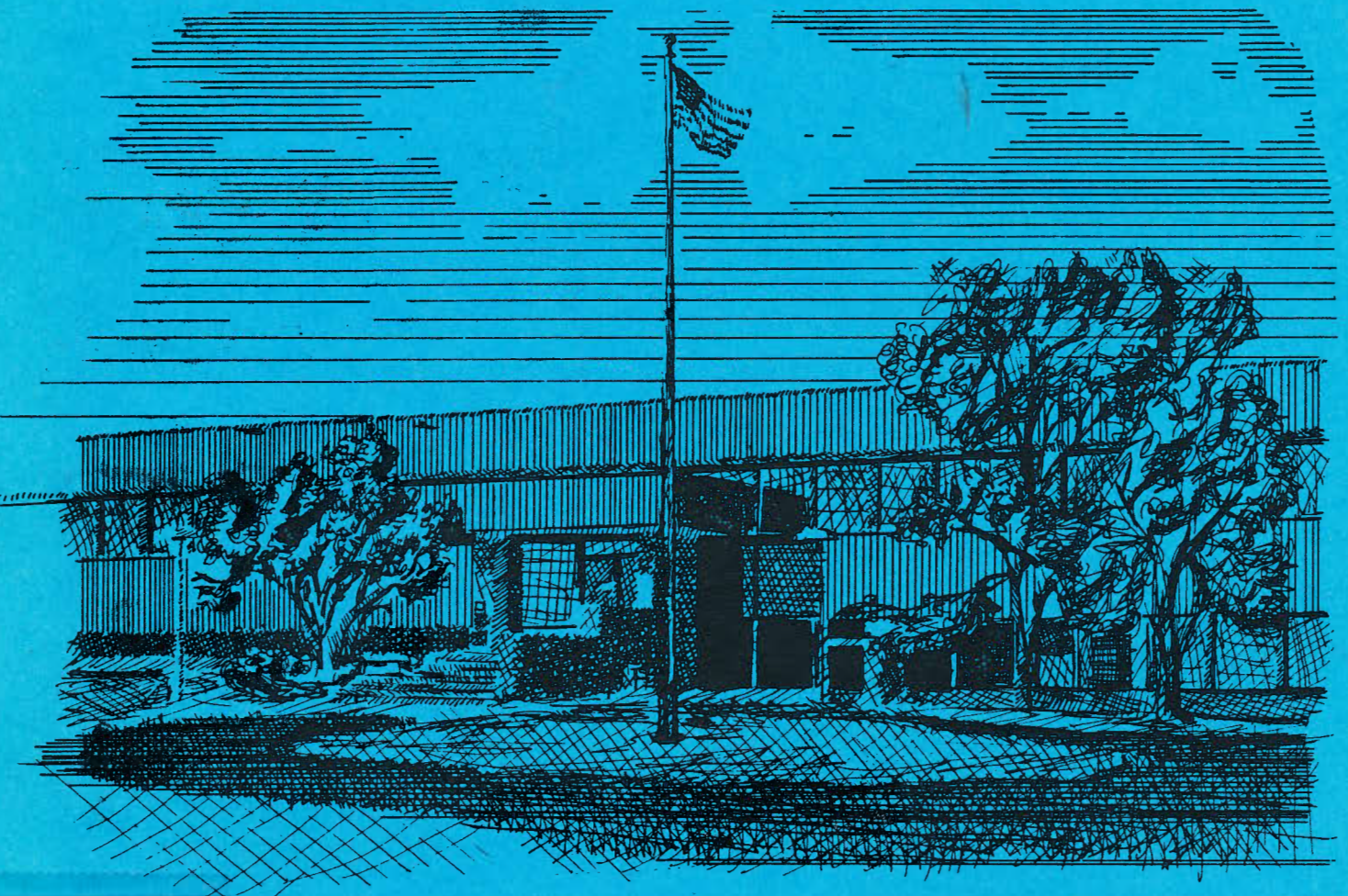


1991 ANNUAL REPORT



GEORGE W. KUHN
DRAIN COMMISSIONER
OAKLAND COUNTY, MICHIGAN
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ROBERT H. FREDERICKS
Chief Deputy Commissioner
858-0970

GEORGE W. KUHN
OAKLAND COUNTY DRAIN COMMISSIONER
ONE PUBLIC WORKS DRIVE
WATERFORD, MICHIGAN 48328-1907
858-0958
FAX # (313) 858-1066

April 1, 1992

GLEN YRJANAINEN
Deputy & Chief Engineer
Drain & Lakes Engineering
858-0981

WILLIAM E. KLOCKOW
Chief Engineer
Water & Sewer Engineering
858-1094

OAKLAND COUNTY

AUG 3 1992

Reference Library

Honorable Board of Commissioners
County of Oakland
1200 North Telegraph Road
Pontiac, Michigan 48341

Mr. Chairman, Ladies & Gentlemen:

As required by the Michigan Drain Code, I enclose the Annual Report of the operations of the Drain Commissioner's Office during the period January 1, 1991 through December 31, 1991.

The Drain Office experienced a significant increase in project activity during 1991. The \$33.5 million of project activity represented a 54% increase over the previous year's total of \$21.7 million. This significant increase was caused primarily by Segment II of the Evergreen-Farmington Sewage Disposal System (EFSDS). This project which encompasses 11 Oakland County municipalities has a total cost of \$31.8 million, of which \$9.9 million is funded through a grant from the Federal Government.

We have numerous projects currently in varying stages of construction or development. The enclosed report provides a summary of those projects. Communities throughout Oakland County continue to contract with this office at record levels to fulfill their infrastructure requirements. We continue to work diligently to service those requests, and complete projects on time and within budget.

I wish to extend my thanks and appreciation to all members of the Board of Commissioners for the excellent cooperation and assistance extended to this office during the past year.

Most sincerely,


George W. Kuhn

OAKLAND COUNTY DRAINAGE BOARD

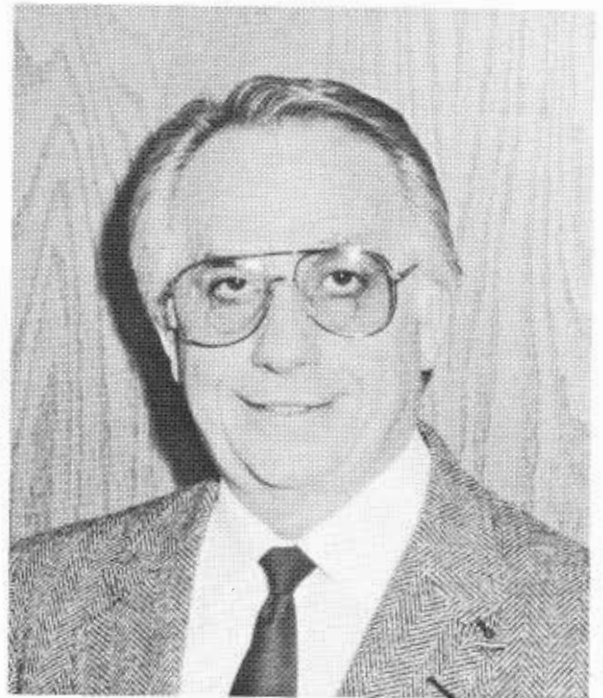


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George W. Kuhn
Drain Commissioner



Roy Rewold
Chairman
Board of Commissioner



G. William Caddell
Chairman
Finance Committee

DRAIN DEPARTMENT MANAGEMENT STAFF



Robert H. Fredericks
Chief Deputy Drain Commissioner



Glen Yrjanainen
Deputy/Chief Engineer
Drain & Lakes



William E. Klockow
Chief Engineer
Water & Sewer



Philip Joseph Donald
Sanzica Kozma Mills
Assistant Chief Engineers

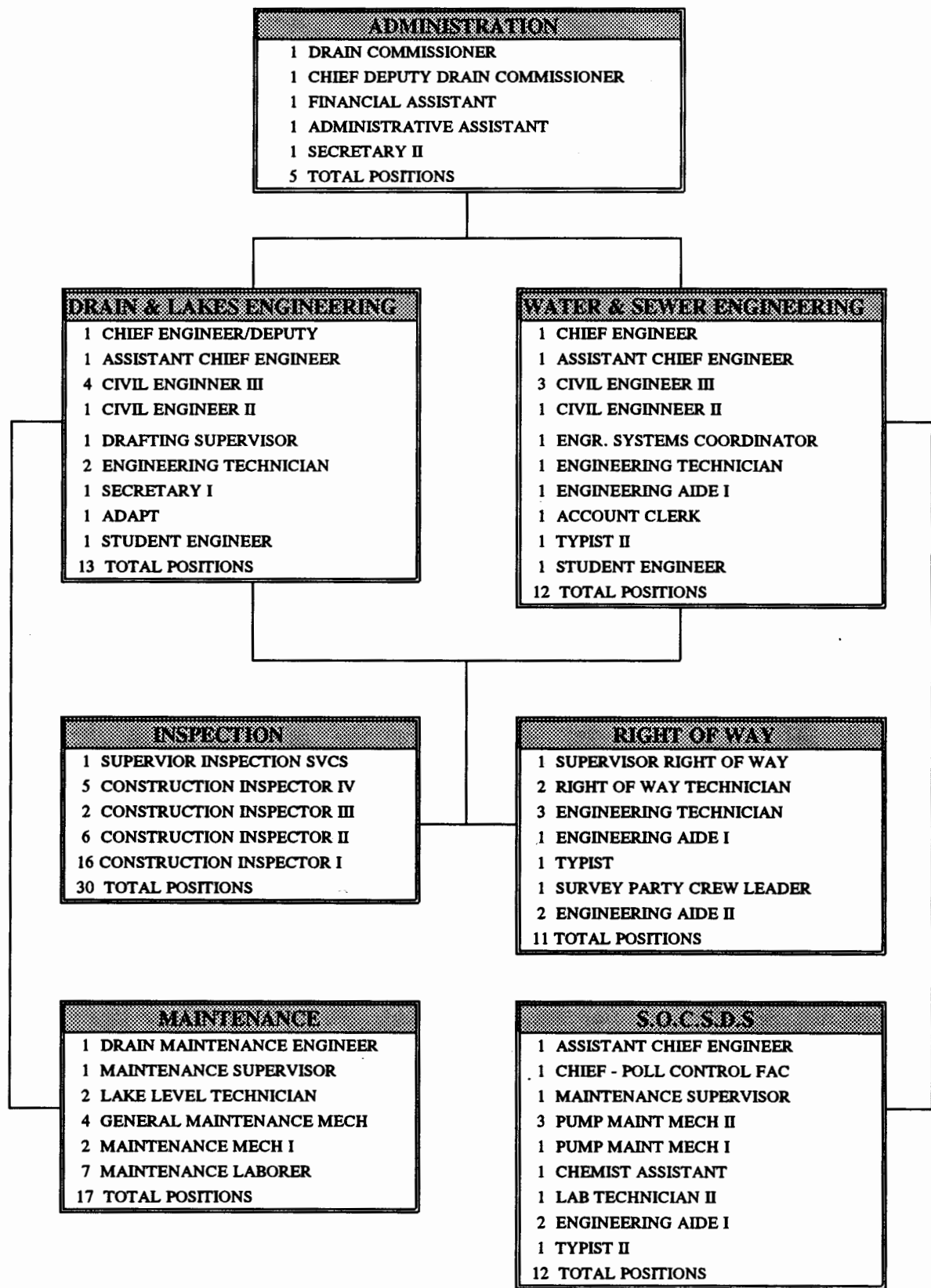
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ORGANIZATION CHART



ADMINISTRATION

- 1 DRAIN COMMISSIONER
- 1 CHIEF DEPUTY DRAIN COMMISSIONER
- 1 FINANCIAL ASSISTANT
- 1 ADMINISTRATIVE ASSISTANT
- 1 SECRETARY II
- 5 TOTAL POSITIONS

DRAIN & LAKES ENGINEERING

- 1 CHIEF ENGINEER/DEPUTY
- 1 ASSISTANT CHIEF ENGINEER
- 4 CIVIL ENGINEER III
- 1 CIVIL ENGINEER II
- 1 DRAFTING SUPERVISOR
- 2 ENGINEERING TECHNICIAN
- 1 SECRETARY I
- 1 ADAPT
- 1 STUDENT ENGINEER
- 13 TOTAL POSITIONS

Water & Sewer Engineering

- 1 CHIEF ENGINEER
- 1 ASSISTANT CHIEF ENGINEER
- 3 CIVIL ENGINEER III
- 1 CIVIL ENGINEER II
- 1 ENGR. SYSTEMS COORDINATOR
- 1 ENGINEERING TECHNICIAN
- 1 ENGINEERING AIDE I
- 1 ACCOUNT CLERK
- 1 TYPIST II
- 1 STUDENT ENGINEER
- 12 TOTAL POSITIONS

INSPECTION

- 1 SUPERVOR INSPECTION SVCS
- 5 CONSTRUCTION INSPECTOR IV
- 2 CONSTRUCTION INSPECTOR III
- 6 CONSTRUCTION INSPECTOR II
- 16 CONSTRUCTION INSPECTOR I
- 30 TOTAL POSITIONS

RIGHT OF WAY

- 1 SUPERVISOR RIGHT OF WAY
- 2 RIGHT OF WAY TECHNICIAN
- 3 ENGINEERING TECHNICIAN
- 1 ENGINEERING AIDE I
- 1 TYPIST
- 1 SURVEY PARTY CREW LEADER
- 2 ENGINEERING AIDE II
- 11 TOTAL POSITIONS

MAINTENANCE

- 1 DRAIN MAINTENANCE ENGINEER
- 1 MAINTENANCE SUPERVISOR
- 2 LAKE LEVEL TECHNICIAN
- 4 GENERAL MAINTENANCE MECH
- 2 MAINTENANCE MECH I
- 7 MAINTENANCE LABORER
- 17 TOTAL POSITIONS

S.O.C.S.D.S.

- 1 ASSISTANT CHIEF ENGINEER
- 1 CHIEF - POLL CONTROL FAC
- 1 MAINTENANCE SUPERVISOR
- 3 PUMP MAINT MECH II
- 1 PUMP MAINT MECH I
- 1 CHEMIST ASSISTANT
- 1 LAB TECHNICIAN II
- 2 ENGINEERING AIDE I
- 1 TYPIST II
- 12 TOTAL POSITIONS

ENGINEERING UNITS

OAKLAND COUNTY DRAIN COMMISSIONER

The County Drain Commissioner has broad powers and responsibilities under several state laws. His primary duties are described in the Michigan Drain Code, Act 40 of 1956. Additional powers and duties of the Drain Commissioner derive from the provisions of two public works acts, Act 342 of 1939 and Act 185 of 1957; the Inland Lake Level Control Act, Act 146 of 1961; the Inland Lake Improvement Act, Act 345 of 1966; the Subdivision Control Act, Act 288 of 1967; the Soil Erosion and Sedimentation Control Act, Act 347 of 1972; and various other statutes.

For purposes of organization, the functions of the Drain Commissioner as a part of Oakland County government are delegated to six operating units: Drain and Lakes Engineering, Water and Sewer Engineering, Right of Way, Inspection, Maintenance, and S.O.C.S.D.S. The employees in each of these units perform a multitude of tasks necessary for the office of the County Drain Commissioner to construct and maintain a variety of public works facilities for the use of residents in all parts of Oakland County.

ENGINEERING UNITS

The staff of engineers and other technical personnel in these two units are responsible for the design and construction of public works facilities of various kinds including storm drains, sanitary sewers, water mains and lake level control structures. Two Chief Engineers, Glen Yrjanainen and William Klockow, supervise the engineering functions of these units. At the end of 1991 there were 23 employees in these units. The following specific activities are performed in the Engineering Units.

New Project Construction

Engineers and other support personnel administer the construction activity on new storm drains, sanitary sewers, water mains, and lake level control structures. This activity includes close cooperation with local units of government, state and federal agencies, consulting engineers, contractors and other interested parties. A summary of specific projects completed or under construction during 1991 is provided later in this report.

Plat Review

Under the provisions of the Subdivision Control Act, Act 288 of 1967, the Drain Commissioner reviews and approves all new subdivision plats in Oakland County. The review by the Drain Commissioner is made to ensure that adequate storm drainage facilities have been included in the engineering plans for the proposed plat. In addition, the Mobile Home Commission Act, Act 96 of 1987, requires the Drain Commissioner to review and approve the outlet drainage for new mobile home developments.

In 1991, 39 preliminary plats, 38 sets of subdivision construction plans, and 29 final subdivision plats were reviewed by the engineering staff of the Drain Commissioner. A total of 21 Oakland County communities were represented in the projects

reviewed. The final subdivision plats contained 1256 lots. Total revenue generated from plat review fees in 1991 was \$10,025. Joseph P. Kozma, P.E. is the Drain Office engineer in charge of the plat review program.

Lake Level Program

Under the provisions of Act 146 of 1961, the Drain Commissioner's office participates in legal proceedings to establish and build lake level control structures for lakes in Oakland County.

Oakland County is approximately 30 miles from east to west, and 30 miles from north to south, with an area of approximately 900 square miles. For water management purposes, portions of the County are located within the basins of six rivers, the Clinton, Huron, Rouge, Flint, Shiawassee and Belle Rivers. There are 50 lakes in the County where levels have been established and assigned to the Drain Commissioner for control. The 50 lakes are in four river basins; 33 in the Clinton, 13 in the Huron, two in the Rouge, and two in the Shiawassee.

In some cases the level of more than one lake is controlled from a single lake level control structure. A summary containing basic information about lakes under the jurisdiction of the Drain Commissioner in Oakland County appears on the two following pages of this report.

Ronald R. Karttunen, P.E. is responsible for the lake level program which involves the operation and maintenance of 32 lake level control structures, and six lake level augmentation pumps.

Regular inspection of lake level control structures is made on a weekly basis, or more often as weather conditions may dictate. The level of each lake is read and recorded, and adjustments to the structures are made throughout the year. Every effort is made to maintain the established legal level. A typical illustration of this is shown on page 7 of this report in the form of Dawson Mill Pond's 1991 hydrograph. These hydrographs are available for each lake level system.

Regular inspection also ensures that the structures are in good operating condition, and permits scheduled maintenance and repairs when needed. In order to effectively keep pace with the inspection and maintenance needs of the lake level program, two Lake Level Control Technicians are assigned to monitor the lake levels.

Special assessment districts were established by the Circuit Court for each project and, as necessary, annual assessment rolls are prepared to reimburse the cost of necessary maintenance expenditures. During 1991, maintenance work was performed on 24 lake level projects, and the Board of Commissioners approved assessments in the amount of \$249,402 to assess property for the maintenance costs on these Lake Level Control Projects. In addition to these assessments, three lake level projects were assessed in the amount of \$76,022 for a portion of the cost of construction of the Price Dam, Indianwood Dam, and Bunny Run Dam.

