

LACONIA WATER WORKS

**CONSTRUCTION AND MAINTENANCE
ASSESSMENT**

STATEMENT OF POLICY

EFFECTIVE: July 13, 1995

**Amended 10-09-96
Amended 08-01-97
Amended 08-11-05
Amended 11-09-06
Amended 08-28-08**

TABLE OF CONTENTS

	Pg. No.
I. INTRODUCTION.....	1
II. CONSTRUCTION AND MAINTENANCE ASSESSMENT	2
III. CAPITAL IMPROVEMENTS.....	3
IV. CONSTRUCTION AND MAINTENANCE ASSESSMENT RULES.....	7
V. APPEALS TO THE BOARD OF WATER COMMISSIONERS.....	8

LIST OF TABLES

TABLE NO. 1 METER CAPACITY AND EQUIVALENT DEMAND UNITS.....	2
TABLE NO. 2 COMPLETED CAPITAL IMPROVEMENTS	3
TABLE NO. 3 CONSTRUCTION AND MAINTENANCE ASSESSMENT.....	6
TABLE NO. 4 METER SIZE VS NUMBER OF UNITS.....	7

I. INTRODUCTION

Based on the growth of first and second homes in the City of Laconia, the demand for water is expected to increase. In 1988, Laconia constructed a new water treatment plant. This plant was designed to serve not only the present demand, but was designed with additional capacity for future growth and development. Also, other system wide improvement has been necessary in order to accommodate increase in demand.

In order to have amortized funds to pay for these capital improvements attributable to current and contemplated growth, the Laconia Water Works is instituting a Construction And Maintenance Assessment (CMA) to all new users of Laconia water.

The Construction And Maintenance Assessment is a one-time fee assessed when a new connection is made to the water system or when an existing connection is provided with a larger meter because an existing customer has substantially increased water usage.

The rationale underlying the charge is that a new customer enjoys a proportionate use of the existing system benefits, but because of his increased demand, causes future capital outlays to be made for system development due to growth. Existing customers cause very little new capital outlay for system development, but are burdened with sharing the costs of new system improvements brought about by increased growth. Consequently, Laconia has developed a one-time connection charge for new customers as a long-term solution to finance system improvements and maintenance. Existing customers would not be required to pay a connection fee unless they substantially ⁽¹⁾ expand their present demand.

The objective of the Construction And Maintenance Assessment is to have only those persons demanding additional water pay the incremental cost to have that water supplied to them. The goal is to not impact the existing users of Laconia water by having them pay for capital improvements (through water rate increases) caused by the new water users in the City.

(1) The increase is substantial if it is determined that larger or additional water meters are required to properly meter the increase in demand. Example: An existing motel of five units served through a 1" meter expands to thirty units. The increased demand requires the installation of a 2" meter. The CMA charge is the difference between a 2" meter and a 1" meter, as identified in Table No. 3.

The CMA is additional to all other currently established fees and services by Laconia Water Works, to have water service brought into a structure.

II. CONSTRUCTION AND MAINTENANCE ASSESSMENT

No part of the Laconia Water Works has been paid for by property taxes. It has been paid for by fees and charges assessed against the users. This method permits orderly growth by providing new users and "expanded" users an opportunity to be connected to the system by paying their fair share of the capital improvements, which are necessary to provide service to them.

This Construction And Maintenance Assessment is proposed to be based on the size of the water meter needed to serve the specified unit demand. For example, a residential service requires a 5/8" - 3/4" water meter. To equitably determine this charge we must know the existing use in gallons-per-day of a typical 5/8" - 3/4" water meter. This is calculated on the basis of the hydraulic capacity of each water meter (80% of maximum capacity recommended by AWWA manual M22) size varying from 5/8" to 8".

The first item to determine is the 2008 Average Maximum Daily Demand (MDD) necessary to serve the City. Based on Drawing No.1 we can see that the Laconia and Weirs peak MDD for 2006 was 3.50. In 2008 the MDD flows remained near the 3.5 MGD level.

A table of meter sizes and an extrapolation of the equivalent number of 5/8" - 3/4" meters is shown in Table No. 1.

