Finance Department will have "control" of these assets. That is, they can be identified, depreciation schedules and valuation can be assigned, and replacements costs can be anticipated, all with a much higher degree of accuracy than is now possible.

Daynor James, Wayne Anielski, Dan Smith and Joel Kopen are District pioneers in operating the Computerized Maintenance Management System (CMMS).

Daynor, as Head Storekeeper, uses the system to keep track of the inventory of approximately 25,000 different items that are needed to repair and maintain the equipment at all of the District's treatment plants.

Dan is one of six Preventive Maintenance Managers. He

uses the CMMS for job planning at the Easterly Wastewater Treatment Center. The system helps him determine what parts are needed to repair or maintain a piece of equipment, their availability, and what crafts are needed to perform the work. He estimates the time needed to complete the job, handles the work orders and makes sure that the job has been completed.

Wayne Anielski, Senior Maintenance Manager, is responsible for seeing that

all information from the District's five plants and pump stations is entered into the system in the identical way. This is crucial for ensuring that all necessary information can be retrieved easily and quickly by personnel at all locations.

And when anyone at any of the District's facilities has a problem involving the use of the CMMS, Joel Kopen, Programmer Analyst, serves as the coordinating link and troubleshooter.



Left to right:
Daynor James, 14 years
of service.
Wayne Anielski, 14
years of service.
Dan Smith, 5 years of
service.
Joel Kopen, 4 years of
service

District Emphasizes Skill Enhancement At All Levels

There was a time when people did not think of wastewater treatment plant operations as a profession requiring a high degree of skill. However, that view is certainly not valid today. And as the demands and complexity of wastewater treatment plant operations grow, employee training also grows in scope and importance.

At the District, Operator, Safety, and Management Training were some of the general categories in which employees received training during 1988. AIDS, CPR and Hazard Communication were some of the specific training categories. Often, the District used its own employees, who are experts in specific areas, as instructors.

Operator Training

Provides District With

Resource Pool

The largest number of employees who receive training are treatment plant operators. Developing skilled operators has proven to be a wise investment since it provides a resource pool from which to choose for promotion into higher level positions.

Ohio certifies treatment plant operators by four classifications. To become certified, operators must pass an examination which is offered biannually. The District has established three programs to help employees prepare for the examinations. The first is a two-part course administered by

Class III certified operators. In 1988, 45 employees participated in this course.

The District also offers a refresher math course to help employees who need to brush up on their arithmetic skills. Since the certification examinations contain many calculations, good math skills are important for success.

Employees who wish to study at their own pace have available a 29-chapter correspondence course. The District administers this course through California State University. In 1988, six employees completed this rigorous course.

AIDS Information

Program Addresses

Employee Concerns

Some of the District's employees had expressed concerns about contracting AIDS from wastewater. This prompted the District to arrange a program to inform its employees about how AIDS is transmitted.

Twenty-five sessions were held in various District work locations. Through these programs, presented by the Cleveland Chapter of the American Red Cross, fears were allayed when employees learned that no one has been known to contract AIDS from wastewater.

To date, the District is the only large Cleveland area organization to present such a program to all of its employees.

Hazard Communication

Training Increases

Workplace Safety

Wastewater treatment can be a hazardous field in which to work, so safety is a priority as the amount of training conducted in this area reflects.

The most comprehensive effort to date has been the Hazard Communication Training. This program identifies the potentially dangerous materials located in the workplace. It describes how to safely handle the material, and what to do if the material should spill.

The first two levels of training were given to 210 employees during 1988.

Additional Training

Conducted For

Specialized Needs

In addition to the Hazard Communication Training, there are safety-related and other specialized training programs. As an example, the Industrial Waste Section and Sewer Control Systems personnel must often enter manholes to access sewers. This activity requires adherence to strict safety procedures. To ensure that employees know and take the necessary precautions, the Industrial Waste Section conducts monthly safety training for its personnel and for those from Sewer Control Systems. This effort has paid off many times over. These employees have had no accidents for more than eight years.

Five immense blowers totalling 9,000 horsepower and operating at 3,470 revolutions per minute pump air into the 32,000,000 gallon capacity aeration system at the Easterly Wastewater Treatment Plant.

As a C-2 Operator, Truzeller "Trudy" Goudy's job is to make certain that these blowers, which would cost one million dollars each to replace, are functioning properly.

A licensed stationary engineer, Trudy is an example of the many hard-working employees who are motivated to take advantage of the District-offered training courses to upgrade their skills and increase their job opportunities.

Trudy successfully completed the Wastewater Treatment Plant Operator course taught by the District during 1988. Completion of this course enables her to take the test for her Class I license.

She is now taking the California State University Field Study Program for Wastewater Treatment Plant Operators. This correspondence course will help her prepare for obtaining her Class II and Class III licenses. The course is administered by the District's Training Department which distributes the material, grades the tests, and notifies the university when the course material has been completed.



Truzeller Goudy, 1 year of service.

Focus On Water Quality

New Pollution

Problems Become

Areawide Concern

In the early 1970s, the Northeast Ohio Regional Sewer District faced a massive task. The capacity of its facilities was inadequate, and the level of treatment provided was not up to par with commonly accepted wastewater treatment technology.

A substantial commitment of local and federal resources has reversed that original situation. Floating oils, and common organic materials, which previously robbed area waterways of life-supporting oxygen, have been removed. As a result, water quality has improved dramatically. However, these improvements have exposed a new set of problems.

Today's concerns are focused on the effects of pollutants which exist in minute quantities and also the control of pollution sources which are active only during rainfall.

Control of this second generation of water pollution problems can be tremendously expensive. In fact, the cost of chemical analysis of wastewater for minute quantities of pollutants is so much greater than for traditional analysis, that new ways to analyze for their presence and effects are evolving. And the cost for eliminating these pollutants is so great that available technology cannot be used to dictate the level of treatment as it did 20 years ago.

Addressing this new set of problems has required the District to focus more heavily on monitoring the water quality of area streams and Lake Erie. During the past two years, eight, two-person teams monitored 65 locations in 17 area streams. Physical and chemical measurements and biological samples were taken.

One of the objectives was to document the improvement that resulted from the District's capital construction program.

Comparing past and present data, the District's stream monitoring program found some substantial improvements. For example, in the Cuyahoga River there was a significant reduction of pollutants such as heavy metals and bacteria associated with wastewater. Monitoring also showed increases in dissolved oxygen and biological diversity, important indicators of a healthy water community.

The stream survey work has resulted in the discovery and documentation of numerous potentially significant pollution sources. These sources, such as abandoned landfills, dumps, and urban and material stockpile runoffs, are not presently well-documented or characterized.

However, they may be significant contributors of toxic materials. The surveys also discovered some leaking community sewers. The District followed up on them to make certain corrective action was taken.

The data from these ongoing water quality studies is also crucial to decisions regarding

further capital improvements at the District's treatment plants. During 1988, the District received new stringent limits for the Southerly Wastewater Treatment Center, which discharges into the Cuyahoga River. The District has questioned the benefits and practicality of meeting these new limits. Much of the degradation of aquatic life in the Cuyahoga River, downstream of the Southerly plant, is due to alterations of the natural state of the river. For example, much of this section of the river is regularly dredged to maintain a shipping channel.

Given these stream conditions, it is questionable whether further improvements at the Southerly plant will yield any benefits. Substantial water quality studies are being planned for 1989 to try to determine the answer.

But water quality studies are only one part of the process of dealing with the complex issue of pollution control. In 1988, the District joined with a broad range of interested parties to begin setting goals for cleaner water in the Cuyahoga River and near shore areas of Lake Erie.

