

Town of Harwich
2012 TOWN REPORT - WATER DEPARTMENT

The Harwich Board of Water Commissioners and the Superintendent respectfully submit our Annual Report to the Honorable Board of Selectmen and to the citizens of the Town of Harwich for the year ending 2012.

Water System and Enterprise Fund

The original water system was established in 1936. Although major expansion projects were undertaken in the 1950's, late 1960's and again in the late 1970's, these expansions were accredited to system expansion. Since the establishment of the original water system, minimal work had been done to the infrastructure of the system prior to the inception of the Water Enterprise Fund in FY06; beginning July 1, 2005. The current water system includes the following:

- 14 Pump Stations on approximately 400 acres of well fields or watershed protection areas
- 5 Corrosion Facilities; including one laboratory facility
- 3 Water Storage Tanks (2 – 1 MG and 1 – 1.5 MG elevated tanks)
- 1 Greensand Water Treatment Facility (Newly constructed 6.5 MGD)
- 210 Miles of Water Main
- 1,349 Fire Hydrants
- 9,887 Service Connections
- 1 Main Office Building
- 1 Service Garage (4 bay)
- 1 Equipment Garage (1 bay)
- 1 Storage Garage (1 bay)

Since the inception of the Water Enterprise Fund many infrastructure improvements have been made and consist of the following:

- Construction of a new 1.5 MG water tank in 2006
- 25% of our hydrants in system have been replaced
- 73% of metered water accounts have been upgraded with new meters and radio read devices
- 104 new water services and 109 water service renewals have been installed in the past 3 years
- 1.75 miles of a 16" ductile iron transmission main was installed to connect our main treatment facility to the new Greensand Water Treatment Facility
- Construction of a new 6.5 MGD Greensand Water Treatment Facility, was brought online in 2012
- Wells 1 and 4 were redeveloped, submersible pumps were installed and these wells were brought online
- 5+ miles of optical fiber was installed to optimize SCADA system communications and alarms which included installation of video surveillance

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- The Route 39 tank interior and exterior was rehabilitated in 2012 to include structural repairs
- Generators were installed at the Lothrop Ave and Pleasant Lake tanks
- SCADA upgrades and improvements
- Telecommunications equipment installed on two water tanks and cellular communication leases established with Verizon Wireless and T-Mobile
- Roof replacement and interior and exterior painting of all buildings
- Security fence installed around Route 39 tank
- Main building transformer replacement
- Electrical system upgrades at Stations 1, 2, 3 & 4 and Buildings A, B & C
- HVAC system installation at main building
- Repeater antenna installed at main station
- Blow-off pit installed at Route 39 tank
- Redevelopment of all Wells (over the past 5 to 8 years)
- Turbine wells replaced with submersible pumps at 13 out of 14 wells

In 2012, the Department revised its Master Plan which identifies a backlog of approximately \$40 million in capital improvements. Phase I includes water main replacement in Southeast Harwich in coordination with the installation of new sewer mains. When possible, infrastructure improvements are paid for by utility rates and fees.

System-wide Leak Detection

Leak detection is a necessary component to the management of a water distribution system. Unaccounted-for-water include unmeasured water put to beneficial uses such as firefighting and main flushing as well as water losses from the system. Illegal connections, leaks, theft and evaporation, etc. are examples of water losses. Such losses from the distribution system do not produce revenue, and are unavailable for other beneficial uses. The Department continues to be attentive in system-wide leak detection and is proud to report that the Harwich water system has only 6.4% unaccounted for water, well below the national average of 15%.

Award-winning Water System

The Harwich Water Department is pleased to announce that we received the Department of Environmental Protection “2012 Public System Award”. We are honored to receive this award, a Governor’s Citation in recognition of being “*One of the 10 Best Run Community Water Systems in the Commonwealth of Massachusetts*” and a letter of congratulations from Representative Sarah Peak for being “*one of only 30 water systems to be honored this year and for winning this award ten times in the past twelve years as a result of outstanding leadership and dedication of the entire staff of the Harwich Water Department*”.

North Westgate Road Greensand Water Treatment Facility

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The Board of Water Commissioners and Superintendent will seek authorization to construct a 1.0 MGD expandable to 3.0 MGD Greensand Water Treatment Facility at the North Westgate Road complex. This plant will treat well 10 and any potential future wells. This well field will help to keep the Lothrop Tank full without pumping water from the west end of Harwich.