TABLE NO. 1 METER CAPACITY AND EQUIVALENT DEMAND UNITS

<u>Meter Size Inch</u>	<u>Capacity (GPM) (1)</u>	<u>No. of Active Meters 2005</u>	<u>Demand Factor (2)</u>	<u>Total No. of Equivalent Demand Units</u>
5/8 - 3/4 (3)	16	5,782	1.0	5,782.0
3/4	24	14	1.5	21.0
1	40	143	2.5	357.5
1-1/2	80	120	5.0	600.0
2	128	153	8.0	1,224.0
3	240	2	15.0	30.0
4	400	1	25.0	25.0
6	800	2	50.0	100.0
8	1,280	0	80.0	<u>0.0</u>
Total (2008)				8,139.5

(1) 80% of maximum capacity in GPM (AWWA manual M-22)

(2) Demand Factor = $\frac{\text{Capacity in GPM}}{16}$

(3) 5/8" plus (5/8"-3/4") meters

Present (2006) Demand Unit Rate = $\frac{\text{Maximum Demand}}{\text{Equiv. Demand Units}} = \frac{3,500,000 \text{ GPD}}{8,139.5}$

Present (2006) Demand Unit Rate = 430 GPD/Unit

Additional Increase in System Demand For Maximum Water Treatment Plant Capacity
6.0 MGD - 3.50 MGD = 2.50 MGD

No. of Future Equivalent Demand Units = $\frac{2.50 \text{ MGD}}{430 \text{ GPD/Unit}} = 5,814 \text{ Units}$

No. of Future Equivalent Demand Units = 5,814 Units (beginning 08-10-08)

III. CAPITAL IMPROVEMENTS

Capital expenditures for infrastructure improvements are necessary to maintain the high standards of service that Laconia water customers presently enjoy. Capital expenditures for infrastructure improvements are also necessary in order to insure the delivery of water to new or expanded customers. Some of the capital expenditures proposed here are not totally a result of system expansion and increased demand within Laconia. Some are required to meet the current State of New Hampshire Department of Environmental Services and Environmental Protection Agency's requirements of the Safe Drinking Water Act presently being enforced.

Table 2 itemizes capital improvements that have been completed within the past nineteen (19) years. In table 2 an equitable percentage of the cost for these projects is assigned to the growth factions of the City.

TABLE NO. 2 COMPLETED CAPITAL IMPROVEMENTS

IMPROVEMENTS (completion date)	ACTUAL COSTS (including bond principal and interest payments) (\$)	PERCENT ATTRIBUTED TO SYSTEM EXPANSION (%)	CONSTRUCTION VALUE ATTRIBUTED TO SYSTEM EXPANSION (\$)
1. 6.0 MGD water treatment plant (1988)	\$5,546,624	45.66% (1)	\$2,532,588
2. 20" forcemain to Stark St. tank w/ new meter pit (3,500' 20" CLDIP) by LWW (1987)	\$ 212,000	45.66%(1)	\$ 96,799

IMPROVEMENTS (completion date)	ACTUAL COSTS (including bond principal and interest payments) (\$)	PERCENT ATTRIBUTED TO SYSTEM EXPANSION (%)	CONSTRUCTION VALUE ATTRIBUTED TO SYSTEM EXPANSION (\$)
3. Backwash Recycle at the Water Treatment Plant (1990)	\$ 55,000	45.66%(1)	\$ 25,113
4. New Intake Structure	\$305,000	44.83%(2)	\$ 136,731
5. Rebuild 300HP Pump- Base Blue 2000	\$23,861	44.83%(2)	\$ 10,696
6. Rebuild Briarcrest Pump 2000	\$7,800	44.83%(2)	\$ 3,496
7. Generator 2000	\$86,030	44.83%(2)	\$38,567
8. Rehab Long Bay Tank 2004	\$193,250	43.33%(3)	\$ 83,735
9. SCADA System 2004	\$127,769	43.33%(3)	\$ 55,362
10. New Weirs Tank 2005	\$486,811	43.33%(3)	\$ 210,935
11. Treatment Plant Pump Replacement 2005	\$15,200	43.33%(3)	\$ 6,586
12. Globe Check Valve Replacement 2005	\$7,257	43.33%(3)	\$ 3,144
13. Discharge Head Weirs Pump 2005	\$1,815	43.33%(3)	\$ 786
14. Base Raw Pump – VFD 2006	\$41,682.08	41.66%(4)	\$17,365
15. 96 Channel Auto Dialer 2006	\$14,905.00	41.66%(4)	\$6,209
16. BASE RAW PUMP – VFD 08-30-07	\$125,485.00	41.66%(5)	\$52,277
17. CLEARWELL PUMP – TP 06-12-08	\$21,512	41.66%(5)	\$8,962

IMPROVEMENTS (completion date)	ACTUAL COSTS (including bond principal and interest payments) (\$)	PERCENT ATTRIBUTED TO SYSTEM EXPANSION (%)	CONSTRUCTION VALUE ATTRIBUTED TO SYSTEM EXPANSION (\$)
18. SCADA CONTROL PANEL – TP 05-29-08	\$75,302	41.66%(5)	\$31,371
		SUB-TOTAL COMPLETED PROJECTS	\$3,320,722

