

Town of Harwich
BOARD OF WATER COMMISSIONER'S MEETING AGENDA*
Wednesday, August 12, 2020, 1:00 pm

REMOTE PARTICIPATION ONLY
OPEN PUBLIC FORUM

For those members of the public wishing to make comment you may do so by a combination of email and phone by;

1. First, send an email to: **dpelletier@harwichwater.com**
(Send emails at any time after the meeting agenda has been officially posted)
 - a. In the subject line enter "request to speak Jane Doe"
 - b. Replace Jane Doe with your name - No need to add any more detail to email
2. Please wait until the Chairman has opened this agenda item for Open Public Forum
3. **Dial: 1-224-501-3412**
4. **Enter Access Code: 552-094-845**
5. Please be patient and eliminate any background noise
6. Callers will be taken in the order the emails are received
7. When your name is called use *6 to unmute yourself

I. CALL TO ORDER

II. CONSENT AGENDA

A. Minutes

1. July 31, 2020

III. ABATEMENTS

IV. OLD/UNFINISHED BUSINESS

- A. Pleasant Lake Tank Upgrade Project Design Contracts- *Discussion & Possible Vote*
- B. Water Commission's Authority over Department Staff- *Discussion*
- C. Water Rates

V. NEW BUSINESS

- A. Wastewater
- B. Bid Extension Letter; Ti-Sales- *Vote to approve and sign*

VI. SUPERINTENDENT'S REPORT

VII. COMMISSIONER'S REPORT

VIII. CORRESPONDENCE/ANY OTHER BUSINESS

IX. NEXT MEETING: Wednesday, August 28, 2020 at 1:00 pm

X. OPEN PUBLIC FORUM

- A. See dial in instructions above

XII. ADJOURNMENT

**Per the Attorney General's Office: The Board of Water Commissioners may hold an open session for topics not reasonably anticipated by the Chair 48 hours in advance of the meeting following "New Business." *If you are deaf or hard of hearing or are a person with a disability who requires an accommodation, contact the Water Department Office at 508-432-0304 x.0 or by email at customerservice@harwichwater.com*

Authorized Posting Officer:

Tracey Alves

Tracey Alves, Board Secretary

Posted By: _____

Town Clerk

Date: _____

IV. OLD/UNFINISHED BUSINESS

A. Pleasant Lake Tank Upgrade Project Design Contracts

**AGREEMENT FOR PROFESSIONAL
ENGINEERING SERVICES
BETWEEN
THE TOWN OF HARWICH, MASSACHUSETTS
AND
TANK INDUSTRY CONSULTANTS
FOR PLEASANT LAKE WATER TANK IMPROVEMENTS**

THIS AGREEMENT made this ____ day of _____, 2020 between TANK INDUSTRY CONSULTANTS, with a usual place of business at 7740 West New York Street, Indianapolis, Indiana 46214, hereinafter called the "ENGINEER," and the Town of Harwich, MA, acting by its Board of Water Commissioners, with a usual place of business at 196 Chatham Road, Harwich, MA hereinafter called the "TOWN".

The ENGINEER and the TOWN, for the consideration hereinafter named, agree as follows:

1. Scope of Work

The ENGINEER shall perform the work set forth in the Scope of Services attached hereto as Exhibit A.

2. Contract Price

The TOWN shall pay the ENGINEER for services rendered in the performance of this Agreement a lump sum of \$_____, subject to any additions and deductions provided for herein at the hourly rates set forth in Exhibit B. The amount to be paid to the ENGINEER shall not exceed \$_____ without the prior written consent of the TOWN.

3. Commencement and Completion of Work

A. This Agreement shall commence on _____ and shall expire on _____, unless terminated sooner in accordance with this Agreement.

B. Progress and Completion: ENGINEER shall commence work promptly upon execution of this Agreement and shall prosecute and complete the work regularly, diligently and uninterruptedly at such a rate of progress as will insure completion in a timely manner.

4. Performance of the Work

The ENGINEER shall supervise and direct the Work, using his best skills and attention, which shall not be less than such state of skill and attention generally rendered by the engineering/design profession for projects similar to the Project in scope, difficulty and location.

A. Responsibility for the Work:

- (1) The ENGINEER shall be responsible to the TOWN for the acts and omissions of his employees, subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the ENGINEER. Consistent with the standard of care referenced above, the ENGINEER shall be responsible for the professional and technical accuracy for all work or services furnished by him or his consultants and subcontractors. The ENGINEER shall perform his work under this Agreement in such a competent and professional manner that detail checking and reviewing by the TOWN shall not be necessary.
- (2) The ENGINEER shall not employ additional consultants, nor sublet, assign or transfer any part of his services or obligations under this Agreement without the prior approval and written consent of the TOWN. Such written consent shall not in any way relieve the ENGINEER from his responsibility for the professional and technical accuracy for the work or services furnished under this Agreement.
- (3) All consultants must be registered and licensed in their respective disciplines if registration and licensure are required under the applicable provisions of Massachusetts law.
- (4) The ENGINEER and all consultants and subcontractors shall conform their work and services to any guidelines, standards and regulations of any governmental authority applicable to the type of work or services covered by this Agreement.
- (5) The ENGINEER shall not be relieved from its obligations to perform the work in accordance with the requirements of this Agreement either by the activities or duties of the TOWN in its administration of the Agreement, or by inspections, tests or approvals required or performed by persons other than the ENGINEER.
- (6) Neither the TOWN's review, approval or acceptance of, nor payment for any of the work or services performed shall be construed to operate as a waiver of any rights under the Agreement or any cause of action arising out of the performance of the Agreement.

B. Deliverables, Ownership of Documents: One (1) reproducible copy of all drawings, plans, specifications and other documents prepared by the ENGINEER shall become the property of the TOWN upon payment in full therefor to the ENGINEER. Ownership of stamped drawings and specifications shall not include the ENGINEER's certification or stamp. Any re-use of such documents without the ENGINEER's written verification of suitability for the specific purpose intended shall be without liability or legal exposure to the ENGINEER or to the ENGINEER's independent professional associates, subcontractors or

consultants. Distribution or submission to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as an act in derogation of the ENGINEER's rights under this Agreement.

- C. Compliance with Laws: In the performance of the Work, the ENGINEER shall comply with all applicable federal, state and local laws and regulations, including those relating to workplace and employee safety.

5. Site Information Not Guaranteed; Contractor's Investigation

The TOWN shall furnish to the ENGINEER available surveys, data and documents relating to the area which is the subject of the Scope of Work. All such information, including that relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the TOWN. All such information is furnished only for the information and convenience of the ENGINEER and is not guaranteed. It is agreed and understood that the TOWN does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures will be the same as those indicated in the information furnished, and the ENGINEER must satisfy himself as to the correctness of such information. If, in the opinion of the ENGINEER, such information is inadequate, the ENGINEER may request the TOWN's approval to verify such information through the use of consultants or additional exploration. In no case shall the ENGINEER commence such work without the TOWN's prior written consent. Such work shall be compensated as agreed upon by TOWN and ENGINEER.

6. Payments to the Contractor

- A. Cost incurred on this project shall be billed on a fixed fee basis as outlined in the attached Scope of Services. Payment shall be due 30 days after receipt of an invoice by the TOWN.
- B. If there is a material change in the scope of work, the TOWN and the ENGINEER shall mutually agree to an adjustment in the Contract Price.
- C. If the TOWN authorizes the ENGINEER to perform additional services, the ENGINEER shall be compensated in an amount mutually agreed upon, in advance, in writing. Except in the case of an emergency, the ENGINEER shall not perform any additional services until such compensation has been so established.

7. Reimbursement

Except as otherwise included in the Contract Price or otherwise provided for under this Agreement, the ENGINEER shall be reimbursed by the TOWN: (a) at 1.0 times the actual cost to the ENGINEER of consultants retained to obtain information pursuant to Article 5 hereof or otherwise. No such reimbursement shall be made unless the rates of compensation have been approved, in advance, by the TOWN; (b) at 1.0 times the actual cost of additional or specially authorized expense items, as approved by the TOWN.

8. Final Payment, Effect

The acceptance of final payment by the ENGINEER shall constitute a waiver of all claims by the ENGINEER arising under the Agreement.

9. Terms Required By Law

This Agreement shall be considered to include all terms required to be included in it by the Massachusetts General Laws, and all other laws, as though such terms were set forth in full herein.

10. Indemnification

- A. General Liability: The ENGINEER shall indemnify and hold harmless the TOWN from and against any and all claims, damages, losses, and expenses, including reasonable attorney's fees, to the extent arising out of the performance of this Agreement and to the extent the same relate to matters of general commercial liability, when such claims, damages, losses, and expenses are caused, in whole or in part, by the negligent or wrongful acts or omissions of the ENGINEER or his employees, agents, subcontractors or representatives.
- B. Professional Liability: The ENGINEER shall indemnify and hold harmless the TOWN from and against any and all claims, damages, losses, and expenses, including reasonable attorney's fees, arising out of the performance of this Agreement and to the extent the same relate to the professional competence of the ENGINEER's services, when such claims, damages, losses, and expenses are caused, in whole or in part, by the negligent acts, negligent errors or omissions of the ENGINEER or his employees, agents, subcontractors or representatives.

11. Insurance

- A. The ENGINEER shall at his own expense obtain and maintain a Professional Liability Insurance policy for errors, omissions or negligent acts arising out of the performance of this Agreement in a minimum amount of \$1,000,000.00.
- B. The coverage shall be in force from the time of the agreement to the date when all construction work for the Project is completed and accepted by the TOWN. If, however, the policy is a claims made policy, it shall remain in force for a period of six (6) years after completion.

Since this insurance is normally written on a year-to-year basis, the ENGINEER shall notify the TOWN should coverage become unavailable.

- C. The ENGINEER shall, before commencing performance of this Agreement, provide by insurance for the payment of compensation and the furnishing of other benefits in accordance with M.G.L. c.152, as amended, to all its employees and shall continue such insurance in full force and effect during the term of the Agreement.

- D. The ENGINEER shall carry insurance in a sufficient amount to assure the restoration of any plans, drawings, computations, field notes or other similar data relating to the work covered by this Agreement in the event of loss or destruction until the final fee payment is made or all data are turned over to the TOWN.
- E. The ENGINEER shall also maintain public liability insurance, including property damage, bodily injury or death, and personal injury and motor vehicle liability insurance against claims for damages because of bodily injury or death of any person or damage to property.
- F. Evidence of insurance coverage and any and all renewals substantiating that required insurance coverage is in effect shall be filed with the Agreement. Any cancellation of insurance, whether by the insurers or by the insured, shall not be valid unless written notice thereof is given by the party proposing cancellation to the other party and to the TOWN at least fifteen days prior to the intended effective date thereof, which date shall be expressed in said notice.
- G. Upon request of the ENGINEER, the TOWN reserves the right to modify any conditions of this Article.

12. Notice

All notices required to be given hereunder shall be in writing and delivered to, or mailed first class to, the parties' respective addresses stated above. In the event that immediate notice is required, it may be given by telephone or facsimile, but shall, to the extent possible, be followed by notice in writing in the manner set forth above.

13. Termination

- A. Each party shall have the right to terminate this Agreement in the event of a failure of the other party to comply with the terms of the Agreement. Such termination shall be effective upon seven days' notice to the party in default and the failure within that time of said party to cure its default.
- B. The TOWN shall have the right to terminate the Agreement without cause, upon ten (10) days' written notice to the ENGINEER. In the event that the Agreement is terminated pursuant to this subparagraph, the ENGINEER shall be reimbursed in accordance with the Agreement for all work performed up to the termination date.

14. Miscellaneous

- A. Assignment: The ENGINEER shall not assign or transfer any of its rights, duties or obligations under this Agreement without the written approval of the TOWN.
- B. Governing Law: This Agreement shall be governed by and construed in accordance with the law of the Commonwealth of Massachusetts.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals, the TOWN by its authorized representative who, however, incurs no personal liability by reason of the execution hereof or of anything herein contained, as of the day and year first above written.

ENGINEER:

TOWN OF HARWICH:

By: 

By: _____
Gary Carreiro – Chairman

Name: Gregory R Stein
Type or Print

Judith Underwood – Vice Chairman

Title: Managing Principal

Allin Thompson - Clerk

640822/Harw/0001

IV. OLD / UNFINISHED BUSINESS

B. Water Commissioner's Authority over Department Staff

COPY OK

BOARD OF WATER COMMISSIONERS Harwich Water Department

March 13, 2012

Jim Merriam
Town Administrator
Town of Harwich
732 Main Street
Harwich MA 02645

RE: Union Negotiations for Water Department Field Staff,
International Association of Machinists and Aerospace Workers (IAMAW)
Local Lodge 264 of District 38

Dear Jim,

The Board of Water Commissioners, at our February 28, 2012 meeting agreed by unanimous vote that a Water Commissioner will serve at union contract negotiations in place of Craig Wiegand. Although we have been very pleased with Craig's negotiation skills, we feel that this task is best placed in the hands of our Board.

Donald Bates, Jr. has been selected to replace Craig in the Management role of negotiator for all IAMAW union negotiations. Please direct all IAMAW negotiations communications to Donald. He can be reached at 508-430-2649 or by email at commissioners@harwichwater.com.

Sincerely,

Donald Bates, Chairman

Allin P. Thompson, Vice-Chairman

Danette Gonsalves, Clerk

cc: Board of Selectmen
Neil Salzillo, Negotiator, IAMAW Union
James Foley, IAMAW



196 Chatham Road
Harwich, MA 02645

Phone: 508-432-0304
Fax: 888-774-3557

Email:
Commissioners
@harwichwater.com

Commissioners:

Donald Bates
Chairman

Allin P. Thompson
Vice Chairman

Danette Gonsalves
Clerk

Alexandra Bilek
Board Secretary

Water Department:

Craig Wiegand
Superintendent

Steve Hicks
Distribution Foreman

Neil Salzillo
Treatment Foreman

Sandra Cummings
Comptroller

Wellesley Marsh
Sr. Billing Administrator

Alexandra Bilek
Administrative Assistant

Chap. 165 An Act (of 1935) authorizing the town of Harwich to supply ITSELF AND ITS INHABITANTS WITH WATER.

http://www.archive.org/stream/actsresolvespass1935mass/actsresolvespass1935mass_djvu.txt

Be it enacted, etc., as follows:

Section 1. The town of Harwich may supply itself and its inhabitants with water for the extinguishment of fires and for domestic and other purposes; may establish fountains and hydrants, relocate or discontinue the same, and may regulate the use of such water and fix and collect rates to be paid for the use of the same.

Section 2. For the purposes aforesaid, said town, acting by and through its board of water commissioners hereinafter provided for, may contract with any other municipality, acting through its water department, or with any water company, or with any water district, for whatever water may be required, authority to furnish the same being hereby granted, and may lease, or take by eminent domain under chapter seventy-nine of the General Laws, or acquire by purchase or otherwise, and hold, the waters, or any portion thereof, of any pond, brook, spring or stream or of any ground water sources, by means of driven, artesian or other wells or filter galleries, within the limits of said town, not already appropriated for purposes of public water supply, and the water rights connected with any such water sources; and also for said purposes may take by eminent domain under said chapter seventy-nine, or acquire by purchase or otherwise, and hold, all lands, rights of way and other easements necessary for collecting, storing, holding, purifying and treating such water and protecting and preserving the purity thereof and for conveying the same to any part of said town; provided, that no source of water supply and no lands necessary for protecting and preserving the purity of the water shall be taken or used without first obtaining the advice and approval of the department of public health, and that the location and arrangement of all dams, reservoirs, wells or filter galleries, filtration and pumping plants or other works necessary in carrying out the provisions of this act shall be subject to the approval of said department. Said town may construct and maintain on the lands acquired and held under this act proper dams, wells, reservoirs, pumping and filtration plants, buildings, standpipes, tanks, fixtures and other structures, including also purification and treatment works, the construction and maintenance of which shall be subject to the approval of said department of public health, and may make excavations, procure and operate machinery, and provide such other means and appliances and do such

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other things as may be necessary for the establishment and maintenance of complete and effective water works; and for that purpose may construct, lay and maintain aqueducts, conduits, pipes and other works, under or over any lands, water courses, railroads, railways and public or other ways, and along any such way in said town in such manner as not unnecessarily to obstruct the same; and for the purposes of constructing, laying, maintaining, operating and repairing such conduits, pipes and other works, and for all other proper purposes of this act, said town may dig up or raise and embank any such lands, highways or other ways in such manner as to cause the least hindrance to public travel thereon; provided, that all things done upon any such way shall be subject to the direction of the selectmen of said town. Said town shall not enter upon, construct or lay any conduits, pipes or other works within the location of any railroad corporation except at such time and in such manner as it may agree upon with such corporation or, in case of failure so to agree, as may be approved by the department of public utilities. Said town may enter upon any lands for the purpose of making surveys, test pits and borings, and may take or otherwise acquire the right to occupy temporarily any lands necessary for the construction of any work or for any other purpose authorized by this act.

Section 3. The land, water rights and other property taken or acquired under this act, and all works, buildings and other structures erected or constructed thereunder, shall be managed, improved and controlled by the board of water commissioners hereinafter provided for, in such manner as they shall deem for the best interest of the town.

Section 4. Any person or corporation injured in his or its property by any action of said town or board under this act may recover damages from said town under said chapter seventy-nine; provided, that the right to damages for the taking of any water, water source or water right, or any injury thereto, shall not vest until the water is actually withdrawn or diverted by said town under authority of this act.

Section 5. Said town may, for the purpose of paying the necessary expenses and liabilities incurred or to be incurred under the provisions of this act, other than expenses of maintenance and operation, issue from time to time bonds or notes to an amount, not exceeding, in the

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aggregate, two hundred thousand dollars, which shall bear on their face the words. Town of Harwich Water Loan, Act of 1935. Each authorized issue shall constitute a separate loan, and such loans shall be payable in not more than thirty'- years from their dates. Indebtedness incurred under this act shall be subject to chapter forty-four of the General Laws.

Section 6. Said town shall, at the time of authorizing said loan or loans, provide for the payment thereof in accordance with the provisions of section five; and when a vote to that effect has been passed, a sum which, with the income derived from the water rates, will be sufficient to pay the annual expense of operating its water works or the purchasing of water and the maintenance of its pipe lines, as the case may be, and the interest as it accrues on the bonds or notes issued as aforesaid, and to make such payments on the principal as may be required under the provisions of this act, shall without further vote be assessed by the assessors of said town annually thereafter in the same manner as other taxes, until the debt incurred by the said loan or loans is extinguished.

Section 7. Whoever wilfully or wantonly corrupts, pollutes or diverts any of the waters taken or held under this act, or injures any structure, work or other property owned, held or used by said town under the authority and for the purposes of this act, shall forfeit and pay to said town three times the amount of damages assessed therefor, to be recovered in an action of tort; and upon conviction of any one of the above wilful or wanton acts shall be punished by a fine of not more than three hundred dollars or by imprisonment for not more than one year.

