

METROPOLITAN SEWERAGE DISTRICT BOARD

SEPTEMBER 15, 1987

1. CALL TO ORDER AND ROLL CALL:

The regular monthly meeting of the Metropolitan Sewerage District Board was held in the Boardroom of MSD's Administration building at 2 p.m. on Tuesday, September 15, 1987. Vice-Chairman Williams called the meeting to order at 2:00 p.m.

Vice-Chairman Williams and the following members were present: Aceto, Batts, Boggs, Dent, Dyson, Edwards, Pope, and Waddey. Others present were: W. H. Mull, P.E., Engineer-Manager, John Stevens and Walter Currie, General Counsel to the District, Dean Huber, Bill Morris, and Dr. Lloyd Robinson, representatives of the Consulting Engineers, Bob Ensley, MSD Staff, William Anderson with Ti-Caro, Stew Fink with Champion Finishing, Inc., Philip Carson, Esquire, and Leah Karpen representing the League of Women Voters.

2. MINUTES OF AUGUST 18, 1987:

Mr. Edwards moved that the Board minutes of August 18, 1987, be approved as written. Mr. Ivey seconded the motion, and voice vote was unanimous in favor of the motion.

3. REPORT OF ENGINEER-MANAGER:

a. REQUEST TO ADVERTISE FOR BIDS FOR PICK-UP TRUCK FOR LABOR CREW:

Mr. Mull requested approval from the Board to advertise for bids for one (1) pick-up truck for the MSD Labor Crew. Mr. Mull stated that if approved, the existing 1975 Chevrolet pick-up truck would be traded in on the new truck. This was included in the budget as a replacement vehicle. Mr. Waddey moved that the Board authorize approval for the District to advertise for bids for a pick-up truck for the MSD Labor Crew. Mr. Dyson seconded, and voice vote was unanimous in favor of the motion.

b. RESULTS OF BID OPENING READVERTISEMENT - MAIN PLANT EXPANSION - PHASE III, SECTION 3A, 3B AND 3C:

Mr. Mull reviewed a letter with the Board from Hendon Engineering Associates regarding bids for Phase III of the Main Plant Expansion, received August 18 and September 3, 1987. Hendon recommends that the low bid received on September 3rd, for Section 3B be rejected due to the fact that Powell Construction did not currently have a valid North Carolina HVAC license. One bid was received on September 3rd for Section 3C, and it is recommended that this bid be rejected and readvertised. Mr. Currie stated that for Section 3 General Work and Section 3C Plumbing, the low bidder submitted a bond which is not in proper form. It is therefore recommended by General Counsel that the bids for Section 3, Section 3B and Section 3C be rejected and readvertised. The bid for Section 3A Electrical Equipment and Wiring is good, but the Board should not award this bid until the General Work has been awarded.

Mr. Ivey moved that the Board reject the bids for Section 3 General Work, Section 3B HVAC and Section 3C Plumbing, and authorize readvertisement. Mr. Batts seconded the motion, and roll call vote was unanimous in favor of the motion.

No action was taken on the bids for Section 3A Electrical.

c. RESULTS OF BID OPENING (AUGUST 20, 1987) - LAGOON:

Mr. Mull reported that the District advertised for bids on the above referenced project on August 10, 1987, with a bid opening date of August 20th, at 2:00 p.m. Three bids were received on this project. The apparent low bidder is Terry Brothers Construction Company in the amount of \$134,160. The

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other two bids received were from Taylor & Murphy Construction Company in the amount of \$134,740.00 and Hobson Construction Company in the amount of \$154,780.00. Mr. Mull stated he has written a letter to Terry Brothers Construction Company tentatively awarding them the contract, subject to approval of the plans and specifications by the North Carolina Department of Natural Resources and Community Development - Environmental Management Commission.

Mr. Dent moved that the District award the Sludge Storage and Dewatering Reservoir Modifications contract to Terry Brothers Construction Company in the amount of \$134,160, contingent upon approval of the plans and specifications by the North Carolina Department of Natural Resources and Community Development - Environmental Management Commission. Mr. Boggs seconded the motion and roll call vote was unanimous in favor of the motion.

d. STATUS OF COMPLIANCE MONITORING - MAIN PLANT:

Mr. Mull reported that the Wastewater Treatment Plant was out of compliance last month on two of its' NPDES Permit parameters, BOD and Fecal Coliform Bacteria. It is believed that the BOD noncompliance was due to a plant in the area processing peaches causing a high BOD in the wastewater. Industrial waste samples are being analyzed and prior data examined to verify this.

e. ANNUAL USER CHARGE REPORT:

Mr. Mull reported that the Sewer Service Charge Committee met on Monday, September 14, 1987, to review the Annual User Charge Report. Mrs. Pope made a recommendation to the Board from the Sewer Service Charge Committee that the proposed increases for 1987-88 be accepted. At this time Dean Huber reviewed the Annual User Charge Report with the Board. Lengthy discussion followed between the Board members and Mr. Philip Carson, Attorney, representing various industries in the area regarding sewer service charges. Mr. Carson's concern is that the industrial share of the costs of operating the District is too high.

Mr. Dent recommended that the Chairman appoint a Committee to review the methodology used to calculate user charges insofar as it pertains to the division of costs between domestic and industrial users, with the possibility of having a seminar with various industries, if they are interested in so doing, to see if the District's method of billing should be changed, or if the District's rate structure should be changed. Mr. Edwards seconded the motion and voice vote was unanimous in favor of the motion.

Mr. Ivey moved that the Board adopt the Annual User Charge Report for 1987-88 prepared by Hendon Engineering Associates, Inc. Mr. Dent seconded the motion and roll call vote was unanimous in favor of the motion. A copy of the report is attached herewith and made a part of these minutes.

f. RESOLUTION ADOPTING USER CHARGES:

Mr. Mull stated that the Resolution adopting User Charges has been modified to reflect the 20% debt service coverage requirements of the 1985 Bond Order rather than the 50% coverage required under the original Bond resolution.

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Mr. Dent moved that the Board adopt the User Charge Resolution which specifies Domestic rates of \$1.00 per CCF, with a minimum of \$3.00 per month, and Industrial rates as follows: Flow (Q) at \$0.224 per CCF, BOD at \$0.130 per pound, and SS at \$0.056 per pound, for Fiscal Year 1987-88. Mr. Boggs seconded the motion, and roll call vote was unanimous in favor of the motion. A copy of the Resolution is attached herewith and made a part of these minutes.

g. DRAFT OF PROPOSED REVISIONS TO SEWER USE ORDINANCE:

Dr. Lloyd Robinson reviewed the proposed changes to the MSD Sewer Use Ordinance with the Board. Mr. Stevens gave some background on the Sewer Use Ordinance, and what needs to be done to get the Ordinance changed.

Mrs. Pope moved that the Board adopt the Declaration of Intent to adopt a new Sewer Use Ordinance. Mr. Dent seconded, and roll call vote was unanimous in favor of the motion. The draft Ordinance will be distributed to all local governmental units for comment prior to actual adoption.

4. REPORT OF OFFICERS:

None.

5. REPORT OF COMMITTEES:

a. Hydro Committee - Mr. Dyson

(1) Concerns of French Broad Electric Membership Corporation Regarding Erratic River Flow:

Mr. Mull reported that letters have been received from the French Broad Electric Membership Corporation (FBEMC) concerning erratic river flows at its powerhouse. This past weekend the Hydro was down for its annual inspection by Voith Hydro, Inc. The District did notify the FBEMC and CP&L. While the Hydro was down, the computer program which controls the powerhouse was changed. Under the new method of operation, the units are set to come on and go off at 3" intervals, which is also adjusted to the crest of the dam so the water level will never get below the top of the dam. Hopefully, this will alleviate any problems at the plants down river.

(2) Bid Opening For Intake Screen Rake - September 1, 1987:

Mr. Mull stated that one bid was received on September 1 for the Intake Screen Rake from Acme Engineering Company in the amount of \$74,490.00. The bid is being reviewed by MSD General Counsel.

Subject to approval of General Counsel, the Hydro Committee recommends to the Board that the Board accept the bid of Acme Engineering Company in the amount of \$74,490.00.

Mr. Edwards moved that subject to approval of the General Counsel, the Board accept the bid of Acme Engineering Company in the amount of \$74,490. for the intake screen rake. Mr. Batts seconded the motion, and roll call vote was unanimous in favor of the motion.

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(3) Status of Fish Habitat Study:

Mr. Mull reported that the Fish Habitat Study (between the dam and the power house in the river) has been received from RMC Muddy Run, which recommends 100 CFS over the dam. The report has been sent to the U.S. Fish and Wildlife Service asking it to review and approve it. It will probably be another 6 weeks before the MSD can get a meeting set-up with the U.S. Fish and Wildlife Service. Mr. Mull stated he would keep the Board abreast of this matter.

(4) STATUS OF VOITH CONCERNS:

The District has not been able to obtain any information from Voith concerning final payment, and therefore have not been able to make final payment.

Mr. Mull stated the Hydro Committee will talk with Jim Brewer after the annual inspection by Voith, to see if the District needs to meet with the Hydro Committee towards making a recommendation concerning final payment.

b. Sewer System Consolidation Committee Report - Mr. Aceto:

Mr. Aceto reported that the County Commissioners and MSD Board held a work session on August 26, 1987, and the County's major concern was the ceiling for user charges. Mr. Stevens stated he has to work with the County Attorney concerning this.

Mr. Stevens stated that the City of Asheville scheduled a work session with their own consultants today concerning sewer consolidation, and would be contacting MSD regarding a joint work session after reviewing their consultants' (CH2M Hill) findings.

6. UNFINISHED BUSINESS:

None.

7. NEW BUSINESS:

Mr. Mull reported a letter had been received from Sandra Chapin, representing a group called Sediment Control, requesting that the District adopt a resolution requesting that the County Commissioners enforce the County's Erosion Control Ordinance. The Board feels this is out of MSD's jurisdiction.

