

Board of Sewer Commissioners Meeting Agenda



Date

August 24, 2021

Time

7:00 P.M.

Location

Bourne Veteran's Memorial Community Center
239 Main Street, Buzzards Bay

Note this meeting is being televised, streamed or recorded by Bourne TV. If anyone in the audience is recording or video-taping, they need to acknowledge such at this time.

All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners.

7:00 P.M. Call Public Session to Order in Open Session

1. Moment of Silence to recognize our Troops and our public safety personnel
2. Salute to the Flag
3. **Vision:** Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
4. **Mission:** Bourne will maximize opportunities for social and economic development while retaining an attractive, sustainable and secure coastline and environment for the enjoyment of residents and visitors. Through responsible and professional leadership and in partnership with others, Bourne will strive to improve the quality of life for all residents living and working in the larger community.
5. **Public Comment on Non-Agenda Items:** Public comments are allowed for up to a total of 12 minutes at the beginning of each meeting. Each speaker is limited to 3 minutes for comment. Based on past practice, members of the Board are not allowed to comment or respond.
6. **Minutes:** No minutes to approve
7. **Board of Sewer Commissioners Business**
 - a. **Buzzards Bay Wastewater Treatment Facility** – Update on the startup and control of the new Buzzards Bay Wastewater Treatment Facility.
 - b. **Inflow and Infiltration (I/I) Study report** – Status update on the Inflow and Infiltration (I/I) Study conducted by Environmental Partners including trenchless sewer pipe lining and manhole repair recommendations.

RECEIVED
2021 AUG 20 AM 10:14
TOWN CLERK BOURNE

**Board of Sewer Commissioners
Minutes of Tuesday, August 24, 2021
Bourne Veterans' Community Center
Buzzards Bay, MA**

**TA Tony Schiavi
ATA Glenn Cannon**

**RECEIVED
2022 JUL 20 AM 11:02
TOWN CLERK BOURNE**

Board of Sewer Commissioners

Mary Jane Mastrangelo, Chair
George Slade, Clerk
Peter Meier
Judy Froman

Others: Erica Flemming, Finance Director, Michael Rausch, Bourne Enterprise, Tim Lydon, Skip Barlow, Joe Sullivan (remote), Stanley Andrews, Wendy Chapman (remote), and Steve Souza (remote).

7:07 PM Call Public Session to Order in Open Session

Chair Mary Jane Mastrangelo called the meeting of the Sewer Commissioners to order.

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All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners. Michael Rausch acknowledged that he is recording the meeting.

Chair Mastrangelo said that there was an Executive Session scheduled for 6:30 PM this evening and the Board of Selectmen's Executive session meeting went past that time, so the Executive Session Meeting for the Board of Sewer Commissioners is being deferred, and it may be held at the end of this meeting.

- 1. Moment of Silence to recognize our Troops and our public safety personnel.**
- 2. Salute to the Flag.**
- 3. Vision:** Bourne is a proud community that embraces change while respecting the rich heritage of the town and its villages. It is a municipality based on strong fiscal government with a durable economy that recognizes the rights of all citizens, respects the environment, especially the coastal areas of the community and the amenities that it affords. Bourne embraces excellent education, and offers to citizens a healthy, active lifestyle.
- 4. Mission:** Bourne will maximize opportunities for social and economic development while retaining an attractive, sustainable, and secure coastline and environment for the enjoyment of residents and visitors. Through responsible and professional leadership and in partnership with others, Bourne will strive to improve the quality of life for all residents living and working in the larger community.
- 5. Public Comment on Non-Agenda Items**

- a. Public comments are allowed for up to a total of 12 minutes at the beginning of each meeting. Each speaker is limited to 3 minutes for comment. Based on past practice, members of the Board are not allowed to comment or respond.

Skip Barlow said he was there on behalf of the Save the Cape Cod Canal Committee. He said he was there to present the Board with a petition, signed by 935 people, concerning the outfall at the Canal. He said the people are concerned about how things will change should they tie in with Wareham. He said the current discharge is 77,000 gallons per day, which is 2.3 million gallons per month. He said the proposed minimum is 105 million gallons per month, and the proposed maximum is 300 million gallons a month. He said that they can not support this proposal.

6. Minutes: No minutes to approve.

7. Board of Sewer Commissioners Business

- a. **Buzzards Bay Wastewater Treatment Facility – Update on the startup and control of the new Buzzards Bay Wastewater Treatment Facility**

Town Administrator Tony Schiavi said that they seeded the plant on August 5th. Joe Sullivan said that all systems are performing as designed, and there were a few equipment adjustments that were needed for DEP's requirements of the operation. Mr. Sullivan said they will hydroseed the field next Monday. Peter Meier asked when the playground will be installed, and Mr. Schiavi did not have a date for that, and he said it might be after the grass grows. Chair Mastrangelo said that she had a call from a citizen that had some noise concerns and the concerns have been passed on to the Wastewater Building Committee.

- b. **Inflow and Infiltration (I/I) Study report – Status update of the Inflow and Infiltration (I/I) Study conducted by Environmental Partners including trenchless sewer pipe lining and manhole repair recommendations.**

Helen Gordon, Project Manager at Environmental Partners, said she worked on the Inflow and Infiltration (I/I) Study with Kate Roosa. Ms. Gordon showed a slide presentation on the I/I study. She said that they did submit the final draft report and it is on the Town's website. Ms. Gordon explained what inflow and infiltration are and she talked about the sub-areas of the gravity sewer system. She said that some of the conditions to note are possible tidal inflow at Taylors Point Marina, hydrogen sulfide corrosion in manholes connecting low-pressure system to gravity system, loose manhole frames, and covers, and overall age and condition considerations.

Ms. Gordon said that for sub-areas B & C the estimate for the next phase of work would cost \$317,500.00, for CCTV investigation and rehabilitation. For sub-area D the estimate is \$421,600.00 for recommended improvements.

Ms. Gordon said that they will do a combination contract for CCTV inspections, where they look at all the pipes and the manholes, and while doing that they come up with the improvements that are needed and then there already is a bid out there with all the items that are needed to do the rehabilitation. She said that there clearly is manhole rehabilitation that needs to be done in all the

manholes where the low-pressure sewers come into the gravity system. She said she does have some concerns about the hydrogen sulfide issues. She said she recommends for year 3 to look at the 2 force mains. She talked about the ductile iron piping compared to PVC piping and the PVC is supposed to last for 100 years. She also said that based on the amount of I/I in the system that 10 to 25 percent might have a problem and they could be variable.

Glenn Cannon said that the cost estimates are staggering and asked if they were conservative estimates and Ms. Gordon said that they were conservative estimates. Stanley Andrews asked if they looked at the grinder pumps and Ms. Gordon said they have not yet. There was some discussion about the grinder pumps.

Chair Mastrangelo said that the next step seems to be to have the Capital Outlay Committee review this. There was some discussion about having an article on the Town Meeting and having the Capital Outlay Committee review.

Voted: Peter Meier moved, and Judy Froman seconded to have this presentation of the sewer line study recommendation sent to the Capital Outlay Committee and to have the Town Administrator and Assistant Town Administrator be very involved and set the pace.

Vote: 3-0-1. Judy Froman abstained.

Chair Mastrangelo moved the next agenda item out of order and forward:

Communication Protocols for discussions with the Buzzards Bay Water District – Discussion on the communication protocols with the Buzzards Bay Water District.

Chair Mastrangelo said that the reason she put this item on the agenda is that there was an agenda item at the Buzzards Bay Water District meeting last week around increased sewer users that had come up at a Sewer Commissioners discussion and they were concerned that the Sewer Commissioners were proposing new users that they did not know about. Chair Mastrangelo told them that they were just talking about a budgetary thing. She feels that a communication loop needs to be established.

Mr. Schiavi talked about methods of communication. Wendy Chapman said that she feels that the Buzzards Bay Water District should be in the loop not only when there are projects involving the Buzzards Bay Water District, but even when there are projects close to the area. They have been blindsided in the past and recently and have had to increase their DEP permit. Mr. Schiavi said that communication needs to happen concerning capacity.

c. Wastewater Advisory Committee Charge. – Discussion and possible vote to accept the charge for the Wastewater Advisory Committee.

Chair Mastrangelo said that Helen Gordon made a recommendation on what the charge should be for the Wastewater Advisory Committee. Peter Meier said that he has a problem with the Sewer Commissioners being on the committee and they need to take a step back for this committee. Chair Mastrangelo said that she agrees and feels it should be an ex-officio of the Sewer Commission. Judy Froman agrees with Mr. Meier. There was some discussion on who should be ex-officio

members. Chair Mastrangelo said that this is just the beginning of creating the charge, and she feels all should think about it a bit more and have another conversation soon to discuss. Glenn Cannon thanked Environmental Partners for authoring the charge, and he thought it was a great start. Ms. Gordon told the Board of Sewer Commissioners what sections of the proposed charge they should really take a good look at.

d. Fiscal Year 2021 Sewer Allocation Fees – Review and discuss the sewer allocation fees collected in fiscal year 2021.

Chair Mastrangelo said that there was \$24,430.00 in allocation fees and \$1,500.00 in filing fees. Chair Mastrangelo talked about the \$50,000.00 from retained earnings that will be going into the budget and how the money should be tracked with the allocation fees.

e. Annual Sewer User Rates – Discussion and possible vote on the Annual Sewer User Rates, Overages, Fees, and Other Sewer User Fees and Charges.

Mr. Schiavi said that the subsidy that was received from the Cape and Island Water Protection Fund, allowed the Town to decrease its debt service by about \$26,100.00, which gave an additional \$24.00 decrease in the rate. There was some discussion about overage fees.

Voted: Peter Meier moved, and Judy Froman seconded to approve the FY 2022 sewer rate at \$1183.00 per unit.

Vote: 4-0-0.

f. Fiscal Year 2022 Budget Adjustments for the Special Town Meeting – Discuss possible budget adjustments to the Fiscal Year 2022 Sewer Enterprise Fund Budget.

Voted: Peter Meier moved, and Judy Froman seconded to have a warrant article at the Fall Special Town Meeting to reduce the debt service budget by \$26,100.00.

Vote: 4-0-0.

g. Wareham Intermunicipal Agreement – Discussion and possible vote to select a team to negotiate the proper billing associated with the Bourne/Wareham Intermunicipal Agreement.

Deferred.

h. Savary Avenue Septic System – Discussion relative to the decommissioning of the Savary Avenue septic system.

Mr. Schiavi said that they sent a letter in December to the Army Corps of Engineers with a proposal for the method they would like to use in decommissioning the site and putting it back to its prior state. They are waiting to hear back.

i. Communication Protocols for discussions with the Buzzards Bay Water District – Discussion on the communication protocols with the Buzzards Bay Water District.

Previously discussed.

j. Board of Sewer Commissioner's Policy Subcommittee Update – Summary and discussion of the August 5, 2021, Board of Sewer Commissioners policy Subcommittee meeting.

Mr. Cannon said that have granted a lot of sewer allocations and they still have a lot of sewer capacity. He said they discussed sewer charges.

8. Future Agenda Items

Chair Mastrangelo said the quarterly report will be discussed. Mr. Schiavi said that the Board should talk about its position on the Town Meeting article on changing section 19 for the Water Protection Fund.

Chair Mastrangelo asked Mr. Schiavi how he thinks that the Town Administrators from Bourne and Wareham should discuss the Wareham Intermunicipal agreement. Mr. Schiavi said that the agreement is a document that codifies billing and capital and is a document that the Sewer Commissioners oversee. He said that anything that the Town Administrator's office might do or has done, that affected the rates that the Commissioner has set, should get a blessing to go forth to do just that. He said he can meet with her next week to discuss strategy.

9. Correspondence

Mr. Cannon said there was a letter from DEP giving the approval to run the plant.

10. Adjourn

Voted: Peter Meier moved, and Judy Froman seconded to adjourn.

Vote: 4-0-0.

This meeting of the Bourne Board of Sewer Commissioners was adjourned at 9:09 PM.

Respectfully Submitted,

Kim Johnson, Recording Secretary

- c. [Wastewater Advisory Committee Charge](#) – Discussion and possible vote to accept the charge for the Wastewater Advisory Committee.
 - d. [Fiscal Year 2021 Sewer Allocation Fees](#) - Review and discuss the sewer allocation fees collected in fiscal year 2021.
 - e. [Annual Sewer User Rates](#) – Discussion and possible vote on the Annual Sewer User Rates, Overage Fees and Other Sewer User Fees and Charges.
 - f. [Fiscal Year 2022 Budget Adjustments for the Special Town Meeting](#) – Discuss possible budget adjustment to the Fiscal Year 2022 Sewer Enterprise Fund Budget.
 - g. [Wareham Intermunicipal Agreement](#) – Discussion and possible vote to select a team to negotiate the proper billing associated with the Bourne/Wareham Intermunicipal Agreement.
 - h. [Savary Avenue Septic System](#) – Discussion relative to the decommissioning of the Savary Avenue septic system.
 - i. [Communication Protocols for discussions with the Buzzards Bay Water District](#) – Discussion on the communication protocols with the Buzzards Bay Water District.
 - j. [Board of Sewer Commissioner's Policy Sub-committee Update](#) – Summary and discussion of the August 5, 2021 Board of Sewer Commissioners Policy Subcommittee meeting.
- 8. [Future Agenda Items](#)
 - 9. [Correspondence](#)
 - 10. [Adjourn](#)



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

July 22, 2021

Mr. Anthony Schiavi, Town Administrator
Town of Bourne
Bourne Town Hall
24 Perry Avenue, Room 101
Buzzards Bay, Massachusetts 02532

Re: BOURNE – BWR – GWDP #974,
314 CMR 5.00, Groundwater Discharge
Buzzards Bay WWTF
Clearwater Test Inspection

Dear Mr. Schiavi:

On July 8, 2021, MassDEP conducted the clearwater test for the Wastewater Treatment Facility (WWTF) permitted under Groundwater Discharge Permit (GWDP) # 974 Buzzards Bay WWTF.

MassDEP hereby approves of operation of the Buzzards Bay WWTF provided the following items are addressed:

1. Add labels on pipes within the facility showing flow direction and where the flow is going.
2. Add labels on the monitoring wells.
3. Installation of an audible alarm at the facility and pump station to complement the visual alarm and auto-dialer.
4. Installation of the 3-way valve for the fine screen allowing both of the treatment lines to be operational.
5. Submission of a hard copy and digital pdf of the as-build drawings to MassDEP SERO.

Please submit proof of execution of all the items of above with photographs and documentation sent to Andrew.Osei@mass.gov.

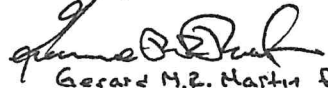
The permittee must coordinate with the Boston Office of MassDEP for proper registration on the eDEP website for monthly report submission. Please coordinate with Linda Barba at Linda.Barba@Mass.gov for any questions with respect to eDEP. Please state the date in which discharge starts in the first eDEP submittal in which discharge is reported.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

If you have any questions or comments regarding this matter, please feel free to contact Drew Osei, P.E. at 508-946-2869 or Andrew.Osei@mass.gov.

Sincerely,



Gerard M.E. Martin, Sec.

