



The Middleborough Board of Selectmen, acting as the Water & Sewer Commissioners, voted on March 8, 2004, to adopt the following Infiltration and Inflow Policy and New Sewer Rates and Charges, effective immediately:

**TOWN OF MIDDLEBOROUGH
WASTEWATER POLICY
AND
PLAN OF SEWER SERVICE AREA**

1. No extensions or connections are allowed outside the existing sewer service area unless the Board of Selectmen declare a public health emergency and vote approval at a regularly convened public meeting.
2. Connections to the existing sewer system service area are permitted provided the lot in question has a sewer line fronting on the property (either side of the street) or passing through it.
3. Any extensions outside of the sewer service area – not considered a public health emergency by the Board of Selectmen – shall be approved by Town Meeting.
4. Project flows shall be based upon estimates calculated by 314CMR5.0. Projects requiring participation in the I/I Removal Process shall be responsible for I/I Removal or Fees in excess of the original project estimate following full buildout.
5. Projects using two thousand (2,000) gallons per day or more of wastewater flow, require special permission. The Board of Selectmen may approve the proposed project provided the following steps are taken:
 - a. The developer must apply to the Board of Selectmen and receive approval of a connection permit for any project use exceeding two thousand (2,000) gallons per day.
 - b. All connection permits approved by the Board of Selectmen will be conditioned on the project proponent's removal of two (2) gallons of infiltration and/or inflow (I/I) for every gallon of projected flow from the proposed use.
 - c. The project proponent will have the opportunity to apply three (3) programs to reduce I/I to the 2 for 1 requirement for flows over 2,000 gallons per day. These options are:
 - Option 1 is a Water and Sewer Use Reduction Program;
 - Option 2 is for Construction Funding by a developer.
 - Option 3 is a Town Sewer Project Engineering/Construction Fund.

Options are described in the attached work program.

- d. Section 5 (above) applies to both new project flows and existing customers expanding their use in excess of 2,000 gallons per day.
6. The Superintendent of the Wastewater Department shall review the proposed work plan and provide a recommendation to the Board of Selectmen for approval. The Superintendent will be responsible for certifying completion of the project work.
7. If the Town's engineering consultant is required to participate in review of any of the options, the Superintendent of the Wastewater Department shall provide an estimate of costs. These costs are part of the total obligation by the project proponent.
8. The Board of Selectmen shall be presented the information and authorize the connection to the sewer system, through the Wastewater Department Superintendent.

**TOWN OF MIDDLEBOROUGH
WASTEWATER DEPARTMENT**

EFFECTIVE MARCH - 2004

A. Wastewater Flow Quarterly Charges

1. Minimum Quarterly Charge for 500 cubic feet of wastewater ***

2. Wastewater Meter Flow Over 500 cu. ft. Charges

<u>Water Meter Size</u>	<u>Charge</u>	<u>Cubic Feet</u>	<u>Charge per Cu.Ft.</u>
5/8 inch	\$ 17.78	501 to 2,500 cu. ft.	= \$ 1.24 cu. ft.
3/4 inch	21.10	2,501 to 25,000 cu. ft.	= \$ 1.89 cu. ft.
1 inch	27.75	25,001 or over cu. ft.	= \$ 2.85 cu. ft.
1 1/4 inch	36.42		
1 1/2 inch	44.41		
2 inch	54.38		
3 inch	117.65		
4 inch	177.56		
6 inch	344.00		
8 inch	776.76		

B. Septage Charges for Haulers

Middleborough Origin Septage

1. \$ 35.00 per 1000 gallons hauled to Wastewater Treatment Facility as a minimum charge.
2. Over 1000 gallons = \$ 3.50 per 100 gallons or \$ 0.035 per gallon.

Lakeville Permitted Origin Septage

1. \$ 70.00 per 1000 gallons hauled to Wastewater Treatment Facility as a minimum charge.
2. Over 1000 gallons = \$ 7.00 per 100 gallons or \$ 0.070 per gallon.

Gate Charge for Middleborough or Lakeville Permitted Haulers

1. Septage received outside normal discharge hours (7AM to 3:30 PM M-F, and 7AM to 11AM Saturday) are charged \$ 48.00 per load to offset callback.

