

Section III

Enterprise Budget Detail

Water Fund

## Water Fund

### Program Description

In 1974, Annual Town Meeting established a separate Water Fund to insure that the operation, maintenance and capital improvement of the water 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 water infrastructure, which has a book value of over \$15 million dollars.

Concord's water system was first established in 1884. Currently, the system is composed of eight separate water pumping/treatment stations and a high-pressure water distribution system. There are presently 5,428 customers served with potable water and fire protection from this supply. The service area covers approximately 95% of Concord along with a small section in Acton on Rt. 2A.

### FY04 Program Highlights

**Source Protection.** A system-wide vulnerability assessment was performed and submitted to the Environmental Protection Agency in accordance with a federal mandate. The report provides information and guidance as to security improvement and infrastructure hardening opportunities.

**Brewster Well - New Source Approval Process.** Site assessment work and associated permitting efforts continued in an effort to develop a new water supply source on the former Benson land located at the end of Balls Hill Road. Prolonged pump testing was conducted with specific consideration placed upon withdrawal capacity and potential impacts on local wetland habitat. Findings have been submitted to the Massachusetts Department of Environmental Protection and Executive Office of Environmental Affairs in accordance with the Massachusetts Environmental Policy Act (MEPA).

**Station Rehabilitation Activities.** Both the Deaconess Well and White Pond Well were rehabilitated. In addition to routine cleaning and re-development of these wells, the pumping and piping systems at White Pond were replaced, and a new screen liner was installed within the Deaconess Well.

**Iron & Manganese Treatment – Deaconess Well.** Pilot testing activities were performed at the Deaconess well site to optimize full-scale design needs for a new iron and manganese removal system.

**Mains (New/Replacement Mains).** As part of the annual water main replacement/improvement program, approximately 4,950 linear feet of pipe were replaced or cleaned and cement-lined. Work was done under sections of Beharrel Street, Monument Square, Liberty Street, Old Bridge Road, Lexington Road, Wilson Road, and Ripley Hill Road.

**Water Conservation Program Strengthened.** Concord's 5 ½-year old Comprehensive Water

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Conservation Program was strengthened in 2003 by the creation of a Water Conservation Program Coordinator position. The Coordinator administers an expanded and enhanced conservation program for residential, commercial and institutional customers. Water conservation will play an increasingly important role in Concord's long-term water sustainability and protection strategy.

### FY05 Capital Plan

#### PROTECTION

**Source Protection** \$50,000

Miscellaneous equipment/materials for ongoing implementation of water resource protection program. Ongoing public education and improved forestry management activities are planned, along with security improvements in accordance with findings from Vulnerability Assessment activities.

#### DEVELOPMENT

**Brewster Well Development** \$1,500,000

Development of the Brewster Well site, including completion of new source approval permitting process and design, bid, and award of construction contract.

#### IMPROVEMENTS

**Station Structures** \$55,000

Annual capital outlay for improvements and replacement of station structures. Completion of White Pond station rehabilitation project.

**Station Equipment** \$150,000

Annual capital outlay for improvements and replacement of station equipment used to control, monitor, pump, store, and treat water including motors, pumps, motor control panels and chemical feed systems. The amount includes funds for the White Pond well electrical system overhaul and Route 2A/Ozone facility process controller SCADA upgrade.

#### TREATMENT

**Nagog Treatment Plant** \$95,000

As a result of successful resource protection and source management efforts, CPW has continued to maintain an existing filtration waiver. Monies must be available to initiate evaluation and piloting of treatment technologies if the waiver is tripped as well as to assess infrastructure improvements required to maintain waiver.

**Iron & Manganese Treatment – Deaconess** \$1,750,000

Treatment optimization efforts have demonstrated that full-scale removal of iron and manganese is required to satisfactorily address water quality issues identified within several

## Town of Concord, Massachusetts

existing groundwater wells. For FY05, the plan is to have the treatment facility designed, the construction contract bid and awarded, and the construction initiated.

### **Treatment Optimization Program** \$74,000

Ongoing optimization program to assess and identify cost-effective treatment modification for improved water quality within the distribution system.