Section 8. The selectmen of said town shall serve as water commissioners until the election and qualification of water commissioners at the annual meeting in nineteen hundred and thirty-six or at such later date, if any, as the town may elect water commissioners. Whenever the phrase "said board of water commissioners" or "said board" or "said commissioners" occurs in this act it shall mean and include the board of water commissioners or the selectmen acting as such, as the case may be. Said town shall at the annual meeting in nineteen hundred and thirty-six or at such later date, if any, as it may vote at a meeting called for the purpose elect by ballot three persons to hold office, one until the expiration of three years, one until the expira-

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tion of two years, and one until the expiration of one year, from the next succeeding annual town meeting, to constitute a board of water commissioners; and at the annual town meeting held on the day on which the shortest of such terms expires, and at each annual town meeting thereafter, one such commissioner shall be elected by ballot for the term of three years. All the authority granted to the town by this act, except sections five and six, and not otherwise specially provided for, shall be vested in said board of water commissioners, who shall be subject, however, to such instructions, rules and regulations as said town may impose by its vote. A majority of said commissioners shall constitute a quorum for the transaction of business. After the election of a board of water commissioners under authority of this section, any vacancy occurring in said board from any cause may be filled for the remainder of the unexpired term by said town at any legal town meeting called for the purpose. Any such vacancy may be filled temporarily in the manner provided by section eleven of chapter forty-one of the General Laws, and the person so appointed shall perform the duties of the office until the next annual meeting of said town or until another person is qualified.

Section 9. Said commissioners shall fix just and equitable prices and rates for the use of water, and shall prescribe the time and manner of payment. The income of the water works shall be appropriated to defray all operating expenses, interest charges and payments on the principal as they accrue upon any bonds or notes issued under authority of this act. If there should be a net surplus remaining after providing for the aforesaid charges, it may be appropriated for such new construction as the water commissioners, with the approval of the town, may determine upon, and in case a surplus should remain after payment for such new construction the water rates shall be reduced proportionately. All authority vested in said commissioners by the foregoing provisions of this section and by section three shall be subject to the provisions of section eight. Said commissioners shall annually, and as often as the town may require, render a report upon the condition of the works under their charge, and an account of their doings, including an account of the receipts and expenditures.

Section 10. This act shall take effect upon its acceptance by a majority of the voters of the town of Harwich

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present and voting thereon at a town meeting called for the purpose within three years after its passage; but the number of meetings so called in any year shall not exceed three. Approved April 15, 1935.

proposed expenditure has been recommended by the board of selectmen and the finance committee, acting separately at separate meetings.

Section 9. Compulsory Attendance

2-9-1 All town officers, the chairmen of town agencies, division directors, and department heads, or their duly designated representatives shall attend sessions of the town meeting when proposals affecting their particular office, agency, division, department, or function are included in the warrant. The absence of these persons shall not invalidate the actions of the town meeting.

CHAPTER 3. BOARD OF SELECTMEN

Section 1. The Board of Selectmen

3-1-1 A board of selectmen of 5 members shall be elected at-large for 3-year overlapping terms.

3-1-2 Vacancies in the office of selectmen shall be filled by special election in accordance with general law.

Section 2. Policy Leadership Responsibilities

3-2-1 Except as otherwise provided by this charter, all executive powers of the town shall be vested in the board of selectmen. The board of selectmen shall have all of the powers and duties given to boards of selectmen under the constitution and General Laws of the commonwealth, and any additional powers and duties that may be authorized by the charter, by by-law, or by any other town meeting vote.

3-2-2 The board of selectmen shall cause the laws and orders for the government of the town to be enforced and shall cause an up-to-date record of all its official acts to be kept.

3-2-3 The board of selectmen shall serve as the chief policy-making agency of the town and, as such, shall not normally administer the day-to-day affairs of the town, but shall instead regularly direct the town administrator to help it in carrying out its administrative duties and make recommendations to the town meeting relating to actions required to be taken by that body.

Section 3. General Powers, Duties and Responsibilities

3-3-1 The board of selectmen shall have the power to enact rules and regulations establishing town policies not otherwise governed by general law, this charter, or by-law, but whenever an appropriation shall be necessary to implement an action, the vote of the board shall be effective only if the appropriation has been authorized by town meeting.

Section 4. Powers of Investigation

3-4-1 The board of selectmen may conduct investigations and may authorize the town administrator or other agent to investigate the affairs of the town and the conduct of any town department, office, or agency, including any doubtful claims against the town, and for this purpose may subpoena witnesses, administer oaths, take testimony, and require the production of evidence. The report of these investigations shall be placed on file in the office of the town clerk, and a report summarizing the investigation shall be printed in the next town report.

Section 5. Specific Powers, Duties, and Responsibilities

3-5-1 The board of selectmen shall be recognized as head of the government for all ceremonial purposes.

3-5-2 The board of selectmen shall act as the licensing authority of the town and shall have the power and responsibility to issue licenses, to make all necessary rules and regulations regarding the issuance of licenses, and to attach conditions and impose any restrictions that it considers to be in the public interest, and further, to enforce, or cause to be enforced, the laws, rules and regulations relating to all businesses for which it issues licenses.

3-5-3 The board of selectmen shall have the authority to designate from time to time 1 or more of its members to sign warrants for the payment of town funds in the absence of the town administrator as referenced in clause 4-6-1. This designation shall be by a majority of the board at a duly-called and held public meeting. The vote shall take effect as soon as a written copy of it signed by a majority of the board is filed in the offices of the town clerk, town accountant and town treasurer.

Section 6. Powers of Appointment

3-6-1 Except as may otherwise be provided by General Laws, this charter, or the personnel by-law, the board of selectmen shall have the power to appoint and remove: a) a town administrator as provided in chapter 4; b) a town counsel; c) a finance director; d) a police chief; e) a fire chief; f) 3 assessors for overlapping 3-year terms; g) 3 members of a board of registrars of voters for overlapping 3-year terms; h) election officers; and i) 1 or more constables. **[Amended 5-1-2017 ATM by Art. 38²]**

3-6-2 The board of selectmen shall also have the power to appoint members and up to two alternates (to the extent permissible by general law) of policy-making town agencies enumerated in chapter 7 and other agencies that are in existence on the effective date of this charter and for whom no other method of appointment is provided in this charter. Unless otherwise provided, the board shall also appoint members and up to two alternates (to the extent permissible by general law) of other agencies as may be hereafter established by general law, charter, by-law, vote of the town meeting or vote of the Board of Selectmen. All appointments made shall be for the full term of that position (or, in the case of a position vacated prior to the

² Editor's Note: This amendment was approved at the 5-15-2018 Town Election.

end of a term, for the full remainder of the unexpired term). [Amended 5-2-2016 ATM by Arts. 48, 49³]

Section 7. Prohibitions

3-7-1 Except for the purpose of investigation authorized by this charter, the board of selectmen or its members shall deal with town officers and employees who are subject to the direction and supervision of the town administrator solely through the town administrator, and neither the board nor its members shall give orders to these officers or employees, either publicly or privately.

3-7-2 No member of the board of selectmen shall simultaneously hold another appointive or elective town office or any elected regional, county or state office. [Amended 10-9-2014 by Ch. 345 of the Acts of 2014⁴]

3-7-3 Members of the board of selectmen shall be eligible to serve as liaisons to appointed and elected town agencies. A liaison for any elected town agency or committee shall be appointed by a majority vote of the entire board of selectmen and shall be for the sole purpose of efficient communication between the board of selectmen and the affected appointed and/or elected town agency. [Amended 5-1-2017 ATM by Art. 38⁵]

CHAPTER 4. THE TOWN ADMINISTRATOR

Section 1. Appointment

4-1-1 The board of selectmen, by an affirmative vote of at least 4 members, shall appoint a town administrator for an indefinite term to serve at its pleasure.

4-1-2 In selecting a town administrator, the board of selectmen shall search for candidates by placing an advertisement in the International City Management Association Newsletter or similar professional publication and in at least 2 newspapers having statewide or regional circulation.

Section 2. Qualifications

4-2-1 The town administrator shall be appointed on the basis of educational, executive and administrative qualifications and experience. The educational qualifications shall consist of at least a bachelor's degree, preferably in public administration, granted by an accredited degree-granting college or university. The professional experience shall include at least 5 years of prior full time, compensated executive service in public or business administration. Alternately, 2 years or more of professional experience and a master's degree in an appropriate discipline shall qualify any applicant.

³ Editor's Note: These amendments were approved at the 5-16-2017 Town Election.

⁴ Editor's Note: This Act provided an effective date of 7-1-2015.

⁵ Editor's Note: This amendment was approved at the 5-15-2018 Town Election.

- (j) Coordinate, with the approval of the board of selectmen, the administrative activities of all town agencies and officers concerned with the physical, economic, and environmental development of the town.
- (k) Develop, keep, and annually update a full and complete inventory of all property of the town, both real and personal. **[Amended 5-2-2016 ATM by Art. 48⁷]**
- (l) Convene regular meetings of the management advisory team established by clause 5-3-3.
- (m) Negotiate collective bargaining contracts on behalf of the board of selectmen, unless the board shall have designated another negotiator.
- (n) Perform such other duties as may be required by this charter, by-law, or vote of the board of selectmen.

Section 4. Responsibilities for Appointments

4-4-1 Except as may otherwise be provided by General Laws, this charter, or the personnel by-law, and subject to the approval of 3 or more affirmative votes of the board of selectmen, the town administrator shall have the power to appoint, on the basis of merit and fitness alone, and remove division directors, department heads, and an assistant town administrator.

4-4-2 Except as may otherwise be provided by General Laws, this charter, the personnel by-law, or collective bargaining, the town administrator shall have the authority to appoint, on the basis of merit and fitness alone, and remove: a) all full-time town employees; b) all part-time employees; c) all employees of appointed town agencies; d) 1 or more inspectors; and e) all other full-time, part-time or seasonal employees. Any such appointments or removals may be overturned only by the affirmative vote of at least 4 selectmen taken within 14 days of the town administrator's action in initiating such appointment or removal.

4-4-3 The town administrator shall appoint the harbormaster and any assistant harbormasters. **[Added 5-2-2016 ATM by Art. 48⁸]**

Section 5. Responsibilities for Administrative Reorganization

4-5-1 The town administrator may, with the approval of the affirmative vote of at least 3 members of the board of selectmen, establish, reorganize, consolidate or abolish any division, department or position placed by this charter under the town administrator's direction and supervision, except as otherwise provided by general law, this charter or vote of town meeting.

4-5-2 The creation of any new full-time, compensated position which requires the approval of the board of selectmen shall not become effective until the position has been funded by a vote of town meeting.

⁷ Editor's Note: This amendment was approved at the 5-16-2017 Town Election.

⁸ Editor's Note: This amendment was approved at the 5-16-2017 Town Election.

Section 3. Duties

4-3-1 The town administrator shall be the chief administrative officer of the town and shall be responsible for administering and coordinating all employees, activities and departments placed by general law, this charter, or by-law under the control of the board of selectmen and of the town administrator.

4-3-2 The town administrator shall devote full working time to the duties of that office, shall not become a candidate for, or hold, any elective office during the term of appointment; and shall not engage in any business activity during the term, except with the written consent of the board of selectmen. The town administrator shall:

- (a) Attend all meetings of the board of selectmen, except when excused, and have the right to speak but not to vote.
- (b) Assemble, prepare, and present to the board of selectmen the annual operating budget of the town.
- (c) Develop and annually revise the capital outlay plan in consultation with the capital outlay committee.
- (d) Be responsible for seeing that the budget is administered and expended as adopted by the town meeting and in accordance with general law, this charter, and by-law.
- (e) Keep the board of selectmen informed regarding all departmental operations, fiscal affairs, general problems, and administrative actions, and to this end submit regular reports to the board.
- (f) Keep the board informed regarding the availability of state and federal funds and how such funds might relate to unmet short-range and long-range needs.
- (g) Have the authority to seek and apply for grants.
- (h) In the absence of a personnel director, be responsible for the day-to-day administration of the personnel system and by-law, and administer and enforce collective bargaining contracts, the personnel by-law, and rules and regulations adopted by the board of selectmen.
- (i) Be responsible for the purchasing of services, supplies, materials and equipment for all town divisions, departments, and offices, excepting those for the water department and the Brooks Free Library. The Town Administrator shall execute all contracts for goods and services on behalf of the divisions and departments under the jurisdiction of the Town Administrator, subject to the approval of the Board of Selectmen. The Board of Selectmen may delegate its approval authority to the Town Administrator for certain classes of contracts. **[Amended 5-2-2016 ATM by Art. 48⁶]**

⁶ Editor's Note: This amendment was approved at the 5-16-2017 Town Election.

Section 4. Town Clerk

6-4-1 A town clerk shall be elected for a 3-year term.

6-4-2 The town clerk shall carry out the duties that are, provided by general law, this charter, by-law or by vote of the town meeting.

Section 5. School Committee [Amended 5-16-2012 by Ch. 97 of the Acts of 2012]

6-5-1 Four members of the Monomoy regional school district committee shall be elected for the terms and in the manner provided in the regional school district agreement. The committee shall have the powers and duties set forth in the regional school district agreement and under applicable General Laws.

Section 6. Water Commission

6-6-1 A water commission of 3 members shall be elected for 3-year overlapping terms.

6-6-2 The water commission shall possess and exercise all powers given to this board under chapter 165 of the acts of 1935.

6-6-3 The commission shall appoint a water superintendent, and shall request this officer to cooperate with, and be responsive to, requests from the town administrator's office.

Section 7. Library Trustees

6-7-1 A board of library trustees of 7 members shall be elected for 3-year overlapping terms.

6-7-2 The board shall be responsible for the administration and operation of the Brooks Free Library, including appointment of library staff, acquisitions of books, journals, periodicals, and other materials relating to the library function, and the promulgation of library rules and regulations. **[Amended 6-3-2016 by Ch. 117 of the Acts of 2016]**

Section 8. Housing Authority

6-8-1 There shall be a housing authority of 5 members, 1 of whom shall be appointed under authority of the commonwealth and 4 of whom shall be elected. The elected members shall serve 5-year overlapping terms.

IV. OLD/UNFINISHED BUSINESS

C. Water Rates



Harwich Water Department

196 Chatham Road • Harwich, MA • 02645

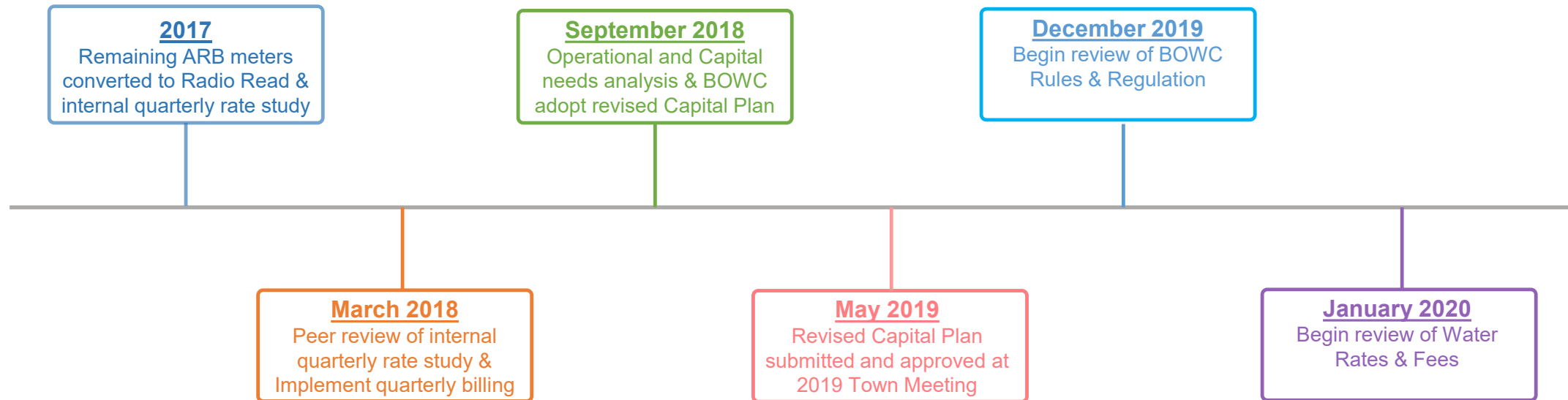
Rate Increase Analysis

August 2020



Introduction & Background

In 2018 the Board of Water Commissioners along with department staff began a comprehensive review of the Departments needs with respect to existing & future infrastructure upgrades, system redundancy, water production and operating expenses. This review prompted significant revisions to the departments Capital Plan which was voted and adopted by the Water Commission in September of 2018. Following the adoption of the new Capital Plan the department completed a thorough analysis of future water use, revenue projections and the Departments ability to fund future operational and capital expenses. The results of this analysis indicate that existing water rates are not sufficient to support department operations and capital needs beyond fiscal year 2021. Upon confirmation that a rate increase will be required the Water Commission has developed 11 unique rate structure scenarios for consideration, the details of which are included in this presentation.

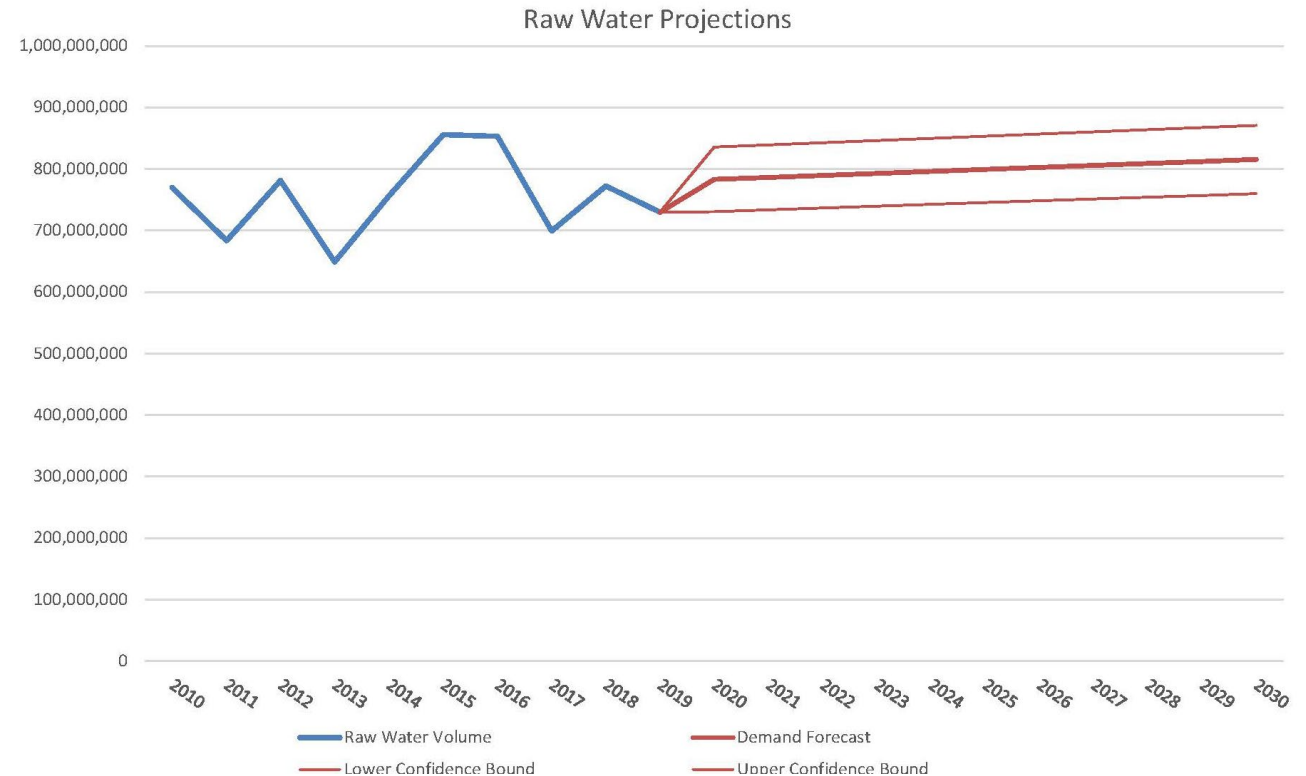




Demand Projection

Raw Water Projections:

Prior to evaluating the effectiveness of each rate increase scenario the department had to establish future demand projections. Raw water projections were forecast using linear regression to establish a line of best fit based on 10 years of historical water production. As can be seen easily on the chart, water production can fluctuate significantly from year-to-year. This is largely due to a corresponding increase or decrease in precipitation. To accommodate for the uncertainty of future weather patterns upper & lower confidence bounds were incorporated into the projections. For the purpose estimating future revenue the lower confidence annual raw water volumes were used for the basis of analysis.