Mr. Aceto moved that the Board take this matter into consideration at its October meeting. Mr. Ivey seconded, and voice vote carried unanimously in favor of the motion.

Mr. Dent recommended that the District compliment the Friends of the River concerning the 1987 Riverfest. The Board members agreed that this would be a good idea. Mr. Stevens stated he will develop a Resolution for this matter, and present it at the next Board meeting.

8. Date of Next Regular Meeting - October 20, 1987.

9. Adjournment:

There being no further business, Vice-Chairman Williams adjourned the meeting at 4:25 p.m.


SECRETARY

September 15, 1987

I, Charles M. Dent, Secretary to the District Board of the Metropolitan Sewerage District of Buncombe County, North Carolina, DO HEREBY CERTIFY that the attached copy is a true and correct copy of the RESOLUTION adopted by the Metropolitan Sewerage District Board at their regular meeting held September 15, 1987.

WITNESS my hand and seal of said District this 15th day of September, 1987.

Signed by



Secretary, Metropolitan Sewerage District

Board of Buncombe County

A RESOLUTION ADOPTING CHARGES
FOR THE DISCHARGE OF DOMESTIC
WASTEWATER AND INDUSTRIAL WASTES TO THE
SANITARY SEWERAGE SYSTEM OF THE
METROPOLITAN SEWERAGE DISTRICT OF
BUNCOMBE COUNTY

WHEREAS, the District Board of the Metropolitan Sewerage District of Buncombe County, North Carolina, has heretofore adopted a Resolution adopting charges for the discharge of domestic wastewater and industrial wastes to the sanitary sewerage system of the Metropolitan Sewerage District of Buncombe County on the 15th day of April, 1975, and has amended said Resolution from time to time to adjust user charges for domestic and industrial users of the sewerage system and, the District Board now desires to revise said Resolution; and

WHEREAS, the District Board of the Metropolitan Sewerage District of Buncombe County, North Carolina, has heretofore adopted on May 15, 1984, an Ordinance for the purpose of regulating and controlling the discharge of wastewaters into the sanitary sewerage system tributary to wastewater treatment facilities of the District; and

WHEREAS, the Ordinance provides, among other things, for the control metering and determination of the characteristics of industrial wastes discharged to the sanitary sewerage system and for the subsequent adoption of a schedule of charges and fees for wastewater disposal services; and

WHEREAS, the District Board desires to provide for the equitable sharing of costs between domestic users and industrial users and to establish separate charges for the discharge of domestic and industrial wastewaters;

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE DISTRICT BOARD OF THE METROPOLITAN SEWERAGE DISTRICT OF BUNCOMBE COUNTY, as follows:

Section 1. DOMESTIC WASTEWATER CHARGE

Sec. 1.1 General

The domestic wastewater charge shall be applicable to all residential, commercial, and institutional customers discharging wastes with no unusual characteristics and to industries whose discharge consists of wastes solely from sanitary conveniences.

Sec. 1.2 Adjustment of Charge

The domestic wastewater charge shall be subject to periodic adjustment in conjunction with the industrial wastewater charges, as necessary to maintain adequate revenues and to meet operation and maintenance expenses, as shown by the Annual Budget for the current fiscal year, and the principal and interest requirements on account of the revenue bonds then outstanding, and plus either one-fifth of the principal and interest requirements or such larger sum as set forth in the Annual Budget for capital expenditures from the General Fund.

The procedure for determining from time to time the domestic users' share of costs and the resulting domestic wastewater charges shall be as outlined in Section 2 for the establishment of the industrial wastewater charges.

Section 1.3 Domestic Wastewater Charge Established

The domestic wastewater charge is hereby established as \$1.00 per 100 cubic feet, effective on the first regular meter reading date for each user after the adopting of this Resolution.

There shall be a minimum charge of \$3.00 per month.

There shall be no discounts for increased quantity.

Section 2 INDUSTRIAL WASTEWATER CHARGES

Section 2.1 General

Industrial wastewater charges shall be applied to the following user categories:

A. Industrial User shall mean any nongovernmental user of publicly owned treatment works identified in the Standard Industrial Classification Manual, 1972, Office of Management and Budget, as amended and supplemented, under the following divisions:

- a) Division A - Agriculture,
Forestry, and Fishing
- b) Division B - Mining
- c) Division D - Manufacturing
- d) Division E - Transportation
Communication, Electric, Gas and Sanitary Services
- e) Division I - Services

A user in the Divisions listed may be excluded if it is determined that it will introduce into the system only segregated domestic wastes or wastes from sanitary conveniences.

B. Industrial User shall also mean any other industrial, commercial, or institutional user of the sanitary sewerage system and the District's treatment works who shall be so classified by the District by reason of the volume and/or characteristics of the wastes discharged or of the type, extent, and nature of the facilities used and required to provide service to such user.

Sec. 2.2 Charge Components

The billings to industrial users shall be based on separate charges for the following:

- A. Wastewater quantity (Q), per 100 cubic feet.
- B. Suspended solids (SS), per pound.
- C. Biochemical oxygen demand (BOD), per pound.

Sec. 2.3 Determination of Charges Annually

Sec. 2.31 The industrial wastewater charges shall be established annually based on the actual costs, as defined in Sec. 2.32, for the District's facilities for each preceding fiscal year. The charges so computed shall be the basis for estimating the monthly billings to each such customer for the following fiscal year. The charges collected shall be adjusted to actual costs at the end of each fiscal year and appropriate credits given against billings in the ensuing year, or additional billings made to each such customer, using the actual wastewater quantities and characteristics discharged by that customer during the preceding fiscal year as the basis for computing the adjusted charges.

The actual costs shall be determined as soon after the end of each fiscal year as possible; and, until such time, the charges for the current year shall be based on either the rates for the prior year or on estimated rates for the current year.

Sec. 2.32 The costs included in the computation of actual charges for the preceding fiscal year, or of estimated charges for an ensuing fiscal year, shall include the following:

- A. Operation and maintenance expenses.
- B. Interest and principal on outstanding bond issues.
- C. Coverage required by bond indentures on the debt service or such larger sum as set forth in the Annual Budget for capital expenditures from the General Fund.

Expenditures from the General Fund, using funds from prior years' deposits, are excluded from consideration in the industrial wastewater charges.

Section 2.4 Distribution of Costs and Computation of Unit Charges

Section 2.41 The total annual costs for the system shall recognize at least the following subdivisions:

- A. Lateral sewer systems (if such are operated and maintained by the District)

- B. Trunk and intercepting sewer systems
- C. Pumping stations
- D. Wastewater treatment plants
- E. Billing Costs
- F. General Administration
- G. Hydroelectric Facility

Section 2.42 The costs shall be distributed to fairly recognize the contribution to each subdivision of the following basic classifications of users:

- A. Industrial users, including:
 - a) Industrial users as defined in Federal Guidelines.
 - b) Other industrial, commercial, or institutional users with unusual waste characteristics.
- B. Domestic users, including all residential, institutional, and commercial users not included in A b) above.

Sec. 2.43 The cost distribution shall permit the establishment of realistic total annual costs to the two basic classes of users for the following functions or purposes:

- A. Conveyance of wastewater (Q)
- B. Removal of BOD
- C. Removal of SS

Costs not directly related to any of the foregoing functions, such as administration and billing and collection, shall be distributed among the several functions by such other parameters as will produce a reasonable apportionment of such costs to each user.

Sec. 2.44 The cost distribution shall distinguish between current operation and maintenance costs and non-operating expenditures including principal and interest and debt service coverage required on the bonds outstanding and any additional sums budgeted for deposit to the General Fund. The distribution of debt service and debt

service coverage to functions as set forth in Section 2.43 shall be in accordance with the application of the bond funds to the construction of the facilities having such functions. The distribution of additional sums budgeted for deposit to the General Fund may recognize, in addition, the application of monies from the General Fund for extensions and improvements to the District's facilities.

Sec. 2.45 The annual distribution shall be in accord with the general principles set forth in "Financing and Charges for Wastewater Systems," a joint committee report of the American Public Works Association, American Society of Civil Engineers and Water Pollution Control Federation, 1973, and shall be subject to approval of the Consulting Engineers. Summarized data showing the development of the annual charges shall be maintained by the District, and copies thereof shall be made available to all industrial users and others upon request.

Sec. 2.46 The industrial wastewater charges are established initially for FY 1984-1988 as follows:

For Quantity	\$____ per 100 cubic feet
For Characteristics	
BOD	\$____ per pound
Suspended Solids	\$____ per pound

The industrial wastewater charges shall become effective on the first regular meter reading date for each industrial user after July 1, 1987, or after any later date of written notice from the Engineer-Manager of classification as an industrial user.

Section 2.5 Classes of Industrial Users

The Engineer-Manager may establish classes of industrial users to whose wastewaters representative strengths are assigned. Such class wastewater characteristics may recognize analyses of representative users of each class in Buncombe County and/or typical data from other sources. To the extent practical, actual data for each industrial

user's wastewater shall be used. Any industrial user to whose wastewaters standard strength parameters have been applied may request analysis of its wastewater; and, upon determination of the characteristics on samples representative of the wastewater on not less than three working days, such characteristics shall be used in determining the charges until the wastewaters may again be sampled.

Section 2.6 Weighted Volume Charge

The Engineer-Manager may consolidate the component charges of the industrial wastewater charges into a single volume charge which includes the characteristic charges computed for a unit volume of 100 cubic feet. Such a weighted volume charge may be applicable to a class of users or to each user where its actual wastewater characteristics are known.

Section 2.7 Miscellaneous Provisions

Sec. 2.71 Industrial users exhibiting marked, seasonal load variations shall pay charges which recognize the dedication or reservation of capacity for the treatment of their seasonal peak operation loads and any unusual operation and maintenance costs directly related to such seasonal loads.

This provision shall apply only to those industrial users whose peak loads exceed 10 percent of any capacity parameter and are at least twice its off-season loads.

