

Section IV

Enterprise Budget Detail

Sewer Fund

Sewer Fund

Program Description

In 1976, Town Meeting established a separate Sewer Fund to insure that the operation, maintenance and capital improvement of the sewer system would be a financially viable enterprise. As such, all expenses and expenditures incurred for the system is covered entirely by user fees. The Water/Sewer Division of Concord Public Works is responsible for managing the day-to-day operations of the sewer infrastructure, with a book value of over \$17 million dollars.

Concord's sewer system, originally established in 1900, presently includes a 1.2 million gallon per day centralized wastewater treatment facility, two sewer pumping stations, four sewer lift stations, and a 24-mile sewer collection system. The system currently serves 1,598 customers or approximately one-third of the Town.

FY04 Program Highlights

Comprehensive Wastewater Management Planning Process. The "Recommended Plan", accepted at the 2003 Town Meeting, was submitted to the Massachusetts Department of Environmental Protection and Executive Office of Environmental Affairs in accordance with the Massachusetts Environmental Policy Act (MEPA) requirements.

Comprehensive Wastewater Management Plan – Phase 1 Design. Sewer extension design activities were completed for a portion of the Elm Brook neighborhood in East Concord and the Prairie Street neighborhood of West Concord.

Lowell Road Pump Station Improvements. The second of three existing motor control panels was upgraded with a variable frequency drive to improve the reliability of operation and reduce electrical demand.

Inflow/Infiltration. The wastewater treatment plant currently receives about one million gallons of waste per day. An annual inflow and infiltration (I/I) program has been developed to reduce the groundwater/stormwater presently entering the collection system through deteriorating pipes or illicit stormwater connections. Rehabilitation work included targeted TV inspections, pipe joint testing and sealing, manhole rehabilitation, smoke testing and dye testing.

Wastewater Treatment Plant Equipment Improvements. Annual cost to replace equipment presently used beyond recommended service life. Completed work included replacement of four (4) intermediate lift pumps, polymer feed system upgrades, chemical control systems, chlorine system feed, control upgrades and relocation of effluent sampling equipment.

20-Year Wastewater Treatment Plant Facilities Plan. Woodard & Curran and Division Staff developed a 20-year WWTP Facilities Plan. The plan is essential given the age of the existing facility (17 years) with much of the major process equipment approaching the end of its intended service life. In addition to maintaining existing treatment capabilities, future treatment standards may require installation of a tertiary treatment process.

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Phosphorus Reduction Demonstration Pilot. Extensive phosphorus removal studies were performed to assess both theoretical and practical treatment limits of the existing facility. Concord's efforts, specifically with respect to ongoing participation in its CoMag commercial demonstration pilot testing program, continued to gain national attention. This magnetically enhanced coagulation process continues to show impressive results and will be carefully considered if tertiary treatment is required.

FY05 Capital Plan

COLLECTION SYSTEM

Station Equipment \$15,000

Annual capital outlay for improvements and replacement of equipment housed within four ejector stations and two main pump stations required to control, monitor, pump, store, and treat wastewater enroute to the WWTP, including motors, pumps, motor control panels, and air compressors.

Wastewater Construction Project (Design/Construction) \$3,000,000 [first-year estimated cost]

Construction of Phase 1 collection system expansion project in accordance with approved Comprehensive Wastewater Master Plan.

Inflow/Infiltration \$150,000

The wastewater treatment plant currently receives about one million gallons of waste per day. An annual inflow and infiltration (I/I) program has been developed to reduce the groundwater/stormwater presently entering the collection system through deteriorating pipes or illicit stormwater connections. Work includes targeted TV inspections, pipe joint testing and sealing, smoke and die testing, Manhole rehabilitation and replacement.

Meter Replacement Program \$6,000

Sewer fund portion of costs associated with our system-wide meter replacement efforts.

Services \$ 4,000

Costs associated with the replacement/installation (street to property line) of 2-3 new sewer connections to Concord's collection system.