Brian A. Dudley, Section Chief
Wastewater Management – Cape and Islands

ecc. Repucci, Corey repuccic@wseinc.com;
Bourne BOH tguarino@townofbourne.com
Glen Cannon gcannon@townofbourne.com

D/AFO: W:\BWR\Wastewater\Cape\Groundwater\974 - Bourne-Buzzards Bay WWTF\Inspections\974 CW Insp Cover
21.docx

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE**

FACILITY				OPERATOR(S)	
Buzzards Bay WWTF 31 Armory Road Buzzards Bay MA 02532				Weston & Sampson	
DEP INSPECTOR(S)				OTHER PERSONS PRESENT	
Drew Osei, P.E.				General Contractor and sub-contractor representatives Design Engineer- Weston & Sampson	
Date: 7/8/2021				Permit: 974-0	
INSPECTION					
Unit	Operational Yes / No		Problems Yes / Action Required		Additional Information
(1) Influent Pump station	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The influent pump station is located on 239 Main Street at the Community Center site. The IPS is a submersible concrete pump station, that consists of a wetwell, below grade valve vault, control panel (CP-1) and transformer. The IPS has two non-clog, Flygt submersible pumps. The pump station is also equipped with a pressure transducer for level sensing with mechanical float backup, stainless steel lift out chain and guide rails, an activated carbon filter for odor control on the vent line, and a connection for a portable standby generator.</p> <p>During the Clearwater test, the Design Engineers explained that the pump station is equipped with two (2) pumps that operate in simplex. The two pumps offer redundancy and automatically alternate, but both pumps will not operate at one time if the high-level float alarm is activated. This is to assure that not more than 100,000 gpd of flow is sent to the facility and per-agreement that any additional flow is sent to Wareham. At the time of the clearwater test, the transducer levels were not appropriately set.</p> <p>Both pumps were operational. Alarms were test and operated accordingly.</p>
(1) Influent Primary Settling Tank (Trash Trap) (10,000 gallon)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The influent flow from the influent pump station discharges to the 10,000-gallon below grade pre-cast concrete settling tank. The sewage from the Police Station directly flows to the settling tank through a separate dedicated gravity sewer lateral. The tank also receives decant from the plant's waste sludge holding tank.</p> <p>This location is the most representative of the raw influent of the facility. Although, the tank receives some decant from the waste sludge, in comparison to the FET which can receive recycle flow from Aeration Zone A and Pre-Anoxic Zone A, the Influent Primary Settling Tank is more representative of the true influent of the facility.</p>
(2) Flow Equalization Tanks (3,000 gallon) • Bubble Mixing System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Flow from the trash trap is conveyed to one or both influent flow equalization tanks via individual gravity flow outlets. Each outlet is equipped with a below grade shut of valve. The</p>

<ul style="list-style-type: none"> (1) FET Pump per tank 					<p>operator inclined that the facility will operate with both valves open.</p> <p>The tanks are equipped with a large bubble mixing system and effluent pumps. The effluent pumps are automatically alternating and operate in a duplex system with separate float trees.</p> <p>Both pumps were operational. Alarms were test and operated accordingly.</p>
(2) Rotary Drum Fine Screens	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Wastewater is transferred from the FET to one of two (2) rotary drum screens to remove solids greater than 2 mm. The screens are located in the Screen Room, a separate room located on the north side of the upper level of the main building. The room is provided with a separated entrance from the building exterior due to space hazard classification. The primary purpose of the fine screens is to protect the MBR system from stringy and other objectionable materials that could damage or clog the membrane system. The screens operate in duty and standby mode to allow for cleaning and maintenance. Only one screen will operate at a time and the in-service screen selection is done manually by the operator using the manual three-way valve on the screen influent line from the IFET pumps. Screenings will be conveyed to a common washer compactor unit prior to discharge into a bagging system and a bin for disposal. Screened wastewater flows directly to the pre-anoxic zone via a gravity flow connection.</p> <p>At the time of the inspection, due to Covid19 Manufacturing disruptions, the three-way valve had not been delivered and installed. As such, only one screen was in operation.</p>
(1) Pre-Anoxic Tank (1,400 gallon) <ul style="list-style-type: none"> Mixer 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Screened wastewater flows from the fine screens by gravity to the Pre-Anoxic Tank. In addition to screened wastewater, internal Mixed Liquor Recycle (IMLR) from the aeration zone and the Return Activated Sludge recycle from the Membrane tanks flow to this tank.</p> <p>The pre-anoxic zone is continuously mixed propeller type submersible mixer. The pre-anoxic zone is equipped with a pressure type level sensor and an emergency overflow which discharges to a sump with duplex pumps located in the floor of the lower level of the main process building, which discharges back to the FET.</p> <p>Process redundancy for the Pre-Anoxic Tank is provided by the first of the two-aeration zones (Aeration Zone A) which can operate as a Swing Zone.</p> <p>The mixer was operational at the time of the inspection.</p>
(2) Aeration Zones (A & B) <ul style="list-style-type: none"> Fine Bubble Diffusers Sodium Hydroxide Chemical Feed Pump (2) Forward Feed Pumps 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Effluent from pre-anoxic tank flows by gravity to the first of two separate aeration zones referred to as Aeration Zone A. The Aerobic Zones provide organics (BOD) removal and nitrification. Aeration and mixing is provided via fine bubble diffusers. Air to the diffusers is provided by three (3) aeration blowers (two duty, one standby). Each aeration</p>

					<p>basin has a DO/Temperature sensor and a dedicated air flowmeter. Sodium Hydroxide will be dosed to Aeration Zone A for Alkalinity control.</p> <p>From Aeration Zone B, the forward feed pumps pump aerated wastewater to the post-anoxic zone.</p> <p>Aerators were activated and operational at the time of the inspection. Both pumps were installed and operational according to the design engineer.</p>
<p>(1) Post- Anoxic Tank</p> <ul style="list-style-type: none"> • Micro C Chemical Feed Pump 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Feed Forward pumps conveyed flow to the post-anoxic tank. The tank is equipped with a rail mounted submersible propeller type mixer to keep the MLSS in suspension. The post anoxic tank is equipped with a micro-s chemical feed. If performance shows that effluent total nitrogen levels average above 10 mg/l the system can be set to "polish" several mg/l of nitrate to drop that to less than 10 mg/l.</p>
<p>(3) Membrane Bioreactor</p> <ul style="list-style-type: none"> • Return Activated Sludge System • (3) Aeration Blowers & Fine Bubble Diffusers • Waste Activated Sludge System (2 pumps) • Clean In Place System • (3) Filtrate Permeate Pumps 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Effluent from the Post Anoxic Zone flows by gravity through three (3) overflow pipe connections one to each of the three parallel MBR tanks, each equipped with a manual shut off valve. Each tank in the zone houses a rack of flat plate type "outside in" membrane units with aeration diffusers below to continuously scour the membranes.</p> <p>Treated wastewater is "pulled" through the membranes by three (3) Filtrate Permeate Pumps (2 duty, 1 spare) which pull a vacuum on the membranes through a common header between the pumps and the individual discharge pipes from each membrane rack.</p> <p>Return activated sludge flows by gravity to the Pre-anoxic tanks and waste activated sludge is conveyed by two (2) pumps.</p> <p>The MBR Clean-In-Place (CIP) system consists of one (1) sodium hypochlorite skid and one (1) citric acid skid and a batch mix/dilution tank with solution feed pumps. Both chemical feed skids include two (2) transfer pumps (1 duty, 1 standby) and level switch. Chemical cleaning for the MBR system should occur two (2) to four (4) times per year with sodium hypochlorite, and one (1) time per year with citric acid.</p> <p>Full operation of the Membrane Bioreactor could not be confirmed as the membranes were not fully submersed. The membranes need continuously influent flow for proper operation without damage from drying. Due to this, operation can only be verified after facility activation. All warranties and appropriate engineering contracts were active at the time of the clearwater test and the engineering certification was submitted afterwards.</p>
(3) Subsurface disposal fields	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Treated Effluent is disposed of through a subsurface disposal system that includes a below grade cast-in-place tank located at the southeast corner of the main process building, three (3)</p>

					<p>effluent dosing pumps, a discharge manifold with eight (8) individual discharges with control valves. The pumps and valves direct flow to one of eight (8) distribution boxes for each of the eight (8) subsurface disposal zones in three different infiltrator beds located under the parking lot of the plant and adjacent police station.</p> <p>Monitoring wells were not labeled at the time of the clearwater test.</p>
Aeration System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Aeration system consisted of six (6) aerators: two dedicated to the aeration zones and two dedicated to the MBR with a sixth aerator for stand-by.</p>
Back-up Generator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Back-up power was available by a Kohler 200 KW, 277/480V, 3-phase, 60 Hz, generator.</p> <p>The generator was load tested and it did operate accordingly.</p>
Laboratory and Sampling					
Effluent Appearance: Good	Housekeeping:				
Notes:					

MEMORANDUM

Date: August 13, 2021

To Glenn Cannon

From Helen Gordon, PE, Environmental Partners

CC Mark White, Robert Rafferty, Kate Roosa – EP

Subject Suggestions for Wastewater Committee to the Board of Sewer Commissioners

Overview of Purpose

At the Board of Sewer Commissioner's (BOSC) Meeting held on July 27, 2021 discussion began regarding creation of an advisory committee to the BOSC to assist with the Comprehensive Wastewater Management Plan (CWMP). The goal would be for the Committee to conduct some of the work the Town is responsible for in association with the vetting of the CWMP assessments and recommendations. Since the resulting recommended plan is a town plan it is imperative that the community understand the goals and are kept up to date on the process and to gain consensus for the Recommended Plan as it moves forward ultimately to Town Meeting for acceptance. The Advisory Committee will make recommendations to the BOS on the implementation of the CWMP Plan of Study as approved by MassDEP. What follows is some recommendations for the structure of the committee.

Creation of Committee

The BOSC would appoint five to seven members to the Advisory Committee (Committee) annually. The committee Chair typically would be one of the BOSC members. A clerk would be identified for each meeting to prepare meeting minutes.

It will be important to consider the name of the Advisory Committee. For example if the name "sewer" is utilized in the name it may tend to imply that the committee is focused solely on sewers. When picking a name for the committee attention should be taken to the charge of the committee. If the Committee were to be simply called the CWMP Advisory Committee it would clearly represent the role of the Advisory Committee to the BOSC. In the end it will be the BOSC and Town's decision.

Committee Membership

Members must be residents of the Town of Bourne and be duly sworn by the Town Clerk and adhere to regulations of the Open Meeting Laws of the Attorney General's Office.

It is recommended that the BOSC reach out to the following committees so each can recommend an appointment to the committee.

- BOSC Representative – Chair of Committee
- Finance Committee
- Planning Board
- Conservation Commission
- Board of Health
- Member of North of the Canal stakeholder group
- Member of South of the Canal stakeholder group

Potential Committee Charge Items

The Committee will have responsibility for advising the BOSC in the areas of public policy and long-range planning as it relates to the implementation of the CWMP Plan of Study.

- The committee will advise and facilitate the development of a Comprehensive Wastewater Management Plan
 - Providing comments on the draft Needs Assessment
 - Provide input on the evaluation criteria to be used in the alternative analysis phase of the CWMP
 - Provide input on four alternatives for town-wide wastewater management which will be further refined into a recommended plan
- The committee shall work diligently to protect the town's Water Resources, both groundwater and surface waters;
- The committee shall recommend actions in the area of stormwater management to protect and to improve water quality in Buzzards Bay
- The committee shall explore, evaluate and recommend enhanced wastewater systems that mitigate or eliminate nitrogen loading and other contaminants from entering our groundwater and surface water resources.
- The committee shall facilitate the coordination of efforts with other town officials;
- The committee shall identify and pursue grant opportunities;
- The committee shall receive comments and suggestions from the public, hold public meetings/hearings as appropriate, post agendas and publish minutes of their proceedings and file an Annual Report

- To facilitate effective stakeholder engagement the committee shall hold meetings at the locations where the local stakeholder meetings are held. At a minimum the groups will include:
 - Cataumet Village Association
 - Gray Gables Neighborhood Association
 - Pocasset Water Quality Coalition
 - Sagamore Highland Association
 - Scraggy Neck Recreation Association
 - Taylor's Point Improvement Association
 - Wings Neck Trust Association

Environmental Partners Current Budget

Addition of quarterly meetings with the new committee are not currently included in the CWMP project budget. Currently we are budgeted for quarterly meetings with the BOSC only.

Comprehensive Wastewater Management Plan Advisory Committee

CHARGE

The Committee will have responsibility for advising the BOSC in the areas of public policy and long-range planning as it relates to the implementation of the CWMP Plan of Study.

- The committee will advise and facilitate the development of a Comprehensive Wastewater Management Plan-
 - Providing comments on the draft Needs Assessment;
 - Provide input on the evaluation criteria to be used in the alternative analysis phase of the CWMP;
 - Provide input on four alternatives for town-wide wastewater management which will be further refined into a recommended plan.
- The committee shall work diligently to protect the town's water resources, both groundwater and surface waters;
- The committee shall recommend actions in the area of stormwater management to protect and to improve water quality in Buzzards Bay;
- The committee shall explore, evaluate and recommend enhanced wastewater systems that mitigate or eliminate nitrogen loading and other contaminants from entering our groundwater and surface water resources;
- The committee shall facilitate the coordination of efforts with other town officials;
- The committee shall identify and pursue grant opportunities;
- The committee shall receive comments and suggestions from the public, hold public meetings/hearings as appropriate, post agendas and publish minutes of their proceedings and file an Annual Report;
- To facilitate effective stakeholder engagement the committee shall hold meetings at the locations where the local stakeholder meetings are held. At a minimum the groups will include:
 - Cataumet Village Association
 - Gray Gables Neighborhood Association
 - Pocasset Water Quality Coalition
 - Sagamore Highland Association
 - Scraggy Neck Recreation Association
 - Taylor's Point Improvement Association
 - Wings Neck Trust Association

Date: August 24, 2021

Comprehensive Wastewater Management Plan Advisory Committee

MEMBERSHIP

The committee membership of the Comprehensive Wastewater Management Plan Advisory Committee to the Board of Sewer Commissioners shall consist of the following:

- BOSC Representative
- Finance Committee
- Planning Board
- Conservation Commission
- Board of Health
- Member of North of the Canal stakeholder group
- Member of South of the Canal stakeholder group

Members must be residents of the Town of Bourne and be duly sworn by the Town Clerk and adhere to regulations of the Open Meeting Laws of the Attorney General's Office.

Allocation Fees Collected
FY20 FY21

FY2020	
Allocation Fees	135,488.12
Filing Fees	7,500.00
	142,988.12

FY2021	
Allocation Fees	24,430.00
Filing Fees	1,500.00
	25,930.00

Buzzards Bay Commercial Wastewater Summary Sheet (July 21, 2021)

OWNER	LOCATION	GPD Req'd	GPD Exist'g	\$1500 App Paid Date	Planning Board Approval Date	Preliminary Allocation Approval Date	Prelim Alloc Fee (2017) ¹	Prelim Allocation Date Paid	Sewer Develop Charge (2006) ²	Comments	6-Month Review Date
	2020 GPD Downtown Actual Use	112496									
	2% Residential Reserve	6000									
Operational Allocations											
Vincent Michienzi	85-93 Main Street	13000	931	10/24/2018		10/15/2018	\$18,000.00	10/24/2019		Temporary Certificate of Occupancy	11/25/19, 5/25/2020, 9/8/2020, 4/27/21
HAMPTON INN	12 Kendall Rac Place	15243	4614			9/30/2014		11/11/2019	\$48,533.12	Certificate of Occupancy issued in January 2020	On-line (3 year review Jan 2023) 2020 = 4614gpd
	<i>Total Operational GPD</i>	146739									
Preliminary Allocations											
Maritime Holdings LLC/Rob	12 Wagner Way	17750		1/5/2018		6/18/2019	\$22,750.00	11/20/2019			11/25/2019, 5/25/2020, 2/1/2021, 4/27/21
CALAMAR	13 Kendall Rac Place	16800			1/29/2018	9/19/2017	\$21,800.00	1/6/2020		Calamar representatives appeared at the Board of Selectmen on April 6, 2021	11/25/19, 5/25/20, 4/6/21
Vincent Michienzi	100 Block	26080				10/13/2015				-1000 gpd 11/25/2019 (originally 27080)	11/25/19, 5/25/2020, 9/8/2020, 4/27/21
Oak Bay Brewery	140 Main Street	2256		8/23/2019	11/14/2019	12/18/2019	\$7,256.00	1/16/2020		Sewer Allocation revoked on March 23, 2021	N/A
MMA Cadet Housing	11 Buttermilk Way	7070	310	12/27/2019	N/A	1/28/2020	\$12,070.00	2/20/2020		11 Buttermilk Way was reviewed by the BOSC on Feb 23, 2021	9/8/2020
James McLaughlin	227 Main Street	79	40	12/31/2019	10/10/2019	1/28/2020	\$5,079.00	2/7/2020			9/8/2020, 4/27/21
Bay Motor Inn	223 Main Street	11985	640	5/20/2020		7/28/2020	\$16,335.00	9/1/2020		Approval after BBWD moratorium sent letter 08.03.2020	2/1/2021, 4/27/21
CMP Development LLC	2 Kendall Rac Place	46475		2/25/2020		7/28/2020	\$0.00			Approval after BBWD moratorium sent letter 08.03.2020	10/28/2020, 4/27/21
340 Main St LLC	340 Main St	3095		8/19/2020	2/27/2020	8/25/2020	\$8,095.00	11/2/2020		Potential 2nd phase to include 18-24 residential units / sent letter 09.01.2020	2/1/2021, 4/27/21
	<i>Total Approved GPD</i>	278329									
	<i>Total Available GPD</i>	21671									
Pending Applications		Requested:									
Projects Not Counted		Requested:									
Louis Costa	25-27 Main Street	0	36				\$0.00	N/A		Waiver Received	Waiver Req'd
Judah Branagan	6 Washington Ave	880	0					N/A		Approval not required	
							Fees total to Date:	\$111,385.00		\$48,533.12	

¹ Preliminary Allocation Fee is based on the Commercial Wastewater Management Allocation Policy approved in 2017

² Sewer Development Charge based on the Sewer Use Charges Certificate of Vote dated January 17, 2006

AGREEMENT
FOR
WASTEWATER COLLECTION, TREATMENT AND DISPOSAL
BETWEEN
TOWN OF WAREHAM, MASSACHUSETTS AND TOWN OF BOURNE, MASSACHUSETTS

This agreement, made and entered unto this 23rd day of February, 2010 by and between the Town of Wareham, a municipal corporation within the County of Plymouth and the Commonwealth of Massachusetts acting through its Board of Selectmen, hereinafter referred to as "Wareham" and the Town of Bourne, a municipal corporation within the County of Barnstable and the Commonwealth of Massachusetts acting through its Board of Selectmen, hereinafter referred to as "Bourne".

WITNESSETH

WHEREAS, The Division of Water Pollution Control of the Massachusetts Department of Environmental Protection endorses the recommendations of the 208 Areawide Wastewater management Plan for Southeastern Massachusetts, the Wareham 201 Wastewater Facilities Plan, the Bourne 201 Wastewater Facilities Plan, and

WHEREAS, the Division of Water Pollution Control has approved a plan whereby Bourne will discharge its wastewaters to Wareham's sewage works, and

WHEREAS, the communities deem it to be the most economical and in the public interest to enter into an Agreement whereby Wareham would receive, treat and dispose of Bourne's wastewaters through Wareham's sewage works.

WHEREAS, the communities are authorized by Chapter 40, Sections 4 and 4A of the General Laws of the Commonwealth of Massachusetts to enter into contracts and agreements for the purpose of aiding in the prevention or abatement of water pollution, and

WHEREAS, Wareham agrees to sell to Bourne an annual average daily wastewater flow capacity not to exceed 200,000 GPD. The source of the wastewater flow will be from the Village of Buzzards Bay (approximately

140,000 GPD) and Hideaway Village (approximately 60,000 GPD) and will be derived only for the services of the critical needs of Bourne, as identified in the "201 Facilities Plan and Environmental Information Document for the Town of Bourne, Massachusetts - Final Draft" dated May 1984 together with the Regionalization Supplement dated March 1988, prepared by the engineering firm of Anderson-Nichols. Said areas shall include the following: Phase I, Phase II, Phase III, and Phase IV all as shown in Exhibit 1, attached hereto, entitled, "Figure 6-1, Sewer Phasing" and Hideaway Village as shown in Exhibit 2, attached hereto, entitled "Figure V-2, Recommended Plan for Hideaway Village", all of which are hereinafter referred to as critical needs in Bourne, and

WHEREAS, Wareham and Bourne have been authorized to enter into this agreement by vote of their respective Town Meetings as evidenced by certified copies of the approved Articles, attached hereto as Exhibit 3.