Soil Erosion and Sedimentation Control

For the past 17 years, the Drain Commissioner's Office has operated as the designated enforcing agency in Oakland County for the Soil Erosion & Sedimentation Control Act, Act 347 of 1972. The Drain Commissioner is currently enforcing agent for 18 cities, 19 townships, and 9 villages within Oakland County. The program is

**SUMMARY OF OAKLAND COUNTY LAKES
WITH COURT ESTABLISHED LEGAL LEVELS**

LAKE	AREA (ACRES)	YEAR ESTABLISHED	LOCATION	
<u>CLINTON RIVER BASIN</u>				
Lakeville Lake	Lakeville *	492	1961	Addison Twp
Oxford Multi-Lakes	Mickelson	61	1973	Oxford Twp
	Squaw	29		
	Clear	32		
	Long	33		
	Cedar	15		
	Tan	58		
	Mill Pond *	2		
	Waterford Multi-Lakes	Cemetery	28	1966	Independence & Waterford Twps
Dollar *		6		
Greens		101		
Maceday		234		
Lotus		169		
Lester		22		
Van Norman *		27		
Upper Silver		41		
Silver		108		
Mohawk		35		
Wormer		38		
Schoolhouse		40		
Loon *		265		
Williams *		175		
Oakland-Woodhull Lakes	Woodhull	135	1958	Waterford Twp
	Oakland *	235		
Watkins Lake	Watkins * (pump)	229	1960	Waterford Twp
Cass Lake	Cass *	1280	1969	Waterford Twp & Keego Harbor
	Orchard Lake	Orchard * (pump)	850	1966	Orchard Lake & W. Blmfld Twp
Indianwood Sylvan-Otter	Indianwood *	122	1986	Orion Twp
	Otter	81	1986	Waterford Twp,
	Sylvan	458		Pontiac, Sylvan Lake & Keego Harbor
	Dawson Mill Pond *	8		
Crystal Lake	Crystal *	51	1989	Pontiac
Bunny Run Lake	Bunny Run *	11	1990	Orion Twp

* Lake level structure is located at the outlet of the lake

**SUMMARY OF OAKLAND COUNTY LAKES
WITH COURT ESTABLISHED LEGAL LEVELS**

LAKE	AREA (ACRES)	YEAR ESTABLISHED	LOCATION	
<u>HURON RIVER BASIN</u>				
Big Lake	Big *	220	1967	Springfield Twp
White Lake	White * (pump)	540	1965	White Lake & Highland Twps
Duck Lake	Duck * (pump)	307	1962	Highland Twp
Pontiac Lake	Pontiac *	615	1944	White Lake Twp
Oxbow Lake	Oxbow *	286	1963	White Lake Twp
Cedar Island Lake	Cedar Island *	169	1964	White Lake Twp
Fox Lake	Fox *	39	1963	Commerce Twp
Union Lake	Union *	465	1949	Commerce Twp
Long Lake	Long * (pump)	175	1964	Commerce Twp
Upper Straits Lake	Upper Straits *	378	1964	W. Blmfld Twp
Middle & Lower Straits Lake	Middle Straits Lower Straits * (pump)	194 220	1963	Commerce Twp
Commerce Lake	Commerce *	262	1964	Commerce Twp
<u>Rouge River Basin</u>				
Walled & Shawood Lakes	Shawood Walled *	45 670	1984	Novi & Walled Lake
<u>Shiawassee River Basin</u>				
Bevins Lake	Bevins *	31	1964	Holly Twp
Tipsico Lake	Tipsico *	301	1954	Rose Twp

* Lake level structure is located at the outlet of the lake

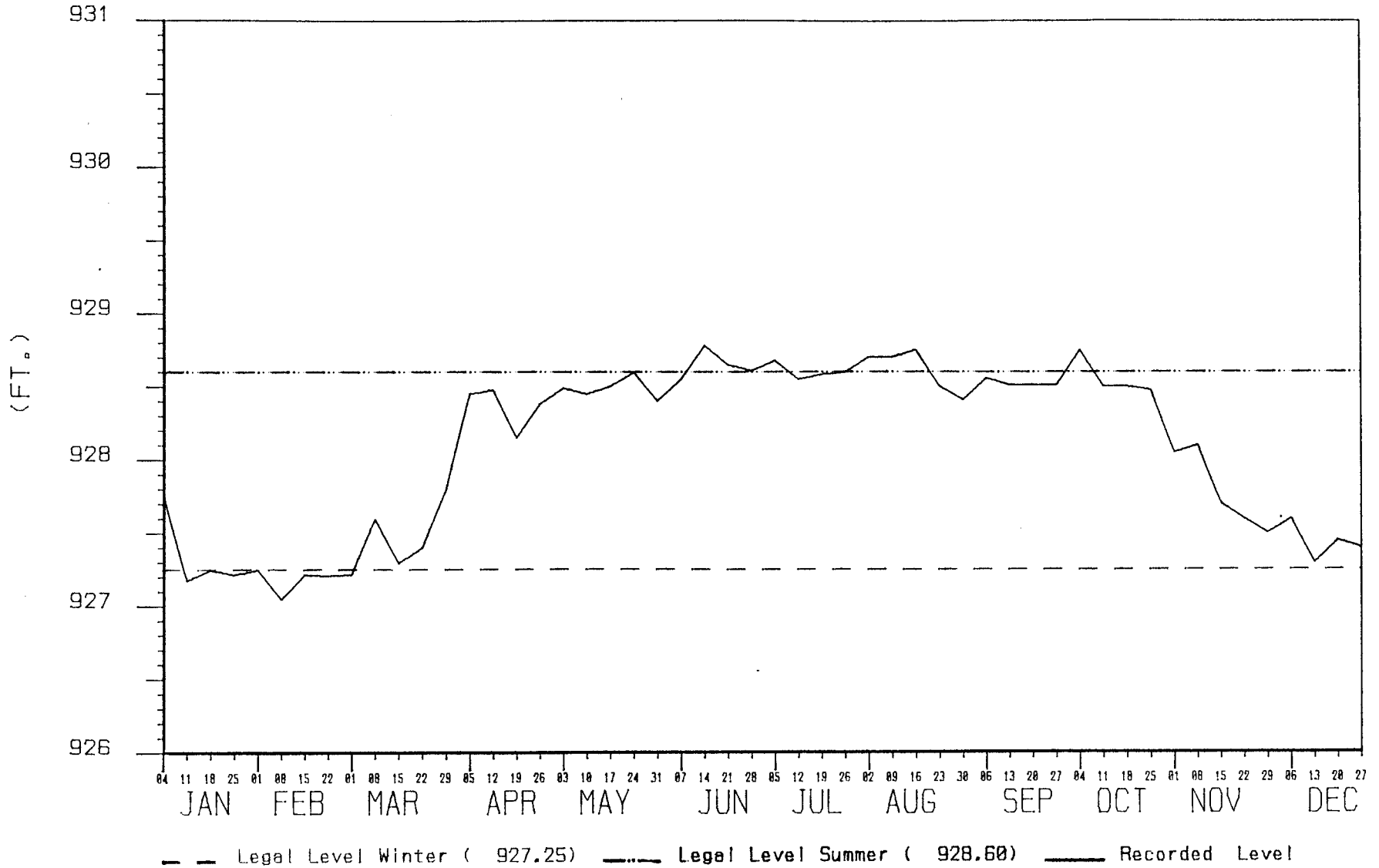
**LAKE LEVEL EXPENDITURE SUMMARY
FOR THE YEAR 1991**

<u>Lake Level</u>	<u>Salaries & Fringes</u>	<u>Material & Supplies</u>	<u>Misc Charges</u>	<u>Mileage Charges</u>	<u>Insurance</u>	<u>Electrical Service</u>	<u>Contracted Services</u>	<u>Total Expenditures</u>
Bevens Lake	\$1,182.53	\$0.00	\$0.00	\$1,384.12	\$106.15	\$0.00	\$0.00	\$2,672.80
Big Lake	\$1,936.80	\$3.70	\$0.00	\$1,356.41	\$137.62	\$0.00	\$0.00	\$3,434.53
Bunny Run Lake	\$11,613.12	\$446.13	\$194.76	\$891.31	\$845.35	\$109.62	\$65,535.86	\$79,636.15
Cass Lake	\$10,861.45	\$48.33	\$141.67	\$2,410.18	\$963.29	\$0.00	\$0.00	\$14,424.92
Cedar Island Lake	\$4,373.99	\$22.16	\$0.00	\$1,134.36	\$287.03	\$0.00	\$0.00	\$5,817.54
Commerce Lake	\$2,867.40	\$0.00	\$53.00	\$1,171.79	\$389.25	\$0.00	\$0.00	\$4,481.44
Crystal Lake	\$6,159.20	\$116.29	\$141.67	\$729.32	\$530.81	\$340.84	\$20.00	\$8,038.13
Duck Lake	\$3,203.88	\$120.84	\$32.96	\$1,404.85	\$648.75	\$4,303.72	\$219.00	\$9,934.00
Fox Lake	\$1,914.87	\$2.04	\$0.00	\$773.90	\$228.05	\$0.00	\$0.00	\$2,918.86
Indianwood Lake	\$2,164.43	\$31.70	\$0.00	\$1,062.29	\$471.82	\$0.00	\$0.00	\$3,730.24
Lake Louise	\$5,726.59	\$123.69	\$1,015.34	\$674.83	\$0.00	\$0.00	\$16,513.50	\$24,053.95
Lakeville Lake Level	\$2,209.04	\$0.00	\$0.00	\$1,754.12	\$153.35	\$0.00	\$0.00	\$4,116.51
Long Lake	\$2,992.27	\$24.50	\$2,404.96	\$2,690.29	\$279.16	\$221.52	\$11,510.94	\$20,123.64
Middle & Lower Lake	\$3,100.30	\$349.49	\$0.00	\$954.26	\$487.54	\$2,872.04	\$3,702.00	\$11,465.63
Oakland-Woodhull Lake	\$7,189.00	\$55.57	\$141.67	\$1,679.98	\$1,179.55	\$0.00	\$0.00	\$10,245.77
Orchard Lake	\$6,094.50	\$678.18	\$136.15	\$1,018.43	\$420.70	\$1,418.32	\$0.00	\$9,766.28
Oxbow Lake	\$5,666.18	\$13.00	\$141.67	\$1,583.09	\$326.33	\$0.00	\$0.00	\$7,730.27
Oxford Multi Lake	\$3,086.93	\$81.20	\$0.00	\$1,891.84	\$935.78	\$0.00	\$0.00	\$5,995.75
Pontiac Lake	\$4,608.91	\$169.09	\$151.17	\$1,417.04	\$1,171.68	\$0.00	\$0.00	\$7,517.89
Square Lake	\$215.81	\$0.00	\$78.00	\$0.00	\$0.00	\$0.00	\$13,779.00	\$14,072.81
Sylvan Otter Lake	\$8,543.39	\$586.33	\$159.85	\$1,495.37	\$1,376.13	\$0.00	\$14,600.00	\$26,761.07
Tipsico Lake	\$1,015.04	\$18.78	\$0.00	\$1,598.50	\$31.45	\$0.00	\$0.00	\$2,663.77
Union Lake	\$4,467.71	\$19.05	\$0.00	\$1,102.07	\$224.11	\$0.00	\$0.00	\$5,812.94
Upper Straits Lake	\$1,268.25	\$796.80	\$0.00	\$0.00	\$58.98	\$0.00	\$0.00	\$2,124.03
Walled & Shawood Lake	\$1,156.70	\$0.00	\$0.00	\$1,420.25	\$381.40	\$0.00	\$0.00	\$2,958.35
Waterford Multi Lake	\$16,850.66	\$578.92	\$51.45	\$2,000.28	\$3,200.51	\$0.00	\$0.00	\$22,681.82
Watkins Lake	\$2,566.30	\$8.81	\$10.00	\$482.43	\$157.28	\$1,754.18	\$0.00	\$4,979.00
White Lake	\$2,677.25	\$267.75	\$430.20	\$1,774.79	\$1,049.80	\$14,147.82	\$0.00	\$20,347.61
TOTAL	\$125,712.50	\$4,562.35	\$5,284.52	\$35,856.10	\$16,041.87	\$25,168.06	\$125,880.30	\$338,505.70

Note: Hydrograph derived
from lake level elevation
record readings, U.S.G.S.
datum.

DAWSON MILL POND

HYDROGRAPH for 1991



designated to protect the environment without placing an undue burden on property owners or contractors.

In 1991 Oakland County was honored with an achievement award from the National Association of Counties for our Soil Erosion and Sedimentation Control Program. This award was given in consideration of the innovative programs developed by this office to ensure that the quality of our lakes and streams is preserved.

In 1991, 630 applications for soil erosion permits were received by this office. The total revenue received in 1991 from soil erosion permit fees was \$155,023. Douglas D. Smith, P.E. was in charge of the Drain Commissioner's Soil Erosion & Sedimentation Control program in 1991.

Construction Permits

The Drain Commissioner, under provisions of the Drain Code, requires that a permit be obtained before making connections to, or doing work affecting, a County drain. The permit program is under the direction of Edward T. Micol, Supervisor of Inspection Services.

During 1991 a total of 173 permits were issued for work items affecting County and Inter-County Drains. The number of permits does not directly reflect the extent of construction or modification of the affected drains. A single permit may involve only a single connection to a drain or many different direct points of connection or other involvement.

In most cases before a permit is issued, two sets of construction plans are submitted for review. Requests for a connection to a drain may be submitted by public agencies, engineering firms, private property owners or contractors retained by others to construct particular facilities. All plans submitted for review must conform to the engineering design standards which have been developed by the Drain Commissioner's office to protect the integrity and usefulness of existing facilities.

At the time of construction of any work for which a permit has been issued, an inspection is made to assure that the job is done properly and in accordance with the approved engineering plans. A fee, or fee and deposit, is charged to offset the cost of this inspection.

Review of Lateral Connections to the S.O.C.S.D.S.

All connections into any sewer that is tributary to the Southeastern Oakland County Sewage Disposal System are required to be reviewed by the Drain Commissioner prior to being submitted to the Michigan Department of Natural Resources. This review allows a record to be kept of all facilities outletting into County trunk lines, as well as assuring that proper and approved construction standards are used on new connections.

The Drain Commissioner works closely with local units of government. All plans sent to the Drain Office for review are transmitted through the municipality's engineer or Engineering Department, to ensure that sewer lines conform to the local community master plan for sewer service. During 1991 the Engineering Unit received and reviewed 19 sets of sanitary and combined sewer plans for facilities that will outlet into the Southeastern Oakland County Sewage Disposal System.

INSPECTION UNIT

INSPECTION UNIT

The Oakland County Drain Commissioner employs trained inspection personnel to inspect drain, sewer and water projects. During 1991 there were twenty four employees in the Inspection Unit. The supervisor of the Inspection Unit is Edward T. Micol who schedules and coordinates all activities of the unit, and provides in-the-field assistance to individual inspectors. During each project assignment the individual inspector reports directly to the engineer responsible for the project.

The inspector insures that each facility is constructed in accordance with the plans and specifications, with particular attention paid to backfill material, proper compaction, and workmanship. Careful observation of the quality and proper placement of construction materials such as pipe, concrete and reinforcing steel in underground lines, pump stations and other structures are also important duties of the inspector.

The Drain Commissioner also strives to maintain good public relations with members of the public affected by the construction of various projects. Necessary services, such as mail delivery and garbage collection, and prompt restoration of access to private property during and after construction are expedited to reduce the inconvenience to the public.

Inspectors use radio and telephone communication with the office and local communities during working hours so that any complaints, inquiries, or construction related problems can be handled as quickly as possible.

Daily inspection reports and a log of the progress of construction are maintained by the inspector on each project. Daily records permit proper restoration of the construction site, and also assure that correct payment will be made to the contractors on the project.

Inspection staff also videotapes future construction sites and routes. Particular care is taken with easement areas where possible problems can be anticipated or where difficult types of restoration work will be needed. After construction, the video tapes are available as needed during restoration work, and can be used to resolve differences regarding the actual conditions which existed before construction. The video record is valuable to discourage litigation because a visual review of the prior condition of all property is possible.

An important responsibility of the inspector on each project is the preparation of an "as-built" plan, which is a plan that shows exactly how the project was constructed in the field, with dimensions identifying the location of all underground structures. Future surface access for additional installations or service is thereby enhanced at a lower cost with a minimum of disturbance to the existing facility.

The Inspection Unit is responsible for the field inspection portion of the Soil Erosion and Sedimentation Control program, and meets with municipalities and private citizens to promote a reasonable and effective soil erosion policy in an effort to reduce the pollution of lakes and streams in Oakland County. The soil erosion inspection program is supervised by Dan MacLennan.

Inspection Staff is also responsible for inspecting connections and other involvements with county drains throughout Oakland County. The inspector is present to insure that the integrity of the existing system is maintained, and that proper compliance with state and local regulations are observed.

MAINTENANCE UNIT

MAINTENANCE UNIT

The Oakland County Drain Commissioner's Maintenance Unit, under the direction of Michael J. Lamb, P.E. is responsible for the operation and maintenance of approximately 600 miles of legally established county drains, 32 lake level control structures and related facilities.

Description of Unit

The Maintenance Unit consists of a Drain Maintenance Engineer, a Maintenance Supervisor and an operations staff of 14 maintenance workers. Operations require that the Maintenance Unit maintain seven pickup trucks, a bulldozer, a backhoe, a jet vactor truck, a dump truck, skid loader, trailers and a variety of other equipment such as compressors, pumps, and power tools.

Operational Description

Through a procedure of routine inspection and response to complaints, the County drains are inspected on a regular basis for maintenance needs and routine repairs. Often during these inspections it is possible to identify potential problems or violations associated with the proper operation of the drains. The majority of the work performed by the Maintenance Unit is the general upkeep of the drains and correcting problems identified by these inspections.

Response to drainage complaints from citizens and local municipalities is also a major function of the Maintenance Unit. In most cases complaints are answered on the same day that they are submitted to this office. The department's policy of prompt response to complaints has been instrumental in preventing property damage and personal injury associated with flooding and failure of drainage facilities under this office's jurisdiction.

Additional Operations

The Maintenance Unit is also responsible for maintenance of lake level control structures, U.S. Department of Agriculture Weather Service Office rain gauge stations, and numerous pump stations related to maintaining lake levels and stream flow.

Rain gauge stations under our operational control consist of twenty-four units located throughout Oakland County. Trained maintenance personnel monitor these stations to insure that they operate reliably to provide accurate data for use by national and local organizations. Frequent repairs are required on these units due to the sensitivity of the mechanisms and exposed location.

In cooperation with other County governmental units, the Maintenance Unit provides services and equipment, at a minimal rate, to the Oakland County Road Commission, DPW, FM&O, Oakland-Pontiac Airport and others in their operations and maintenance work in order to assist them in reducing the costs of their specific maintenance responsibilities.

Funding for the Maintenance Unit is provided by direct assessment to responsible municipal governments and special assessment districts.

RIGHT OF WAY UNIT

RIGHT OF WAY

The Oakland County Drain Commissioner employs a trained and experienced staff of eleven full time people in this unit, supervised by James W. Isaacs, Jr., R.L.S.

The primary purpose of this unit is the acquisition of easements for the construction of storm drains, sanitary sewer systems and water supply systems. The easements for these projects are obtained by contacting individual property owners. In order to obtain an easement, it is necessary to negotiate an acceptable agreement with the property owner. This process can be slow and difficult. It may be necessary to make several contacts with each owner, or in some cases, with multiple owners. Easements are either permanent (land upon which facilities are located) or temporary (land required for use during construction only). Upon completion of a project, temporary easements revert to the owner, while permanent easements remain under the control of the County or the Drainage District.

Besides easement acquisition, the Right-of-Way Unit is responsible for verifying signatures on petitions to establish lake level controls and researching requests and/or lawsuits for plat easement vacations or amendments. This unit has also been working with the Drain Inspection Unit to acquire new easements needed for Drain relocations due to industrial or residential development.

Another important function of the Right-of-Way Unit is to purchase property, in fee, for such things as pump station sites, retention ponds or other areas where large easements are required. Property may also be purchased for additional road Right-of-Way and later deeded to the local municipality.

The Right-of-Way Staff becomes involved early in the planning stage of projects. This is necessary to accommodate possible route changes, land and soil conditions, landscaping, and the desires of the public. Any or all of these factors may affect the cost of a project. Staff members work closely with the engineer assigned to each project and make recommendations to help control or reduce costs.

Once the route and basic design of a project are determined, easement documents must be prepared to cover the area required for construction. A title search is necessary to determine the legal owners of record and all parties having an interest in the land, i.e., mortgage holders, land contract purchasers, etc. In many cases, old records have to be researched, which can be both difficult and time consuming.

The easement description is written by calculating the exact location of the facility which will be constructed on private land. The description must be precise, as it will become part of a recorded title document. After the easement documents are prepared, they are assigned to a Right-of-Way Field Agent who will contact the property owner. All signed easement documents are recorded at the Oakland County Register of Deeds.

When an easement cannot be obtained from a property owner, it is necessary to file a condemnation action in Circuit Court under the Uniform Condemnation Act, Act 87 of 1980. Right-of-Way Staff works closely with the Oakland County Corporation Counsel or outside legal counsel in filing a condemnation action. In a condemnation proceeding, the Court, with the assistance of expert appraisers, awards the requested easement to the County and awards the property owners a sum of money deemed to represent the diminution in value to the property caused by the easement.

During 1991, the Right-of-Way Unit was involved with 43 major projects in various stages of development. These projects included 25 drains, 9 sanitary systems, 8 water systems, and 1 dam site.

Early in 1991 easement acquisition was completed for the 48 million dollar federally funded Evergreen-Farmington Sanitary Sewer Project, the Lueders Drain and the first phase of the Waterford Township Sewer and Water Project.

Throughout the year, easement acquisition was proceeding on various projects including the King Drain (Troy), Minnow Pond and Pebblecreek Drains (Farmington Hills), Oaks Drain (Pontiac), Contracts 3 through 7 of the Rochester Hills Water Supply System, and the second phase of the Waterford Sewer and Water Project. In all, approximately 300 easements were acquired during 1991.

