Acton Water District

Water Supply District of Acton

693 MASSACHUSETTS AVENUE
P.O. BOX 953
ACTON, MASSACHUSETTS 01720

TELEPHONE (978) 263-9107 FAX (978) 264-0148

Board of Water Commissioners

Meeting Agenda

Monday, December 20, 2021 @ 7:00 PM

Due to the COVID-19 Pandemic, meetings are being held virtually via Zoom

Please click the link below to join the webinar:

https://us02web.zoom.us/j/87918581362

Or One tap mobile :

US: +19292056099,,87918581362# or +13017158592,,87918581362#

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 929 205 6099 or +1 301 715 8592 or +1 312 626 6799 or +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799

Webinar ID: 879 1858 1362

International numbers available: https://us02web.zoom.us/u/kdDrrcazmE

- **Comments from the Public**
- **Approve minutes from the meeting of 12/6**
- **Appoint one Commissioner to approve warrants while conducting meetings virtually**

OLD BUSINESS:

- Peter Bay of EDF Renewables with update on solar projects and request for additional lease term
- Per- and Poly-Fluoroalkyl Substances (PFAS)
  - Current sample data, if available
  - Any updates or discussion from the PFAS Working Group
    - Review of Technical Memorandum on temporary treatment at the North Acton treatment plant
- Review of Draft Budget for Fiscal Year 2023 (FY '23)
- Summary of proposed Articles for the 2022 Annual Meeting Warrant

NEW BUSINESS:

- Acton's Open Space & Recreation Plan
- Request for a Drinking Fountain/Bottle filling station for Gardner Field

EXECUTIVE SESSION: -- To consider the purchase, exchange, lease of real property as an open meeting may have a detrimental effect on the negotiating position of the District

Agenda posted on 12/16/2021 11:24 AM

Town of Acton Recreation Department
472 Main Street
Acton, MA 01720
Phone: 978-929-6640
recreation@actonma.gov
www.actonma.gov/recreation

November 15, 2021

Dear Boards and Committees,

The Town of Acton has once again begun the lengthy public process of editing and updating its Open Space & Recreation Plan - (OSRP). This public participation based document assesses, "where we've come from, where we are, and where we plan to direct Acton's resources in protecting our highly valued Open Space/Natural Environment and in advancing our Recreation goals." Each town in the Commonwealth is required to have an approved OSRP in order to participate in State grant applications. The Town Manager has assembled a staff working group to facilitate the process of updating each of the required sections of the document. This process relies heavily on the expertise of stakeholders from the Boards and Committees who help to steer the direction this document will follow for the next seven years. We are now seeking input from your committee to add to the content of the next edition of the OSRP. To look over the current OSRP shown at right, please go to http://www.actonma.gov/osrp.

On behalf of the working group I respectfully request that you consider including the OSRP for discussion on an upcoming agenda and let me know if you would like us to attend to help introduce the topic. We will be publishing at the above link a draft update on all of the goals from the existing plan for review and comment. We also ask that you consider the fundamental goals of the document and please forward observations and contributions from your committee to help identify potential goals that could be incorporated into the draft updated plan.

We also ask that you consider selecting a liaison from your committee to be a primary participant and point of contact for this project. Our goal is to have a draft document by mid-February 2022. Therefore, having stakeholder input by early February would be greatly appreciated. Please let me know the name and email address for the liaison for your committee. Our working group looks forward to working with you all in creating an updated Open Space and Recreation Plan that serves our community's present and future needs. After we complete the direct engagement with stakeholders as described above we are planning to hold a public forum and resident survey. We look forward to working with you on this important project. If there any questions please send me an email to mrier@actonma.gov.

Sincerely,

Melissa Rier
Acton Recreation Director

WRIGHT-PIERCE
Engineering a Better Environment

Memorandum

Date: **11/22/2021**

Project No.: **20384C**

To: **Chris Allen, District Manager**

From: **Christine Catalini**

Subject: **Temporary PFAS Treatment Evaluation**

In April 2020, it was discovered that some of the source waters for the North Acton Water Treatment Plant (NAWTP) exceeded the Massachusetts Maximum Contaminant Level of 20 ng/L for the sum of the six Per- and Poly-Fluoroalkyl Substances (PFAS6) compounds. Wright-Pierce conducted a pilot study in two phases between September 21, 2020 and January 27, 2021 to evaluate the removal of PFAS using Granular Activated Carbon (GAC) and Ion Exchange (IX) from a selection of media manufacturers, and the Pilot Study Report was approved by MassDEP on August 6, 2021. It was determined that GAC followed by IX proved to be the most effective scenario for PFAS removal and recommended the installation of this treatment following the existing ultrafiltration (UF) membrane treatment process and before the addition of chlorine for disinfection. The District requested approval to install the GAC treatment process (whether temporary or permanent use) and would consider the addition of IX for future regulatory compliance should it be determined to be needed at a later date. MassDEP agreed with the recommendation to pursue installing the Calgon Filtrasorb GAC media.