Billed Consumption Projections:

Unfortunately due to treatment plant losses, fire protection, water theft and watermain breaks/leaks raw water projections cannot directly be used for projecting future revenues. To adjust for these losses raw water projections were multiplied by 92.63% which is the 10-year average of billed consumption vs. raw water production.



Demand Projection

Annual Quarterly Allocation:

Due to the seasonal nature of the community, water consumption and revenues vary significantly between quarters within a fiscal year. To accurately distribute annual volumes to the appropriate quarter daily finished water volumes from FY15-FY19 were consolidated to establish a 5-year average quarterly volume as a percentage of annual volume.

Quarterly Tier Allocation:

After determining the quarterly allocations these volumes must be further broken down into individual billing tiers to accurately estimate revenues. To accomplish this the department used historic actual data to establish an average % of quarterly usage per tier for each quarter in the fiscal year.

Tier	Usage				
	Q1	Q2	Q3	Q4	Total
1	61,998,945	35,200,670	41,763,030	75,987,925	214,950,570
2	40,800,817	23,233,149	12,731,646	35,264,365	112,029,976
3	93,565,428	25,039,615	7,784,354	42,078,525	168,467,924
4	139,148,615	15,148,905	7,668,984	20,542,849	182,509,353
Tot.	335,513,805	98,622,339	69,948,014	173,873,665	677,957,823

	FY15	FY16	FY17	FY18	FY19	5-Year AVG
Quarter 1	44.49%	49.44%	53.77%	48.07%	52.12%	49.58%
Quarter 2	14.01%	13.31%	15.35%	14.83%	15.36%	14.57%
Quarter 3	11.77%	9.56%	9.01%	11.12%	9.92%	10.28%
Quarter 4	29.73%	27.55%	21.87%	25.97%	22.60%	25.55%

Allocation			
Q1 Tier %	Q2 Tier %	Q3 Tier %	Q4 Tier %
18.48%	35.69%	59.71%	43.70%
12.16%	23.56%	18.20%	20.28%
27.89%	25.39%	11.13%	24.20%
41.47%	15.36%	10.96%	11.81%



Projected Expenses

FY20 – FY28

2020 Water Rate Model

Harwich Water Department

Water Utility Rate Dashboard

Harwich Water Dept.

	\$4,583,865.00	\$4,516,677.00	Projected Expenses; 2% Increase -->>						
EXPENSES	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Operating Expenses									
Labor	\$1,337,473	\$1,398,335	\$1,426,302	\$1,454,828	\$1,483,924	\$1,513,603	\$1,543,875	\$1,574,752	\$1,606,247
Operating Expenses and Maintenance	\$1,534,995	\$1,468,390	\$1,497,758	\$1,527,713	\$1,558,267	\$1,589,433	\$1,621,221	\$1,653,646	\$1,686,719
Indirect Costs + OPEB	\$720,295	\$779,715	\$795,309	\$811,215	\$827,440	\$843,989	\$860,868	\$878,086	\$895,647
Subtotal	\$3,592,763	\$3,646,440	\$3,719,369	\$3,793,756	\$3,869,631	\$3,947,024	\$4,025,964	\$4,106,484	\$4,188,613
Delta previous (\$)	\$272,476	\$53,677	\$72,929	\$74,387	\$75,875	\$77,393	\$78,940	\$80,519	\$82,130
Delta previous (%)	8.21%	1.49%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Capital Expenses									
Retained Earnings Funded Capital	\$250,000	\$145,000	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Existing Debt	\$741,102	\$721,345	\$704,376	\$536,648	\$528,266	\$515,008	\$506,417	\$492,533	\$483,516
New Debt Service	\$0	\$0	\$0	\$151,200	\$151,200	\$178,420	\$365,459	\$528,871	\$598,644
Subtotal	\$741,102	\$721,345	\$704,376	\$687,848	\$679,466	\$693,428	\$871,876	\$1,021,404	\$1,082,160
TOTAL EXPENSES	\$4,333,865	\$4,367,785	\$4,423,745	\$4,481,604	\$4,549,097	\$4,640,452	\$4,897,840	\$5,127,888	\$5,270,773
Delta previous (\$)	\$261,212	\$33,920	\$55,960	\$57,859	\$67,493	\$91,355	\$257,388	\$230,048	\$142,885
Delta previous (%)	6.41%	0.78%	1.28%	1.31%	1.51%	2.01%	5.55%	4.70%	2.79%
	\$4,333,865.00	\$4,222,785.00	\$4,298,744.80	\$4,306,604.18	\$3,724,097.30	\$4,140,451.93	\$4,897,840.29	\$4,377,887.81	\$5,095,773.06

*FY20 – FY28 expense projections include 2% annual increases to operating expenses, anticipated future capital projects and related debt.



Projected Expenses

FY20 – FY28

Capital Plan FY20-FY31			
Fiscal Year	Project	Estimated Cost	Notes
FY20	Truck & Excavator	125,000	
	Pleasant Lake Tank Fill Pipe	300,000	Undersized
	T1 Generator	60,000	Generator installed in 2001, problematic, provides power to SCADA, 3 wells, & office
FY21	New Source Exploration	250,000	
FY22	Rt.28 Water main Replacement- Design & Engineering	100,000	
	Station 8 Generator	45,000	
FY23	2 Vehicles	125,000	
	New Well Construction(BOND 0.5M PROJECT)	500,000	Price dependent on location of source & water quality
	Rt.28 Water main Replacement- Construction (BOND 2.0M PROJECT)	2,000,000	1.25 miles from Lothrop to Lower county
FY24	Pavement Management Plan	175,000	
FY25	Paint Pleasant Lake Ave Tank(Bond 1M Project)	1,750,000	Full engineered coating inspection recommended in 2018 -(spot repair significant savings)
	Vehicle Replacement	75,000	
FY26	Pipe Discontinuity Upgrade (Bond 1M)	1,500,000	5900 LF of discontinuity
FY27	No Project		
FY28	Relocate HWD HQ (Bond 750K)	1,500,000	
FY29	No Project		
FY30	Vehicle Replacement	175,000	
FY31	Construct new tank @ Rt.39 (Bond 3.0)	4,500,000	Replace spider leg tank W/ larger hydropillar
		Low Estimate	9,760,000
		High Estimate	12,650,000



Existing Water Rates

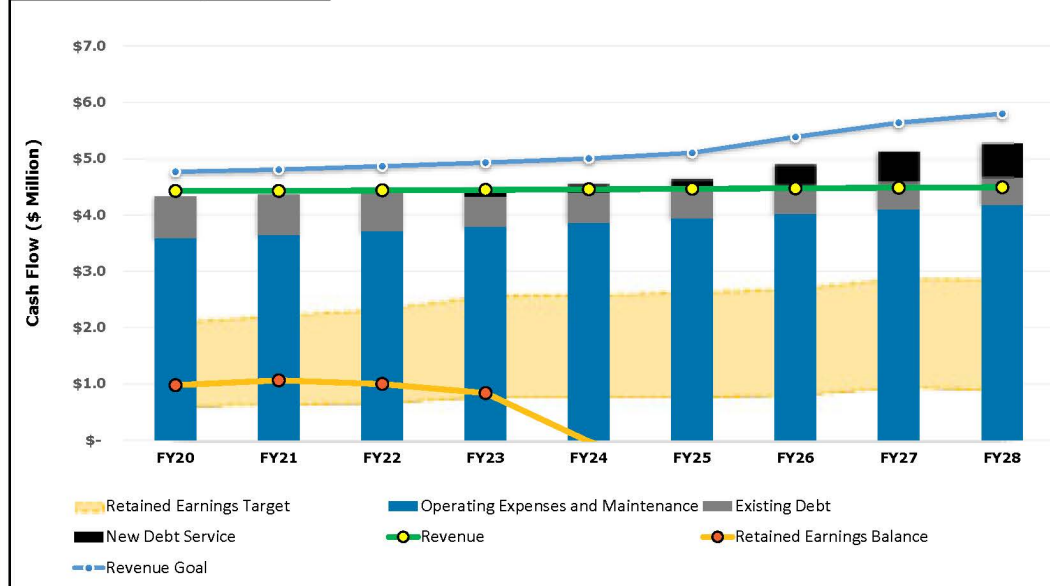
2020 Water Rate Model

Harwich Water Department

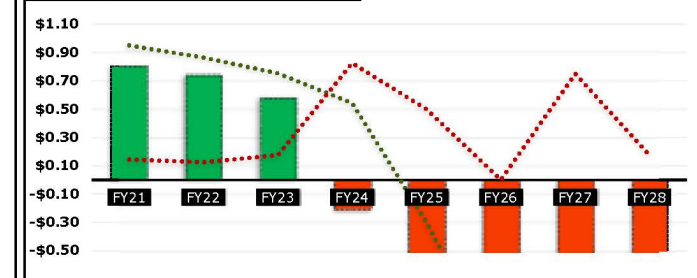
Current Rate Structure
Do Nothing

REVENUE	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing Revenue	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rate Revenue	\$3,679,913	\$3,693,059	\$3,702,334	\$3,711,596	\$3,720,846	\$3,730,084	\$3,739,310	\$3,748,523	\$3,757,725
Non-Rate Revenue	\$746,933	\$735,273	\$735,274	\$735,275	\$735,276	\$735,277	\$735,278	\$735,279	\$735,280
TOTAL REVENUE	\$4,426,846	\$4,428,333	\$4,437,608	\$4,446,872	\$4,456,123	\$4,465,362	\$4,474,588	\$4,483,803	\$4,493,005
Delta previous (Rate Revenue) (\$)	-\$16,641	\$13,146	\$9,275	\$9,262	\$9,250	\$9,238	\$9,226	\$9,214	\$9,201
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$428,511	-\$482,893	-\$547,884	-\$639,136	-\$913,036	-\$1,156,874	-\$1,304,845
Actual									
Net Revenue (Revenue-Expense)	\$230,000	\$60,548	\$13,864	-\$34,733	-\$92,975	-\$175,090	-\$423,252	-\$644,085	-\$777,768
Retained Earnings Expense	\$250,000	\$145,000	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$976,576	\$1,061,576	\$997,124	\$835,987	-\$23,745	-\$616,720	-\$791,810	-\$1,965,062	-\$2,784,148
Retained Earnings as Percent of Operating Expenses	27%	29%	27%	22%	-1%	-16%	-20%	-48%	-66%
Rate Funded Capital Analysis									
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$948,833	\$864,381	\$753,244	\$543,512	-\$299,463	-\$1,299,553	-\$2,222,805	-\$2,866,890
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$803,833	\$739,381	\$578,244	-\$206,488	-\$1,124,463	-\$1,799,553	-\$2,222,805	-\$3,616,890

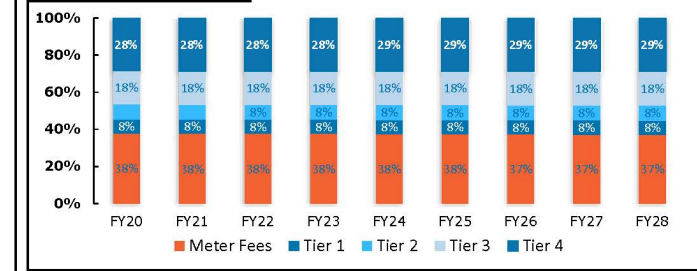
Proforma - Existing Conditions



Funding for Rate Funded Capital



Revenue Distribution





Proposed Rate Structures Summary

Scenario	Proposed Increases
Alternative A	8\$ base rate increase, 2.5% annual increase to all tiers
Alternative B	5\$ base rate increase, 3% tier increase in FY22 & FY23
Alternative C	5\$ base rate increase, 4% tier increase in FY22 & FY23
Alternative D	5\$ base rate increase, 5% tier increase in FY22 & FY23
Alternative E	8\$ base rate increase, 2% annual increase to all tiers
Alternative F	10\$ base rate increase, no increase to tiers
Alternative G	10\$ base rate increase, 5% tier increase in FY22 & FY23
Alternative H	10\$ base rate increase, 3% tier increase in FY22 – FY24
Alternative I	10\$ base rate increase, 10% tier increase in FY22
Alternative J	10\$ base rate increase, 5% increase tiers 2 & 3 and 4% tier 4 FY22-FY23
Alternative K	8\$ base rate increase, 3% annual increase to all tiers



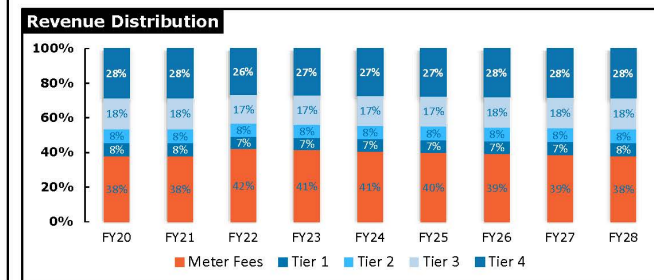
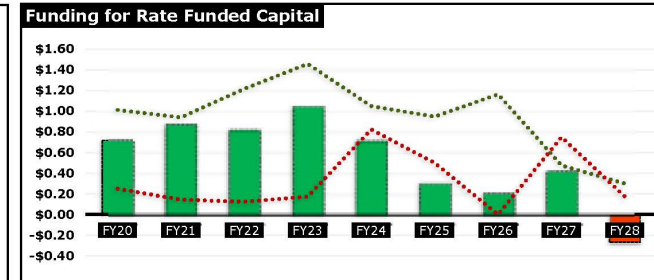
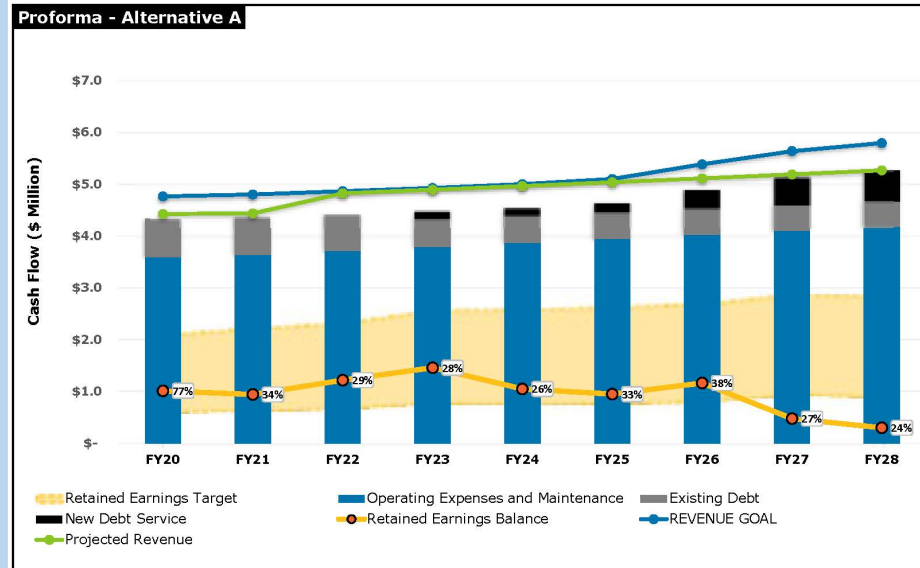
Alternative A

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure
Alternative A (\$8+ to Base Rate, 2.5% Annual Tier Increase)

	Actual & Proj		Projection						
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative A									
+\$8 Base & +2.5% All Tiers	0.0%	0.0%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Rate Revenue	\$3,679,913	\$3,693,059	\$4,079,892	\$4,148,621	\$4,219,298	\$4,291,977	\$4,366,714	\$4,443,567	\$4,522,894
Non-Rate Revenue	\$746,933	\$746,933	\$746,933	\$746,933	\$746,933	\$746,933	\$746,933	\$746,933	\$746,933
TOTAL REVENUE Alternative I	\$4,426,846	\$4,439,992	\$4,826,825	\$4,895,554	\$4,966,231	\$5,038,910	\$5,113,647	\$5,190,500	\$5,269,827
Delta previous	-\$16,641	\$13,146	\$386,833	\$68,729	\$70,677	\$72,679	\$74,737	\$76,853	\$79,027
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$489,555	\$496,623	\$503,891	\$511,365	\$519,050	\$526,953
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$364,571	-\$39,294	-\$34,211	-\$37,776	-\$65,587	-\$273,977	-\$450,176	-\$528,324
Net Revenue (Revenue-Expense)	\$300,000	\$72,207	\$403,080	\$413,950	\$417,133	\$398,458	\$215,807	\$62,612	-\$1,246
Retained Earning Expenses	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,013,833	\$941,040	\$1,219,121	\$1,458,070	\$1,050,204	\$948,662	\$1,164,469	\$477,081	\$300,835
Retained Earnings as Percent of Operating Expenses	28%	26%	33%	38%	27%	24%	29%	12%	7%
Target retained earnings balance	\$768,553	\$758,288	\$768,874	\$793,751	\$938,926	\$889,405	\$805,193	\$971,297	
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$946,040	\$1,224,121	\$1,463,070	\$1,130,204	\$703,662	\$419,469	\$482,081
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$821,040	\$1,049,121	\$713,070	\$305,204	\$203,662	\$419,469	-\$267,919