The Cuyahoga Coordinating Committee is seeking answers to some fundamental questions. For instance, how do citizens of the area want to use various sections of area streams? And, how much is the public willing to pay for further cleaning of streams to support these uses?

Bob Kleinhenz, Keith Linn, Cheryl Green and Bill Mack of the Industrial Waste Section participate in the District's stream monitoring efforts.

Their work includes gathering and identifying benthic organisms — the worms, snails, insect larvae and

crustaceans that live in the bottom of streams. These organisms exhibit various degrees of sensitivity to pollution. Some cannot survive in polluted water; others actually thrive in it.

The stream monitoring program also includes visual in-

spections for pollution, fish surveys, and analyses for chemical and bacteriological parameters at over 60 different locations.

The information gathered and analyzed by the stream monitoring crew helps the District to assess the water quality and take corrective action, where indicated.



Left to right:
Bob Kleinhenz, 1 year of service.
Keith Linn, 8 years of service.
Cheryl Green, 11 years of service.
Bill Mack, 1 year of service.

Maintaining And Operating Wastewater Treatment Plants — A Never-ending Task

Plants Entering

Period of

Transition

Two awards received by the Southerly Wastewater Treatment Center late in 1988 are symbolic of the period of transition that the District is now entering.

The Ohio Council of the American Society of Civil Engineers awarded Southerly its 1988 "Outstanding Civil Engineering Achievement" award. The basis for this award is "an engineering project that demonstrates the greatest engineering skills and represents a contribution to civil engineering progress and mankind."

The second award was from Zimpro/Passavant Inc. The company named Southerly "Plant of the Year," in its 1988 plant operation and maintenance competition. This annual competition, judged by an independent panel of experts, is open to some 1,700 wastewater treatment plants using Zimpro/Passavant equipment for sludge management and wastewater treatment.

Southerly was singled out for its years of successful operations, excellent equipment performance, and special measures taken by plant staff to optimize or improve the process.

These awards symbolize the period of plant construction and renovation over the

past 13 years and the operational and maintenance challenges facing the District now and in the future.

The now nearly-completed construction and renovation provides the firm foundation upon which the plants' operating and maintenance personnel can build.

At the Easterly and Southerly Wastewater Treatment Centers, as well as at the small plants, all the equipment and facilities are in place and the plants are meeting their permit conditions.

Operations and maintenance may not be considered as glamorous as construction, but certainly the challenge of protecting the District's massive investment in new facilities is a demanding one.

That challenge includes such goals as: improve operating efficiency to ensure a high quality effluent, improve plant environment (in terms of odor control, cleanliness and safety), and continue to implement cost-containment measures.

Many of the year's operating and maintenance projects were concerned with the removal and disposal of sludge — the accumulated solids separated from wastewater during processing.

At Southerly, a pumping system was designed and installed to remove old sludge from the Imhoff tanks. It is estimated that this system will save the District over \$200,000 in sludge hauling charges.

Another project at Southerly was the installation of a

flushing system in the final settling tanks. The project reduces the amount of time required for the tanks to be out of service during cleaning and lessens the chance that the sludge will become septic and cause odors.

At the Easterly Wastewater Treatment Center, the newly repaired and renovated grease reactor, which incinerates grease and scum removed from wastewater, passed the Environmental Protection Agency's air pollution test in August. This reactor will soon function as the District's central skimmings disposal facility.

Also at Easterly, the District made provisions to temporarily store sludge in the event of a break in the force main that transports Easterly's sludge to Southerly for processing.

Rather than construct an expensive new facility, the District's engineers utilized existing and unused pre-aeration tanks and modified them for storage purposes.

At the Berea Plant, which will be decommissioned when the Southwest Interceptor is ready to serve Berea, small repairs and equipment installations were performed cost-efficiently by the District's own operations and building maintenance personnel.

Improvements completed at the Berea Plant during 1988 resulted in all primary pollutant parameters being met and significant reductions in excursions of residual chlorine and fecal coliform.

On January 31, 1989, Dale F. Patrick, Chief of Operations, retired.

He joined the District in 1974 as Assistant Chief of Operations, and was named Chief of Operations in 1978.

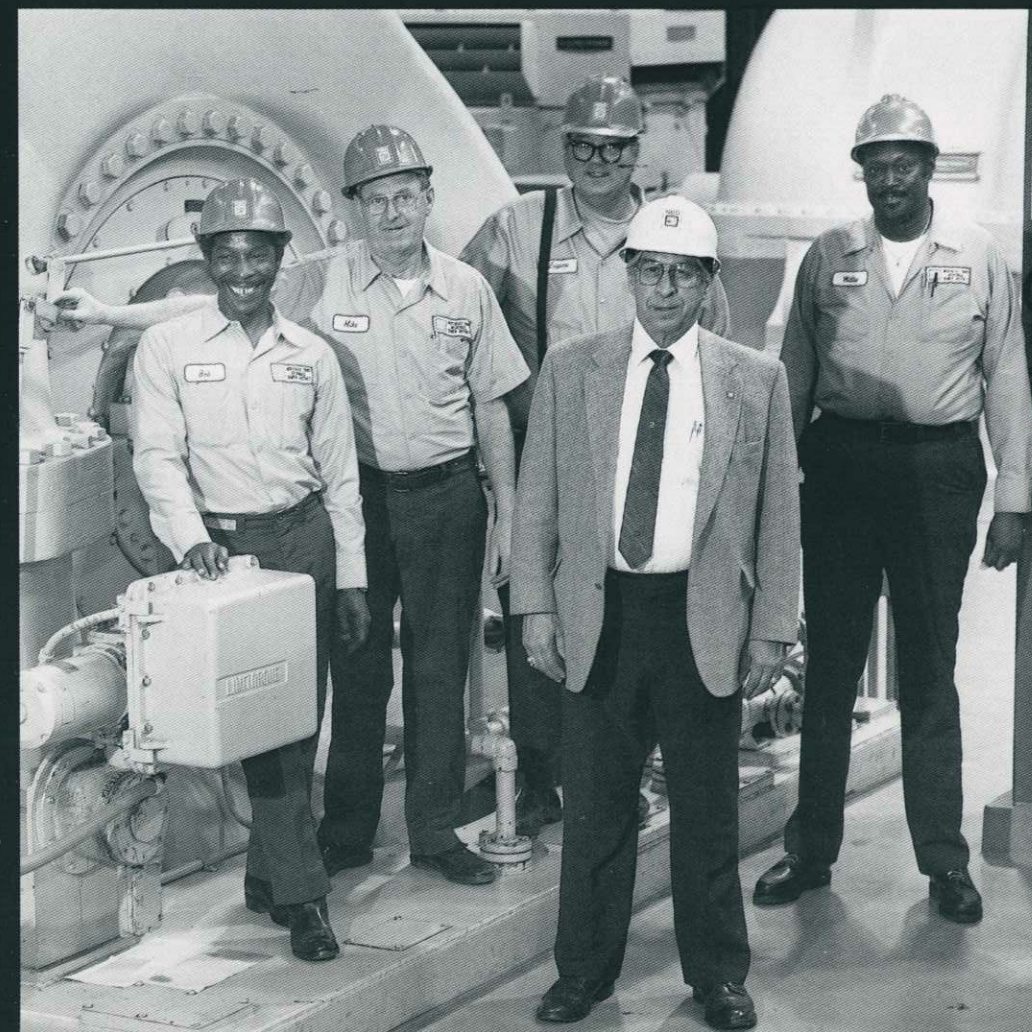
Dale managed the operations of the District's wastewater treatment plants from the very beginning of the massive renovation and rehabilitation program.