WASTE WATER TREATMENT PLANT

Structures \$11,000

Annual capital outlay for improvements and replacement of WWTP structures.

Equipment \$50,000

Annual cost to replace equipment presently used beyond recommended service life, including motors, pumps, motor control panels, chemical feed systems, and process instrumentation.

Capacity/Treatment Assessment and Optimization \$791,000

Design costs for major WWTP rehabilitation and improvement needs as defined in the 2004

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Facility Plan. Plan includes overhaul of headworks and septage management systems as well as design of CoMag, UV Disinfection, Generator, MCC upgrade, and Plant Water systems

NPDES Permitting/(TMDL) \$50,000

Consulting services required to protect long-term interests of Concord as they relate to permit-driven capital improvements and O&M costs..

GENERAL PLANT (899)

135 Keyes Rd. Facility \$ 6,000

Capital outlay for improvements to Water/Sewer Administrative and Garage facilities.

Miscellaneous Field Equipment and Tools \$2,000

Miscellaneous equipment not included in 5-yr. capital equipment/vehicle request.

Vehicles \$22,000

Water/Sewer Fleet consists of 15 vehicles and miscellaneous service equipment which are replaced using CPW criteria based on industry-accepted useful life measures.

Wastewater Management Plan \$25,000

Completion of CWMP regulatory filing process in accordance with the Massachusetts Environmental Policy Act (MEPA) requirements

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SEWER FUND	FUND # 60
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OPERATING REVENUES

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 <u>Revised Budget</u>	FY05 <u>Estimate</u>
Sewer User Fees	1,515,077	1,626,084	1,577,000	1,686,000
Sewer Service Charges	4,670	9,900	6,000	7,000
Septage Fees	70,189	46,076	48,000	48,000
Liens & Tax Titles	8,804	10,719	15,000	15,000
Sale of Tax Possession	34	0	0	0
Other Revenue	241	1,520	2,000	2,000
Total Operating Revenues	<u><u>1,599,015</u></u>	<u><u>1,694,299</u></u>	<u><u>1,648,000</u></u>	<u><u>1,758,000</u></u>

OPERATING EXPENSES

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 <u>Revised Budget</u>	FY05 <u>Estimate</u>
DIVISION - Sewer Collection System				
Personal Services	176,707	175,402	191,546	210,295
Purchased Services	68,123	78,107	73,832	81,857
Supplies & materials	21,913	28,905	27,749	28,699
Other charges & expenses	3,882	7,329	8,747	9,872
General Fund Services	67,146	69,681	71,348	74,259
Subtotal, Collection System	<u><u>337,771</u></u>	<u><u>359,424</u></u>	<u><u>373,222</u></u>	<u><u>404,982</u></u>
DIVISION - Wastewater Treatment Plant				
Personal Services	29,878	37,888	36,572	38,335
Purchased Services	16,988	29,107	20,500	20,500
Management Contract	432,121	442,039	458,988	472,969
Supplies & materials	54	0	575	575
Other charges & expenses	3,081	2,661	4,130	2,830
General Fund Services	59,109	69,681	71,348	74,258
Subtotal, Treatment Plant	<u><u>541,231</u></u>	<u><u>581,376</u></u>	<u><u>592,113</u></u>	<u><u>609,467</u></u>
Depreciation expense	<u><u>604,102</u></u>	<u><u>582,343</u></u>	<u><u>612,000</u></u>	<u><u>667,000</u></u>
Total Operating Expenses	<u><u>1,483,104</u></u>	<u><u>1,523,143</u></u>	<u><u>1,577,335</u></u>	<u><u>1,681,449</u></u>

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SEWER FUND	FUND # 60
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AUTHORIZED POSITIONS