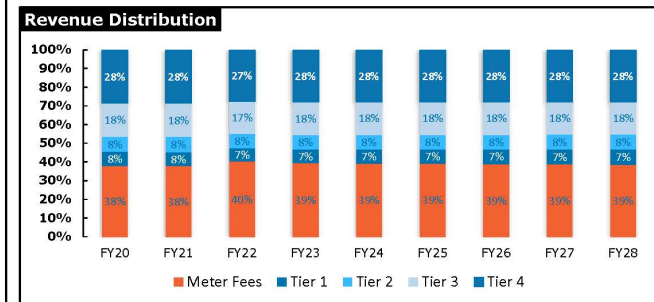
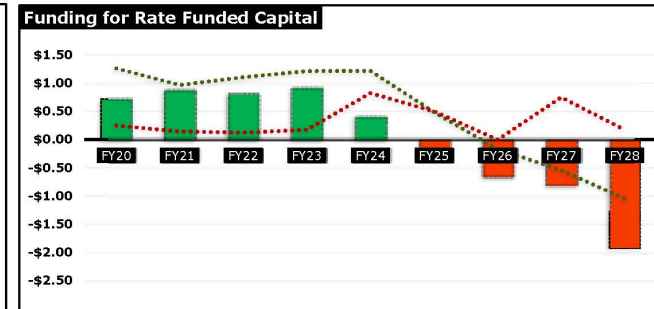
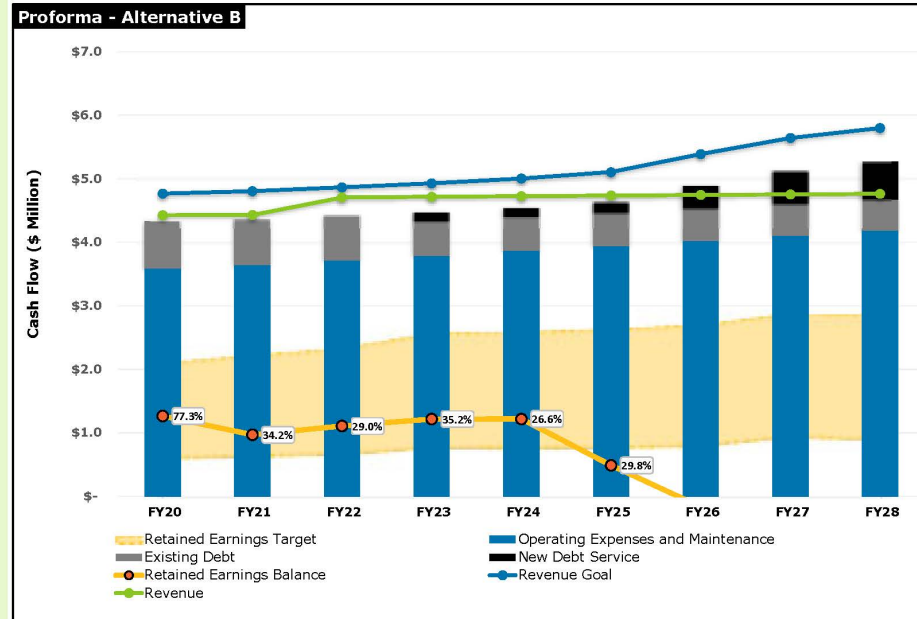
Alternative B

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative B (+\$5 Base Rate & 3% Tier Increase FY22 & FY23)

	Actual & Proj		Projection						
	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative B									
+\$5 Base & +3% All Tiers (FY22 & FY23)	0.0%	0.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rate Revenue	\$3,679,913	\$3,693,059	\$3,971,404	\$3,980,944	\$3,990,472	\$3,999,987	\$4,009,489	\$4,018,979	\$4,028,457
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative B	\$4,426,846	\$4,428,333	\$4,706,677	\$4,716,218	\$4,725,745	\$4,735,260	\$4,744,763	\$4,754,252	\$4,763,730
Delta previous	54,910	13,146	278,345	9,540	9,528	9,515	9,502	9,490	9,477
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$159,442	-\$213,547	-\$278,262	-\$369,237	-\$642,862	-\$886,424	-\$1,034,120
Net Revenue (Revenue-Expense)	\$300,000	\$60,548	\$282,933	\$234,613	\$176,648	\$94,808	-\$153,078	-\$373,635	-\$507,043
Retained Earnings Balance	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	29.8%	32.1%	31.5%	12.4%	-4.1%	-13.1%	-25.0%
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,092,313	\$1,151,927	\$578,574	-\$151,618	-\$804,695	-\$1,178,331
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$917,313	\$401,927	-\$246,426	-\$651,618	-\$804,695	-\$1,928,331





Alternative C

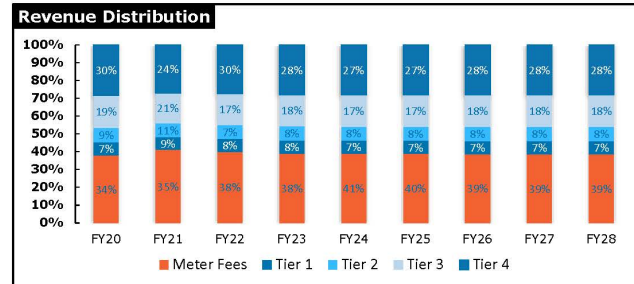
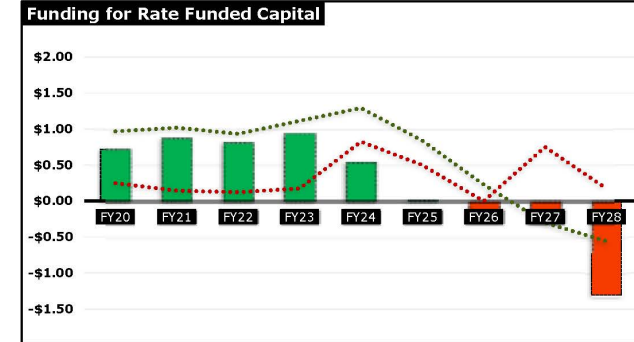
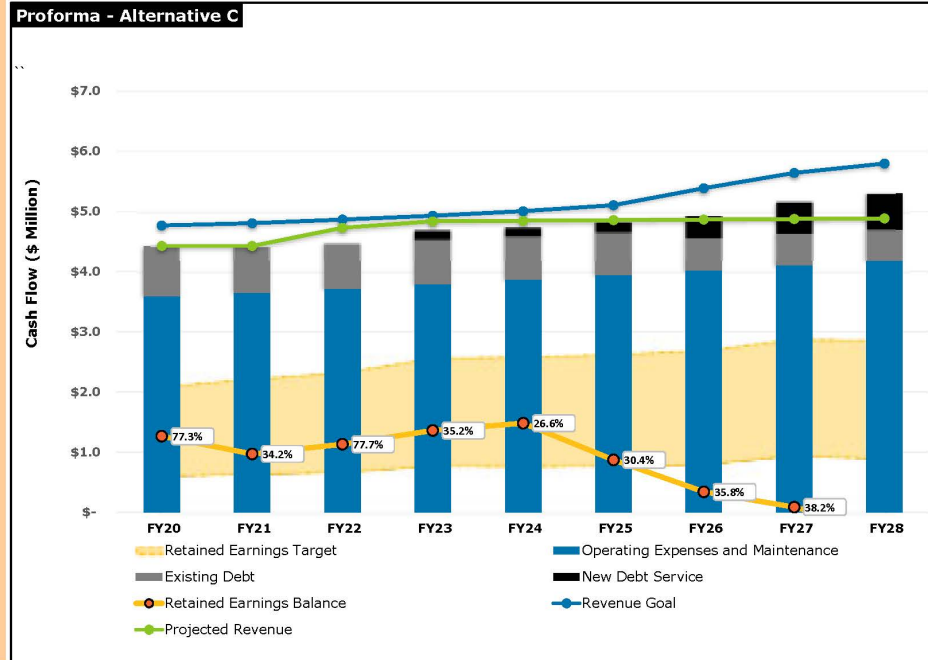
2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure
Alternative C (+\$5 Base Rate & 4% Tier Increase FY22 & FY23)

REVENUE Alternative C +\$5 Base & +4% All Tiers (FY22 & FY23 Only)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
	0%	0%	4%	4%	0%	0%	0%	0%	
Total Rate Revenue	\$3,679,913	\$3,693,059	\$3,994,427	\$4,100,223	\$4,110,227	\$4,120,219	\$4,130,198	\$4,140,163	\$4,150,115
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,729,701	\$4,835,496	\$4,845,501	\$4,855,492	\$4,865,471	\$4,875,436	\$4,885,388
Delta previous	-\$16,641	\$13,146	\$301,368	\$105,795	\$10,005	\$9,992	\$9,978	\$9,965	\$9,952
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$136,419	-\$94,269	-\$158,506	-\$249,005	-\$522,153	-\$765,240	-\$912,462
Net Revenue (Revenue-Expense)	\$300,000	\$60,547.71	\$305,955.86	\$353,891.70	\$296,403.46	\$215,040.50	-\$32,369.38	-\$252,451.56	-\$385,384.57
Retained Earnings Expense	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,263,833	\$968,833	\$1,129,789	\$1,358,681	\$1,480,084	\$870,125	\$337,755	\$85,304	-\$300,081
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	30.4%	35.8%	38.2%	22.0%	8.4%	2.1%	-7.2%
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,115,337	\$1,294,228	\$840,632	\$230,672	-\$301,697	-\$554,149
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$940,337	\$544,228	\$15,632	-\$269,328	-\$301,697	-\$1,304,149





Alternative D

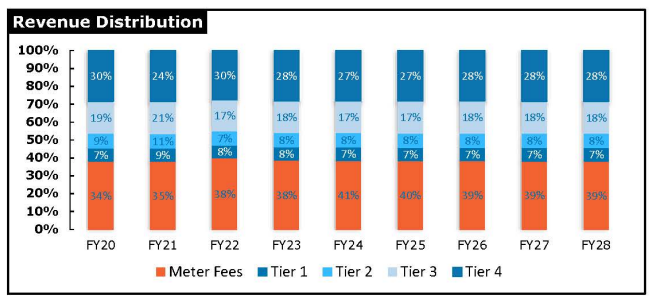
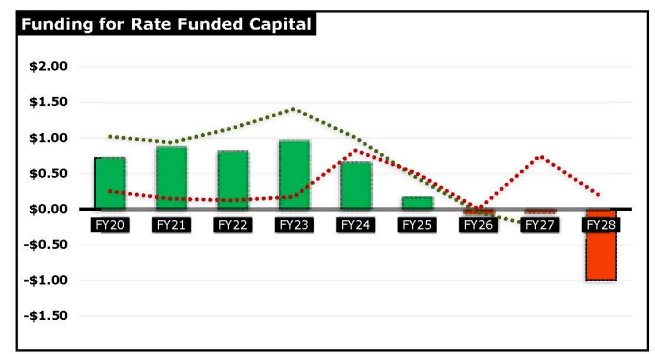
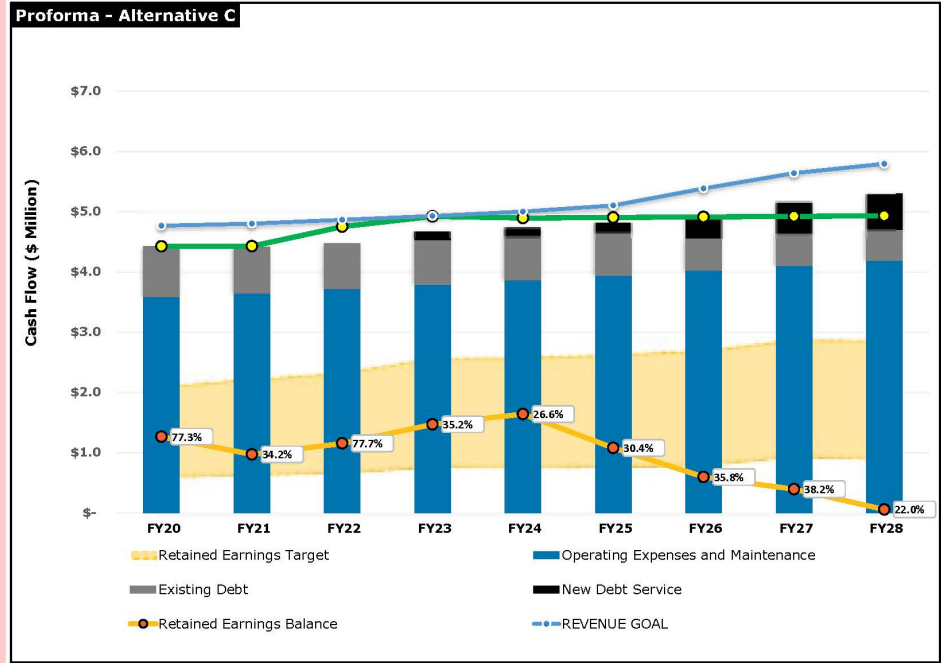
2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative D (+\$5 Base Rate & 5% Increase to Tiers FY22 & FY23)

REVENUE Alternative D +\$5 Base & +5% All Tiers (FY22 & FY23 Only)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
	0%	0%	5%	5%	0%	0%	0%	0%	
Total Rate Revenue	\$3,679,913	\$3,693,059	\$4,017,451	\$4,188,535	\$4,158,733	\$4,168,918	\$4,179,089	\$4,189,247	\$4,199,392
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,752,724	\$4,923,808	\$4,894,006	\$4,904,191	\$4,914,362	\$4,924,520	\$4,934,665
Delta previous	\$3,607,438	\$13,146	\$324,391	\$171,084	-\$29,802	\$10,185	\$10,171	\$10,158	\$10,145
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$113,395	-\$5,956	-\$110,001	-\$200,306	-\$473,262	-\$716,156	-\$863,185
Net Revenue (Revenue-Expense)	\$300,000	\$60,547.71	\$328,979.20	\$442,204.07	\$344,909.15	\$263,739.26	\$16,522.19	-\$203,367.42	-\$336,108.12
Retained Earnings Expense	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,263,833	\$968,833	\$1,152,812	\$1,470,016	\$1,639,925	\$1,078,665	\$595,187	\$391,819	\$55,711
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	31.0%	38.7%	42.4%	27.3%	14.8%	9.5%	1.3%
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,138,360	\$1,405,564	\$1,000,473	\$439,212	-\$44,265	-\$247,633
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$963,360	\$655,564	\$175,473	-\$60,788	-\$44,265	-\$997,633





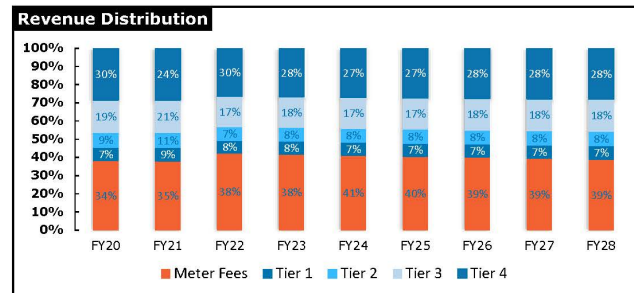
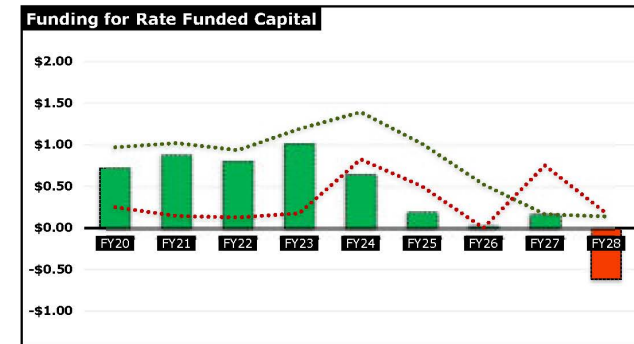
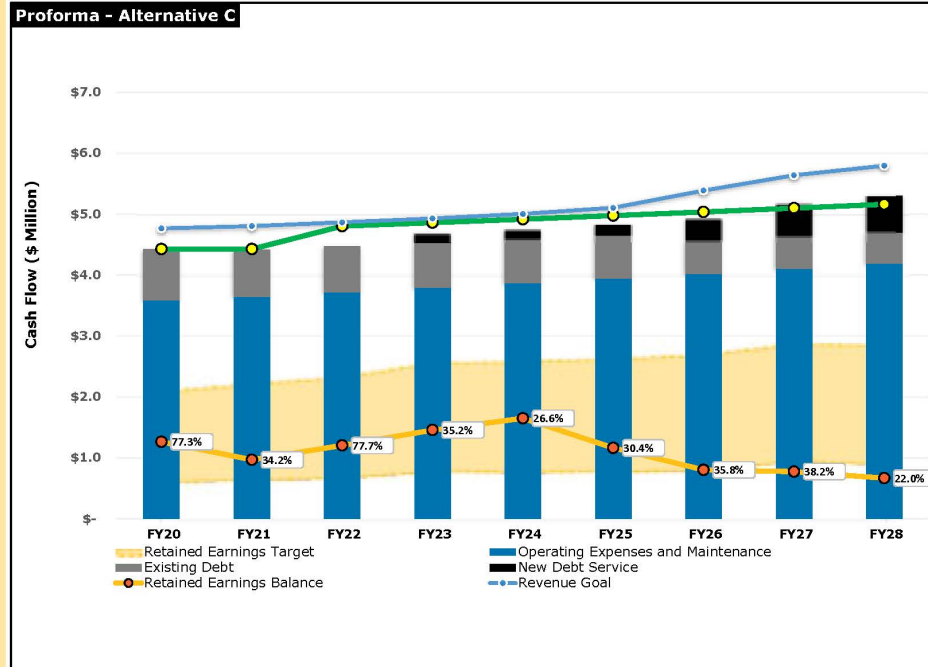
Alternative E

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative E (+\$8 Base & 2% Annual Increase all Tiers)

REVENUE Alternative E +\$8 Base & +2% All Tiers Annually		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
		0%	0%	5%	5%	0%	0%	0%	0%	
Total Rate Revenue		\$3,679,913	\$3,693,059	\$4,068,381	\$4,124,985	\$4,182,901	\$4,242,158	\$4,302,787	\$4,364,819	\$4,428,285
Non-Rate Revenue		\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C		\$4,426,846	\$4,428,333	\$4,803,654	\$4,860,258	\$4,918,174	\$4,977,431	\$5,038,060	\$5,100,092	\$5,163,558
Delta previous		\$3,679,913	\$13,146	\$375,321	\$56,604	\$57,916	\$59,257	\$60,629	\$62,032	\$63,466
Retained Earnings Contribution Goal		\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL		\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall		-\$340,405	-\$376,231	-\$62,465	-\$69,506	-\$85,833	-\$127,066	-\$349,564	-\$540,584	-\$634,292
Net Revenue (Revenue-Expense)		\$300,000	\$60,547.71	\$379,909.18	\$378,653.94	\$369,076.76	\$336,979.50	\$140,220.18	-\$27,795.67	-\$107,215.03
Retained Earnings Expense		\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance		\$1,263,833	\$968,833	\$1,203,742	\$1,457,396	\$1,651,473	\$1,163,452	\$803,673	\$775,877	\$668,662
Retained Earnings as Percent of Operating Expenses		35.2%	26.6%	32.4%	38.4%	42.7%	29.5%	20.0%	18.9%	16.0%
Rate Funded Capital Analysis		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)		\$968,833	\$1,018,833	\$934,381	\$1,189,290	\$1,392,944	\$1,012,021	\$524,000	\$164,220	\$136,425
Rate Funded Capital (from above)		\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available		\$718,833	\$873,833	\$809,381	\$1,014,290	\$642,944	\$187,021	\$24,000	\$164,220	-\$613,575