Section 4. SEVERABILITY

Sec. 4.01 If any section, clause, provision, or portion of this Resolution shall be held to be invalid or unconstitutional by any court of competent jurisdiction, such holding shall not affect any other section, clause provision, or portion of this Resolution.

Section 5. MAY BE AMENDED

Sec. 5.01 This Resolution may be amended from time to time, which amendments shall include, but need not be limited to, periodic adjustments to the domestic and industrial user charges, rates and fees.

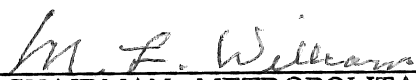
Sec. 5.02 ADOPTED THIS September 15, 1987.

RESOLUTION


The District Board of the Metropolitan Sewerage District of Buncombe County North Carolina does hereby adopt the following Declaration of Intent;

"RESOLVED, the District Board of the Metropolitan Sewerage District of Buncombe County, North Carolina, does hereby declare its intent to adopt an Ordinance to regulate and control the Sewerage System operated by the Metropolitan Sewerage District. This Declaration of Intent is made pursuant to North Carolina General Statutes, 162A-81(13a). A copy of the Ordinance which the District Board intends to adopt is attached to this Declaration of Intent."

Adopted this 15th day of September, 1987.



VICE-CHAIRMAN, METROPOLITAN SEWERAGE
DISTRICT BOARD OF BUNCOMBE COUNTY,
NORTH CAROLINA



SECRETARY, METROPOLITAN SEWERAGE
DISTRICT BOARD OF BUNCOMBE COUNTY,
NORTH CAROLINA



Hendon Engineering Associates

INCORPORATED

TELEPHONE (704) 274-7711

ADDRESS REPLY TO P. O. BOX 5176

25 REED STREET • ASHEVILLE, NORTH CAROLINA 28813

September 15, 1987

W. L. MORRIS, JR.
H. E. BYAS, JR.

HARRY H. HENDON
(1904-1973)
H. D. HUBER
P. L. BENTLEY
M. G. BUCKLEY, JR.
R. F. HOLBROOK

Mr. W. H. Mull, Engineer/Manager
Metropolitan Sewerage District
P. O. Box 8969
Asheville, North Carolina 28814

Subject: User Charge Analysis
Fiscal Year 1986-87

RECEIVED

SEP 15 1987

Metropolitan Sewerage District
of Buncombe County

Dear Mr. Mull:

Transmitted herewith is our report on the Industrial and Domestic User Charges for FY 1986-87 and proposed user charges for FY 1987-88.

Based on actual year end data and calculations presented in this report the user charges for last fiscal year (FY 1986-87) are summarized as follows:

INDUSTRY RATES

	<u>ADOPTED RATE</u>	<u>YEAR END</u>
		<u>CALCULATED ACTUALS</u>
Flow (Q)	\$ 0.180/CCF	\$ 0.1531/CCF
BOD	\$ 0.113/LB.	\$ 0.0937/LB.
SS	\$ 0.052/LB.	\$ 0.0353/LB.

DOMESTIC RATE

Flow (Q)	\$ 0.75/CCF	\$ 0.7334/CCF
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The adopted industry rates resulted, on average, in billings to industry of approximately \$200,000 more than the calculated industry share of the actual costs. It is recommended that rebates or credits be given to industry in the usual manner.

The estimated industry rates for FY 1987-88 based on the adopted budget, a larger debt service obligation, and assuming no changes in industry flow and waste loads, are summarized as follows:

INDUSTRY RATES

Flow (Q)	\$ 0.224/CCF
BOD	\$ 0.130/LB.
SS	\$ 0.056/LB.

Mr. W. H. Mull, Engineer/Manager
Metropolitan Sewerage District
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September 15, 1987

This report recommends adoption of the above industry rates for FY 1987-88 and made retroactive to July 1, 1987 as done in previous years.

The FY 1986-87 adopted domestic rate of 75¢ per CCF produced approximately \$47,908 more than the calculated domestic share of the actual costs. This amount, along with \$224,517 of excess domestic revenue from FY 1985-86, deferred to FY 1987-88 is taken into account in calculating the recommended domestic user charge rate for FY 1987-88.

The recommended domestic user charge rate for FY 1987-88 is \$1.00 per CCF, starting October 1, 1987.

To be consistent with previously adopted policy, this report recommends that the minimum bill be \$3.00 per month (3 CCF x \$1.00/CCF) starting October 1, 1987 and until the domestic rate is changed further.

We would like to express our appreciation for the fine assistance of your staff in the preparation of this report.

Very truly yours,

HENDON ENGINEERING ASSOCIATES, INC.

By



H. Dean Huber

HDH:b
Enclosure
R927USER.TAB(5)

cc: Local Government Commission
Trustee

SEWER USER CHARGE REPORT
(FISCAL YEAR 1986-87)

1.0 Introduction

In accordance with the Resolution Adopting Charges for the Discharge of Wastewater and Industrial Wastes to the Sanitary Sewerage System of the Metropolitan Sewerage District of Buncombe County ~~and the~~ Section 2.3, Determination of Charges Annually, this report is prepared for calculation of actuals for FY 1986-87 and for establishing recommendations for industry rates for FY 1987-88.

At the regular meeting of the Metropolitan Sewerage District (MSD) Board on May 17, 1983, the Board adopted a policy of setting the Domestic User Charge annually in a manner similar to the Industrial User Charges. This report provides the data and recommendations for Domestic Sewer User Rates.

2.0 User Charge Raw Data and Calculations

All of the analysis input and calculation tables are bound in the back of this report as Appendix A. At the beginning of Appendix A there is a description of the contents of each table in Appendix A.

3.0 Historical & Current Results of User Charge Calculations

A summary of the calculated actual industry charges for FY 1986-87 are as follows:

UNIT CHARGES TO INDUSTRY
ACTUALS - FY 1986-87

<u>Cost Parameter</u>	<u>Annual Discharge</u>	<u>Total Annual Cost Allocated To Industry</u>	<u>Unit Charges</u>
Flow (Q)	2,486,597/CCF	\$ 380,752	\$0.1531/CCF
BOD	5,472,324/LBS	512,894	0.0937/LB.
SS	1,876,440/LBS	<u>66,259</u>	0.0353/LB.
		\$ 959,905	

A summary of the estimated industry charges for FY 1987-88 are as follows:

UNIT CHARGES TO INDUSTRY
ESTIMATE - FY 1987-88

<u>Cost Parameter</u>	<u>Annual Discharge</u>	<u>Total Annual Cost Allocated To Industry</u>	<u>Unit Charges</u>
Flow (Q)	2,486,597/CCF	\$ 556,906	\$0.2240/CCF
BOD	5,472,324/LBS	712,527	0.1302/LB.
SS	1,876,440/LBS	<u>104,100</u>	0.0555/LB.
		\$1,373,533	

Table A Shows a summary of costs and revenue for FY 1986-87.

Table B shows a summary of projected costs for FY 1987-88 and the estimated rates necessary to produce revenue to meet these costs.

Table C shows the Industry unit charges from previous reports and the charges calculated in this report.

Table D shows Domestic users charge data from previous reports and the user charges calculated in this report.

Table E is a copy of a table from the official statement document for the Series 1986A Bond Issue that shows projected user charges through 1990.

4.0 Minimum User Charge

The District previously adopted a policy of increasing the minimum user charge based on the cost of 3 CCF flow at the current domestic rate. With the recommended new rate of \$1.00 per CCF, the minimum bill will be \$3.00.

Table A

User Charge Analysis
Metropolitan Sewerage District
FY 1986-87
(Actuals)

	<u>Total</u>	<u>Industry</u>	<u>Domestic</u>
O & M Costs (WWTP & Hydro)	\$1,272,409	\$ 244,653	\$1,027,756
Ind. Waste Monitoring	143,468	143,468	---
Debt Service (WWTP)	571,699	144,084	427,615
Debt Service (Hydro)	789,489	218,364	571,125
Debt Service Coverage	938,812	236,607	702,205
Less Revenue (Sale of Power)	<u>(98,596)</u>	<u>(27,271)</u>	<u>(71,325)</u>
	\$3,617,281	\$ 959,905	\$2,657,376
Billable Flow (CCF)		2,486,597	3,837,282
Calculated Average Rate (\$/CCF)		0.3860(2)	0.6925(1)
Sewer Rent Revenue	\$3,869,198(3)	\$1,163,915	\$2,705,284
Calculated Excess Revenue	\$ 251,917	\$ 204,010	\$ 47,908

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- (1) Fiscal Year Domestic Average (\$0.7334/CCF if adjusted to compare with adopted rate effective for 9 months of FY 1986-87)
- (2) Fiscal Year Industry Average
- (3) Actual cash revenue from sewer user charges plus industry rebates credited in FY 1986-87 for FY 1985-86 service.

Table B

User Charge Analysis
Metropolitan Sewerage District
FY 1987-88
(Projected)

	<u>Total</u>	<u>Industry</u>	<u>Domestic</u>
O & M Costs (WWTP & Hydro Budget)	\$1,418,364	\$ 272,622	\$1,145,741
Ind. Waste Monitoring	159,349	159,349	---
Debt Service (WWTP)	2,397,243	604,172	1,793,071
Debt Service (Hydro)	790,865	218,745	572,120
Debt Service Coverage	800,000	201,622	598,378
Less Revenue (Sale of Power)	<u>(300,000)</u>	<u>(82,977)</u>	<u>(217,023)</u>
	\$5,265,821	\$1,373,533	\$3,892,287
LESS EXCESS DOMESTIC COLLECTIONS (FY 1986-87)			47,908
			<u>224,517</u>
			\$3,619,862
Billable Flow (CCF) (2)		2,486,597	3,837,282
Calculated Average Rate (\$/CCF)		0.552	0.943
Proposed Domestic Rate (1)			\$1.00/CCF

(1) Adjusted to compensate for nine months at new rate and three months at \$0.75/CCF and rounded to the nearest cent.

(2) Billable flow projection is same as calculated actual for FY 1986-87.