## **DISTRIBUTION SYSTEM**

### **Mains (New/Replacement Mains)** \$425,000

Annual capital outlay for improvements and extension to distribution system. The program is intended to insure that aging deteriorating main is replaced in a methodical and prudent manner. The program is to be stepped up in coordination with Phase 1 Sewer Extension work.

### **Meter Replacement Program** \$24,000

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

### **Hydrants** \$21,000

Annual hydrant inspection and replacement activities to insure all hydrants operate properly. Budget includes costs for approximately 16 new hydrants.

### **Services** \$12,000

Costs associated with the replacement/installation (street to property line) of approximately 10-15 new water services within the distribution system. Sites are generally prioritized in conjunction with Roads Program.

### **Pine Street Bridge Water Main** \$55,000

Installation of a 12-inch water main within a reconstructed Pine Street Bridge. The installation, to which the Town committed its resources in 1995, was incorporated into bid documents drafted by the Massachusetts Highway Department. The project will result in improved system hydraulics and reliability of service.

## **GENERAL PLANT**

### **Keyes Rd. Facility** \$24,000

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

### **Miscellaneous Field Equipment and Tools** \$5,000

Miscellaneous equipment not included in the 5-year capital equipment/vehicle requests.

### **Vehicles** \$85,000

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

**Town of Concord, Massachusetts**

<b>WATER FUND</b>	<b>FUND # 61</b>
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**OPERATING REVENUES**

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 Revised <u>Budget</u>	FY05 Estimate
Water User Fees	3,104,171	3,260,436	2,967,000	3,424,000
Service Charges	138,211	77,044	72,000	72,000
Liens & Tax Titles	28,039	21,991	22,000	22,000
Sale of Tax Possession	3,745	0	0	0
Miscellaneous	1,034	637	2,000	2,000
Total Operating Revenues	<u>3,275,200</u>	<u>3,360,108</u>	<u>3,063,000</u>	<u>3,520,000</u>

**OPERATING EXPENSES**

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 Revised <u>Budget</u>	FY05 Estimate
Personal Services	703,423	757,100	753,712	825,369
Purchased Services	394,214	424,674	478,399	480,969
Contract - Consulting Engineer	0	0	0	0
Supplies & materials	206,965	217,351	255,810	243,464
Other charges & expenses	55,306	39,269	48,378	86,798
Depreciation expense	355,470	369,469	415,000	474,000
Capital reserve charge	--	--	152,000	147,000
Reclassification to inventory	692	0	--	--
Subtotal	<u>1,716,070</u>	<u>1,807,863</u>	<u>2,103,299</u>	<u>2,257,600</u>
 <u>General Fund Services:</u>				
Management & Engineering Svcs.	160,903	170,186	171,475	175,398
Financial & Administrative Svcs.	169,200	175,059	185,596	184,397
Natural Resource Protection	57,173	61,605	61,868	63,004
Salary Reserve	--	--	--	13,400
Subtotal	<u>387,276</u>	<u>406,850</u>	<u>418,939</u>	<u>436,199</u>
Total Operating Expenses	<u>2,103,346</u>	<u>2,214,713</u>	<u>2,522,238</u>	<u>2,693,799</u>

**Town of Concord, Massachusetts**

<b>WATER FUND</b>	<b>FUND # 61</b>
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**AUTHORIZED POSITIONS**