(1) $\frac{6.0 \text{ MGD} - 3.26 \text{ MGD}}{6.0 \text{ MGD}} \times 100 = 45.66\% \text{ 1996 FUTURE SHARE}$

(2) $\frac{6.0 \text{ MGD} - 3.31 \text{ MGD}}{6.0 \text{ MGD}} \times 100 = 44.83\% \text{ 1997 FUTURE SHARE}$

(3) $\frac{6.0 \text{ MGD} - 3.40 \text{ MGD}}{6.0 \text{ MGD}} \times 100 = 43.33\% \text{ 2002 FUTURE SHARE}$

(4) $\frac{6.0 \text{ MGD} - 3.50 \text{ MGD}}{6.0 \text{ MGD}} \times 100 = 41.66\% \text{ 2006 FUTURE SHARE}$

(5) $\frac{6.0 \text{ MGD} - 3.50 \text{ MGD}}{6.0 \text{ MGD}} \times 100 = 41.66\% \text{ 2008 FUTURE SHARE}$

TOTAL COMPLETED PROJECTS = \$3,320,722

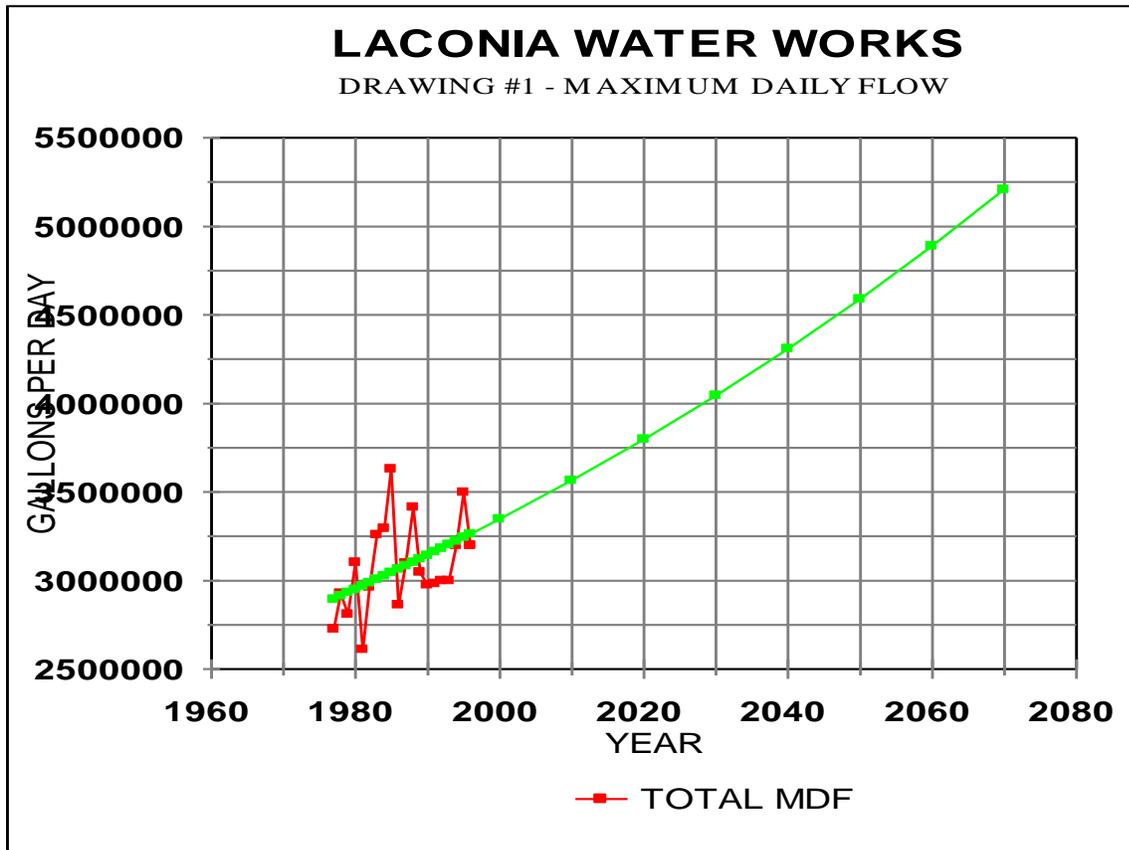
Cost per demand unit = $\frac{\text{Total cost}}{\text{Remaining Equiv. Demand Units (future)}} = \frac{\$ 3,320,722}{5,814 \text{ units}}$