Table C
Industrial User Charge Comparison

	Flow (\$/CCF)	BOD (\$/LB.)	SS (\$/LB.)
FY 1975-76 - Adopted Rate	0.090	0.041	0.021
Actual	0.078	0.048	0.030
FY 1976-77 - Adopted Rate	0.090	0.041	0.021
Actual	0.083	0.042	0.024
FY 1977-78 - Adopted Rate	0.090	0.049	0.027
Actual	0.1004	0.0485	0.0324
FY 1978-79 - Adopted Rate	0.105	0.055	0.036
Actual	0.0749	0.0513	0.0260
FY 1979-80 - Adopted Rate	0.084	0.059	0.030
Actual	0.0778	0.0510	0.0220
FY 1980-81 - Adopted Rate	0.082	0.056	0.024
Actual	0.0885	0.0523	0.0330
FY 1981-82 - Adopted Rate	0.102	0.063	0.038
Actual	0.1115	0.0728	0.0417
FY 1982-83 - Adopted Rate	0.090	0.064	0.035
Actual	0.0825	0.0624	0.0355
FY 1983-84 - Adopted Rate	0.092	0.071	0.040
Actual	0.0812	0.0566	0.0379
FY 1984-85 - Adopted Rate	0.089	0.063	0.042
Actual	0.1299	0.0500	0.0280
FY 1985-86 - Adopted Rate	0.123	0.074	0.037
Actual	0.1174	0.0698	0.0325
FY 1986-87 - Adopted Rate	0.180	0.113	0.052
Actual	0.1531	0.0937	0.0353
FY 1987-88 - Estimate(1)	0.224	0.130	0.056

(1) Based on FY 1987-88 Budget and FY 1986-87 Waste Loads and Flows

Table D
Domestic User Charge Rate Comparison

<u>MSD Fiscal Year</u>	<u>Domestic Billable Flow 100 Cu.Ft.</u>	<u>Cost Allo- cated to Domestic/User</u>	<u>Fiscal Year Average Rate Actual (\$/CCF)</u>	<u>Fiscal Year Average Rate Projected (\$/CCF)</u>	<u>Adopted Rate (\$/CCF)</u>
<u>FY 1975-76 (Actual)</u>	3,650,000	\$1,095,352	\$0.299		\$0.320
<u>FY 1976-77 (Actual)</u>	3,573,020	\$1,199,699	0.336	\$0.335	0.320
<u>FY 1977-78 (Actual)</u>	3,675,819	\$1,170,221	0.318	0.378	0.320
<u>FY 1978-79 (Actual)</u>	4,013,240	\$1,175,109	0.293	0.368	0.320
<u>FY 1979-80 (Actual)</u>	4,015,994	\$1,336,919	0.333	0.330	0.320
<u>FY 1980-81 (Actual)</u>	3,820,528	\$1,383,237	0.362	0.356	0.320
<u>FY 1981-82 (Actual)</u>	4,174,527	\$1,430,845	0.343	0.395	0.320
<u>FY 1982-83 (Actual)</u>	3,719,306	\$1,410,548	0.379	0.349	0.320
<u>FY 1983-84 (Actual)</u>	3,906,118	\$1,563,892	0.400	0.425	0.400
<u>FY 1984-85 (Actual)</u>	3,432,501	\$1,545,633	0.4671	0.454	0.460
<u>FY 1985-86 (Actual)</u>	4,152,579	\$1,836,702	0.4423	0.544	0.57(2)
<u>FY 1986-87 (Actual)</u>	3,837,282	\$2,657,376	0.6925	0.705	0.75(2)
<u>FY 1987-88 (Est.)(1)</u>	3,837,282	\$3,619,862		0.943	1.00(2)

(1) Based on FY 1987-88 O & M Budget - Allocated to User Groups at Same Ratio as Actuals for FY 1986-87.

(2) Rate Effective October 1. - Adjusted to compensate for 3 months of the fiscal year on previously adopted rate to produce the projected fiscal year average.

TABLE E

USER CHARGE HISTORY AND PROJECTIONS
(ASSUMING NO SEWER CONSOLIDATION)

	TOTAL O&M	DEBT SERVICE 1965 ISSUE AND SERIES 1985A BONDS	DEBT SERVICE SERIES 1986A BONDS AND FUTURE ISSUE	DEBT SERVICE COVERAGE AND CAPITAL IMPROVEMENTS (1)	TOTAL	LESS INCOME FROM POWER SALES	USER CHARGE INCOME REQUIRED	FROM INDUSTRY (\$)	%	INDUSTRY FLOW (CCF/YR)	AVERAGE RATE (\$/CCF)	FROM DOMESTIC (\$)	%	DOMESTIC FLOW (CCF/YR)	AVERAGE RATE (\$/CCF)
FY1979-80	942,735	430,385		653,451	2,026,571			367,973	23	1,944,459	.189	1,247,973	77	4,015,994	.320
FY1980-81	1,068,335	426,020		916,243	2,410,598			458,957	28	2,170,016	.211	1,161,523	72	3,820,528	.320
FY1981-82	1,138,408	438,345		1,221,158	2,797,911			658,476	37	2,420,953	.272	1,120,101	63	4,174,527	.320
FY1982-83	1,307,518	345,678		1,006,424	2,659,620			577,448	34	2,460,175	.235	1,126,242	66	3,719,306	.320
FY1983-84	1,342,252	401,460		1,241,020	2,984,732			514,608	26	2,151,672	.239	1,474,879	74	3,906,118	.400
FY1984-85	1,366,264	451,700		1,475,561	3,293,525			598,036	27	2,235,712	.267	1,618,908	73	3,432,501	.460
FY1985-86	1,575,177	500,000		1,395,500	3,470,677		3,470,677	724,623	28	2,289,000	.317	2,746,054	72	3,846,000	.570
FY1986-87	1,445,985	1,361,188		600,000	3,407,173	410,400	2,996,773	749,193	27	2,335,000	.321	2,247,580	73	3,885,000	.579
FY1987-88 ⁽²⁾	1,468,700	1,363,560	1,870,000	800,000	5,502,260	251,700	5,250,560	1,312,640	27	2,381,000	.551	3,937,920	73	3,923,000	1.004
FY1988-89	1,511,400	1,365,005	1,870,000	800,000	5,546,405	289,500	5,256,905	1,314,226	27	2,429,000	.541	3,942,679	73	3,963,000	.995
FY1989-90 ⁽³⁾	1,549,400	1,362,162	2,130,000	900,000	5,941,562	319,700	5,621,862	1,405,466	27	2,478,000	.567	4,216,397	73	4,002,000	1.054
FY1990-91	1,640,900	1,364,113	2,130,000	900,000	6,035,013	307,600	5,727,413	1,431,853	27	2,527,000	.567	4,295,560	73	4,042,000	1.063

(1) Includes miscellaneous and interest income through FY 1985-86

(2) Assumes the issuance of \$21,000,000 in aggregate principal amount of Series 1986A Bonds bearing interest at an average annual rate of 8.00% with interest capitalized through July 1, 1987 and the first principal payment due on serial bonds on July 1, 1988

(3) Assumes the issuance of \$3,000,000 in aggregate principal amount of additional bonds bearing interest at an average annual rate of 8.00% with interest capitalized through July 1, 1989 and the first principal payment due on serial bonds on July 1, 1990

APPENDIX A

TABLE 1 - SYSTEM LOADS

This table shows the total system loads in terms of Flow, BOD, and Suspended Solids (SS) as received and treated by the MSD treatment plants. This data is taken from plant operating records during the last complete fiscal year.

TABLE 2 - INDUSTRY LOADS

This table shows the total waste loads in terms of Flow, BOD, and SS received from industry for treatment by the MSD plants. This data is taken from MSD industrial billing records during the last complete fiscal year.

TABLE 3 - DISTRIBUTION OF O & M COSTS

This table shows how the last completed fiscal years total Operation and Maintenance (O & M) cost was expended by line item account and by Flow, BOD, SS, Customers, and Industrial Waste Monitoring (IWM). The total line item costs should be consistent with the fiscal year audit report. The distributions among Flow, BOD, SS, Customers and IWM is from a special accounting system maintained by MSD during the year that allocates all costs as they are incurred. The table also shows the current adopted O & M Budget with the projected distribution to Flow, BOD, SS, Customers and IWM. This distribution is based on the previous year actual percentage distribution. (Adjustments were made to take into account the fact that decreases in purchased power (Account Number 530) has no effect on the customer and industrial waste monitoring parameters.)

TABLE 4 - INPUT PARAMETERS

From Tables 1, 2, & 3 and other basic data a complete list of parameters are summarized. This is a complete listing of the raw data necessary to calculate user charges in accordance with the MSD adopted procedures. (ACTUALS FOR LAST COMPLETED FISCAL YEAR)

TABLE 5 - ALLOCATION OF LOADS TO USER GROUPS

This table shows the percentage use of the treatment system parameters between Industry customers and Domestic customers during the most recent completed fiscal year plus four years of historical data.

TABLE 6 - DISTRIBUTION OF TOTAL ANNUAL COSTS

This table divides all costs between the two user groups (Industrial & Domestic) by parameters Flow, BOD, SS, and Customers. (ACTUALS FOR LAST COMPLETED FISCAL YEAR)

TABLE 7 - UNIT COST DISTRIBUTION OF ANNUAL COSTS

This table divides costs, which were previously divided among parameters and user groups (Table 6), by annual quantities which results in the unit user charges. (ACTUALS FOR LAST COMPLETED FISCAL YEAR)

TABLE 8 - INPUT PARAMETERS

This table is a revised version of Table 4 showing input parameters for calculation of projected user charges for the current fiscal year. Usually, the only parameter changes are the current adopted O & M budget and the debt service requirement for the current fiscal year. Unless unusual circumstances dictate all other parameters are assumed unchanged. (ESTIMATES FOR CURRENT FISCAL YEAR)

TABLE 9 - DISTRIBUTION OF TOTAL ANNUAL COSTS

Same as Table 6 except calculations are based on Table 8 input parameters.
(ESTIMATES FOR CURRENT FISCAL YEAR)

TABLE 10 - UNIT COST DISTRIBUTION OF ANNUAL COSTS

Same as Table 7 except calculations are based on Table 8 input parameters.
(ESTIMATES FOR CURRENT FISCAL YEAR)

TABLE 11 - SERIES 1985 BOND ISSUE SCHEDULE \$14,420,000

This table is provided to show the schedule of principal and interest payments for the Series 1985 Bond Issue and the allocation between the Hydro Project and the Wastewater Treatment Plant Expansion.