Code	Position Title	Grade	Fiscal Year 2004		Fiscal Year 2005	
			# Positions	\$ Amount	# Positions	\$ Amount
5111	W/S Superintendent	MP-10	0.6	44,668	0.6	44,668
	Operations Engineer	MP-7	0.2	10,524	0.2	10,524
	Asst. to Supt.	MP-5	0.8	48,342	0.8	48,488
	Environ. Analyst	MP-3	0.8	30,250	0.8	30,250
	Admin. Asst.	ACL-5	0.8	33,143	0.8	33,702
	Public Works Supv.	LA-7	1.6	82,200	1.6	82,692
	Crew Leader	LA-5	0.8	38,335	1.6	74,210
	Treatment Sys. Oper.	LA-4	1.6	58,262	1.6	59,620
	System Maintainer	LA-3	4.8	169,657	4.0	143,779
	IS Support:					
	Tech. Admin.	MP-8	0.04	2,463	0.04	2,463
	Info. Sys. Asst.	MP-2	<u>0.04</u>	<u>1,584</u>	<u>0.04</u>	<u>1,683</u>
			12.08	519,428	12.08	532,079
	Standby pay		890 hrs.	20,469	890 hrs.	20,549
5112	Water Conservation Coordinator	MP-3	0.75	33,630	0.75	33,940
5120	Summer Crew	15/hr.	480 hrs.	7,200	480 hrs.	7,200
	GIS Intern	10/hr.	333 hrs.	3,330	640 hrs.	6,400
	Clerk of the Works	35/hr.	416 hrs.	14,560	416 hrs.	14,560
5130	Overtime		2000 hrs.	56,892	2600 hrs.	76,475
5131	Police Details		525 hrs.	20,094	525 hrs.	21,000
517X	Group Insurance -- Health, Life, Dental			46,000		53,000
	Retirement			33,271		34,244
	Social Security & Medicare Tax			12,000		13,000
51XX	Salary Reserve -- regular pay			--		23,463
	overtime pay			--		3,059
	Budgeted charges to Snow acct.		680 hrs.	<u>(13,162)</u>	680 hrs.	<u>(13,600)</u>
				<u>753,712</u>		<u>825,369</u>

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<b>WATER FUND</b>	<b>FUND # 61</b>
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**DEBT SERVICE**

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 <u>Budget</u>	FY05 <u>Estimate</u>
Long Term Debt --				
Repayment Schedule - Principal	430,000	615,000	555,000	420,000
Interest	94,808	151,280	124,243	100,010
Debt Issuance Expenses	16,545	0	0	33,000
Short Term Notes: BAN Interest	<u>204,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL	745,353	766,280	679,243	553,010

**NET INCOME**

	FY02 <u>Actual</u>	FY03 <u>Actual</u>	FY04 <u>Revised Budget</u>	FY05 <u>Estimate</u>
<b>Statement of Net Income:</b>				
Operating Revenues	3,275,200	3,360,108	3,063,000	3,520,000
Operating Expenses	<u>2,103,346</u>	<u>2,214,713</u>	<u>2,522,238</u>	<u>2,693,799</u>
Operating Income	1,171,854	1,145,395	540,762	826,201
Investment Income	164,038	67,645	43,000	30,000
Premium on Notes	0	0	0	0
Premium on Sale of Bond	<u>34,079</u>	<u>0</u>	<u>0</u>	<u>0</u>
Gross Income	1,369,971	1,213,040	583,762	856,201
less: Interest Expense	(298,808)	(151,280)	(124,243)	(100,010)
Debt issuance expense	--	--	0	(33,000)
Net Income	<u>1,071,163</u>	<u>1,061,760</u>	<u>459,519</u>	<u>723,191</u>

**Town of Concord, Massachusetts**

<b>WATER FUND</b>	<b>FUND # 61</b>
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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
<b>from:</b>				
Depreciation expense	355,470	369,469	415,000	474,000
Capital reserve charge	--	--	152,000	147,000
Net Income	1,071,163	1,061,760	459,519	723,191
<b>Total Operations</b>	1,426,633	1,431,229	1,026,519	1,344,191
<b>less:</b>				
Debt Principal repayment	430,000	615,000	555,000	420,000
<b>Net Available for capital purposes</b>	996,633	816,229	471,519	924,191

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<b>WATER FUND</b>	<b>FUND # 61</b>
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**CAPITAL SPENDING PLAN**

<b>Uses of Resources:</b>	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
<u>Vehicle Purchase / Replacement</u>				
Unit#85: 1994 pickup (2500)	17,642			
Unit#90a: 10-ton dump -> 5-ton dump	47,510			
Unit#90b: 10-ton dump -> pickup (1500)	15,912			
Unit#93: 1989 tractor -> skid-steer loader		33,194		
--    JAW bucket for Unit#92 JCB backhoe		3,900		
Unit#A1: 1995 Sedan (Crown Vic)			16,154	
Unit#81: 1996 1-ton pickup (3500)			18,972	
Unit#89: 1996 pickup (2500)			18,972	
Unit#88: 1996 pickup (enclosed bed)				24,800
Unit#92: 1990 backhoe loader				60,000
<u>Supply/Capacity</u>				
Source protection	1,840	835	30,000	50,000
New source permitting, design, construction	0	3,228	300,000	0
Water supply exploration - test wells	4,814	58,486	0	0
<u>Improvements</u>				
Station structures	39,629	166,609	150,000	55,000
Station equipment	53,711	177,216	100,000	150,000
SCADA upgrade	143,275	56,829	25,000	0
<u>Treatment</u>				
Nagog ozone plant enhancements	71,583	98	19,000	95,000
Iron & manganese removal	0	5,909	50,000	0
Treatment optimization program	296	0	74,000	74,000
<u>Distribution System</u>				
Mains replacement program	228,774	208,072	600,000	425,000
Meter replacement program	17,587	12,315	32,000	24,000
Hydrant replacement/additions	9,431	19,145	20,000	21,000
Building service lines	0	20,965	12,000	12,000
Pine Street Bridge Main	0	0	0	55,000