Code	Position Title	Grade	Fiscal Year 2004		Fiscal Year 2005	
			# Positions	\$ Amount	# Positions	\$ Amount
DIVISION - Sewer Collection System						
5111	W/S Superintendent	MP-10	0.2	14,889	0.2	14,889
	Asst. to Supt.	MP-5	0.2	12,086	0.2	12,122
	Environ. Analyst	MP-3	0.2	7,562	0.2	7,562
	Admin. Asst.	ACL-5	0.2	8,286	0.2	8,426
	Public Works Supv.	LA-7	0.4	20,550	0.4	20,673
	Crew Leader	LA-5	0.2	9,584	0.4	18,553
	Treatment Sys. Oper.	LA-4	0.4	14,565	0.4	14,905
	System Maintainer	LA-3	1.2	42,414	1.0	35,945
	IS Support:					
	Tech. Admin.	MP-8	0.01	616	0.01	616
	Info. Sys. Asst.	MP-2	0.01	396	0.01	421
			3.02	130,948	3.02	134,112
	Standby pay		680 hrs.	15,639	680 hrs.	15,700
5120	GIS Intern	10/hr.	83 hrs.	830	160 hrs.	1,600
5130	Overtime		700 hrs.	19,912	900 hrs.	26,472
5131	Police Details		180 hrs.	6,889	180 hrs.	7,200
517X	Group Insurance --					
	Health, Life, Dental			12,000		13,500
	Retirement			6,318		6,561
	Social Security & Medicare Tax			2,300		1,500
51XX	Salary Reserve -- regular pay			--		6,000
	overtime pay			--		1,050
	Budgeted charges to Snow acct.		170 hrs.	(3,290)	170 hrs.	(3,400)
				191,546		210,295

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SEWER FUND	FUND # 60
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AUTHORIZED POSITIONS (cont.)

<u>Code</u>	<u>Position Title</u>	<u>Grade</u>	<u>Fiscal Year 2004</u>		<u>Fiscal Year 2005</u>	
			<u># Positions</u>	<u>\$ Amount</u>	<u># Positions</u>	<u>\$ Amount</u>
DIVISION - Wastewater Treatment Plant						
5111	Operations Engineer	MP-7	0.6	31,572	0.6	31,572
517X	Group Insurance --					
	Health, Life, Dental			2,000		2,500
	Retirement			2,000		2,000
	Medicare Tax			1,000		1,000
51XX	Salary Reserve (regular pay)			--		1,263
				<u>36,572</u>		<u>38,335</u>
TOTAL - Sewer Fund				<u><u>228,118</u></u>		<u><u>248,630</u></u>

GENERAL FUND SERVICES

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
Management & Engineering Svcs.	49,344	51,949	52,305	53,185
Financial & Administrative Svcs.	56,195	58,709	61,325	61,421
Natural Resource Protection	20,716	28,704	29,066	29,292
Salary Reserve	--	--	--	4,620
	<u>126,255</u>	<u>139,362</u>	<u>142,696</u>	<u>148,518</u>

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SEWER FUND	FUND # 60
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DEBT SERVICE

LONG TERM DEBT -- Repayment Schedule:

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Budget</u>	<u>FY05 Estimate</u>
DIVISION - Sewer Collection System				
Principal	80,000	80,000	0	0
Interest	<u>8,100</u>	<u>2,700</u>	<u>0</u>	<u>0</u>
	88,100	82,700	0	0
 BAN Interest	0	0	0	52,000
 DIVISION - Wastewater Treatment Plant				
Principal	50,000	0	0	0
Interest	<u>1,687</u>	<u>0</u>	<u>0</u>	<u>0</u>
	51,687	0	0	0
	<u><u>139,787</u></u>	<u><u>82,700</u></u>	<u><u>0</u></u>	<u><u>52,000</u></u>