TABLE 11A - SERIES 1986 BOND ISSUE SCHEDULE \$20,700,000

This table is provided to show the schedule of principal and interest payments for the Series 1986 Bond Issue.

TABLE 12 - DISTRIBUTION OF CAPITAL PROGRAM COST TO PARAMETERS

This table takes the MSD capital program cost estimate and allocates these costs to Parameters Flow, BOD, SS, Customers, and Industrial Waste Monitoring (IWM) for the purpose of allocating the present debt service and debt service coverage to the billable parameters.

RPT23/Y5

TABLE 1 - SYSTEM LOADS - (FROM PLANT OPERATING RECORDS)
 YEAR: FY 1986-87
 File: A927-86-87

METROPOLITAN PLANT					
MONTH	Q (MGD)	BOD (MG/L)	BOD (LBS/DAY)	SS (MG/L)	SS (LBS/DAY)
JULY, 1986	22.1	287	52,898	332	61,192
AUGUST	23.3	332	64,515	461	89,582
SEPTEMBER	23.4	332	64,792	411	80,209
OCTOBER	24.1	307	61,705	392	78,790
NOVEMBER	25.0	217	45,245	214	44,619
DECEMBER	26.3	225	49,352	243	53,300
JANUARY, 1987	25.9	196	42,337	211	45,577
FEBRUARY	27.3	200	45,536	258	58,742
MARCH	25.6	183	39,071	215	45,903
APRIL	29.7	170	42,109	227	56,227
MAY	26.2	234	51,131	232	50,694
JUNE	26.5	210	46,412	223	49,285
TOTAL	305.4	2893	605,103	3419	714,122
AVERAGE	25.45	241	50,425	285	59,510
ADJUSTED AVERAGE	25.45	241	50,425	285	59,510

YEAR TOTALS

FLOW (CCF)	12,385,667
BOD (LBS)	18,405,125
SS (LBS)	21,721,150

NOTE: Q is Flow or Quantity
 SS is Suspended Solids
 BOD is Biochemical Oxygen Demand

TABLE 2 - INDUSTRY LOADS (FROM INDUSTRIAL BILLING RECORDS)
YEAR: FY 1986-87

INDUSTRY NAME =====	TOTAL ANNUAL QUANTITIES				ANNUAL AVERAGE QUANTITIES					
	Q (100 Cu.Ft.)	Q (M.G.)	BOD (LBS.)	SS (LBS.)	Q (MGD)	BOD (Mg./L)	BOD (LB./Day)	SS (Mg./L)	SS (LB./Day)	
Arcadia Dairy	3,325	2.494	16,882	3,005	::	.007	812	46	144	8
Ash. By-Prod.	47,314	35.486	142,358	67,529	::	.097	481	390	228	185
Arden Electropl.	877	.658	329	247	::	.002	60	1	45	1
Ashville Indus.	1,502	1.127	3,688	3,636	::	.003	393	10	387	10
Asheville Metal	18,478	13.859	4,277	10,518	::	.038	37	12	91	29
Ball Corporation	38,059	28.544	16,755	30,728	::	.078	70	46	129	84
Beacon Mfg. Corp.	113,376	85.032	116,363	31,312	::	.233	164	319	44	86
Belton Corp.	75	.056	41	22	::		87		47	
Biltmore Dairy	2,368	1.776	3,896	3,199	::	.005	263	11	216	9
Blue Ridge Plat.	366	.275	254	257	::	.001	111	1	112	1
CTS of Asheville	1,523	1.142	905	924	::	.003	95	2	97	3
Champion Finish.	347,905	260.929	785,203	200,585	::	.715	361	2,151	92	550
Chemtronics	25,220	18.915	47,712	3,386	::	.052	302	131	21	9
Dia Compe	51	.038	191	311	::		599	1	975	1
Dotson Metal	16,812	12.609	841	2,524	::	.035	8	2	24	7
Eaton Corp.	10,309	7.732	7,377	5,942	::	.021	114	20	92	16
Eaton-Marshall	6,166	4.625	9,465	8,510	::	.013	245	26	221	23
Estate Wine	81	.061	305	49	::		602	1	97	
Flynt Knit	356,295	267.221	418,263	190,312	::	.732	188	1,146	85	521
G & H Industries	1,477	1.108	50,817	3,990	::	.003	5,500	139	432	11
Gerber Products	110,785	83.089	639,003	307,569	::	.228	922	1,751	444	843
Girmes of America	129,277	96.958	164,979	72,941	::	.266	204	452	90	200
Memorial Mission	72,968	54.726	77,591	42,903	::	.150	170	213	94	118
Milkco	35,141	26.356	352,877	82,038	::	.072	1,605	967	373	225
Mountain Rug Mill	1,397	1.048	473	151	::	.003	54	1	17	
National Linen	23,377	17.533	95,606	56,228	::	.048	654	262	385	154
Owen Mfg. Co.	115,641	86.731	313,529	29,235	::	.238	433	859	40	80
Rheem Mfg. Co.	2,754	2.066	2,430	2,253	::	.006	141	7	131	6
Royal Crown	8,140	6.105	40,733	5,092	::	.017	800	112	100	14
St. Joseph	41,119	30.839	72,947	56,422	::	.084	284	200	219	155
Sayles Bleach.	443,414	332.561	1,329,609	301,546	::	.911	479	3,643	109	826
Schwitzer	4,675	3.506	17,096	9,776	::	.010	585	47	334	27
Seven-Up	1,058	.794	5,294	662	::	.002	800	15	100	2
Singer Kearfott	22,827	17.120	43,760	53,534	::	.047	306	120	375	147
Southern Railway	2,660	1.995	732	582	::	.005	44	2	35	2
Square D Co.	45,361	34.021	13,370	9,543	::	.093	47	37	34	26
Steelcase	3,343	2.507	3,854	1,617	::	.007	184	11	77	4
Strawberry Hill	1,685	1.264	2,473	878	::	.003	235	7	83	2
Swannonoa Laundry	7,848	5.886	18,843	6,590	::	.016	384	52	134	18
Taylor Sybron	16,154	12.116	18,501	36,019	::	.033	183	51	356	99
Uniform Rental	6,703	5.027	14,455	13,873	::	.014	345	40	331	38
VA Medical Center	78,193	58.645	110,600	96,063	::	.161	226	303	196	263
WNC Center BlkMtn	20,542	15.407	23,407	18,157	::	.042	182	64	141	50
Wilson Plastics	9,414	7.061	16,770	24,020	::	.019	285	46	408	66
Winston Dyeing	290,542	217.907	467,470	81,762	::	.597	257	1,281	45	224
TOTALS	2,486,597	1,864.948	5,472,324	1,876,440		5.109		14,993		5,141
DAILY AVG.	6,813	5.109	14,993	5,141						

TABLE 3 - DISTRIBUTION OF O & M COSTS
 YEAR: FY 1986-87 (ACTUAL)
 FY 1987-88 (BUDGET)

ACCT. NO.	ACCOUNT NAME	TOTAL COSTS	FLOW Q	BOD	SS	CUSTOMERS	IND. WASTE MONITORING

ADMINISTRATION							
200	Admin. Salaries	146,855.52					
210	Billing & Collection	56,736.90					
220	T & T	7,935.72					
230	Travel & Conventions	4,293.74					
240	Office Supplies	5,830.49					
251	Power and Water	3,929.64					
260	Director Expense	10,655.00					
270	Insurance	68,288.04					
280	Dues & Subscription	1,709.50					
290	Accounting	5,685.82					
300	Consulting Engineers	12,546.78					
310	Legal	21,311.01					
320	Trustee Fee						
330	Auditor	5,000.00					
340	Postage & Cash	2,475.48					
350	Repairs	674.12					
360	Social Security	35,985.78					
370	Retirement	47,404.86					
380	Vehicle Expense	4,800.00					
390	Capital	6,695.31					
400	Contingency	10,570.56					
SUB-TOTAL		459,384.27					

PLANT OPERATIONS							
500	Salaries	416,924.21					
510	Chemicals	47,861.69					
520	T & T	7,639.12					
530	Power & Lights	300,840.65					
540	Maintenance Supplies	11,188.99					
550	Water & Garbage	6,616.82					
560	Vehicle Expense	6,877.00					
571	Lab Supplies	6,483.10					
580	Uniform Service	3,045.67					
591	Schools	1,943.03					
600	B & G Maintenance	15,426.60					
610	Pipe & Line Maint.	9,253.36					
620	Maintenance Equip.	46,627.85					
630	Capital	18,507.37					
640	Equip.Replacement	57,257.08					
650	Contingency						
SUB-TOTAL		956,492.54					
ADMINISTRATIVE		459,384.27					

TOTAL O & M COST (FY1986-87)		1,415,876.81	383,659.92	383,796.64	181,005.95	323,946.39	143,467.91

PERCENT DISTRIBUTION (FY1986-87)			27.1	27.1	12.8	22.9	10.1

BUDGET DISTRIBUTION (FY87-88)		1,577,713.00	427,560.00	427,560.00	201,947.00	361,296.00	159,349.00

EACH EXPENDITURE WITHIN EACH BUDGET LINE ITEM IS
 DISTRIBUTED TO THE APPROPRIATE PARAMETER BY MSD STAFF
 AS EACH EXPENDITURE IS RECORDED EACH MONTH.
 (BOTTOM LINE ONLY IS SHOWN)