In August of 1991, plans were received for a combined Sewer and Water Project for the entire City of Orchard Lake Village. Approximately 600 easements will be required for this project which is slated for construction in 1993.

**SOUTHEASTERN
OAKLAND COUNTY
SEWAGE DISPOSAL
SYSTEM**

SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM

The District

The Southeastern Oakland County Sewage Disposal System (S.O.C.S.D.S.) serves a district of approximately 46,000 acres and provides sewer service to all of the areas within the Cities of Berkley, Clawson, Ferndale, Hazel Park, Huntington Woods, Madison Heights, Oak Park, Pleasant Ridge, Royal Oak, and the Township of Royal Oak. Part of the area within the Cities of Birmingham, Southfield, Troy, and the Village of Beverly Hills also receive sewer service from the S.O.C.S.D.S. Of the 46,000 acres served, approximately 24,385 acres are served by combined sewers, and the remaining 21,615 acres, primarily in the Cities of Troy and Madison Heights, are served by separated sewer systems.

The Pollution Control Facility - Background

Prior to 1974 the Twelve Towns Relief Drains system collected combined sewage from the district and delivered it to the Dequindre Interceptor at the rate of 118 cubic feet per second. When the total flow exceeded 118 cubic feet per second, the excess was stored in the Twelve Towns system up to a retention capacity of 90 acre/feet (approximately 33 million gallons). When a storm event occurred of such magnitude that the storage capacity of the Twelve Towns Relief system was exceeded, the excess combined sewage would spill into the Red Run Drain. Overflows occurred approximately 25 times every year and were causing pollution of the Red Run Drain.

The Red Run Drain is a large, open inter-county Chapter 21 drain, over eight miles in length, flowing east from Twelve Mile and Stephenson Highway through Macomb County until it outlets into the Clinton River.

To mitigate this pollution of the Red Run Drain and the Clinton River, the Drain Commissioner as agent for the County of Oakland constructed the Pollution Control Facility, a storage facility 65 feet wide, 20 feet high and approximately two miles long with a capacity of 190 acre/feet (approximately 62 million gallons), which now receives overflows from the Twelve Towns Relief System. With this additional facility the storage capacity of the district has been increased to 280 acre/feet of combined sewage.

After a storm event, flows of combined sewage retained in the storage basin are pumped into the Dequindre Interceptor up to a capacity of 260 cubic feet per second. Only when the storage capacity of both the Twelve Towns Drain and the Pollution Control Facility are exceeded, will a spill occur to the Red Run Drain.

Operators of the Pollution Control Facility can anticipate when such a spill is going to occur. With this knowledge, chlorine is pumped into the combined sewage spilling into the Pollution Control Facility to kill bacteria so that the quality of effluent spilling into the Red Run Drain meets standards established by the Michigan Water Resources Commission.

Operations - 1991

The Drain Commissioner currently employs nine people to maintain and operate the S.O.C.S.D.S. under the direction of Joseph P. Kozma, P.E.

Laboratory staff collect and test samples to continually monitor contributors to the sewer system. The purpose of the monitoring program is to test sewage effluent from industries at designated locations so as to limit the users of the system to specific parameters of sewage strengths. The City of Detroit is notified of the results of these tests, and if a violation occurs the industry violating the sewage ordinance is notified. During 1991 approximately 51,000 analyses were performed on more than 10,000 samples collected within the district. Through these efforts the district has been able to control the strength of the effluent entering the system and later treated by the City of Detroit.

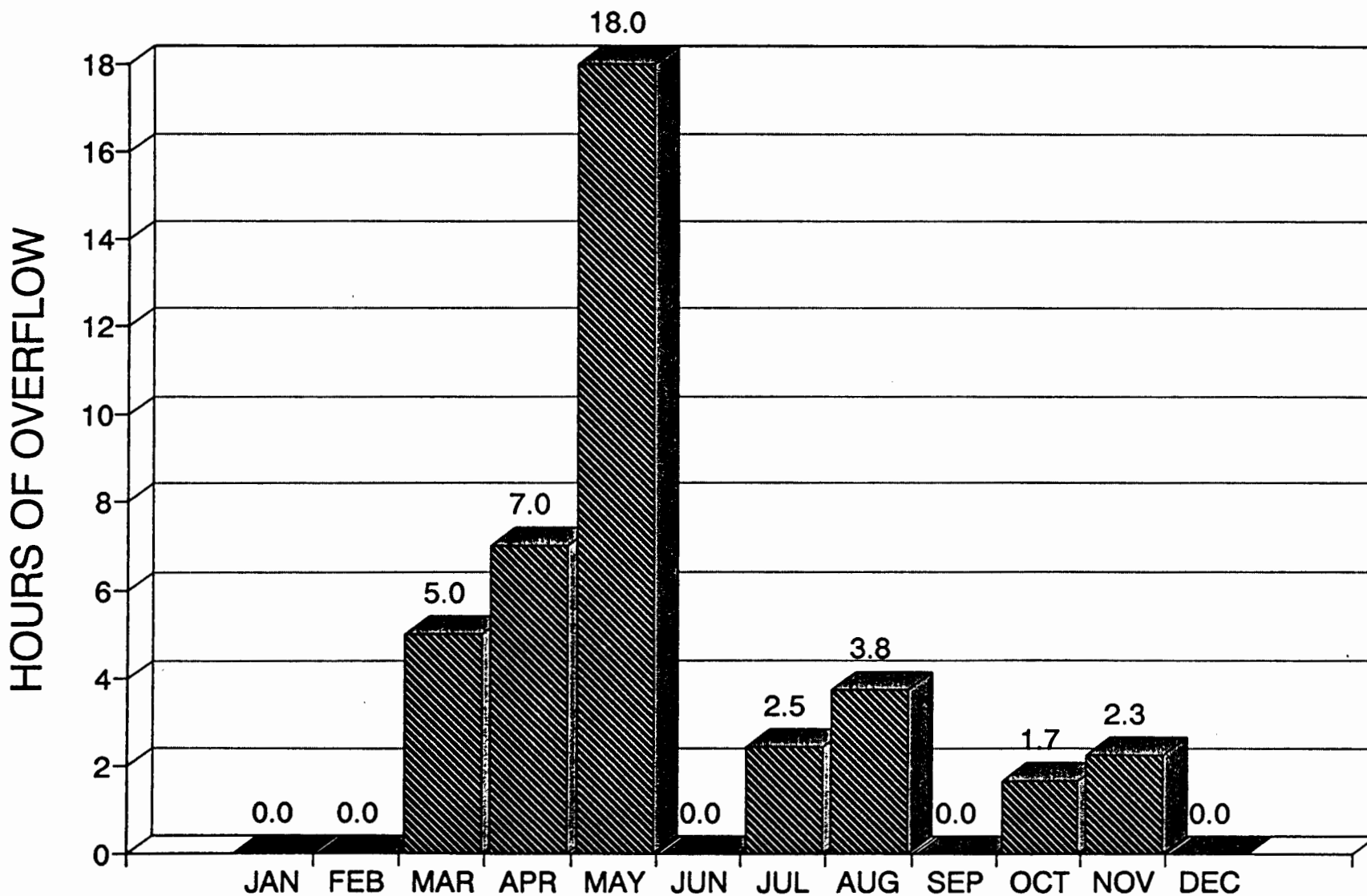
Field staff maintain and operate the Pollution Control Facility. Responsibilities include the operation of the pump station housing six dewatering pumps that pump combined sewage from the Pollution Control Facility into the Dequindre Interceptor. Once the Pollution Control Facility has been pumped dry, a flushing system is activated to wash down the walls and floor of the Pollution Control Basin. After flushing, employees enter the Pollution Control Basin and remove any remaining debris.

During all of 1991 there were only 18 spills from the Twelve Towns system to the Pollution Control Facility, of which 11 were retained in the basin with no spill to the Red Run Drain. The remaining 7 spills were chlorinated before spilling to the Red Run Drain. The total overflows to the Red Run Drain were limited to a total period of only 40 hours and 7 minutes for the year. The total volume of flow spilled was approximately 92,800,000 cubic feet or approximately 694 million gallons.

S.O.C.S.D.S. employees also operate and maintain the Red Run Drain, the outlet water course for the Pollution Control Facility, which begins at Thirteen Mile and Dequindre Road and runs northeasterly through Macomb County for over eight miles where it outlets into the Clinton River. This open water course is subject to erosion and shoaling. Funding for maintenance activities on the Red Run Drain is provided by assessments against the Chapter 21 inter-county drainage district for the Red Run Drain.

TOTAL OVERFLOW FOR 1991

40 Hours 7 Minutes



Southeastern Oakland County Sewage Disposal System

January 1, 1991 Thru December 31, 1991

DRAINS COMPLETED IN 1991

DRAINS COMPLETED IN 1991

Barnard Drain Improvements

The Barnard Drain consists of mostly open ditches in Sections 35 & 36 of the City of Troy. In one particular area between Chicago and John R Roads (north of the Oakland Mall) the drain makes a sudden change in direction and severe erosion problems were occurring in the open ditch at this location.

In August of 1989, the Barnard Drainage District contracted with the engineering consulting firm of Professional Engineering Associates to design erosion control improvements to this area of the Barnard Drain. On August 14, 1990, bids were received for the open ditch improvements and Saturn Construction Company was awarded the construction contract in the amount of \$84,400.

Construction of the Barnard Drain Improvement commenced in September of 1990 and the improvements were completed in the Spring of 1991 with a final project construction cost of \$93,700.

Jensen Drain

Petitions and resolutions for the construction of the Jensen Drain were received from the City of Rochester Hills on December 30, 1987. In February of 1988 the engineering firm of Hubbell, Roth & Clark, Inc. was employed as the consulting engineer for the Jensen Drain.

The Jensen Drain project was constructed to alleviate flooding problems being experienced in the Southwest quadrant of Section 33 which also contributed to flooding in the City of Troy. The project consists of storm sewer along portions of South Boulevard, Grace, Ruby, Dearborn, Cone, and Mildred Streets in addition to a retention facility located between South Boulevard and Grace Street.

On July 31, 1990, the final apportionment percentages were established and bids were received for the construction of the Jensen Drain. The low bidder was A.V.S. Construction Specialties (\$540,647.50) who was subsequently awarded the contract subject to the sale of bonds. Bonds in the amount of \$995,000 were sold on November 8, 1990 and construction of the Jensen Drain commenced in December of 1990. The drain is essentially completed except for some minor restoration which will occur in the Spring of 1992.

Johnson Drain

A petition for certain drain improvements along Featherstone Road and Auburn Road east of Opdyke and west of I-75, in the City of Auburn Hills was filed with the Drain Commissioner on July 14, 1986. At the first drainage board meeting held on August

18, 1986, the project was named the Johnson Drain, and the public hearing was scheduled for October 7, 1986. No objections were received at the hearing, and as a result, the project was determined practicable and necessary for the public health and the Final Order of Determination was adopted. Mr. Philip Sanzica, P.E., was designated as the project engineer for the Johnson Drain; Orchard Hiltz & McCliment was employed as consulting engineers; and Dickinson, Wright; Moon, Van Dusen and Freeman was named bond counsel for the project.

On August 29, 1989, plans and specifications for the project were received, adopted and approved. The cost estimate submitted with the plans totaled \$3,725,000. The project was advertised and construction bids were received with the contract being awarded to the low bidder, Dan's Excavating, Inc. of Utica, Michigan.

The cost of the project was financed by the sale of Oakland County Drain Bonds in the amount of \$2,675,000, for which the City of Auburn Hills pledged its full faith and credit for repayment. The bonds were sold on July 26, 1990, at an average effective interest rate of 6.56% over 10 years.

Construction began in the summer of 1990, and had been completed by the end of 1991.

DRAINS UNDER CONSTRUCTION

DRAINS UNDER CONSTRUCTION

Crake Drain

The City of Rochester Hills requested the construction of the Crake Drain by way of petition and resolution which were received by the Drain Commissioner's office on December 30, 1987. The first drainage board meeting was held on January 12, 1988, and the Final Order of Determination was adopted February 23, 1988 with no objections being heard. Mr. David Lakin was designated as the project engineer for the Crake Drain, and Hubbell, Roth & Clark, Inc., was selected to be the consulting engineer.

The City of Rochester Hills requested the Crake Drain improvements to alleviate flooding in some older neighborhoods in the S.E. quarter of Section 34 and S.W. quarter of Section 35. It is also believed that the improvements will help drainage of the existing gravel roads which, in turn, would mean less road maintenance.

Bids were received on May 21, 1991, and on July 10, 1991 the Crake Drain Contract was awarded to L. D'Agostini & Son, Inc. who was the lowest responsive bidder for the amount of \$1,228,372.36. The award was made subject to the sale of bonds which were sold on September 10, 1991. Dickinson, Wright, Moon, VanDusen & Freeman acted as bond counsel for the project, and Bendzinski & Company was appointed financial consultant.

The work began in November of 1991 and by the end of the year nearly sixty percent (60%) of the improvements were already in place. The completion of the Crake Drain is scheduled to take place by July 15, 1992.

Lueders Drain

A petition for certain drain improvements in the vicinity of the existing Sprague and Taylor Drains in Section 28, 29, 32 and 33, City of Rochester Hills, was filed with the Drain Commissioner on January 19, 1984. At the first drainage board meeting held February 8, 1984, the project was named the Moore Drain (renamed the Lueders Drain on October 25, 1988) and the public hearing on necessity was scheduled for March 21, 1984. No objections were received at the hearing and therefore the project was determined practicable and necessary for the public health and the Final Order of Determination was adopted. Hubbell, Roth & Clark, Inc. was appointed as the consulting engineer for the Lueders Drain, and Donald L. Mills, P.E. was designated as the Project Engineer.

The project consists of approximately 44,000 lineal feet of 12" through 96" diameter storm sewer, channel improvements to approximately 3,500 lineal feet of open storm drain, and modifications and enlargement of an existing storm water retention facility, along with the construction of miscellaneous appurtenances. The construction of this project will provide storm drainage improvements and reduce flooding in

Sections 28, 29, 32 and 33. The final Estimate of Cost for the Lueders Drain was \$4,660,000.

Construction bids were received on April 23, 1991 and the contract was awarded to the low bidder, Lanzo Construction Company, in the amount of \$2,889,671.09. Actual construction began in the fall of 1991. Completion is scheduled for the summer of 1992.

Drain bonds to finance the project were sold on July 23, 1991 at an average effective interest cost of 6.66% over 20 years.

McIntosh Drain

The Charter Township of West Bloomfield, in a petition dated December 18, 1989, requested the construction of a storm drain along Middlebelt Road between Fourteen Mile Road and Maple Road to relieve a portion of the existing Ward Drain, a County Drain originally constructed in 1920.

The name "McIntosh Drain" was given this project at the first meeting of the Drainage Board held on January 9, 1990. No objections were heard at the February 27, 1990 Public Hearing for the Drain and therefore the McIntosh Drain was determined to be practical and necessary for the public health. The engineering firm of Giffels-Webster Engineers, Inc. was retained to prepare engineering plans and specifications for the project.

Final apportionment percentages for the McIntosh Drain were established by the Drainage Board at their meeting on March 26, 1991. The Township of West Bloomfield financed their portion of the Drain through the use of Edwards Relief Drainage District surplus construction funds.

Construction bids were received on July 23, 1991. Pacentro Construction Company, Inc. of Mt. Clemens was awarded the contract for the construction of the McIntosh Drain for their low bid amount of \$98,835.00. Construction began in September 1991. Approximately 80% of the construction had been completed by the end of 1991 with the balance of work, including restoration, to be completed in the Spring of 1992.

Oaks Drain

A petition for certain drain improvements along the existing Clinton River channel in the southwestern part of the City of Pontiac was filed with the Drain Commissioner on June 6, 1990. At the first Drainage Board meeting held June 12, 1990, the project was named the Oaks Drain, and the public hearing on necessity was scheduled for July 31, 1990. No objections were received at the hearing, and as a result, the project was determined practicable and necessary for the public health and the Final Order of Determination was adopted. Hampton Engineering Associates, Inc. was employed to prepare bid plans and specifications for the Oaks Drain and

Ronald R. Karttunen, P.E. was designated as the Drain Office engineer for the project.

The project consists of selectively clearing, regrading and improving the existing Clinton River channel from the Cucksey Dam, located near Bagley Street, to an area upstream near the Grand Trunk Western Railroad trestle for a distance of approximately 1,800 lineal feet. Also, the Walter Moore Dam which is located at the outlet to Crystal Lake and the Cucksey Dam will be modified to allow increased water flow within the Oaks Drain. This increased flow is intended to enhance the aesthetic appearance and qualities of the former river channel.

On June 18, 1991, plans and specifications for the project were received, adopted and approved. Subsequently the project was advertised and construction bids were received with the contract being awarded on August 6, 1991 to the low bidder, Man Con, Inc., of Sterling Heights, Michigan.

The project cost, \$495,000.00, is being financed with surplus construction funds from completed drain projects under the provisions of Act No. 165 of the Public Acts of 1984.

Construction began in the Fall of 1991 and 95% of the Oaks Drain had been completed by the end of 1991. The balance of construction consisting of restoration, will be completed in the Spring of 1992.

Pebble Creek Drain

On June 7, 1990, a petition was filed with the Drain Commissioner's Office by the City of Farmington Hills for drainage improvements to be undertaken in several areas of the Pebble Creek drainage basin. In accordance with the City's Master Storm Drainage Plan, drainage relief was intended to be provided in an area bounded approximately by Fourteen Mile Road to the north, Thirteen Mile Road to the south, Orchard Lake Road to the west and Middlebelt Road to the east. The project was named the Pebble Creek Drain and a public hearing on necessity was scheduled for July 31, 1990. No objections were received at the hearing, and therefore the project was determined practicable and necessary for the public health and the Final Order of Determination was adopted. Hubbell, Roth and Clark, Inc. was employed to prepare bid plans and specifications for the Pebble Creek Drain and Ronald R. Karttunen, P.E. was designated as engineer for the project. Dickinson, Wright, Moon, VanDusen and Freeman was named Bond Counsel for the project. The project is divided into two phases.

Phase I involves the construction of a storm water detention dam on line within the Pebble Creek watercourse at the easterly boundary of the Glen Oaks Golf Course, and also open ditching improvements to the north of the golf course from Pebble Creek easterly to the Tri-Atria commercial development.

Phase II consists of ditching and storm sewer improvements within the Franklin Knolls Subdivision located north of Northwestern Highway and west of Middlebelt Road, and culvert improvements at Orchard Lake Road near Ravine Drive.

After considerable delay in obtaining a commitment from the Michigan Department of Natural Resources for work relating to the golf course detention dam, a permit was issued on June 12, 1991 allowing the work. Subsequently, the Phase I portion of the project was advertised and construction bids were received. The contract was awarded on August 6, 1991 to the low bidder, DeAngelis Landscape, Inc. of Woodhaven, Michigan.

Phase II of the project is presently under design and it is anticipated that construction will take place in 1992.

The cost of the project was financed by the sale of Oakland County Bonds in the amount of \$3,540,000.00 for which the City of Farmington Hills pledged its full faith and credit for repayment. The bonds were sold on December 3, 1991 at an average effective interest rate of 6.49% over 20 years.

Phase I construction for the project began in September 1991, and by the end of 1991 42% of the project was completed. The balance of construction including the retention dam on the golf course and the open ditching from Pebble Creek to the Tri-Atria commercial development will be completed in the Spring of 1992.

**WATER & SEWER
COMPLETED IN 1991**

WATER & SEWER COMPLETED IN 1991

Wixom Sewage Disposal System - Extension No. 2

An agreement between the City of Wixom and the County of Oakland to construct an activated sludge wastewater treatment plant to treat an average of 3.0 million gallons per day was approved by the City Council on March 8, 1988. The County Board of Commissioners approved the agreement and authorized the sale of bonds to finance the local share cost on August 4, 1988. Project development and construction was assigned to the Drain Commissioner as County Agency under the provisions of Act 342 of 1939.

The firm of Hubbell, Roth & Clark, Inc. of Bloomfield Hills, Michigan designed the entire project, prepared construction plans and specifications, and assisted in obtaining federal funding under the Public Law 92-500 Grant Program. Hubbell, Roth & Clark, Inc. also provided resident engineer inspection services at the treatment plant site. Philip Sanzica, P.E. was designated as project engineer for the Wixom Sewage Disposal System - Extension No. 2 project.