Though tough, even obstinate at times, Dale was known to be fair-minded and dedicated to the wastewater treatment field in which he spent 43 years. By his unflagging enthusiasm and willingness to advise, he encouraged others to rise to the limits of their capabilities in the field.

Pictured with Dale are Operations employees whose combined experience with the District totals 102

years. Bobby Gillespie, Mike McLaughlin, Eugene Henry and Willie Fowlkes are all C-2 Operators in the Second Stage Blower Building at the Southerly Wastewater Treatment Center.

Through their knowledge, dedication and sense of teamwork, they have significantly contributed to the consistently successful operation of the plant's second stage aeration system.



Foreground: Dale F. Patrick, 15 years of service.
Left to right:
Bobby Gillespie, 23 years of service.
Mike McLaughlin, 28 years of service.
Eugene Henry, 30 years of service.
Willie Fowlkes, 21 years service.

Interrelated Problems

Still Plague

Westerly Treatment Center

In 1972, the Cleveland Regional Sewer District (later renamed the Northeast Ohio Regional Sewer District) received funds from EPA to construct a wastewater treatment plant that would use a new, innovative and unproven technique.

One of the three District treatment plants to receive federal Construction Grant funds, the new plant was to be constructed on the site of the original Westerly facility, which dated back to 1922.

Westerly's previous owner, the city of Cleveland, had already contracted for the plant's design. It was to employ a physical-chemical process that could be constructed inside multi-level buildings. This was particularly important because the plant site was small and confined. (An activated sludge treatment plant, upgraded to the new clean water standards, would have required much more acreage than was available.)

Construction began in 1973 and was completed in 1985. Since then, hundreds of technical problems, most of them interrelated, have been overcome. In the face of seem-

ingly endless difficulties, the District's engineering and operations personnel have persevered. By tackling and solving each problem as it surfaced, plant personnel were able to see some light at the end of the tunnel in 1988, when the list of problem-plagued process and equipment problems was finally whittled down.

For example, the 30 carbon columns, inside which dissolved organics are removed from the wastewater, were affected by a myriad of difficulties.

The previous year, the plastic diffusers connected to the floor of the columns began breaking off. They were repaired and then a new problem developed. Stainless steel screens, integral to the diffusers, began to corrode. They were replaced with diffusers constructed entirely of plastic.

Another problem concerned the protective coating inside the plenum chambers of the carbon columns. In 1982, due to a heating system failure, the coating began to peel off in sheets. New coatings were applied in 1984. In the following years, blisters began appearing on the coating of some of the carbon columns. In 1988, the coatings were repaired in the affected columns. By the end of the year, the carbon columns finally were being phased into service.

Another aspect of the plant completed during 1988, was the start up of the carbon regeneration furnace. It was not

without its problems.

The purpose of this furnace is to regenerate the spent carbon used in the carbon columns by driving off the organic material captured by the carbon. The regenerated carbon is then reused.

Operations personnel visited several facilities that used this type of furnace and found they had all been constructed with emergency exhaust systems, while Westerly's had not.

Based on this information, and the recommendation of an independent furnace consultant, it was decided to install such a system that would prevent hot toxic gases from entering the building during emergency shut-down conditions.

As the construction of the emergency exhaust system neared completion, it was found that the programmable controllers for the furnace would not function and would need to be refurbished.

The ozone system, which extends the life of the activated carbon, was one of the last systems to be completed. It became functional in December.

It is projected that the entire \$108 million plant will become fully operational in 1989.

Joyce Leschinski, James Spencer, Ricky Loch and Tim Tigue have been instrumental in stabilizing the chemical processes at the Westerly Wastewater Treatment Center.

Tim, as Unit Process Manager, is responsible for supervising the operation of all the chemical units.

Joyce and Ricky are operators of the unit that feeds ozone, oxygen and chlorine into the system. James operates the unit that feeds ferric chloride, polymer and lime. They monitor the storage, handling and dosage of these chemicals and control the rate at which they enter the system.

These four are among the 107 employees of the Westerly Plant who have exhibited a "can do" attitude in the face of seemingly unending problems. They typify the teamwork that has been exhibited by all of the Westerly employees who are working to bring this very complex facility "on line."



Left to Right:
Joyce Leschinski, 2 years of service.
James Spencer, 14 years of service.
Ricky Loch, 2 years of service.
Tim Tigue, 13 years of service.

Intercommunity Relief Sewers And Interceptors Will Help Ensure Pollution Control

The sometimes not so gentle rains of spring bring more than flowers to many communities in Northeast Ohio. They also bring overflows of sewage to many area streams.

There are a number of causes for this serious problem of contamination of the area's waterways. Some communities have older sewer pipes which have developed cracks over the years or in which the seals of the joints have disintegrated. In other areas where populations have grown, the pipes are simply too small to handle the larger flows that now enter them. These conditions result in backups of wastewater and the eventual overflow of pollutants to area streams, the Cuyahoga River and Lake Erie. In some areas, these backups can also cause basement flooding.

As mandated by EPA, the District administers a permit program that requires communities to implement good maintenance practices with regard to their sanitary sewer systems, and, where necessary, repair, replace, or construct new sanitary sewers to service their own residents.

However, even after constructing new community sewers to serve its residents, and completing repairs to keep rainwater out of existing sewers, many communities could still have major problems. The receiving sewer pipes in a downstream commu-

nity may not be large enough to accept the wastewater of the upstream communities. Or, viewed from the perspective of a downstream community, wastewater from an upstream community may be creating problems.

To solve this problem, the District accepted responsibility for construction of these intercommunity relief sewers. These new relief sewers will transport wastewater from two or more communities to interceptor sewers which deliver the wastewater to treatment plants.

At this time, 50 such sewers are planned for construction at a cost of approximately \$115 million. The work is to be completed by the year 2000.

The intercommunity relief sewer program requires a major effort by the District's engineering staff. The large number of projects has resulted in significant competition among engineering firms for design contracts. This is providing a stiff challenge to the District's engineers who will be coordinating the projects, evaluating designs and tracking construction progress.

The first and largest of the projects is the Pearl Road Relief Sewer. Notice to Proceed was issued to the contractor in December 1988. This 66-inch diameter sewer, to be constructed in a tunnel, will be nearly 20,000 feet long and cost \$16,855,252. When completed, in two years, it will receive wastewater flows from parts of

Middleburg Heights, Parma and Parma Heights. It is expected to greatly improve the water quality of Big Creek and its tributaries.

Other intercommunity relief sewer progress in 1988 included the award of a combined design contract for the Parma Park 1 and York Road Relief Sewers, and the District review of design proposals for the Big Creek 1 and 2 Relief Sewers. The construction of these sewers will be completed by July 1991.

The intercommunity relief sewers are a major component of the District's capital improvement program. They are designed to help ensure continuing overall water pollution abatement and control in Northeast Ohio.

Construction of the \$155 million Southwest Interceptor and the \$205 million Heights/Hilltop Interceptor began in 1985. These two interceptors will convey wastewater from the eastern and southwestern suburbs directly to wastewater treatment plants.

The maps on page 16 detail the current construction status, progress and completion dates of each interceptor contract.

Richard Switalski, Don Shaver and Carol Pla are among the many employees whose work is crucial to the smooth functioning and administration of the District's major construction projects.

