



Recipients, Water Department Certificates of Appreciation - 25th Anniversary, Aaron River Reservoir, May 11, 2003

(L-R): Edwin Pratt, Selectman Fred Koed, Charles Fink, Gordon Flint, Barry Butman, Betty Maree, Bill Signorelli, George Marlette, Mrs. Alan Murphy, Brenda Douglas, Bill McAuliffe, Bob Eiben, Dan Blair, George Hawksley, Senator Bob Hedlund, Selectman Merle Brown, Tom Keefe, Steven Burn (for Rep. Garrett Bradley). *Photo © 2003 Susan Haney*

2004 Water Quality Report

Cohasset Water Department, 339 King Street, Cohasset, MA 02025 (781) 383-0057 www.cohassetwater.org March 27, 2004

Recipient of the 2003 Massachusetts Public Water System Award – one of the top 10% water systems in the state!

The Cohasset Water Department (DEP ID# 3065000), under the direction of the elected Board of Water Commissioners, provides public drinking water to approximately 7,100 Cohasset residents and provides and maintains a water system for fire fighting. We provide drinking water for almost 90% of the population of Cohasset, excluding North Cohasset which get its water from the Aquarion Water Company of Massachusetts.

This Water Quality Report describes the sources of our drinking water and the quality of that water for the period from January 1 – December 31, 2003. We are pleased to report that our drinking water meets or exceeds all applicable drinking water standards.

Where Your Water Comes From

Your drinking water comes from two surface water supplies, Lily Pond (DEP ID# 065-01S), and the Aaron River Reservoir (DEP ID# 065-02S). Lily Pond has a maximum capacity of about 100 million gallons of water and is 52 acres in size. The 136 acre Aaron River Reservoir, which can hold a maximum of 550 million gallons of water, is used to supplement Lily Pond in times of high water demand.

The watershed for Lily Pond and the Reservoir (*see enclosed map*) covers an area of 5,892 acres, or 9.21 square miles. Only 2,339 acres (or 40%) is in Cohasset. The safe yield of our surface water supplies is 5.2 million gallons per day (gpd). Our average daily demand is about 710,000 gallons per day, and

the maximum daily demand, in the summer, is 2.2 million gpd. Projections show that our existing water supply will be capable of meeting future water system demands for the next 40 years or more.

The Water Department has two wellfields - the Ellms Meadow Wellfield (ID# 065-02G), which has been approved for up to 170,000 gallons per day. The wellfield will be reactivated when the pumphouse is rebuilt in 2005. The Sohier Street Wells (ID# 065-01G & 03G) are currently out of service but are planned to be reactivated when the wellhead is relocated with mitigation funds from the MBTA.

2003 Water System Improvements

In 2003 the Water Commission:

- Replaced 6,864 feet, or about 1.3 miles of under-sized water mains (S. Main, Hillside, Beechwood) to improve fire protection & water quality.
- Approved the sale of 306,000 gallons of water per day to Linden Ponds in Hingham, which will provide revenue to help improve our water system.
- Was awarded a \$20 million 2% low interest loan for continued system improvements over next 5 years.
- Was awarded a \$255,000 grant to reduce nutrient loading of Lily Pond from stormwater runoff.
- Installed Variable Flow Drives and flow paced chemical feeds at the Lily Pond Treatment Plant.
- Started Taste&Odor study to improve water quality.
- Replaced 34 fire hydrants, installed 17 new fire hydrants, fixed 22 leaks, and repaired 54 meters.

2003 Cohasset Water Quality Results

The Cohasset Water Department tests for over 80 contaminants on a regular basis, in accordance with State and Federal requirements. The following contaminants were the only ones detected in the most recent testing required under the regulations. *In 2003, there were no violations of any applicable drinking water quality regulation.*