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<b>WATER FUND</b>	<b>FUND # 61</b>
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**CAPITAL SPENDING PLAN (cont.)**

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
<b>Uses of Resources - continued:</b>				
<u>General Plant Improvements</u>				
Keyes Road Facility	0	0	20,000	24,000
GIS support	7,685	0	0	0
Miscellaneous small equipment	1,708	0	5,000	5,000
<u>Miscellaneous Capital Items</u>				
Computer software & hardware	2,785	65,146	0	0
<u>Capital Projects</u>				
Hugh Cargill / White Pond Wells	220,881	0	0	0
Keyes Rd. - CPW Facility	31,813	0	0	0
Benson Land (Lot B -survey/test wells)	15,751	0	0	0
 <b>GRAND TOTAL</b>	 <u>932,627</u>	 <u>831,947</u>	 <u>1,491,098</u>	 <u>1,074,800</u>

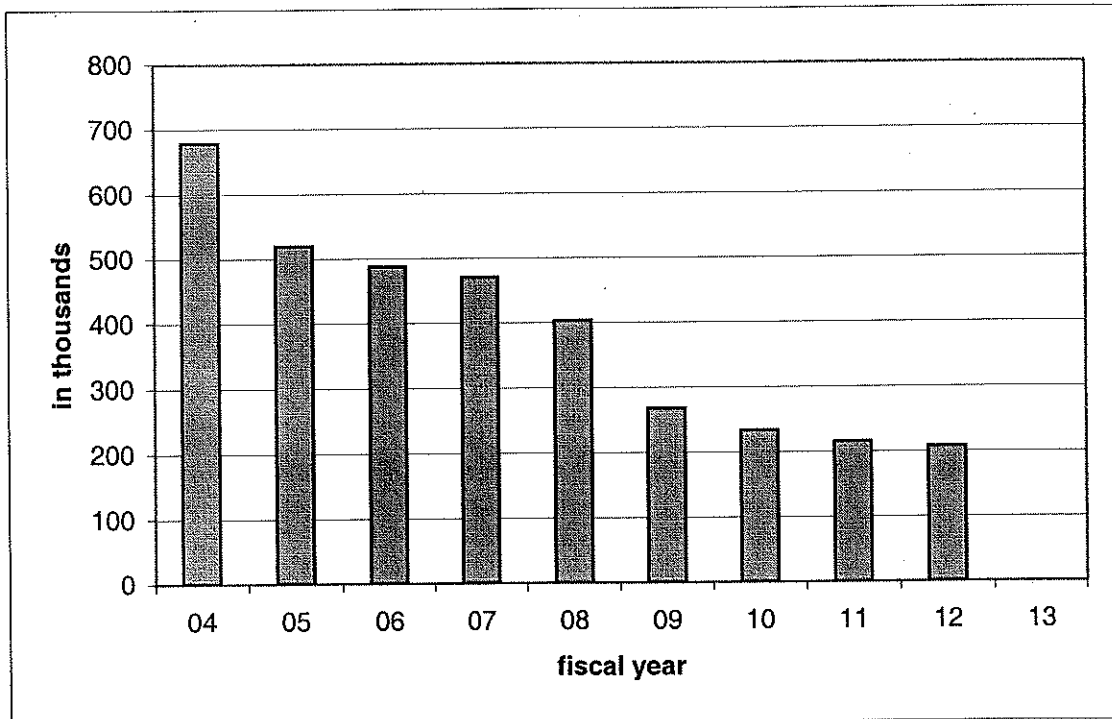
**USE OF BORROWED FUNDS**

	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
<u>Capital Projects</u>				
Brewster Well development	0	0	0	1,500,000
Deaconess Well iron & manganese removal		0	0	1,750,000
Hugh Cargill/Satellite Wells	42,330	256	0	0
New Source Acquisition - Benson Land	(3,100,000) *	0	0	0
	(3,057,670)	256	0	3,250,000
 *Sale of Benson Lot B				