NOW THEREFORE, in consideration of these premises and mutual benefits to be derived by the parties hereto, an Agreement is prepared in the following form:

Article 1	Definitions
Article 2	Wastewater Characteristics
Article 3	Terms of Agreement
Article 4	DELETED
Article 5	Payment - Capital Investment
Article 6	Payments - Operation and Maintenance
Article 7	Measurement of Flow
Article 8	Sampling of Wastewater
Article 9	Notice of Changes
Article 10	Pretreatment
Article 11	Septage
Article 12	Contract Administration
Article 13	Termination
Article 14	Approval By Emergency Finance Board
Article 15	Other Considerations

ARTICLE 1. DEFINITIONS

1.1 For the purpose of this Agreement, the following terms are defined:

- 1.1.1 "Average Daily Flow" shall mean the total flow as measured at a metering location, divided by the same number of days in the flow period.
- 1.1.2 "BOD (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20° C, expressed in milligrams per liter (or pounds per day).
- 1.1.3 "Bourne" is the Town of Bourne, a municipal corporation of the Commonwealth of Massachusetts.
- 1.1.4 "Bourne Board" shall be the Board of Selectmen acting as the sewer commissioners of the Town of Bourne.
- 1.1.5 "Bourne Wastewater" shall mean wastewater originating from only those sources defined in Exhibits 1 and 2, attached hereto, and otherwise known as Phases I, II, III, and IV within the Village of Buzzards Bay and Hideaway Village, herein referred to as critical needs.
- 1.1.6 "Building Drain" shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning ten (10) feet outside the inner face of the building wall.
- 1.1.7 "Building Sewer" shall mean the extension from the building drain to the public sewer.
- 1.1.8 DELETED
- 1.1.9 "Combined Sewer" shall mean a sewer receiving both surface runoff and sewage.
- 1.1.10 "Common Sewage Works" shall mean that portion of the Wareham sewage works all in Wareham that will be used by

Wareham and Bourne.

- 1.1.11 "Communities" shall mean the Towns of Wareham and Bourne.
- 1.1.12 "DEP" is the abbreviation for Massachusetts Department of Environmental Protection.
- 1.1.13 "GPD" is the abbreviation for gallons per day.
- 1.1.14 "Industrial Wastes" shall mean the liquid wastes from industrial manufacturing processes, trade or business and distinct from sanitary sewage.
- 1.1.15 "Memorandum of Intent" shall mean the nine (9) page document; including the addendum thereto, signed on September 1, 1988 by a majority of the members of the Wareham Board of Selectmen and the Bourne Board of Selectmen which outlines the general areas of mutual agreement setting the foundation for the agreement contained herein.
- 1.1.16 "MGD" is the abbreviation for million gallons per day.
- 1.1.17 "NPDES Permit" shall mean the National Pollutant Discharge Elimination System permit for the Wareham Sewage Treatment Plant.
- 1.1.18 "Operation and Maintenance Cost" means costs relating to the operation and maintenance of the sewage works, including but not limited to labor, power, chemicals, administration, supplies, equipment replacement, and incidental costs.
- 1.1.19 "Peak Hourly Flow" means the highest volume of wastewater, during a continuous sixty (60) minute period.
- 1.1.20 "Person" shall mean any individual, firm, company, association, society, corporation, group or other legal entity.

- 1.1.21 "pH" shall mean the logarithm of the reciprocal of weight of hydrogen ions in grams per liter of solution.
- 1.1.22 "Public Sewer" shall mean a sewer in which all owners of abutting properties have equal rights and is controlled by public authority.
- 1.1.23 "Sanitary Sewage" shall mean water-carried waste from the sanitary conveniences such as toilets, washrooms, urinals, sinks, showers, drinking fountains, small laundries and from kitchens, restaurants, cafeterias and floor drains essentially free of industrial wastes or toxic materials.
- 1.1.24 "Sanitary Sewer" shall mean a sewer which carries sanitary sewage and to which storm, surface and ground waters are not intentionally admitted.
- 1.1.25 "Septage" means the wastes from holding tanks, septic tanks, and cesspools.
- 1.1.26 "Sewage Treatment Plant" shall mean any arrangement of devices and structures used for treating sewage.
- 1.1.27 "Sewage Works" shall mean all facilities for collecting, pumping, treating, and disposing of sewage and sludge.
- 1.1.28 "Sewer" shall mean a pipe or conduit for carrying sewage.
- 1.1.29 "Shall" is mandatory; "May" is permissive.
- 1.1.30 DELETED
- 1.1.31 "Slug" shall mean any discharge of water, sewage, or industrial waste which in concentration of any given constituent or in quantity of flow exceeds for any period of duration longer than fifteen (15) minutes, or more than five (5) times the average twenty-four (24) hour concentration or flows during normal operation.

- 1.1.32 "Storm Drain" (sometimes termed "Storm Sewer") shall mean a sewer, which carries storm and surface waters and drainage, but excludes sewage and industrial waste, other than unpolluted cooling water.
- 1.1.33 "Total Flow" includes the total amount of sewage flowing into the sewerage works and includes the sewage contributed to such system by the participating communities.
- 1.1.34 "Total Flow Capacity Allocation" shall refer to the amount of sewage treatment plant capacity set aside for use by each community. The Wareham total flow capacity allocation is 1.30 MGD average daily flow and the Bourne total flow capacity allocation is 0.20 MGD average daily flow.
- 1.1.35 "Total Suspended Solids" (abbreviated TSS) shall mean solids that either float on the surface of, or are in suspension in water, sewage or other liquids and which are removable by laboratory filtering, expressed in milligrams per liter by weight (or pounds per day).
- 1.1.36 "Wareham" is the Town of Wareham, a municipal corporation of the Commonwealth of Massachusetts.
- 1.1.37 "Wareham Board" shall be the Board of Selectmen acting as sewer commissioners of the Town of Wareham.
- 1.1.38 DELETED
- 1.1.39 "Wastewater" (sometimes termed "Sewage") shall mean the spent water of the communities and may be a combination of the liquid and water carried waste from residences, commercial buildings, industrial plants and institutions, together with any groundwater and surface water that may be present.
- 1.1.40 "User" shall mean any individual, firm, company, association, society, corporation or group having a

connection to and deriving a benefit (either actual or potential) from the sewage works.

- 1.1.41 "User Charges" shall mean a charge levied on all users of the sewage works for the cost of operation and maintenance.

ARTICLE 2. WASTEWATER CHARACTERISTICS

- 2.1 Prior to introducing wastewater into the common sewage works, Bourne shall adopt and conform to Sewer Use Bylaws, or regulations similar to Wareham's Bylaws, Division V, dated August 1, 1986 and any amendments thereto. Prior to adoption, Bourne shall provide a copy to Wareham for their review and approval.
- 2.2 Wareham shall receive and treat Bourne's wastewaters and septage in accordance with all State and Federal laws, regulations, water quality standards, orders or decrees of any State and/or Federal governmental authority having jurisdiction over the treatment and disposal of wastewaters, and Wareham shall make its best effort to be at all times in compliance with the NPDES Permit.
- 2.3 Bourne shall enforce its Sewer Use Bylaws to ensure that any storm drain or combined sewer will not directly or indirectly connect into the common sewage works or local sewage works, and to ensure that any drainage, substances, septage, or wastewater containing, but not limited to, the following characteristics in a volume determined to be excessive by DEP Division of Water Pollution Control will not discharge into the sewage works.
- 2.3.1 Any gasoline, benzene, naptha, lube oil, fuel oil, or other flammable, or explosive liquid, solid or gas.
- 2.3.2 Any waters or wastes containing toxic or poisonous solids, liquids, gases, or hazardous materials in sufficient quantity, either singly or by interaction with any sewage treatment process, which constitute a hazard to humans or animals, create a public nuisance, or create any hazard to humans or animals, create a public nuisance, or create any

hazard in the receiving waters of the sewage treatment plant.

- 2.3.3 Any waters or wastes having a pH lower than (5.5), or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.
- 2.3.4 Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewer works such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, inground garbage, whole blood, paunch manure, hair and fleshings, entrails, and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.
- 2.3.5 Any liquid or vapor having a temperature higher than one hundred fifty (150)°F (65°C).
- 2.3.6 Any water or waste containing fats, wax, grease, or oils whether emulsified or not, in excess of one hundred (100) mg/l or containing substances which may solidify or become viscous at temperatures between thirty-two (32) and one hundred fifty (150)°F (0 and 65°C).
- 2.3.7 Any radioactive waste or isotopes of such half-life or concentration as may exceed limits established by applicable State or Federal regulations.
- 2.3.8 Any waters or wastes having a pH in excess of 9.5.
- 2.3.9 Materials which exert or cause:
- (1) Unusual concentrations of inert suspended solids (such as, but not limited to, Fullers Earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

- (2) Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions).
- (3) Unusual BOD, chemical oxygen demand, or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment plant.
- (4) Unusual volume of flow or concentration of wastes constituting "slugs" as defined herein.

2.3.10 Waters or wastes containing substances which are not amendable to treatment or reduction by the sewage treatment process employed, or are amenable to treatment only to such degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the receiving waters.

ARTICLE 3. TERM OF AGREEMENT

3.1 The term of this agreement shall be for twenty (20) years commencing from the date of execution of this Agreement, subject to provisions of Articles 12 and 13.

The Wareham Board of Sewer Commissioners and the Bourne Board of Sewer Commissioners shall jointly review this agreement every five (5) years within the twenty-year agreement. The staffs of the Wareham Sewer Department and Bourne Sewer Department shall jointly review this agreement every two (2) years within the twenty-year agreement.

At the termination of the twenty (20) year term, both communities may renew the Agreement as appropriate.

ARTICLE 4. DELETED

4.1 DELETED

4.2 DELETED

4.3 DELETED

ARTICLE 5. PAYMENT - CAPITAL INVESTMENT

- 5.1 Bourne shall pay Wareham a proportionate share for Wareham's capital investment in various common sewage works described hereinafter in Paragraphs 5.2 and 5.3, including, but not limited to, costs, such as easements, land takings, construction, engineering, legal, administrative, interest, bond fees, and all other costs incurred or incidental to the projects, less the full amount of all grants made to Wareham by State and Federal agencies.
- 5.2 The existing sewage works within Wareham to be shared with Bourne are described as follows:
- 5.2.1 The 18-inch force main from Onset and Minot Avenue, beginning from the point of connection with the proposed Cranberry Highway force main at the intersection with Depot Street, and extending to its terminus at the Wareham Sewage Treatment Plant.
- 5.2.2 DELETED
- 5.2.3 The Wareham Sewage Treatment Plant as initially constructed in 1972 and the additions thereto constructed in 1983 and the 2005 upgrade.
- 5.3 Bourne's estimated proportionate share shall be adjusted after exact costs are determined by audit and shall be based on the allocated capacity for the proposed common sewage works as presented in Exhibit 4 attached hereto.
- 5.3.1 Portions of the Cranberry Highway project consisting of intercepting sewers, force mains, and pump stations, as defined in Exhibit 4, for the purpose of conveying wastewater flows generated in Bourne within the Village of Buzzards Bay and Hideaway Village.

- 5.3.2 Portions of the Indian Mound Beach project consisting of an intercepting sewer, as defined in Exhibit 4, for the purpose of conveying wastewater flows generated within Hideaway Village in Bourne.
- 5.3.3 Additions and modifications to the existing Sewage Treatment Plant, as defined in Exhibit 4.
- 5.4 DELETED
- 5.5 In the event Wareham undertakes major repairs, replacement, or improvements to the common sewage works, or is directed or ordered to provide higher degree of treatment in the future, then, the capital cost, less any State and/or Federal grant(s), related thereto shall be apportioned between the parties on the basis of 82.09%, representing Wareham's share, and 17.91%, representing Bourne's share. Percentages shown are based on the wastewater flows and characteristics presented in Exhibit 4 attached hereto.
- 5.6 Non-compliance fines levied against Wareham by a regulatory agency shall be apportioned between the parties. The apportionment shall be based on 82.09%, representing Wareham's share, and 17.91, representing Bourne's share. Percentages shown are based on the wastewater flows and characteristics presented in Exhibit 4 attached hereto. If Wareham is found to be grossly negligent in its operation of the common sewage works, the non-compliance fines apportioned to Bourne will be waived.
- 5.7 Bourne will pay for all costs, both capital and extraordinary operating and maintenance, incurred by Wareham for restoring the Wareham sewage works should damage occur due to sewage and/or septage from Bourne.
- 5.8 In the event Wareham undertakes an expansion of the common sewage works to address its own needs, then the capital cost, less any State and/or Federal grants(s), related thereto shall be paid by Wareham.

- 5.9 Requests for connections beyond the critical needs areas shall be submitted by Bourne to the Wareham Board. Bourne shall be notified of Wareham's decision within forty-five (45) calendar days. It is understood that Wareham is under no obligation to accept additional wastewater flow beyond the annual average of 200,000 gpd resulting from Bourne's sewerage beyond its critical needs areas. For flows in excess of 200,000 gpd, Bourne acknowledges that Wareham must give priority to its own needs.
- 5.10 In the event Bourne must undertake and request Wareham for an expansion of the common sewage works or request connections beyond the critical needs to which Wareham agrees, as hereinbefore defined as Phases I, II, III, and IV within the Village of Buzzards Bay as shown in Exhibit 1 and within Hideaway Village as shown in Exhibit 2, then the capital cost, less any State and/or Federal grants(s), related thereto shall be paid by Bourne.
- 5.11 In the event that Wareham and Bourne jointly undertake an expansion of the common sewage works then, the capital cost, less any State and/or Federal grant(s), related thereto shall be apportioned between the parties based on wastewater flow and its characteristics.
- 5.12 When any of the capacities allocated to Bourne under Exhibit 4 are equaled or exceeded, Bourne shall impose an immediate ban on all further connections to its system which are tributary to the Wareham sewage works.
- 5.13 DELETED
- 5.14 In the event payment is not received by Wareham from Bourne on the dates referred to herein under Paragraphs 5.2 and 5.3, interest on overdue payments shall be assessed at the current prime rate of the Chase Manhattan Bank plus one percent, per annum, on the unpaid balance from said day, subject to State limitations on maximum interest rates.

ARTICLE 6. PAYMENTS - OPERATION AND MAINTENANCE

6.1 Wareham shall maintain an adequate and separate cost accounting system which shall be the basis for the determination and allocation of costs for the operation, maintenance and repair of the common sewage works. The accounting system shall be available for inspection by Bourne during normal business hours. The operation, maintenance, and repair costs will be grouped into the following three (3) categories:

6.1.1 Costs associated with the sewage treatment plant.

6.1.2 Costs associated with the common pump stations, interceptor sewers, force mains, and collector sewers.

6.1.3 Costs associated with the Wareham sewer collection system not shared by Bourne.

6.2 Bourne agrees to pay to Wareham, quarterly for costs relevant to operation, maintenance, and repair of the common sewage works. Bourne will participate in the following items:

6.2.1 Common Collection Facilities: The term "Common Collection Facilities" shall mean the interceptor sewers, pump stations, force mains, and any other sewers utilized to convey Bourne's wastewater through the common sewage works to the sewage treatment plant. The costs of operating, maintaining and repairing these common collection facilities shall be apportioned on the basis of the actual total quarterly flows through the common collection facilities from each of the communities as defined in Exhibit 5, attached hereto.

6.2.2 Sewage Treatment Plant: The cost of operating, maintaining and repairing the sewage treatment plant shall be understood to be the net cost after subtracting revenues received from the septage haulers.

6.3 In the event that financial assistance from State and/or Federal agencies not otherwise provided for herein becomes available

toward the annual operating costs of the common sewage works, then such assistance shall be used to reduce the total operation, maintenance and repair costs.

- 6.4 The various parameters of flow and strength shall be determined for Bourne on the basis of the records obtained from the metering and sampling equipment referred to in Articles 7 and 8.
- 6.5 BOD and Total Suspended Solids for each of the participants shall be determined from proportional, composite, 24-hour samples obtained from sampling equipment referred to in Paragraph 6.4. Samples shall be collected at intervals of not more than thirty (30) days taken coincidentally at each measuring location on different weekdays to monitor the strength of wastewater from Wareham and Bourne.
- 6.6 User charges may be payable in advance and due on July 1, October 1, January 1 and April 1. Payments shall become overdue after the dates herein provided. Interest on overdue payments shall be assessed at the current prime rate of the Chase Manhattan Bank plus one percent, per annum, on the unpaid balance from said day, subject to State limitations on maximum interest rates.
- 6.7 Wareham shall submit to Bourne its estimated operating and maintenance cost of the common sewage works for the next fiscal year, in writing, by January 30th of each year so that Bourne can budget accordingly. The final appropriation, as approved by the Wareham Town Meeting, shall be submitted to Bourne within thirty (30) days after approval.
- 6.8 Bourne's user charge for any quarter shall be estimated from flow records of the previous quarter and from the budget for that quarter.
- 6.9 Within sixty (60) days of the end of each fiscal year Wareham shall determine the actual operating costs of the common sewage works for the previous fiscal year. In the event that the total amount of the quarterly payments exceeds the annual costs due from Bourne, any excess shall be credited on the subsequent payments. In the event that the total amount of quarterly

payments is less than the actual annual cost, the difference will be payable by Bourne within thirty (30) days of notice from Wareham.