Richard is Project Manager for the Heights/Hilltop and Southwest Interceptors and the Intercommunity Relief Sewer Program. He is responsible for the overall

design, administration of contracts, trouble shooting, and ensuring the timely start and completion of the work.

During most of 1988, Don was Construction Supervisor for Contract 3 of the Southwest Interceptor. Toward the end of December, he shifted gears to become Construction Supervisor for the Pearl Road Intercommunity Relief Sewer program.

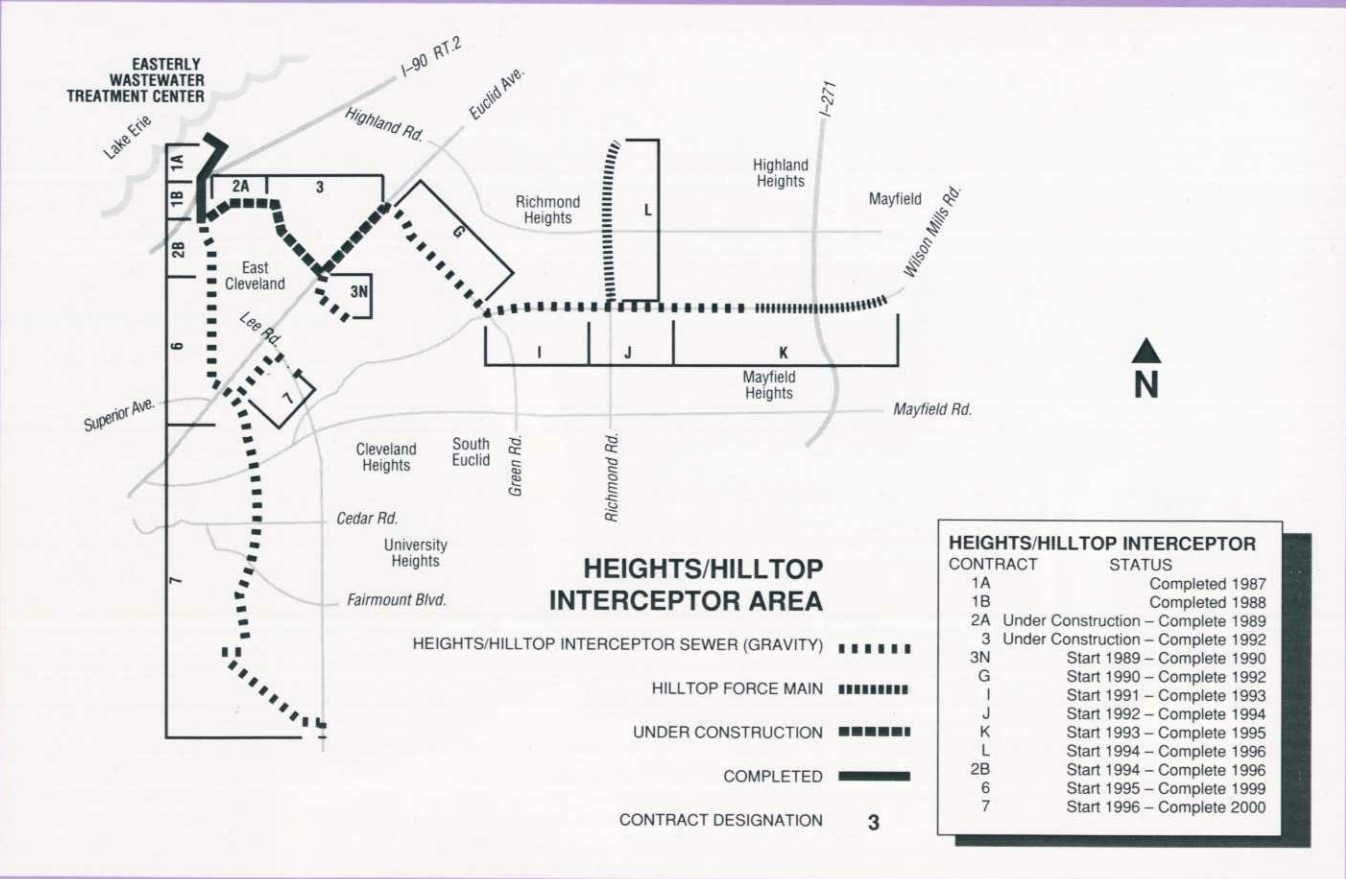
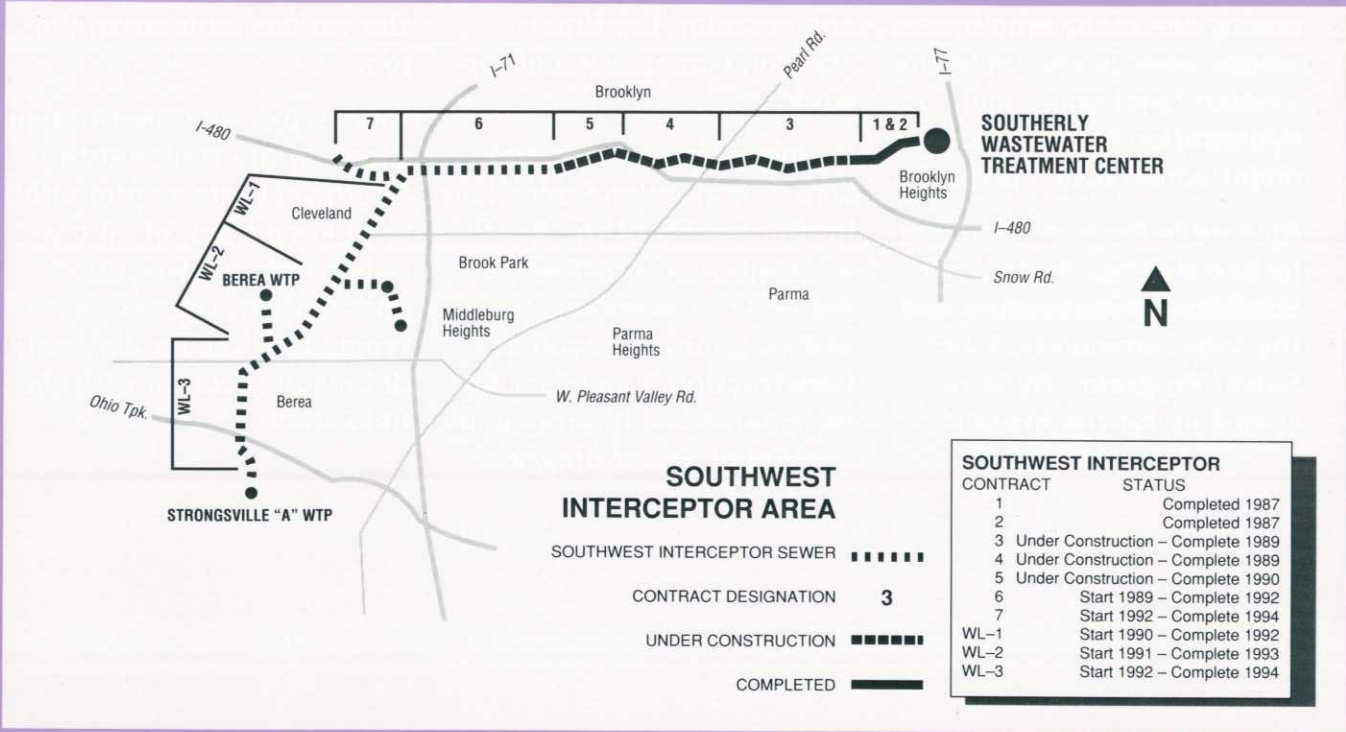
Before the work begins, Don will become familiar with all the various aspects of the job.