C. Existing Sewer System Service Area

The following fee schedule shall apply to existing homes, commercial, industrial or motel/hotels, or new construction within the existing sewer system service area, that have lot frontage, as described in the Town's Wastewater Policy and that have paid a betterment fee.

For properties that are connected to the sewer system and are requesting additional wastewater flow in excess of 400% of the average flow for the 12 month period prior to the quarter ending March 31, 2004, fees outlined under Section D (below) shall be applied. I/I Removal or Fees will also apply if the flow increase exceeds 2,000 gallons per day in total.

Fee Schedule

Description	Application Fee
1. Residential Home	\$ 125.00
2. Commercial	250.00 + \$ 0.05 per square foot
3. Industrial	250.00 + \$ 0.05 per square foot
4. Motel/Hotel	250.00 + \$ 100 per room
5. Permit Connection Fee	200.00 (1)

(1) All sewer connections must obtain a permit from the Wastewater Division. Permit fees must be paid to cover inspections and office work. Permits must be paid in full prior to the commencement of work.

D. Wastewater Fees and Charges for Tie in's Outside The Sewer System Service Area Or Outside of Middleborough

The following application fee schedule and P.O.T.W. tie-in fees shall apply for tie in's to the sewer collection system, for classifications listed below: All sewer connection costs will be borne by project proponents. If there is a potential for other future tie ins, or other benefit to the Town, the Board of Selectmen can negotiate in its best interest.

Application Fee Schedule and P.O.T.W.

1. Permit Connection Fee	200.00
2. Connection Fees and Classification of Users	
a. Residential/Single not in SSSA	4,000.00
b. Motel - Hotel	5,000.00 per 1000 gallons/day (1)
c. Beneficial Use -Non Profits	Board vote to assess Fee
d. Commercial/Industrial	5,000.00 per 1000 gallons/day (1)
e. Duplex per lot	4,000.00
f. Triple Family/Apartments	1,300.00 per bedroom
g. Reuse of Commercial Bldgs (if upgrade req'd)	5,000.00 per 1000 gallons (\$ 4,000.00 credit for original connection)

- (1) A minimum of \$ 5000.00 will be required for flows less than 1000 gpd for these categories.
- 3. Publicly Owned Treatment Works Tie In Fees of Middleborough.
- (a) Calculation for POTW Tie in Fee is as follows:

Variables	Description
A	Proposed Wastewater Flow (or increase in Flow) to POTW in mgd (1)
B	Design Flow of Middleborough POTW - constant = 2.16 mgd
C	Percent of POTW Flow = $C = A \text{ divided by } B = \text{ _____\%}$
D	1974 Cost of POTW - constant = \$ 5,864,778
E	1974 Consumer Price Index (CPI) = 48.9
F	Current Consumer Price Index (CPI) = \$ _____\
G	Current Value of POTW = $(E/F \text{ times } D/X) = \$ \text{ _____\}$
H	Tie In Fee

POTW FORMULA $H = G \text{ times } C = \$ \text{ _____\}$

- (1) Increase in Flow in excess of 200% of the average Flow for the Twelve Month Period prior to the Quarter ending March 31, 2004 will trigger the Fees and Charges under Section D. for Customers outside of Middleborough.
- (1) I/I Removal or Fees will also apply if the Flow Increase exceeds 2,000 gallons per day in total.

INFILTRATION- INFLOW WORK PROGRAM

General

The project proponent will have a choice of three options or a combination of options in order to accomplish the goal of removal of 2 gallons of I/I for every gallon that is added to the Town of Middleborough's wastewater flow.

The Board of Selectmen, acting as Sewer Commissioners shall determine the needs of any of the programs and will provide an approval of any selected or combination of Options, based upon recommendations from the Wastewater Superintendent. If agreement cannot be reached, the Selectmen, acting as Sewer Commissioners, shall make the choice.

OPTION 1 - WATER AND SEWER USE REDUCTION PROGRAM

Introduction

A Water and Sewer Use Reduction Program (the "WASURP") will be implemented to reduce the amount of water that is currently being used by existing water users which are connected to the Town of Middleborough's sewer service area. The end result will be an equivalent two for one (2 to 1) reduction in wastewater flowing into the sewer system and the Town's wastewater treatment facility.