6.10 Operating and maintenance costs for the use of the sewage treatment plant shall be comprised of semi-fixed costs and flow variable costs. Bourne's user charge shall include its share of semi-fixed costs based on total flow capacity allocation and its share of flow variable costs based on actual use according to the formula defined in Exhibit 5, attached hereto. The total flow capacity allocation for Wareham shall be 1.30 mgd or 86.67% of the total flow and Bourne's total flow capacity allocation shall be 0.20 mgd or 13.33% of the total flow.

6.11 For the purpose of this agreement, the various elements or components of the cost of operation, maintenance and repair shall be defined and categorized as to "semi-fixed" or "flow variable" as follows:

6.11.1 Sewer Enterprise Salaries, which are overall administrative salaries and include, but are not limited to, a portion of the Director of Municipal Maintenance, Town Administrator, Purchasing Agent/Business Manager, Town Accountant, Town Treasurer salaries, are semi-fixed costs. These costs shall be considered as an overhead charge and shall equal 11.0 percent of the total operation and maintenance costs of the sewage treatment plant and the common collection facilities.

6.11.2 Common collection facilities salaries and operating, maintenance and repair expenses are flow variable costs. The total of these costs shall also include an overhead charge as defined herein under Paragraph 6.11.1.

6.11.3 Sewage treatment plant salaries, including overtime, are all semi-fixed costs.

6.11.4 Sewage treatment plant expenses such as telephone, building heat, water, supplies, uniforms, and insurance are semi-fixed costs.

- 6.11.5 Sewage treatment plant expenses such as equipment maintenance costs, gas and oil (for vehicles), electricity and chemicals, are flow variable costs.
- 6.12 Any costs that have not been considered under this article but that may arise in the future, will be designated as semi-fixed or flow variable by the Wareham Board. Bourne shall be notified in writing thirty (30) days prior to being charged.
- 6.13 In the event that Bourne's total average daily wastewater flow entering the common sewage works within any two consecutive quarters exceeds 180,000 gpd, then Bourne shall notify Wareham and define measures that will be taken to manage the quarterly flow increase to keep the total within the total flow capacity allocated to Bourne.
- 6.14 Bourne may reasonable inspect and audit Wareham cost records, at its own expense, relevant to the operation and maintenance of the common sewage works.

ARTICLE 7. MEASUREMENT OF FLOW

- 7.1 Wareham and Bourne both agree that measurement of flow shall be as follows:
- 7.1.1 The volume of flow used in computing the operation and maintenance costs shall be based upon readings obtained by metering equipment approved by Wareham. Metering equipment shall consist of a flow measuring device, continuous flow recorder, and flow totalizer. Such metering equipment shall be installed by Bourne, at no cost to Wareham, within their town boundary. The collection of flow meter readings for the purpose of computing and distributing charges shall be the responsibility of Wareham and/or its authorized agent, and all costs related to the collection of the data and the calculation of the charges shall be a part of the operating costs of the sewage treatment plant. Once a month Bourne will provide Wareham with the wastewater

volume for the preceding month, based upon the meter readings. Wareham shall have access to Bourne's metering equipment at all times.

- 7.1.2 Bourne shall provide metering equipment at its own expense to monitor all wastewater flows from Bourne, which cross town lines and enter the common sewage works. The general arrangement, equipment and physical location of the flow meters shall be subject to Wareham's review and approval prior to any construction. The cost of installing and maintaining the metering equipment shall be at Bourne's expense.
- 7.1.3 Bourne shall acquired a maintenance agreement, subject to Wareham's approval, at its own expense for the purpose of checking the accuracy and reliability of the flow metering equipment twice a year and agrees to keep such equipment functional, operational and accurate. Wareham shall be furnished two (2) certified copies of the results of any test on the equipment and the methods employed.
- 7.1.4 Volume of wastewater from Wareham and Bourne shall be obtained as follows:
 - (a) Bourne's total wastewater volume shall be determined by directly summing the meter readings conducted at each of its pumping stations delivering flow into Wareham.
 - (b) Wareham's wastewater volume at each of the common pump stations (Cohasset Narrows, Dicks Pond, Depot Street shall be determined indirectly by subtracting Bourne's total wastewater volume from the total volume of wastewater measured at each common pump station.
 - (c) Wareham's wastewater volume at the sewage treatment plant shall be determined indirectly by subtracting Bourne's total wastewater volume from the total volume of wastewater measured at the sewage treatment plant.

- 7.1.5 In the event the metering equipment is temporarily out of order or service for any reason, the volume of wastewater will be estimated by Wareham on the basis of past experience or available records.

ARTICLE 8. SAMPLING OF WASTEWATER

- 8.1 Both Wareham and Bourne agree that the determination of character and concentration of wastewater will be in accordance with the latest edition of "Standard Methods for the Examination of Water and Sewage" as proposed, approved and published jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation, unless any other method is mutually agreed upon.
- 8.2 Bourne shall furnish, install, and operate suitable automatic flow proportional (24-hour composite) wastewater samplers as approved by Wareham. A sampler shall be located in each of the pumping stations delivering flow into Wareham.
- 8.3 Wareham shall collect and transport the samples to the Wareham Sewage Treatment Plant. The cost incurred by Wareham in collecting the samples, making the analyses, and calculating and distributing charges shall be a part of the operating costs of the sewage treatment plant.
- 8.4 The sampling and determination of the character and concentration of Bourne's wastewater for the purpose of computing the charges shall be the responsibility of Wareham or its authorized agent. Bourne shall give Wareham full and free access to Bourne's sampling equipment for this purpose. Wareham shall provide a schedule to Bourne detailing said sampling dates. Wareham shall furnish Bourne with copies of all such determinations.
- 8.5 Samples shall be collected by Wareham in such a manner as to be representative of the actual quality of the wastewater. Representative twenty-four (24) hour flow weighted composite samples shall be provided by Bourne at intervals of not more than thirty (30) days. Wareham shall have access to said locations as

required to conduct intermittent or continuous wastewater sampling.

- 8.6 Bourne may, however, conduct its own sampling and analytical program and submit the results relating to the character and concentration of the wastewaters to Wareham. Portions of wastewater samples collected by Bourne as part of a sampling and analytical program shall be made available to Wareham at no cost and in adequate quantities for analysis by Wareham for characteristics and concentrations.
- 8.7 In the event that the sampling equipment is temporarily out of order or service, for any reason, the equipment shall be repaired at Bourne's expense and placed back in operation within a period not to exceed 60 calendar days. Until such time that the permanent equipment is placed back into operation, Bourne shall either substitute portable equipment or manually collect the samples, all at its own cost.
- 8.8 Bourne shall acquire a maintenance agreement, subject to Wareham's approval, at its own expense, for the purpose of checking the accuracy and reliability of the sampling equipment twice a year and agrees to keep such equipment functional, operational and accurate. Wareham shall be furnished two (2) certified copies of the results of any test on the equipment and methods employed.

ARTICLE 9. NOTICE OF CHANGES

- 9.1 Bourne agrees to notify Wareham as far in advance as possible of any anticipated or planned significant increases or decreases in both the quantity and quality of the wastewater to be discharged into the common sewage works. In no case shall Bourne discharge into the common sewage works wastewater exceeding parameters stated in this Agreement without prior written Agreement.

- 9.2 DELETED

ARTICLE 10. PRETREATMENT

- 10.1 Each town reserves the right at any time to pretreat or improve the quality of the wastewater or to otherwise give preliminary treatment to its wastewater prior to discharge to the common sewage works.
- 10.2 In accordance with the Wareham Sewer Use Bylaws, Division V, Wareham may require pretreatment of wastes by individual users. Bourne recognizes and agrees to Wareham's authority to require such pretreatment and agrees to apply it's fully authority or acquire the necessary authority by amending its Sewer Use Ordinance to enforce such requirements. The parties agree that the failure of Bourne to do so shall be considered a material breach of this Agreement.

ARTICLE 11. SEPTAGE

- 11.1 Wareham agrees to accept and treat, at its sewage treatment plant, septage originating from sources within Bourne excluding Otis Air Force Base. All persons operating vacuum or "cesspool" pump trucks desiring to discharge septage to the sewage treatment plant shall first acquire a trucker's discharge permit from Wareham, make payment to Wareham for treatment costs at the rates fixed from time to time by Wareham for such wastes, and shall be subject to the conditions of Wareham's sewer use policy regulating trucker's discharges.
 - 11.1.1 Bourne shall not allow the discharge of sanitary and/or industrial wastes containing heavy metals, cyanide and/or toxicity. All wastes to be discharged must be in accordance with the industrial pretreatment guidelines presently in effect or any, other which may take effect in the future.
 - 11.1.2 Bourne hereby agrees that at no time will it intentionally allow the discharge of any wastewaters which are economically and/or technically more burdensome to treat than those described in this Article 2.
- 11.2 Wareham shall maintain record for such receive septage and make same available to Bourne.

- 11.3 Wareham agrees to accept septage from licensed haulers at a minimum rate of 2,500 gallons per business day except as hereinafter provided in Paragraph 11.4.
- 11.4 Wareham shall have the right to limit the total septage delivered to the sewage treatment plant, allocate capacity for septage handling, or modify or change the allocation as operating conditions require.
- 11.5 Bourne shall require that all septage haulers discharging septage at the Wareham Sewage Treatment Plant originating from sources within Bourne, excluding sources as hereinbefore stated in Paragraph 11.1, obtain a septage handler's permit from the Bourne Board of Health pursuant to G.L. Chapter 111, Section 31A and 310 CMR 15.02(3). Wareham shall have the authority pursuant to 310 CMR 15.19(5) to approve the septage haulers authorized to dispose of septage at the Wareham Sewage Treatment Plant. Bourne shall adopt septage handler regulations, acceptable to Wareham, pursuant to G.L. Chapter 111, Section 31B.

ARTICLE 12. CONTRACT ADMINISTRATION

- 12.1 The responsibility for enforcement and administration of this Agreement for the Town of Wareham shall be assigned to the Wareham Town Administrator. All reports, requests for extensions, permit applications, questions, etc. shall be addressed to the Town Administrator or his designee. Any requests by Bourne concerning the need for additional flow capacity in excess of 200,000 gpd shall be addressed to the Wareham Board.
- 12.2 In the event that a dispute arises regarding the Town Administrator's enforcement of the terms of this Agreement, Bourne may petition the Wareham Board of Selectmen. The petition shall be addressed to the attention of the Wareham Town Administrator, who shall present it to the Wareham Board of Selectmen at its next regularly scheduled meeting. The Wareham and Bourne Boards of Selectmen will attempt to resolve the dispute, however if the matter cannot be resolved, then the

matter shall be resolved as set forth herein under Paragraph 12.3.

12.3 In the event that a controversy or claim exists which arises out of or relates to this Agreement, either party may file a declaratory judgment action in the Superior Court to resolve the dispute.

12.4 No failure or delay in performance shall be deemed to be a breach of this Agreement when such failure or delay is occasioned by or due to any Act of God, strike, lockout, war, riot, epidemic, explosion, sabotage, breakage or accident to machinery or lines or pipe, the binding order of any court or governmental authority, or any other cause whether of the kind herein enumerated or otherwise not within the control of the Party against whom a breach is alleged.

ARTICLE 13. TERMINATION

13.1 For any material breach of this Agreement continued for four (4) months after notice thereof in writing by the other party, either party may terminate this Agreement by giving written notice thereof to the other party with an effective date ninety (90) days after receipt of the notice to terminate.

13.2 The parties have agreed that each of the circumstances set forth in Articles 10.2 and 15.1 shall constitute a material breach of this Agreement. However, the parties acknowledge that no attempt has been made to identify in advance all circumstances constituting a material breach, and each party expressly reserves the right to assert in the future that any other violation of this Agreement may constitute a material breach.

13.3 Upon termination of this Agreement for any material breach caused by Bourne, Bourne shall forfeit its capital contribution as paid in accordance with Article 5.0, and shall be responsible for payment of user charges up to the date that said termination becomes effective.

- 13.4 This Agreement may also be terminated in accordance with the procedures set forth in G.L. Chapter 40, Section 4A. In the event that Bourne is the terminating party, the provisions of Paragraph 13.3 shall apply.

ARTICLE 14. APPROVAL OF EMERGENCY FINANCE BOARD

- 14.1 Before this Agreement becomes effective and binding upon the parties, the terms must be approved by the Commonwealth of Massachusetts Emergency Finance Board pursuant to G.L. Chapter 40, Section 4.



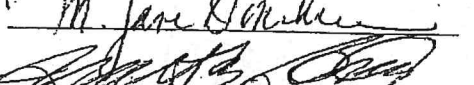
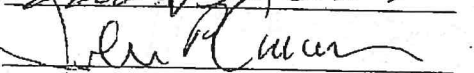
ARTICLE 15. OTHER CONSIDERATIONS

- 15.1 Wareham shall have the right to require Bourne, at Bourne's expense, to take appropriate legal action against any system user to enforce Bourne's Sewer Use Bylaws or to comply otherwise with the terms of the Agreement. However, in the event that Bourne fails to enforce its Sewer Use Bylaws in the manner prescribed in Article 2.3 or fails to require system users in Bourne to comply with this Agreement, Bourne agrees to indemnify Wareham for all costs, including legal fees, which Wareham incurs in requiring users located in Bourne to comply with the terms of this Agreement. The parties agree that the failure of Bourne to enforce its Sewer Use Bylaws or to require system users located in Bourne to comply with the Agreement shall be considered a material breach of this Agreement.
- 15.2 Bourne is to receive advance notice of all meetings of the Wareham Board and Wareham is to receive advance notice of all meetings of the Bourne Board relevant to matters concerning the sewage works.
- 15.3 Bourne will submit to Wareham, for review and approval, the design documents (plans and specifications) for any proposed wastewater facilities to be constructed, which will be used to convey Bourne's wastewater to the common sewage works in Wareham. During the construction phase, Wareham reserves the right to inspect such facilities prior to backfilling.

- 15.4 Wastewater flows and septage from Massachusetts Maritime Academy and Otis Air Force Base are considered excluded from this Agreement.
- 15.5 In accordance with this agreement, the Town of Bourne, subject to written approval from DEP Division of Solid Waste, agrees to allow the disposal of up to 200 tons of inorganic grit and screenings from Wareham at the Bourne sanitary landfill site. There shall be no charge to Wareham for this disposal. Wareham shall be responsible, at its cost, for trucking the material to the Bourne landfill.
- 15.6 DELETED
- 15.7 DELETED
- 15.8 This Agreement may be amended from time to time with the written consent of both participating parties.

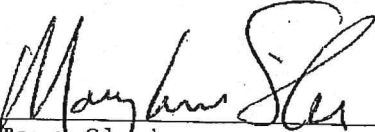
IN WITNESS WHEREOF, the TOWN OF WAREHAM, acting through it's BOARD OF SELECTMEN, and the TOWN OF BOURNE, acting through its BOARD OF SELECTMEN, has each caused this Agreement, and three others of like nature, to be executed, after authorization by their respective Town Meetings, and said Towns have caused their respective seals to be hereto fixed by their respective Town Clerks, and this Agreement shall be construed as an Agreement under seal.

