The Harwich Board of Water/Wastewater Commissioners and Water Department respectfully submit our Annual Report to the Honorable Board of Selectmen and to the citizens of the Town of Harwich for the year of 2021.

COVID-19
As the COVID-19 pandemic continued throughout 2021 the Department was able to restore and maintain non-essential and public facing services that were halted at the onset of the pandemic. The department was also able to reopen the office to the public and resume in-person public meetings.

2021 Public Water Systems Awards
The Harwich Water Department received the 2021 Public Water Systems Award from the Massachusetts Department of Environmental Protection for Outstanding Performance and Achievement in the Medium and Large Community Water System Category in 2021. Through the hard work and dedication of department staff 2021 marks the seventh consecutive year Harwich has been selected to receive the PWS Award.

Operations
The Water Department offers a wide variety of services from seasonal water turn on/off, new and renewal water service installation, utility mark outs, final readings for property transfers, backflow inspection and much more. Below is a summary of 2,568 services performed in 2021:

<table>
<thead>
<tr>
<th>2021 Service Activity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Meter</td>
<td>203</td>
</tr>
<tr>
<td>Repair/Replace Valve</td>
<td>12</td>
</tr>
<tr>
<td>Damaged Box/Gate</td>
<td>10</td>
</tr>
<tr>
<td>Service Install/Renew</td>
<td>114</td>
</tr>
<tr>
<td>Final Read</td>
<td>362</td>
</tr>
<tr>
<td>Service Call/Repair</td>
<td>143</td>
</tr>
<tr>
<td>Frozen Meter/Service</td>
<td>1</td>
</tr>
<tr>
<td>Site Visit</td>
<td>109</td>
</tr>
<tr>
<td>Hydrant Meter Use</td>
<td>6</td>
</tr>
<tr>
<td>Troubleshoot</td>
<td>28</td>
</tr>
<tr>
<td>Install Meter</td>
<td>50</td>
</tr>
<tr>
<td>Turn Off (Seasonal)</td>
<td>390</td>
</tr>
<tr>
<td>Leak Investigation</td>
<td>67</td>
</tr>
<tr>
<td>Turn Off Service</td>
<td>41</td>
</tr>
<tr>
<td>Mark Out Property</td>
<td>545</td>
</tr>
<tr>
<td>Turn On (Seasonal)</td>
<td>417</td>
</tr>
<tr>
<td>Remove Meter</td>
<td>18</td>
</tr>
<tr>
<td>Turn On Service</td>
<td>52</td>
</tr>
</tbody>
</table>

Projects & Accomplishments
The Department remained very active throughout 2021, please find some of the more notable projects & accomplishments below:

- **Rules, Regulations and Rates**– This past year the Board worked diligently to update the departments rules, regulations, and rates. The Board conducted several public hearings and was able to successfully update the Water Rules & Regulations, adopt new Sewer Use Regulations, and establish new water & sewer rates.
• **Pleasant Lake Storage Tank Upgrade** – Upgrades to the Pleasant Lake storage tank which included increasing the diameter of the tank fill pipe were completed in the late spring of this past year. In addition to the interior tank work completed by the contractor, water department staff also worked to upgrade the exterior yard piping saving the department approximately $200,000.

• **Phase 2 Wastewater Collections System** – Construction of the Phase 2 collections system is now complete and recently authorized by MassDEP to accept flow. This reflects a major accomplishment in our efforts to restore the embayment’s and estuaries in Harwich.

• **Water System Improvement Projects** - The department is currently in the early stages of 2 water system improvement projects, design of the Route 28 watermain replacement and new source well exploration in North Harwich.

• **Chatham Rd. Fiber & Electrical Upgrades** – The department completed the first phase of fiber & electrical upgrades at the Chatham Rd. wellfield. This project included the installation of buried conduit and hand holes to support placing the primary electrical service to the wellfield underground and establishing a direct fiber connection to the Route 39 tank improving the reliability and redundancy of the water system.

**Water/Sewer Rates and Financial Overview**

Upon evaluating anticipated revenues, operational expenses and capital needs of the department it was determined by the Board that an increase to the water rates must be considered. After evaluating a number of different rate scenarios the Board settled on a $10 increase to the quarterly base rate and a 5% increase on the tiered usage rates which became effective July 1st 2021. In anticipation of the wastewater collections system coming online the Board also established the departments first sewer rates which became effective July 16th 2021.