Approximately 10 years ago the Department began to notice that Iron and Manganese levels were starting to rise. Because there was no adverse health effects connected to high iron and manganese, this project was placed on the back burner. Due to these levels rising, we feel that it is time to take corrective action by installing a second greensand treatment facility. Such facility will eliminate a host of issues from dirty or rusty looking drinking water to stained fixtures and clothing. Although these minerals are naturally occurring, the DEP has now declared them to have health effects on the elderly as well as children.

The cost of this project is estimated to \$1.6M and the Department, through careful planning and spending, will be paying for this project from water enterprise funds. We anticipate that this will be the first of many projects to be paid for without borrowing.

Water Storage Tanks

The Town presently maintains three water storage tanks that have capacities ranging from 1 MG to 1.5 MG. In 2012, the Orleans Road storage tank was rehabilitated which included structural repairs and painting. We plan to make the same type of repairs to the Lothrop Avenue tank in FY15. All tanks are on 10-year maintenance schedule. By maintaining the tanks we hope to prolong full replacement.

The Harwich Water Department is almost two years into Verizon Wireless and T-Mobile cell tower leases for Pleasant Lake Avenue and Route 39 water tanks. This revenue source helps to offset the very expensive cost of water tank rehabilitation, maintenance and painting.

Services

The Water Department offers a wide variety of services from seasonal water turn on/off, new and renewal water service installation, utility markouts, final readings for property transfers, backflow inspection and much more. Below is a summary of services performed in 2012:

2012 Annual Statistics of Services Performed

| | |
|---|-----|
| Curb Stop Repair / Renewals | 9 |
| Frozen Water Meters / Services | 3 |
| Meter Reading Troubleshoot | 263 |
| Hydrant Repairs | 7 |
| Hydrant Replacement | 2 |
| Hydrants Installed | 0 |
| Installation of Yard Hydrants for Water Samples | 0 |
| Mark Outs | 383 |

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| | | |
|--|-----------|----------|
| New Water Service Installations | 35 | |
| Property Transfers Requests | 314 | |
| Radio Reads Installed/Replaced | 1,060 | |
| Renewal of Water Services | 41 | |
| Seasonal Turn On / Off | 1,333 | |
| Total Hydrants in System | 1,349 | Hydrants |
| Total Usage for Hydrant for Construction | 9,000 | Gallons |
| Water Main Repairs | 1 | |
| Meter Change Outs | 358 | |
| Meters Installed | 35 | |
| Water Service Repairs / Technical Services | 453 | |
| Water Usage for Flushing | 7,290,100 | Gallons |

2012 Water Main Installations

| Street | Type | Size | Footage | Hydrants |
|---------------|--------------|-------------|----------------|-----------------|
| Cornelia Way | Ductile Iron | 8" | 278' | 1 |

Online Bill Presentment and Payment

The Harwich Water Department provides our customers a convenient way to view, print and pay your water bill online. Registering for this service also provides you with notification that your bill is ready as well as several reminders that your bill is due. Opting to go paperless is also a great option. We are sure you will find it more convenient and it is better for the environment. Be sure to visit our website and click “View or Pay a Bill” and register so you can take advantage of the services that are offered.

Voice Broadcast System

The Voice Broadcast system has become a useful tool in communicating not only water emergencies to our residential and commercial customers but also town-wide emergencies to all residents. Be sure to enroll so you receive these messages. You can enroll on our website or by contacting our office at 508-432-0304 to sign up and/or update your phone number if it has changed.

Service Tight Protection Plan

Did you know that as a homeowner you are responsible for the water service line that runs from the street to your home? In many cases those lines have been in place since your home was originally built. Many homeowners assume the lines are the water department’s responsibility or any problems on the lines are covered under their homeowners’ insurance policies. Unfortunately, these are false assumptions. Replacing a water service can cost \$2,000 or more.

Why not protect yourself and sign up for our *Service Tight Protection Plan* today! For as little as \$68 per year we can protect participants from costly repairs or replacement costs in the event of a

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water service break at your property. You can learn more about this plan and enroll by visiting our website and/or feel free to contact our office and we'll mail you a brochure.