FOR THE TOWN OF
WAREHAM
MASSACHUSETTS
BOARD OF SELECTMEN

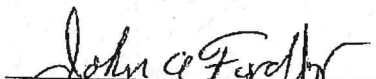




Brenda Elstrom

M. Jane Danahy

John A. Fedy

John A. Fedy

February 23, 2010
DATE

A TRUE COPY ATTEST:


Mary Ann Shea
Town Clerk
Town of Wareham

FOR THE TOWN OF
BOURNE
MASSACHUSETTS
BOARD OF SELECTMEN


John A. Fedy

James Stonacker

Mary Ann Shea

John A. Fedy

January 19, 2010
DATE

A TRUE COPY ATTEST:


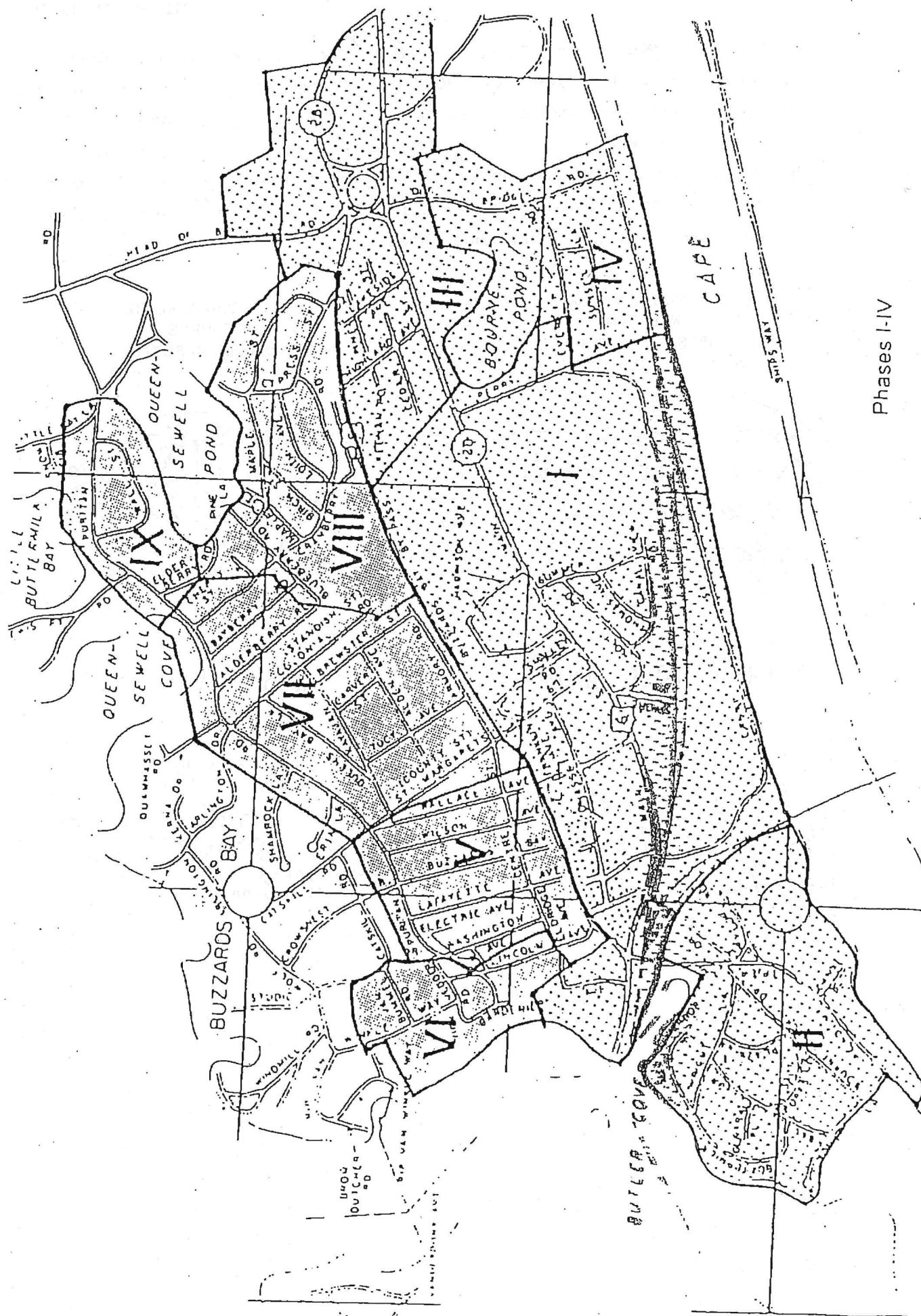

Raymond J. Brown
Town Clerk
Town of Bourne

Figure D-1 SEWER PHASING



Phases I-IV

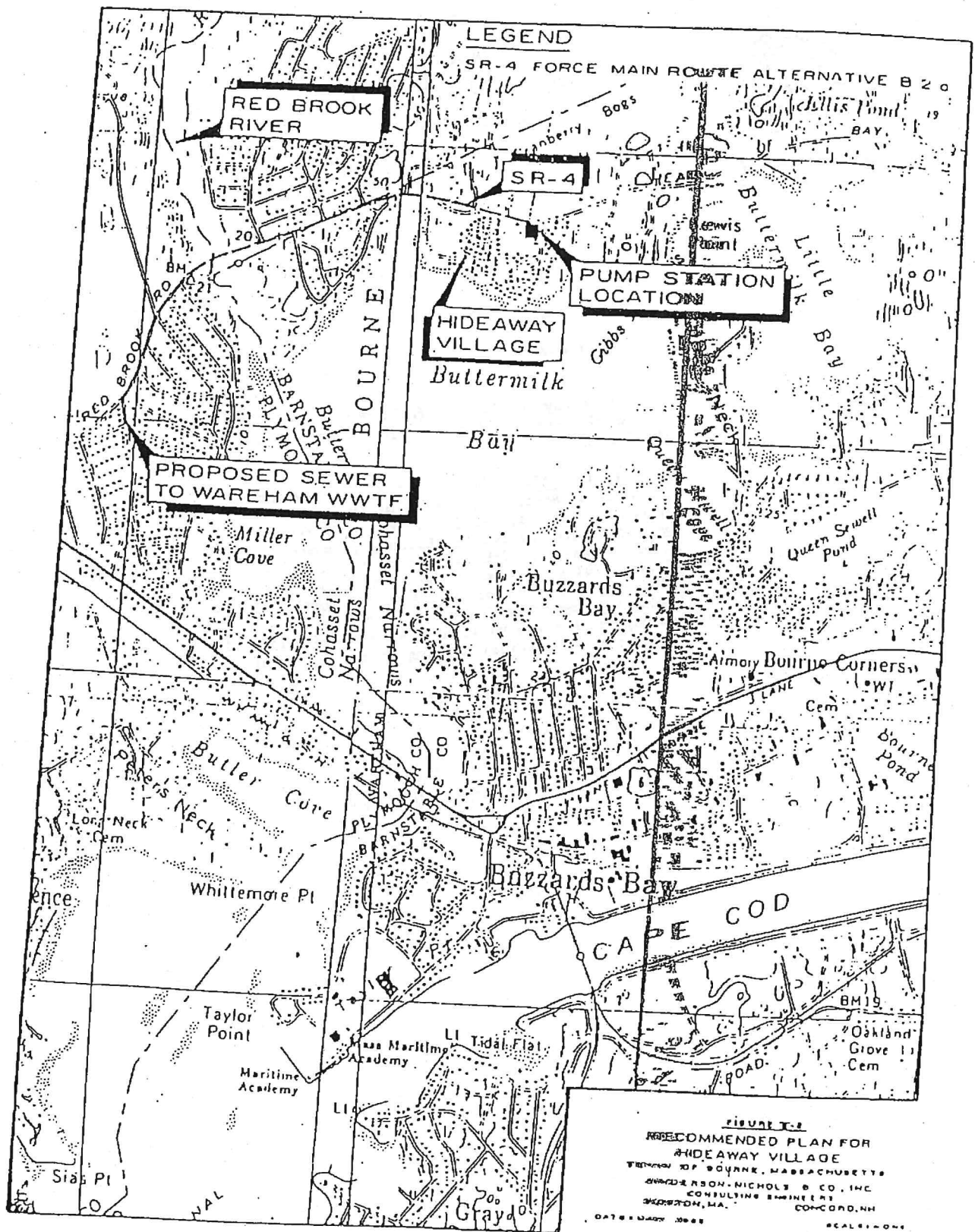


EXHIBIT 2

EXHIBIT 3



Jay K. Montague
TOWN CLERK AND TREASURER

Office of the
TOWN CLERK and TREASURER
WAREHAM, MASS.

October 22, 1987

To Whom It May Concern:

I hereby certify the following vote of the
Town of Wareham Fall Town Meeting held on October
19, 20, and 21, 1987:

Article 41: Voted that the Town authorize
the Board of Selectmen, acting as the Board of
Sewer Commissioners, to enter into an Intermunicipal
Agreement with the Town of Bourne, pursuant to M.G.L.
c.40, s.4 and 4A, with respect to the use by the Town
of Bourne of a portion of the Town of Wareham's
Water Pollution Control Facility, and further that a
public hearing be held and advertised in a local
newspaper; that the whole agreement be advertised in
1987, before the actual signing of the agreement.

(Majority)



Jay K. Montague
Town Clerk



EXHIBIT 3
TOWN OF BOURNE
Town Clerk and Treasurer

Lucia Fulco

The following is a copy of the final vote taken under Article 9:

At a legal meeting of the qualified voters of the Town of Bourne held September 19, 1988, the following business was transacted under Article 9:

ARTICLE 9: To see if the Town will vote to raise and appropriate, borrow or transfer from available funds a sum of money in addition to sums previously appropriated for the same purpose for the purpose of constructing a sewerage system or systems for portions of the Village of Buzzards Bay, for payments to the Town of Wareham for the cost of tie-in of this system to Wareham's existing wastewater treatment facilities, and for costs incidental and related to the project, or take any other action relative thereto.

MOTION: We move that the sum of \$5,208,500.00 is hereby appropriated in addition to sums previously appropriated for the same purpose for constructing a sewerage system for the Buzzards Bay area, for a lump sum payment to the Town of Wareham of the cost of a tie-in of this system to Wareham's sewerage treatment facilities and for costs incidental and related thereto; that to raise this appropriation the Treasurer with the approval of the Selectmen is authorized to borrow the sum of \$5,208,500.00 under and pursuant to Chapter 44, Section 8(15), of the General Laws, or any other enabling authority, and to issue bonds or notes therefor; that the Selectmen are hereby authorized to enter into such agreements with the Town of Wareham as may be appropriate in connection with the project, and that the Selectmen are further authorized to apply for, accept and expend any Federal, State or other grants that may be available for the foregoing purposes, provided that the amount of any bonds or notes issued hereunder shall be reduced by the amount of any such grants that are received prior to the sale of such bonds or notes.

VOTED. Approved by two-thirds vote. 516 Ayes, 11 Nays.

A true copy.
Attest:


Lucia Fulco, Clerk

24 Ferry Avenue
Buzzards Bay, Massachusetts 02532

EXHIBIT 4**WAREHAM, REGIONAL
WATER POLLUTION CONTROL FACILITY**

	<u>Treatment Facility Capacity</u>	<u>Capacity Allocated To Bourne</u>
<u>Flow (Million gal/day)</u>		
Average Wastewater	1.50	0.20
Peak hourly wastewater	4.00	0.62
<u>Biochemical Oxygen Demand (Lbs/day)</u>		
Average wastewater (@250 mg/l)	3,128	417
Average septage (@3000 mg/l)	876	375
Total Average	4,004	792
<u>Suspended Solids (Lbs/day)</u>		
Average wastewater (@ 250 mg/l)	3,128	417
Average septage (@ 10,000 mg/l)	2,919	1,250
Total Average	6,047	1,667

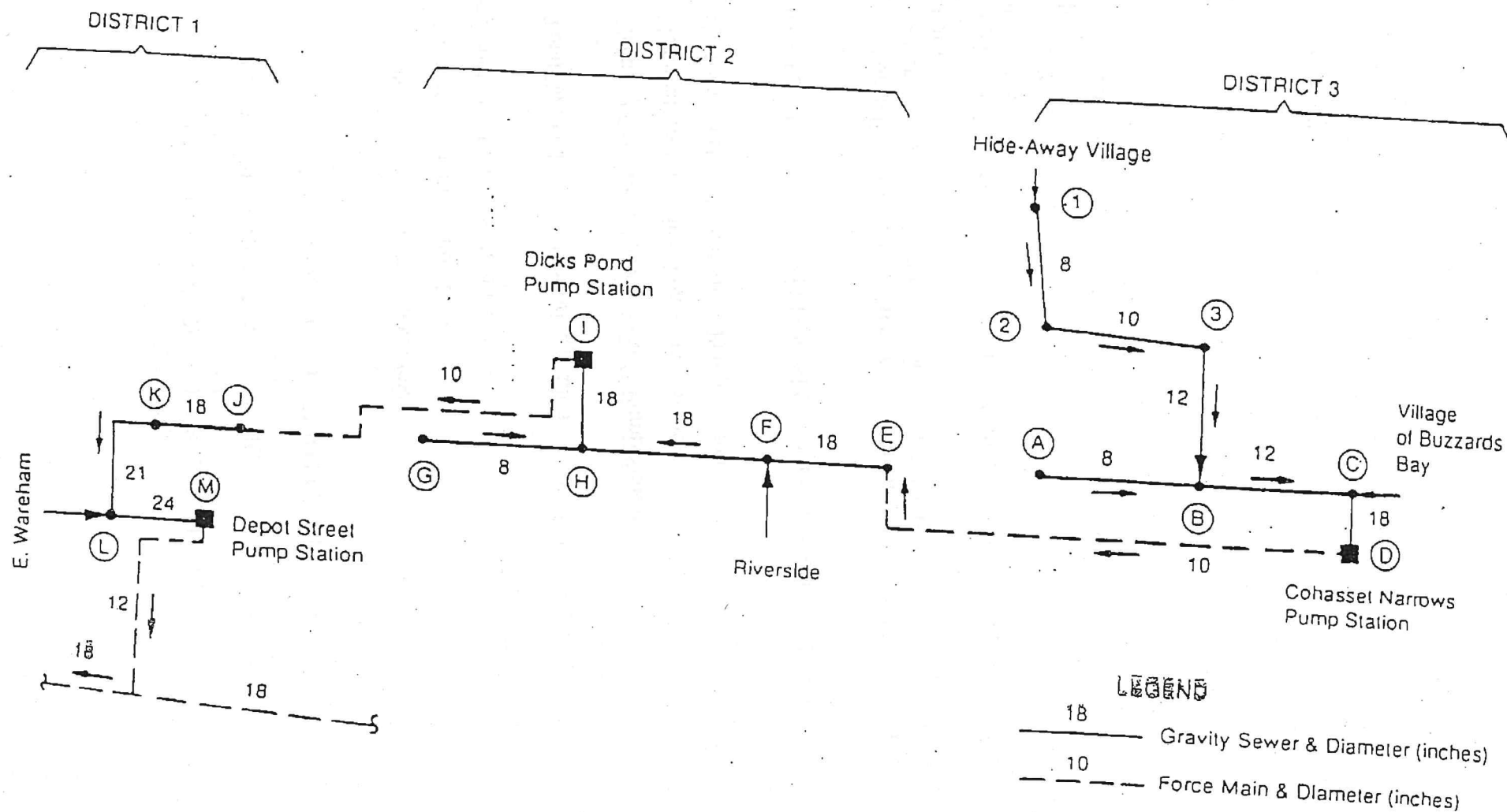


FIGURE 1. SCHEMATIC OF CRANBERRY HIGHWAY SEWER PROJECT

EXHIBIT 5
COMPUTATION OF PROPORTIONATE SHARE
FOR
TOTAL OPERATION, MAINTENANCE, AND REPAIR COST
FOR
COMMON COLLECTION SYSTEM FACILITIES

Q1 = Cohasset Narrows Pump Station Flow

Q2 = Dicks Pond Pump Station Flow

Q3 = Depot Street Pump Station Flow

QBT = Total Bourne Flow = Monitoring Station 1 - Monitoring Station 2

E1 = Electrical Cost for Cohasset Narrows Pump Station

E2 = Electrical Cost for Dicks Pond Pump Station

E3 = Electrical Cost for Depot Street Pump Station

ET = E1 + E2 + E3 = Total Electrical Cost for Common Pump Stations

OMNE = Total operation, maintenance, repair, and administrative cost for the common collection system facilities excluding total electrical cost for common pump stations.

TOM = Total operation, maintenance, repair, and administrative cost for the common collection system facilities.

Electrical Cost - Proportionate Shares:

Electrical Bourne Share =
 $E1 \left(\frac{Q_{BT}}{Q_1} \right) + E2 \left(\frac{Q_{BT}}{Q_2} \right) + E3 \left(\frac{Q_{BT}}{Q_3} \right)$

Electrical Wareham Share =

$E1 \left(\frac{Q_1 - Q_{BT}}{Q_1} \right) + E2 \left(\frac{Q_2 - Q_{BT}}{Q_2} \right) + E3 \left(\frac{Q_3 - Q_{BT}}{Q_3} \right)$

Bourne
has flow
meters

Section
6.1.0

We need to
recalculate

EXHIBIT 5 (Continued)

Operation, Maintenance, and Repair Cost for Common Collection System Facilities
Excluding Total Electrical Cost – Proportionate Shares:

$$\text{OMNE Bourne Share} = \frac{\text{Electrical Bourne Share}}{\text{ET}} \times \text{OMNE}$$

$$\text{OMNE Wareham Share} = \frac{\text{Electrical Wareham Share}}{\text{ET}} \times \text{OMNE}$$

Total Operation, Maintenance, and Repair Cost for Common Collection System
Facilities – Proportionate Shares:

$$\text{TOM Bourne Share} = \text{Electrical Bourne Share} + \text{OMNE Bourne Share}$$

$$\text{TOM Wareham Share} = \text{Electrical Wareham Share} + \text{OMNE Wareham Share}$$

SAMPLE CALCULATION

Assume the following:

$$Q1 = 0.415 \text{ MGD} \quad E1 = \$8,000/\text{yr}$$

$$Q2 = 0.629 \text{ MGD} \quad E2 = \$7,500/\text{yr}$$

$$Q3 = 0.798 \text{ MGD} \quad E3 = \$13,000/\text{yr}$$

$$\begin{aligned} \text{QBT} = 0.181 \text{ MGD} \quad \text{ET} &= \$28,500/\text{yr} \\ \text{O\&M Cost Subtotal} &= \$120,000/\text{yr} \\ \text{Administrative Cost} &= \$13,200/\text{yr} \\ @ 11\% & \end{aligned}$$

Where does this amount come from?

$$\begin{aligned} \text{TOM} &= \$133,200/\text{yr} \\ \text{OMNE} &= \$133,200/\text{yr} - \$28,500/\text{yr} = \$104,700/\text{yr} \end{aligned}$$

EXHIBIT 5 (Continued)

Electrical Cost - Proportionate Shares:

Electrical Bourne Share =

$$\begin{aligned} & \$ 8,000 \left(\frac{0.181 \text{ MGD}}{0.415 \text{ MGD}} \right) + \$ 7,500 \left(\frac{0.181 \text{ MGD}}{0.629 \text{ MGD}} \right) \\ & + \$ 13,000 \left(\frac{0.181 \text{ MGD}}{0.798 \text{ MGD}} \right) \end{aligned}$$

$$\$ 3,489 + \$ 2,158 + \$ 2,949 = \$ 8,596$$

Electrical Wareham Share =

$$\begin{aligned} & \$ 8,000 \left(\frac{0.415 \text{ MGD} - 0.181 \text{ MGD}}{0.415 \text{ MGD}} \right) + \$ 7,500 \left(\frac{0.629 \text{ MGD} - 0.181 \text{ MGD}}{0.629 \text{ MGD}} \right) \\ & + \$ 13,000 \left(\frac{0.798 \text{ MGD} - 0.181 \text{ MGD}}{0.798 \text{ MGD}} \right) \end{aligned}$$

$$\$ 4,511 + \$ 5,342 + \$ 10,051 = \$ 19,904$$

Operation, Maintenance and Repair Cost for Common Collection Systems Facilities
Excluding Total Electrical Cost-Proportionate Shares:

$$\text{OMNE Bourne Share} = \left(\frac{\$ 8,596}{\$ 28,500} \right) \times \$ 104,700 = \$ \underline{31,579}$$

$$\text{OMNE Wareham Share} = \left(\frac{\$ 19,904}{28,500} \right) \times \$ 104,700 = \$ \underline{73,121}$$