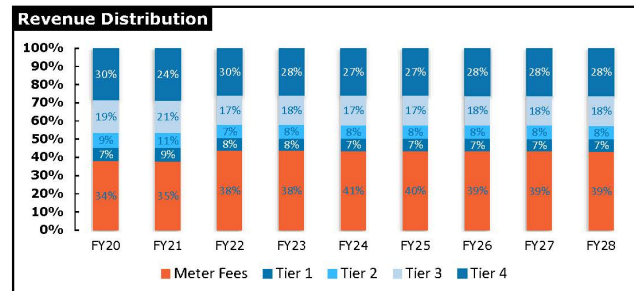
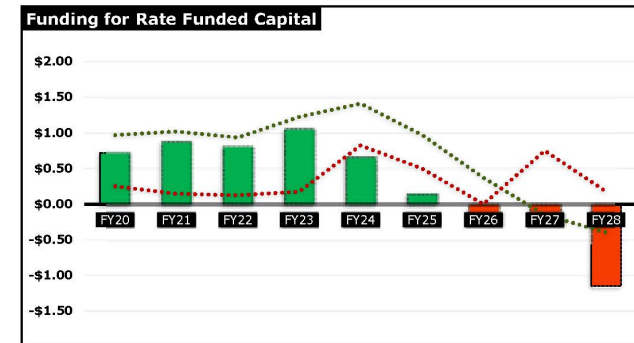
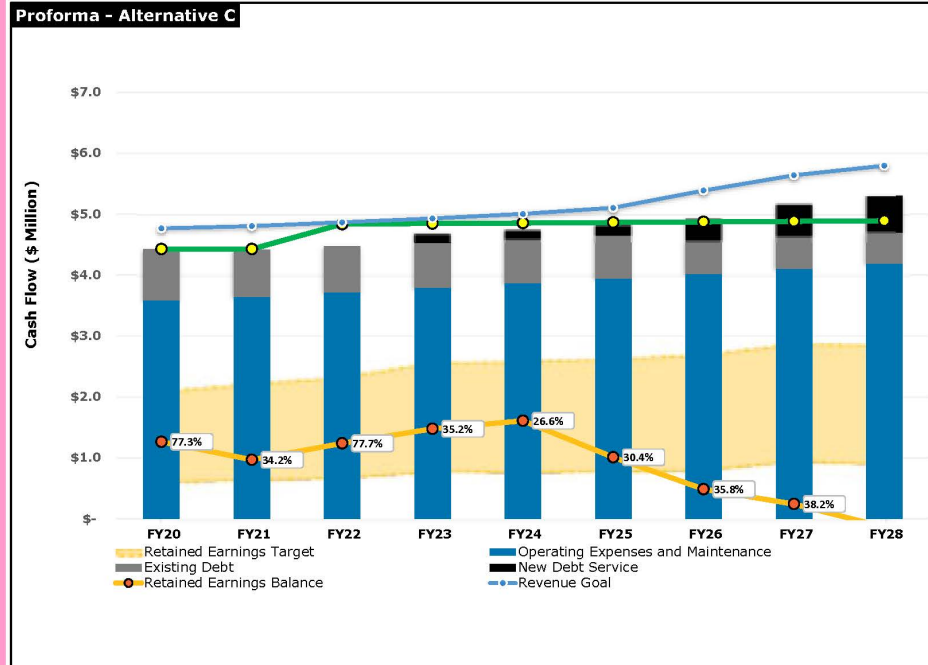
Alternative F

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative F (+\$10 Base Rate Increase)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative F									
+\$10 Base Only	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Rate Revenue	\$3,679,913	\$3,693,059	\$4,102,334	\$4,111,596	\$4,120,846	\$4,130,084	\$4,139,310	\$4,148,523	\$4,157,725
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,837,607	\$4,846,870	\$4,856,120	\$4,865,358	\$4,874,583	\$4,883,797	\$4,892,998
Delta previous	#VALUE!	\$13,146	\$409,275	\$9,262	\$9,250	\$9,238	\$9,226	\$9,214	\$9,201
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$28,512	-\$82,895	-\$147,887	-\$239,140	-\$513,041	-\$756,880	-\$904,852
Net Revenue (Revenue-Expense)	\$300,000	\$60,547.71	\$413,862.50	\$365,265.44	\$307,022.39	\$224,905.62	-\$23,257.07	-\$244,091.07	-\$377,774.92
Retained Earnings Expense	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,263,833	\$968,833	\$1,237,696	\$1,477,961	\$1,609,983	\$1,009,889	\$486,632	\$242,541	-\$135,234
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	33.3%	39.0%	41.6%	25.6%	12.1%	5.9%	-3.2%
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,223,243	\$1,413,509	\$970,531	\$370,437	-\$152,820	-\$396,911
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$1,048,243	\$663,509	\$145,531	-\$129,563	-\$152,820	-\$1,146,911





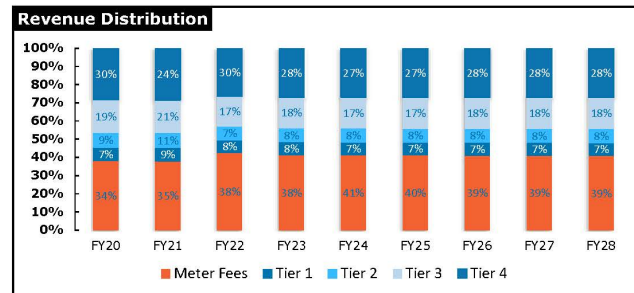
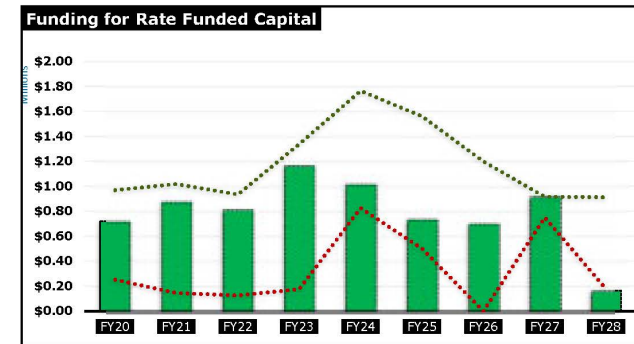
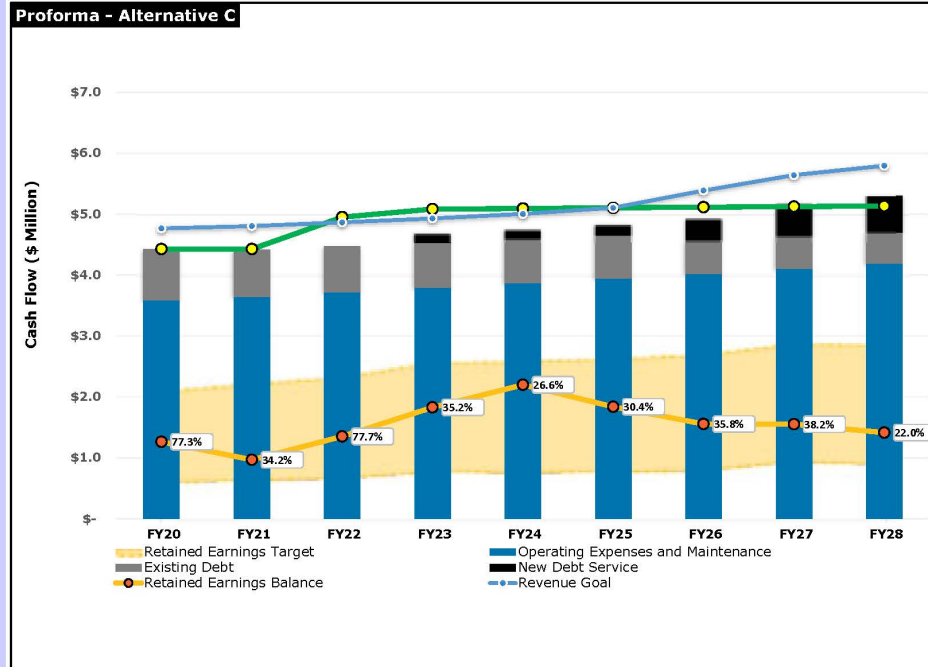
Alternative G

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative G (+\$10 Base & 5% Increase all Tiers (FY22 & FY23))

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative F									
+\$10 Base & 5% Increase all Tiers (FY22 & FY23)									
Total Rate Revenue	\$3,679,913	\$3,693,059	\$4,217,451	\$4,348,535	\$4,358,733	\$4,368,918	\$4,379,089	\$4,389,247	\$4,399,392
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,952,724	\$5,083,808	\$5,094,006	\$5,104,191	\$5,114,362	\$5,124,520	\$5,134,665
Delta previous	#VALUE!	\$13,146	\$524,391	\$131,084	\$10,198	\$10,185	\$10,171	\$10,158	\$10,145
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	\$86,605	\$154,044	\$89,999	-\$306	-\$273,262	-\$516,156	-\$663,185
Net Revenue (Revenue-Expense)									
Retained Earnings Expense	\$300,000	\$60,547.71	\$528,979.20	\$602,204.07	\$544,909.15	\$463,739.26	\$216,522.19	-\$3,367.42	-\$136,108.12
Retained Earnings Balance	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	36.4%	48.2%	56.9%	46.6%	38.6%	37.8%	33.8%
Rate Funded Capital Analysis									
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,338,360	\$1,765,564	\$1,560,473	\$1,199,212	\$915,735	\$912,367
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$1,163,360	\$1,015,564	\$735,473	\$699,212	\$915,735	\$162,367





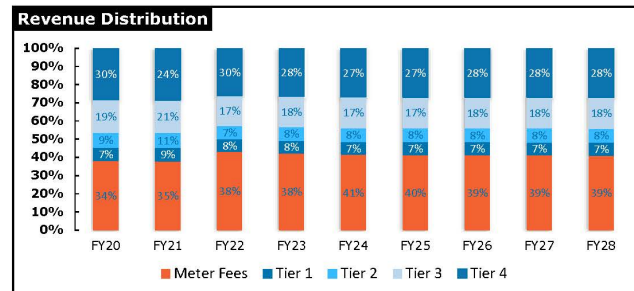
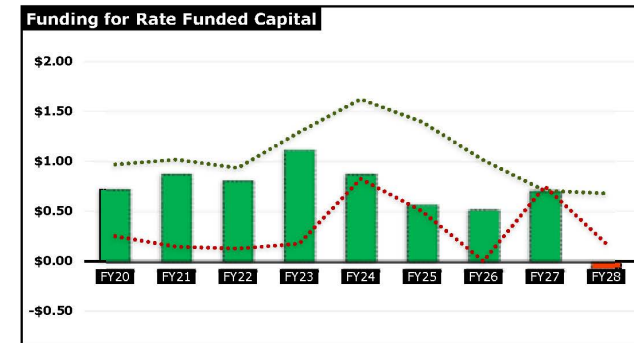
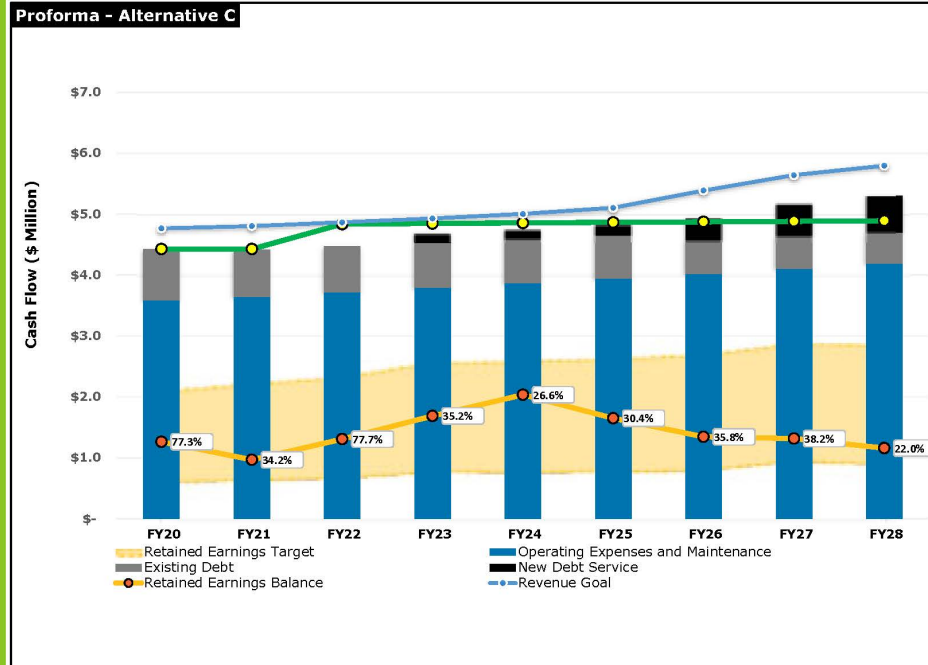
Alternative H

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative H (+\$10 Base & 3% Increase FY22-FY24)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative H									
+\$10 Base & 3% Increase FY22-FY24									
Total Rate Revenue	\$3,679,913	\$3,693,059	\$4,171,404	\$4,252,373	\$4,336,051	\$4,346,146	\$4,356,227	\$4,366,295	\$4,376,350
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,906,677	\$4,987,646	\$5,071,325	\$5,081,419	\$5,091,500	\$5,101,568	\$5,111,623
Delta previous	#VALUE!	\$13,146	\$478,345	\$80,969	\$83,679	\$10,094	\$10,081	\$10,068	\$10,055
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	\$40,558	\$57,881	\$67,318	-\$23,078	-\$296,124	-\$539,108	-\$686,227
Net Revenue (Revenue-Expense)									
Retained Earnings Expense	\$300,000	\$60,547.71	\$482,932.52	\$506,041.66	\$522,227.52	\$440,967.34	\$193,660.12	-\$26,319.54	-\$159,150.17
Retained Earnings Balance	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	35.1%	44.5%	52.6%	41.8%	33.4%	32.1%	27.7%
Rate Funded Capital Analysis									
Shifted Retained Earnings (2 years)	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Rate Funded Capital (from above)	\$968,833	\$1,018,833	\$934,381	\$1,292,313	\$1,623,355	\$1,395,582	\$1,011,550	\$705,210	\$678,890
Net Funding Available	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
	\$718,833	\$873,833	\$809,381	\$1,117,313	\$873,355	\$570,582	\$511,550	\$705,210	-\$71,110





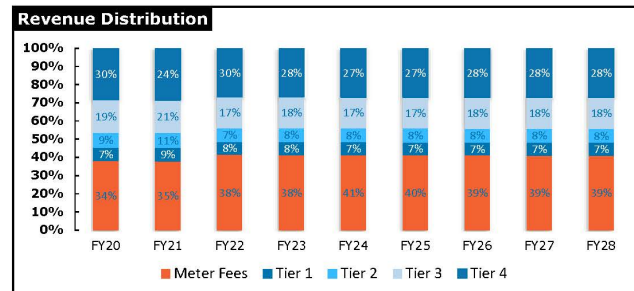
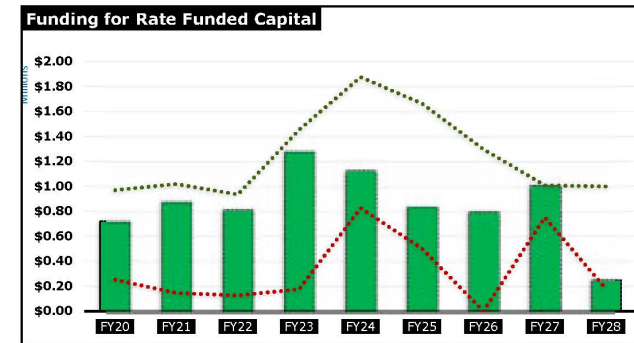
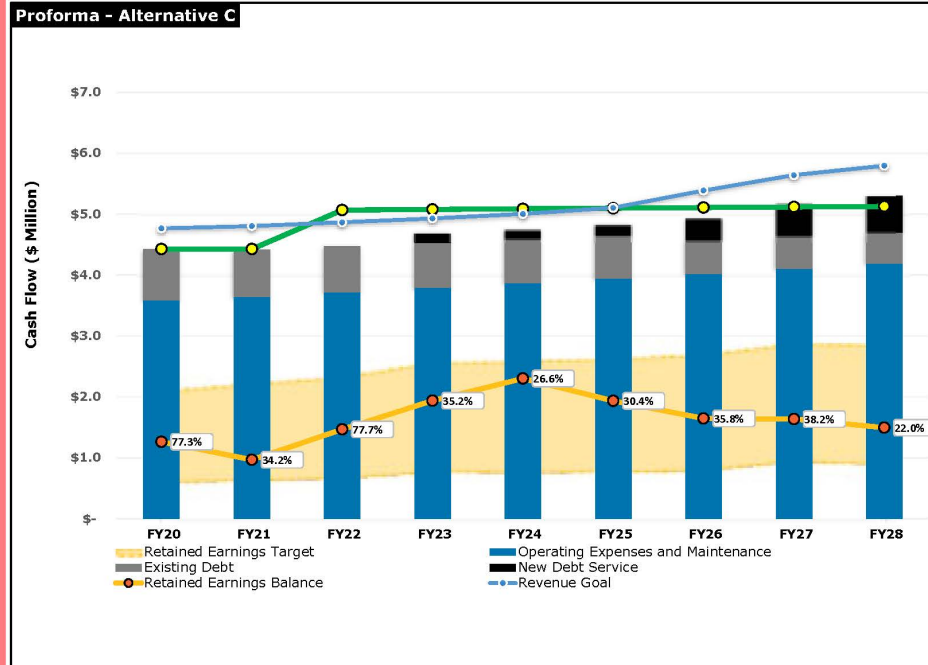
Alternative I

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure
Alternative I (+\$10 Base & 10% on all Tiers FY22)