The stance of the Board of Water/Wastewater Commissioners, with support of the Department, is to keep rates fair and equitable. Water rate increases become necessary when revenues are unable to keep up with inflation, increases to operational and maintenance expenses and/or when a new capital project must be funded. To see what’s on the horizon for capital projects for the next five (5) years, please refer to the Capital Planning section in our report.

In addition to water rates and services, the Department continues to look for other revenue sources as well as ways to run more efficiently and economically.

**FY21 Financial Summary**

<table>
<thead>
<tr>
<th>Expenses</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary and Wages</td>
<td>1,218,643</td>
</tr>
<tr>
<td>Supplies, Services &amp; Maintenance/Repair</td>
<td>1,422,154</td>
</tr>
<tr>
<td>OPEB Contribution</td>
<td>50,000</td>
</tr>
<tr>
<td>Debt</td>
<td>721,164</td>
</tr>
</tbody>
</table>
Indirect Expenses; Insurance & Employee Benefits 730,290
Total Expenses 4,142,250

Revenues
Water Rates & Recurring Services 4,356,298
Service Repairs & Site Visits 60,923
Service Tight Protection Plan 51,220
Solar Revenue 88,015
Backflow Inspection 94,451
Water Service Installation and Renewals 247,635
Late Fees, Interest, Lien Collection & Penalties 82,423
Wireless Communications Lease 130,164
Investment Revenue 9,144
Total Revenues 5,139,747

Water Enterprise Fund Balance Summary
FY21 Fund Balance 1,603,029
FY21 Abatements & Adjustments 13,359

Capital Planning
The Board of Water/Wastewater Commissioners and Department staff continues to evaluate the aging infrastructure, water consumption forecasts, revenue projections, and the current debt schedule to identify and plan for the future capital needs of the Department.

5-Year Capital Plan:
- Fiscal Year 2023
  - (2) Fleet/Truck replacement
- Fiscal Year 2024
  - Phase 3 Wastewater Collections System
  - Route 28 Sewer Main Installation
  - Route 28 Water Main Construction
  - New Well Construction
  - Pavement Management - Well access roads
- Fiscal Year 2025
  - Phase 4 Collections System Design
  - Backhoe Replacement
  - Paint Pleasant Lake Tank
  - Distribution System Upgrades
- Fiscal Year 2026
• Pipe Discontinuity Upgrades
• (2) Fleet/Truck replacement
• Fiscal Year 2027 – No Project(s)

System Maintenance
The Department experienced a number of water main breaks in 2021. Regular distribution maintenance helps minimize the impact to residents and businesses during repairs. For this reason, the Department continues its standard maintenance/monitoring programs, which include:

• **Hydrant Maintenance** - Evaluate hydrant coatings & re-paint where necessary to prevent corrosion & remove and lubricate hydrant cups to maintain ease of access in the event the hydrant needs to be utilized for fire suppression

• **Valve Maintenance** - Vacuum valve boxes to guarantee access to the valves operating nut & exercise the valve by opening and closing to verify it is working order

• **Well & Pumps** - Take manual drawdown readings to check the wells specific capacity, which is used to check the wells current capacity to historical data. This information is used to determine if the well is in need of cleaning & redevelopment, or to verify the pump is functioning in the capacity it was designed

• **Water Storage Tanks** - In addition to the daily site visits, monthly tank inspection reports are completed to document a more thorough evaluation of tank conditions. These monthly reports combined with our contracted annual inspection are used to predict future maintenance needs

• **Water Meter Replacement** - The Department upgrades & replaces all customer meters 15 years or older

Water System
The original water system was established in 1936. Major expansion projects were undertaken in the 1950s, late 1960s and again in the late 1970s, these expansions made the water distribution system what it is today.

The Water Department operation consists of 14 pump stations, approximately 400 acres of well fields/watershed protection areas, 5 corrosion control facilities, 2 elevated and 1 ground-level water storage tanks and 2 Greensand Water Treatment facilities which provide service to 10,093 metered accounts, 129 fire sprinkler accounts and 1,394 fire hydrants for fire protection.