Total Operation, Maintenance and Repair Cost for Common Collection Systems
Facilities - Proportionate Shares:

TOM Bourne Share = Electrical Bourne Share + OMNE Bourne Share

$$\$ 8,596 + \$ 31,579 = \$ \underline{40,175}$$

TOM Wareham Share = Electrical Wareham Share + OMNE Wareham Share

$$\$ 19,904 + \$ 73,121 = \$ \underline{93,025}$$

EXHIBIT 6
 Computations of Proportionate Share
 For
 Total Operations, Maintenance, and Repair Cost
 For
 Sewage Treatment Plant

1. Each community shall pay a share of semi-fixed sewage treatment plant operating costs and overall administrative costs based on its total dedicated allocation compared to the total dedicated allocation of the plant for all users. The following formula applies:

$$\text{Bourne User Cost} = 0.1333 \times \text{Total Semi-Fixed Costs} \\ (\text{Semi-Fixed Costs})$$

$$\text{Wareham User Cost} = 0.8667 \times \text{Total Semi-Fixed Costs} \\ (\text{Semi-Fixed Costs})$$

2. Each community shall pay a share of flow variable sewage treatment plant operation costs based on its share of total actual use compared to the total actual use of all users. The following formula applies:

$$\text{Bourne User Cost} = \frac{\text{Bourne Actual Use}}{\text{Total Actual Use}} \times \text{Flow Variable Costs} \\ (\text{Flow Variable Cost})$$

$$\text{Wareham User Cost} = \frac{\text{Wareham Actual Use}}{\text{Total Actual Use}} \times \text{Flow Variable Costs} \\ (\text{Flow Variable Cost})$$

3. Each community shall pay its share of the total operation, maintenance and repair costs for the sewage treatment plant based on the following formula:

$$\text{Bourne Total User Cost} = \text{Bourne Semi-Fixed} + \text{Bourne Flow Variable}$$

$$\text{Wareham Total User Cost} = \text{Wareham Semi-Fixed} + \text{Wareham Flow Variable}$$

4. The communities hereto agree that the proportionate shares for the operation, maintenance, and repair costs for the sewage treatment plant are based on wastewater flows and do not consider, at this time, the strength of the wastewater. However, it shall be agreed by Bourne, That if its wastewater strength in BOD and TSS exceeds its allocated portion shown in Exhibit 4 by more than 10% in any annual average, the formulas shown above in items 1, 2, & 3 shall be revised as mutually agreed to account for both wastewater flow and wastewater strength in BOD and TSS.

EXHIBIT 6 (Continued)
Sample Calculation

Assume the following:

Bourne Actual Flow	=	0.176 MGD
Wareham Actual Flow	=	1.266 MGD
Total Actual Plant Flow	=	1.442 MGD

Revenues from Septage	=	\$100,000
Reimbursement for Chemicals	=	\$ 19,350

Operating and Maintenance Cost for Plant = \$ 432,000 as
Broken down in the following table:

<u>Cost Type</u>	<u>Item Description</u>	<u>Cost</u>
Semi-Fixed	Labor	\$206,000
Semi-Fixed	Utilities (Heating Fuel, Water, Telephone)	12,600
Flow-Variable	Electricity	\$122,000
Semi-Fixed	Materials and Supplies	\$ 17,000
Flow-Variable	Chemicals	\$ 38,000
Flow-Variable	Repair and Maintenance And Vehicle Fuel	\$ 33,200
Semi-Fixed	Miscellaneous (Includes Telemetry and Alarms Contracted Services, Advertising, And Medical Services)	\$ 2,500
<hr/>		<hr/>
	O&M Cost Subtotal	\$ 432,000
Semi-Fixed	Administrative Cost @ 11%	<u>47,520</u>
	Total O&M Cost	\$ 479,520
	Revenues from Septage	<\$100,000>
	Reimbursement – Chemicals	<u><\$ 19,350></u>
	Net O&M Cost	\$ 360, 170
Total Semi-Fixed Costs	= \$285,620	
Total Flow-Variable Costs	= \$193,900	
Net Semi-Fixed Costs =		
$285,620 - \left(\frac{\$285,620}{\$479,520} \times \$100,000 \right) = \underline{\$ 226,056}$		
Net Flow-Variable Costs =		
$193,900 - \$19,350 - \left(\frac{\$193,900}{\$479,520} \times \$100,000 \right) = \underline{\$ 134,114}$		

EXHIBIT 6 (Continued)

Semi-Fixed Cost Shares:

$$\text{Bourne User Cost} = 0.1333 \times \$226,056 = \underline{\$ 30,133}$$

$$\text{Wareham User Cost} = 0.8667 \times \$226,056 = \underline{\$ 195,923}$$

Flow-Variable Cost Shares:

$$\text{Bourne User Cost} = \left(\frac{0.176 \text{ MGD}}{1.442 \text{ MGD}} \right) \times \$134,114 = \underline{\$ 16,369}$$

$$\text{Wareham User Cost} = \left(\frac{1.266 \text{ MGD}}{1.442 \text{ MGD}} \right) \times \$134,114 = \underline{\$ 117,745}$$

Total Cost Shares:

$$\text{Bourne Total User Cost} = \$30,133 + \$16,369 = \underline{\$ 46,502}$$

$$\text{Wareham Total User Cost} = \$195,923 + \$117,745 = \underline{\$ 313,668}$$

Bourne/Wareham IMA Billing Worksheet

Instructions for preparing the Fiscal Year (FY) Billings

General

- 1 Only cells that are highlighted in yellow should have information entered into. All other cells have been locked to prohibit any changes to necessary formulas.
- 2 If any locked information needs to be edited, the sheets must be unlocked. To unlock any of the sheets, first click on the sheet tab to be unlocked, then go to "Tools—Protection—Unprotect Sheet" on the top toolbar and enter password. This will have to be done to each sheet that needs editing to locked cells.
- 3 It is recommended that after unlocking a spreadsheet tab and making any changes, the spreadsheet be re-locked to prohibit any changes to necessary formulas. To re-lock the spreadsheet, first click on the sheet tab to be locked, then go to "Tools—Protection—Protect Sheet" on the top toolbar and enter the password. Again this will have to be done to each sheet that was unlocked and edited.

WPCF Budget Tab

- 1 Enter the fiscal year for the billings in the top left cell C4.
- 2 Enter whether the billings are the "Actual" or "Estimated" for this worksheet iteration in cell E6.
- 3 Enter budget information into the appropriate cells in column E. This sheet has been formatted to match previous Wareham WPCF Budget form. If no like items have been removed or added, data can be copied from the WPCF budget form directly into this sheet.

Cost Allocations Tab

- 1 Enter any revenues from seepage as a negative number or as zero in cell G159.
- 2 Enter any reimbursements from chemicals as a negative number or as zero in cell G161.

Flow Calculations Tab

(for Actual Billings)

- 1 Enter actual monthly flows (gallons per month) for the total Wareham Share and Bourne Share of the flows to the WPCF in cells E11:F22.
- 2 Enter actual monthly flows (gallons per month) for each of the Wareham and Bourne PS's in cells C35:H46.
- 3 Enter actual amount of seepage received (gallons per month) at the WPCF from Wareham, Bourne and other communities in cells D57:F68.

(for Estimated Billings)

- 1 Enter estimated yearly flow (gallons) for the total Wareham Share and Bourne Share of the flows to the WPCF in cells E11 and F11 respectively.
- 2 Enter estimated yearly flows (gallons) for each of the Wareham and Bourne PS's in cells C35 to H35 respectively.
- 3 Enter the estimated amount of seepage received (gallons) at the WPCF from Wareham, Bourne and other communities in cells D57 to F57 respectively.

OM & Repair for Collection System Tab

- 1 Enter monthly electrical cost for the Wareham and Bourne PS's associated with the IMA. NOTE: if monthly electrical cost are not available, leave cells blank and spreadsheet will use total IMA Electrical Costs from budget value entered in "Cost Allocations" sheet divided by the total number of PS's with shared inter-municipal flow (four PS's).

OM & Repair for WPCF Tab

- 1 This spreadsheet tab automatically calculates. No need to enter any information on this sheet.
- 2 If the semi-fixed cost share percent should change in future IMA agreements, these values may be changed accordingly.

Bourne Memo Invoice Tab (Common for Both)

Please note that these tabs were only provided for use in creating billing memos and are not necessary for calculations. All values required for billing are provided on both the "OM & Repair for Collection System" tab and the "OM & Repair for the WPCF" tab. The user may choose to use these values in the billing format used prior to the creation of this spreadsheet if the Invoice Tabs in this spreadsheet are not sufficient for the user.

- 1 Enter appropriate items in the "TO:", "FROM:" and "DATE:" cells.
- 2 Enter any future changes to the amount of agreed upon credit Bourne receives for seepage in cell C43.

(for Estimated Billings)

- 3 Insert current quarter (as Text) that the estimated billing period is for in cell G19 (i.e. enter either 'First' for first quarter, 'Second' for second quarter, 'Third' for third quarter, or 'Fourth' for fourth quarter)
- 4 The Quarterly Billings will be calculated automatically ("Total Estimated Amount Due" divided by 4) in cells H49.

(for Estimated Billings in Second Quarter only)

- 5 Insert amount owed (as positive) or any credits (as negative) for the Town of Bourne based upon the previous FY actual billing calculations in cell H51.
- 6 The Second Quarter Billing will be calculated automatically ("Total Estimated Amount Due" divided by 4, minus/plus any money owned/credits) in cells H53.

(for Actual Billings)

- 3 Insert the Total Amount Paid from the FY Total Estimated Billings in cell H49.
- 4 "Actual Amount Due" in cell H51 will be calculated automatically by subtracting the "Total Paid from Estimated Billing" cell from the "Total Amount Due" cell. A negative number in this cell will denote a credit due the Town of Bourne.

Fiscal Year

FY 0

0.00

060-2405-631-21-11	Electricity
060-2405-631-21-19	Elect. IMA Pump Stations
060-2405-631-21-20	Elect. Non-IMA Stations
060-2405-631-21-21	Elect. Dewatering Plant
060-2405-631-21-22	Pro. Gas Dewatering Plant
060-2405-631-21-25	Natural Gas - IMA
060-2405-631-21-26	Pro. Gas Main Plant
060-2405-631-21-27	Pro. Gas Non IMA
060-2405-631-21-28	Natural-Gas-Non-IMA
060-2405-631-21-41	Natural Gas - MP
060-2405-631-21-42	Natural Gas - Dewater
060-2405-631-23-01	Water
060-2405-631-23-06	Water-IMA Pump Station
060-2405-631-23-07	Water-Non IMA Pump Sta.
060-2405-631-23-08	Water-Dewatering Plant
060-2405-631-24-02	Vehicles
060-2405-631-24-10	Office Equipment
060-2405-631-24-11	Buildings
060-2405-631-24-12	IMA Pump Station
060-2405-631-24-13	Non IMA Pump Station
060-2405-631-24-14	Building Dewatering
060-2405-631-24-15	Equipment
060-2405-631-24-16	Equip. IMA Pump Station
060-2405-631-24-17	Equip. Non-IMA Pump Sta.
060-2405-631-24-18	Equip. Dewatering
060-2405-631-27-06	Equip. Rental Dewatering
060-2405-631-27-07	Equip. Rental Main Plant
060-2405-631-28-01	Main Plant
060-2405-631-28-06	Dewatering Plant
060-2405-631-30-03	Other Professional
060-2405-631-30-04	Contract Services Admin.
060-2405-631-30-08	Contracted Serv. Dewater.
060-2405-631-30-09	NPDES Testing
060-2405-631-30-10	NPDES Testing Dewatering
060-2405-631-32-01	Reimbursement
060-2405-631-32-02	Tuition Other
060-2405-631-34-01	Telephone

060-2405-631-34-02	Printing & Mailing
060-2405-631-34-03	Postage
060-2405-631-34-04	Advertising
060-2405-631-34-06	Advertising Dewatering
060-2405-631-34-07	Postage Dewatering
060-2405-631-34-08	Telemetry & Alarms
060-2405-631-34-09	Telemetry IMA Pump Station
060-2405-631-34-10	Non IMA Stations
060-2405-631-34-13	Cellular
060-2405-631-38-01	Other Purchased Services
060-2405-631-38-03	Medical Services
060-2405-631-38-04	Medical Serv. Dewatering
060-2405-631-38-05	Administrative Expense
060-2405-631-38-15	Sludge Disposal
060-2405-631-38-16	Grit and Screenings
060-2405-631-42-01	All Office Supplies
060-2405-631-42-02	Dewatering
060-2405-631-42-03	Pre-Printed Forms
060-2405-631-42-04	Pre-Printed Forms Dewater
060-2405-631-42-05	Copy Machine-MP
060-2405-631-42-06	Copy Machine-Dewater
060-2405-631-46-07	Gasoline
060-2405-631-46-08	Gasoline Dewatering
060-2405-631-46-09	Diesel IMA
060-2405-631-46-10	Diesel Non IMA
060-2405-631-46-11	Diesel
060-2405-631-46-12	Diesel Dewatering
060-2405-631-47-01	Chemicals
060-2405-631-47-02	Chemicals Dewatering
060-2405-631-47-04	Reimbursement Protec.ltm
060-2405-631-47-05	Operating Supplies
060-2405-631-47-06	Operating Supp.Dewater
060-2405-631-47-07	Laboratory Supplies
060-2405-631-47-08	Laboratory Supp. Dewater
060-2405-631-47-09	Protective Clothing
060-2405-631-47-10	Protec. Cloth. Dewatering
060-2405-631-47-11	Chemicals-IMA
060-2405-631-47-12	Chemicals-Non-IMA
060-2405-631-47-13	Operating Supplies-IMA
060-2405-631-47-14	Operat Supplies-Non-IMA
060-2405-631-58-09	Books & Subscriptions
060-2405-631-61-01	Travel/Conferences
060-2405-631-61-02	Conferences-DELETED FY09
060-2405-631-65-01	Dues
060-2405-631-65-02	Dues/Prof. Organ Dewater.
060-2405-631-85-07	WPCF Equipment
060-2405-631-85-08	Data Processing
060-2405-631-85-09	Spare Parts
060-2405-631-85-10	Spare Parts Dewatering
060-2405-631-85-11	Lease / Purchase
060-2405-631-85-12	Equipment Replacement
060-2405-631-85-13	Equip Replace. Dewatering

[illegible]

[illegible][illegible]

WPCF TOTAL

Bourne/Wareham IMA Cost Allocations

Water Pollution Control Facility

Fiscal Year 0

	FY 0 0	WPCF Cost		PS Cost
		Semi-Fixed	Flow Variable	Flow Variable
060-2405-631-11-01 Regular	\$0	\$0		
060-2405-631-11-04 Overtime	\$0	\$0		
060-2405-631-11-07 Longevity	\$0	\$0		
060-2405-631-11-24 Regular Pay Dewatering	\$0	\$0		
060-2405-631-11-25 Overtime Dewatering	\$0	\$0		
060-2405-631-11-27 On-Call Wages	\$0	\$0		
TOTAL SALARIES	\$0	\$0		
Fringes & Benefits (40% of total wages)		\$0		
Grand Total Labor		\$0		
LABOR FOR COMMON FACILITIES (80% of Grand Total Labor)		\$0		
060-2405-631-21-11 Electricity	\$0		\$0	
060-2405-631-21-19 Elect. IMA Pump Stations	\$0			\$0
060-2405-631-21-20 Elect. Non-IMA Stations				
060-2405-631-21-21 Elect. Dewatering Plant	\$0		\$0	
060-2405-631-21-22 Pro. Gas Dewatering Plant	\$0	\$0		
060-2405-631-21-25 Natural Gas - IMA	\$0			\$0
060-2405-631-21-26 Pro. Gas Main Plant	\$0	\$0		
060-2405-631-21-27 Pro. Gas Non-IMA				
060-2405-631-21-28 Natural Gas Non-IMA				
060-2405-631-21-41 Natural Gas - MP	\$0	\$0		
060-2405-631-21-42 Natural Gas - Dewater	\$0	\$0		
060-2405-631-23-01 Water	\$0	\$0		
060-2405-631-23-06 Water-IMA Pump Station	\$0			\$0
060-2405-631-23-07 Water-Non-IMA Pump Sta.				
060-2405-631-23-08 Water-Dewatering Plant	\$0	\$0		
060-2405-631-24-02 Vehicles	\$0		\$0	
060-2405-631-24-10 Office Equipment	\$0	\$0		
060-2405-631-24-11 Buildings	\$0		\$0	
060-2405-631-24-12 IMA Pump Station	\$0			\$0
060-2405-631-24-13 Non-IMA Pump Station				
060-2405-631-24-14 Building Dewatering	\$0		\$0	
060-2405-631-24-15 Equipment	\$0		\$0	
060-2405-631-24-16 Equip. IMA Pump Station	\$0			\$0
060-2405-631-24-17 Equip. Non-IMA Pump Sta.				
060-2405-631-24-18 Equip. Dewatering	\$0		\$0	
060-2405-631-27-06 Equip. Rental Dewatering	\$0		\$0	
060-2405-631-27-07 Equip. Rental Main Plant	\$0		\$0	
060-2405-631-28-01 Main Plant	\$0	\$0		
060-2405-631-28-06 Dewatering Plant	\$0	\$0		
060-2405-631-30-03 Other Professional				
060-2405-631-30-04 Contract Services Admin.	\$0	\$0		
060-2405-631-30-08 Contracted Serv. Dewater.	\$0	\$0		
060-2405-631-30-09 NPDES Testing	\$0	\$0		
060-2405-631-30-10 NPDES Testing Dewatering	\$0	\$0		
060-2405-631-32-01 Reimbursement				
060-2405-631-32-02 Tuition Other	\$0	\$0		
060-2405-631-34-01 Telephone	\$0	\$0		
060-2405-631-34-02 Printing & Mailing	\$0	\$0		
060-2405-631-34-03 Postage	\$0	\$0		
060-2405-631-34-04 Advertising	\$0	\$0		
060-2405-631-34-06 Advertising Dewatering	\$0	\$0		
060-2405-631-34-07 Postage Dewatering	\$0	\$0		
060-2405-631-34-08 Telemetry & Alarms	\$0	\$0		