REVENUE Alternative I +\$10 Base & 10% on Tiers FY22		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
		0%	0%	10%	0%	0%	0%	0%	0%	
Total Rate Revenue		\$3,679,913	\$3,693,059	\$4,332,567	\$4,342,756	\$4,352,931	\$4,363,093	\$4,373,241	\$4,383,376	\$4,393,497
Non-Rate Revenue		\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C		\$4,426,846	\$4,428,333	\$5,067,841	\$5,078,029	\$5,088,204	\$5,098,366	\$5,108,514	\$5,118,649	\$5,128,771
Delta previous	#VALUE!		\$13,146	\$639,508	\$10,189	\$10,175	\$10,162	\$10,148	\$10,135	\$10,122
Retained Earnings Contribution Goal		\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL		\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall		-\$340,405	-\$376,231	\$201,721	\$148,265	\$84,197	-\$6,131	-\$279,110	-\$522,028	-\$669,080
Net Revenue (Revenue-Expense)		\$300,000	\$60,547.71	\$644,095.90	\$596,425.08	\$539,107.03	\$457,914.05	\$210,673.92	-\$9,238.73	-\$142,002.43
Retained Earnings Expense		\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance		\$1,263,833	\$968,833	\$1,467,929	\$1,939,354	\$2,303,461	\$1,936,375	\$1,647,049	\$1,637,810	\$1,495,808
Retained Earnings as Percent of Operating Expenses		35.2%	26.6%	39.5%	51.1%	59.5%	49.1%	40.9%	39.9%	35.7%
Rate Funded Capital Analysis		FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)		\$968,833	\$1,018,833	\$934,381	\$1,453,477	\$1,874,902	\$1,664,009	\$1,296,923	\$1,007,597	\$998,358
Rate Funded Capital (from above)		\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available		\$718,833	\$873,833	\$809,381	\$1,278,477	\$1,124,902	\$839,009	\$796,923	\$1,007,597	\$248,358





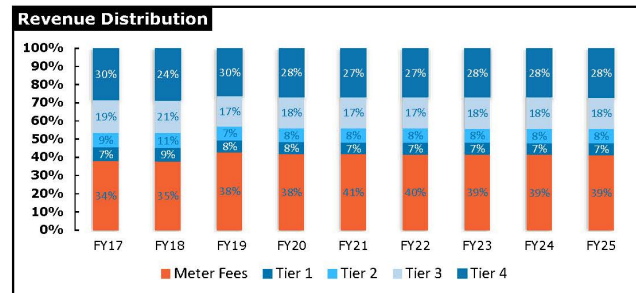
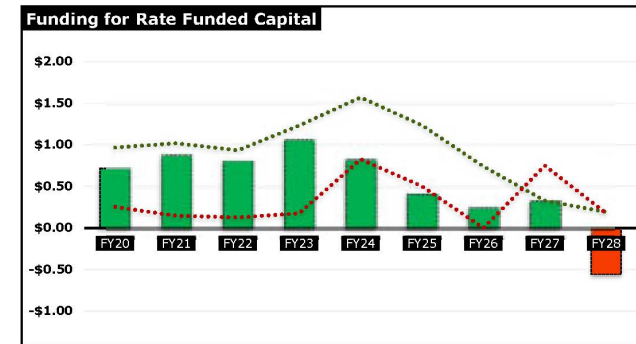
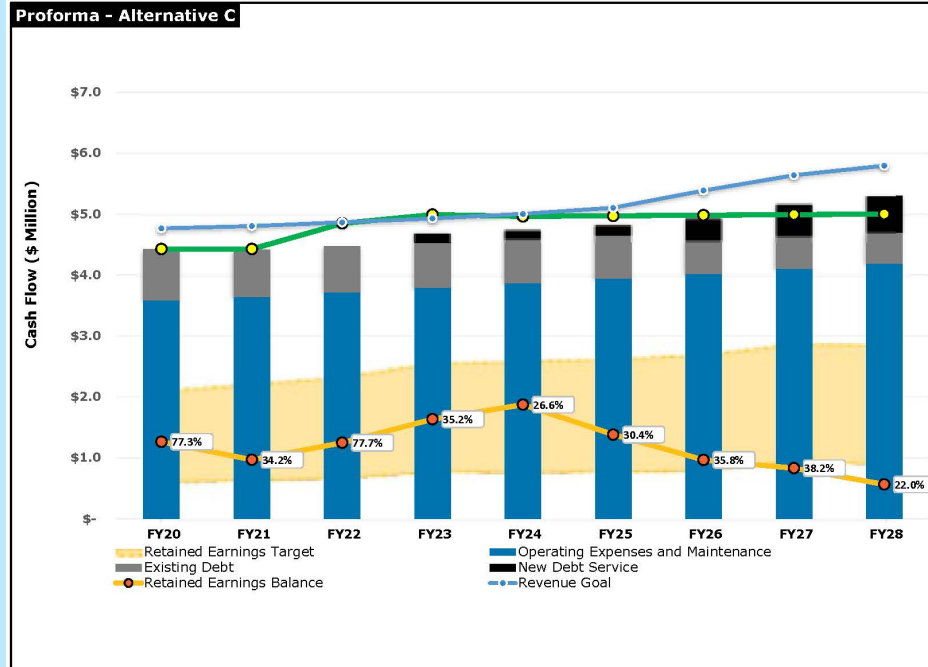
Alternative J

2020 Water Rate Model

Harwich Water Department

Proposed Rate Structure Alternative J (+\$10 Base Rate & +5% Tiers 2/3 and 4% Tier 4)

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative F									
+\$10 Base Rate & +5% Tiers 2/3 and 4% Tier 4									
Total Rate Revenue	\$3,679,913	\$3,693,059	\$4,112,961	\$4,257,706	\$4,227,701	\$4,237,683	\$4,247,651	\$4,257,607	\$4,267,549
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,426,846	\$4,428,333	\$4,848,234	\$4,992,980	\$4,962,975	\$4,972,956	\$4,982,925	\$4,992,880	\$5,002,822
Delta previous	#VALUE!	\$13,146	\$419,902	\$144,745	-\$30,005	\$9,982	\$9,968	\$9,955	\$9,942
Retained Earnings Contribution Goal	\$433,387	\$436,779	\$442,374	\$448,160	\$454,910	\$464,045	\$489,784	\$512,789	\$527,077
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$340,405	-\$376,231	-\$17,885	\$63,215	-\$41,033	-\$131,541	-\$404,700	-\$647,797	-\$795,028
Net Revenue (Revenue-Expense)									
Retained Earnings Expense	\$250,000	\$145,000	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,263,833	\$968,833	\$1,248,323	\$1,634,698	\$1,873,575	\$1,381,080	\$966,164	\$831,156	\$563,205
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	33.6%	43.1%	48.4%	35.0%	24.0%	20.2%	13.4%
Rate Funded Capital Analysis									
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$934,381	\$1,233,870	\$1,570,246	\$1,234,123	\$741,627	\$326,712	\$191,704
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$809,381	\$1,058,870	\$820,246	\$409,123	\$241,627	\$326,712	-\$558,296





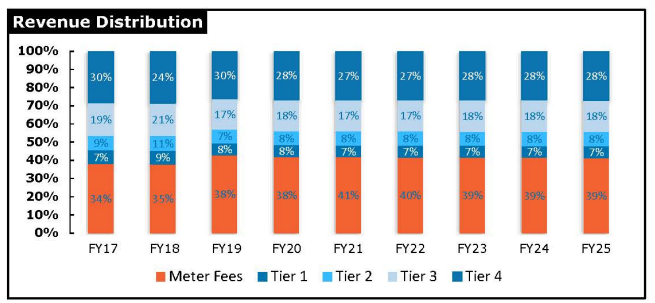
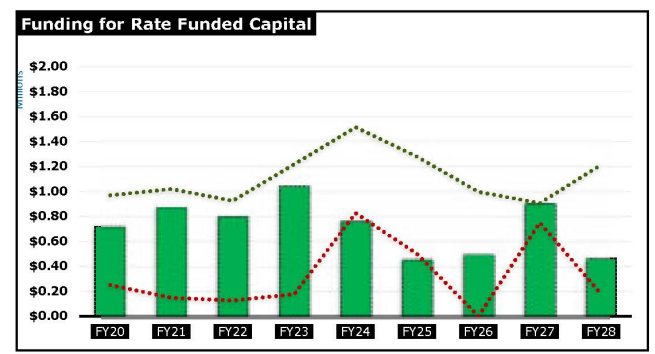
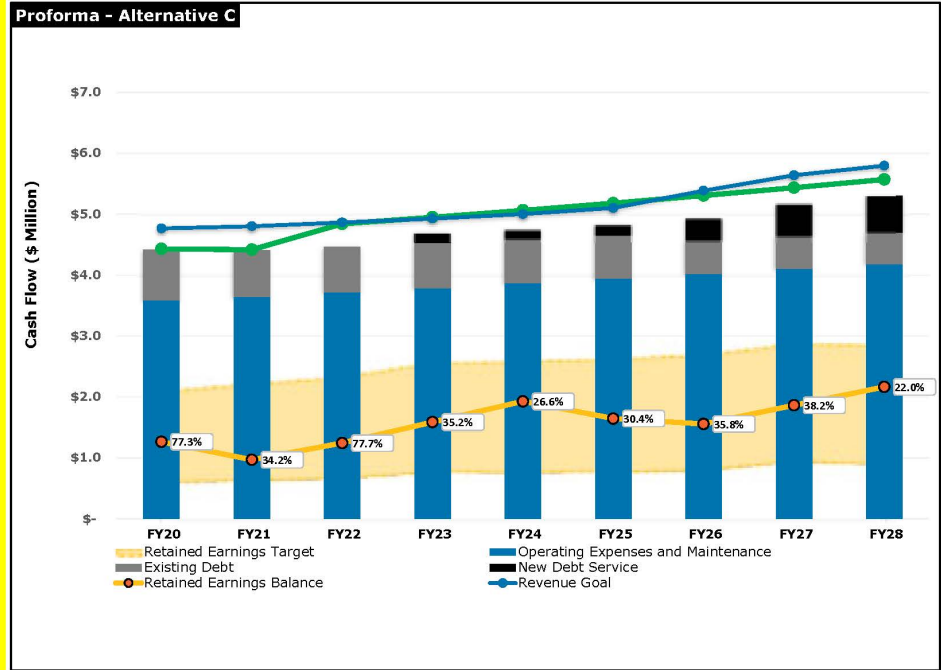
Alternative K

2020 Water Rate Model

Harwich Water Department

**Proposed Rate Structure
Alternative K (+\$8 Base Rate & 3% Tier Increase Annually)**

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
REVENUE Alternative F									
+\$8 Base Rate & +3% all Tiers Annually	0%	0%	3%	3%	3%	3%	3%	3%	3%
Total Rate Revenue	\$3,683,567	\$3,683,567	\$4,107,356	\$4,215,861	\$4,329,298	\$4,447,890	\$4,571,873	\$4,701,491	\$4,836,999
Non-Rate Revenue	\$746,933	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273	\$735,273
TOTAL REVENUE Alternative C	\$4,430,500	\$4,418,841	\$4,842,629	\$4,951,134	\$5,064,571	\$5,183,164	\$5,307,146	\$5,436,764	\$5,572,273
Delta previous	\$3,683,567	\$0	\$423,788	\$108,505	\$113,437	\$118,593	\$123,983	\$129,618	\$135,509
Retained Earnings Contribution Goal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
REVENUE GOAL	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Surplus/Shortfall	-\$336,751	-\$385,723	-\$23,490	\$21,370	\$60,564	\$78,667	-\$80,478	-\$203,913	-\$225,678
Net Revenue (Revenue-Expense)	\$300,000	\$51,055.79	\$418,884.13	\$469,530.07	\$515,473.82	\$542,711.78	\$409,306.04	\$308,876.15	\$301,499.65
Retained Earnings Expense	\$250,000	\$145,000.00	\$125,000	\$175,000	\$825,000	\$500,000	\$0	\$750,000	\$175,000
Retained Earnings Balance	\$1,263,833	\$968,833	\$1,242,717	\$1,587,247	\$1,927,721	\$1,645,433	\$1,554,739	\$1,863,615	\$2,165,115
Retained Earnings as Percent of Operating Expenses	35.2%	26.6%	33.4%	41.8%	49.8%	41.7%	38.6%	45.4%	51.7%
Rate Funded Capital Analysis	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Shifted Retained Earnings (2 years)	\$968,833	\$1,018,833	\$924,889	\$1,218,773	\$1,513,303	\$1,278,777	\$996,489	\$905,795	\$1,214,671
Rate Funded Capital (from above)	\$250,000	\$145,000	\$125,000	\$175,000	\$750,000	\$825,000	\$500,000	\$0	\$750,000
Net Funding Available	\$718,833	\$873,833	\$799,889	\$1,043,773	\$763,303	\$453,777	\$496,489	\$905,795	\$464,671





Alternative Evaluation

	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Revenue Goal	\$4,767,252	\$4,804,564	\$4,866,119	\$4,929,765	\$5,004,007	\$5,104,497	\$5,387,624	\$5,640,677	\$5,797,850
Alternative A	No	No	Yes	Yes	Yes	No	No	No	No
Alternative B	No	No	No	No	No	No	No	No	No
Alternative C	No	No	No	No	No	No	No	No	No
Alternative D	No	No	No	Yes	No	No	No	No	No
Alternative E	No	No	No	No	No	No	No	No	No
Alternative F	No	No	Yes	No	No	No	No	No	No
Alternative G	No	No	Yes	Yes	Yes	Yes	No	No	No
Alternative H	No	No	Yes	Yes	Yes	Yes	No	No	No
Alternative I	No	No	Yes	Yes	Yes	Yes	No	No	No
Alternative J	No	No	Yes	Yes	Yes	Yes	No	No	No
Alternative K	No	No	Yes	Yes	Yes	Yes	No	No	No

*Revenue Goal = Operating Expenses + 10%

Proposed Rate Structures +/- 1% Revenue Goal

Alternative A - \$8 Base Rate increase, 2.5% Tier increase annually

Alternative G - \$10 Base Rate increase, 5% Tier increase in FY22 & FY23

Alternative H - \$10 Base Rate increase, 3% Tier increase in FY22, FY23 and FY24

Alternative I - \$10 Base Rate increase, 10% Tier increase in FY22

Alternative J - \$10 Base Rate increase, 5% Tier 2 & 3 and 4% Tier 4 FY22 & FY23

Alternative K - \$8 Base Rate increase, 3% Tier increase annually



Affordability Analysis

The US EPA recommends evaluating water rates against local benchmarks for household affordability. To accomplish this the annual cost of water in the community is evaluated as a percentage of the Median Household Income and lowest quintile income to determine the level of burden water rates may pose to the customers.

Harwich Stats:

Median Household Income - \$75,352

<https://www.census.gov/quickfacts/fact/table/harwichtownbarnstablecountymassachusetts/INC910218#INC910218>

Lowest Quintile Income- \$29,680

https://censusreporter.org/data/table/?table=B19080&geo_ids=06000US2500129020&primary_geo_id=06000US2500129020

Basis for Comparison:

Average Household- 2.15

<https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

RGPCD- 64 Gal

Average Quarterly Water Use- 12,384 Gallons

EPA's stated view on potable water- That it is affordable if it costs less than 2.5% of small community MHI.



Typical Bill

Typical Bill									
Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing	\$56.94	\$56.94	\$56.94	\$56.94	\$56.94	\$56.94	\$56.94	\$56.94	\$56.94
Scenario A	\$56.94	\$56.94	\$65.49	\$66.05	\$66.62	\$67.22	\$67.82	\$68.44	\$69.08
Scenario B	\$56.94	\$56.94	\$62.60	\$63.27	\$63.27	\$63.27	\$63.27	\$63.27	\$63.27
Scenario C	\$56.94	\$56.94	\$62.82	\$63.73	\$63.73	\$63.73	\$63.73	\$63.73	\$63.73
Scenario D	\$56.94	\$56.94	\$63.03	\$64.19	\$64.19	\$64.19	\$64.19	\$64.19	\$64.19
Scenario E	\$56.94	\$56.94	\$65.38	\$65.82	\$66.28	\$66.75	\$67.22	\$67.71	\$68.20
Scenario F	\$56.94	\$56.94	\$66.94	\$66.94	\$66.94	\$66.94	\$66.94	\$66.94	\$66.94
Scenario G	\$56.94	\$56.94	\$68.03	\$69.19	\$69.19	\$69.19	\$69.19	\$69.19	\$69.19
Scenario H	\$56.94	\$56.94	\$67.60	\$68.27	\$68.97	\$68.97	\$68.97	\$68.97	\$68.97
Scenario I	\$56.94	\$56.94	\$69.13	\$69.13	\$69.13	\$69.13	\$69.13	\$69.13	\$69.13
Scenario J	\$56.94	\$56.94	\$67.52	\$68.13	\$68.13	\$68.13	\$68.13	\$68.13	\$68.13
Scenario K	\$56.94	\$56.94	\$65.60	\$66.27	\$66.97	\$67.69	\$68.43	\$69.19	\$69.98



Change in Typical Bill

Change in Typical Bill

Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario A	\$ -	\$ -	\$ 8.55	\$ 0.56	\$ 0.58	\$ 0.59	\$ 0.61	\$ 0.62	\$ 0.64
Scenario B	\$ -	\$ -	\$ 5.66	\$ 0.68	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario C	\$ -	\$ -	\$ 5.88	\$ 0.91	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario D	\$ -	\$ -	\$ 6.10	\$ 1.15	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario E	\$ -	\$ -	\$ 8.44	\$ 0.45	\$ 0.46	\$ 0.47	\$ 0.47	\$ 0.48	\$ 0.49
Scenario F	\$ -	\$ -	\$ 10.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario G	\$ -	\$ -	\$ 11.10	\$ 1.15	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario H	\$ -	\$ -	\$ 10.66	\$ 0.68	\$ 0.70	\$ -	\$ -	\$ -	\$ -
→ Scenario I	\$ -	\$ -	\$ 12.19	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario J	\$ -	\$ -	\$ 10.58	\$ 0.61	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario K	\$ -	\$ -	\$ 8.66	\$ 0.68	\$ 0.70	\$ 0.72	\$ 0.74	\$ 0.76	\$ 0.79