Town of Concord, Massachusetts

Water Debt Service

Fiscal Year	Principal	Interest	Total
2004	555,000	124,243	679,243
2005	420,000	100,010	520,010
2006	405,000	82,478	487,478
2007	405,000	65,523	470,523
2008	355,000	48,320	403,320
2009	235,000	33,118	268,118
2010	210,000	23,915	233,915
2011	200,000	15,800	215,800
2012	200,000	8,000	208,000
2013	0	0	0
Totals	\$2,985,000	\$501,407	\$3,486,407



**Town of Concord, Massachusetts**

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

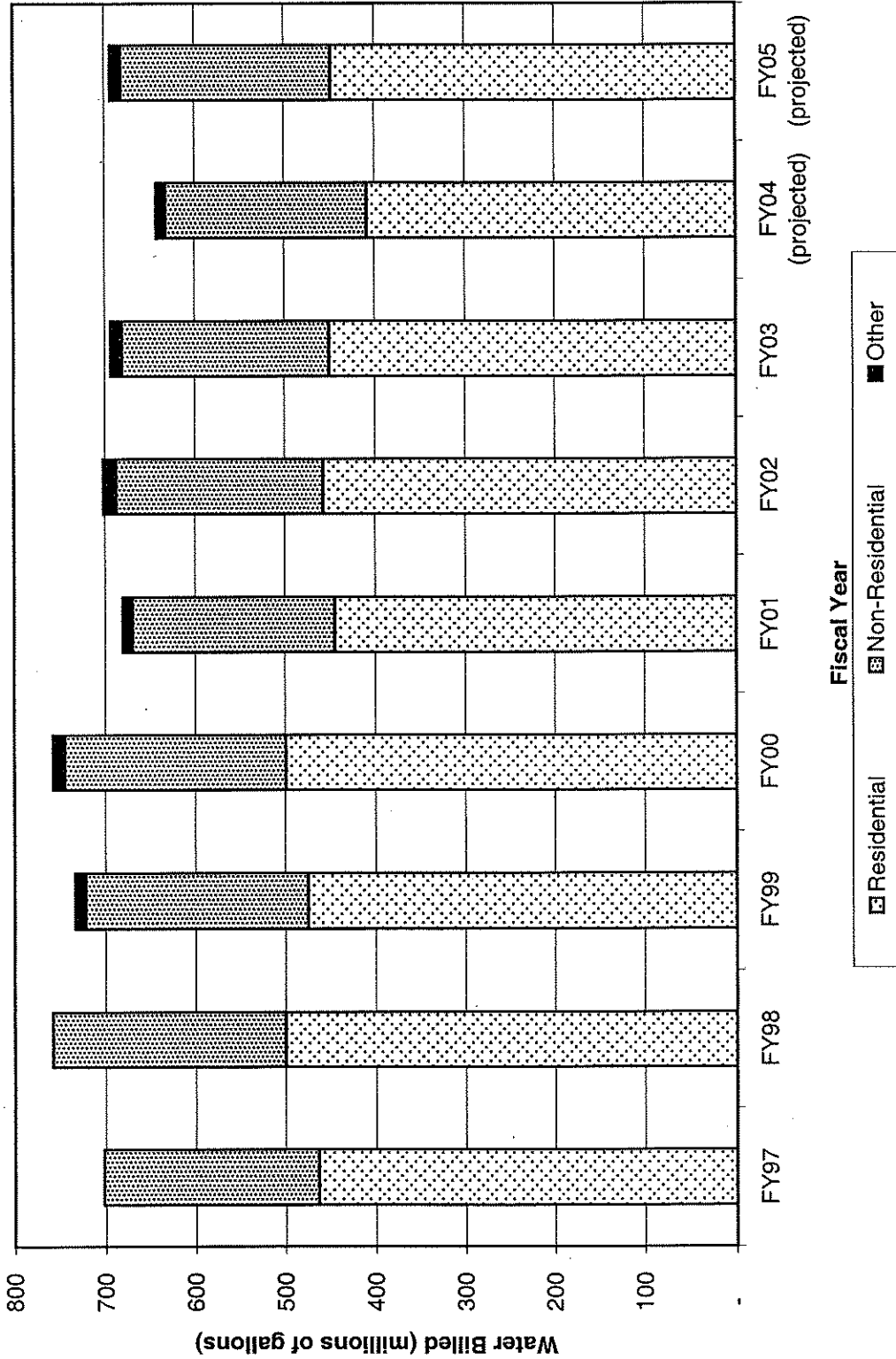
	<u>FY02 Actual</u>	<u>FY03 Actual</u>	<u>FY04 Revised Budget</u>	<u>FY05 Estimate</u>
<b>Management &amp; Engineering Services</b>				
Public Works Administration	63,209	65,063	65,427	65,428
Public Works Engineering	47,470	47,838	48,266	48,716
Highway Maintenance	12,534	13,068	13,349	13,451
133/135 Keyes Road Facilities	<u>37,690</u>	<u>44,217</u>	<u>44,433</u>	<u>47,803</u>
	160,903	170,186	171,475	175,398
<b>Financial &amp; Administrative Services</b>				
Town Manager	38,657	40,578	40,837	40,713
Town Accountant				
General Services	47,862	45,682	44,492	43,387
Audit Services	3,225	5,160	5,160	5,160
Finance Administration	30,125	31,659	41,892	41,898
Treasurer-Collector	36,181	38,238	38,855	38,880
Personnel Administration	8,425	8,580	8,958	8,881
Town House Facilities	<u>4,725</u>	<u>5,162</u>	<u>5,402</u>	<u>5,478</u>
	169,200	175,059	185,596	184,397
<b>Natural Resource Protection</b>				
Planning	25,785	27,252	27,429	28,118
Natural Resources	16,111	17,081	16,901	17,348
Health	<u>15,277</u>	<u>17,272</u>	<u>17,538</u>	<u>17,538</u>
	57,173	61,605	61,868	63,004
<b>Salary Reserve</b>				
Averages 4.0% of salaries	<u>--</u>	<u>--</u>	<u>--</u>	<u>13,400</u>
	<u>387,276</u>	<u>406,850</u>	<u>418,939</u>	<u>436,199</u>