Since the District is also experiencing similar challenges with other sources and treatment facilities related to the PFAS concentrations in its water supply, the District's PFAS Working Group has been accessing the situation. It was determined that a temporary PFAS removal system at the NAWTP could be a potential approach at this time, and the District preliminarily identified equipment available through SUEZ and Calgon Carbon for further investigation. This technical memorandum presents an evaluation of AWD's options for a temporary system in comparison to the permanent treatment system presented within the Pilot Study Report.

Existing Treatment

The NAWTP is an ultrafiltration (UF) membrane facility commissioned in June of 2009 that is supplied water from the Kennedy Wells and the Marshall Wellfield. Once the raw water from these sources is pumped to the NAWTP, it is processed through several pretreatment steps before filtration through the membranes. Pretreatment includes pre-screening to remove particles, aeration for VOC removal, oxidation of dissolved iron and manganese with potassium permanganate, and coagulation and flocculation of natural organic matter using polyaluminum chloride. The filtration process consists of an immersed ultrafiltration membrane system originally manufactured by GE/Zenon Membrane Solutions that consist of two trains of ZeeWeed 500. The ultrafiltration membranes were recently replaced in 2020.

After filtration, the water is injected with sodium hypochlorite for disinfection and sodium fluoride for dental health benefits before entering the baffled clearwell for contact time (CT). The finished water is then pumped into the distribution system.

The facility includes a backwash recycle system that concentrates solids and recovers a portion of the wash water. Wash water is deposited into two Recycle Tanks, and the settled wash water is pumped from the Recycle Tanks to a

rapid mix tank for recovery. Solids in the wash water settle to the bottom of the Recycle Tanks and are periodically pumped to one of the two onsite lagoons. The lagoon overflow is directed to a sand bed for infiltration back into the ground.

The proposed location of the new temporary (or permanent) system is following the UF treatment process and prior to the addition of chlorine for disinfection and fluoride for dental health benefits.

Available Treatment Options

As previously discussed, the two available treatment options that were identified by the District for consideration were SUEZ and Calgon Carbon. The proposed treatment systems, their implementation requirements, and associated costs have been reviewed and are presented in the following sections.

SUEZ

SUEZ offers a temporary treatment system that consists of six 5-foot diameter vessels within a 43-foot by 8-foot container. To treat the maximum flow rate of 350 gpm at the NAWTP, SUEZ recommends two containers operated in series (lead/lag). The design criteria are presented in **Table 1**.

Table 1 SUEZ's GAC Conceptual Design Criteria

SUEZ's Temporary GAC System	
Max Design Flow	350 gpm (0.5 MGD)
Number of Containers	2 (in series – lead/lag)
No. of Filter Vessels/Container	6
Vessel Diameter	5 ft
Filter Area (each)	19.6 ft^2
Hydraulic Loading Rate	3.3 gpm/ft^2
GAC Volume/Vessel (approximate)	90 ft^3
Media Capacity per Vessel (approximate)	3,035 pounds
Empty Bed Contact Time per Container	11.5 minutes
Headloss/Container	27.5 psi
Pipe Connections to Container	4" diameter (inlet and outlet), 3" diameter (backwash outlet)
Length of Container	43 ft
Container Height	9 ft 6 in

SUEZ's Temporary GAC System	
Container Width	8 ft
Electrical Power Requirements/Container	110V, 20 Amps
Backwash Rate*	12 gpm/ft^2
Backwash Design Flow (per Vessel)	235 gpm
Backwash Duration	30 minutes
Backwash Waste Volume (per Vessel)	7,056 gallons

*Backwash rate can be reduced to 8.5 gpm/ft^2 as long as water temperature does not exceed 55 degrees F.