Regulated Contaminants								
	Date(s) Collected	Highest Detected	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDL	Violation? (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants								
Fluoride (ppm)	Daily, 2003	1.30	0.90 - 1.30	1.10	4	4	No	Additive to water to promote strong teeth
Volatile Organic Contaminants								
Chlorine (ppm)	Daily, 2003	1.50	1.09 - 1.50	1.29	4	4	No	Water additive used to protect public health by controlling microbes
Total Trihalomethanes (TTHMs) (ppb) (1)	3/31/03, 5/28/03, 9/17/03, 11/17/03	126.50	44.3 - 126.5	80.0	80	-----	No(1)	Byproduct of drinking water chlorination
Haloacetic Acids (HAC's) (ppb) (1)	3/31/03, 5/28/03, 9/17/03, 11/17/03	108.7	51.4 - 108.7	77.9	60	-----	No(1)	Byproduct of drinking water chlorination
Radioactive Contaminants (2)								
Gross Alpha (pCi/l) (minus uranium)	3/21/00	1.7	----	----	15	0	No	Erosion of natural deposits
Gross Beta/Photon emitters (pCi/L)	3/21/00	1.3	----	----	50	0	No	Decay of natural and man-made deposits
Synthetic Organic Contaminants								
Hexachlorocyclopentadiene (ppb)	6/3/03	0.1	----	----	50	50	No	Discharge from chemical factories
Lead & Copper (3) (20 sites sampled each)	Date(s) Collected	90th Percentile	Action Level	MCLG	# sites above AL	Violation?	Possible Sources of Contamination	
Lead (ppb)	8/22/01	12	15	0	2 of 20	No	Corrosion of household plumbing systems.	
Copper (ppm)	8/22/01	0.318	1.3	1.3	0 of 20	No	Corrosion of household plumbing systems; Leaching from wood preservatives	
Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value		Violation?	Possible Sources of Contamination		
Daily Compliance (NTU)	5	----	0.07		No	Soil Runoff		
Monthly Compliance	At least 95%	100%	----		No			
Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.								
*Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.								
Unregulated Contaminants (4)								
Inorganic Contaminants	Date(s) Collected	Results	Average Detected	SMCL	ORSG	Violation?	Possible Sources of Contamination	
Sodium (ppm)	5/2/03, 11/20/03	30.0, 20.2	25.1	----	20	No	Runoff from use of salt on roadways to protect public safety.	
Sulfate (ppm)	4/28/03	27.1	n/a	250	----	No	Natural sources	

(1) Cohasset was not required to test for TTHM's or HAC's in 2003 because systems serving less than 10,000 were not required to do so until January, 2004. However, we have been voluntarily testing for TTHM's & HAC's since 2000 and are taking measures to reduce their levels by continuing to rehabilitate water mains, annually flushing the distribution system, and by changing plant operations. In December 2003 we moved the pre-chlorination point in the Treatment Plant, which is expected to reduce TTHM and HAC levels to ensure that we will be in compliance with these MCL's to protect public health.

(2) DEP regulations require that radioactive contaminants be tested for only once every four years.

(3) We received a monitoring waiver in 1998 for Lead & Copper and were required to test for them once every three years.

(4) Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether further regulation is warranted. Exceeding a SMCL or ORSG for an unregulated contaminant is not a violation.

Vulnerable Populations Warning

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Educational Statement About Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using tap water to reduce lead content. Additional information is available from the Safe Drinking Water Hotline, 1-800-426-4791.

Health Effects of Some Contaminants

Although there were no exceedances of any applicable water quality regulation, below are the health effects for contaminants detected at relatively high levels:

Haloacetic Acids (HAC's). Some people who drink water containing HAC's in excess of the MCL over many years may have an increased risk of cancer.

Total Trihalomethanes (TTHM's). Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous system. They may have an increased risk of getting cancer.

Sodium. There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If the level is over 20 ppm, and you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.



Cohasset Water Commissioner Rob Kasameyer (center) receiving the **Massachusetts Public Drinking Award** for the Cohasset Water Department on May 8, 2003.

Definitions

- **90th Percentile.** 9/10 were at or below this level.
- **pCi/L.** Picocuries per liter (radioactivity).
- **ppb** - parts per billion, micrograms per liter (ug/l)
- **ppm** - parts per million, milligrams per liter (mg/l)
- **AL (Action Level).** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which must be followed.
- **MCL (Maximum Contaminant Level):** Highest level of contaminant allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
- **MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for margin of safety.
- **MRDL (Maximum Residual Disinfectant Level).** The highest level of a disinfectant allowed in drinking water. Disinfection is necessary to control microbiological contamination.
- **MRDLG (Maximum Residual Disinfectant Level Goal).** Level of a drinking water disinfectant which there is no known or expected risk to health; do not reflect the benefits of the use of disinfectants to control microbiological contaminants.
- **NTU (Nephelometric Turbidity Units)** Measure of how clear the water is.
- **ORSG. Mass Office of Research and Standards Guideline** Concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure.
- **SMCL.** Secondary Maximum Contaminant Level These standards protect the aesthetic qualities of drinking water and are not health based.
- **TT (Treatment Technique)** - 95% of all monthly samples taken must be less than/equal to 0.50 NTU
- **Variations & Exemptions** – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Community Involvement

- We encourage public interest and participation in Cohasset's decisions affecting drinking water.
- The Water Commission usually meets every other week at 8:00 pm at the Lily Pond Water Treatment Plant, 339 King Street. Meeting notices are posted at Town Hall. Feel free to attend and to participate in our meetings.
- Please call the Water Department at 383-0057 (fax 383-2906) with any questions or concerns.
- Chairman John McNabb can be reached at 383-6202 or at mcnabbj@mindspring.com
- This report is available at the Water Dept., Town Hall, and the Paul Pratt Memorial Library, and on our website, www.cohassetwater.org

Contaminants in Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic & volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and also from gas stations, stormwater runoff, & septic systems.

- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the DEP and EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Mass. Department of Public Health (DPH) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.



25th Anniversary – Aaron River Reservoir – May 11, 2003

Photo © 2003 Tanna Kasperowicz

SWAP Report on Cohasset

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving the Cohasset Water Department.

The SWAP Report notes that the key issues for water supply protection are: protection of the Zone A (see map inside), protecting the watershed outside Cohasset, public education, and control of residential uses that might contaminate the watershed.

The report commends the water system for mapping storm drains, conducting a study on the health of Lily Pond, and taking preliminary steps to develop a lawn care program.

The SWAP report recommends that we:

- Educate residents how to protect the water supply.
- Inspect the Zone A areas regularly.
- Coordinate responses to spills or accidents.
- Help local businesses to ensure the proper storage, handling, and disposal of hazardous materials.
- Monitor the progress on remedial actions on known hazardous material contamination sites.
- Implement our Surface Water Protection Plan.

The Water Commission plans to implement all the SWAP recommendations. The complete SWAP report is available at the Water Department and on our website. For more information, call the Water Dept. at 781-383-0057.

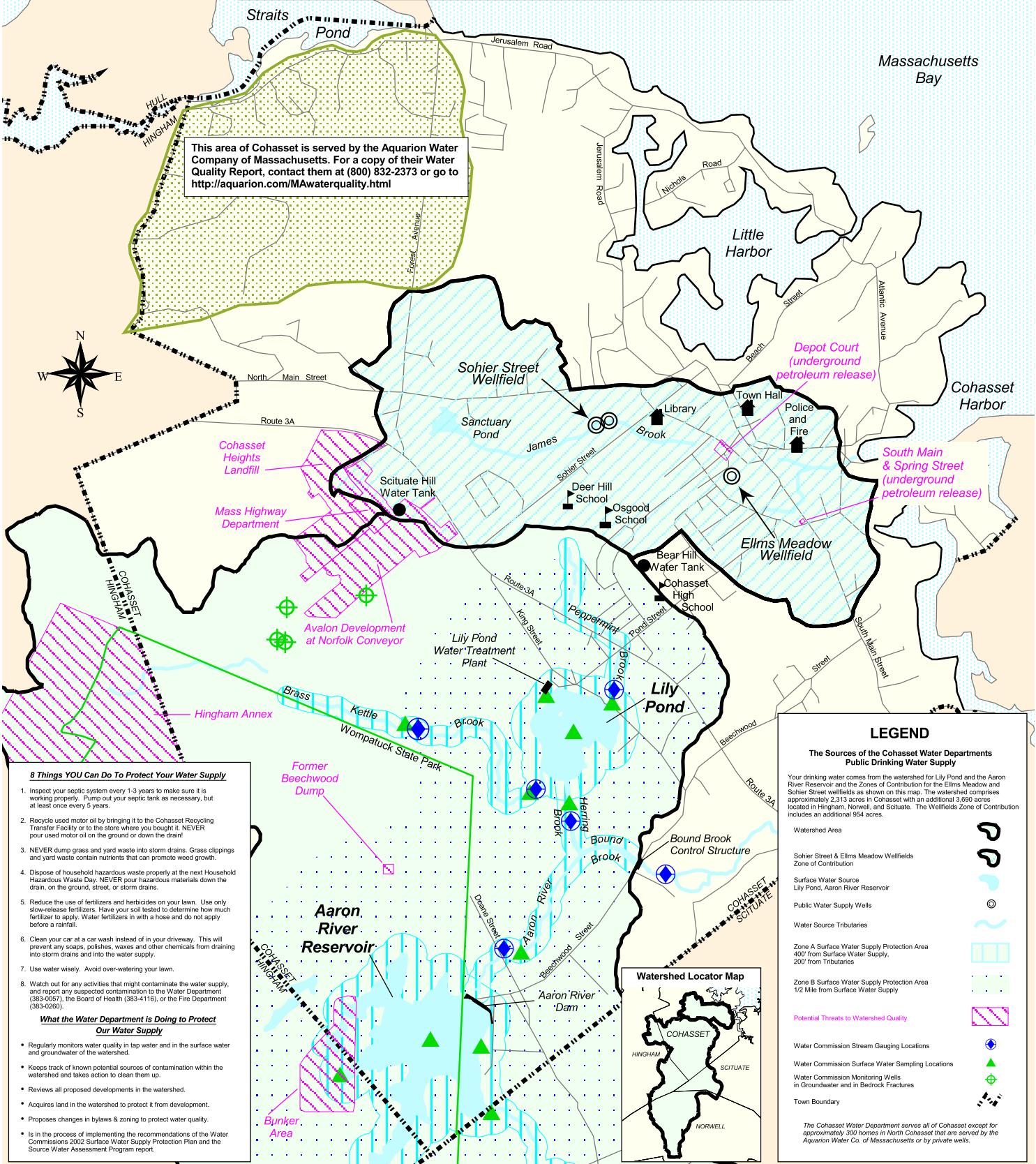
Cohasset Board of Water Commissioners

John McNabb, Chairman
Robert E. Kasameyer, Vice-Chairman
Glenn A. Pratt, Clerk

Where Your Drinking Water Comes From

Cohasset Water Department

This area of Cohasset is served by the Aquarion Water Company of Massachusetts. For a copy of their Water Quality Report, contact them at (800) 832-2373 or go to <http://aquarion.com/MAwaterquality.html>



8 Things YOU Can Do To Protect Your Water Supply

1. Inspect your septic system every 1-3 years to make sure it is working properly. Pump out your septic tank as necessary, but at least once every 5 years.
2. Recycle used motor oil by bringing it to the Cohasset Recycling Transfer Facility or to the store where you bought it. NEVER pour used motor oil on the ground or down the drain!
3. NEVER dump grass and yard waste into storm drains. Grass clippings and yard waste contain nutrients that can promote weed growth.
4. Dispose of household hazardous waste properly at the next Household Hazardous Waste Day. NEVER pour hazardous materials down the drain, on the ground, street, or storm drains.