Annual Cost of Water

Annual Cost										FY20-FY28
Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	Total
Existing	\$227.75	\$227.75	\$227.75	\$227.75	\$227.75	\$227.75	\$227.75	\$227.75	\$227.75	\$2,049.75
→ Scenario A	\$227.75	\$227.75	\$261.94	\$264.19	\$266.50	\$268.86	\$271.28	\$273.76	\$276.31	\$2,338.35
Scenario B	\$227.75	\$227.75	\$250.38	\$253.09	\$253.09	\$253.09	\$253.09	\$253.09	\$253.09	\$2,224.45
Scenario C	\$227.75	\$227.75	\$251.26	\$254.91	\$254.91	\$254.91	\$254.91	\$254.91	\$254.91	\$2,236.23
Scenario D	\$227.75	\$227.75	\$252.14	\$256.74	\$256.74	\$256.74	\$256.74	\$256.74	\$256.74	\$2,248.11
Scenario E	\$227.75	\$227.75	\$261.51	\$263.30	\$265.12	\$266.98	\$268.88	\$270.82	\$272.80	\$2,324.91
Scenario F	\$227.75	\$227.75	\$267.75	\$267.75	\$267.75	\$267.75	\$267.75	\$267.75	\$267.75	\$2,329.75
→ Scenario G	\$227.75	\$227.75	\$272.14	\$276.74	\$276.74	\$276.74	\$276.74	\$276.74	\$276.74	\$2,388.11
→ Scenario H	\$227.75	\$227.75	\$270.38	\$273.09	\$275.89	\$275.89	\$275.89	\$275.89	\$275.89	\$2,378.41
→ Scenario I	\$227.75	\$227.75	\$276.53	\$276.53	\$276.53	\$276.53	\$276.53	\$276.53	\$276.53	\$2,391.18
→ Scenario J	\$227.75	\$227.75	\$270.07	\$272.51	\$272.51	\$272.51	\$272.51	\$272.51	\$272.51	\$2,360.66
→ Scenario K	\$227.75	\$227.75	\$262.38	\$265.09	\$267.89	\$270.76	\$273.73	\$276.78	\$279.92	\$2,352.06

FY20-FY28 Total Cost of Water (9 Years)

Existing Rates = \$2,049.75

Scenario A (*Low*) = \$2,338.35

Scenario I (*High*) = \$2,391.18

Total additional cost to consumer over 9-year projection: \$288.6 – \$341.43



Annual Change in Typical Bill

Change in Annual Cost

Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario A	\$ -	\$ -	\$ 34.19	\$ 2.25	\$ 2.30	\$ 2.36	\$ 2.42	\$ 2.48	\$ 2.54
Scenario B	\$ -	\$ -	\$ 22.63	\$ 2.71	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario C	\$ -	\$ -	\$ 23.51	\$ 3.65	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario D	\$ -	\$ -	\$ 24.39	\$ 4.61	\$ -	\$ -	\$ -	\$ -	\$ -
Scenario E	\$ -	\$ -	\$ 33.76	\$ 1.79	\$ 1.83	\$ 1.86	\$ 1.90	\$ 1.94	\$ 1.98
Scenario F	\$ -	\$ -	\$ 40.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario G	\$ -	\$ -	\$ 44.39	\$ 4.61	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario H	\$ -	\$ -	\$ 42.63	\$ 2.71	\$ 2.79	\$ -	\$ -	\$ -	\$ -
→ Scenario I	\$ -	\$ -	\$ 48.78	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario J	\$ -	\$ -	\$ 42.32	\$ 2.44	\$ -	\$ -	\$ -	\$ -	\$ -
→ Scenario K	\$ -	\$ -	\$ 34.63	\$ 2.71	\$ 2.79	\$ 2.88	\$ 2.96	\$ 3.05	\$ 3.14



Average Bill as %MHI

Annual Cost as % MHI (City wide MHI from 2016 Census)

Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%	0.30%
→ Scenario A	0.30%	0.30%	0.35%	0.35%	0.35%	0.36%	0.36%	0.36%	0.37%
Scenario B	0.30%	0.30%	0.33%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
Scenario C	0.30%	0.30%	0.33%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
Scenario D	0.30%	0.30%	0.33%	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
Scenario E	0.30%	0.30%	0.35%	0.35%	0.35%	0.35%	0.36%	0.36%	0.36%
Scenario F	0.30%	0.30%	0.36%	0.36%	0.36%	0.36%	0.36%	0.36%	0.36%
→ Scenario G	0.30%	0.30%	0.36%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
→ Scenario H	0.30%	0.30%	0.36%	0.36%	0.37%	0.37%	0.37%	0.37%	0.37%
→ Scenario I	0.30%	0.30%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
→ Scenario J	0.30%	0.30%	0.36%	0.36%	0.36%	0.36%	0.36%	0.36%	0.36%
→ Scenario K	0.30%	0.30%	0.35%	0.35%	0.36%	0.36%	0.36%	0.37%	0.37%



Average Bill as % LQI

Annual Cost as % LQI (City wide MHI from 2016 Census)

Scenario	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Existing	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%	0.77%
→ Scenario A	0.77%	0.77%	0.88%	0.89%	0.90%	0.91%	0.91%	0.92%	0.93%
Scenario B	0.77%	0.77%	0.84%	0.85%	0.85%	0.85%	0.85%	0.85%	0.85%
Scenario C	0.77%	0.77%	0.85%	0.86%	0.86%	0.86%	0.86%	0.86%	0.86%
Scenario D	0.77%	0.77%	0.85%	0.87%	0.87%	0.87%	0.87%	0.87%	0.87%
Scenario E	0.77%	0.77%	0.88%	0.89%	0.89%	0.90%	0.91%	0.91%	0.92%
Scenario F	0.77%	0.77%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%
→ Scenario G	0.77%	0.77%	0.92%	0.93%	0.93%	0.93%	0.93%	0.93%	0.93%
→ Scenario H	0.77%	0.77%	0.91%	0.92%	0.93%	0.93%	0.93%	0.93%	0.93%
→ Scenario I	0.77%	0.77%	0.93%	0.93%	0.93%	0.93%	0.93%	0.93%	0.93%
→ Scenario J	0.77%	0.77%	0.91%	0.92%	0.92%	0.92%	0.92%	0.92%	0.92%
→ Scenario K	0.77%	0.77%	0.88%	0.89%	0.90%	0.91%	0.92%	0.93%	0.94%



Summary

- Of the 11 proposed rate structures 6 have been identified as viable options to sufficiently fund the departments future operational, maintenance and capital needs.
- The 6 proposed rate structures and future water costs have been evaluated for household affordability in line with American Waterworks “Framework for Household Affordability and Financial Capability Assessment in the Water Sector” published in April 2019. The resulting cost increase associated with the 6 proposed rate structures are all identified as “Low Impact” in comparison to Median Household Income and Lowest Quintile Income.

Alternative A	Alternative G	Alternative H	Alternative I	Alternative J	Alternative K
8\$ Base Rate 2.5% Annual All Tiers	10\$ Base Rate 5% All Tiers FY22 & FY23	10\$ Base Rate 3% All Tiers FY22 – FY24	10\$ Base Rate 10% All Tiers FY22	10 Base Rate 5% Tiers 2 & 3 4% Tier 4	8\$ Base Rate 3% Annual All Tiers



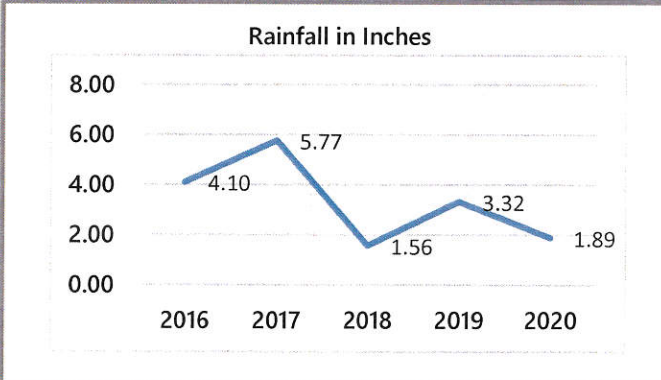
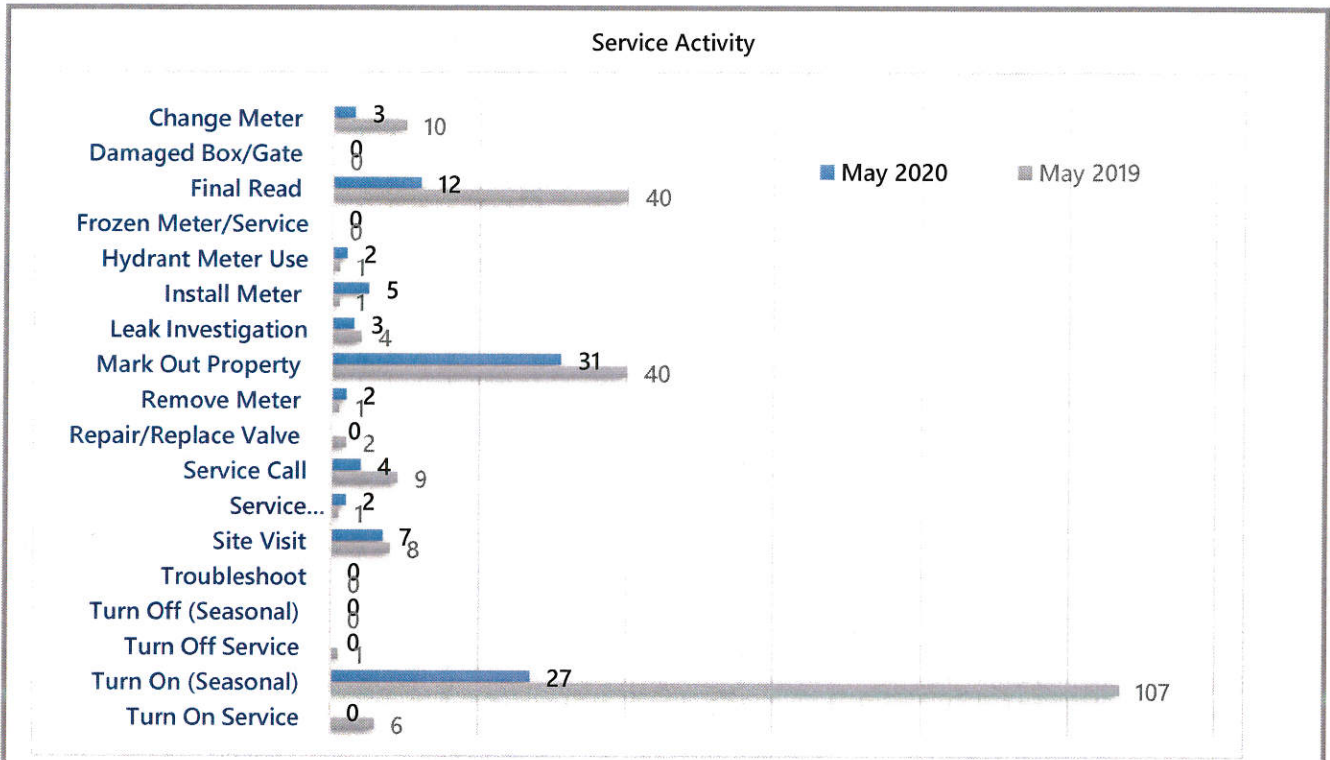
Question & Comments

Thank You

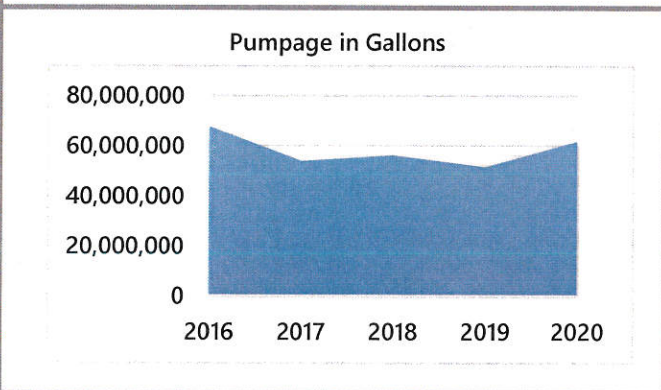
I'd like to acknowledge and thank the Board of Water Commissioners and Department staff for the years of hard work and support that went into this process.

VIII. CORRESPONDENCE

Monthly Reports



- ### Calendar Activity
- COVID/Check In-Out Dept Head Mtgs
 - COVID/Alt Remote/All Ops 5/1-5/8
 - COVID/Return/All Ops 5/11
 - Weekly Wastewater Meetings
 - WW Customer Appts (2)
 - BOWC Meeting 5/22
 - Pleasant Bay Water Use Data Mtg 5/11
 - Chatham-Harwich Water Main Interconn. Mtg 5/14
 - Pleasant Bay Watershed Work Group 5/21
 - Cold Brook Design Mtg w/Ford/Mass.gov 5/8



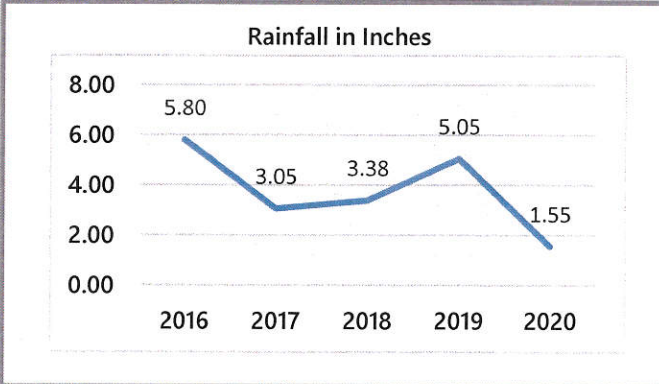
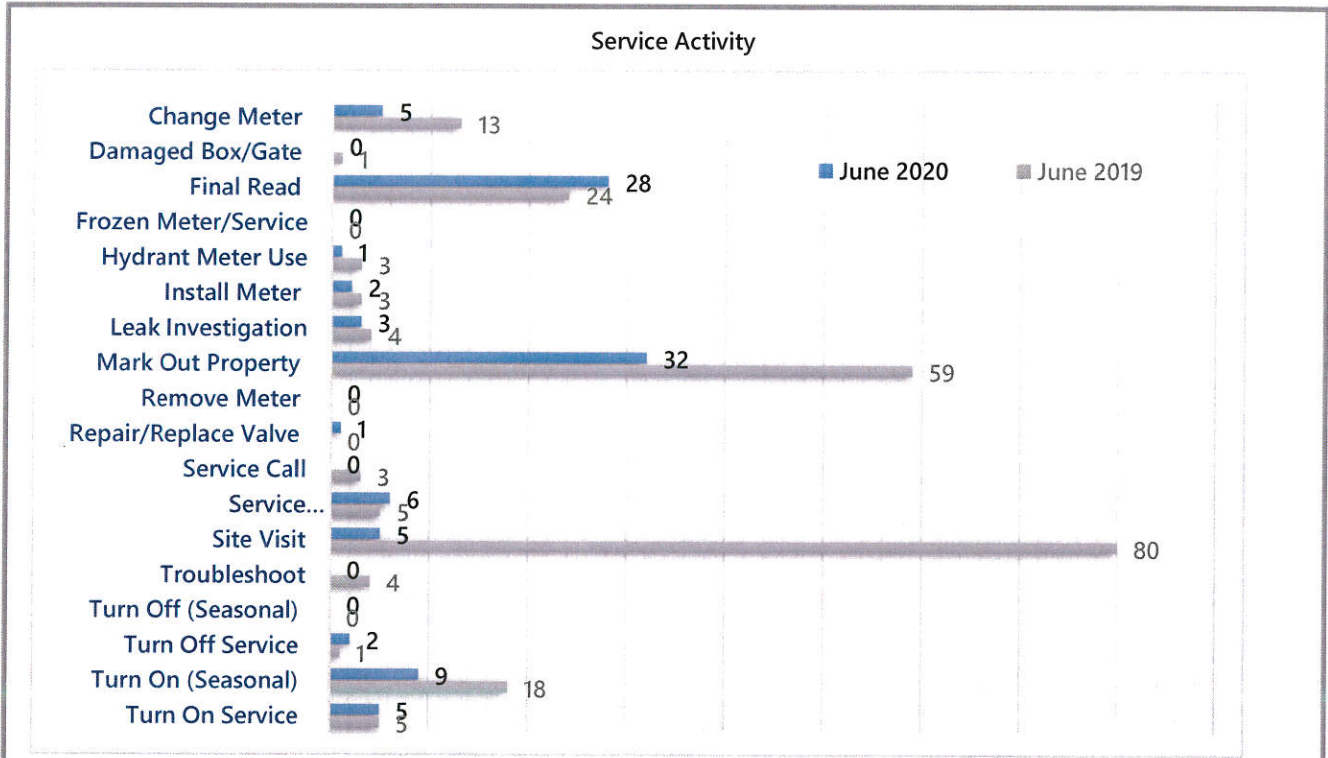
HARWICH WATER DEPARTMENT DROUGHT ACTION LEVEL RESPONSES

ACTION LEVEL	RESPONSE	FREQUENCY OF MONITORING
NORMAL	NORMAL WATERING CONDITIONS	
ADVISORY	VOLUNTARY WATER RESTRICTIONS ODD/EVEN DAYS	X
WATCH	MANDATORY: ODD/EVEN LAWN WATER & OFF-PEAK HOURS	
WARNING	MANDATORY: 2 DAY PER WEEK OUTDOOR USE & OFF-PEAK HOURS	
EMERGENCY	MANDATORY: BAN ON ALL NON-ESSENTIAL OUTDOOR WATER USE	