Components of the Program

The WASURP will consist of replacement or retrofitting of various water-using devices in existing buildings in the Town of Middleborough, whose owners choose to participate. All participants are to be presently connected to the sewer system.

Each replacement or retrofit of a water-using device will carry a stipulated gallonage savings, based on average savings achieved in similar programs implemented in other communities or in conjunction with the Massachusetts Department of Environmental Protection.

Devices to be considered for retrofit or replacement include toilets, toilet dams, flushometers, showerheads, faucet aerators, and flow-limiting devices on commercial machines that utilize water and discharge to the Town's sewer system, such as dishwashers, car washes, industrial processes, etc.

Candidate Participants

Participation in the WASURP by existing water users will be voluntary. The following existing user groups are candidates for participation in the WASURP:

1. Schools: Potential water and sewer use reduction opportunities include:
 - Replacing flushometers in toilets
 - Replacing flushometers in urinals
 - Installing aerators in lavatory faucets
 - Installing low-flow showerheads in locker rooms
 - Installing flow-limiting devices in cafeteria dishwashers

2. Municipal Buildings: Potential water and sewer use reduction opportunities include:
 - Replacing flushometers in toilets
 - Replacing flushometers in urinals
 - Installing aerators in lavatory faucets

3. Multifamily Housing units: Potential water and sewer use reduction opportunities include:
 - Installing toilet dams in toilets
 - Installing aerators in lavatory and kitchen faucets
 - Installing low-flow showerheads in bathrooms

4. Single family homes: Potential water and sewer use reduction opportunities include:
 - Installing toilet dams in toilets
 - Installing aerators in lavatory and kitchen faucets
 - Installing low-flow showerheads in bathrooms

5. Business or commercial users: Potential water and sewer use reduction opportunities include:
 - Replacing flushometers in toilets
 - Replacing flushometers in urinals
 - Installing aerators in lavatory faucets
 - Installing flow-limiting devices on commercial or industrial processes which utilize water then discard it as wastewater to the sewer system.

Implementation

1. General

Implementation will begin with a detailed survey of existing water and sewer users to identify the most likely candidates to achieve the required water and sewer use reduction of the required two for one gallons per day. Based on the results of the fieldwork, specific participants will be selected and the detailed components of the WASURP will be finalized.

Once developed, an implementation plan with its specific components will be submitted to the Town of Middleborough's Wastewater Department Superintendent for approval.

2. Achievement of Use Reduction

Credit for reduction of water and sewer use will be granted on a stipulated basis as the various components of the WASURP are implemented, utilizing the user reductions set forth in Exhibit A for Residential Users, and in Exhibit B for schools, municipal, and commercial users. The stipulated savings set forth in Exhibits A and B have been developed for similar programs using industry averages for existing fixture water flows, occupancy loads, and number of uses per day. The total stipulated use reduction will be calculated using the actual population of the schools or other facilities which participate, and the actual number of households which participate. The quantity of savings for components not listed in Exhibits A & B such as commercial dishwashers, laundry

machines, or industrial processes, will be provided and approved by the Town of Middleborough Wastewater Department Superintendent.

Schedule of Implementation

A schedule of implementation will be provided and shall be limited to one (1) year.

3. Method of Implementation

a. The identified potential participants will be sent a notice by mail, outlining the WASURP and asking for voluntary participation, along with a request for types, years and flow of toilets, and any general information such as dishwasher and washing machine use.

b. Once the accumulated information is provided in a table, an estimated cost of materials and construction services will be provided to the Wastewater Department. This cost shall be reviewed by the Town's Wastewater Department and submitted to the Board of Selectmen for approval.

c. The proponent will select a local self insured plumber/company for contact to be made for installation of the water saving devices.

d. A final submittal of installed devices and estimated water and sewer use reduction shall be provided to the Board of Selectmen through the Wastewater Department Superintendent.