TABLE 4 - INPUT PARAMETERS (Page 1 of 2)
YEAR: FY 1986-87

SYSTEM LOADS					
Flow (Q) - Year average		25.45			
Total Flow for Year (CCF)		12,385,667			
BOD Yearly average		50,425			
Total BOD for year (lbs.)		18,405,125			
SS Yearly average		59,510			
Total SS for year (lbs.)		21,721,150			
Customers (average no.)	**	32,050			
INDUSTRIAL LOADS		TOTAL	PER DAY		
Flow including infiltration (CCF)					
Flow billable (CCF)		2,486,597			
BOD for year (lbs.)		5,472,324	14,993		
SS for year (lbs.)		1,876,440	5,141		
Customers (average no.)	**	45			
DOMESTIC LOADS					
Flow including infiltration (CCF)					
Flow billable (CCF)		3,837,282			
BOD for year Total minus industry (lbs.)		12,932,801			
SS for year Total minus industry (lbs.)		19,844,710			
Customers Total minus industry (average no.)		32,005			
TOTAL BILLABLE LOADS					
Flow - excluding infiltration (CCF)		6,323,879			
BOD - Ind. load plus domestic loads (lbs.)		18,405,125			
SS - Ind. load plus domestic loads (lbs.)		21,721,150			
ALLOCATIONS TO USER GROUPS					
		Q (%)	BOD (%)	SS (%)	Customers (%)
Domestic		70.14	70.27	91.36	99.9
Industry		29.86	29.73	8.64	.1
Total		100.0	100.0	100.0	100.0
INDUSTRY INCOME DISTRIBUTION					
Quantities (CCF)(lbs)(lbs)		2,486,597	5,472,324	1,876,440	TOTAL
User charge (\$/CCF)(\$/lb)(\$/lb.)	**	.180	.113	.052	
Calculated Revenue from gross qtys. (\$)		447,587.46	618,372.61	97,574.88	1,163,534.95
Percent distribution		38.47	53.15	8.39	100.00
O & M DISTRIBUTION					
		ACTUAL	EST. NEXT FY		
Total O & M cost		1,415,876.81	1,577,713.00		
Flow		383,659.92	427,560.00		
BOD		383,796.64	427,560.00		
Suspended solids		181,005.95	201,947.00		
Customers		323,946.39	361,296.00		
Industrial waste monitoring		143,467.91	159,349.00		
NON-BILLABLE FLOW					
Total Non-Billable Flow (MGD)		12.46			
Domestic Non-Billable Flow (MGD) (80%)		9.96			
Industry Non-Billable Flow (MGD) (20%)		2.49			

TABLE 4 - INPUT PARAMETERS (Page 2 of 2)
 YEAR: FY1986-87

DEBT SERVICE COST DISTRIBUTION (WWTP)			%
Total debt service (\$)	**	571,699.00	100.0
Flow (\$)		177,226.69	31.0
BOD (\$)		245,830.57	43.0
Suspended Solids (\$)		142,924.75	25.0
Customers (\$)		.0	.0
Industrial Waste Monitoring (\$)		5,717.0	1.0
DEBT SERVICE COST DISTRIBUTION (HYDRO)			
Total debt service (\$)	**	789,489.00	100.0
Flow (\$)		213,162.03	27.0
BOD (\$)		497,378.07	63.0
Suspended Solids (\$)		78,948.90	10.0
Customers (\$)		.0	.0
Industrial Waste Monitoring (\$)		.0	.0
DEBT COV. & SCH. CAPITAL IMPROVEMENTS			
Total (\$)	**	938,812.00	100.0
Flow (\$)		291,031.72	31.0
BOD (\$)		403,689.16	43.0
Suspended Solids (\$)		234,703.00	25.0
Customers (\$)		.0	.0
Industrial Waste Monitoring (\$)		9,388.1	1.0
REVENUE DATA			
Total sewer rents revenue (\$)	**	3,827,990.00	
Industry billings (\$)	**	1,163,915.00	
Rebate / (Surcharge) (\$)	**	41,208.95	
Domestic waste income (\$)		2,705,283.95	
Domestic user charge rate (\$/CCF)(Yr.Avg.)	**	.7050	Actual rate \$.75 starting Oct.1,1986, average rate for year \$.7050/CCF
Domestic billable flow (CCF)		3,837,282	
Domestic billable flow (MGD)		7.88	
Income From Power Sales	**	98,595.70	3 Mo. @ \$.57 AND 9 Mo. @ \$.75 = \$.7050 Fiscal Year Average
FLOW (Q), AVERAGE INDUSTRY FLOW (MGD)		5.109	

TABLE 5 - ALLOCATION OF LOADS TO USER GROUPS

	AVERAGE ANNUAL QUANTITIES						PERCENT 1986-87
	1982-83 (ACTUAL)	1983-84 (ACTUAL)	1984-85 (ACTUAL)	1985-86 (ACTUAL)	1986-87 (ACTUAL)	1987-88 (ESTIMATE)	
FLOW - MGD							
DOMESTIC BILLABLE	7.64	8.03	7.05	8.53	7.88		
DOMESTIC NON-BILLABLE	11.84	13.54	9.89	8.52	9.96		
TOTAL DOMESTIC	19.48	21.57	16.94	17.05	17.85	SAME	70.14
INDUSTRY BILLABLE	5.06	4.42	4.59	4.81	5.11		
INDUSTRY NON-BILLABLE			2.48	2.13	2.49		
TOTAL INDUSTRY	5.06	4.42	7.07	6.95	7.60		29.86
GRAND TOTAL	24.54	25.99	24.01	24.00	25.45		100.00
BOD - LBS. PER DAY							
DOMESTIC	14,895	21,901	29,636	31,159	35,432	SAME	70.27
INDUSTRY	13,183	13,217	14,410	13,841	14,993		29.73
TOTAL	28,078	35,118	44,046	45,000	50,425		100.00
SS - LBS. PER DAY							
DOMESTIC	28,148	32,327	43,776	45,752	54,369	SAME	91.36
INDUSTRY	5,703	4,817	4,380	4,248	5,141		8.64
TOTAL	33,851	37,144	48,156	50,000	59,510		100.00
CUSTOMERS							
DOMESTIC							99.90
INDUSTRY						NO SIGNIFICANT	.10
TOTAL						CHANGE	100.00

(1) Minor discrepancies are due to computer rounding.

TABLE 6 - DISTRIBUTION OF TOTAL ANNUAL COSTS TO BILLING PARAMETERS
YEAR: FY 1986-87

	FLOW (Q) (Dollars)	BOD (Dollars)	SS (Dollars)	CUSTOMERS (Dollars)	IND. WASTE MONITORING (Dollars)	TOTALS (Dollars)
ALLOCATION TO PARAMETERS						
O & M (WWTP & Hydro)	383,660	383,797	181,006	323,946		1,272,409
Industrial Waste Monitoring					143,468	143,468
Debt Service (WWTP)	177,227	245,831	142,925		5,717	571,699
Debt Service (Hydro)	213,162	497,378	78,949			789,489
Debt Coverage & Scheduled Capital Improvements	291,032	403,689	234,703		9,388	938,812
Less Revenue(Sale of Power) (	26,621) (	62,115) (	9,860)			(98,596)
Total	1,038,460	1,468,579	627,723	323,946	158,573	3,617,281
ALLOCATION TO USER GROUPS						
O & M (WWTP & Hydro)						
Domestic	269,081	269,684	165,369	323,622		1,027,756
Industry	114,579	114,113	15,637	324		244,653
Total	383,660	383,797	181,006	323,946		1,272,409
Industrial Waste Monitoring						
Industry	55,189	76,247	12,031			143,468
Debt Service (WWTP)						
Domestic	124,298	172,739	130,578			427,615
Industry	52,928	73,092	12,347		5,717	144,084
Total	177,227	245,831	142,925		5,717	571,699
Debt Service (Hydro)						
Domestic	149,502	349,495	72,129			571,125
Industry	63,660	147,883	6,820			218,364
Total	213,162	497,378	78,949			789,489
Debt Coverage & Scheduled Capital Improvements						
Domestic	204,116	283,662	214,428			702,205
Industry	86,916	120,027	20,275		9,388	236,607
Total	291,032	403,689	234,703		9,388	938,812
LESS POWER SALES REVENUE						
Domestic	(18,671) (	43,647) (	9,008)			(71,325)
Industry	(7,950) (	18,468) (	852)			(27,271)
Total	(26,621) (	62,115) (	9,860)			(98,596)
TOTAL ANNUAL						
Domestic	728,326	1,031,932	573,495	323,622		2,657,376
Industry	365,323	512,894	66,259	324	15,105	959,905
Total	1,093,649	1,544,827	639,754	323,946	15,105	3,617,281

TABLE 7 - UNIT COST DISTRIBUTION OF ANNUAL COSTS & RESULTING USER CHARGE RATES
YEAR: FY 1986-87

	FLOW CCF/YR	BOD Lbs/YR.	S.SOLIDS Lbs/YR.	CUSTOMERS	

Annual Loads at Treatment Plant					
Domestic	8,686,712	12,932,801	19,844,710	32,005	
Industry	3,698,954	5,472,324	1,876,440	45	
Total	12,385,667	18,405,125	21,721,150	32,050	

Unit Costs - Gross Quantities (2)					TOTAL
Domestic	.08384	.07979	.02890	10.11162	.30591
Industry	.10294	.09373	.03531	7.19881	.25951
Total	.08952	.08393	.02945	10.10753	.29205

Unit Costs - Billable Quantities					
Domestic	.27414	.07979	.02890		.69252
Industry	.15312	.09373	.03531		.38603
Total	.22655	.08393	.02945		.57200