NET INCOME

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
Statement of Net Income:				
Operating Revenues	1,599,015	1,694,299	1,648,000	1,758,000
Operating Expenses	<u>1,483,104</u>	<u>1,523,143</u>	<u>1,577,335</u>	<u>1,681,449</u>
Operating Income	115,911	171,156	70,665	76,551
Investment Income	137,991	88,556	82,000	91,000
Sewer Improvement Fees	<u>45,150</u>	<u>173,758</u>	<u>0</u>	<u>0</u>
Gross Income	299,052	433,470	152,665	167,551
less: Debt interest expense	<u>(9,787)</u>	<u>(2,700)</u>	<u>0</u>	<u>(52,000)</u>
Net Income	289,265	430,770	152,665	115,551

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SEWER FUND	FUND # 60
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AVAILABLE RESOURCES

Resources available from current operations for replacement & renewal of plant:

	FY02 Actual	FY03 Actual	FY04 Revised Budget	FY05 Estimate
from:				
Depreciation expense	604,102	582,343	612,000	667,000
Betterment Repayments	0	0	0	0
Net Income	<u>289,265</u>	<u>430,770</u>	<u>152,665</u>	<u>115,551</u>
	893,367	1,013,113	764,665	782,551
less:				
Debt Principal repayment	<u>130,000</u>	<u>80,000</u>	<u>0</u>	<u>0</u>
 Net Available for capital purposes	 763,367	 933,113	 764,665	 782,551

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SEWER FUND	FUND # 60
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CAPITAL SPENDING PLAN

Uses of Resources:	FY02 Actual	FY03 Actual	FY04 Revised Budget	FY05 Estimate
DIVISION - Sewer Collection System				
<u>Vehicle Purchase / Replacement</u>				
Unit#85: 1994 pickup (2500)	4,411			
Unit#90a: 10-ton dump -> 5-ton dump	11,998			
Unit#90b: 10-ton dump -> pickup (1500)	3,978			
Unit#93: 1989 tractor -> skid-steer loader		8,298		
-- JAW bucket for Unit #92 JCB backhoe		975		
Unit#A1: 1995 Sedan (Crown Vic)			4,039	
Unit #81: 1996 1-ton pickup (3500)			4,743	
Unit #89: 1996 1-ton pickup (2500)			4,743	
Unit#88: 1996 pick-up (enclosed bed)				6,200
Unit#92: 1990 backhoe loader				15,000
<u>Pumping Plant</u>				
Station Structures	0	3,648	0	0
SCADA upgrade	61,468	13,664	10,000	0
Station Equipment	6,039	9,682	15,000	15,000
<u>Collection Plant</u>				
Meter replacement program	3,629	2,513	8,000	6,000
New/replacement mains	0	2,705	0	0
Infiltration/Inflow remediation	93,301	4,698	100,000	150,000
Service connections	0	0	4,000	4,000
Wastewater Construction Project	0	0	350,000	0
<u>General Plant Improvements</u>				
Keyes Road Facility	0	0	6,000	6,000
Wastewater management plan	148,671	182,761	25,000	25,000
Misc. equipment	0	0	2,000	2,000
-continued-				

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SEWER FUND	FUND # 60
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CAPITAL SPENDING PLAN (cont.)

	FY02 Actual	FY03 Actual	FY04 Revised Budget	FY05 Estimate
Uses of Resources - continued:				
<u>Miscellaneous Capital Items</u>				
Computer software & hardware	696	14,358	0	0
<u>Capital Projects</u>				
Keyes Rd. - CPW Facility	7,780	0	0	0
Subtotal	341,971	243,302	533,525	229,200
 DIVISION - Wastewater Treatment Plant				
<u>Structures</u>				
Building equipment replacement	0	9,595	40,000	11,000
<u>Equipment</u>				
Plant equipment replacement	12,236	87,151	431,000	50,000
Capacity assessment & optimization	0	15,805	100,000	791,000
NPDES river monitoring & permitting	17,005	0	0	50,000
Subtotal	29,241	112,551	571,000	902,000
 SEWER FUND - Combined Total	 371,212	 355,853	 1,104,525	 1,131,200