Carol's job, as Construction Clerk in the trailer at the Southwest Interceptor site, is to keep track of all the paperwork, answer the phone, do the necessary typing and handle the many details associated with the field office.



Left to Right:
Richard Switalski, 9
years of service.
Don Shaver, 11 years of
service.
Carol Pla, 6 months of
service.

Southwest and Heights/Hilltop Interceptor Areas



1988 Plant Performance Data

(in milligrams per liter)

TREATMENT PLANT	PARAMETERS	NPDES PERMIT LIMITS	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
EASTERLY ¹	BOD	JAN 20 MAY -	24	25	21	20	-	-	-	-	-	-	-	-
	CBOD	- 15	-	-	-	-	7	8	5	4	4	5	5	6
	TSS	20 20	9	12	12	9	9	10	6	7	6	8	8	10
	PHOS.	1.0 1.0	0.68	0.67	0.65	0.60	0.81	0.87	0.61	0.74	0.93	0.51	0.44	0.65
SOUTHERLY ²	BOD	JAN 20 OCT -	4	5	5	3	4	4	3	2	2	-	-	-
	CBOD	- 10/16 ³	-	-	-	-	-	-	-	-	-	2	2	2
	TSS	12 16	2	2	2	2	3	3	2	2	2	3	2	3
	PHOS.	1.0 1.0	0.75	0.56	0.67	0.92	0.94	0.87	0.87	0.90	0.89	0.66	0.74	0.77
WESTERLY ⁴	BOD	JAN 85 MAY 20	76	60	67	50	55	58	49	48	51	50	41	42
	TSS	30 20	38	22	17	13	16	15	10	14	9	9	11	13
	PHOS.	1.0 1.0	1.35	1.02	0.86	0.55	0.96	1.01	0.70	0.88	0.64	0.57	0.44	0.76
STRONGSVILLE "A"	BOD	30	22	21	22	17	14	22	17	11	13	16	17	15
	TSS	30	21	18	14	13	9	13	9	7	10	14	21	15
	PHOS.	1.0	0.88	0.61	0.86	0.79	0.60	0.86	0.73	0.75	0.91	0.87	0.80	0.73
BEREA	BOD	21	14	14	17	15	15	11	11	9	8	9	10	17
	TSS	24	9	8	9	11	9	8	6	5	6	6	8	10
	PHOS.	1.0	0.83	0.52	0.77	0.86	0.82	0.78	0.70	0.85	0.77	0.69	0.65	0.67

- 1 Easterly NPDES permit revised to monitor CBOD instead of BOD effective in May.
- 2 Southerly permit reissued to monitor CBOD instead of BOD and includes revised limits for TSS and other parameters effective in October.
- 3 CBOD permit limit: effective in October, 10 mg/l in the summer (May-Oct.); 16 mg/l in the winter (Nov.-Apr.)
- 4 Westerly NPDES limits interim before May; final permit limits effective in May.

NPDES	National Pollutant Discharge Elimination System
BOD	Biochemical Oxygen Demand
CBOD	Carbonaceous Biochemical Oxygen Demand
TSS	Total Suspended Solids
PHOS.	Phosphorus

Wastewater Treatment Plant Characteristics and 1988 Operating Highlights

EASTERLY WASTEWATER TREATMENT CENTER

Location	14021 Lake Shore Boulevard, Cleveland
Type of Plant	Primary and Secondary Treatment (Activated Sludge, Step Aeration)
Number of Personnel	77
Plant Design Capacity	155 mgd dry weather
Total Wastewater Treated	43.6 billion gallons
Total Sludge Pumped to Southerly	653 million gallons
1988 Operating Cost	\$3,797,619
Effluent Discharge Point	Lake Erie

SOUTHERLY WASTEWATER TREATMENT CENTER

Location	6000 Canal Road, Cuyahoga Heights
Type of Plant	Primary and Secondary Treatment (Two-stage Activated Sludge) with Effluent Filtration and Solids Handling
Number of Personnel	256
Plant Design Capacity	175 mgd dry weather
Total Wastewater Treated	43 billion gallons
Total Sludge Filter Cake Processed	95,432 wet tons*
Total Sludge Incinerated	89,494 wet tons
Total Sludge Hauled to Landfill	5,938 wet tons
1988 Operating Cost	\$15,215,799
Effluent Discharge Point	Cuyahoga River

* Includes sludge from Easterly, Strongsville "A" and Berea WTP's

WESTERLY WASTEWATER TREATMENT CENTER

Location	5800 West Memorial Shoreway, Cleveland
Type of Plant	Primary and Advanced Treatment (Physical-Chemical) and Solids Handling
Number of Personnel	107
Plant Design Capacity	50 mgd dry weather
Total Wastewater Treated	11.4 billion gallons
Total Sludge Centrifuge Cake Processed and Hauled to Landfill	37,305 wet tons
1988 Operating Cost	\$7,991,668
Effluent Discharge Point	Lake Erie

STRONGSVILLE "A" WASTEWATER TREATMENT PLANT

Location	22707 Sprague Road, Strongsville
Type of Plant	Conventional Activated Sludge and Solids Handling
Number of Personnel	6
Plant Design Capacity	2.6 mgd dry weather
Total Wastewater Treated	1.1 billion gallons
Total Sludge Filter Cake Processed and Hauled to Southerly	6,372 wet tons
1988 Operating Cost	\$583,764
Effluent Discharge Point	Blodgett Creek (tributary to East Branch of Rocky River)

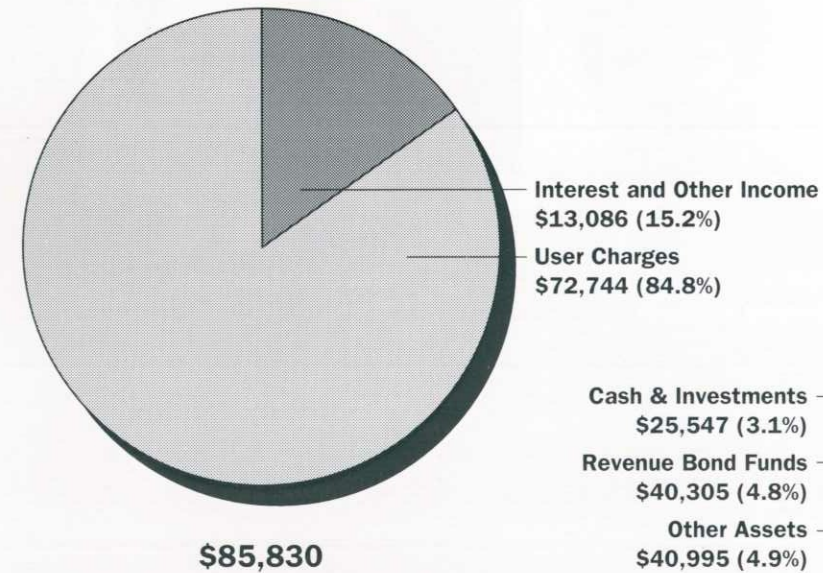
BEREA WASTEWATER TREATMENT PLANT

Location	400 Barrett Road, Berea
Type of Plant	Primary and Secondary Treatment (Contact Stabilization)
Number of Personnel	7
Plant Design Capacity	3.0 mgd dry weather
Total Wastewater Treated	0.9 billion gallons
Total Sludge Hauled to Southerly for Further Processing	25,053 wet tons
1988 Operating Cost	\$592,868
Effluent Discharge Point	East Branch of Rocky River