HarwichWater.com and HarwichGIS.com

If you haven't visited our revamped Department website, we would like to invite you to do so. We continue to provide our customers with quick and easy access to all of the information they need. Some of the items you will find on our website are Department forms and reports, online bill payment, water rates and fees schedules, voice broadcast messages that were sent, up-to-date meeting minutes of the Board of Water Commissioners and news event updates. In addition, there are many informational facts and how-to instructions that you may find very helpful.

At harwichgis.com we have a variety of maps. You can view our water system map and many of the Harwich maps; zoning, town owned property, flood area, conservation and recreation as well as road and street maps. Be sure to visit our electronic business front on the Web.

System Maintenance

Hydrants and Valves

The Water Department also has an ongoing program for maintaining our valves throughout the system and we continue to add valves into our infrastructure. This allows us to isolate smaller areas of Town during water emergencies and to provide even more discrete controls on our flushing program. Hydrants are inspected and exercised and fire flow testing continues to be done on a recurring schedule. The Department replaced, installed or repaired eleven hydrants in 2012. The majority of hydrant replacement and repair occurred in 2011.

Water Meter Upgrade Program

Water Meter upgrades continue on schedule. Meters age 15 years and older are part of our ongoing meter replacement program. In 2012, 358 meters were replaced and 35 new meters were installed for new water services.

Radio Read Installation Program

We continue to install radio reads throughout our customer base. In 2012 we installed 1,060 radio reads for a total of 7,125 now installed, which is 73% of our customer base. We will continue to work diligently on this program and anticipate achieving 100% radio read in 2013. Radio read devices compliment the meter and encode, receive, and transmit the data by radio signal. This technology greatly reduces the number of technicians needed for meter reading and allows us to dedicate more staff to routine maintenance of the distribution system, service installations and seasonal services. We appreciate your patience and cooperation as we contact you for access to your property.

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Water Department and Town Department Coordination

In early 2013, the Water Department will install a new water system at the Town Garden and the Highway Department will do all of the related road work. We continue to work in coordination with other Town Departments in a variety of ways, from sharing software applications to managing a Voice Broadcast System that is also for town-wide use to assisting the Highway Department with snow plowing needs. We look forward to continued cooperation with town departments.

Water Main Improvements

Now that much needed capital projects were completed in 2012, the Water Department plans to continue our water main upgrade and replacement program by replacing or relining the older water mains in our system. As part of this effort, we will continue to closely coordinate our water main replacement program with the Highway Department by scheduling our construction activities to occur during the same time as street resurfacing by the Highway Department. This coordinated approach to our construction activities results in a large savings to our rate payers.

Drought Management and Conservation Programs

The Water Department has placed drought management signs throughout the Harwich Community. During peak season please refer to these signs and our website for up-to-date watering restrictions. Whether or not a voluntary or mandatory restriction exists, we encourage our customers to be diligent in conserving water. Even though there is an abundant water supply on Cape Cod, we should still conserve as much water as possible.

Awareness of how much water you use is the first step in conservation. The average person uses fifty (50) gallons of water per day on the following activities:

- Toilet = 19 gallons per day
- Bathing & Hygiene = 15 gallons per day
- Laundry = 8 gallons per day
- Kitchen = 7 gallons per day
- Housekeeping = 1 gallon per day
- Irrigation/Lawn Watering = 70 gallons per day
- Total Winter Use = 50 Gallons
- Total Summer Use = 120 Gallons

Because of the seasonal influx during the summer months, the Town of Harwich averages approximately 65 to 70 gallons per day per capita.