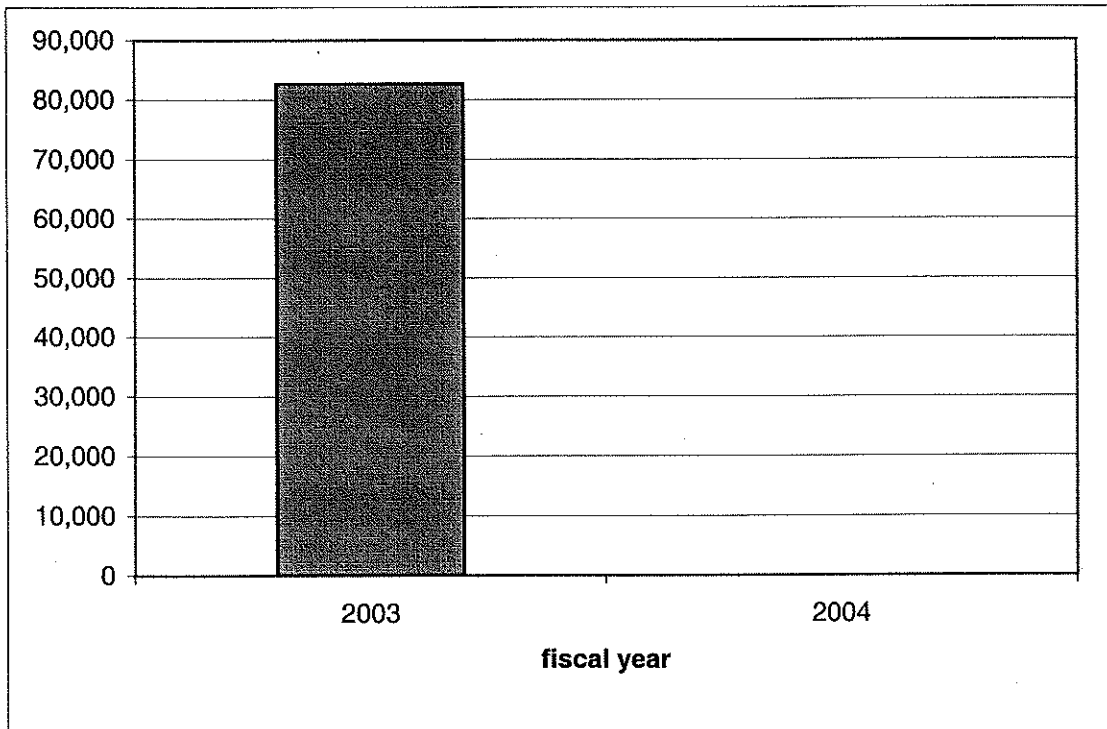
PENDING 2004 TOWN MEETING ACTION:

Comprehensive Wastewater Management Plan (first year of Phase I) 2,587,500
 *70% betterment, 10% sewer fee, 20% property tax allocation as proposed
 by Wastewater Planning Committee; betterment and property tax portion
 to be financed by debt; property tax debt portion to be subject to debt
 exclusion vote.

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Sewer Debt Service

Fiscal Year	Principal	Interest	Total
2003	80,000	2,700	82,700
2004	<u>0</u>	<u>0</u>	<u>0</u>
Totals	\$80,000	\$2,700	\$82,700