Federal Funds of 55% of the grant eligible portions, plus an additional 20% for innovative technology and 20% for alternative technology will total approximately \$9,500,000. Oakland County Bonds were sold on December 15, 1988 in the amount of \$5,700,000, at an effective rate of 7.30% over 20 years. The balance of the project funds (\$4,500,000) was forwarded by the City of Wixom.

The project consists of an influent pumping station to lift the wastewater to an aerated grit chamber and then through a Parshall Flume Flow Meter. The wastewater then flows to two 1.5 million gallon aeration channels for biological treatment. The wastewater will receive clarification in three 60 foot diameter circular clarifiers, and then is stored in two equalization tanks totaling 850,000 gallons. Extensive chemical treatment consists of alum feed equipment followed by parallel plate separators and sand filters to meet the stringent phosphorous limitation for this facility.

Biological solids are thickened by Rotary Drum Thickeners before stabilization in two aerobic digesters. The digested sludge is then stored in two 850,000 gallon above ground storage tanks. The chemical sludge may be dewatered in a Plate and Frame Filter Press if necessary for disposal to a landfill.

Three buildings are included in the Wastewater Treatment Plant project. An approximately 4,000 square foot Administration Building contains personnel offices and a fully equipped laboratory. A 30,000 square foot two-story Treatment Building contains the advanced chemical treatment and biological and chemical sludge dewatering equipment. And a 4,800 square foot utility building provides for grit removal, ultraviolet disinfection, a 750 k.w. generator, electrical equipment, and maintenance facilities.

The construction contract was awarded in October, 1988 to Lerner-Linden, Inc. and C.A. Hull, a joint venture, in the amount of \$15,942,000.

**WATER & SEWER
UNDER CONSTRUCTION**

WATER & SEWER UNDER CONSTRUCTION

Evergreen-Farmington S.D.S. Amy Relief Sewer

This project is being developed under a contractual agreement between the Drain Commissioner and the Township of Bloomfield, the City of Bloomfield Hills and the City of Auburn Hills.

The project consists of approximately 17,000 lineal feet of 10" through 24" diameter sanitary sewer, a 4,500 g.p.m. pumping station and miscellaneous appurtenances. The project is designed to provide sanitary relief for the North Evergreen Interceptor within the above communities.

The firm of Hubbell, Roth & Clark, Inc. of Bloomfield Hills, Michigan designed the entire project, prepared construction plans and specifications and will provide resident engineer inspection services at the pumping station. Philip Sanzica, P.E. was designated as project engineer for the Amy Relief Sewer project.

The project is to be financed by the sale of Oakland County Bonds for which the City of Bloomfield Hills and the Township of Bloomfield have pledged their full faith and credit. The bonds were sold on December 4, 1990 in the amount of \$3,425,000 at an effective net interest rate of 6.73% over 19 years.

Construction bids were received on July 12, 1990 and the low bidders were: Contract 1 - Adamo Contracting Corporation of Detroit, Michigan in the amount of \$1,354,572.65; Contract 2 - O'Laughlin Construction Company of Novi, Michigan in the amount of \$1,092,081. The following is a summary of the contracts:

Contract 1

Approximately 92% of Contract 1, including all gravity sanitary sewer and force main, was completed in 1991. The remainder of the project, including testing, final road restoration and cleanup will be completed in the spring of 1992.

Contract 2

Approximately 97% of Contract 2, including the caisson, building construction, mechanical, electrical and instrumentation was completed in 1991. Final testing, cleanup and restoration will be completed in the spring of 1992.

Evergreen-Farmington Pollution Control Facilities

The Evergreen-Farmington Sewage Disposal District is an area of approximately 130 square miles within southern Oakland County which serves all or part of fifteen communities.

Due to population growth over the years, the regional interceptors and local sanitary sewage collection systems within the Evergreen-Farmington District have been subject to excessive infiltration/inflow, and lack the necessary capacity to collect and transport peak wastewater flows. Early in 1976, the fifteen communities requested Oakland County to apply for a Facilities Planning Grant, and provided the local share as an advance to finance the studies. The Facilities Plan Studies were completed in October 1982 and approved by the member communities of the District and submitted to the Michigan Department of Natural Resources and the U.S. Environmental Protection Agency (E.P.A.) with an application for a grant to construct the proposed facilities. This application led to a Michigan Department of Natural Resources request for additional studies and reports.

By mid-1988 all the necessary environmental issues, sewer system evaluation studies and flow routing concerns had been addressed. In the fall of 1988 the County of Oakland and each of the fifteen member communities entered into Final Orders of Abatement which mandated schedules for constructing the various improvements to the Evergreen-Farmington Sanitary Sewer System.

These schedules called for the improvements to be constructed in two phases or segments.

Segment I

Work in Segment I consists of the construction of a 2.26 million gallon retention facility; improvements to the existing Muirwood Pumping Station; and construction of approximately 6,300 lineal feet of 54" diameter tunnel sewer and 7,400 lineal feet of 30" force main to relieve the existing Eight Mile Road Interceptor.

The firm of Hubbell, Roth & Clark, Inc. of Bloomfield Hills, Michigan was retained to design the system, prepare construction plans and specifications and provide resident engineer inspection services on the retention basin and pump station contracts.

Contract No. 1

This contract involves the construction of a 2.26 million gallon Retention Tank, complete with pumps, flushing and odor control system, in the Kendallwood-Westbrooke area of the City of Farmington Hills. Construction bids were received on May 10, 1989 and the contract was awarded to the low bidder, the Barton-Malow Company of Southfield, Michigan in the amount of \$3,796,000. This project was completed and placed into service on July 2, 1991 with minor work order changes and landscaping to be completed in the spring of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

Contract No. 2

This contract involves the construction of improvements to the existing Muirwood Pumping Station located in the City of Southfield. Work includes the replacement of all pumps, additional piping and valves, replacement of electrical switch gear, and a 31 foot by 26 foot building to house a new 1,000 k.w. diesel generator. Construction bids were received on May 10, 1989 and the contract was awarded to the low bidder, Lerner-Linden, Inc. of Novi, Michigan, in the amount of \$2,177,000. This project was

completed and placed into service in December of 1991 with minor work order changes and final cleanup to be completed in the spring of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

Contract No. 3

This contract involves the construction of approximately 7,150 lineal feet of 30" force main sewer, 850 lineal feet of 36" sanitary sewer, 6,300 lineal feet of 54" tunnel sewer, one overflow chamber with connection sewer and manholes, structures and appurtenances in the City of Southfield. Construction bids were received on May 10, 1989 and the contract was awarded to the low responsible bidder, M. & M. Contracting of Michigan of Detroit, Michigan, in the amount of \$5,085,852. This project was completed and placed into service in December 1991. Final restoration and cleanup will be completed in the spring of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

In summary, the total project cost for segment I of the improvements and additions to the Evergreen-Farmington Pollution Control Facilities was \$16,400,000. Construction grants from the E.P.A. in the amount of \$5,300,000 were received, and the balance of local share cost was \$11,100,000.

Segment II

Work on Segment II consists of the construction of approximately 24,000 lineal feet of 8" to 12" sewer, 21,000 lineal feet of 15" to 21" sewer, 21,000 lineal feet of 24" to 36" sewer, 3,000 lineal feet of 6" to 12" force main, 5,000 lineal feet of 54" tunnel sewer, construction of a three million gallon retention facility, repairs to 4,000 existing manholes, joint grouting for 46,000 lineal feet of existing 8" to 24" sewer, in place relining of approximately 14,000 lineal feet of 8" to 24" sanitary sewer and the installation of 68 permanent flow meters throughout the Evergreen-Farmington District.

The above work is being performed under eighteen different contracts of which 16 were bid in July 1990 and awarded in December 1990. Of the remaining two contracts, Contract No. 12A was bid on April 30, 1991 and awarded November 12, 1991 while Contract No. 21 was bid on June 4, 1991 and awarded August 19, 1991.

The firm of Hubbell, Roth & Clark, Inc. of Bloomfield Hills, Michigan was retained to design the system and prepare construction plans and specifications for Contracts No. 4 through No. 19 and No. 21.

The firm of Giffels-Webster Engineers, Inc. of Rochester Hills, Michigan was retained to design the system and prepare construction plans and specifications for Contract No. 20.

Contract No. 4

This contract involves the construction of approximately 250 lineal feet of 15" through 27" sanitary sewer, 5,500 lineal feet of 30" and 36" open cut sanitary sewer and 5,000 lineal feet of 54" tunnel sewer, in the City of Southfield. Construction bids were received on July 10, 1990 and the contract was awarded to the low bidder, Ric-Man

Construction, Inc. of Sterling Heights, Michigan in the amount of \$2,696,537.56. Approximately 89% of the project was completed in 1991. The remaining work was delayed due to a methane gas problem encountered at Nine Mile and Beech Roads. Corrective actions will be implemented to permit completion of tunnel construction as well as all cleanup and restoration by the contract completion date of July 15, 1992. Gary R. Aho is the Drain Office project engineer for this contract.

Contract No. 5

This contract involves the construction of approximately 20,000 lineal feet of 18" to 30" sanitary sewer and appurtenances in the Cities of Southfield and Farmington Hills. Construction bids were received on July 10, 1990 and the contract was awarded to the low bidder Dan's Excavating, Inc. of Shelby Township, Michigan in the amount of \$1,982,798. Approximately 90% of the project was completed in 1991. The remaining work, including restoration and cleanup, is scheduled to be completed by mid 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

Contract No. 6

This contract involves the construction of approximately 8,300 lineal feet of 10" to 18" sanitary sewer, two sanitary sewage pumping stations, 1,800 lineal feet of 8" and 10" force main and appurtenances in the City of Southfield. Construction bids were received on July 10, 1990 and the contract was awarded to the low bidder, Lanzo Construction, Inc. of Roseville, Michigan, in the amount of \$1,578,612.08. Approximately 85% of the project was completed in 1991. Completion of the two pumping stations and all final restoration and cleanup is to be completed in the spring of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

Contract No. 7

This contract involves the construction of approximately 6,600 lineal feet of 10" to 15" sanitary sewer, 3,300 lineal feet of 6" and 12" force main and three sanitary sewage pumping stations, located along 13 Mile Road between Lahser and Southfield Roads in the Village of Beverly Hills. Construction bids were received on July 10, 1990 and the contract was awarded to the low bidder, S.B.G. Construction, Inc. of Wixom, Michigan, in the amount of \$1,528,748.62. Approximately 81% of the project was completed in 1991. The remaining work will be completed during the first half of 1992. Gary R. Aho, P.E., is the Drain Office project engineer for this contract.

Contract No. 8

This contract involves the construction of 290 lineal feet of 10" sanitary sewer in Bloomfield Township, 2,200 lineal feet of 10" sanitary sewer along Grand River in the City of Farmington Hills and 8,100 lineal feet of 10" through 15" sanitary sewer in two sections of West Bloomfield Township. Construction bids were received on July 12, 1990 and the contract was awarded to the low bidder, Giannetti Contracting Corporation and Giannetti Construction of Sterling Heights, Michigan, a joint venture, in the amount of \$1,068,506. Approximately 94% of the project was completed in 1991 with final restoration and cleanup to be completed in the spring of 1992. Philip Sanzica, P.E. is the Drain Office project engineer for this contract.

Contract No. 9

This contract involves the construction of 3,350 lineal feet of 10" sanitary sewer in West Bloomfield Township, 2,260 lineal feet of 8" and 10" sanitary sewer in the City of Troy, and 1,740 lineal feet of 10" sanitary sewer in the City of Farmington Hills. Construction bids were received on July 12, 1990 and the contract was awarded to the low bidder, L. D'Agostini and Sons, Inc. of Sterling Heights, Michigan, in the amount of \$693,975. Approximately 98% of the project was completed in 1991 with final restoration and cleanup to be completed in the spring of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

Contract No. 10

This contract involves the construction of approximately 7,000 lineal feet of 8" through 27" local relief sanitary sewer and appurtenances throughout Lathrup Village. Construction bids were received on July 10, 1990 and the contract was awarded to the low bidder, Giannetti Contracting Corporation of Sterling Heights, Michigan in the amount of \$593,881.30. Approximately 99% of the project was completed in 1991 with the final cleanup and restoration to be completed in the spring of 1992. Philip Sanzica, P.E. is the Drain Office project engineer for this contract.

Contract No. 11 (Lathrup Village Retention Tank)

This contract consists of the construction of a 123 foot by 242 foot by 18 foot Concrete Retention Tank below grade (3 million gallon capacity) and a Control Building above grade. The work includes influent, dewatering and flushing pumps, flushing and odor control systems, miscellaneous appurtenances and sewer and water connections. The project is located in the area of Eleven Mile and Evergreen Roads in the City of Lathrup Village. This \$4,488,000 project was awarded to Barton-Malow Company of Southfield, Michigan in April of 1991 and was 43% complete at year end. It is expected to be completed by November 1992. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 12A (Interceptor Permanent Meter Installation)

This contract involves the installation of 68 ultrasonic type flow meters, 6 rain gauges and 2 control computer systems. The meter installation will include telephone connections, start-up, personnel training and three years of data processing, preventative and repair maintenance. The system is designed to monitor sewage flow to identify any unexpected sources of inflow entering into the Evergreen-Farmington Sanitary Sewer System. The meters are mounted in manholes located in 14 communities in Oakland County. This \$2,142,096 project was awarded to ADS Environmental Services, Inc. of Huntsville, Alabama in December 1991 and is expected to be completed by December 1992. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 13 (SSES Rehabilitation)

This contract involves rehabilitation of 403 manholes for sanitary sewers operated and maintained by the Oakland County Department of Public Works and the communities of Bloomfield Hills, Bingham Farms and Keego Harbor. Bid in July of 1990 and awarded to Ric-Man Construction Company of Sterling Heights, Michigan

in the amount of \$212,794, the work began in February of 1991. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 14 (SSES Rehabilitation)

This contract involves rehabilitation of 813 manholes for sanitary sewers located in the community of Bloomfield Township. Bid in July of 1990 and awarded to Ric-Man Construction Company of Sterling Heights, Michigan in the amount of \$338,961, the work began in February of 1991. At years end, the contract was approximately 22% complete. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 15 (SSES Rehabilitation)

This contract involves the rehabilitation of 811 manholes for sanitary sewers located in the communities of Beverly Hills, Troy and West Bloomfield Township. Bid in July of 1990 and awarded to Lanzo Construction Company of Roseville, Michigan in the amount of \$320,994, the work began in February of 1991. At years end, the contract was approximately 35% complete. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 16 (SSES Rehabilitation/Sewer Grouting)

This contract consists of the rehabilitation of 441 manholes, 68 sanitary sewer "point repairs" (pipe repair or replacement at 68 different locations) and sewer grouting with root control of 22,406 lineal feet of 8", 982 lineal feet of 10", 3,110 lineal feet of 12", 3,208 lineal feet of 15" and 2,788 lineal feet of 18" sanitary sewer lines in the City of Farmington Hills. Bid in July of 1990 and awarded to Lanzo Construction Company of Roseville, Michigan in the amount of \$645,022, the work began in February of 1991. At years end, the contract was approximately 63% complete. George A. Bondi is the project engineer for this office for the Oakland County Drain Commissioner.

Contract No. 17 (SSES Rehabilitation)

This contract involves the rehabilitation of 1,121 manholes and 140 lineal feet of 8" storm sewer in the City of Southfield. Bid in July of 1990 and awarded to Inland Waters Pollution Control, Inc. of Detroit, Michigan in the amount of \$421,245, the work began in January of 1991. At years end, the contract was approximately 35% complete. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 18 (SSES Rehabilitation)

This contract consists of the rehabilitation of 450 manholes for sanitary sewers located in the City of Lathrup Village. Bid in July of 1990 and awarded to Inland Waters Pollution Control, Inc. of Detroit, Michigan in the amount of \$275,585, and subsequently increased to \$418,800 by additions to the contract per authorization from the City of Lathrup Village. Work began in January of 1991. The project was 100% complete by October, 1991. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 19 (Joint Grouting Rehabilitation)

This contract involved the sewer grouting of 1,688 lineal feet of 8", 2,191 lineal feet of 10", 7,190 lineal feet of 12", 1,870 lineal feet of 15", 474 lineal feet of 18", 196 lineal feet of 21", and 64 lineal feet of 24" sanitary sewers in the City of Lathrup Village. Bid in July of 1990 and awarded to National Power Rodding of Chicago, Illinois in the

amount of \$284,715 and subsequently increased to \$462,723 by additions to the contract per authorization from the City of Lathrup Village. Work began in February of 1991. The project was 100% complete by September of 1991. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 20 (Pipe Relining)

This contract involved pipe relining of approximately 2,000 lineal feet each of 8", 10", 12", 15", 18", 21" and 24" sanitary sewers in the City of Lathrup Village. Bid in July of 1990 and awarded to Insituform North, Inc. of Chesterfield, Missouri in the amount of \$866,000 and subsequently increased, by additions to the contract per the City of Lathrup Village authorization, to \$1,372,126, the work began in February of 1991. The project was 100% complete by July of 1991. George A. Bondi is the Drain Office project engineer for this contract.

Contract No. 21

This contract involves the construction of approximately 3,400 lineal feet of 8" force main, 230 lineal feet of 10" sanitary sewer and one sanitary sewage pumping station running along Tequesta, Watergate and Lake Bluff Roads in West Bloomfield Township. Construction bids were received on June 6, 1991 and the contract was awarded to the low bidder, Giannetti Contracting Corporation of Sterling Heights, Michigan, in the amount of \$427,240. Approximately 63% of the project was completed in 1991. The remainder of the work, construction of the pump station, will be completed in the first half of 1992. Gary R. Aho, P.E. is the Drain Office project engineer for this contract.

In Summary, the total project cost for Segment II of the improvements and additions to the Evergreen-Farmington Pollution Control Facilities was \$31,800,000. Construction grants from the E.P.A. in the amount of \$9,900,000 were received, and the balance of local share cost was \$21,900,000.

Huron-Rouge Sewage Disposal System - Walled Lake-Nov
Wastewater Treatment Plant 1989 Enlargement

An agreement between the Cities of Walled Lake and Novi and the County of Oakland to increase the capacity of the existing treatment plant to an average flow of 3.5 MGD was approved by the City Councils on February 21 and 27, 1989, respectively. The County Board of Commissioners approved the agreement and authorized the sale of bonds to finance the project on June 28, 1990. Project development and construction was assigned to the Drain Commissioner as County Agency under the provisions of Act 342 of 1939.

The firm of McNamee, Porter & Seeley, Inc. of Ann Arbor, Michigan designed the entire project and prepared construction plans and specifications. McNamee, Porter & Seeley, Inc. also provided resident engineer inspection services at the treatment plant site. Philip Sanzica, P.E. was designated as project engineer for the Walled Lake-Nov 1989 Enlargement project.

The project was financed by Oakland County Bonds sold on August 22, 1990 in the amount of \$2,600,000 at an effective rate of interest of 7.05% over 15 years. The balance of the financing (\$5,820,690) was forwarded by the City of Novi.

The project consists of the construction of a new activated sludge treatment unit, a new administration building and a new blower building to house the process blowers, sludge pump and rotary sludge thickener. The proposed improvements also include necessary site revisions to accommodate these additions and a sludge storage tank for stabilization of sludge.

The construction contract was awarded on June 12, 1990 to Clark Construction Co. of Lansing, Michigan in the amount of \$6,998,000.

Approximately 96% of the project, including the site grading, underground piping and major building construction was completed in 1991. The balance of the project, including retrofitting the final aeration tank, road work and site restoration will be completed during the spring of 1992.

Oakland County Water Supply and Sewage Disposal System For Rochester Hills - 1988 Extensions

The City of Rochester Hills has requested Oakland County to proceed with acquiring right of way, constructing, and financing this project. The total project cost is estimated at \$12 million with several contracts which will be bid when plans and specifications are prepared by the consulting engineers, Hubbell Roth & Clark, Inc. The following is a summary of the Contracts to date.

Contract I

This contract was bid on April 27, 1989 at a cost of \$521,263 with Adamo Contracting Corporation being the successful bidder. Contract I was scheduled to be completed in 1989, however supplies necessary were not delivered on time to allow the contractor to complete the work on schedule. The work was completed in early 1990, including restoration.

Contract II

This contract was bid on November 10, 1988 at a cost of \$1,570,630 with Adamo Contracting Corporation being the successful bidder. Construction was completed in 1989, and restoration was finished in 1990.