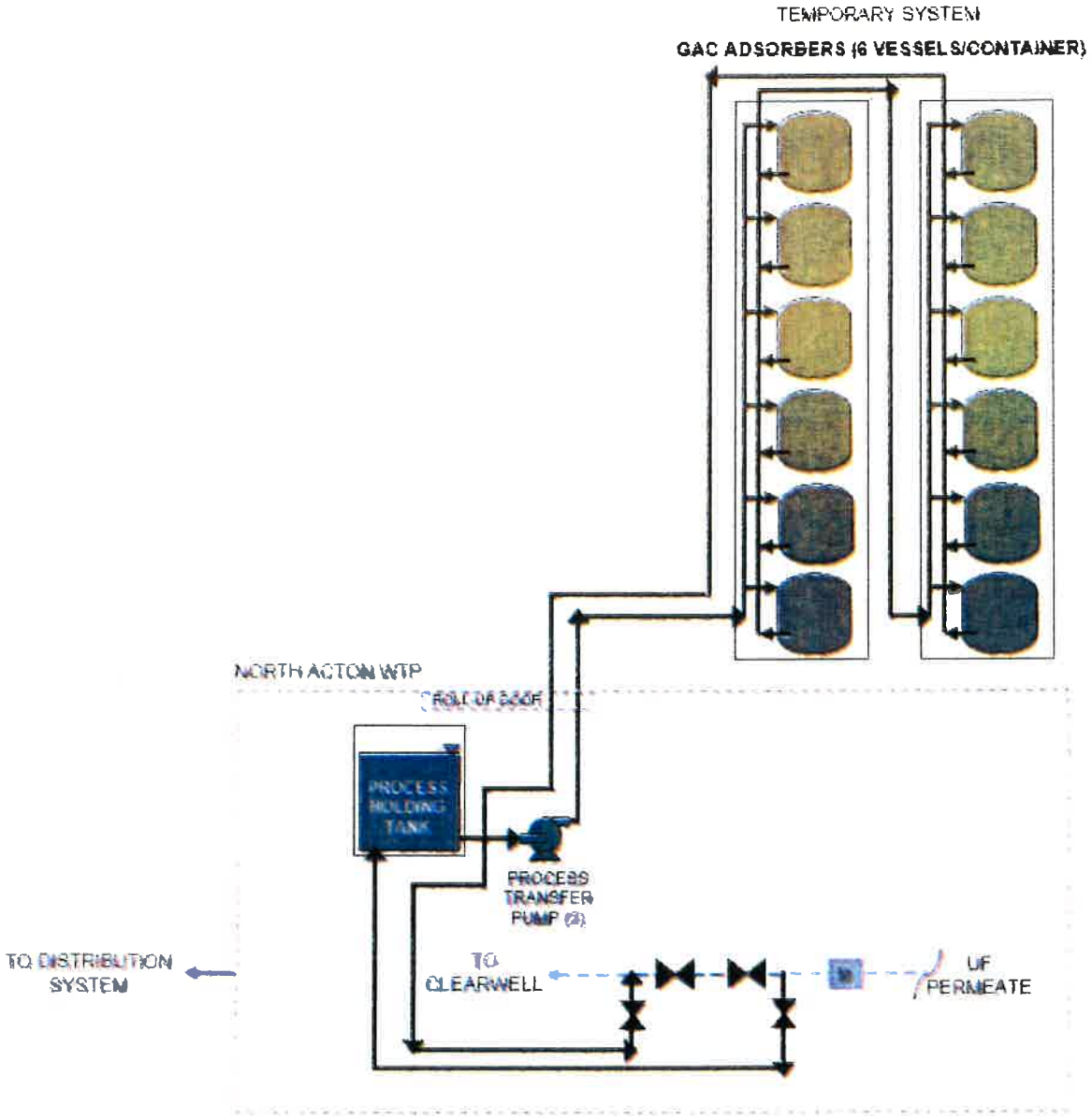
The containers also include instrumentation, controls, and heating. The instrumentation consists of two conductivity meters, high/low temperature alarms, complete pressure instrumentation, flow indicator, and a totalizing flow meter. The controls consist of an adjustable pressure reducing valve on inlet, isolation valves on all pressure vessels, automatic shutdown system, and external audible alarms. The heating consists of a propane fueled, thermostat-controlled system for freeze protection to -20 deg F. The treatment system also has automatic shutdown features to protect from power failure, excess pressure, and off-specification water.

To provide water to SUEZ's temporary treatment system, a new 4-inch water main would connect to the 8-inch UF permeate pipe following the flow meter and before the pipe goes through the concrete slab to the lower level where fluoride and sodium hypochlorite are injected before entering the clearwell. Due to the available straight length needed after the flow meter, the meter would need to be moved several feet to a new location prior to the new interconnection. The permeate water would be directed to a new Process Water Holding Tank. From this tank, new Process Water Transfer Pumps (one duty and one stand-by) would pump the permeate to the PFAS treatment system. The level of the holding tank would be monitored and used to automatically control the transfer pumps. Treated water from the PFAS treatment system would flow back to the existing UF permeate line prior to final chlorination and fluoridation before entering the clearwell.

Due to available water pressure and backwashing of the UF system at the NAWTP, the installation of a Process Water Holding Tank and Process Water Transfer Pumps would be required prior to the temporary treatment systems. The available pressure following the ultrafiltration membrane treatment would be about 15 to 20 psi and the two containers require approximately 55 psi, so additional pressure would be needed. Also, the UF membrane system is backwashed once/hour for about 15 to 20 minutes, so a holding tank would be needed to maintain continuous duty of the PFAS filtration system. The Process Water Holding Tank would be sized for 5,000 gallons and the two Process Water Transfer Pumps (one duty and one standby) would be sized for 350 gpm at 25 HP. The tank and pumps would be located next to the existing roll-up door where the new 4-inch water main would connect to the new temporary treatment systems.

A schematic process flow diagram is shown in **Figure 1**. The new temporary treatment system would be designed to match the 350 gpm design flow of the NAWTP.

Figure 1 Schematic Process Flow Diagram



One possible layout for the new 4-inch piping, Process Water Holding Tank, and Process Water Transfer Pumps is presented in **Figure 2**. The conceptual design criteria for the Process Water Holding Tank and Process Water Transfer Pumps are presented in **Table 2**. Alternative layouts will be evaluated prior to preliminary design.