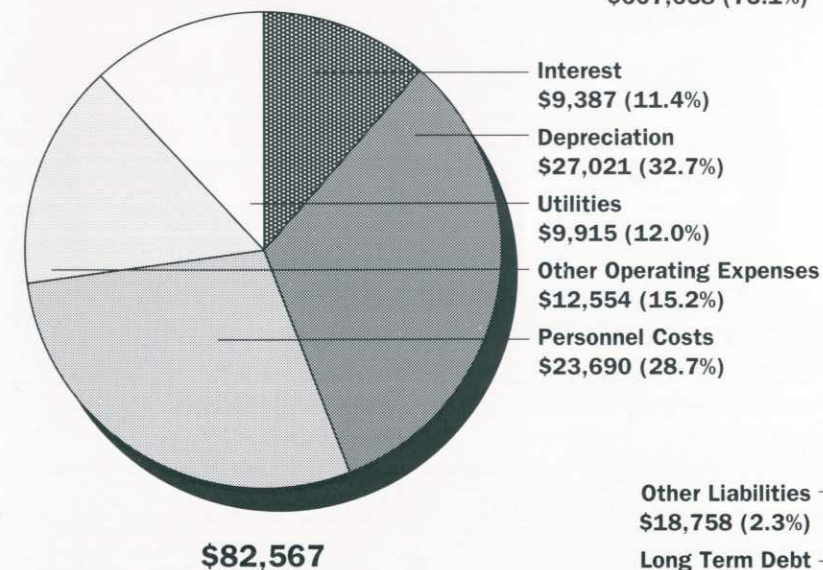
Revenue and Expenses

for 1988
(in thousands)

REVENUE

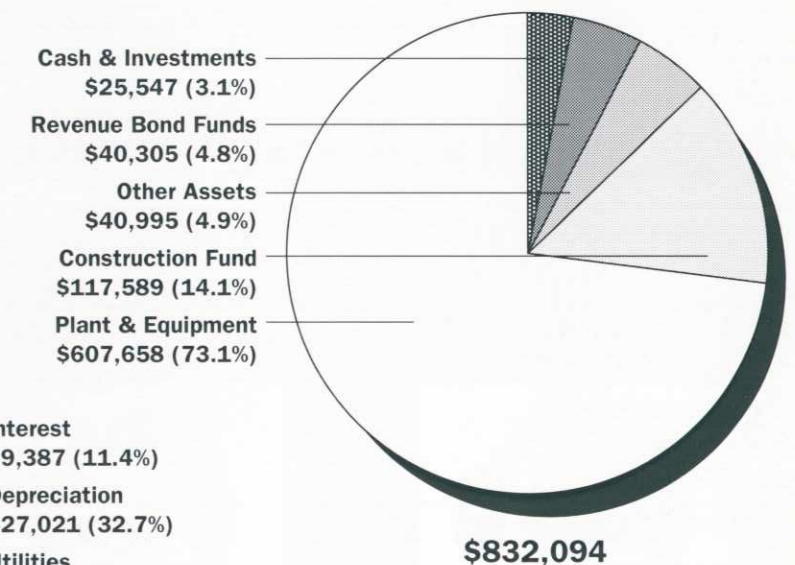


EXPENSES

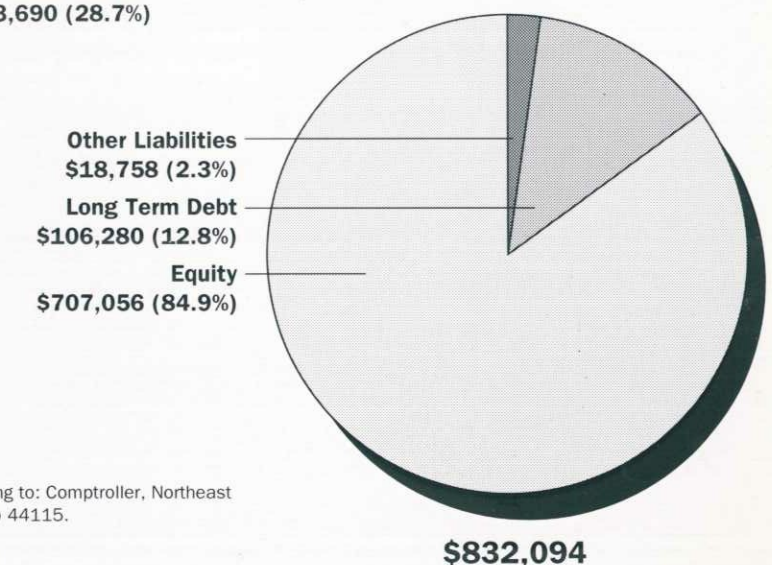


Financial Position as of December 31, 1988 (in thousands)

ASSETS

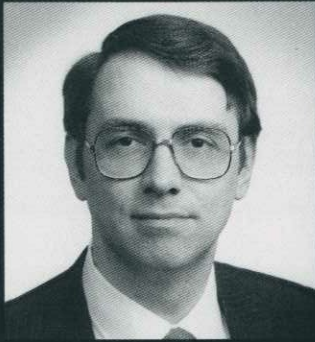


EQUITY & LIABILITIES



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.