Northwest Transmission Water Main

This contract was bid on April 27, 1989 at a cost of \$1,904,065 with D'Alessandro Construction, Inc. being the successful bidder. Work was started on October 30, 1989, and was completed and placed into service on September 28, 1990. Cleanup and restoration were substantially completed in the spring of 1991.

Tienken Road Water Booster Station

This contract was bid on July 20, 1989 at a cost of \$516,810 with L. D'Agostini & Sons, Inc. being the successful bidder. Actual construction began on July 13, 1990 and

was completed and placed into service on September 21, 1990. Cleanup and restoration were substantially completed in the Spring of 1991.

Contract 3

This contract was bid on November 17, 1990 at a cost of \$1,863,098. The successful bidder was A.V.S. Construction Specialties, Inc. This project was constructed and placed into service during 1991, with only minor restoration to be completed in the Spring of 1992.

Contract 4

This contract was bid on September 6, 1990 at a cost of \$455,567. Pacitto & Forest Construction Company was the successful bidder. This project was completed and is now in service, restoration was completed in the Fall of 1991.

Contract 5

This contract provides for the construction of water main transmission lines on Dequindre Road between Hamlin and Parkdale and also on portions of Avon and School roads. In the course of easement acquisition it was discovered that there are several adjacent sites which were old landfills and have contaminated soils. While working with the MDNR, plans are proceeding cautiously to make sure that the construction does not help spread any contamination already present.

Contract 6R

This contract consists of both watermain and sanitary sewer extensions throughout the City of Rochester Hills, which have been combined under one contract to obtain more competitive bids. Bids are planned for the late Spring of 1992.

This project is being financed by surplus funds held by Oakland County from prior water and sewer construction projects in Rochester Hills. When the existing surplus is exhausted, bonds will be sold to finance the remaining work.

Waterford Township Extensions - Phase VI

The Charter Township of Waterford has requested the County of Oakland to construct approximately 55,000 lineal feet of 8" through 24" sanitary sewer, modifications to the existing Cooley Lake Road Pump Station and miscellaneous appurtenances. Construction of this project will eliminate existing and potential sources of pollution from individual on-site septic systems into Pleasant Lake and ground water.

The firm of Johnson & Anderson, Inc. of Waterford, Michigan was retained to design the system and prepare construction plans and specifications. Philip Sanzica, P.E. was selected as the Drain Office project engineer. The project was financed by the transfer of surplus funds from prior sewer construction projects.

Contract 52 - Sewer

This contract involves the construction of 32,000 lineal feet of 8" through 24" sanitary sewer and appurtenances. Construction bids were received on March 28, 1991 and the

contract was awarded to the low bidder Giannetti Contracting Corporation, of Sterling Heights, Michigan in the amount of \$2,319,628.55. Approximately 23% of the project was completed in 1991 with the contract to be completed by the fall of 1992.

Contract 53 - Sewer

This contract involves the construction of 23,000 lineal feet of 8" through 12" sanitary sewer and appurtenances. The construction plans and specifications and easement acquisition are substantially complete and are awaiting final permits to bid the project in the spring of 1992.

Contract 54

This contract involves modifications to the existing Cooley Lake Road Pump Station including the replacement of two existing sewage pumps and motors and furnishing and installing a third pump and motor, constructing a concrete masonry building over the existing drywell to house electrical and maintenance equipment and miscellaneous appurtenances. Construction bids were received on March 28, 1991 and the contract was awarded to the low bidder Sheridan Construction, Inc. of Garden City, Michigan in the amount of \$147,950. Approximately 95% of the project was completed in 1991 with exterior painting and final cleanup and restoration to be completed in the spring of 1992.

Waterford Water Supply System Extension No. 9

The Charter Township of Waterford has requested the County of Oakland to construct 24,000 lineal feet of 8" through 12" diameter water mains and appurtenances. The proposed water main was to be constructed in conjunction with the Waterford Township Extensions, Phase VI Sewage Disposal project to provide a potable water supply during dewatering operations due to the existing shallow wells and to provide potable water and fire protection to the area.

The total project cost is estimated to be \$1,101,000 and will be bid based on plans and specifications prepared by Johnson & Anderson, Inc. of Waterford Township, Michigan. The project is to be financed by available local funds from the Township of Waterford. Philip Sanzica, P.E. was selected as the Drain Office project engineer for the project. The following is a summary of the contracts to date:

Contract 52 - Water

This contract involves the construction of 13,000 lineal feet of 8" and 12" water mains and appurtenances. Construction bids were received on March 28, 1991 and the contract was awarded to the low bidder, Giannetti Contracting Corporation of Sterling Heights, Michigan in the amount of \$525,935.00. Approximately 92% of the project was completed in 1991 with the balance of the water main and cleanup and restoration to be completed by the fall of 1992.

Contract 53 - Water

This contract involves the construction of 11,000 lineal feet of 8" and 12" water mains and appurtenances. The construction plans and specifications and easement

acquisition are substantially completed and are awaiting final permits to bid the project in the spring of 1992.

West Bloomfield Water Supply System - Section XI

West Bloomfield Township has requested Oakland County to proceed with the development of a project to complete the construction of the water transmission main along Haggerty Road northerly from Maple Road to Pontiac Trail, and easterly along Pontiac Trail to Green Lake Road in Sections 19 and 30 of the Township.

In addition to approximately 13,000 lineal feet of 20" diameter transmission main along Haggerty Road and Pontiac Trail, the project consists of a 400,000 gallon elevated storage tank to be constructed on Commerce Road east of Keith Road and a metered connection to the existing D.W.S.D. main to be built at the intersection of 14 Mile Road and Haggerty Road.

An agreement between West Bloomfield Township and the County of Oakland was approved by the Township Board on June 15, 1987, and by the Oakland County Board of Commissioners on July 23, 1987. The Township is paying the entire cost of the project, currently estimated to be \$1,819,000.00, by advancing cash installments to the County.

The firm of Hubbell, Roth & Clark, Inc. was retained to design the system and prepare construction plans and specifications. Donald L. Mills, P.E. was selected as the Drain Office project engineer.

Contract No. 1

This contract provided for the construction of a 400,000 gallon elevated storage tank. Construction bids were received on October 4, 1988 and the contract was awarded to the low bidder, CBI Na-Con, Inc., in the amount of \$597,500.00. Actual erection of the tank began in the spring of 1989 and was completed in the fall of 1989. Final payment was made in December of 1990.

Contract No. 2

This contract provided for the construction of the metered connection to the existing D.W.S.D. main. Construction bids were received on March 5, 1991 and the contract was awarded to the low bidder, Lawrence M. Clarke, Inc., in the amount of \$280,000.00. Actual construction began in the summer of 1991. Completion is scheduled for the summer of 1992.

Contract No. 3

This contract provided for the construction of 13,000 lineal feet of 20" diameter transmission main along Haggerty Road and Pontiac Trail. Construction bids were received on May 17, 1989 and the contract was awarded to the low bidder, Mago Construction Co., in the amount of \$787,394.00. Actual construction began in the fall of 1989 and was completed in the spring of 1990. Final payment was made in August of 1990.

**LAKE LEVEL PROJECTS
COMPLETED IN 1991**

LAKE LEVEL PROJECTS COMPLETED IN 1991

Bunny Run Lake Dam

On August 30, 1988, petitions were received by the Drain Commissioner requesting that a legal level be established for Bunny Run Lake. It was necessary that a new dam be constructed, to replace the existing deteriorated structure, at the outlet of Bunny Run Lake sufficient to maintain the level of the lake at its current elevation, Bunny Run Lake is located in Section 1 of Orion Township and has a surface area of approximately 11.0 acres.

On May 25, 1989, the Oakland County Board of Commissioners approved a resolution authorizing the establishment of a lake level for Bunny Run Lake. On July 9, 1990 the Honorable John M. O'Brien, Circuit Court Judge, established a legal level for Bunny Run Lake. Subsequently Hampton Engineering Associates, Inc., was retained to prepare the construction plans and specifications for the new dam. Mr. Ronald R. Karttunen, P.E. was assigned as the Drain Office project engineer for the construction of the Bunny Run Dam.

On August 22, 1990 Construction bids were received for the Bunny Run Lake Dam, and a contract was awarded to Dan's Excavating of Shelby Township, Michigan for their low bid of \$192,759.90. Construction of the new dam began in October 1990 and was completed in the Fall of 1991.

PROJECT EXPENDITURE SUMMARY

**OAKLAND COUNTY DRAIN COMMISSIONER
PROJECT EXPENDITURES FOR THE CALANDAR YEAR 1991
BY PROJECT**

<u>DRAINS</u>	<u>EXPENDITURE</u>
JOHNSON DRAIN	\$532,379.16
CRAKE DRAIN	\$491,078.39
PEBBLE CREEK DRAIN	\$476,330.93
JENSEN DRAIN	\$414,485.99
OAKS DRAIN	\$342,255.69
LUEDERS DRAIN	\$231,653.81
KING DRAIN	\$230,622.74
MINNOW POND DRAIN	\$126,716.91
McINTOSH DRAIN	\$88,752.77
BARNARD DRAIN	\$72,684.50
KARAS DRAIN	\$60,752.02
REWOLD DRAIN	\$56,514.74
NELSON DRAIN	\$54,442.66
FREDERICKS DRAIN	\$51,827.87
MAPLE PLACE VILLAS DRAIN	\$10,544.42
IRELAND DRAIN	\$8,355.44
GABLER DRAIN	\$5,080.00
VOGT DRAIN	\$4,555.84
McINTYRE DRAIN	\$4,464.26
CRANBERRY LAKE DRAIN	\$3,341.23
BISHOP DRAIN	\$3,150.00
M-15 DRAIN	\$1,640.00
NORTH HUR VAL/ROUGE VALLEY	\$840.60
TOTAL DRAINS	<u>\$3,272,469.97</u>
<u>WATER</u>	
WATERFORD WSS EXT NO. 9	\$592,682.83
WEST BLOOMFIELD WATER SEC XI	\$158,436.10
WEST BLOOMFIELD WATER SEC XII	\$20,671.29
WALLED LAKE WATER EXT 1	\$6,648.00
WATERFORD WSS #3 CONST.	\$2,885.15
TOTAL WATER	<u>\$781,323.37</u>
<u>SEWER</u>	
EFSDS PCF - SEG II	\$15,069,375.99
WALLED LK NOVI ENLARGEMENT	\$5,410,481.22
EFSDS PCF - SEG I	\$2,830,486.53
AMY DRAIN RELIEF SEWER	\$2,491,904.92
ROCHESTER HILLS 88 EXT-OCWS &	\$1,966,115.81
WIXOM SDS - EXT. NO. 2	\$631,292.97
COSDS WATERFORD EXT PH 6	\$626,972.34
ORCHARD LK VILL SSC & DS	\$281,036.60
EVERGREEN FARMINGTON SDS	\$66,857.90
COSDS COLEMAN-FRIEDMAN EXT I	\$6,026.09
COSDS W BLOOMFIELD EXT #2	\$1,101.41
TOTAL SEWER	<u>\$29,381,651.78</u>
<u>LAKE LEVEL</u>	
BUNNY RUN LAKE LEVEL	\$63,516.20
GRAND TOTAL	<u><u>\$33,498,961.32</u></u>

PROJECTS UNDER DEVELOPMENT

DRAINS UNDER DEVELOPMENT

Bishop Drain

The petition and resolution for the Bishop Drain were received from the City of Rochester Hills on June 7, 1989. The first Drain Board Meeting was held on July 12, 1989.

The Bishop Drain is needed to curtail flooding that occurs in the area of Eyster's Bloomer Park Subdivision located in Section 14. The flooding is to be controlled with the use of enclosed storm sewers and a storm water Retention Facility. The existing drainage ditch and proposed Retention Facility are located in wetland areas under the jurisdiction of MDNR. In order to meet MDNR requirements, the design for both the Retention Facility and storm sewers had to be revised. The scope of the original project has also been revised to include the construction of lateral storm sewers to pick up road drainage.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$556,000, which will be funded by a bond sale. Construction is expected to start in the Fall of 1992. The Drain Office project engineer for this project is David A. Lakin, P.E.

Chester Drain

A petition for certain drain improvements in Sections 30 and 31 upstream of the Borden Drain were received from the City of Rochester Hills on October 10, 1990. The Final Order of Determination was adopted on December 12, 1990.

The drainage improvement proposed as part of the Chester Drain includes open channel improvement from the Robert J. Evans Retention Facility north to Auburn Road. Storm sewers will also be constructed to pick up drainage of local residential roads.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$1,550,000, which will be funded by a bond sale. Construction is expected to start in the Fall of 1992 or Spring of 1993. The Drain Office project engineer for this project is David A. Lakin, P.E.

Hampton Drain Improvement

A request for certain drain improvements to the Hampton Drain was filed by the City of Rochester Hills with the Drain Commissioner on May 22, 1990. A resolution was approved by the drainage board on July 31, 1990 to proceed with the miscellaneous improvements to the Hampton Drain.

The project consists of enlarging the retention volume of Lake No. 5 by removing the

sediment and increasing the size, cleaning and removing silt from existing underground storm drain systems, and repair of an existing erosion problem from a manhole to Lake No. 1.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$1,650,000, which will be funded by a bond sale and local funds. The Drain Office project engineer for this project is Philip Sanzica, P.E.

Huntoon Drain

A petition for certain drain improvements along Auburn Road from the Clinton River westerly, approximately 700 feet, was filed by the City of Auburn Hills with the Drain Commissioner's Office on July 19, 1990. At the first drainage board meeting, held August 14, 1990, the project was named the Huntoon Drain, and the public hearing on necessity was scheduled for September 25, 1990. No objections were received at the hearing, therefore the project was determined practicable and necessary for the public health and the Final Order of Determination was adopted.

The project consists of approximately 700 lineal feet of 48" diameter storm sewer and miscellaneous appurtenances. Construction of this project will provide storm drainage improvements and reduce flooding conditions located in the Southwest 1/4 of Section 25.

The consulting engineer for this project is Orchard Hiltz & McCliment, Inc. The estimated project cost is \$110,000, which will be funded by a bond sale. Construction is expected to start in 1993. The Drain Office project engineer for this project is Donald L. Mills, P.E.

King Drain

A petition for certain drain improvements along Square Lake Road from an existing open ditch crossing approximately 2,500 feet east of Livernois Road west to a point just east of Crooks Road, was filed by the City of Troy with the Drain Commissioner's Office on August 23, 1988. At the first drainage board meeting, held September 7, 1988, the project was named the King Drain, and the public hearing on necessity was scheduled for October 25, 1988. No objections were received at the hearing and the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of approximately 7,500 lineal feet of 12" through 60" diameter storm sewer and miscellaneous appurtenances. Construction of this project will provide storm drainage for future widening and improvements to be made to Square Lake Road, and also for the Crooks Road and I-75 overpass which has been reconstructed at Square Lake Road by the Michigan Department of Transportation. The project scope has been increased to include a junction chamber and a redesigned outlet into the Sylvan Glen Golf Course including channel improvements. Construction plans are being prepared with easement and permit acquisition currently underway.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$4,500,000, which will be funded with surplus construction funds from completed drain projects under the provisions of Act No. 165 of the Public Acts of 1984. Construction is expected to start in the Spring of 1993. The Drain Office project engineer for this project is Donald L. Mills, P.E.

Maplehurst Drain

A petition for certain drain extensions and improvements consisting of the replacement and renovation of existing pipe installation along the route of the existing Chapter 4 Maplehurst Drain was filed, by the City of Auburn Hills with the Drain Commissioner's Office on July 16, 1990. At the first drainage board meeting, held August 14, 1990, the project was named the Maplehurst Drain, and the public hearing on necessity was scheduled for September 25, 1990. No objections were received at the hearing and the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of approximately 8,800 lineal feet of 12" through 72" diameter storm sewer and miscellaneous appurtenances. Construction of this project will provide storm drainage improvements and reduce flooding conditions located in the Southeast 1/4 of Section 25, and the East 1/2 of Section 36.

The consulting engineer for this project is Orchard, Hiltz & McCliment, Inc. The estimated project cost is \$1,200,000. Construction is anticipated to start in the 1993. The Drain Office project engineer for this project is Donald L. Mills, P.E.

McIntyre Drain

The City of Rochester Hills filed a petition and resolution for the creation of the McIntyre Drain on June 28, 1989. The first meeting of the McIntyre Drain Board was held on July 12, 1989.

The McIntyre Drain is needed to alleviate flooding which occurs east of Rochester Road and north of M-59 during moderate to heavy rainfalls. The flooding would be controlled by a new Retention Facility which will reduce the peak flows. The proposed Retention Facility is to be located on City owned land, which contains regulated wetlands, requiring an MDNR permit. Both on-site and off-site mitigation will be necessary in order to compensate for the disturbance to the existing wetland areas.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$997,000, which will be funded by a bond sale. Construction is anticipated to start in the Summer of 1992. The Drain Office project engineer for this project is David A. Lakin, P.E.

McPherson Drain

A petition for certain drain improvements consisting of the enclosure of an existing drainage course from Squirrel Road westerly approximately 2,700 feet to Dexter

Road, was filed by the City of Auburn Hills with the Drain Commissioner's Office on July 16, 1990. At the first drainage board meeting, held August 14, 1990, the project was named the McPherson Drain, and the public hearing on necessity was scheduled for September 25, 1990. No objections were received at the hearing and the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of approximately 2,700 lineal feet of 66" through 84" diameter storm sewer and miscellaneous appurtenances. Construction of this project will provide storm drainage improvements and reduce flooding conditions located in the Southeast 1/4 of Section 11, and the South 1/2 of Section 12.

The consulting engineer for this project is Orchard, Hiltz & McCliment, Inc. The estimated project cost is \$1,300,000. Construction is anticipated to start in 1993. The Drain Office project engineer for this project is Donald L. Mills, P.E.

Rewold Drain

A request for certain drain improvements to the existing Rewold Drain along the route of the existing Chapter 4 Honeywell Drain between John R. and Dequindre Roads was received from the City of Rochester Hills. On July 12, 1989 the Drainage Board authorized design of the proposed improvements.

The originally proposed improvements included Storm Water Detention Facilities west of John R. Road (John R. Road Detention Facility) and west of Dequindre Road (Dequindre Road Basin), as identified in the Rochester Hills Master Storm Water Management Plan.

The proposed basins, were located in wetland areas which required a Michigan Department of Natural Resources permit. Based upon anticipated problems with obtaining the necessary wetland permits, several alternative designs were considered. The current plan calls for elimination of both detention basins, and redesign of the Rewold Drain as a storm drain without retention. As redesigned the project consists of approximately 1,700 lineal feet of 90" diameter storm sewer along John R. Road from the existing Honeywell Drain north to School Road and approximately 1,800 lineal feet of 90" diameter storm sewer along School Road from John R. Road east to the Honeywell Drain crossing, 120 lineal feet of 6 foot by 12 foot box culverts, 1,700 lineal feet of open channel storm drain from Dequindre Road east to the Clinton River plus appurtenant structures.

Preliminary plans have been prepared and easement acquisition for the Michigan Department of Natural Resources owned parcel of property required to construct the open channel storm drain is underway.

The consulting engineer for this project is Hubbell, Roth & Clark, Inc. The estimated project cost is \$2,200,000. Construction is anticipated to start in the Spring of 1993. The Drain Office project engineer for this project is Gary R. Aho, P.E.

Robert Huber Drain

The City of Rochester Hills filed a petition and resolution for the creation of the Robert Huber Drain on July 23, 1991. The first meeting of the Drain Board was held on August 6, 1991.

The purpose of the Robert Huber Drain is to provide improved drainage on residential roads in the S.W. quarter of Section 34.

The consulting engineer for this project is Professional Engineering Associates, Inc. The estimated project cost is \$650,000. Construction is anticipated to start in the Summer of 1993. The Drain Office project engineer for this project is David A. Lakin, P.E.

Van Tassel Drain

A petition for certain drain improvements in Section 23, Orion Township, was filed with the Drain Commissioner on December 3, 1986. At the first drainage board meeting held December 9, 1986, the project was named the Van Tassel Drain, and the public hearing on necessity was scheduled for January 20, 1987. No objections were received at the hearing and therefore the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of reconstructing and enlarging an existing pond outlet structure which discharges to a tributary of Trout Creek located northwest of the intersection of Greenshield Road and M-24, constructing 420 linear feet of 30" diameter enclosed storm drain crossing M-24 south of Scripps Road and related open ditching outletting to an existing gully on state park land west of M-24. Construction of this drain will assist in providing storm drainage relief for the proposed "Round Tree Subdivision No. 1" - development to be located in the east 1/2 of Section 23, Orion Township. Preliminary construction plans have been completed with easement and permit acquisition currently underway.