ANNUAL QUANTITIES SUMMARY

		INDUSTRY	USER CHARGE
Total Domestic Flow- Includes infiltration (CCF)	8,686,712	-----	=====
Total Industry Flow - Includes Infiltration(CCF)	3,698,954		
Domestic Billable Flow (CCF)	3,837,282	FLOW (\$/CCF)	.1531
Industry Billable Flow (CCF)	2,486,597		
Total Billable Flow (CCF)	6,323,879	BOD (\$/lb.)	.0937
BOD - Industry (lbs)	5,472,324		
BOD - Domestic (lbs)	12,932,801	SS (\$/lb.)	.0353
BOD - Total (lbs)	18,405,125		
Suspended solids (SS) - Industry (lbs)	1,876,440	DOMESTIC	
Suspended solids (SS) - Domestic (lbs)	19,844,710	-----	
Suspended solids (SS) - Total (lbs)	21,721,150	RATE (\$/CCF)	.6925
Customers - Industry	45	(Fiscal Year Average)	
Customers - Domestic	32,005		

TABLE 8 - INPUT PARAMETERS (Page 1 of 2)
 YEAR: FY 1987-88 PROJECTED

SYSTEM LOADS					
Flow (Q) - Year average		25.45			
Total Flow for Year (CCF)		12,385,667			
BOD Yearly average		50,425			
Total BOD for year (lbs.)		18,405,125			
SS Yearly average		59,510			
Total SS for year (lbs.)		21,721,150			
Customers (average no.)	**	32,050			
INDUSTRIAL LOADS					
		TOTAL	PER DAY		
Flow including infiltration (CCF)					
Flow billable (CCF)		2,486,597			
BOD for year (lbs.)		5,472,324	14,993		
SS for year (lbs.)		1,876,440	5,141		
Customers (average no.)	**	45			
DOMESTIC LOADS					
Flow including infiltration (CCF)					
Flow billable (CCF)		3,837,282			
BOD for year Total minus industry (lbs.)		12,932,801			
SS for year Total minus industry (lbs.)		19,844,710			
Customers Total minus industry (average no.)		32,005			
TOTAL BILLABLE LOADS					
Flow - excluding infiltration (CCF)		6,323,879			
BOD - Ind. load plus domestic loads (lbs.)		18,405,125			
SS - Ind. load plus domestic loads (lbs.)		21,721,150			
ALLOCATIONS TO USER GROUPS					
		Q (%)	BOD (%)	SS (%)	Customers (%)
Domestic		70.14	70.27	91.36	99.9
Industry		29.86	29.73	8.64	.1
Total		100.0	100.0	100.0	100.0
INDUSTRY INCOME DISTRIBUTION					
					TOTAL
Quantities (CCF)(lbs)(lbs)	**	2,486,597	5,472,324	1,876,440	
User charge (\$/CCF)(\$/lb)(\$/lb.)	**	.180	.113	.052	
Calculated Revenue from gross qtys. (\$)		447,587.46	618,372.61	97,574.88	1,163,534.95
Percent distribution		38.47	53.15	8.39	100.00
O & M DISTRIBUTION					
		BUDGET			
Total O & M cost		1,577,713.00			
Flow		427,560.00			
BOD		427,560.00			
Suspended solids		201,947.00			
Customers		361,296.00			
Industrial waste monitoring		159,349.00			
NON-BILLABLE FLOW					
Total Non-Billable Flow (MGD)		12.46			
Domestic Non-Billable Flow (MGD) (80%)		9.96			
Industry Non-Billable Flow (MGD) (20%)		2.49			

DEBT SERVICE COST DISTRIBUTION (WWTP)		
Total debt service (\$)	** 2,397,243.00	100.0
Flow (\$)	743,145.33	31.0
BOD (\$)	1,030,814.49	43.0
Suspended Solids (\$)	599,310.75	25.0
Customers (\$)	.0	.0
Industrial Waste Monitoring (\$)	23,972.4	1.0
DEBT SERVICE COST DISTRIBUTION (HYDRO)		
Total debt service (\$)	** 790,865.00	100.0
Flow (\$)	213,533.55	27.0
BOD (\$)	498,244.95	63.0
Suspended Solids (\$)	79,086.50	10.0
Customers (\$)	.0	.0
Industrial Waste Monitoring (\$)	.0	.0
DEBT COV. & SCH. CAPITAL IMPROVEMENTS		
Total (\$)	** 800,000.00	100.0
Flow (\$)	248,000.00	31.0
BOD (\$)	344,000.00	43.0
Suspended Solids (\$)	200,000.00	25.0
Customers (\$)	.0	.0
Industrial Waste Monitoring (\$)	8,000.0	1.0
REVENUE DATA		
Total sewer rents revenue (\$)	** 3,827,990.00	
Industry billings (\$)	** 1,163,915.00	
Rebate /(Surcharge) (\$)	** 41,208.95	
Domestic waste income (\$)	2,705,283.95	
Domestic user charge rate (\$/CCF)(Yr.Avg.)	** .7050	Actual rate \$.75 starting Oct.1,1986, average rate for year \$.7050/CCF
Domestic billable flow (CCF)	3,837,282	
Domestic billable flow (MGD)	7.88	
Income From Power Sales	** 300,000.00	3 Mo. @ \$.57 AND 9 Mo. @ \$.75 = \$.7050 Fiscal Year Average
FLOW (Q), AVERAGE INDUSTRY FLOW (MGD)	5.109	

TABLE 9 - DISTRIBUTION OF TOTAL ANNUAL COSTS TO BILLING PARAMETERS
 YEAR: FY 1987-88 PROJECTED

	FLOW (Q) (Dollars)	BOD (Dollars)	SS (Dollars)	CUSTOMERS (Dollars)	IND. WASTE MONITORING (Dollars)	TOTALS (Dollars)
ALLOCATION TO PARAMETERS						
O & M (WWTP & Hydro)	427,560	427,560	201,947	361,296		1,418,364
Industrial Waste Monitoring					159,349	159,349
Debt Service (WWTP)	743,145	1,030,814	599,311		23,972	2,397,243
Debt Service (Hydro)	213,534	498,245	79,087			790,865
Debt Coverage & Scheduled Capital Improvements	248,000	344,000	200,000		8,000	800,000
Less Revenue(Sale of Power)	(81,000)	(189,000)	(30,000)			(300,000)
Total	1,551,239	2,111,619	1,050,344	361,296	191,321	5,265,821
ALLOCATION TO USER GROUPS						
O & M (WWTP & Hydro)						
Domestic	299,870	300,435	184,501	360,935		1,145,741
Industry	127,690	127,125	17,446	361		272,622
Total	427,560	427,560	201,947	361,296		1,418,363
Industrial Waste Monitoring						
Industry	61,298	84,688	13,363			159,349
Debt Service (WWTP)						
Domestic	521,206	724,326	547,538			1,793,071
Industry	221,939	306,488	51,773		23,972	604,172
Total	743,145	1,030,814	599,311		23,972	2,397,243
Debt Service (Hydro)						
Domestic	149,762	350,104	72,254			572,120
Industry	63,771	148,141	6,832			218,745
Total	213,534	498,245	79,087			790,865
Debt Coverage & Scheduled Capital Improvements						
Domestic	173,935	241,720	182,722			598,378
Industry	74,065	102,280	17,278		8,000	201,622
Total	248,000	344,000	200,000		8,000	800,000
LESS POWER SALES REVENUE						
Domestic	(56,810)	(132,805)	(27,408)			(217,023)
Industry	(24,190)	(56,195)	(2,592)			(82,977)
Total	(81,000)	(189,000)	(30,000)			(300,000)
TOTAL ANNUAL						
Domestic	1,087,965	1,483,780	959,607	360,935		3,892,287
Industry	524,573	712,527	104,100	361	31,972	1,373,533
Total	1,612,537	2,196,307	1,063,707	361,296	31,972	5,265,820

TABLE 10 - UNIT COST DISTRIBUTION OF ANNUAL COSTS & RESULTING USER CHARGE RATES
 YEAR: FY 1987-88 PROJECTED

	FLOW CCF/YR	BOD Lbs/YR.	S. SOLIDS Lbs/YR.	CUSTOMERS	
Annual Loads at Treatment Plant					
Domestic	8,686,712	12,932,801	19,844,710	32,005	
Industry	3,698,954	5,472,324	1,876,440	45	
Total	12,385,667	18,405,125	21,721,150	32,050	
Unit Costs - Gross Quantities (2)					
Domestic	.12524	.11473	.04836	11.27745	.44807
Industry	.15056	.13021	.05548	8.02880	.37133
Total	.13278	.11933	.04897	11.27289	.42515
Unit Costs - Billable Quantities					
Domestic	.37758	.11473	.04836		1.01433
Industry	.22396	.13021	.05548		.55237
Total	.31718	.11933	.04897		.83269

ANNUAL QUANTITIES SUMMARY

		INDUSTRY	USER CHARGE
Total Domestic Flow- Includes infiltration (CCF)	8,686,712	-----	=====
Total Industry Flow - Includes Infiltration(CCF)	3,698,954		
Domestic Billable Flow (CCF)	3,837,282	FLOW (\$/CCF)	.2240
Industry Billable Flow (CCF)	2,486,597	BOD (\$/lb.)	.1302
Total Billable Flow (CCF)	6,323,879	SS (\$/lb.)	.0555
BOD - Industry (lbs)	5,472,324	DOMESTIC	
BOD - Domestic (lbs)	12,932,801	-----	
BOD - Total (lbs)	18,405,125	RATE (\$/CCF)	1.0143
Suspended solids (SS) - Industry (lbs)	1,876,440	(Fiscal Year Average)	
Suspended solids (SS) - Domestic (lbs)	19,844,710	With FY85-86 & FY86-87 Excess	.943
Suspended solids (SS) - Total (lbs)	21,721,150	(9Mo. @ X) + (3Mo. @ .75) = \$ 3,619,862	
Customers - Industry	45	PROPOSED RATE (X)	1.01
Customers - Domestic	32,005	(\$/CCF)	
DOMESTIC REVENUE DATA			
FY 1986-87 Adopted Domestic Rate (\$/CCF)			
Excess Domestic Revenue in FY1986-87 (\$)			
Actual Revenue	2,705,284.00		
Calculated Amt.	2,657,376.00		
	47,908.00		
FY 1985-86 Excess Deferred to FY1987-88	224,507.00		