1988 Senior Staff



Erwin J. Odeal
Director



William B. Schatz
General Counsel



David A. DeMarco
Comptroller



Charles J. Vasulka
Chief Engineer

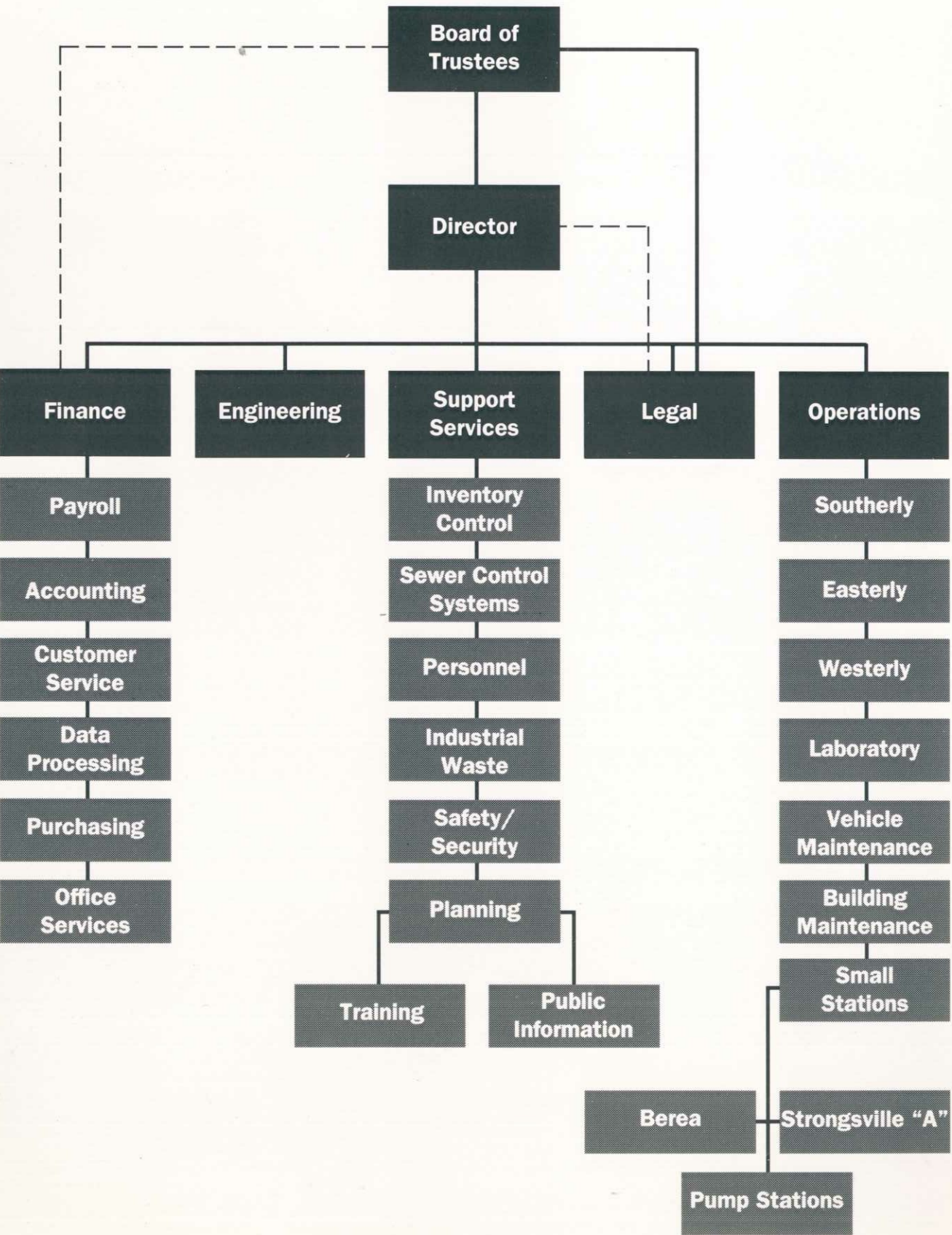


Kenneth A. Pew
Chief of Support Services



Dale F. Patrick
Chief of Operations

Organization Chart



RONALD HEBEBRAND • JOE HENDERSON • LAWRENCE HENDERSON • REGINALD HENDERSON • EUGENE HENRY • JOSEPH HERTEN
HARRY HEYDORN • ILDIKO HIBA • DOTTIE HILL • MARK HILL • MATTHEW HILL • LUTRAIL HOBBS • DAVID HOBSON • DARRELL HOLLEY
FRANK HOMICK • TERRY HORN • SCOTT HORVATH • CLYDE HOUDESHILL • DOUGLAS HOVEN • SHARON HOWARD • MICHAEL HRICK
MARK HRUSOVSKY • DANIEL HUDSON • JEFFREY HUMMEL • CALVIN HUNT • JEFFREY HURLEY • NICK IAROCCI • FRANK INTIHAR
MONIR ISKANDAR • JERRY ISKOWIZ • ROBERT IVANS • DIANNE JACKSON • ELLIS JACKSON • LEA JACKSON • DAYNOR JAMES
FRANK JAMES • JESSE JAMES • SPAIN JAMES • RONALD JANASHAK • ROBERT JANKULOV • DANIEL JANTONIO • DONALD JANTONIO
EDWARD JAROSZ • CLIFFORD JEFFERSON • LEONARD JENKINS, JR. • JEFFREY JENNINGS • BARBARA JOHNSON • BRENT JOHNSON
CHARLES JOHNSON • ROBERT D. JOHNSON • ROBERT E. JOHNSON • THOMAS JOHNSON • ANTOINETTE JONES • ANTHONY JORDAN
PAMELA JORDAN • LEONARD JUFKO • JAMES KALAS • CLIFFORD KALKBRENNER • DAVID KALMAN • ANDREW KALUZA • WILLIAM KAMINSKI
WILLIAM KASBERG • ADEL KATIB • WILLIAM KEEN • RICHARD KECIC • OSCAR KELLEY • JIMMIE KEMP • GERALD KENNEY
FRED KEYERLEBER • STEPHEN KEYS • JOHN KINNAIRD • ROBERT KLEINHENZ • LEONARD KLEPATZKI • KENNETH KLIR • JAMES KLOSZ
FRANK KMIECIK • JOEL KOPEN • JOHN KOPETZ • LOUISE KOSINSKI • DALE KOSKINEN • JEFFREY KOSMETOS • INGRID KOSMOWSKI
ZIG KOSMOWSKI • ROBERT KOWNACKI • DALE KRAMER • JOHN KREPOP • GARY KRIVOS • DONALD KRUSINSKI • JOSEPH KUBA
WENDELL KUCERA • DONALD KUCZKOWSKI • PHILIP KUHN JR. • PHILIP KUHN SR. • ROBERT KUNKLE • JAMES LAHETA • MAURA LAMBERT
STEPHEN LANGDON • WILLIAM LANGMEYER • RANDY LAPOHN • DAVID LATARSKI • JOHN LAURIE • JOHN LAWS • PETER LeCASTRE
MILTON LEE • JAMES LEITH • HARRY LEMMEY • JOYCE LESCHINSKI • PETER LEVITSKY • ARNETTA LEWIS • KEITH LINN • KAREN LISOWSKI
VALETTA LITTLETON • DAVID LIVINGSTON • RICKY LOCH • THOMAS LOGAN • ANTHONY LOMBARDO • THOMAS LONGO • JEFFREY LOOBY
ROBERT LOOBY • HERMAN LOOPER • RENE LOPEZ • ALFREDIA LOWE • JAMIE LUKAS • GERALD LUNDER • ROGERS LYDE
MARY ANNE LYMAN • MELVIN LYONS • GAIL MACIEJEWSKI • CHESTER MACK • WILLIAM MACK • CHARLES MACZKO • JOSEPH MADRO
MARK MAGALSKI • JOHN MAKSYM • HIRAM MALDONADO • JOHN MALEE • ROBERT MALHEREK • FRANK MANCUSO • MARK MANDRAK
DANIEL MANIK • THEODORE MANNING • ROBERT MANTELL • ROBERT MANUEL • GARY MARGOCS • STANLEY MARKOWSKI
JOSEPH MARSALA • PAT MARSALA • BERTHA MARTIN • MICHAEL MARTIN • DONALD MARTOWICZ • DAVID MATTHEWS • JOANNE MATTICE
THOMAS MAXWELL • JOHN MAYER • JOHNNY McCARTER • KEVIN McCARTHY • CHARLES McCREE • RONALD McCUNE • WILLIAM McDONALD
JEAN McGRATH • WILLIAM McGREW • JAMES McGUINNESS • DANIEL McKENNA • MICHAEL McLAUGHLIN • PATRICIA McLAUGHLIN
DAVID McNEELY • TERRY MEISTER • RALPH MELENA • PHILLIP MELICANT • FRANK MERRICK • THOMAS MEYER • BETH MICHKO
BRENDA MILLER • CHARMAINE MILLER • MARY MILLS • EDWIN MINTER • CARL MIROGLOTTA • RICHARD MOCIOLEK • DENNIS MOEHRING
LEONARD MOLNAR • PAUL MONTGOMERY • STEPHEN MONYAK • WALTER MOORE • EDWARD MORAD • MURIEL MORRIS
EUGENE MUELLER • JOHN MURCHISON • PAUL MURPHY • GEORGE MYERS • JOSEPH NAGY • ARTHUR NAPIER • CLARENCE NELSON
THOMAS NEMCEK • ALAN NEMECEK • WILLIAM NEUNDORF • CHARLES NEWMAN • SAMELLA NEWSOM • CURTIS NICKLE • ROBERT NIEBAUER
LAURETTA NOLEN • LUTHER NORMAN • WILLIAM NORTON • MICHAEL NOTARO • GLENN NOVAK • JOSEPH NOVAK • MARK NOWACK
SA-ID NURED-DIN • JENNIE O'BANNON • RAYMOND OBOJSKI • ERWIN ODEAL • JOHN OLESINSKI • GEORGE OLESKO • ADA OLMEDA
RICHARD OLS • LESLIE OLSIESKI • CHRISTOPHER OPALACH • GARY OUTZS • DOLORES OWEN • LEROY OWENS • MICHAEL PAAD
VLADIMIR PACAS • ARTHUR PAETH • ANDRES PAGAN • ANTHONY PAGLIA • OLIVO PALLINI • ANDREW PAPP • ERIC PARHAM • KIRIT PARIKH