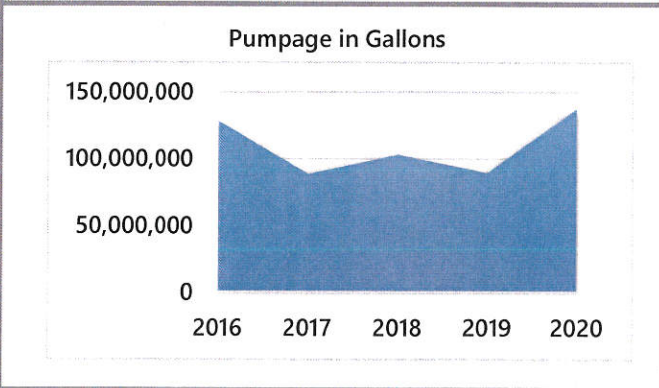
Monthly Pumping Change
99.68%

YTD Pumping Change
28.75%

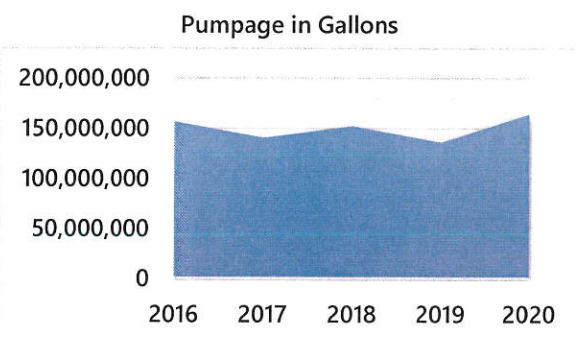
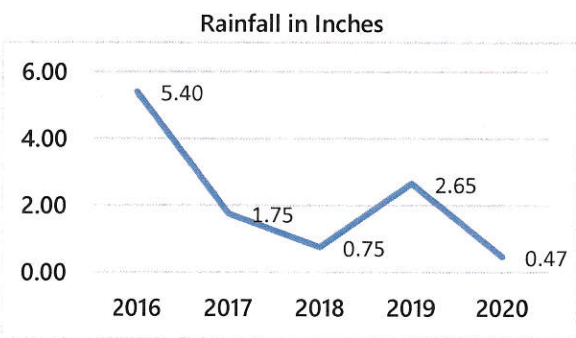
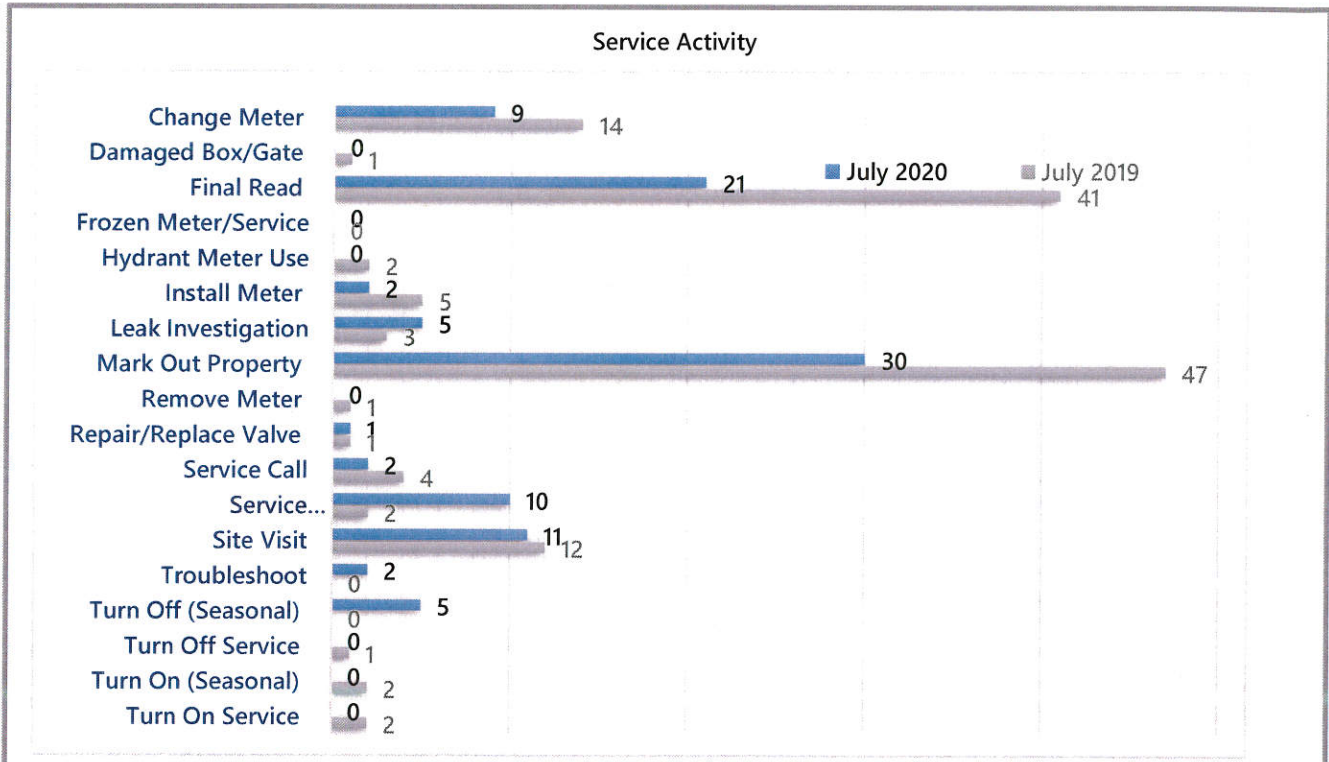
Water Samples Taken
62



- ### Calendar Activity
- WW Customer Appts (5)
 - BOWC Meeting 6/12
 - Weekly WW Meetings
 - Meter Reading 6/19, 6/22, 6/24-6/25
 - WW Meeting 6/19
 - Staff Vacation Use
 - Harwich Sewer Contracts Owner's Mtg 6/2
 - RBO/RJV Mtg 6/2
 - Bay Rd Progress Mtg 6/16
 - DHY/JP Call 6/17
 - Dept Head Checkin Mtg 6/17
 - DHY Mtg; Language Issue 6/18
 - Cold Brook Update Mtg 6/10
 - HWD/Wright-Pierce Mtg 6/23
 - GHD Sewer Contract Mtg 6/24
 - Mtg w/JP RE Vacant Position 6/24
 - Mtg w/CDM RE Final Paving 6/29



Monthly Pumping Change	YTD Pumping Change	Water Samples Taken
122.94%	28.72%	53



- ### Calendar Activity
- Seasonal Laborer Interviews 7/10
 - Weekly WW Meetings
 - Tank Industries Mtg 7/9
 - Cold Brook MOU Review 7/8, 7/9
 - Crossovers/Project (3)
 - BOWC Chair Mtg 7/16, 7/24, 7/28
 - WW Mtg w/JP & GR 7/15
 - Mtg w/GHD @ Oak St Tank 7/16
 - BOWC Mtg 7/17, 7/31
 - WW GHD Mtg 7/23
 - GHD/TIC Oak St Tank 7/27
 - WW Flows 7/28
 - WW/RJV Change Order Review 7/29
 - WW/Chatham 1D-1 Const. Mtg 7/29
 - Non-Resident Taxpayer Mtg
 - FY20 Q4 Billing
 - Harwich Sewer Contracts Owner's Mtg 7/7
 - Contract 1 PS Facades Mtg w/CDM 7/16
 - Sewer Modeling Kickoff Mtg w/GHD 7/23
 - GHD Flows for Modeling Mtg 7/28
 - Pleasant Bay Watershed Work Group 7/30

Monthly Pumping Change
19.18%

YTD Pumping Change
25.96%

Water Samples Taken
62

Date July 2020
 PWS No. 4126000

Monthly Weather Report
 Harwich Water Department

Day	Snow Fall (in.) (Gallons)	Rain Fall (in.)	Temperature High (°F)	Temperature Low (°F)	Temperature AVG (°F)	Weather Comments	Operator
1		0.02	72	65	69		
2		0.00	78	65	72		
3		0.00	78	67	73		
4		0.00	71	65	68		
5		0.00	69	64	66		
6		0.34	74	62	68		
7		0.00	66	60	63		
8		0.00	78	64	71		
9		0.00	79	70	75		
10		0.00	75	69	72		
11		0.00	78	68	73		
12		0.00	83	72	77		
13		0.00	80	72	76		
14		0.00	80	68	74		
15		0.00	69	60	64		
16		0.00	72	58	65		
17		0.00	70	59	64		
18		0.00	81	65	73		
19		0.00	76	72	74		
20		0.00	81	72	76		
21		0.00	87	70	79		
22		0.00	79	70	74		
23		0.00	86	74	80		
24		0.00	83	70	76		
25		0.00	83	66	74		
26		0.00	88	75	81		
27		0.00	90	73	82		
28		0.00	91	77	84		
29		0.00	82	73	78		
30		0.00	86	74	80		
31		0.11	79	68	74		
Total		0.47					
Average		0.02	78.8	68.0			
Max		0.34	90.7	77.4			
Min		0.0	66.4	58.4			

Month/Year July 2020

Monthly Pumpage Report Harwich Water Department

PWS No. 4126000

Date	T1							T2			T3		T10	T11
	Main 1	Main 2	Main 3	Well 1	Well 2	Well 3	Well 4	Well 5	Well 6	Well 7	Well 8	Well 9	Pump 10	Pump 11
1	186,321	186,115	134,918	322,904	218,022	265,111	408,232	373,229	394,282	374,138	392,746	404,674	448,873	409,739
2	196,545	197,175	142,510	342,354	230,402	279,336	431,294	394,916	416,635	395,495	414,171	425,716	474,089	434,368
3	236,713	236,691	171,548	408,449	275,736	337,590	520,045	475,416	501,705	475,982	498,749	516,221	570,778	523,220
4	193,954	194,014	140,478	334,594	225,359	272,809	424,578	388,990	410,306	389,210	408,386	420,637	466,827	428,132
5	203,867	204,399	147,868	354,517	238,491	290,140	447,716	409,705	432,291	409,876	430,203	443,391	491,824	450,971
6	177,701	178,102	129,004	307,188	206,857	251,611	390,019	357,279	376,915	357,727	375,139	385,293	428,863	393,080
7	177,953	176,657	128,280	300,450	203,211	244,279	385,913	355,692	374,914	355,637	399,708	408,521	408,735	420,090
8	222,616	224,537	162,733	380,776	257,430	312,861	490,240	453,491	478,608	454,423	448,531	462,703	548,592	470,619
9	187,754	187,962	135,833	325,313	211,399	265,025	411,679	374,329	394,803	375,593	422,300	437,371	451,459	393,955
10	218,072	217,951	158,143	376,829	253,449	308,338	477,558	437,976	462,067	438,550	432,403	442,724	525,659	446,541
11	185,131	185,351	134,296	320,666	215,818	261,840	405,915	371,610	392,146	371,958	390,140	401,217	446,322	409,156
12	233,084	233,639	169,322	397,867	269,251	325,477	512,005	469,067	494,891	469,667	492,683	505,607	563,023	516,400
13	227,084	227,084	164,533	393,686	264,833	326,009	498,270	455,743	480,920	456,443	477,672	495,333	547,048	501,790
14	194,933	194,927	140,888	338,417	227,460	277,325	427,260	391,224	412,748	391,667	410,763	422,972	469,515	430,642
15	201,398	201,090	145,675	349,126	235,237	289,763	442,010	403,688	426,089	404,313	423,368	438,696	484,541	444,299
16	200,672	200,720	145,312	341,951	231,631	279,248	439,442	402,353	424,547	402,729	420,415	431,205	482,948	442,801
17	208,856	208,995	151,337	360,700	243,198	295,861	458,271	418,487	441,740	418,933	439,066	452,652	502,262	460,610
18	216,782	217,005	157,058	370,899	250,937	303,253	475,214	435,914	459,702	436,622	457,168	469,826	523,337	479,524
19	235,274	235,008	170,506	399,513	270,868	327,557	516,135	471,946	498,070	472,511	495,104	510,226	566,658	519,530
20	233,552	233,270	169,030	403,793	271,701	333,098	512,316	468,613	494,517	469,100	491,244	508,566	562,370	515,745
21	228,376	228,211	165,483	398,104	266,776	326,672	501,011	458,291	483,624	459,047	480,716	496,633	522,034	504,861
22	228,781	228,352	165,552	393,576	265,653	326,180	502,682	459,695	484,973	460,333	481,939	498,202	551,630	504,320
23	199,157	198,887	144,281	341,264	230,431	279,047	437,038	400,149	422,226	401,039	419,925	432,242	480,487	440,280
24	249,725	249,846	180,547	436,872	292,246	360,593	547,956	500,967	528,826	501,255	525,666	544,098	601,316	550,327
25	235,641	235,664	170,913	409,776	274,461	335,449	517,640	473,285	499,400	473,821	496,234	513,404	568,013	515,901
26	256,054	253,887	184,043	438,257	294,434	358,361	558,390	510,358	538,592	510,586	545,469	563,938	608,319	572,554
27	267,913	269,425	195,145	475,120	316,129	391,490	591,777	539,629	569,735	540,668	573,306	596,286	649,182	607,862
28	247,841	248,096	179,790	428,865	287,638	352,498	544,285	510,640	538,692	511,351	517,918	533,180	613,013	536,895
29	252,327	250,204	181,592	433,054	291,268	357,442	549,971	502,728	530,514	502,936	552,782	572,461	599,290	580,079
30	240,168	239,713	174,088	406,593	274,480	331,148	526,265	482,192	508,614	482,635	502,691	516,181	578,789	527,761
31	216,086	217,447	157,921	375,209	252,349	308,284	478,239	437,593	461,568	438,717	436,829	450,217	529,599	458,296
Pumps :	6,760,330	6,760,424	4,898,625	11,666,684	7,847,154	9,573,693	14,829,366	13,585,193	14,334,658	13,602,963	14,253,434	14,700,393	16,265,395	14,890,348
MIN :	177,701	176,657	128,280	300,450	203,211	244,279	385,913	355,692	374,914	355,637	375,139	385,293	408,735	393,080
MAX :	267,913	269,425	195,145	475,120	316,129	391,490	591,777	539,629	569,735	540,668	573,306	596,286	649,182	607,862
STATIONS :	62,336,275							41,522,814			28,953,827		16,265,395	14,890,348
TOTAL :	163,968,659													

Month/Year July 2019

Monthly Pumpage Report Harwich Water Department

PWS No. 4126000

Date	T1							T2			T3		T10	T11
	Main 1	Main 2	Main 3	Well 1	Well 2	Well 3	Well 4	Well 5	Well 6	Well 7	Well 8	Well 9	Pump 10	Pump 11
1	218,432	217,638	157,084	390,246	259,281	339,437	0	435,869	459,810	436,365	457,823	466,159	482,412	479,835
2	172,361	171,750	123,608	308,627	203,450	266,493	0	344,656	363,715	345,322	361,394	368,049	413,616	379,259
3	236,498	235,331	169,604	423,150	278,420	366,315	0	472,379	498,800	472,683	487,277	500,032	563,535	519,936
4	203,343	202,448	145,784	363,362	238,936	312,314	0	406,330	428,881	406,753	426,102	434,475	487,895	447,057
5	249,520	249,316	179,414	447,124	296,631	392,057	0	499,166	526,931	499,770	523,333	537,180	597,889	549,643
6	195,747	195,087	140,648	350,983	231,796	306,079	0	392,039	413,718	392,569	411,121	412,240	471,848	431,262
7	201,681	201,378	145,018	361,189	239,184	313,833	0	403,870	426,169	404,407	417,172	425,523	484,756	444,591
8	225,151	224,527	161,676	403,599	265,538	348,761	0	450,464	475,338	451,079	472,459	484,729	540,718	495,998
9	193,071	192,277	138,495	345,622	227,068	297,158	0	386,604	407,817	387,197	404,966	413,150	464,124	425,364
10	227,856	227,392	164,005	408,527	267,814	350,243	0	456,669	481,981	457,224	478,598	490,743	548,151	502,459
11	184,284	184,131	132,622	330,566	216,125	286,785	0	369,082	389,465	369,378	382,769	390,212	443,246	406,444
12	183,445	183,184	131,923	328,668	216,864	284,913	0	367,511	387,709	367,869	385,490	393,335	441,153	404,512
13	158,811	158,267	114,249	284,489	187,925	245,996	0	318,133	335,616	318,624	333,835	338,752	381,800	350,234
14	209,001	208,479	150,449	374,455	247,111	324,433	0	418,295	441,465	418,869	438,238	446,632	502,279	460,668
15	234,724	233,901	168,543	420,595	273,389	362,794	0	469,937	495,830	470,630	492,832	505,289	564,021	517,181
16	192,899	192,148	138,596	345,494	226,425	296,058	0	386,678	407,976	387,071	405,516	413,124	464,326	423,594
17	210,253	209,956	151,353	375,589	245,791	320,974	0	419,138	441,278	420,181	441,213	451,737	505,060	463,125
18	140,095	140,126	101,142	251,589	165,727	216,301	0	281,471	296,937	281,934	312,389	315,470	337,862	310,021
19	179,615	179,388	129,226	322,030	212,488	279,523	0	359,872	379,616	360,463	377,328	384,633	432,346	396,201
20	217,738	217,597	156,900	390,811	258,169	340,107	0	436,382	460,513	436,804	457,653	466,221	524,010	480,488
21	243,824	242,858	175,493	437,063	287,747	379,205	0	488,027	514,987	488,563	511,705	523,667	585,911	536,377
22	185,821	184,867	133,520	329,476	216,663	283,553	0	394,524	415,879	393,883	421,487	430,406	472,224	405,188
23	119,066	120,348	86,799	212,113	137,768	178,141	0	247,398	260,827	248,348	252,360	254,412	299,327	210,766
24	76,413	76,887	55,400	135,758	87,618	111,707	0	145,320	153,150	145,402	161,665	161,832	185,020	169,743
25	136,555	136,644	98,632	244,858	161,907	210,070	0	245,255	258,629	245,443	287,318	290,466	328,511	301,341
26	198,994	198,958	143,652	357,725	237,638	310,352	0	398,917	420,993	399,353	420,986	427,914	478,793	445,679
27	248,046	247,408	178,171	443,141	293,141	380,490	0	494,766	522,457	494,788	525,981	529,062	350,593	547,172
28	201,939	203,060	145,995	365,030	240,288	314,485	0	407,325	429,719	408,554	418,543	425,785	491,418	439,340
29	240,944	240,980	173,563	432,995	284,817	372,708	0	483,256	510,140	483,821	501,774	513,539	580,281	532,081
30	202,227	202,142	145,560	362,873	237,058	309,086	0	405,536	427,938	405,922	425,684	433,198	486,985	446,376
31	226,428	225,967	162,845	405,719	268,938	352,902	0	452,667	477,760	453,236	474,902	485,429	543,393	498,163
Pumps :	6,114,781	6,104,440	4,399,967	10,953,467	7,211,713	9,453,275	0	12,237,535	12,912,045	12,252,505	12,869,913	13,113,395	14,453,503	13,420,098
MIN :	76,413	76,887	55,400	135,758	87,618	111,707	0	145,320	153,150	145,402	161,665	161,832	185,020	169,743
MAX :	249,520	249,316	179,414	447,124	296,631	392,057	0	499,166	526,931	499,770	525,981	537,180	597,889	549,643
STATIONS :	44,237,643							37,402,086			25,983,308		14,453,503	13,420,098
TOTAL :	135,496,637													

Date July 2019
 PWS No. 4126000

Monthly Weather Report
Harwich Water Department

Day	Snow Fall (in.) (Gallons)	Rain Fall (in.)	Temperature High (°F)	Temperature Low (°F)	Temperature AVG (°F)	Weather Comments	Operator
1		0.00	77	65	71		
2		0.00	78	65	71		
3		0.00	84	65	75		
4		0.00	83	65	74		
5		0.00	80	66	73		
6		0.00	82	71	77		
7		0.00	75	60	68		
8		0.00	76	58	67		
9		0.00	83	61	72		
10		0.00	85	65	75		
11		0.00	77	67	72		
12		0.85	78	69	73		
13		0.00	81	69	75		
14		0.00	86	72	79		
15		0.00	80	69	75		
16		0.00	82	65	73		
17		0.00	81	74	78		
18		0.12	77	68	72		
19		0.01	78	68	73		
20		0.00	92	74	83		
21		0.00	95	75	85		
22		0.63	87	72	80		
23		1.00	75	63	69		
24		0.04	71	63	67		
25		0.00	77	62	70		
26		0.00	79	61	70		
27		0.00	76	60	68		
28		0.00	79	62	70		
29		0.00	86	73	80		
30		0.00	85	75	80		
31		0.00	86	74	80		
Total		2.65					
Average		0.09	81.1	67.0			
Max		1.00	94.7	75.2			
Min		0.0	71.5	57.6			