Bourne/Wareham IMA Cost Allocations

Water Pollution Control Facility

Fiscal Year 0

	FY 0 0	WPCF Cost		PS Cost
		Semi-Fixed	Flow Variable	Flow Variable
060-2405-631-34-09 Telemetry IMA Pump Station	\$0			\$0
060-2405-631-34-10 Non-IMA Stations				
060-2405-631-34-13 Cellular	\$0	\$0		
060-2405-631-38-01 Other Purchased Services	\$0	\$0		
060-2405-631-38-03 Medical Services	\$0	\$0		
060-2405-631-38-04 Medical Serv. Dewatering	\$0	\$0		
060-2405-631-38-05 Administrative Expense				
060-2405-631-38-15 Sludge Disposal	\$0		\$0	
060-2405-631-38-16 Grit and Screenings	\$0	\$0		
060-2405-631-42-01 All Office Supplies	\$0	\$0		
060-2405-631-42-02 Dewatering	\$0	\$0		
060-2405-631-42-03 Pre-Printed Forms	\$0	\$0		
060-2405-631-42-04 Pre-Printed Forms Dewater	\$0	\$0		
060-2405-631-42-05 Copy Machine-MP	\$0	\$0		
060-2405-631-42-06 Copy Machine-Dewater	\$0	\$0		
060-2405-631-46-07 Gasoline	\$0		\$0	
060-2405-631-46-08 Gasoline Dewatering	\$0		\$0	
060-2405-631-46-09 Diesel IMA	\$0			\$0
060-2405-631-46-10 Diesel Non-IMA				
060-2405-631-46-11 Diesel	\$0		\$0	
060-2405-631-46-12 Diesel Dewatering	\$0		\$0	
060-2405-631-47-01 Chemicals	\$0		\$0	
060-2405-631-47-02 Chemicals Dewatering	\$0		\$0	
060-2405-631-47-04 Reimbursement Protec.Itm	\$0	\$0		
060-2405-631-47-05 Operating Supplies	\$0	\$0		
060-2405-631-47-06 Operating Supp.Dewater	\$0	\$0		
060-2405-631-47-07 Laboratory Supplies	\$0	\$0		
060-2405-631-47-08 Laboratory Supp. Dewater	\$0	\$0		
060-2405-631-47-09 Protective Clothing	\$0	\$0		
060-2405-631-47-10 Protec. Cloth. Dewatering	\$0	\$0		
060-2405-631-47-11 Chemicals-IMA	\$0			\$0
060-2405-631-47-12 Chemicals Non-IMA				
060-2405-631-47-13 Operating Supplies-IMA	\$0			\$0
060-2405-631-47-14 Operat-Supplies-Non-IMA				
060-2405-631-58-09 Books & Subscriptions	\$0	\$0		
060-2405-631-61-01 Travel/Conferences	\$0	\$0		
060-2405-631-61-02 Conferences-DELETED FY09				
060-2405-631-65-01 Dues	\$0	\$0		
060-2405-631-65-02 Dues/Prof. Organ Dewater.	\$0	\$0		
060-2405-631-85-07 WPCF Equipment	\$0	\$0		
060-2405-631-85-08 Data Processing	\$0	\$0		
060-2405-631-85-09 Spare Parts	\$0	\$0		
060-2405-631-85-10 Spare Parts Dewatering	\$0	\$0		
060-2405-631-85-11 Lease / Purchase	\$0	\$0		
060-2405-631-85-12 Equipment Replacement	\$0	\$0		
060-2405-631-85-13 Equip Replace. Dewatering	\$0	\$0		
060-2405-631-85-14 Equip. Replacement IMA	\$0			\$0
060-2405-631-85-15 Equip-Replace Non-IMA				
060-2405-631-85-17 Equipment Dewatering	\$0	\$0		
060-2405-631-85-18 Equipment New-IMA	\$0			\$0
060-2405-631-85-19 Equipment New-Non-IMA				
060-2405-631-85-20 Equip. Spare Parts-IMA	\$0			\$0
060-2405-631-85-22 Equip. Spare Parts-Non-IMA				
060-2405-631-86-00 Reserve Account	\$0	\$0		
060-2405-631-89-01 WPCF Capital Additions	\$0	\$0		
060-2405-631-91-01 Principle on Debt				
060-2405-631-92-01 Long-Term Interest				

Fiscal Year 0

	FY 0 0	WPCF Cost		PS Cost
		Semi-Fixed	Flow Variable	Flow Variable
-060-2405-631-92-02 Short-Term-Interest				
TOTAL EXPENSES	\$0	\$0	\$0	\$0
-060-2405-631-93-23 capital-outlay-ftm03-art4				
-060-2405-631-93-24 capital-outlay-ftm-art3				
-060-2405-631-93-25 pumping-station-des/const				
-060-2405-631-93-26 Infiltration/inflow-study				
-060-2405-631-93-27 Flow-Meters				
-060-2405-631-93-28 capital-outlay-stm 10/00				
-060-2405-631-93-29 Sewer-88-1-4-&5				
-060-2405-631-93-30 Sewer-88-5				
-060-2405-631-93-31 Sewer-Feas.-MWPAT-95-31				
-060-2405-631-93-32 O.H. Riverside construct.				
-060-2405-631-93-33 Rep.Pump-Stat.at31-atm4/3				
-060-2405-631-93-34 Rose-Pl-design-19-10/93				
-060-2405-631-93-60 Remove-Storage-Tanks				
-060-2405-631-93-65 Sewer-Capital-Projects				
-060-2405-631-93-68 design-engineer-(272,000)				
-060-2405-631-93-69 Construction-Webanilt-Shr				
-060-2405-631-93-72 upgrade-facil. Art-16-stm				
-060-2405-631-93-75 upgrade-facility-construct				
-060-2405-631-93-76 Rose-pt/Bria-bch/Bver-dam				
-060-2405-631-93-77 Design-Webanilt-Sh-4/27/92				
-060-2405-631-93-78 Design-Sunset-Is-4/27/92				
-060-2405-631-93-80 art24-4/97-Generators				
-060-2405-631-93-83 River-Testing-Program				
-060-2405-631-93-84 Inflow-&Infiltration-sty				
-060-2405-631-93-86 paving-&Var.Frequ.Pumps				
-060-2405-631-93-88 Thatcher-Lane/Cranberry-h				
-060-2405-631-93-89 Construct-Sunset-Island-				
-060-2405-631-93-92 Bobcat-/Flowmeter				
SPECIAL ARTICLES TOTAL	\$0			
TOTAL	\$0	\$0	\$0	\$0
		WPCF	Common PS	
O&M Cost Subtotal		\$0	\$0	
Administrative Salaries (11% of WPCF O&M Subtotal)		\$0		
Revenues from Septage				
Reimbursement- Chemicals				
Net Total O&M Cost (Semi-fixed & Flow Variable)		\$0.00		

Common Collection System Flows

Fiscal Year 0

Water Pollution Control Facility

0.00 Wastewater Flow
(based on previous FY total)

(NOTE: for estimated flows just enter est. yearly total flow in July cell)

Month	Year	Total WPCF	Wareham Share	Bourne Share	
July	-1	0			gallons per month
August	-1	0			gallons per month
September	-1	0			gallons per month
October	-1	0			gallons per month
November	-1	0			gallons per month
December	-1	0			gallons per month
January	0	0			gallons per month
February	0	0			gallons per month
March	0	0			gallons per month
April	0	0			gallons per month
May	0	0			gallons per month
June	0	0			gallons per month
Total		0	0	0	gallons per month

Wastewater Pump Stations

0.00 Wastewater Pump Station Flows
(based on previous FY total)

(NOTE: for estimated flows just enter est. yearly total flow in July cell)

Month	Year	Wareham Pump Stations				Bourne Pump Stations		
		Cohasset Narrows PS	Dick's Pond PS	Depot Street PS	Hynes Field PS	Main Street PS	Hideaway Village PS	
July	-1							gallons per month
August	-1							gallons per month
September	-1							gallons per month
October	-1							gallons per month
November	-1							gallons per month
December	-1							gallons per month
January	0							gallons per month
February	0							gallons per month
March	0							gallons per month
April	0							gallons per month
May	0							gallons per month
June	0							gallons per month
Total		0	0	0	0	0	0	gallons per year

Septage Received at WPCF

0.00 Septage Received at WPCF
(based on previous FY total)

(NOTE: for estimated septage just enter est. yearly total septage received in July cell)

Month	Year	Total Septage at WPCF	Septage from Wareham	Septage from Bourne	Septage from Other Towns	
July	-1	0				gallons per month
August	-1	0				gallons per month
September	-1	0				gallons per month
October	-1	0				gallons per month
November	-1	0				gallons per month
December	-1	0				gallons per month
January	0	0				gallons per month
February	0	0				gallons per month
March	0	0				gallons per month
April	0	0				gallons per month
May	0	0				gallons per month
June	0	0				gallons per month
Total		0	0	0	0	gallons per month

Fiscal Year 0

Q ₁	=	Cohasset Narrows Pump Station Flow	=	0	gallons per year
Q ₂	=	Dicks Pond Pump Station Flow	=	0	gallons per year
Q ₃	=	Depot Street Pump Station Flow	=	0	gallons per year
Q ₄	=	Hynes Field Pump Station Flow	=	0	gallons per year
Q _{BT}	=	Total Bourne Flow (Monitoring Station 1 + Monitoring Station 2)	=	0	gallons per year
E1	=	Electrical Cost for Cohasset Narrows Pump Station	=	\$0	per year
E2	=	Electrical Cost for Dicks Pond Pump Station	=	\$0	per year
E3	=	Electrical Cost for Depot Street Pump Station	=	\$0	per year
E4	=	Electrical Cost for Hynes Field Pump Station	=	\$0	per year
ET	=	E1+E2+E3+E4 = Total Elec. Cost for Common Pump Stations	=	\$0.00	per year

060-2405-831-21-19 Elect. IMA Pump Stations Calculation of Actual Cost Breakdowns					
Electrical Costs for IMA Pump Stations					
Month	Year	Cohasset Narrows PS E1	Dick's Pond PS E2	Depot Street PS E3	Hynes Field PS E4
		NSTAR	NSTAR	NSTAR	ConEd
July	-1				
August	-1				
September	-1				
October	-1				
November	-1				
December	-1				
January	0				
February	0				
March	0				
April	0				
May	0				
June	0				
Total	FY 0	\$0.00	\$0.00	\$0.00	\$0.00

OM _{ex}	=	Total operation, maintenance, repair and administrative cost for the common collection system facilities excluding total electrical cost for common pump stations.	=	\$0.00
TOM	=	Total operation, maintenance, repair and administrative cost for the common collection system facilities.	=	\$0.00

Electrical Cost - Proportionate Shares

Electrical Bourne Share =

$$\begin{array}{ccccccc}
 E1 & \left[\frac{Q_{BT}}{Q_1} \right] & + & E2 & \left[\frac{Q_{BT}}{Q_2} \right] & + & E3 & \left[\frac{Q_{BT}}{Q_3} \right] & + & E4 & \left[\frac{Q_{BT}}{Q_3 + Q_4} \right] \\
 \$0 & \left[\frac{0}{0} \right] & + & \$0 & \left[\frac{0}{0} \right] & + & \$0 & \left[\frac{0}{0} \right] & + & \$0 & \left[\frac{0}{0 + 0} \right] \\
 \#DIV/0! & & + & \#DIV/0! & & + & \#DIV/0! & & + & \#DIV/0! & \\
 \text{Electrical Bourne Share} & & = & & & & \#DIV/0! & & & &
 \end{array}$$

Electrical Wareham Share =

$$\begin{array}{ccccccc}
 E1 & \left[\frac{Q_1 - Q_{BT}}{Q_1} \right] & + & E2 & \left[\frac{Q_2 - Q_{BT}}{Q_2} \right] & + & E3 & \left[\frac{Q_3 - Q_{BT}}{Q_3} \right] & + & E4 & \left[\frac{Q_4 + Q_3 - Q_{BT}}{Q_3 + Q_4} \right] \\
 \$0 & \left[\frac{0 - 0}{0} \right] & + & \$0 & \left[\frac{0 - 0}{0} \right] & + & \$0 & \left[\frac{0 - 0}{0} \right] & + & \$0 & \left[\frac{0 + 0 - 0}{0 + 0} \right] \\
 \#DIV/0! & & + & \#DIV/0! & & + & \#DIV/0! & & + & \#DIV/0! & \\
 \text{Electrical Wareham Share} & & = & & & & \#DIV/0! & & & &
 \end{array}$$

Operation, Maintenance and Repair of Common Collection System Facilities - Proportionate Shares

Operation, maintenance, repair and administrative cost for the common collection system facilities excluding total electrical cost for common pump stations

$$\begin{array}{llll}
 OM_{NE} & \text{(Bourne Share)} & = & \left[\frac{\text{Electrical Bourne Share}}{E_T} \right] OM_{NE}(\text{Total}) \\
 OM_{NE} & \text{(Bourne Share)} & = & \left[\frac{\#DIV/0!}{\$0.00} \right] \$0.00 \\
 OM_{NE} & \text{(Bourne Share)} & = & \#DIV/0!
 \end{array}$$

Total operation, maintenance, repair and administrative cost for the common collection system facilities.

$$\begin{array}{llll}
 TOM \text{ (Bourne Share)} & = & \text{Electrical Bourne Share} & + \quad OM_{NE} \text{ (Bourne Share)} \\
 TOM \text{ (Bourne Share)} & = & \#DIV/0! & + \quad \#DIV/0! \\
 TOM \text{ (Bourne Share)} & = & \#DIV/0! & \\
 TOM \text{ (Wareham Share)} & = & \text{Electrical Wareham Share} & + \left[OM_{NE}(\text{Total}) - OM_{NE} \text{ (Bourne Share)} \right] \\
 TOM \text{ (Wareham Share)} & = & \#DIV/0! & + \left[\$0.00 - \#DIV/0! \right] \\
 TOM \text{ (Wareham Share)} & = & \#DIV/0! &
 \end{array}$$

Fiscal Year 0

Total of WPCF Semi-Fixed Cost	\$0.00
Total of WPCF Flow Variable Cost	\$0.00
WPCF O&M Cost Subtotal	\$0.00
Administrative Salaries (11% of WPCF O&M Subtotal)	\$0.00
Total O&M Cost	\$0.00
Revenues from Septage	\$0.00
Reimbursement- Chemicals	\$0.00
Net Total O&M Cost (Semi-fixed & Flow Variable)	\$0.00
Total Semi-fixed Costs (No revenue deductions)	\$0.00
Total Flow Variable Costs (No revenue deductions)	\$0.00
Net Semi-fixed Costs (deduct proportion of revenues)	#DIV/0!
Net Flow Variable Costs (deduct proportion of revenues)	#DIV/0!
<u>Semi-fixed Cost Allocations</u>	
Bourne User Cost Share Percent	13.33%
Bourne User Cost Share (Bourne % of WPCF Net Semi-fixed Costs)	#DIV/0!
Wareham User Cost Share Percent	86.67%
Wareham User Cost Share (Wareham % of WPCF Net Semi-fixed Costs)	#DIV/0!
<u>Flow Variable Cost Allocations</u>	
Bourne Flow	0 mgd
Wareham Flow	0 mgd
Total Flow	0 mgd
Bourne User Cost	#DIV/0!
Wareham User Cost	#DIV/0!
<u>Total Cost Allocation</u>	
Bourne	#DIV/0!
Wareham	#DIV/0!

Ref #	Note
A	(from 'Cost Allocation' spreadsheet)
B	(from 'Cost Allocation' spreadsheet)
C	(A + B)
D	(0.11 x C)
E	(C + D)
F	(From Wareham WWTF)
G	(From Wareham WWTF)
H	(E + F + G)
I	(A + D)
J	(E - I)
K	(I + {(I / E) x F})
L	(J + G + {(J / E) x F})
M	(From IMA)
N	(K x M)
O	(From IMA)
P	(K x O)
Q	(From 'Flow Calculation' spreadsheet)
R	(From 'Flow Calculation' spreadsheet)
S	(Q + R)
T	(L x Q / S)
U	(L x R / S)
V	(N + T)
W	(P + U)



WAREHAM WATER POLLUTION CONTROL FACILITY
6 TONY'S LANE
WAREHAM, MASSACHUSETTS 02571
TELEPHONE (508) 295-6144
FAX (508) 291-0155

Memorandum

TO:

FROM:

DATE:

CC:

RE: FY 0 0 Bourne Sewer Usage Billing - IMA

Please accept the following information as the final cost allocation for FY 0 for Bourne usage for this period.