LINDA PARNTER • RONALD PARTILLA • KENNETH PASTOR • DALE PATRICK • MARY PAUGH • SCOTT PAULOT • JUDITH PAVLIC
THOMAS PAVLICA • GLENN PAVLIK • MICHAEL PAVLIK • JOHN PELLERITO • GARY PEPERA • EDWIN PEREZ • ERNESTINE PERRY
CLIFFORD PERRYMAN • JAMES PETRIE • JOHN PETRUSKA • THEODORE PETRYSZYN • KENNETH PEW • JOHN PHELPS • EDWARD PICH
RANDY PICKERING • ALLAN PIIPARINEN • PAUL PITINO • CAROL PLA • THOMAS PLANK • GERALD PODRACKY • JEFFREY POKORNY
LARRY POOLE • JOSEPH POSANTE • ALVIN PREISENDORF • WILLIE PRESLEY • THEODORE PREZTAK • ARRIE PRITCHARD
ROBERT PROCHASKA • GREG PROSSER • CALVIN QUARTERMAN • VICTOR QUINONES • THOMAS RAFFAY • ELIZABETH RAWLINS
DAWN REED • DONNA REID • ROBERT REIDY • WILLIAM REIDY • ROBERT REPPENHAGEN • SHARON REYNOLDS • EDWARD RICHARD
WILLIAM RITZ • WILSON RIVERA • FRANK RIZZO • DEBORAH ROBINSON • GEORGE ROBINSON • THOMAS ROCK • JAMES ROSACCO
JOHNNY ROSCOE • PAUL ROSENFELD • SCOTT ROSS • MARGARET ROWE • ABRAHAM ROWSER • RANDY RUSSELL • RUSSELL RYS
ERNEST RZESZOTARSKI • ANTHONY SABOLIK • OTTO SACHS • MARIAN SACK • MOHAMMED SALEEM • CHARLES SAMMONS
NELLIE SAMMONS • SCOTT SANDER • JOSEPH SANDLY • ISTVAN SARAI • ROBERT SARGENT, JR. • HELEN SCALES • LOUIS SCARPITTI
STANLEY SCHAB • WILLIAM SCHATZ • TIMOTHY SCHEALL • ROBERT SCHERMA • PHILLIP SCHERVISH • WARREN SCHINDLER
JOHN SCHRADER • GEORGE SCHUR • FRANK SCHUSCHU • THOMAS SCHUSTER • DAVID SCHWARK • TROY SCOTT • USHER SCOTT
PAUL SEKERAK • GINA SENES • ANDREW SENTO • FRED SEVER • JOSEPH SEXTON • KIRAN SHAH • DONALD J. SHAVER
DONALD L. SHAVER • ROBERT SHEETS • GARY SHERANKO • LARRY SHIMERKA • LINDA SHOMON • DAVID SHORR • DAVID SHUBERT
ANTHONY SIGGIA • MARTHA SILVERA • CHARLIE SIMMONS • ERNEST SIMPSON • WILLIE SIMS • EDDIE SKINNER • STEVEN SLECHTA
JAMES SLEDZ • TERENCE SLOCUM • THOMAS SMEAL • DANIEL SMITH • DENISE SMITH • JANE SMITH • RAYMOND SMITH • ROSE SMITH
TARNIA SMITH • ROBERT SOBCZAK • DONALD SOBOCINSKI • KEVIN SONODA • CHESTER SOSKA • ARTHUR SPEIGHTS • JAMES SPENCER
WALTER SPRUELL • DAVID STANISLAW • CASSANDRA STANLEY • DAVID STARYNCHAK • EDWARD STAWICKI • GREGORY STAWICKI
PAUL STEFANSKI • CHARLES STERNER • KEITH STOKES • THEODORE STOLL • KEVIN STRONG • LARRY STRUMP • LESTER STUMPE
RONALD SULIK • MICHAEL SULLIVAN • DAVID SVEJKOVSKY • RICHARD SWITALSKI • JIMMIE SWOOPE • DANIEL SYROWSKI • MICHAEL SZABO
PAUL SZABO • GENE TAKACS • CARLA TATE • ERIC TAYLOR • MICHAEL TAYLOR • ROBERT TAYLOR • ALEX TENCH • DAVID TERKEN
FRANCIS TESAR • DEAN THURMAN • ANTHONY TICCHIONE • TIMOTHY TIGUE • RUSSELL TISCHER • MARK TOMARO • JEROME TOMASHESKI
JOHN TRAFFIS • STEVEN TRAMBLE • STEFAN TRIFU • ERNEST TROY • FRANK TRULY • JAMES TUBERO • ROBERT TUCKER • TERRENCE TURK
YVETTE TURNER • DONALD TUTOLO • DENNIS TYBURSKI • GEORGE UHL • THOMAS ULRICH • BRIAN VACCHER • OLIVER VACCHER
DONALD VANDRASIK • ALFRED VASIL • CHARLES VASULKA • DAVID VAUGHN • PATRICK VELOTTA • WILLIAM WAITE • LLOYD WALDEN
ROBBIN WALKER • REGIS WALLACE • WAYNE WALTERS • JOHN WARD • KENNETH WARD • TOIVO WARGELIN • JAMES WARGO
ROSEMARY WASHINGTON • JAMES WATKINS • ANTHONY WATROBA • DONALD WEBER • JAMES WEBER • THOMAS WEBSTER
RAYMOND WEEDEN • SANDRA WEEDEN • REGINALD WEEMS • JOHN WEGAS • ROBERT WEIGAND • RONALD WEIZER • CHARLES WELLMAN
PATRICK WESLEY • JESSE WETULA • CHRISTOPHER WHEWELL • SVEN WIBERG • PHILLIP WIENCLAW • THOMAS WILD • ALFRED WILLIAMS
COLANDERS WILLIAMS • CYNTHIA WILLIAMS • JOSEPH WILLIAMS • ROBERT WILLIAMS • SEDALIA WILLIAMS • SIDNEY WILLIAMS • JAY WILSON
MARY WILSON • SCOTT WILSON • WILLIAM WILSON • CHANDA WIMBS • CHARLES WINEMILLER • THOMAS WOHLFEIL • MICHAEL WOLF
ANTHONY WOOD • JOHN WOOD • SABRINA WOODSON • APRIL WRIGHT • KAREN YATES • JOHN YENYO • BERNARD YORKO • KENNETH YOUNG
JAMES YUSKO • THOMAS ZABLOTNY • VICTOR ZADELL • TIMOTHY ZAK • CATHERINE ZAMBORSKY • ROBERT ZAMISKA • TALIVALDIS ZARINS
GLENN ZAROBELL • APRIL ZELLNER • DAVID ZIEMBICKI • BETTY ZIGMUND • ALFRED ZIMMIE • STEPHEN ZYCH