Town of Concord, Massachusetts

**DETAIL OF GENERAL FUND SERVICES
PROVIDED TO SEWER FUND**

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
Management & Engineering Services				
Public Works Administration	25,283	26,025	26,171	26,171
Public Works Engineering	11,868	11,960	12,067	12,179
Highway Maintenance	3,134	3,267	3,337	3,363
133/135 Keyes Road Facilities	9,059	10,697	10,730	11,472
	<u>49,344</u>	<u>51,949</u>	<u>52,305</u>	<u>53,185</u>
Financial & Administrative Services				
Town Manager	19,329	20,289	20,418	20,357
Town Accountant				
General Services	12,145	10,600	10,338	10,428
Audit Services	3,225	5,160	5,160	5,160
Finance Administration	7,531	7,915	10,473	10,475
Treasurer-Collector	9,046	9,559	9,713	9,720
Personnel Administration	2,556	2,605	2,522	2,542
Town House Facilities	2,363	2,581	2,701	2,739
	<u>56,195</u>	<u>58,709</u>	<u>61,325</u>	<u>61,421</u>
Natural Resource Protection				
Planning	4,298	4,542	4,572	4,686
Natural Resources	4,028	4,270	4,225	4,337
Health	12,390	19,892	20,269	20,269
	<u>20,716</u>	<u>28,704</u>	<u>29,066</u>	<u>29,292</u>
Salary Reserve				
Averages 4.0% of salaries	--	--	--	4,620
	<u>126,255</u>	<u>139,362</u>	<u>142,696</u>	<u>148,518</u>

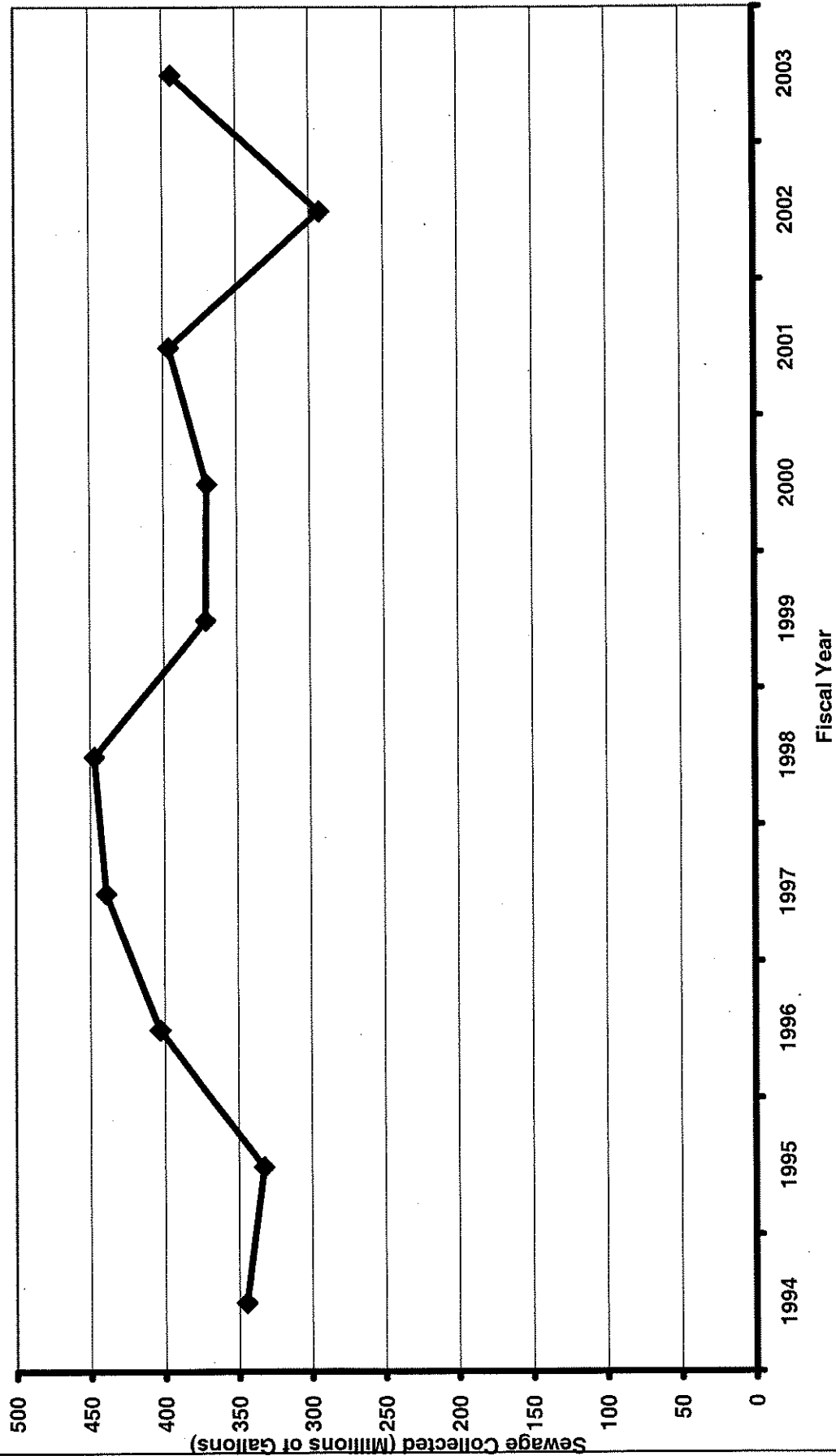
Sewer Fund
Sewage Collected, Revenue, Expense, Operating Income, and Net Income
(FY94 - FY05)