The consulting engineer for this project is Giffels-Webster Engineers, Inc. The estimated project cost is \$215,000. Construction is expected to start in the Summer of 1992. The Drain Office project engineer for this project is Ronald R. Karttunen, P.E.

Vinewood Drain

A petition for certain drain improvements consisting of the enclosure of the existing Chapter 4 Vinewood Drain along with the construction of a retention pond, was filed by the City of Auburn Hills with the Drain Commissioner's Office on July 4, 1990. At the first drainage board meeting, held August 14, 1990, the project was named the Vinewood Drain, and the public hearing on necessity was scheduled for September 25, 1990. No objections were received at the hearing and the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of approximately 9,500 lineal feet of 12" through 72" diameter storm sewer and miscellaneous appurtenances. The construction of this project will provide storm drainage improvements and reduce flooding in the Northeast 1/4 of Section 9, the Northwest 1/4 of Section 10, and the Southwest 1/4 of Section 3.

The consulting engineer for this project is Orchard, Hiltz & McCliment, Inc. The estimated project cost is \$1,700,000. Construction is anticipated to start in 1993. The Drain Office project engineer for this project is Donald L. Mills, P.E.

Wixom Drain

A petition for certain drain improvements along the route of the existing Wixom Drain was filed by the City of Wixom with the Drain Commissioner on February 20, 1990. At the first drainage board meeting held March 13, 1990, the project was named the Wixom Drain, and the public hearing on necessity was scheduled for April 24, 1990. No objections were received at the hearing and the project was determined practicable and necessary for the public health, and the Final Order of Determination was adopted.

The project consists of approximately 2,300 lineal feet of 18" through 48" diameter storm sewer and miscellaneous appurtenances. Construction of this project will replace the existing Chapter 4 Wixom Drain, and provide storm drainage for a future road improvement within the City of Wixom known as the Wixom Road Bypass. The City of Wixom has requested that further work on the Wixom Drain be delayed until local financing can be obtained.

The consulting engineer for this project is Pat, Hirn and Bogue, Inc. The estimated project cost is \$400,000. The Drain Office project engineer for this project is Gary R. Aho, P.E.

Wolf Drain

A petition and resolution were received from the City of Rochester Hills for the creation of the Wolf Drain on November 11, 1991. The Wolf Drain is an extension of the McIntyre Drain and will serve an area of Rochester Hills west of Rochester Road and north of M-59.

The project consists of open ditch improvements west of Rochester Road up to Auburn Road and local storm sewers to provide road drainage in residential areas.

The consulting engineer for this project is Professional Engineering Associates, Inc. The estimated project cost is \$2,188,000. Construction is expected to start in the Summer of 1993. The Drain Office project engineer for this project is David A. Lakin, P.E.

WATER & SEWER UNDER DEVELOPMENT

Oakland Township Extension No. 3

The Township of Oakland has requested the County of Oakland to construct approximately 9,600 lineal feet of 8" through 21" sanitary sewer and appurtenances to the southwest sections of the Township flowing to the Paint Creek Interceptor.

The firm of Giffels-Webster Engineers, Inc. of Rochester Hills, Michigan was retained to design the system and prepare construction plans and specifications. Philip Sanzica, P.E. was selected as the Drain Office project engineer. The total project is estimated to cost \$1,250,000. The project is to be financed by the sale of Oakland County Bonds for which the Township of Oakland will pledge their full faith and credit.

Preliminary plans are currently being developed by the Giffels-Webster, consulting engineers. Easement acquisition is scheduled for the spring of 1992. Construction is estimated to begin in the summer of 1992.

Orchard Lake Village Sanitary Sewage Collection and Disposal System

The City of Orchard Lake Village has requested the Oakland County Drain Commissioner to proceed with the development of a project to provide sanitary sewer service to the entire community. An agreement between the City and the County was approved by the City Council on September 20, 1989, and was ratified by a majority vote of the electorate on November 7, 1989. Approval by the Oakland County Board of Commissioners was granted on February 8, 1990.

The project consists of approximately 96,600 lineal feet of 6" to 10" diameter sanitary sewer along with the construction of eleven sewage lift stations. Construction of this project will eliminate existing and potential sources of pollution from individual on-site septic systems, into Orchard, Upper Straits, and Cass Lakes. When completed, the entire system will outlet into the Evergreen-Farmington Sewage Disposal System.

Construction plans are currently being developed by the Hubbell, Roth & Clark, consulting engineer, with easement acquisition scheduled to begin in January 1992. Estimated project cost is \$8,400,000. Construction is expected to begin in 1993. The Drain Office engineer for this project is Donald L. Mills, P.E.

Orchard Lake Village Water Supply System

The City of Orchard Lake Village has requested the Oakland County Drain Commissioner to proceed with the development of a project to provide water service to the entire community. An agreement between the City and the County was approved by the City Council on July 16, 1990, and was ratified by a majority vote

of the electorate on November 6, 1990. Approval by the Oakland County Board of Commissioners was granted on February 28, 1991. The project consists of approximately 105,000 lineal feet of 8" to 30" diameter water main.

Construction plans are currently being developed by the Hubbell, Roth & Clark, consulting engineer, with easement acquisition scheduled to begin in January 1992. Estimated project cost is \$6,000,000. Construction is expected to begin in 1993. The Drain Office engineer for this project is Donald L. Mills, P.E.

Waterford Water Supply System - Iron Removal Water Treatment Facilities

The Charter Township of Waterford has requested the County of Oakland to construct ten Iron Removal Water Treatment Facilities and miscellaneous water mains and appurtenances. Construction of this project will provide Induced Draft/Gravity Filtration Systems to remove the existing high concentrations of iron and some magnesium in the Township Well System.

The firm of Fishbeck, Thompson, Carr & Huber, Inc. of Ada, Michigan was selected to design the system and prepare construction plans and specifications. Philip Sanzica, P.E. was selected as the Drain Office project engineer.

The project is proposed to be constructed in two phases to begin in the summer of 1992. The total project is estimated to cost \$9,100,000. The project is to be financed by the sale of Oakland County Bonds for which the Township will pledge their full faith and credit.

West Bloomfield Water Supply System - Section XII

Contract 2: West Bloomfield Township has requested the County of Oakland to construct approximately 14,300 lineal feet of 20" diameter water transmission main along Green Lake Road northerly from Pontiac Trail to Commerce Road and then westerly to the 400,000 gallon elevated storage tank located east of Keith Road near the Westacres Subdivision. Also, 3,300 lineal feet of 16" diameter water transmission main along Willow Road from east of Keith Road easterly to Arneth Road and 515 lineal feet of 8" water main along Warner Drive north from Commerce Road.

An agreement between West Bloomfield Township and the County of Oakland was approved by the Township Board on April 4, 1988 and by the Oakland County Board of Commissioners on April 28, 1988. Construction plans have been completed by Hubbell, Roth & Clark, consulting engineers, and Permits and easements have been acquired. It is anticipated that construction bids will be received early in 1992, with construction to begin by the summer of 1992. The total project is estimated to cost

\$2,590,000. Donald L. Mills, P.E. is the Drain Office engineer for this project.

West Bloomfield Water Supply System - Section XIII

West Bloomfield Township has requested Oakland County to proceed with the development of a project to complete the construction of the water transmission main along Willow Road and Hiller Road extending from Lochaven Road to Commerce Road.

The project consists of 1,100 lineal feet of 24" diameter water main in Hiller Road from Commerce Road north to Willow Road and 5,000 lineal feet of 20" diameter water main on Willow Road from Hiller Road westerly to Lochaven Road.

An agreement between West Bloomfield Township and the County of Oakland was approved by the Township Board on June 18, 1990, and by the Oakland County Board of Commissioners on June 28, 1990.

Construction plans are currently being developed by the Hubbell, Roth & Clark, consulting engineer. Estimated project cost is \$680,000. Construction is expected to begin in the Spring of 1993. The Drain Office engineer for this project is Donald L. Mills, P.E.

LAKE LEVEL PROJECTS UNDER DEVELOPMENT

Ruth Johnson Dam

On May 18, 1990, petitions were received by the Oakland County Drain Commissioner to establish a legal level for Lake Louise and Huff Lake. A new dam will be constructed at the outlet of Lake Louise sufficient to keep and maintain the level of the respective lakes at their normal elevations. Lake Louise and Huff Lake are located in Sections 19, 20, 29 and 30 of Brandon Township. Lake Louise has a surface area of approximately 103 acres and Huff Lake approximately 11 acres.

Conceptual plans for the Ruth Johnson Dam, were prepared by Glen Yrjanainen, P.E. and Joseph P. Kozma, P.E. of the Drain Office engineering staff. Mr. Joseph P. Kozma was also designated the project engineer for the Lake Louise Dam project. Hampton Engineering Associates, Inc. of Pontiac, Michigan, was retained to prepare engineering plans and specifications for the project.

On November 8, 1991, the Honorable Francis X. O'Brien, Oakland County Circuit Judge, established the legal level for Lake Louise and Huff Lake. Judge O'Brien also confirmed the boundaries of the Special Assessment District for the dam.

It is anticipated that construction bids for the Ruth Johnson Dam will be received in 1992 with construction to begin in the Fall of 1992, pending the successful outcome of a condemnation hearing and questions concerning title to the property where the dam will be constructed.

**LAKE IMPROVEMENT
BOARDS**

LAKE IMPROVEMENT BOARDS

Lake improvement boards are established by petition of lakefront property owners on certain lakes within the County of Oakland. These boards are funded by the property owners with access to the lake involved. Presently there are 35 lake improvement boards operating in 12 townships and the City of Troy. Eleven members of the Board of Commissioners serve on one or more Lake Improvement Boards. C. Hugh Dohany, the Oakland County Treasurer, serves as the Treasurer for 22 of the Lake Improvement Boards. The Township Treasurers of Bloomfield, Oakland, Waterford, and White Lake Townships serve as the Treasurer for 13 Lake Improvement Boards.

Each Lake Improvement Board may decide to pursue one or more lake improvement projects. Most frequently, Lake Improvement Board projects are intended to improve water quality and clarity by mechanical weed harvesting, chemical treatment, aeration or dredging, all directed toward the reduction of aquatic weeds in the lake.

In calendar year 1991 there were expenditures of \$513,529 for the Lake Improvement Boards where Oakland County is Treasurer (see page 51). This included weed harvesting on 3 lakes, chemical treatment on 4 lakes, and both harvesting and chemical treatment on 8 lakes. These lake maintenance programs have been successful in controlling weeds and maintaining water quality.

All Lake Improvement Board programs are financed by special assessment rolls against property abutting the lake or having access to the lake. The total amount of the special assessment rolls spread in 1991 on the 22 lakes for which Oakland County is Treasurer was \$563,435.

**LAKE IMPROVEMENT EXPENDITURE SUMMARY
FOR THE YEAR OF 1991**

<u>PROJECT</u>	<u>ENGINEER SERVICES</u>	<u>HARVEST SERVICES</u>	<u>TREATMENT SERVICES</u>	<u>PUB/LEGAL NOTICES</u>	<u>DETROIT EDISON</u>	<u>MISC CHARGES</u>	<u>TOTAL EXPENDITURES</u>
Big Lake	\$0.00	\$58,400.00	\$0.00	\$0.00	\$0.00	\$0.45	\$58,400.45
Charlick Lake	\$0.00	\$0.00	\$4,000.00	\$0.00	\$1,116.42	\$0.45	\$5,116.87
Dixie Lake	\$7,144.04	\$15,605.00	\$10,480.00	\$639.04	\$0.00	\$13.50	\$33,881.58
Duck Lake	\$0.00	\$29,540.00	\$12,650.00	\$2,229.99	\$0.00	\$1,355.66	\$45,775.65
Duck Lake Pond	\$4,850.00	\$0.00	\$0.00	\$594.60	\$0.00	\$4.10	\$5,448.70
Highland Lake	\$6,800.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.15	\$6,800.15
Huntoon Lake	\$5,771.31	\$3,100.00	\$6,330.00	\$464.86	\$507.55	\$85.75	\$16,259.47
Indianwood Lake	\$400.00	\$15,000.00	\$5,190.00	\$0.00	\$0.00	\$834.00	\$21,424.00
Lake Charnwood	\$12,000.00	\$0.00	\$0.00	\$12,227.37	\$0.00	\$11,094.68	\$35,322.05
Lake Louise	\$2,500.00	\$0.00	\$7,540.00	\$0.00	\$0.00	\$5.40	\$10,045.40
Lakeville Lake	\$0.00	\$52,200.00	\$0.00	\$0.00	\$0.00	\$119.80	\$52,319.80
Pontiac Lake	\$366.20	\$56,418.57	\$36,978.00	\$102.00	\$0.00	\$0.50	\$93,865.27
Round Lake	\$0.00	\$9,458.00	\$0.00	\$399.50	\$0.00	\$0.45	\$9,857.95
Taggett Lake	\$5,400.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.15	\$5,400.15
Tipsico Lake	\$4,161.60	\$0.00	\$9.00	\$0.00	\$0.00	\$1.85	\$4,172.45
Tomahawk Lake	\$0.00	\$0.00	\$1,450.00	\$0.00	\$0.00	\$0.60	\$1,450.60
Van Norman Lake	\$5,622.00	\$8,442.00	\$4,162.00	\$439.80	\$0.00	\$123.65	\$18,789.45
Walters Lake	\$3,240.84	\$8,733.00	\$5,100.00	\$0.00	\$0.00	\$4,991.06	\$22,064.90
White Lake	\$6,578.00	\$9,000.00	\$46,084.00	\$0.00	\$0.00	\$447.46	\$62,109.46
Woodruff Lake	\$0.00	\$0.00	\$4,000.00	\$0.00	\$1,000.00	\$24.70	\$5,024.70
	<u>\$64,833.99</u>	<u>\$265,896.57</u>	<u>\$143,973.00</u>	<u>\$17,097.16</u>	<u>\$2,623.97</u>	<u>\$19,104.36</u>	<u>\$513,529.05</u>

NOTE - Miscellaneous Charges Include:

Copier Charges, Photo Copy Expenses, Postage Expenses, Equipment Rental Charges, and Mileage Charges

* Lake Charnwood Includes A Payment of \$11,089.58 On Loan From Oakland County

* Walters Lake Includes \$4,500.00 for Piling Removal

FINANCIAL STATEMENTS

FINANCIAL STATEMENTS

Summary financial statements for the Southeastern Oakland County Sewage Disposal System, and for major current projects discussed in the Annual Report are included in this volume. Volumes II and III of this report contains complete financial statements for every County drainage district, and itemized statements of all of the various accounts maintained in connection with the construction, operation, and maintenance of all of the projects under the jurisdiction of the Oakland County Drain Commissioner.

Reference should be made to the Table of Contents of the Financial Statements Volumes (II and III) for information on any specific project or fund account not included in these summary statements.

OAKLAND COUNTY DRAIN COMMISSIONER
SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM
COMBINED BALANCE SHEET, DECEMBER 31, 1991

ASSETS	87700 SEWAGE DISPOSAL	87710 POLLUTION CONTROL	TOTAL
CURRENT ASSETS:			
CASH - OPERATING	\$ 248,542.77	\$ 356,901.95	\$ 605,444.72
CASH - INVESTMENTS	1,999,897.81	1,751,246.41	3,751,144.22
DUE FROM MUNICIPALITIES	1,091,961.57	1,053,690.13	2,145,651.70
DUE FROM CITY OF DETROIT	288,898.82	524,426.72	813,325.54
DUE FROM OTHER FUNDS	71,262.73	27,902.94	99,165.67
PREPAID EXPENSES	10,980.40	3,406.50	14,386.90
ACCOUNTS RECEIVABLE	65,000.00	0.00	65,000.00
ACCRUED INTEREST RECEIVABLE	7,124.11	6,894.16	14,018.27
TOTAL CURRENT ASSETS	3,783,668.21	3,724,468.81	7,508,137.02
PROPERTY AND EQUIPMENT AT COST:			
DRAINS AND INTERCEPTORS	53,888,410.08	19,830,235.17	73,718,645.25
FLOWAGE RIGHTS	1,132,889.68	1,363,307.92	2,496,197.60
BUILDINGS AND IMPROVEMENTS	87,038.46	2,741,693.98	2,828,732.44
EQUIPMENT	179,265.25	285,525.15	464,790.40
LAND AND IMPROVEMENTS	1,533.25	624,465.22	625,998.47
	55,289,136.72	24,845,227.44	80,134,364.16
LESS: ALLOWANCE FOR DEPRECIATION	32,982,333.97	11,191,553.81	44,173,887.78
PROPERTY AND EQUIPMENT - NET	22,306,802.75	13,653,673.63	35,960,476.38
TOTAL ASSETS	\$26,090,470.96	\$17,378,142.44	\$43,468,613.40

LIABILITIES AND FUND EQUITY

CURRENT LIABILITIES:			
DUE TO CITY OF DETROIT	\$ 2,026,425.39	\$ 1,533,583.38	\$ 3,560,008.77
DUE TO MUNICIPALITIES	288,898.80	524,426.69	813,325.49
DUE TO OTHER FUNDS	15,163.04	14,654.76	29,817.80
VOUCHERS & ACCOUNTS PAYABLE	91,450.99	2,584.63	94,035.62
ACCRUED PAYROLL	1,391.86	1,857.09	3,248.95
UNDISTRIBUTED FUNDS	38,564.73	0.00	38,564.73
TOTAL CURRENT LIABILITIES	2,461,894.81	2,077,106.55	4,539,001.36

OAKLAND COUNTY DRAIN COMMISSIONER
 SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM
 COMBINED BALANCE SHEET, DECEMBER 31, 1991

PAGE 2

	87700 SEWAGE DISPOSAL	87710 POLLUTION CONTROL	TOTAL
FUND EQUITY:			
CONTRIBUTED CAPITAL	\$22,224,111.97	\$13,524,165.81	\$35,748,277.78
RETAINED EARNINGS:			
RESERVED FOR:			
OPERATIONS AND MAINTENANCE	1,025,000.00	0.00	1,025,000.00
REPLACEMENT	25,000.00	0.00	25,000.00
MAINTENANCE AND REPLACEMENT	0.00	700,000.00	700,000.00
	1,050,000.00	700,000.00	1,750,000.00
UNDESIGNATED EARNINGS	354,464.18	1,076,870.08	1,431,334.26
TOTAL RETAINED EARNINGS	1,404,464.18	1,776,870.08	3,181,334.26
TOTAL FUND EQUITY	23,628,576.15	15,301,035.89	38,929,612.04
TOTAL LIABILITIES & FUND EQUITY	\$26,090,470.96	\$17,378,142.44	\$43,468,613.40

OAKLAND COUNTY DRAIN COMMISSIONER
 SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM
 COMBINED STATEMENT OF REVENUES, EXPENSES AND CHANGES IN RETAINED EARNINGS
 FOR THE YEAR ENDED DECEMBER 31, 1991

	87700 SEWAGE DISPOSAL	87710 POLLUTION CONTROL	TOTAL
REVENUE FROM SERVICE SALES	\$ 9,947,062.46	\$ 6,500,000.10	\$16,447,062.56
LESS: TREATMENT COSTS	9,629,772.57	5,981,524.03	15,611,296.60
GROSS GAIN ON SALES	317,289.89	518,476.07	835,765.96
LESS: OPERATING EXPENSES	739,729.15	547,618.43	1,287,347.58
GAIN OR (LOSS) ON OPERATIONS	(422,439.26)	(29,142.36)	(451,581.62)
OTHER REVENUE (EXPENSES):			
GAIN ON SALE OF EQUIPMENT	0.00	2,800.00	2,800.00
REIMBURSEMENT-SALARIES	0.00	11,090.50	11,090.50
INCOME ON INVESTMENTS	141,741.62	112,331.53	254,073.15
DISPOSAL PERMITS	9,791.00	0.00	9,791.00
MISCELLANEOUS	130,124.22	(0.09)	130,124.13
TRANSFER TO UNDISTRIBUTED FUNDS	(11,751.19)	0.00	(11,751.19)
RENTAL - EQUIPMENT	6,706.50	0.00	6,706.50
REIMBURSEMENT-ACCOUNTING SERVICES	23,173.77	23,173.76	46,347.53
TOTAL OTHER REVENUE (EXPENSES)	299,785.92	149,395.70	449,181.62
OPERATING TRANSFERS OUT	(25,000.00)	0.00	(25,000.00)
NET GAIN OR (LOSS) BEFORE DEPRECIATION ON ASSETS ACQUIRED FROM CONTRIBUTED CAPITAL	(147,653.34)	120,253.34	(27,400.00)
DEPRECIATION ON ASSETS ACQUIRED FROM CONTRIBUTED CAPITAL	1,019,396.40	610,897.80	1,630,294.20
NET GAIN OR (LOSS) AFTER DEPRECIATION ON ASSETS ACQUIRED FROM CONTRIBUTED CAPITAL	(1,167,049.74)	(490,644.46)	(1,657,694.20)
ADD BACK DEPRECIATION ON ASSETS ACQUIRED FROM CONTRIBUTED CAPITAL	1,019,396.40	610,897.80	1,630,294.20
NET GAIN OR (LOSS)	(147,653.34)	120,253.34	(27,400.00)
RETAINED EARNINGS AT 01/01/91	1,552,117.52	1,656,616.74	3,208,734.26
RETAINED EARNINGS AT 12/31/91	\$ 1,404,464.18	\$ 1,776,870.08	\$ 3,181,334.26