The costs breakdown is as follows:

FY 0 0 Total Sewer Usage Billing -

Total Cost - Treatment Plant \$0.00

Total Cost - IMA Pumping Stations & Collection System + \$0.00

Total Cost \$0.00

FY 0 0 Bourne Sewer Usage Billing -

Bourne Total Cost Share - Treatment Plant #DIV/0!

Bourne Total Cost Share - Pumping Stations/Collection System + #DIV/0!

Bourne Total Cost Share #DIV/0!

FY 0 0 Septage Credit

0 gallons of Bourne septage received at
\$0.01 per gallon of septage - \$0.00

TOTAL AMOUNT DUE #DIV/0!

TOTAL PAID FROM FY ESTIMATED BILLINGS

ACTUAL AMOUNT DUE (Negative means credit)

Please forward payment to the attention of the Town Treasurer/Collector,
54 Marion Road, Wareham, MA 02571



WAREHAM WATER POLLUTION CONTROL FACILITY

6 TONY'S LANE
WAREHAM, MASSACHUSETTS 02571
TELEPHONE (508) 295-6144
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The costs breakdown is as follows:

FY 0 0 Total Sewer Usage Billing -

Total Cost - Treatment Plant	\$0.00
------------------------------	--------

Total Cost - IMA Pumping Stations & Collection System	+	\$0.00
---	---	--------

Total Cost	\$0.00
-------------------	---------------

FY 0 0 Bourne Sewer Usage Billing -

Bourne Total Cost Share - Treatment Plant	#DIV/0!
---	---------

Bourne Total Cost Share - Pumping Stations/Collection System	+	#DIV/0!
--	---	---------

Bourne Total Cost Share	#DIV/0!
--------------------------------	----------------

FY 0 0 Septage Credit

0 gallons of Bourne septage received at \$0.01 per gallon of septage	-	\$0.00
---	---	--------

ESTIMATED AMOUNT DUE	#DIV/0!
-----------------------------	----------------

0 Quarter Due

Please forward payment to the attention of the Town Treasurer/Collector,
54 Marion Road, Wareham, MA 02571



TOWN OF WAREHAM
54 Marion Road
Wareham, Massachusetts 02571

Derek D. Sullivan
Town Administrator
(508) 291-3100, ext. 3110
(508) 291-3124 Fax
dsullivan@wareham.ma.us

June 11, 2019

Thomas M. Guerino, Town Administrator
Bourne Town Hall
24 Perry Avenue, Room 101
Buzzards Bay, MA 02532

Dear Administrator Guerino:

This letter is to serve as a memorialization of settlement between the Town of Wareham and the Town of Bourne.

Whereas, section 12.1 of the IMA the Wareham Town Administrator is charged with enforcement and administration of the contract;

Whereas, a multi fiscal year dispute has arisen between Bourne and Wareham regarding the IMA billing and both communities have hired outside contractors that have further divided said dispute;

Whereas, both communities wish to mitigate the costs associated with performing and hiring outside contractors to perform a multiyear audit of the IMA billings;

Whereas, both parties wish to continue the beneficial relationship and wish to have a mutually agreeable resolution.

Now, therefore, in consideration of mutual promises, the parties agree as follows:

1. The Town of Wareham shall consider the 213,000 received in FY19 to be credited as an in-full payment for FY 2019, in completely satisfies FY19 billing by the Town of Wareham. The 3rd Quarter FY17 remaining balance of \$31,800.07 is hereby waived.
2. The Town of Wareham shall not perform the Fiscal Year 2019 end of year, also known as the 5th quarter, true up and shall not assess or credit Bourne any additional monies for FY19.
3. Bourne shall now and until the end of time waive any claims of overbilling and Wareham, outside of this agreement, shall have no obligation to credit Bourne for Fiscal Year 2019 or any other prior fiscal year.
4. After the signing of this agreement both parties per section 3.1 of the IMA, shall set a date to meet for the five-year review.

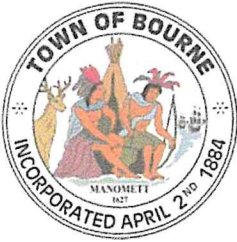
5. Until there is an agreed upon resolution to the question of proper billing the Town of Wareham shall beginning in FY2020 (outside of the \$188,477.53 debt payments for the plant upgrade) bill Bourne \$400,000. Subsequent bills shall be increased by 2.5% until the agreed upon resolution.
6. The above agreement shall have no effect on the required annual septage credit due to the Town of Bourne annually. The current rate for septage credit shall remain in effect during the recognition of the IMA between the two communities.

Regards,

Derek Sullivan
Town Administrator

CC:
Wareham Board of Selectmen
Wareham Sewer Commissioners
John Foster, Wareham Finance Director
Guy Campinha, WPCF Director

RECEIVED
AUG 29 2019
TOWN OF BOURNE
BOARD OF SELECTMEN



TOWN OF BOURNE

Town Administrator

24 Perry Avenue – Room 101
Buzzards Bay, MA 02532
www.townofbourne.com
508.759.0600, Ext. 1308



Anthony Schiavi, Town Administrator
Email: aschiavi@townofbourne.com

December 23, 2020

VIA First Class Mail

To: Mr. John MacPherson
Cape Cod Canal Manager
Cape Cod Canal Field Office
P.O. Box 1555
Buzzards Bay, MA 02532

Subject: Plan to abandon the Savary Ave. Community Septic System

Dear Mr. MacPherson,

1. As you are aware, the Army Corps of Engineers (ACOE) granted the Town of Bourne an easement (ACOE Easement DACW33-2-288) over land owned by the ACOE for the purpose of a community septic system servicing 13 houses located on Savary Ave in the Town of Bourne. This easement is further described in Deed Book 6048, page 224 at the Barnstable County Registry of Deeds with a term of 50 years. On or about October 1, 2018, the Community Sewage Disposal System was determined to be a failed system pursuant to Title 5 of the State of Massachusetts Environmental Code, 310 CMR 15.303.
2. Between October 2018 and the Spring of 2020, all properties which were served by this system have since installed private onsite septic systems on their properties and the Town operated Community Sewage Disposal System is no longer in operation.
3. It is now the desire of the Town of Bourne to abandon this system in accordance with 310 CMR 15.354(3). Within the 6,523 +/- square foot easement, there is an existing 9,000 gallon septic tank, 1,535 gallon syphon tank, distribution box, and a leaching facility comprised of a PVC and stone trench system with a vent. Upon approval by the Bourne Board of Health and the USACOE, the septic tank, syphon tank, and distribution box will be pumped entirely of their contents by a licensed septage hauler. The bottom of the precast components will be ruptured and the components will be completely filled with clean sand or other suitable material. The PVC vent will be removed, and the leaching facility will be abandoned in place. The site will then be graded, loamed, and seeded to restore it to its original condition. The easement would then be relinquished by the Town once the above mentioned code requirements will have been met.

4. The town understands that it will be responsible for funding the tasks outlined in paragraph three (3) above. Although these are very difficult times, we hope that the ACOE will approve the manner in which we wish to leave the site as the most financially economical one and environmentally safe in accordance with generally accepted practice and state regulations.

Respectfully,

Anthony E. Schiavi
Anthony Schiavi
Town Administrator

cc: Bourne Board of Sewer Commissioners
Bourne Board of Health
Terri Guarino, Health Agent



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

July 22, 2021

BOURNE BD OF SELECTMEN
ROUD 2021 JUL 29 AM 11:18

Mr. Anthony Schiavi, Town Administrator
Town of Bourne
Bourne Town Hall
24 Perry Avenue, Room 101
Buzzards Bay, Massachusetts 02532

AS
8-2-21

Re: BOURNE – BWR – GWDP #974
314 CMR 5.00, Groundwater Discharge
Buzzards Bay WWTF
Clearwater Test Inspection

Dear Mr. Schiavi:

On July 8, 2021, MassDEP conducted the clearwater test for the Wastewater Treatment Facility (WWTF) permitted under Groundwater Discharge Permit (GWDP) # 974 Buzzards Bay WWTF.

MassDEP hereby approves of operation of the Buzzards Bay WWTF provided the following items are addressed:

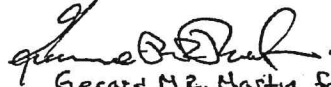
1. Add labels on pipes within the facility showing flow direction and where the flow is going.
2. Add labels on the monitoring wells.
3. Installation of an audible alarm at the facility and pump station to complement the visual alarm and auto-dialer.
4. Installation of the 3-way valve for the fine screen allowing both of the treatment lines to be operational.
5. Submission of a hard copy and digital pdf of the as-build drawings to MassDEP SERO.

Please submit proof of execution of all the items of above with photographs and documentation sent to Andrew.Osei@mass.gov.

The permittee must coordinate with the Boston Office of MassDEP for proper registration on the eDEP website for monthly report submission. Please coordinate with Linda Barba at Linda.Barba@Mass.gov for any questions with respect to eDEP. Please state the date in which discharge starts in the first eDEP submittal in which discharge is reported.

If you have any questions or comments regarding this matter, please feel free to contact Drew Osei, P.E. at 508-946-2869 or Andrew.Osei@mass.gov.

Sincerely,



Gerard M. Martin for:

Brian A. Dudley, Section Chief
Wastewater Management – Cape and Islands

ecc. Repucci, Corey repuccic@wseinc.com;
Bourne BOH tguarino@townofbourne.com
Glen Cannon gcannon@townofbourne.com

D/AFO: W:\BWR\Wastewater\Cape\Groundwater\974 - Bourne-Buzzards Bay WWTF\Inspections\974 CW Insp Cover
21.docx

**DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE**

FACILITY				OPERATOR(S)	
Buzzards Bay WWTF 31 Armory Road Buzzards Bay MA 02532				Weston & Sampson	
DEP INSPECTOR(S)				OTHER PERSONS PRESENT	
Drew Osei, P.E.				General Contractor and sub-contractor representatives Design Engineer- Weston & Sampson	
Date: 7/8/2021				Permit: 974-0	
INSPECTION					
Unit	Operational Yes / No		Problems Yes / Action Required		Additional Information
(1) Influent Pump station	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>The influent pump station is located on 239 Main Street at the Community Center site. The IPS is a submersible concrete pump station, that consists of a wetwell, below grade valve vault, control panel (CP-1) and transformer. The IPS has two non-clog, Flygt submersible pumps. The pump station is also equipped with a pressure transducer for level sensing with mechanical float backup, stainless steel lift out chain and guide rails, an activated carbon filter for odor control on the vent line, and a connection for a portable standby generator.</p> <p>During the Clearwater test, the Design Engineers explained that the pump station is equipped with two (2) pumps that operate in simplex. The two pumps offer redundancy and automatically alternate, but both pumps will not operate at one time if the high-level float alarm is activated. This is to assure that not more than 100,000 gpd of flow is sent to the facility and per-agreement that any additional flow is sent to Wareham. At the time of the clearwater test, the transducer levels were not appropriately set.</p> <p>Both pumps were operational. Alarms were test and operated accordingly.</p>
(1) Influent Primary Settling Tank (Trash Trap) (10,000 gallon)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The influent flow from the influent pump station discharges to the 10,000-gallon below grade pre-cast concrete settling tank. The sewage from the Police Station directly flows to the settling tank through a separate dedicated gravity sewer lateral. The tank also receives decant from the plant's waste sludge holding tank.</p> <p>This location is the most representative of the raw influent of the facility. Although, the tank receives some decant from the waste sludge, in comparison to the FET which can receive recycle flow from Aeration Zone A and Pre-Anoxic Zone A, the Influent Primary Settling Tank is more representative of the true influent of the facility.</p>
(2) Flow Equalization Tanks (3,000 gallon) • Bubble Mixing System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flow from the trash trap is conveyed to one or both influent flow equalization tanks via individual gravity flow outlets. Each outlet is equipped with a below grade shut of valve. The

<ul style="list-style-type: none"> (1) FET Pump per tank 				<p>operator inclined that the facility will operate with both valves open.</p> <p>The tanks are equipped with a large bubble mixing system and effluent pumps. The effluent pumps are automatically alternating and operate in a duplex system with separate float trees.</p> <p>Both pumps were operational. Alarms were test and operated accordingly.</p>
(2) Rotary Drum Fine Screens	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Wastewater is transferred from the FET to one of two (2) rotary drum screens to remove solids greater than 2 mm. The screens are located in the Screen Room, a separate room located on the north side of the upper level of the main building. The room is provided with a separated entrance from the building exterior due to space hazard classification. The primary purpose of the fine screens is to protect the MBR system from stringy and other objectionable materials that could damage or clog the membrane system. The screens operate in duty and standby mode to allow for cleaning and maintenance. Only one screen will operate at a time and the in-service screen selection is done manually by the operator using the manual three-way valve on the screen influent line from the IFET pumps. Screenings will be conveyed to a common washer compactor unit prior to discharge into a bagging system and a bin for disposal. Screened wastewater flows directly to the pre-anoxic zone via a gravity flow connection.</p> <p>At the time of the inspection, due to Covid19 Manufacturing disruptions, the three-way valve had not been delivered and installed. As such, only one screen was in operation.</p>
(1) Pre-Anoxic Tank (1,400 gallon) <ul style="list-style-type: none"> Mixer 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Screened wastewater flows from the fine screens by gravity to the Pre-Anoxic Tank. In addition to screened wastewater, internal Mixed Liquor Recycle (IMLR) from the aeration zone and the Return Activated Sludge recycle from the Membrane tanks flow to this tank.</p> <p>The pre-anoxic zone is continuously mixed propeller type submersible mixer. The pre-anoxic zone is equipped with a pressure type level sensor and an emergency overflow which discharges to a sump with duplex pumps located in the floor of the lower level of the main process building, which discharges back to the FET.</p> <p>Process redundancy for the Pre-Anoxic Tank is provided by the first of the two-aeration zones (Aeration Zone A) which can operate as a Swing Zone.</p> <p>The mixer was operational at the time of the inspection.</p>
(2) Aeration Zones (A & B) <ul style="list-style-type: none"> Fine Bubble Diffusers Sodium Hydroxide Chemical Feed Pump (2) Forward Feed Pumps 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Effluent from pre-anoxic tank flows by gravity to the first of two separate aeration zones referred to as Aeration Zone A. The Aerobic Zones provide organics (BOD) removal and nitrification. Aeration and mixing is provided via fine bubble diffusers. Air to the diffusers is provided by three (3) aeration blowers (two duty, one standby). Each aeration</p>

					<p>basin has a DO/Temperature sensor and a dedicated air flowmeter. Sodium Hydroxide will be dosed to Aeration Zone A for Alkalinity control.</p> <p>From Aeration Zone B, the forward feed pumps pump aerated wastewater to the post-anoxic zone.</p> <p>Aerators were activated and operational at the time of the inspection. Both pumps were installed and operational according to the design engineer.</p>
<p>(1) Post- Anoxic Tank</p> <ul style="list-style-type: none"> • Micro C Chemical Feed Pump 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Feed Forward pumps conveyed flow to the post-anoxic tank. The tank is equipped with a rail mounted submersible propeller type mixer to keep the MLSS in suspension. The post anoxic tank is equipped with a micro-s chemical feed. If performance shows that effluent total nitrogen levels average above 10 mg/l the system can be set to "polish" several mg/l of nitrate to drop that to less than 10 mg/l.</p>
<p>(3) Membrane Bioreactor</p> <ul style="list-style-type: none"> • Return Activated Sludge System • (3) Aeration Blowers & Fine Bubble Diffusers • Waste Activated Sludge System (2 pumps) • Clean In Place System • (3) Filtrate Permeate Pumps 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Effluent from the Post Anoxic Zone flows by gravity through three (3) overflow pipe connections one to each of the three parallel MBR tanks, each equipped with a manual shut off valve. Each tank in the zone houses a rack of flat plate type "outside in" membrane units with aeration diffusers below to continuously scour the membranes.</p> <p>Treated wastewater is "pulled" through the membranes by three (3) Filtrate Permeate Pumps (2 duty, 1 spare) which pull a vacuum on the membranes through a common header between the pumps and the individual discharge pipes from each membrane rack.</p> <p>Return activated sludge flows by gravity to the Pre-anoxic tanks and waste activated sludge is conveyed by two (2) pumps.</p> <p>The MBR Clean-In-Place (CIP) system consists of one (1) sodium hypochlorite skid and one (1) citric acid skid and a batch mix/dilution tank with solution feed pumps. Both chemical feed skids include two (2) transfer pumps (1 duty, 1 standby) and level switch. Chemical cleaning for the MBR system should occur two (2) to four (4) times per year with sodium hypochlorite, and one (1) time per year with citric acid.</p> <p>Full operation of the Membrane Bioreactor could not be confirmed as the membranes were not fully submersed. The membranes need continuously influent flow for proper operation without damage from drying. Due to this, operation can only be verified after facility activation. All warranties and appropriate engineering contracts were active at the time of the clearwater test and the engineering certification was submitted afterwards.</p>
(3) Subsurface disposal fields	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Treated Effluent is disposed of through a subsurface disposal system that includes a below grade cast-in-place tank located at the southeast corner of the main process building, three (3)</p>

					<p>effluent dosing pumps, a discharge manifold with eight (8) individual discharges with control valves. The pumps and valves direct flow to one of eight (8) distribution boxes for each of the eight (8) subsurface disposal zones in three different infiltrator beds located under the parking lot of the plant and adjacent police station.</p> <p>Monitoring wells were not labeled at the time of the clearwater test.</p>
Aeration System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Aeration system consisted of six (6) aerators: two dedicated to the aeration zones and two dedicated to the MBR with a sixth aerator for stand-by.</p>
Back-up Generator	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>Back-up power was available by a Kohler 200 KW, 277/480V, 3-phase, 60 Hz, generator.</p> <p>The generator was load tested and it did operate accordingly.</p>
Laboratory and Sampling					
Effluent Appearance: Good	Housekeeping:				
Notes:					