OPTION 2 - CONSTRUCTION PROJECT PERFORMANCE

This option will allow the project proponent to provide construction services for repair of identified I/I projects. The overall construction cost will be limited to two dollars and fifty cents (\$ 2.50) for every one gallon of I/I removed. The project proponent shall be required to hire an insured and experienced general construction contractor to perform the work.

EXAMPLE:

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

Payment to Wastewater Account is = 6,000 gallons times \$ 2.50 per gallon = \$ 15,000

OPTION 3 - TOWN SEWER PROJECT ENGINEERING AND/OR CONSTRUCTION FUND

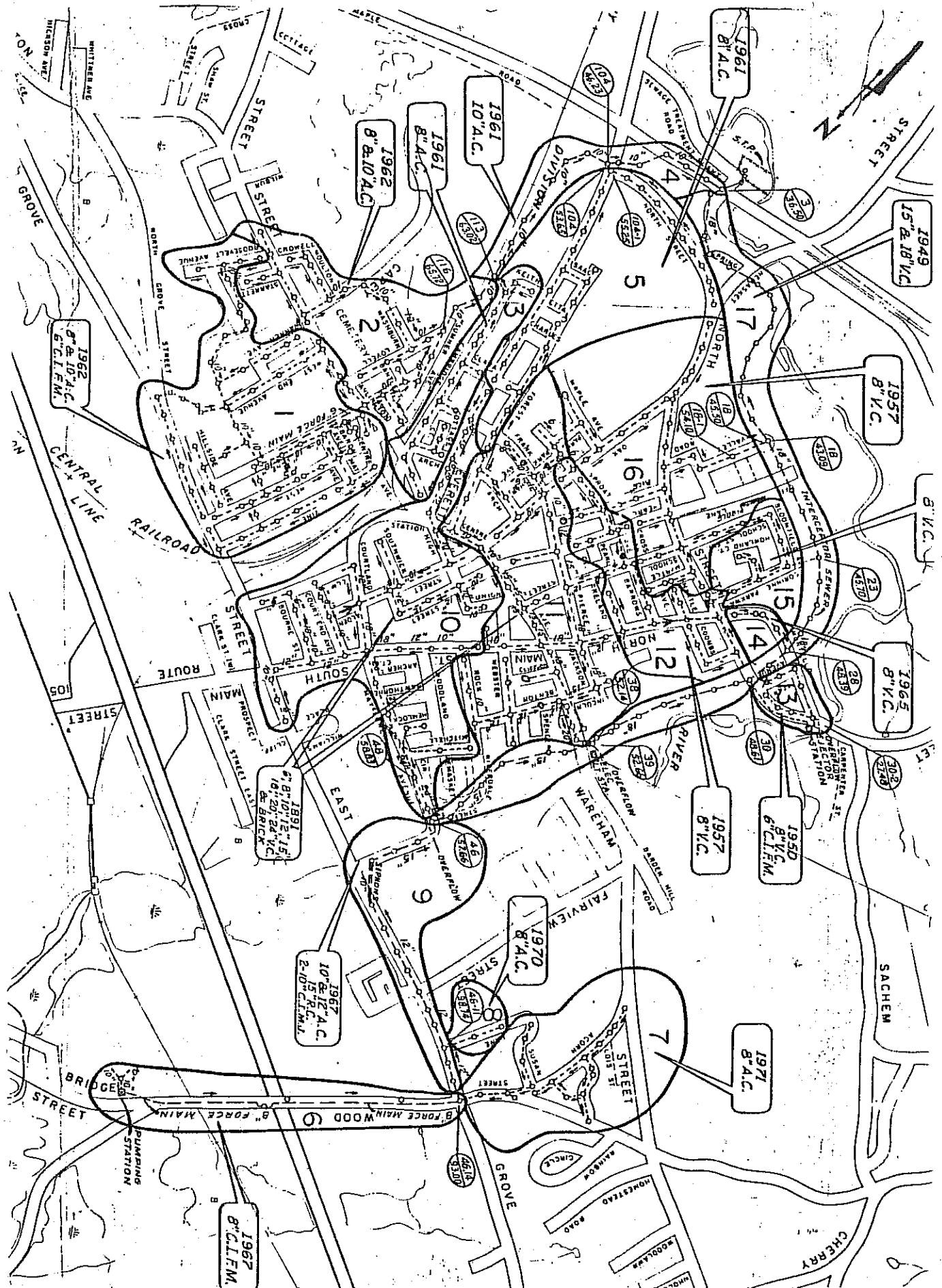
This option allows a project proponent to contribute to a Town Sewer Project Fund that will accumulate dollars for the town to perform I/I studies and construction within the Sewer Service Area. The project proponent will be required to contribute three dollars (\$ 3.00) for every gallon of flow, according to the following formula:

FORMULA.:

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

Payment to Wastewater Fund is = 6,000 gallons times \$ 3.00 per gallon = \$ 18,000



WORK PROGRAM

General

The project proponent will have a choice of three options or a combination of options in order to accomplish the goal of removal of 2 gallons of I/I for every gallon that is added to the Town of Middleborough's wastewater flow.

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EXHIBITS A AND B

EXHIBITS A AND B

R E C E I V E D
DEC 22 2003
 BOARD OF SELECTMEN
 MIDDLEBOROUGH, MA

EXHIBIT A

**WATER AND SEWER REDUCTION PROGRAM
 WATER SAVINGS FOR RESIDENTIAL USERS**
 Water Savings per Household

A	B	C	D	E	F	G	H	I
Fixture	Years Manufactured or Installed ¹	Existing Device Usage	Replacement Device Usage	Retrofit Savings ² (C-D)	Usage Rate (uses/capita/day)	Gallons Saved/capita/day ³ (EXF)	Capita/Household ¹	Average Daily Savings / Household ⁹ (gal. saved/day) (GXH)
Toilet Dams		5-7 gpl ¹	3-5 gpl	2 gpl ⁴	4.2 fpd ⁵	8.4 gpcd	2.64 cph	22.2 gpd
Toilets								
	1994 - Present	1.6 gpl ⁶						
	1980-1994	3.5 gpl ⁶	1.6 gpl ⁶	1.9 gpl ⁶	4.2 fpd ⁵	8.0 gpcd	2.64 cph	21.1 gpd
	1950s - 1980	5.0 gpl ⁶	1.6 gpl ⁶	3.4 gpl ⁶	4.2 fpd ⁵	14.3 gpcd	2.64 cph	37.7 gpd
	Pre 1950s	7.0 gpl ⁶	1.6 gpl ⁶	5.4 gpl ⁶	4.2 fpd ⁵	22.7 gpcd	2.64 cph	59.9 gpd
Faucets								
	1994 - Present	1.7 gpm ⁷						
	1980-1994	1.8 gpm ⁷	1.7 gpm ⁷	0.1 gpm	8.1 mpd ⁷	0.8 gpcd	2.64 cph	2.1 gpd
	Pre 1980s	3.3 gpm ⁷	1.7 gpm ⁷	1.6 gpm	8.1 mpd ⁷	13.0 gpcd	2.64 cph	34.2 gpd
Showerheads								
	1994 - Present	1.7 gpm ⁸						
	1980-1994	1.8 gpm ⁸	1.7 gpm ⁸	0.1 gpm	5.3 mpd ⁸	0.5 gpcd	2.64 cph	1.4 gpd
	Pre 1980s	4.3 gpm ⁸	1.7 gpm ⁸	2.6 gpm	5.3 mpd ⁸	13.8 gpcd	2.64 cph	36.4 gpd

Notes:

- 1 Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 2 Retrofit Savings = Existing device usage - replacement device usage.
- 3 Gallons saved per capita per day = Retrofit Savings x Usage Rate
- 4 Installation of toilet tank displacement device; Weymouth Conservation Program
- 5 Based on Weymouth Conservation Program
- 6 Table 2.2 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 7 Table 2.15 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 8 Table 2.11 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2002
- 9 Average Daily Savings per Household = Gallons Saved per Capita per Day x Capita per Household

gpl = gallons per flush
 gpm = gallons per minute
 fpd = flushes per day
 gpcd = gallons per capita per day
 mpd = minutes per day
 cph = capita per household