Metered Water Calculation

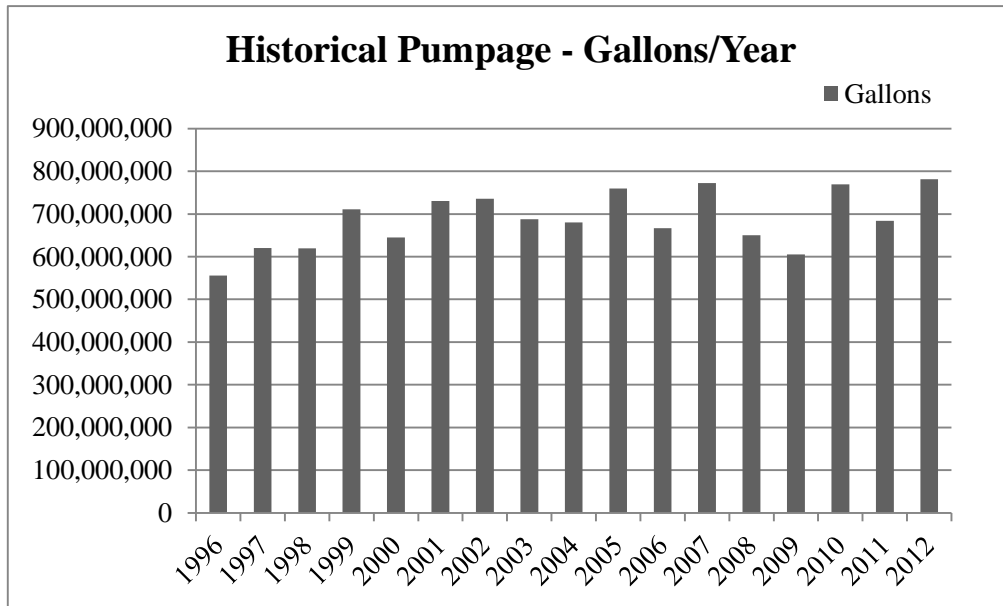
To review your metered water bill, divide your water usage by the number of days in the billing period (approximately 180 days) and also by the number of residents of your household to determine your average.

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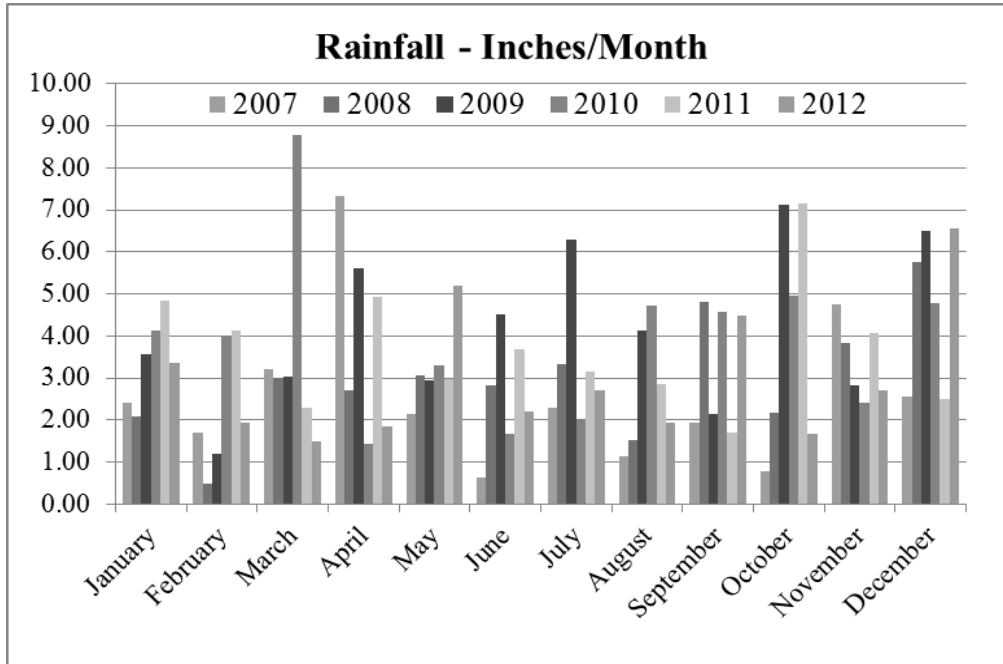
High Consumption and Irrigation Systems

The Fall billing provides for a multitude of calls to our Department concerning high consumption. In most cases, the high consumption is related to an irrigation system leaking or running too frequently. We can't stress enough that our customers become familiar with their meter location and how to read the meter. Customers, especially those who have irrigation systems, should monitor consumption on a regular basis to ensure that any issue is addressed immediately. All water that passes through the meter is the responsibility of the homeowner and who wants to pay for water that is lost. More importantly, it is a waste of our precious water resource.