Water Withdrawal
The Water Department pumped 791,153,890 gallons of water from our wellfields during 2021. Most of the water pumped was withdrawn from Chatham Road and Depot Road wells.
Water Quality
The Harwich Water Department is constantly striving to provide its consumers with the best water possible. The water provided to the residents of Harwich is tested numerous times a month for a variety of contaminants. Harwich Water Department continues to provide water that meets or exceeds State and Federal standards. The results of this testing are located within the Annual Water Quality Report on the Department website. Iron and Manganese levels in the untreated source water have, in the past, caused unfavorable aesthetic qualities in the water. Sources containing these impurities were infrequently pumped. Since the addition of the Bruce Cahoon Greensand Water Treatment Facility and North Westgate Treatment Facility, these minerals are no longer affecting the water quality.

Nitrogen and Phosphorus in fertilizer are the greatest concern to water quality. Generally speaking, lawns need less fertilizer than advertised and there are multitudes of fertilizing alternatives available today. While water quality in Harwich is excellent, let’s do our best to keep it that way and protect our precious resource.

Service Tight Protection Plan
As property owner, you are responsible for the repair and maintenance of your water service, and until a problem occurs, you could incur thousands of dollars in repair costs. Harwich Water offers a Service Tight Protection Plan which covers the costs of repairs to your service in the event of a sudden leak. The cost is $17 per quarter for an annual fee of $68. You can enroll and learn more by visiting harwichwater.com or by calling the department for a brochure.

Drought Management and Conservation
Due to ongoing drought conditions and low groundwater levels in the Monomoy Lens the Board of Water & Wastewater Commissioners implemented water restrictions for the first time in nearly 20 years. Groundwater levels remained low throughout the fall and winter of 2021 and as
2021 Town Report
Water & Wastewater Department

a result water restrictions were left in place for the remainder of the year. The Water Department has drought management signs throughout the Harwich Community. Please refer to the signs around town as well as notices on our website for the most up to date information on drought notification and water restrictions. We continue to encourage our customers to be diligent in conserving water even if the supply is abundant.

It is important to keep in mind that the average person uses 80-100 gallons of water per day on the following activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Usage per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bathing &amp; Hygiene</td>
<td>15 gallons</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>1 gallon</td>
</tr>
<tr>
<td>Irrigation/Watering</td>
<td>70 gallons</td>
</tr>
<tr>
<td>Kitchen</td>
<td>7 gallons</td>
</tr>
<tr>
<td>Laundry</td>
<td>8 gallons</td>
</tr>
<tr>
<td>Toilet</td>
<td>19 gallons</td>
</tr>
</tbody>
</table>

To review your metered water bill, divide your water usage by the number of days in the billing period (approximately 90 days) and by the number of residents of your household to determine your average.

High Consumption and Irrigation Systems
The majority of our high consumption calls come in after the October bill is received. When we receive these calls, the irrigation system usually has been shut down for the season and the seasonal home is vacant. We cannot stress enough the importance of becoming familiar with your irrigation systems to anticipate this expense. You may need the help of your irrigation company to determine the number of zones, number of heads in each zone, frequency of zones running, and how much water is used for a full cycle and/or each day, each week, each month, etc. Consumption should be monitored on a regular basis by checking your water meter reading so if an issue exists it can be corrected immediately. All water that passes through the meter is the responsibility of the homeowner, and who wants to pay for water that is lost?

We would also like to remind our customers who do have an irrigation system that a testable backflow device must be installed on the line that feeds your irrigation system. This device is put in place to protect contaminants from being pulled back into the public water supply.

Board of Water and Wastewater Commissioners
The 2021 election brought an additional two (2) members onto the Board of Water & Wastewater Commission increasing the Board from a 3-member to a 5-member board. The Board of Water & Wastewater Commissioners is responsible to the Town of Harwich for the administration, maintenance, and operation of the water and sewer system.

Conclusion
As we begin 2022, the Board of Water/Wastewater Commissioners would like to thank the dedicated staff and further extend our appreciation to all Town Departments, Town Committees, Boards and Residents for their continued support.
Sincerely,

Board of Water/Wastewater Commissioners
Gary Carreiro, Chairman
Allin Thompson, Vice Chairman
Noreen Donahue, Clerk
Judith Underwood, Commissioner
John Gough, Commissioner