OAKLAND COUNTY DRAIN COMMISSIONER
SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM
COMBINED SCHEDULE OF OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 1991

	87700 SEWAGE DISPOSAL	87710 POLLUTION CONTROL	TOTAL
	-----	-----	-----
SALARIES	\$202,501.71	\$183,291.07	\$385,792.78
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FRINGE BENEFITS	83,417.56	76,871.24	160,288.80
	-----	-----	-----
CONTRACTUAL SERVICES:			
ACCOUNTING SERVICES	47,731.75	47,731.74	95,463.49
AUCTION EXPENSE	0.00	181.86	181.86
AUDITING SERVICES	5,250.00	5,250.00	10,500.00
BUILDING MAINTENANCE	837.46	2,365.44	3,202.90
DEPRECIATION-OPERATING EQUIPMENT	11,560.26	24,617.62	36,177.88
EQUIPMENT REPAIR - OPERATIONS	1,457.34	17,780.02	19,237.36
EQUIPMENT REPAIR - MOTOR VEHICLES	0.00	863.40	863.40
ENGINEERING AND SURVEY	4,450.78	24,943.31	29,394.09
EQUIPMENT RENTAL	0.00	0.00	0.00
EQUIPMENT REPAIRS AND MAINTENANCE	151.27	6,722.67	6,873.94
GARBAGE AND RUBBISH DISPOSAL	0.00	816.25	816.25
GAS - NATURAL	2,504.36	3,802.80	6,307.16
INSURANCE	3,790.34	4,853.45	8,643.79
INVESTMENT FEES	294.29	246.01	540.30
LANDS AND GROUNDS MAINTENANCE	833.13	2,056.85	2,889.98
LAUNDRY AND CLEANING	1,038.67	2,067.27	3,105.94
LEGAL EXPENSE	332,541.01	363.00	332,904.01
LIGHT AND POWER	8,309.83	28,680.49	36,990.32
MAINTENANCE CONTRACTS	3,471.60	1,350.00	4,821.60
MAINTENANCE EQUIPMENT RENTAL	0.00	1,399.71	1,399.71
MEMBERSHIP, DUES AND PUBLICATIONS	230.50	55.00	285.50
PROTECTIVE CLOTHING AND EQUIPMENT	273.30	1,457.40	1,730.70
SEWER MAINTENANCE	12,480.00	0.00	12,480.00
TRAVEL AND CONFERENCE	2,191.84	480.68	2,672.52
WATER PURCHASES	0.00	12,690.41	12,690.41
WATER AND SEWER UTILITIES	1,361.64	1,465.95	2,827.59
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TOTAL CONTRACTUAL SERVICES	440,759.37	192,241.33	633,000.70
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COMMODITIES:			
CHLORINATION SUPPLIES	0.00	77,494.78	77,494.78
FILM AND PROCESSING	0.00	0.00	0.00
LABORATORY SUPPLIES	3,706.45	269.47	3,975.92
OFFICE SUPPLIES	618.21	-6.62	611.59
POSTAGE	41.42	26.42	67.84
SHOP SUPPLIES	0.00	6,242.78	6,242.78
	-----	-----	-----
TOTAL COMMODITIES	4,366.08	84,026.83	88,392.91
	-----	-----	-----

OAKLAND COUNTY DRAIN COMMISSIONER
SOUTHEASTERN OAKLAND COUNTY SEWAGE DISPOSAL SYSTEM
COMBINED SCHEDULE OF OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 1991
PAGE 2

	87700 SEWAGE DISPOSAL	87710 POLLUTION CONTROL	TOTAL
	-----	-----	-----
INTERNAL SERVICES:			
DPW WATER & SEWER EQUIPMENT	\$ 286.90	\$ 286.89	\$ 573.79
MICROFILM & REPRODUCTIONS	0.00	0.00	0.00
RADIO COMMUNICATIONS	1,469.96	1,761.96	3,231.92
MOTOR POOL	2,192.84	5,639.65	7,832.49
EQUIPMENT RENTAL - OFFICE	120.00	120.00	240.00
MATERIALS MANAGEMENT	689.57	392.54	1,082.11
TELEPHONE COMMUNICATIONS	2,046.10	1,107.86	3,153.96
DRAIN EQUIPMENT	1,879.06	1,879.06	3,758.12
	-----	-----	-----
TOTAL INTERNAL SERVICES	8,684.43	11,187.96	19,872.39
	-----	-----	-----
TOTAL OPERATING EXPENSES	\$739,729.15	\$547,618.43	\$1,287,347.58
	=====	=====	=====

OAKLAND COUNTY
 CHAPTER 20 MAINTENANCE FUNDS
 BALANCE SHEET
 BARNARD DRAINAGE DISTRICT

DECEMBER 31, 1991

MAINTENANCE
 FUND NO
 89505

ASSETS

CASH	\$	896.90
INVESTMENTS		44,500.00
ACCRUED INTEREST RECEIVABLE		460.76
FIXED ASSETS		2,205,457.86

TOTAL ASSETS	\$	2,251,315.52
		=====

LIABILITIES

ACCOUNTS PAYABLE	\$	17,190.00
ADVANCES AND LOANS PAYABLE		175,000.00
DEPOSITS		1,000.00
DUE TO OTHER FUNDS		1,781.67

TOTAL LIABILITIES		194,971.67

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		2,205,457.86
UNDESIGNATED	(	131,924.01)
DESIGNATED	(	17,190.00)

		2,056,343.85

TOTAL LIABILITIES & FUND BALANCE	\$	2,251,315.52
		=====

OAKLAND COUNTY
 CHAPTER 20 MAINTENANCE FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 BARNARD DRAINAGE DISTRICT

DECEMBER 31, 1991

MAINTENANCE
 FUND NO
 89505

REVENUES

INCOME FROM INVESTMENTS	\$	3,188.63

TOTAL REVENUES		3,188.63

EXPENDITURES

SALARIES - REGULAR		3,402.70
PER DIEM		200.00
FRINGE BENEFITS		2,026.14
INVESTMENT FEES		40.04
CONTRACTED SERVICES		2,180.00
FILM & PROCESSING		18.63
DRAIN EQUIPMENT		788.54

TOTAL EXPENDITURES		8,656.05

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (5,467.42) -----

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$(	5,467.42)
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 JENSEN DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81664

ASSETS

CASH	\$	.00
INVESTMENTS		270,361.47
FIXED ASSETS		771,443.56

TOTAL ASSETS	\$	1,041,805.03
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	12,452.65

TOTAL LIABILITIES		12,452.65

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		771,443.56
UNDESIGNATED		240,032.57
DESIGNATED		17,876.25

		1,029,352.38

TOTAL LIABILITIES & FUND BALANCE	\$	1,041,805.03
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 JENSEN DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81664

REVENUES

INCOME FROM INVESTMENTS	\$	31,765.25
PERMITS		100.00

TOTAL REVENUES		31,865.25

EXPENDITURES

SALARIES - REGULAR		39,719.67
PER DIEM		300.00
FRINGE BENEFITS		23,139.99
BOND RATING EXPENSE		1,500.00
LEGAL EXPENSE		12,534.00
OTHER ENGINEERING SERVICES		250.00
RECORDING FEES		15.00
TRANSPORTATION		685.00
MATERIAL & SUPPLIES		422.41
DRAIN EQUIPMENT		4,972.05
PROJECT CONST. & IMPROVEMENTS		372,771.25

TOTAL EXPENDITURES		456,309.37

EXCESS (DEFICIENCY) OF REVENUES		
OVER EXPENDITURES	(	424,444.12)

EXCESS (DEFICIENCY) OF REVENUES		
AND OTHER SOURCES OVER		
EXPENDITURES AND OTHER USES	\$(	424,444.12)
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 JOHNSON DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81636

ASSETS

CASH	\$	.00
INVESTMENTS		85,505.33
ACCRUED INTEREST RECEIVABLE		349.39
FIXED ASSETS		3,169,533.62

TOTAL ASSETS	\$	3,255,388.34
		=====

LIABILITIES

DUE TO MUNICIPALITIES	\$	200,000.00
DUE TO OTHER FUNDS		4,986.15

TOTAL LIABILITIES		204,986.15

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		3,169,533.62
UNDESIGNATED	(	74,657.63)
DESIGNATED	(	44,473.80)

		3,050,402.19

TOTAL LIABILITIES & FUND BALANCE	\$	3,255,388.34
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 JOHNSON DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81636

REVENUES

INCOME FROM INVESTMENTS	\$	23,963.71
PERMITS		300.00

TOTAL REVENUES		24,263.71

EXPENDITURES

SALARIES - REGULAR	26,535.06
PER DIEM	250.00
FRINGE BENEFITS	15,878.27
INVESTMENT FEES	182.51
LEGAL EXPENSE	5,813.81
INSPECTION	2,359.18
OTHER ENGINEERING SERVICES	4,844.78
RECORDING FEES	15.55
SOIL TEST BORINGS	1,322.75
TRANSPORTATION	457.25
MATERIAL & SUPPLIES	170.05
DRAIN EQUIPMENT	2,365.60
PROJECT CONST. & IMPROVEMENTS	518,268.34

TOTAL EXPENDITURES	578,463.15

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (554,199.44) -----
------------------------------------------------------	--	---------------------------------

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES		----- \$(554,199.44) =====
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OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 CRAKE DRAINAGE DISTRICT CONST.

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81665

ASSETS

CASH	\$	.00
INVESTMENTS		1,185,939.44
FIXED ASSETS		810,132.59

TOTAL ASSETS	\$	1,996,072.03
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	34,916.77

TOTAL LIABILITIES		34,916.77

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		810,132.59
UNDESIGNATED		418,327.92
DESIGNATED		732,694.75

		1,961,155.26

TOTAL LIABILITIES & FUND BALANCE	\$	1,996,072.03
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 CRAKE DRAINAGE DISTRICT CONST.

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81665

REVENUES

INCOME FROM INVESTMENTS	\$	17,136.15
SALE OF BONDS		1,940,000.00

TOTAL REVENUES		1,957,136.15

EXPENDITURES

SALARIES - REGULAR		32,914.36
PER DIEM		500.00
FRINGE BENEFITS		17,654.06
BOND ATTORNEY FEES		14,195.18
BOND PRINTING EXPENSE		1,117.00
BOND PROSPECTUS EXPENSE		3,820.00
BOND RATING EXPENSE		6,500.00
INVESTMENT FEES		22.05
LEGAL EXPENSE		17,916.97
DISCOUNT ON BONDS		29,100.00
FINANCIAL CONSULTANT FEES		9,145.24
LICENSES AND PERMITS		2,449.00
OTHER ENGINEERING SERVICES		100.00
PUBLISHING LEGAL NOTICES		1,509.01
PURCHASE OF LAND & EASEMENT		750.00
RECORDING FEES		78.00
TRANSPORTATION		390.63
MATERIAL & SUPPLIES		147.78
OFFICE SUPPLIES		44.17
MICROFILM & REPRODUCTIONS		8.00
DRAIN EQUIPMENT		3,371.83
PROJECT CONST. & IMPROVEMENTS		495,677.61

TOTAL EXPENDITURES		637,410.89

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- 1,319,725.26 -----
------------------------------------------------------	--	--------------------------------

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	1,319,725.26 =====
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OAKLAND COUNTY
CHAPTER 20 CONSTRUCTION FUNDS
BALANCE SHEET
LUEDERS DRAIN

DECEMBER 31, 1991

CONSTRUCTION
FUND NO
81655

ASSETS

CASH	\$	.00
INVESTMENTS		3,759,243.42
ACCRUED INTEREST RECEIVABLE		5,502.67
FIXED ASSETS		1,112,161.33

TOTAL ASSETS	\$	4,876,907.42
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	43,900.59

TOTAL LIABILITIES		43,900.59

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		1,112,161.33
UNDESIGNATED		987,639.94
DESIGNATED		2,733,205.56

		4,833,006.83

TOTAL LIABILITIES & FUND BALANCE	\$	4,876,907.42
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 LUEDERS DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81655

REVENUES

INCOME FROM INVESTMENTS	\$	78,700.46
SALE OF BONDS		4,660,000.00
SALE OF LAND & BUILDINGS		77,282.62

TOTAL REVENUES		4,815,983.08

EXPENDITURES

SALARIES - REGULAR		67,998.73
PER DIEM		650.00
FRINGE BENEFITS		37,996.26
BOND ATTORNEY FEES		23,662.10
BOND PRINTING EXPENSE		1,491.00
BOND PROSPECTUS EXPENSE		6,930.92
BOND RATING EXPENSE		10,500.00
INVESTMENT FEES		49.78
LEGAL EXPENSE		21,663.32
APPRAISAL FEES		1,800.00
CONTRACTED SERVICES		435.54
DISCOUNT ON BONDS		69,900.00
FINANCIAL CONSULTANT FEES		13,366.57
LICENSES AND PERMITS		3,935.41
OTHER ENGINEERING SERVICES		6,848.51
PUBLISHING LEGAL NOTICES		829.95
PURCHASE OF LAND & EASEMENT	(	442,656.24)
RECORDING FEES		410.05
R/W NEGOTIATION AND EXPENSE		127.50
SOIL TEST BORINGS		5,992.00
TRANSPORTATION		416.88
MATERIAL & SUPPLIES		168.76
MICROFILM & REPRODUCTIONS		216.00
DRAIN EQUIPMENT		6,821.71
PROJECT CONST. & IMPROVEMENTS		156,465.53

TOTAL EXPENDITURES	(	3,979.72)

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		4,819,962.80

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	4,819,962.80
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 MCINTOSH DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81690

ASSETS

CASH	\$	1,047.34
INVESTMENTS		20,000.00
FIXED ASSETS		129,453.78

TOTAL ASSETS	\$	150,501.12
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	10,543.21

TOTAL LIABILITIES		10,543.21

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		129,453.78
UNDESIGNATED	(	9,305.87)
DESIGNATED		19,810.00

		139,957.91

TOTAL LIABILITIES & FUND BALANCE	\$	150,501.12
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 MCINTOSH DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81690

REVENUES

INCOME FROM INVESTMENTS	\$	5,766.97

TOTAL REVENUES		5,766.97

EXPENDITURES

SALARIES - REGULAR		12,250.15
PER DIEM		350.00
FRINGE BENEFITS		6,196.03
BOND ATTORNEY FEES		3,065.91
INVESTMENT FEES		58.12
LEGAL EXPENSE		918.68
APPRAISAL FEES		2,950.00
LICENSES AND PERMITS		357.72
OTHER ENGINEERING SERVICES		818.86
PUBLISHING LEGAL NOTICES		697.01
PURCHASE OF LAND & EASEMENT		2,310.00
RECORDING FEES		73.30
TRANSPORTATION		299.75
MATERIAL & SUPPLIES		18.94
DRAIN EQUIPMENT		767.55
PROJECT CONST. & IMPROVEMENTS		86,175.60

TOTAL EXPENDITURES		117,307.62

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		(111,540.65)

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$(	111,540.65)
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 OAKS DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81701

ASSETS

CASH	\$	2,943.11
INVESTMENTS		90,000.00
ACCRUED INTEREST RECEIVABLE		161.25
FIXED ASSETS		448,864.16

TOTAL ASSETS	\$	541,968.52
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	14,611.23

TOTAL LIABILITIES		14,611.23

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		448,864.16
UNDESIGNATED		14,683.13
DESIGNATED		63,810.00

		527,357.29

TOTAL LIABILITIES & FUND BALANCE	\$	541,968.52
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 OAKS DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81701

REVENUES

DEPOSITS - ENG PLANS & SPECS	\$	620.00
INCOME FROM INVESTMENTS		24,486.76

TOTAL REVENUES		25,106.76

EXPENDITURES

SALARIES - REGULAR	42,587.69
PER DIEM	500.00
FRINGE BENEFITS	23,918.59
BOND ATTORNEY FEES	2,809.40
INVESTMENT FEES	237.55
CONTRACTED SERVICES	10,325.97
DESIGN FEES	42,443.51
INSURANCE	3,500.00
LICENSES AND PERMITS	743.92
OTHER ENGINEERING SERVICES	480.00
PUBLISHING LEGAL NOTICES	859.71
PURCHASE OF LAND & EASEMENT	4,067.93
RECORDING FEES	589.50
TRANSPORTATION	79.00
FILM & PROCESSING	12.94
MATERIAL & SUPPLIES	23.60
MICROFILM & REPRODUCTIONS	31.00
DRAIN EQUIPMENT	4,220.90
PROJECT CONST. & IMPROVEMENTS	302,847.25

TOTAL EXPENDITURES	440,278.46

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (415,171.70) -----
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EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES		----- \$(415,171.70) =====
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OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 BALANCE SHEET
 PEBBLE CREEK DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81702

ASSETS

CASH	\$	.00
INVESTMENTS		2,747,588.09
ACCRUED INTEREST RECEIVABLE		10,821.76
FIXED ASSETS		900,365.87

TOTAL ASSETS	\$	3,658,775.72
		=====

LIABILITIES

DUE TO MUNICIPALITIES	\$	.00
DUE TO OTHER FUNDS		29,690.44

TOTAL LIABILITIES		29,690.44

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		900,365.87
UNDESIGNATED		1,721,161.41
DESIGNATED		1,007,558.00

		3,629,085.28

TOTAL LIABILITIES & FUND BALANCE	\$	3,658,775.72
		=====

OAKLAND COUNTY
 CHAPTER 20 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 PEBBLE CREEK DRAIN

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 81702

REVENUES

INCOME FROM INVESTMENTS	\$	14,028.13
SALE OF BONDS		3,540,000.00

TOTAL REVENUES		3,554,028.13

EXPENDITURES

SALARIES - REGULAR		54,815.79
PER DIEM		550.00
FRINGE BENEFITS		30,684.27
INVESTMENT FEES		13.51
LEGAL EXPENSE		251.00
CONTRACTED SERVICES		5,740.00
DISCOUNT ON BONDS		53,100.00
LICENSES AND PERMITS		2,271.67
OTHER ENGINEERING SERVICES		254,749.55
PUBLISHING LEGAL NOTICES		1,589.75
PURCHASE OF LAND & EASEMENT		8,065.00
RECORDING FEES		218.55
TRANSPORTATION		25.75
FILM & PROCESSING		12.96
MATERIAL & SUPPLIES		109.88
DPW WATER & SEWER EQUIPMENT		1,024.99
MICROFILM & REPRODUCTIONS		79.00
DRAIN EQUIPMENT		4,249.20
PROJECT CONST. & IMPROVEMENTS		293,290.00

TOTAL EXPENDITURES		710,840.87

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		2,843,187.26

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	2,843,187.26

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 WIXOM S.D.S. - EXT. NO. 2

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87430

ASSETS

CASH		\$(	17,856.61)
INVESTMENTS			1,025,000.00
DUE FROM FEDERAL GOVERNMENT			454,613.00
ACCRUED INTEREST RECEIVABLE			1,793.75
FIXED ASSETS			19,194,007.23

TOTAL ASSETS		\$	20,657,557.37
			=====

LIABILITIES

DUE TO OTHER FUNDS		\$	6,117.38
VOUCHERS PAYABLE			8,509.87
DEFERRED INCOME			454,613.00

TOTAL LIABILITIES			469,240.25

FUND-BALANCE

INVESTMENT IN FIXED ASSETS			19,194,007.23
UNDESIGNATED			989,309.89
DESIGNATED			5,000.00

			20,188,317.12

TOTAL LIABILITIES & FUND BALANCE		\$	20,657,557.37
			=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 WIXOM S.D.S. - EXT. NO. 2