Based on WWTP Inflow

<u>Fiscal Year</u>	<u>Sewage Collected (Millions of Gallons)</u>	<u>Operating Revenue</u>	<u>Operating Expense</u>	<u>Operating Income</u>	<u>Net Income</u>
1994	345	\$1,090,632	\$1,002,565	\$88,067	\$10,512
1995	333	\$1,176,533	\$1,055,696	\$120,837	\$477,691
1996	403	\$1,185,870	\$1,068,667	\$117,203	\$162,119
1997	439	\$1,313,849	\$1,192,543	\$121,306	\$238,478
1998	447	\$1,436,844	\$1,359,850	\$76,994	\$202,346
1999	371	\$1,321,791	\$1,368,627	(\$46,836)	\$113,906
2000	370	\$1,485,703	\$1,717,603	(\$231,900)	\$20,312
2001	396	\$1,611,968	\$1,563,279	\$48,689	\$479,488
2002	293	\$1,599,015	\$1,483,104	\$115,911	\$289,265
2003	394	\$1,694,299	\$1,523,143	\$171,156	\$430,770
2004 Prelim		\$1,648,000	\$1,577,335	\$70,665	\$152,665
2005 Budget		\$1,758,000	\$1,681,449	\$76,551	\$115,551

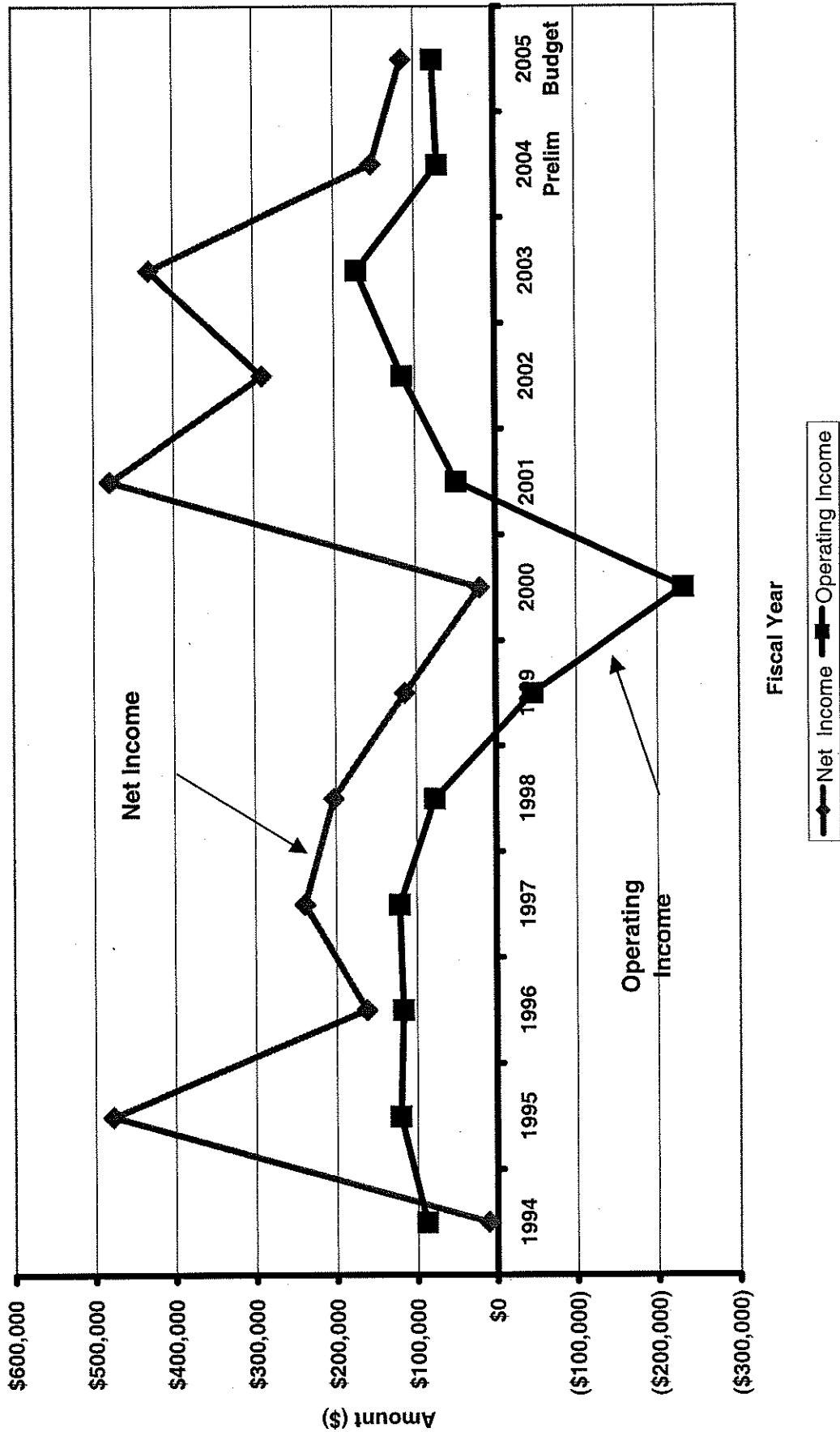