5. Reduce the use of fertilizers and herbicides on your lawn. Use only slow-release fertilizers. Have your soil tested to determine how much fertilizer to apply. Water fertilizers in with a hose and do not apply before a rainfall.
6. Clean your car at a car wash instead of in your driveway. This will prevent any soaps, polishes, waxes and other chemicals from draining into storm drains and into the water supply.
7. Use water wisely. Avoid over-watering your lawn.
8. Watch out for any activities that might contaminate the water supply, and report any suspected contamination to the Water Department (383-0557), the Board of Health (383-4116), or the Fire Department (383-0268).

What the Water Department is Doing to Protect Our Water Supply

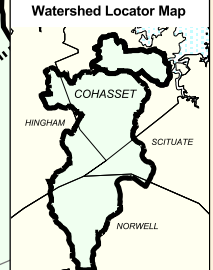
- Regularly monitors water quality in tap water and in the surface water and groundwater of the watershed.
- Keeps track of known potential sources of contamination within the watershed and takes action to clean them up.
- Reviews all proposed developments in the watershed.
- Acquires land in the watershed to protect it from development.
- Proposes changes in bylaws & zoning to protect water quality.
- Is in the process of implementing the recommendations of the Water Commission's 2002 Surface Water Supply Protection Plan and the Source Water Assessment Program report.

LEGEND

The Sources of the Cohasset Water Departments Public Drinking Water Supply

Your drinking water comes from the watershed for Lily Pond and the Aaron River Reservoir and the Zones of Contribution for the Elms Meadow and Sohler Street Wellfields as shown on this map. The watershed comprises approximately 2,313 acres in Cohasset with an additional 3,690 acres located in Hingham, Norwell, and Scituate. The Wellfields Zone of Contribution includes an additional 954 acres.

- Watershed Area
- Sohler Street & Elms Meadow Wellfields Zone of Contribution
- Surface Water Source: Lily Pond, Aaron River Reservoir
- Public Water Supply Wells
- Water Source Tributaries
- Zone A Surface Water Supply Protection Area: 400' from Surface Water Supply, 200' from Tributaries
- Zone B Surface Water Supply Protection Area: 1/2 Mile from Surface Water Supply
- Potential Threats to Watershed Quality
- Water Commission Stream Gauging Locations
- Water Commission Water Sampling Locations
- Water Commission Monitoring Wells in Groundwater and in Bedrock Fractures
- Town Boundary



Massachusetts State Plane Coordinate System -- NAD 1983



Contact Information:
 Cohasset Water Department
 339 King Street
 Cohasset, MA 02025
 ph: (781) 383-0057
 fax: (781) 383-2960
 web: www.cohassetwater.org

Consumer Confidence Report Map -- 2004
 Produced By: Norfolk Ram Group
 Date: March 27, 2004

COHASSET
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