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87430

REVENUES

GRANTS	\$	171,484.00
INCOME FROM INVESTMENTS		63,874.66

TOTAL REVENUES		235,358.66

EXPENDITURES

SALARIES - REGULAR		15,177.29
FRINGE BENEFITS		8,931.73
INVESTMENT FEES		170.06
ARCHITECT FEES-O & M MANUEL		206.35
ARCHITECTURAL TRADES		31,912.80
CONTRACT ADMINISTRATION		103,676.74
INSPECTION		59,002.81
OTHER ENGINEERING SERVICES		2,106.29
DPW WATER & SEWER EQUIPMENT		51,756.91
MAINTENANCE DEPARTMENT CHARGES		99.71
DRAIN EQUIPMENT		13,339.84
PROJECT CONST. & IMPROVEMENTS		443,205.92

TOTAL EXPENDITURES		729,586.45

EXCESS (DEFICIENCY) OF REVENUES		-----
OVER EXPENDITURES	(	494,227.79)

EXCESS (DEFICIENCY) OF REVENUES		
AND OTHER SOURCES OVER	\$(	494,227.79)
EXPENDITURES AND OTHER USES		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 AMY DRAIN AREA RLF SEWER CONST

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87420

ASSETS

CASH	\$	128,636.63
INVESTMENTS		350,733.66
DUE FROM MUNICIPALITIES		28,762.94
ACCRUED INTEREST RECEIVABLE		2,867.57
FIXED ASSETS		3,747,622.39

TOTAL ASSETS	\$	4,258,623.19
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	7,262.11
VOUCHERS PAYABLE		118.75

TOTAL LIABILITIES		7,380.86

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		3,747,622.39
UNDESIGNATED		308,089.85
DESIGNATED		195,530.09

		4,251,242.33

TOTAL LIABILITIES & FUND BALANCE	\$	4,258,623.19
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 AMY DRAIN AREA RLF SEWER CONST

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87420

REVENUES

INCOME FROM INVESTMENTS	\$	155,186.84

TOTAL REVENUES		155,186.84

EXPENDITURES

SALARIES - REGULAR	66,146.59
FRINGE BENEFITS	37,148.22
BOND PROSPECTUS EXPENSE	7,283.22
INVESTMENT FEES	30.37
LEGAL EXPENSE	9,251.75
CONTRACT ADMINISTRATION	14,185.07
CONTRACTED SERVICES	225.00
DESIGN FEES	7,819.86
FINANCIAL CONSULTANT FEES	12,236.18
INSPECTION	80,132.10
LAYOUT AND STAKING	52,256.22
LICENSES AND PERMITS	2,832.18
PERSONAL MILEAGE	1,273.75
PHOTOCOPY EXPENSE	16.00
PURCHASE OF LAND & EASEMENT	19,089.36
RECORDING FEES	64.35
SOIL TEST BORINGS	1,260.00
MATERIAL & SUPPLIES	47.30
MICROFILM & REPRODUCTIONS	10.00
DRAIN EQUIPMENT	7,434.65
PROJECT CONST. & IMPROVEMENTS	2,392,331.84

TOTAL EXPENDITURES	2,711,074.01

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (2,555,887.17) -----
------------------------------------------------------	--	-----------------------------------

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	(2,555,887.17) =====
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OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 EFSDS PCF SEGMENT 1

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87271

ASSETS

CASH	\$	1,433,996.42
DUE FROM FEDERAL GOVERNMENT		592,258.00
FIXED ASSETS		15,832,295.56

TOTAL ASSETS	\$	17,858,549.98
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	1,618.63
DEFERRED INCOME		592,258.00

TOTAL LIABILITIES		593,876.63

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		15,832,295.56
UNDESIGNATED		1,301,388.38
DESIGNATED		130,989.41

		17,264,673.35

TOTAL LIABILITIES & FUND BALANCE	\$	17,858,549.98
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 EFSDS PCF SEGMENT 1

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87271

REVENUES

GRANTS	\$	2,853,848.00
INCOME FROM INVESTMENTS		17,968.67
PRINCIPAL FROM MUNICIPALITIES		2,258,048.00

TOTAL REVENUES		5,129,864.67

EXPENDITURES

SALARIES - REGULAR		45,274.16
FRINGE BENEFITS		25,390.93
BOND ATTORNEY FEES		3,875.00
BOND PROSPECTUS EXPENSE		2,612.17
LEGAL EXPENSE		8,037.96
ARCHITECT FEES-O & M MANUEL		53,940.54
CONTRACT ADMINISTRATION		301,888.08
CONTRACTED SERVICES		3,577.50
FINANCIAL CONSULTANT FEES		3,396.21
INSPECTION		189,315.67
PERSONAL MILEAGE		758.25
PURCHASE OF LAND & EASEMENT		9,372.50
RECORDING FEES		13.00
TRAVEL & CONFERENCE		3.60
MATERIAL & SUPPLIES		46.92
POSTAGE		.29
DRAIN EQUIPMENT		4,731.25
PROJECT CONST. & IMPROVEMENTS		1,133,209.59

TOTAL EXPENDITURES		1,785,443.62

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- 3,344,421.05 -----
------------------------------------------------------	--	--------------------------------

OTHER FINANCING SOURCES(USES)

TRANSFERS TO MUNICIPALITIES		(1,619,993.00) -----
TOTAL OTHER FINANCING SOURCES(USES)		(1,619,993.00) -----

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	1,724,428.05 =====
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OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 EFSDS PCF SEG. II CONST.

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87265

ASSETS

CASH	\$	.00
INVESTMENTS		3,557,601.47
DUE FROM FEDERAL GOVERNMENT		8,165,360.00
DUE FROM OTHER FUNDS		5,759,095.68
ACCRUED INTEREST RECEIVABLE		31,676.32
FIXED ASSETS		21,983,566.64

TOTAL ASSETS	\$	39,497,300.11
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	315,508.45
VOUCHERS PAYABLE		194,789.98
DEFERRED INCOME		8,165,360.00

TOTAL LIABILITIES		8,675,658.43

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		21,983,566.64
UNDESIGNATED		3,507,598.79
DESIGNATED		5,330,476.25

		30,821,641.68

TOTAL LIABILITIES & FUND BALANCE	\$	39,497,300.11
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 EFSDS PCF SEG. II CONST.

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87265

REVENUES

DEPOSITS - ENG PLANS & SPECS	\$	1,505.00
GRANTS		6,665,775.00
INCOME FROM INVESTMENTS		505,472.43
SALE OF BONDS		4,085,000.00

TOTAL REVENUES		11,257,752.43

EXPENDITURES

SALARIES - REGULAR	615,437.96
FRINGE BENEFITS	336,550.61
BOND ATTORNEY FEES	23,188.24
BOND PRINTING EXPENSE	1,361.00
BOND PROSPECTUS EXPENSE	32,658.04
BOND RATING EXPENSE	9,000.00
INVESTMENT FEES	151.85
LEGAL EXPENSE	87,930.96
APPRAISAL FEES	71,349.50
CAPITALIZED INTEREST	156,820.37
CONTRACT ADMINISTRATION	767,537.05
CONTRACTED SERVICES	818.00
DESIGN FEES	707,260.60
DISCOUNT ON BONDS	61,275.00
FINANCIAL CONSULTANT FEES	54,673.66
INSPECTION	776,894.79
INTEREST EXPENSE	145,109.59
LICENSES AND PERMITS	6,068.37
OTHER ENGINEERING SERVICES	737.00
PERSONAL MILEAGE	9,695.20
PHOTOCOPY EXPENSE	957.75
PUBLISHING LEGAL NOTICES	1,216.50
PURCHASE OF LAND & EASEMENT	86,077.92
RECORDING FEES	1,038.10
SOIL TEST BORINGS	602.50
TRANSPORTATION	4.50
TRAVEL & CONFERENCE	152.00
MATERIAL & SUPPLIES	3,295.21
OFFICE SUPPLIES	1,925.00
DPW WATER & SEWER EQUIPMENT	3,258.60
MICROFILM & REPRODUCTIONS	3,593.65

OAKLAND COUNTY
ACT 342 CONSTRUCTION FUNDS
STATEMENT OF REVENUE & EXPENDITURES
EFSDS PCF SEG. II CONST.
Continuation
DECEMBER 31, 1991

	CONSTRUCTION FUND NO 87265
CONVENIENCE COPIER	47.97
DRAIN EQUIPMENT	58,087.70
PROJECT CONST. & IMPROVEMENTS	14,417,011.01

TOTAL EXPENDITURES	18,441,786.20

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES	----- (7,184,033.77) -----
OTHER FINANCING SOURCES(USES)	
TRANSFERS TO MUNICIPALITIES	(1,796,836.00)

TOTAL OTHER FINANCING SOURCES(USES)	(1,796,836.00)

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$ (8,980,869.77) =====

RECEIVED
 DEPARTMENT OF REVENUE
 RECEIVED FROM THE
 COUNTY OF OAKLAND
 DECEMBER 31, 1991
 THE COUNTY CLERK
 COUNTY OF OAKLAND
 RECEIVED FROM THE
 COUNTY OF OAKLAND

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 HRSDS-WALLED LK-NOVI WWTP ENLG

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87500

ASSETS

CASH	\$	.00
INVESTMENTS		1,185,367.06
ACCRUED INTEREST RECEIVABLE		5,542.67
FIXED ASSETS		7,708,302.68

TOTAL ASSETS	\$	8,899,212.41
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	10,352.92
VOUCHERS PAYABLE		23,552.69

TOTAL LIABILITIES		33,905.61

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		7,708,302.68
UNDESIGNATED		777,228.41
DESIGNATED		379,775.71

		8,865,306.80

TOTAL LIABILITIES & FUND BALANCE	\$	8,899,212.41
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 HRSDS-WALLED LK-NOVI WWTP ENLG

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87500

REVENUES

INCOME FROM INVESTMENTS	\$	246,091.51

TOTAL REVENUES		246,091.51

EXPENDITURES

SALARIES - REGULAR		9,782.72
FRINGE BENEFITS		4,227.01
INVESTMENT FEES		602.51
ARCHITECT FEES-O & M MANUEL		17,377.70
CONTRACT ADMINISTRATION		247,391.12
PHOTOCOPY EXPENSE		50.00
SOIL TEST BORINGS		6,210.16
DPW WATER & SEWER EQUIPMENT		52,940.51
MICROFILM & REPRODUCTIONS		22.00
DRAIN EQUIPMENT		3,152.88
PROJECT CONST. & IMPROVEMENTS		5,351,733.88

TOTAL EXPENDITURES		5,693,490.49

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (5,447,398.98) -----
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EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES		----- \$(5,447,398.98) =====
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OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 OCWS & SDS-ROCHSTR HL 1988 EXT

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87435

ASSETS

CASH	\$	49,579.31
INVESTMENTS		4,400,000.00
ACCRUED INTEREST RECEIVABLE		15,891.74
FIXED ASSETS		8,312,948.24

TOTAL ASSETS	\$	12,778,419.29
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	6,895.43
VOUCHERS PAYABLE		300,806.54

TOTAL LIABILITIES		307,701.97

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		8,312,948.24
UNDESIGNATED		4,108,941.03
DESIGNATED		48,828.05

		12,470,717.32

TOTAL LIABILITIES & FUND BALANCE	\$	12,778,419.29
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 OCWS & SDS-ROCHSTR HL 1988 EXT

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87435

REVENUES

INCOME FROM INVESTMENTS	\$	280,591.11
INTEREST - SUNDRY		73,500.00

TOTAL REVENUES		354,091.11

EXPENDITURES

SALARIES - REGULAR	112,519.66
FRINGE BENEFITS	63,188.24
INVESTMENT FEES	695.04
LEGAL EXPENSE	4,656.12
APPRAISAL FEES	8,000.00
CONTRACT ADMINISTRATION	12,138.30
CONTRACTED SERVICES	2,077,897.07
DESIGN FEES	85,622.59
INSPECTION	261,901.45
LAYOUT AND STAKING	45,787.09
PERSONAL MILEAGE	2,795.87
PHOTOCOPY EXPENSE	41.00
PURCHASE OF LAND & EASEMENT	2,552.00
RECORDING FEES	73.50
SOIL TEST BORINGS	22,766.36
MATERIAL & SUPPLIES	38.51
MICROFILM & REPRODUCTIONS	78.70
DRAIN EQUIPMENT	12,864.50

TOTAL EXPENDITURES	2,713,616.00

EXCESS (DEFICIENCY) OF REVENUES		
OVER EXPENDITURES		(2,359,524.89)

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$ (	2,359,524.89)
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 COSDS-WATERFORD EXT-PHASE VI

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87084

ASSETS

CASH	\$	24,467.29
INVESTMENTS		5,800,000.00
ACCRUED INTEREST RECEIVABLE		30,045.61
FIXED ASSETS		1,249,527.34

TOTAL ASSETS	\$	7,104,040.24
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	10,102.26
VOUCHERS PAYABLE		1,901.06

TOTAL LIABILITIES		12,003.32

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		1,249,527.34
UNDESIGNATED		3,982,580.03
DESIGNATED		1,859,929.55

		7,092,036.92

TOTAL LIABILITIES & FUND BALANCE	\$	7,104,040.24
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 COSDS-WATERFORD EXT-PHASE VI

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87084

REVENUES

INCOME FROM INVESTMENTS	\$	372,917.25

TOTAL REVENUES		372,917.25

EXPENDITURES

SALARIES - REGULAR	76,793.39
FRINGE BENEFITS	42,333.78
INVESTMENT FEES	721.66
LEGAL EXPENSE	17,198.26
APPRAISAL FEES	15,718.01
CONTRACTED SERVICES	10,194.17
DESIGN FEES	3,736.00
INSPECTION	8,431.82
LAYOUT AND STAKING	16,265.11
LICENSES AND PERMITS	6,046.24
PERSONAL MILEAGE	523.25
PHOTOCOPY EXPENSE	24.00
PUBLISHING LEGAL NOTICES	369.76
PURCHASE OF LAND & EASEMENT	26,777.00
RECORDING FEES	1,132.75
SOIL TEST BORINGS	1,304.54
MATERIAL & SUPPLIES	252.04
MICROFILM & REPRODUCTIONS	22.50
DRAIN EQUIPMENT	5,774.33
PROJECT CONST. & IMPROVEMENTS	608,619.00

TOTAL EXPENDITURES	842,237.61

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		----- (469,320.36) -----
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EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$ (469,320.36) =====
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OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 WATERFORD WATER SUP. SYS.EXT#9

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87150

ASSETS

CASH	\$	15,222.04
INVESTMENTS		250,000.00
ACCRUED INTEREST RECEIVABLE		111.11
FIXED ASSETS		532,422.21

TOTAL ASSETS	\$	797,755.36
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	492.18

TOTAL LIABILITIES		492.18

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		532,422.21
UNDESIGNATED		215,959.22
DESIGNATED		48,881.75

		797,263.18

CREDIT TO FUND BALANCE FROM OTHER FUNDS FROM RESERVE FUND		----- ----- -----
TOTAL LIABILITIES & FUND BALANCE	\$	797,755.36
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 WATERFORD WATER SUP. SYS. EXT#9

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87150

REVENUES

INCOME FROM INVESTMENTS	\$	17,477.97
PRINCIPAL FROM MUNICIPALITIES		650,000.00

TOTAL REVENUES		667,477.97

EXPENDITURES

SALARIES - REGULAR		5,707.49
FRINGE BENEFITS		3,403.82
INVESTMENT FEES		35.73
LAYOUT AND STAKING		11,926.33
PERSONAL MILEAGE		21.75
DRAIN EQUIPMENT		528.40
PROJECT CONST. & IMPROVEMENTS		477,053.25

TOTAL EXPENDITURES		498,676.77

EXCESS (DEFICIENCY) OF REVENUES OVER EXPENDITURES		168,801.20

EXCESS (DEFICIENCY) OF REVENUES AND OTHER SOURCES OVER EXPENDITURES AND OTHER USES	\$	168,801.20
		=====

APPROVED AND FORWARDED:

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 BALANCE SHEET
 WEST BLOOMFIELD WSS - SEC. XI

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87406

ASSETS

CASH	\$	32,385.39
INVESTMENTS		200,000.00
ACCRUED INTEREST RECEIVABLE		275.00
FIXED ASSETS		1,882,102.84

TOTAL ASSETS	\$	2,114,763.23
		=====

LIABILITIES

DUE TO OTHER FUNDS	\$	1,337.24

TOTAL LIABILITIES		1,337.24

FUND-BALANCE

INVESTMENT IN FIXED ASSETS		1,882,102.84
UNDESIGNATED		119,814.54
DESIGNATED		111,508.61

		2,113,425.99

TOTAL LIABILITIES & FUND BALANCE	\$	2,114,763.23
		=====

OAKLAND COUNTY
 ACT 342 CONSTRUCTION FUNDS
 STATEMENT OF REVENUE & EXPENDITURES
 WEST BLOOMFIELD WSS - SEC. XI

DECEMBER 31, 1991

CONSTRUCTION
 FUND NO
 87406

REVENUES

INCOME FROM INVESTMENTS	\$	9,722.90

TOTAL REVENUES		9,722.90

EXPENDITURES

SALARIES - REGULAR		11,071.97
FRINGE BENEFITS		6,565.57
INVESTMENT FEES		31.80
LEGAL EXPENSE		3,553.96
CONTRACTED SERVICES		168,491.39
PERSONAL MILEAGE		234.50
PUBLISHING LEGAL NOTICES		178.50
SOIL TEST BORINGS		215.25
MATERIAL & SUPPLIES		34.75
DRAIN EQUIPMENT		1,233.15

TOTAL EXPENDITURES		191,610.84

EXCESS (DEFICIENCY) OF REVENUES		-----
OVER EXPENDITURES	(	181,887.94)

OTHER FINANCING SOURCES(USES)

OPERATING TRANSFERS IN		232,362.00

TOTAL OTHER FINANCING SOURCES(USES)		232,362.00

EXCESS (DEFICIENCY) OF REVENUES		
AND OTHER SOURCES OVER	\$	50,474.06
EXPENDITURES AND OTHER USES		=====

OAKLAND COUNTY
LAKE LEVEL MAINTENANCE FUNDS
STATEMENT OF REVENUE & EXPENDITURES
BUNNY RUN DAM LAKE LEVEL

DECEMBER 31, 1991

MAINTENANCE
FUND NO
85674

REVENUES

INCOME FROM INVESTMENTS	\$	1,429.27
INTEREST & PENALTY		152.73
PRINCIPAL		121,308.23

TOTAL REVENUES		122,890.23

EXPENDITURES

SALARIES - REGULAR	7,365.34
FRINGE BENEFITS	4,247.78
CONTRACTED SERVICES	2,811.55
ELECTRICAL SERVICE	109.62
EQUIPMENT RENTAL	25.00
INSURANCE	845.35
TRANSPORTATION	125.75
FILM & PROCESSING	25.75
MAINTENANCE SUPPLIES	446.13
MAINTENANCE DEPARTMENT CHARGES	18.26
DRAIN EQUIPMENT	891.31
PROJECT CONST. & IMPROVEMENTS	62,724.31

TOTAL EXPENDITURES	79,636.15

EXCESS (DEFICIENCY) OF REVENUES		-----
OVER EXPENDITURES		43,254.08

EXCESS (DEFICIENCY) OF REVENUES		
AND OTHER SOURCES OVER	\$	43,254.08
EXPENDITURES AND OTHER USES		=====

OAKLAND COUNTY
LAKE LEVEL MAINTENANCE FUNDS
BALANCE SHEET
BUNNY RUN DAM LAKE LEVEL

DECEMBER 31, 1991

MAINTENANCE
FUND NO
85674

ASSETS

CASH	\$	6,855.38
INVESTMENTS		10,907.22
ASSESSMENTS RECEIVABLE		168,780.77

TOTAL ASSETS	\$	186,543.37
		=====

LIABILITIES

ADVANCES AND LOANS PAYABLE	\$	172,119.93
DUE TO OTHER FUNDS		2,356.64
DEFERRED INCOME		168,780.77

TOTAL LIABILITIES		343,257.34

FUND-BALANCE

UNDESIGNATED		(156,713.97)

TOTAL FUND BALANCE		(156,713.97)

TOTAL LIABILITIES & FUND BALANCE	\$	186,543.37
		=====

2240 (DEFICIT) OR EXCESS
BY SOURCE OF REVENUE