Figure 2 Schematic Piping Plan

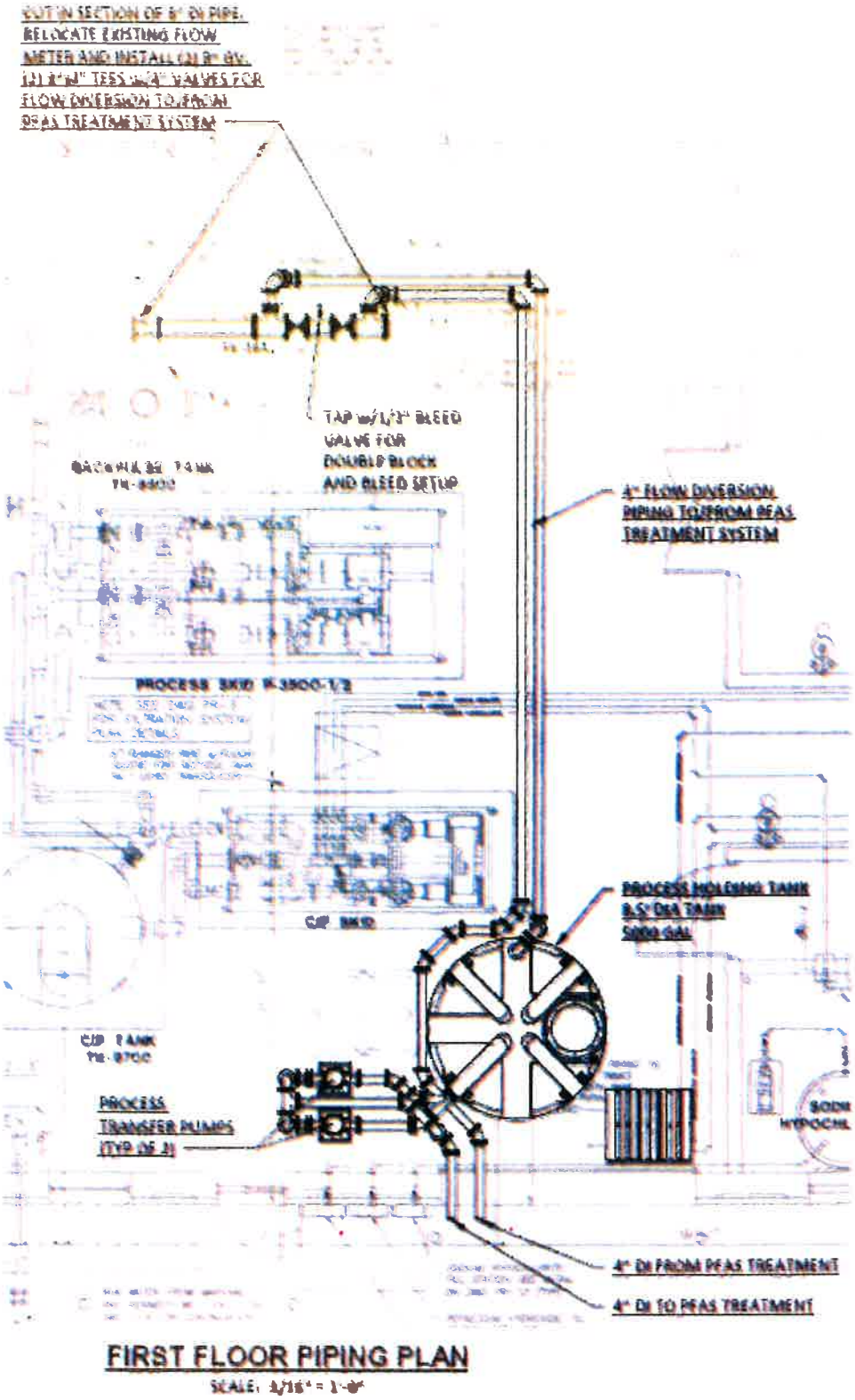
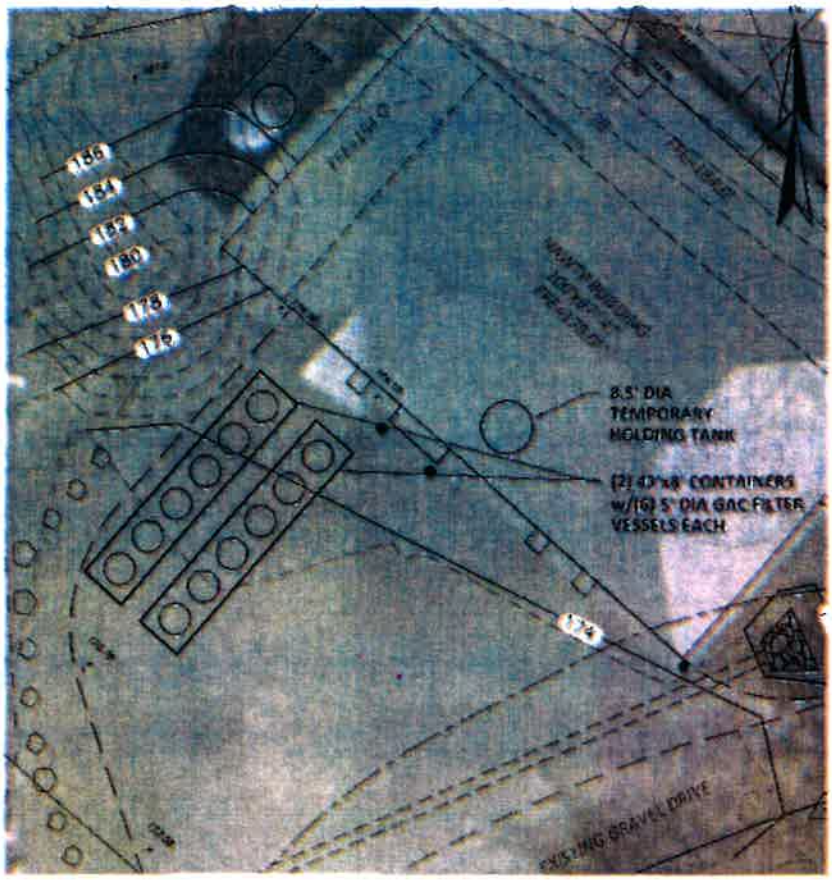