**Water Fund**  
**Water Consumption, Revenue, Expense, Operating Income, and Net Income**  
**(FY94 - FY05)**

<u>Fiscal Year</u>	<u>Billed</u> <u>Water Consumption</u> <u>(Millions of Gallons)</u>	<u>Operating</u> <u>Revenue</u>	<u>Operating</u> <u>Expense</u>	<u>Operating</u> <u>Income</u>	<u>Net</u> <u>Income</u>
1994		\$1,689,000	\$1,280,000	\$409,000	\$369,000
1995		\$1,820,000	\$1,372,000	\$448,000	\$478,000
1996		\$2,228,819	\$1,297,607	\$931,212	\$957,252
1997	702	\$2,233,752	\$1,408,950	\$824,802	\$819,159
1998	758	\$2,464,438	\$1,557,178	\$907,260	\$935,382
1999	734	\$2,991,496	\$1,660,984	\$1,330,512	\$1,369,052
2000	758	\$3,039,578	\$1,868,320	\$1,171,258	\$1,232,781
2001	681	\$2,924,867	\$1,946,931	\$977,936	\$1,097,078
2002	702	\$3,275,200	\$2,103,346	\$1,171,854	\$1,071,163
2003	693	\$3,360,108	\$2,214,713	\$1,145,395	\$1,061,760
2004 Prelim.	643	\$3,063,000	\$2,522,238	\$540,762	\$459,519
2005 Budget	693	\$3,520,000	\$2,693,799	\$826,201	\$723,191