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Sewer Fund
Sewage Collected (Millions of Gallons)



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




Sewer Fund
Operating and Net Income

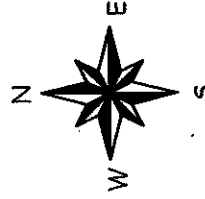


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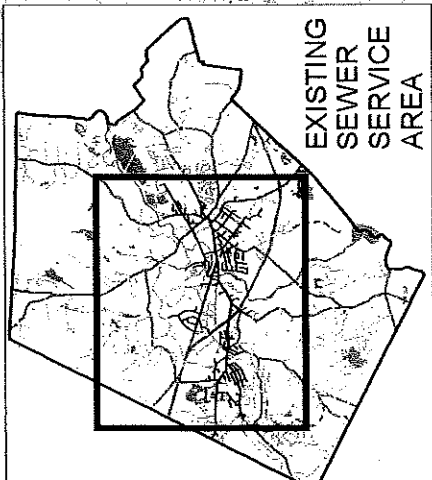
MUNICIPAL SEWER SYSTEM AND COMPREHENSIVE WASTEWATER MANAGEMENT PLAN

-  Sewer Pipes
-  Rivers and Ponds
- CWMP Phases**
-  Phase 1
-  Phase 2
-  Phase 3
-  Phase 4



This map was created by
Concord Public Works.
The information is provided as a
reasonably accurate point of reference,
but is not guaranteed and is not
to be used for conveyances.
The Town of Concord shall not
be held responsible for the
accuracy or misuse of this data.

March 17, 2004



EXISTING
SEWER
SERVICE
AREA