Table 2 Design Criteria – Treatment System Connection to NAWTP

Process Water Holding Tank	
Max Design Flow	350 gpm
Tank Capacity	5,000 gallons
Tank Dimensions	8.5-foot diameter, 12.7-foot height
Process Water Transfer Pumps	
Process Water Transfer Pump Capacity (2)	350 gpm (1 duty/1 standby)
Process Water Transfer Pump TDH	142 feet
Process Water Transfer Pump Motor Size	25 HP

An initial assessment of the existing electrical system indicates that there is sufficient space and capacity to add the two motor loads. The location of these two containers would be behind the NAWTP adjacent to the roll-up door as presented in the schematic site plan in **Figure 3**.

Figure 3 Schematic Site Plan



The suggested location of the two containers is perpendicular to the NAWTP building to provide access for bulk chemical delivery to the NAWTP.

A conceptual level opinion of probable construction cost in 2021 dollars for the installation of this proposed temporary treatment system is provided in **Table 3**. The cost for the containers presented in the table is for 12 months.

Table 3 Opinion of Probable Construction Cost for SUEZ's Temporary Installation

Component	Estimate
Connection to Temporary Treatment System:	
Piping	$70,000
Process Water Transfer Tank and Pumps	$70,000
Instrumentation/Electrical	$50,000
Structural Upgrades	$50,000
Subtotal	$240,000
Construction Contingency	$60,000
Subtotal	**$300,000**
SUEZ's Temporary Treatment System (first 12 months):	
Container Preparation	$3,000
GAC Purchase and Install	$171,390
Field Service Support	$8,880
Rental Container	$224,160
Heil Trailer Rental	$500
Freight Heil Trailer	$1,240
Freight Containers Delivery/Pickup	$14,136
Removal and Disposal of GAC Media (1 Container)	$30,000
Subtotal	**$453,306**
Total Construction Estimate:	$753,306 (rounded up to $755,000)

Based on the results from the column testing that was performed during the pilot study, the Filtrasorb media was capable of removing the PFAS6 compounds for 194 simulated days until reaching a 50% breakthrough. These simulated days represent the NAWTP running continuously every day at the maximum design flow of 350 gpm. The construction cost provided accounts for the lead container having its media replaced within 12 months. However, the media may last longer given the variability in contaminant concentration and actual loading rates.

The anticipated annual cost for this temporary treatment option would be about $460,930 (includes GAC purchase, GAC removal/disposal, field service, and container rental as well as power, labor and maintenance of the transfer pumping system which was not included in Table 3).

Calgon Carbon

Calgon was previously providing customers with GAC adsorption vessels for temporary use, but after more recent discussions with Calgon, they have stated that they no longer have any temporary systems available and have been focusing their efforts on their "for sale" units due to the rising demand in the PFAS market. Based on our experience, we are unaware of any other vendors that are providing temporary GAC systems for rent. The temporary system that Calgon was previously recommending for the NAWTP is the Model 10 system which is the same system that would be utilized for a permanent installation and what was recommended in the Pilot Study Report. The Model 10 system consists of two GAC adsorption vessels operating in series (lead/lag).

The Model 10 setup would include a pipe rack that would allow the full design flow to be directed through either vessel as the lead or lag vessel. Each vessel would have a 10-foot diameter and would be 20 feet tall. With appropriate clearances around the vessels and pipe rack, the overall dimensions would be 32'9"L x 17'6"W x 22'H. At a design flow of 350 gpm and each vessel being provided with 20,000 pounds of GAC, this corresponds to an Empty Bed Contact Time (EBCT) of approximately 12.5 minutes per vessel. The recommended GAC media is Calgon Carbon's Filtrasorb® 400 which proved to be an effective media for PFAS removal during the pilot study.

The design criteria for Calgon's treatment system are provided in **Table 4**.