Cost per demand unit = CMA = \$ 571.14 Say 571.00

TABLE NO. 3 CONSTRUCTION AND MAINTENANCE ASSESSMENT

<u>Meter Size</u>	<u>Demand Factor</u>	<u>Construction And Maintenance Assessment (2)</u>
5/8" - 3/4"	1.0	* \$ 571 *
3/4"	1.5	* 857 *
1"	2.5	* 1,428 *
1-1/2"	5.0	* 2,855 *
2"	8.0	* 4,568 *
3"	15.0	* 8,565 *
4"	25.0	* 14,275 *
6"	50.0	* 28,550 *
8"	80.0	* 45,680 *

(2) Demand factor x \$ 571



IV. CONSTRUCTION AND MAINTENANCE ASSESSMENT RULES

All Laconia Water Works customers requiring a new or larger meter after July 13, 1995 shall be assessed the Construction And Maintenance Assessment. This charge shall be recalculated every year on August 1st, and be based on a new and updated look at the capital expenditures necessary to meet future expansion needs, and the actual cost of those improvements already implemented.

Requests for increases in meter sizes shall be assessed the difference between the current CMA for the existing meter versus proposed meter size.

The CMA shall be paid by the customer to the Laconia Water Works at the time the meter is picked up from the Laconia Water Works for installation. The CMA will be in addition to all other fees and charges including the Meter Maintenance Fee.

Meter sizes shall be based on the following table:

TABLE NO. 4 METER SIZE VS NUMBER OF UNITS

<u>80% of Peak Flow GPM</u>	<u>Maximum Fixture Units</u>	<u>Meter Size</u>	<u>Maximum Number of UNITS</u>
16	28	5/8" - 3/4"	0 - 1
40	182	1"	2 - 6
80	447	1-1/2"	7 - 15
128	1,160	2"	16 - 41
240	5,500	3"	42 - 194
400	13,375	4"	195 - 473
800	28,375	6"	474 - 1004
1280	46,000	8"	1005 - 1629

Each individually owned unit shall require its own water meter. Apartment buildings may use larger meters and pay the larger meter CMA. If condominium ownership is ever proposed for an existing apartment complex, building or other form of ownership, separate meters will then be required for each owner and the CMA will be due and payable by each owner after giving credit towards the larger meter removed.

For example, if in 2006 a 20-unit apartment building with a 2" service meter now wants to convert to 20 condominium units. The original 2" meter requires a total CMA of \$4,568 or \$228.40 per unit. The new CMA would be \$571 per unit, therefore a net CMA of \$343.60 is due from each new owner. Under this schedule the 2" meter must be returned to the Water Works for credit, and separate individual water meters must be installed. Credits towards larger meters

installed before 7/13/95 may be given a new owner even if no CMA was assessed on the original meter. Credits will be calculated based on the CMA currently in effect. The CMA will not be charged on meters installed prior to July 13, 1995.

No CMA refunds will be given on meters returned to the Laconia Water Works or on exchanges for smaller meters. Ownership changes not requiring a larger meter (or additional meter) will not be assessed the CMA.

The CMA will be paid on all new irrigation meters installed after 07-13-95.

V. APPEALS TO THE BOARD OF WATER COMMISSIONERS

Appeals of the CMA may be made to the Board of Water Commissioners, in writing, at any regular meeting. Notice must be given two weeks prior to the meeting.

CMA Summary

DEMAND UNITS

<u>DATES</u>	<u>Current</u>	<u>Future</u>	<u>CMA Charge</u>
07/13/95 to 10-09-96	-	-	\$414
10-09-96 to 08-01-97	7,328.5	6,171	\$430
08-01-97 to 08-11-05	7,393	6,004	\$465
08-11-05 to 11-09-06	8,594	6,566	\$489
11-10-06 to 08-01-07	7,926*	5,656	\$571
08-01-07 to 08-14-08	8,139.5	5,814	\$571

10-09-96 Amendments:

07-01-97 Amendments:

08-11-05 Amendments:

11-09-06 Amendments: * corrected for adjustment to exclude “sewer only” meters

08-14-08 Amendments

Based on more up to date accounting of existing meters now in service, adjustments were made to the number of meters shown in Table No. 1. Also by now having combined flows for the Weirs and Lakeport being recorded at the treatment plant, the projected flow curve for future maximum daily water consumption was adjusted accordingly. This is reflected in Drawing No. 1.