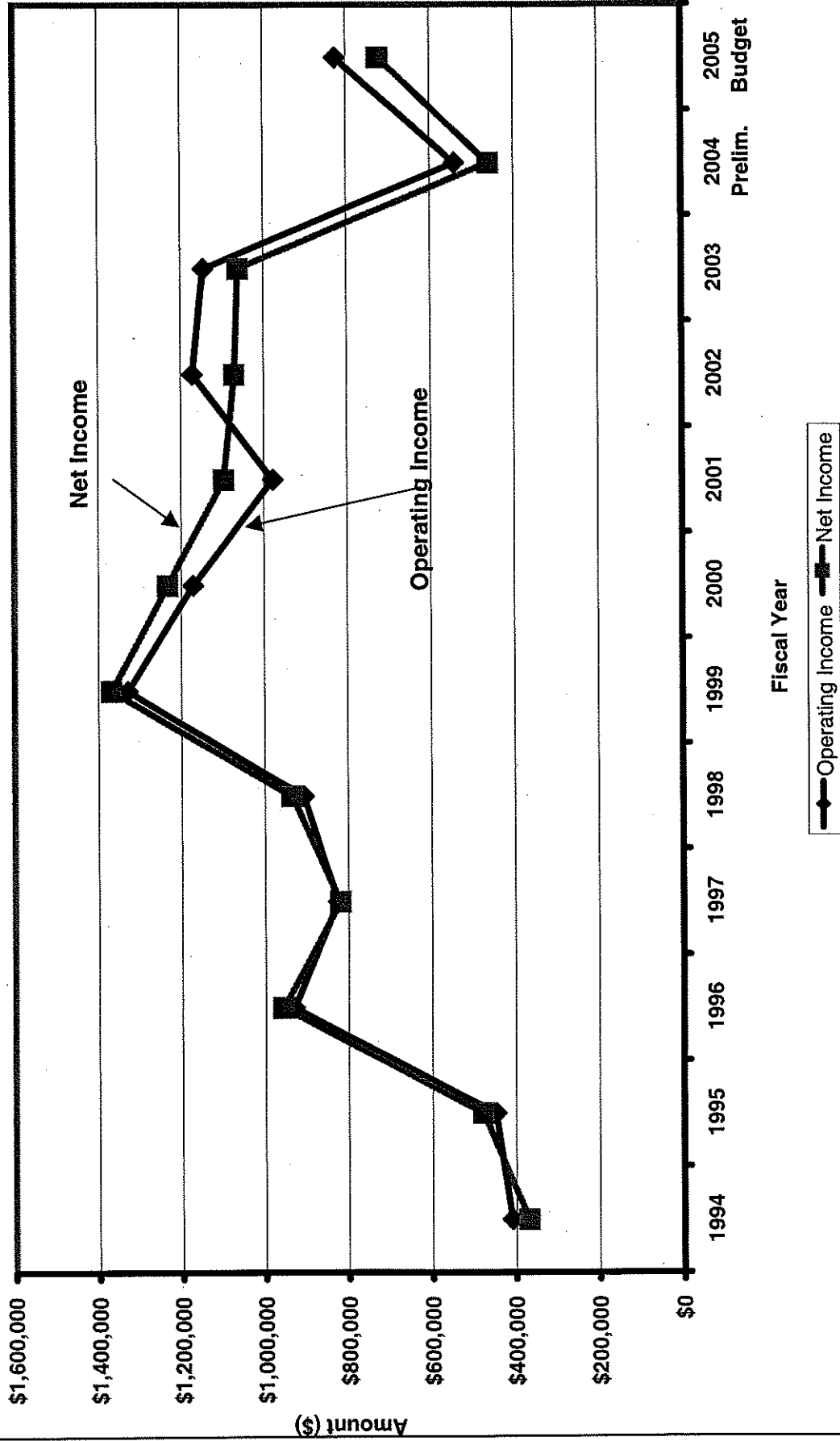
Town of Concord, Massachusetts

Water Fund  
Annual Consumption by Customer Class



Town of Concord, Massachusetts




Water Fund  
Operating and Net Income

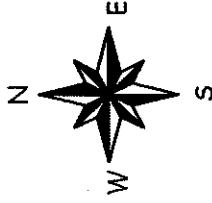


# Town of Concord, Massachusetts



## Water Supply Facilities

-  Surface Water Feature
-  Major Roads
-  Water Supply Protection Areas



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.