Table 4 Calgon's GAC Conceptual Design Criteria

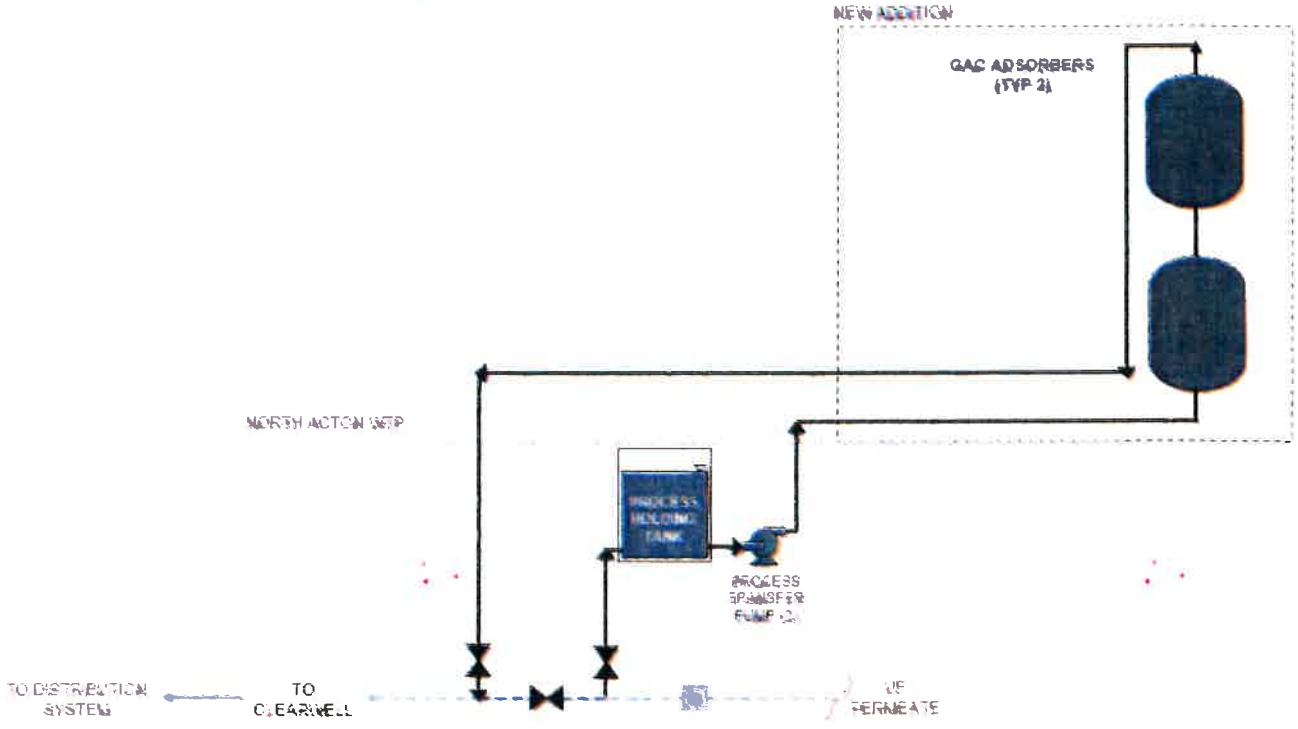
Calgon's Temporary/Permanent GAC System	
Max Design Flow	350 gpm (0.5 MGD)
No. of Vessels	2 (in series – lead/lag)
Filter Diameter	10 ft
Filter Area (each)	78 ft^2
Hydraulic Loading Rate	4.5 gpm/ft^2
Vessel Pipe Connections	8-inch diameter
System Width	11'-1"
System Length	26'-1"
Overall System Height	21'-9" without pressure sustaining valve 30'-0" with anti-siphon loop
Media Capacity per Vessel	20,000 pounds
GAC Volume (approximate)	593 ft^3
Empty Bed Contact Time per Vessel	12.5 minutes
Filter Headloss	2 psi – clean bed

Calgon's Temporary/Permanent GAC System	
	12 psi – dirty bed
Backwash Rate	12 gpm/ft^2
Backwash Design Flow	936 gpm
Backwash Duration	30 minutes
Backwash Waste Volume (per Vessel)	28,080 gallons

Similar to the temporary treatment system connection to the NAWTP, the permanent treatment system would also connect to the UF permeate pipe but in the lower level/basement. The water would be directed to a new Process Water Holding Tank and Process Water Transfer Pumps which would also be located within the basement before the new water main went outside through the NAWTP wall and to the new PFAS treatment system. Treated water from the PFAS treatment system would then flow back to the existing UF permeate line prior to final disinfection and entering the clearwell.

A process flow diagram is shown in **Figure 4**. The system will be designed to match the 350 gpm design flow of the NAWTP.