TABLE 11 - SERIES 1985A BOND ISSUE SCHEDULE \$14,420,000.
File: BONDSCHEDULE

Date Due	Principal	Interest	Total	Plant 42%	Hydro 58%	User Charge Fiscal Year	Total P & I Required	HYDRO Share Of P & I	WW PLANT Share of P & I
Jan.1,86		817,458	817,458	343,333	474,126	Capitalized			
Jul.1,86		613,094	613,094	257,499	355,594	Capitalized			
Jan.1,87		613,094	613,094	257,499	355,594	FY86-87			
Jul.1,87	135,000	613,094	748,094	314,199	433,894	FY86-87	1,361,188	789,489	571,699
Jan.1,88		609,280	609,280	255,898	353,382	FY87-88			
Jul.1,88	145,000	609,280	754,280	316,798	437,482	FY87-88	1,363,560	790,865	572,695
Jan.1,89		605,003	605,003	254,101	350,901	FY88-89			
Jul.1,89	155,000	605,003	760,003	319,201	440,801	FY88-89	1,365,005	791,703	573,302
Jan.1,90		600,043	600,043	252,018	348,025	FY89-90			
Jul.1,90	165,000	600,043	765,043	321,318	443,725	FY89-90	1,362,162	788,826	573,336
Jan.1,91		594,556	594,556	249,714	344,843	FY90-91			
Jul.1,91	175,000	594,556	769,556	323,214	446,343	FY90-91	1,364,113	791,185	572,927
Jan.1,92		588,519	588,519	247,178	341,341	FY91-92			
Jul.1,92	190,000	588,519	778,519	326,978	451,541	FY91-92	1,367,038	792,882	574,156
Jan.1,93		581,726	581,726	244,325	337,401	FY92-93			
Jul.1,93	200,000	581,726	781,726	328,325	453,401	FY92-93	1,363,453	790,802	572,650
Jan.1,94		574,326	574,326	241,217	333,109	FY93-94			
Jul.1,94	215,000	574,326	789,326	331,517	457,809	FY93-94	1,363,653	790,918	572,734
Jan.1,95		566,103	566,103	237,763	328,339	FY94-95			
Jul.1,95	235,000	566,103	801,103	336,463	464,639	FY94-95	1,367,205	792,979	574,226
Jan.1,96		556,820	556,820	233,864	322,956	FY95-96			
Jul.1,96	255,000	556,820	811,820	340,964	470,856	FY95-96	1,368,640	793,811	574,829
Jan.1,97		546,556	546,556	229,554	317,003	FY96-97			
Jul.1,97	275,000	546,556	821,556	345,054	476,503	FY96-97	1,368,113	793,505	574,607
Jan.1,98		535,350	535,350	224,847	310,503	FY97-98			
Jul.1,98	300,000	535,350	835,350	350,847	484,503	FY97-98	1,370,700	795,006	575,694
Jan.1,99		522,900	522,900	219,618	303,282	FY98-99			
Jul.1,99	325,000	522,900	847,900	356,118	491,782	FY98-99	1,370,800	795,064	575,736
Jan.1,00		509,250	509,250	213,885	295,365	FY99-00			
Jul.1,00	350,000	509,250	859,250	360,885	498,365	FY99-00	1,368,500	793,730	574,770
Jan.1,01		494,375	494,375	207,638	286,738	FY00-01			
Jul.1,01		494,375	494,375	207,638	286,738	FY00-01			
\$11,300,000.		8.75% TERM BONDS DUE JULY 1,2015							

TABLE 11A - SERIES 1986A BOND ISSUE SCHEDULE \$20,700,000.
File: BONDSCHEDULE

Date Due	Principal	Interest	Total	User Charge Fiscal Year	Total P & I Required
Jan.1,87		794,774	794,774	Capitalized	
Jul.1,87		794,774	794,774	Capitalized	
Jan.1,88		794,774	794,774		
Jul.1,88	235,000	794,774	1,029,774	FY87-88	1,824,548
Jan.1,89		788,899	788,899	FY88-89	
Jul.1,89	250,000	788,003	1,038,003	FY88-89	1,826,902
Jan.1,90		782,024	782,024	FY89-90	
Jul.1,90	260,000	782,024	1,042,024	FY89-90	1,824,048
Jan.1,91		774,224	774,224	FY90-91	
Jul.1,91	275,000	774,224	1,049,224	FY90-91	1,823,448
Jan.1,92		765,630	765,630	FY91-92	
Jul.1,92	295,000	765,630	1,060,630	FY91-92	1,826,260
Jan.1,93		756,043	756,043	FY92-93	
Jul.1,93	315,000	756,043	1,071,043	FY92-93	1,827,086
Jan.1,94		745,412	745,412	FY93-94	
Jul.1,94	335,000	745,412	1,080,412	FY93-94	1,825,824
Jan.1,95		733,854	733,854	FY94-95	
Jul.1,95	355,000	733,854	1,088,854	FY94-95	1,822,708
Jan.1,96		721,252	721,252	FY95-96	
Jul.1,96	380,000	721,252	1,101,252	FY95-96	1,822,504
Jan.1,97		707,572	707,572	FY96-97	
Jul.1,97	410,000	707,572	1,117,572	FY96-97	1,825,144
Jan.1,98		692,607	692,607	FY97-98	
Jul.1,98	440,000	692,607	1,132,607	FY97-98	1,825,214
Jan.1,99		675,282	675,282	FY98-99	
Jul.1,99	475,000	675,282	1,150,282	FY98-99	1,825,564
Jan.1,00		656,578	656,578	FY99-00	
Jul.1,00	510,000	656,578	1,166,578	FY99-00	1,823,156
Jan.1,01		636,497	636,497	FY00-01	
Jul.1,01	550,000	636,497	1,186,497	FY00-01	1,822,994

PAYMENTS EXTEND ON TO JULY 1, 2016 - NOT SHOWN

TABLE 12 - DISTRIBUTION OF CAPITAL PROGRAM COSTS TO PARAMETERS
 (FOR DEBT SERVICE ALLOCATION PURPOSES)

File: DEBTDIST

	Est. Total Cost	FLOW %	BOD %	SS %	CUST %	IWM %	FLOW DOLLARS	BOD DOLLARS	SS DOLLARS	CUST DOLLARS	IWM DOLLARS
METRO PLANT EXPANSION											
PHASE I											
=====											
Plans & Specs	520,000	40	30	30							
Prelim.Treatment	1,176,700	40	20	40			208,000	156,000	156,000	0	0
Prim.Micro Strainers	1,800,000	30	10	60			470,680	235,340	470,680	0	0
Final Micro Screens	2,400,000	40	40	20			540,000	180,000	1,080,000	0	0
Thickeners	1,500,000	20	30	50			960,000	960,000	480,000	0	0
Sludge Pumping	271,100	20	40	40			300,000	450,000	750,000	0	0
Yard Work & Excav.	3,200,000	40	30	30			54,220	108,440	108,440	0	0
Cont.,Engr.,Insp.,etc.	880,000	40	30	30			1,280,000	960,000	960,000	0	0
							352,000	264,000	264,000	0	0
SUBTOTAL(Ph I)	11,747,800						4,164,900	3,313,780	4,269,120	0	0
PHASE II											
=====											
Plans & Specs	420,900	30	60	5							
Raw Waste Pumping	1,678,100	100	0	0		5	126,270	252,540	21,045	0	21,045
RBCs in Finals	1,800,000	25	75	0			1,678,100	0	0	0	0
RBCs in Primary	1,900,000	25	75	0			450,000	1,350,000	0	0	0
Aeration	250,000	25	75	0			475,000	1,425,000	0	0	0
Chlorination	150,000	75	25	0			62,500	187,500	0	0	0
Recirculation Pumping	326,600	25	75	0			112,500	37,500	0	0	0
Adm.& Lab Facilities	1,200,000	35	25	25		15	81,650	244,950	0	0	0
Yard Work & Misc.	1,100,000	35	45	15		5	420,000	300,000	300,000	0	180,000
Cont.,Engr.,Insp.,etc.	945,300	30	60	5		5	385,000	495,000	165,000	0	55,000
							283,590	567,180	47,265	0	47,265
SUBTOTAL(Ph II)	9,770,900						4,074,610	4,859,670	533,310	0	303,310
PHASE III											
=====											
Plans & Specs	408,000	30	50	20							
RBCs in Aeration Basins	5,600,000	25	75	0			122,400	204,000	81,600	0	0
Aeration	600,000	25	75	0			1,400,000	4,200,000	0	0	0
Sludge Pumping	271,100	20	40	40			150,000	450,000	0	0	0
Garage & Shop Fac.	180,000	40	30	30			54,220	108,440	108,440	0	0
Yard Work & Misc.	1,600,000	40	30	30			72,000	54,000	54,000	0	0
Cont.,Engr.,Insp.,etc.	1,098,900	30	50	20			640,000	480,000	480,000	0	0
							329,670	549,450	219,780	0	0
SUBTOTAL(Ph III)	9,758,000						2,768,290	6,045,890	943,820	0	0
PHASE IV											
=====											
Sludge Dewat.& Disp.	12,911,100	0	50	50			0	6,455,550	6,455,550	0	0
SUBTOTAL TREATMENT PLANT	44,187,800						11,007,800	20,674,890	12,201,800	0	303,310
SO. FRENCH BROAD INT.	3,102,000	100					3,102,000	0	0	0	0
CARRIER BRIDGE P.S.	454,000	100					454,000	0	0	0	0
FLOW MON.& SYP. GR.	541,000	85				15	541,000	0	0	0	81,150
MISCELLANEOUS	1,000,000	40	30	30			400,000	300,000	300,000	0	0
GRAND TOTAL	49,284,800						15,423,650	20,974,890	12,501,800	0	384,460
Percent Distribution							31	43	25	0	1