EXHIBIT B

WATER AND SEWER REDUCTION PROGRAM

Water Savings for School, Municipality, Commercial

A	B	C	D	E	F	G	H	I For Schools		K	L
								J	K		
Fixture	Users	Years Manufactured or Installed ¹	Existing Device Usage	Replacement Device Usage	Retrofit Savings ² (gal. saved/use/fixture) (D-E)	Usage Rate (uses/capita/day)	Gallons Saved/Capita/Day ³ (FxG)	Ratio - Schools days/total days in a year ⁴ (180/365)	Average Daily Savings saved/capita/day ⁵ (HxI)	Ratio - Working days in a year ⁶ (260/365)	Average Daily Savings saved/capita/day ⁷ (HxK)
Toilet	Male	1994 - Present	1.6 gpf ⁸								
		1980-1994	3.5 gpf ⁸	1.6 gpf ⁸	1.9 gpf	1 fpd ⁸	1.9 gpcd	0.49	0.9	0.71	1.4
		1950s - 1980	5.0 gpf ⁸	1.6 gpf ⁸	3.4 gpf	1 fpd ⁸	3.4 gpcd	0.49	1.7	0.71	2.4
		Pre 1950s	7.0 gpf ⁸	1.6 gpf ⁸	5.4 gpf	1 fpd ⁸	5.4 gpcd	0.49	2.7	0.71	3.8
Toilet	Female	1994 - Present	1.6 gpf ⁸								
		1980-1994	3.5 gpf ⁸	1.6 gpf ⁸	1.9 gpf	3 fpd ⁸	5.7 gpcd	0.49	2.8	0.71	4.1
		1950s - 1980	5.0 gpf ⁸	1.6 gpf ⁸	3.4 gpf	3 fpd ⁸	10.2 gpcd	0.49	5.0	0.71	7.3
		Pre 1950s	7.0 gpf ⁸	1.6 gpf ⁸	5.4 gpf	3 fpd ⁸	16.2 gpcd	0.49	8.0	0.71	11.5
Urinal	Male	1994 - Present	1.0 gpf ⁹								
		1980-1994	1.5 gpf ⁹	1.0 gpf ⁹	0.5 gpf	2 fpd ⁹	1.0 gpcd	0.49	0.5	0.71	0.7
		Pre 1980s	5.0 gpf ⁹	1.0 gpf ⁹	4.0 gpf	2 fpd ⁹	8.0 gpcd	0.49	3.9	0.71	5.7
Faucets	Male & Female	1994 - Present	1.7 gpm ¹⁰								
		1980-1994	2.0 gpm ¹⁰	1.7 gpm ¹⁰	0.3 gpm	1 mpd ¹¹	0.3 gpcd	0.49	0.1	0.71	0.2
		Pre 1980s	3.3 gpm ¹⁰	1.7 gpm ¹⁰	1.6 gpm	1 mpd ¹¹	1.6 gpcd	0.49	0.8	0.71	1.1
Shower	Male & Female	1994 - Present	1.7 gpm ¹²								
		1980-1994	1.8 gpm ¹²	1.7 gpm ¹²	0.1 gpm	5.3 mpd ¹²	0.5 gpcd	0.49	0.3	0.71	0.4
		Pre 1980s	4.3 gpm ¹²	1.7 gpm ¹²	2.6 gpm	5.3 mpd ¹²	13.8 gpcd	0.49	6.8	0.71	9.8

Notes:

- 1 Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 2 Retrofit Savings = Existing device usage - replacement device usage.
- 3 Gallons saved per capita per day = Retrofit Savings x Usage Rate
- 4 School Ratio = 180 school days/ 365 total days
- 5 Average Daily School Savings = gallons saved per capita x school day ratio
- 6 Working Day Ratio = 260 working days/ 365 total days
- 7 Average Daily Municipal and Commercial Savings = gallons saved per capita per day x capita x working day ratio
- 8 Table 2.4 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 9 Table 2.10 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 10 Table 2.15 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 11 Faucet Usage Rate (schools, municipal and commercial buildings) assumes 3 uses per day x 20 seconds per use x 1 minute per 60 seconds
- 12 Table 2.11 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001

gpf = gallons per flush

mpd = minutes per day

gpm = gallons per minute

fpd = flushes per day

gpcd = gallons per capita per day