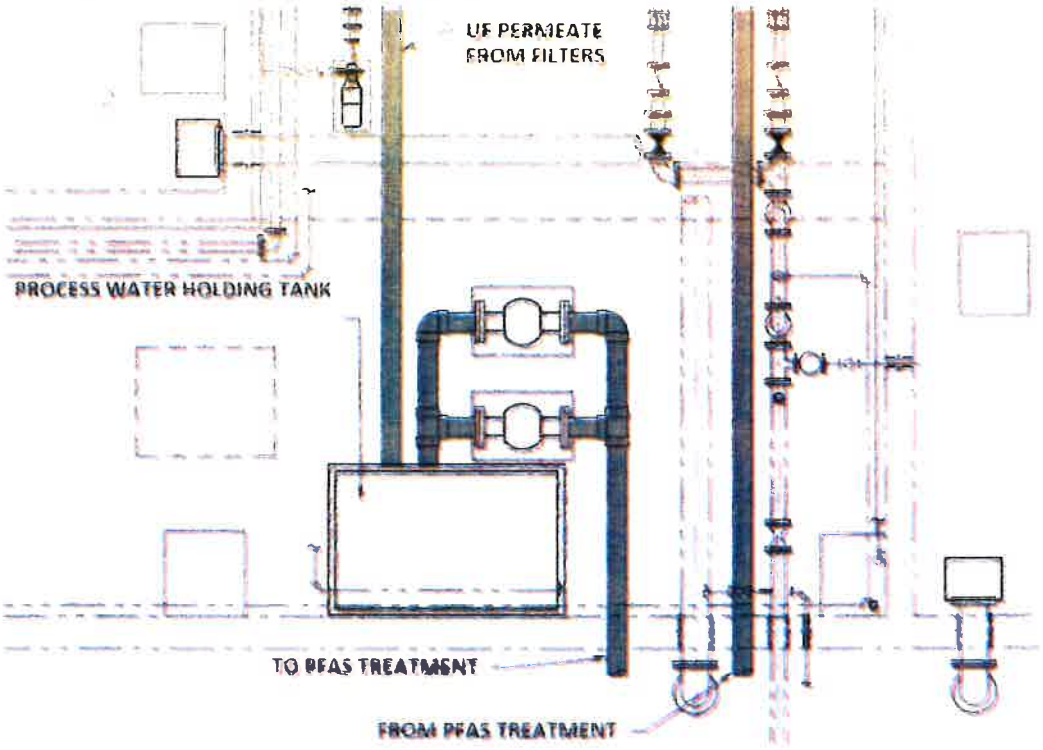
Figure 4 Process Flow Diagram



The Model 10 system would be located within a new building addition (approximately 36 feet by 36 feet). The new building addition would have space available for the addition of Ion Exchange vessels if needed in the future.

One suggested layout for the new piping, Process Water Holding Tank, and Process Water Transfer Pumps, as discussed earlier, is presented in **Figure 5**. Alternative layouts will be evaluated prior to preliminary design.

Figure 5 Pump Room Piping Plan



The proposed Process Water Holding Tank and Process Water Transfer Pumps will need to be connected to the existing SCADA system. The level of the holding tank will be monitored and used to automatically control the transfer pumps. Local and remote control of the transfer pumps will also be designed into the SCADA system.

The GAC vessels will be supplied with differential pressure transmitters to monitor differential pressure in the media. Flow elements and flow meters will be provided for instantaneous process monitoring and long-term tracking of media usage. Automated control valves will not be needed for the operation of these treatment vessels, because the lead/lag contactor arrangements are anticipated to change at most once per year. No additional online analyzers will be required for the operation of the PFAS treatment system.

For additional information regarding Calgon's permanent treatment system, please refer to the Pilot Study Report.

The engineer's estimated opinion of probable construction cost in 2021 dollars for the proposed PFAS treatment system is presented in **Table 5**. The cost includes the installation of GAC with room for IX vessels in the future.

Table 5 Permanent Option - Opinion of Probable Construction Cost

Work Type	Estimate
Contractor General Conditions	$630,000
Site Work	$300,000
Building Addition (~1,300 square feet)	$2,000,000
Process Water Transfer Tank and Pumps	$100,000
GAC Skid and Installation	$585,000
Piping	$300,000
Instrumentation	$100,000
Electrical Upgrades	$100,000
Subtotal	$4,115,000
20% Contingency	$825,000
Total Construction Estimate:	$4,940,000

Some cost assumptions include that no electrical service upgrades or new generator would be needed, the building would be slab on grade, and there would be no significant environmental restrictions.

Due to increased steel costs, the cost for the GAC vessels have increased by about 37% since the submittal of the Pilot Study Report and are reflected in the above noted costs. This is anticipated to keep increasing as the steel costs and the demand for PFAS treatment systems continue to rise. Additional components such as the cost of lumber, copper, and PVC piping have also had a significant cost increase over the past year. Therefore, the District should at least consider an additional 10%/year of cost escalation.

For this permanent installation option, the annual O&M costs have been estimated and are presented within **Table 6**.

Table 6 Estimated Annual O&M Cost

O&M Category	Annual Estimate
GAC Media Replacement	$34,000
Power	$15,000
Labor	$6,000
General Maintenance	$5,000
Total O&M Estimate:	$60,000

Cost Comparison

Overall, the cost to install a temporary treatment system from SUEZ is estimated to be about $755,000 for the first year and at least $460,930 for each following year. The cost for the permanent treatment system from Calgon was estimated to be about $4,940,000 and the O&M cost was estimated to be about $60,000 per year. With these capital and O&M costs, a present worth (PW) analysis was performed to determine how many years until the temporary treatment system would equal the same as the permanent installation. For this analysis, a 4% rate for interest and inflation was used for the present worth calculation of the recurring O&M costs. This rate can be adjusted based on the District's input. **Table 7** present the results of this analysis.