Pumpage and Rainfall Statistics



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| Water Department Comparative Table | | | |
|---|--------------------|----------------|---------------|
| Year | Rainfall in Inches | Gallons Pumped | Maximum Daily |
| 1996 | 63.33 | 555,982,400 | 4,344,600 |
| 1997 | 48.46 | 620,145,100 | 5,627,100 |
| 1998 | 49.93 | 619,321,800 | 4,740,800 |
| 1999 | 44.48 | 710,729,600 | 5,681,400 |
| 2000 | 48.11 | 644,636,400 | 5,065,400 |
| 2001 | 36.76 | 730,249,000 | 5,879,600 |
| 2002 | 50.44 | 735,869,800 | 5,666,970 |
| 2003 | 53.75 | 687,473,053 | 5,701,605 |
| 2004 | 37.88 | 680,194,630 | 5,568,509 |
| 2005 | 61.42 | 759,802,792 | 5,728,926 |
| 2006 | 42.03 | 666,986,217 | 5,052,381 |
| 2007 | 30.89 | 772,525,325 | 5,659,678 |
| 2008 | 35.60 | 649,958,341 | 5,401,605 |
| 2009 | 49.89 | 605,297,549 | 4,386,341 |
| 2010 | 46.76 | 769,662,599 | 7,062,033 |
| 2011 | 44.28 | 683,643,260 | 5,237,726 |
| 2012 | 36.10 | 781,299,860 | 6,288,802 |

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Water Rates and Financial Overview

Water rates increased 5.5% in March 2012 and a 5.5% increase will also take place in March 2013. The same increase will be proposed for March 2014. Smaller annual rate increases vs. larger increases every few years has been the preferred option of the Board of Water Commissioners. Rate increases provide for increasing operational and maintenance costs as well as contribute to current and future capital improvements.

Considering all, the Harwich Water Department rates still remain on the lower side in comparison to similar sized communities on the Cape. When compared to off-Cape, the Cape's water rates in general are low.

In addition to water rates and services, we do have other revenue sources and continue to investigate new ones. Budget wise, we also strive to seek lower pricing for products and services and seek procurement through bids.

Through all of these measures we have been able to return revenues to the reserve fund and over the course of several years we have saved enough to pay for a sizeable capital project without borrowing. Although borrowing is necessary at times, the feeling has been to keep the debt down and not pay interest. We are happy to report that one of our bonds was included in the Town refinancing of some of its debt, which will save the Department \$326,190 over the the next 10 years.

FY12 Financial Summary

Expenses

| | |
|--|-------------------------|
| Salary and Wages | 1,001,889 |
| Supplies and Services | 778,300 |
| Installation Supplies | 31,503 |
| Water Main Maintenance and Repair | 213,902 |
| Well Rehab Maintenance & Repair | 15,737 |
| Indirect Expenses; Insurance & Employee Benefits | 448,131 |
| Debt | 399,033 |
| Articles and Encumbrances | 205,652 |
| Total Expenses | <u>3,094,146</u> |

Revenues

| | |
|--|----------------|
| Water Rates and Recurring Services | 2,947,219 |
| Service Repairs and Technical Services | 177,200 |
| Service Tight Protection Plan | 23,635 |
| Backflow Inspection | 19,625 |
| Water Service Installation and Renewals | 159,251 |
| Late Fees, Interest, Lien Interest and Penalties | 51,072 |
| Wireless Communications Lease | <u>130,620</u> |

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Total Revenues **3,508,623**

Water Enterprise Fund Balance Summary

| | |
|-----------------------------------|------------------|
| FY11 Fund Balance | 1,372,165 |
| FY12 Surplus less Adjustments | <u>400,905</u> |
| FY12 Fund Balance to be Certified | 1,773,070 |

FY12 Abatements and Adjustments -19,042

Anticipated Activities During 2013

- New Greensand Water Treatment Facility at North Westgate Road site
- Planning for Lothrop Avenue tank rehab in FY15
- Begin pump station maintenance and rehabilitation
- Water main replacement and upgrades in coordination with sewer main installation

Conclusion

As Department Superintendent, I would like to thank the Water Department employees for their teamwork and dedication, the Board of Water Commissioners for their continued support and all Town Departments, Town Committees, and Boards for their service to the community and myself throughout the year.

Craig Wiegand, Water Superintendent

Board of Water Commissioners
Donald Bates, Chairman
Allin Thompson, Vice Chairman
Danette Gonsalves, Clerk