Table 7 Net Present Worth Estimates

Treatment Option	Capital Cost Estimate	O&M Cost Estimate	14-Year PW Estimate
SUEZ's Temporary Treatment	$755,000	$460,930	$5,623,860
Calgon's Permanent Treatment	$4,940,000	$60,000	$5,573,787

As presented in the table, it is estimated that it would take about 14 years for the temporary treatment system to equal about the same as the permanent installation. An advantage of utilizing the temporary treatment system is that this option can be implemented much quicker than the permanent option which would allow the District to resume pumping the NAWTP at its full capacity and could be removed/ceased at a lower cost (less than 14 years) if AWD determines it is no longer needed.

Acton Water District

Water Supply District of Acton

693 MASSACHUSETTS AVENUE
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TELEPHONE (978) 263-9107 FAX (978) 264-0148

December 20, 2021

Proposed Warrant Articles for 2022 Annual Meeting (FY '23)

1. Appropriate **$125,000.00 from WR Grace Stabilization fund** for Filtration Maintenance & Operations (M&O)
2. Appropriate **$100,000.00 from Surplus Revenue** for Clean & Rehab Wells
3. Appropriate **$40,000.00 from Surplus Revenue** for Replace Old Mains
4. Appropriate **$30,000.00 from Surplus Revenue** for Emergency Main Breaks
5. Appropriate **$130,000.00 from Surplus Revenue** to replace the filtration media at the District's water treatment plants
6. Appropriate **$500,000 from Surplus Revenue** for Water Main Improvements. (Dedicated to Kelley's Corner)
7. Appropriate **$60,000 from Surplus Revenue** for the five-year Master Plan update
8. Appropriate **$35,000 from Surplus Revenue** for a Water Rate Study
9. **Mitigation revolving fund for $100k**
10. 20-year lease with Baldco, Inc. for 104 Powdermill Road-Rear
11. Additional five-year term (35-years total) on the solar leases for Lawsbrook Road & Knox Trail
12. Approval to **borrow $1,000,000.00 for the Kelley's Corner** water infrastructure improvements.
13. Appropriate **$100,000 from Surplus Revenue** for residuals removal.

-Total from Surplus Revenue = $995,000 + $100,000 (Mitigation) = $1.095,000 (Currently Surplus Revenue = $1,157,598)

-Surplus Revenue balance after appropriations = $162,598

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FY 2023 Budget and Estimated Revenue

	Actual FY 21	Budget FY 22	3 month actual	Budget FY 23	
EXPENSES					
Accounting	1,500	2,000	800	4,000	Into Audit
Audit	16,000	17,000	17,000	17,000	
Auto Maint & Fuel	46,943	50,000	8,654	52,000	
Backflow/Cross Conn	291	1,000		1,000	Into M&O
Short Term Debt	508,223	505,000	505,000	216,550	
Long Term Debt	1,480,767	1,632,955	590,758	1,852,593	
Chemicals	75,000	100,000	21,648	120,000	
Computer Maintenance	16,000	16,000	4,702	16,000	Into Office supplies
DEP Withdrawal	5,100	6,000		5,600	
Employee Education	11,759	17,500	3,439	17,500	
Engineering	54,948	50,000	2,437	50,000	
Health/Life Insurance	314,660	286,000	71,560	320,000	
Hydrants	9,971	10,000	3,750	10,000	Into M&O
Information Reports	29,430	45,000	26,628	45,000	
Insurance	86,718	95,000	92,727	110,000	
Laboratory Analysis	60,000	80,000	13,722	100,000	
Legal	54,060	65,000	7,597	75,000	
Lights/Power/Fuel	390,000	390,000	71,960	350,000	
Maintenance & Operations	399,977	350,000	96,673	400,000	
Middlesex Retirement	256,971	268,502	268,502	293,362	
Meters	59,304	75,000	2,088	75,000	
Office Supplies	20,000	20,000	3,596	25,000	
Paving	50,000	50,000	39,151	60,000	Into M&O
Petty Cash	400	1,000	300	1,000	Into Office supplies
Postage	19,961	20,000	8,120	25,000	Into Office supplies
Reserve Fund		100,000		100,000	85k Media & Legal
Salaries & Wages	1,401,658	1,550,150	421,429	1,677,658	
Telephone	20,000	22,000	3,669	25,000	Into Office supplies
Total	**5,389,641**	**5,825,107**	**2,285,910**	**6,044,263**	
REVENUE					
Water Revenue	2,826,537	2,422,792	1,687,823	2,543,932	5% increase
Service Fee	528,960	525,360	262,500	528,960	
Debt Fee	2,115,840	2,137,955	997,500	2,115,840	
Total Water Revenue	5,471,337	5,086,107	2,947,823	5,188,732	
Fire Protection Sprinklers	40,420	40,000	38,142	40,420	
Rent/Lease	149,500	250,000	50,976	459,312	
Repairs/Installation	79,353	50,000	55,998	50,000	
Cross Connection	21,341	24,000	11,132	24,000	
Demand Fees	145,360	300,000	66,626	300,000	
Mitigation Fees	25,514	75,000	18,164	100,000	
Total Other Revenue	461,488	739,000	241,038	973,732	
Total	**5,932,825**	**5,825,107**	**3,188,861**	**6,162,464**	
				118,201	Surplus

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Warrant Articles:						
Borrow for Kelleys Corner			1,000,000			
Water Main - Kellys Corner			500,000			
from OPEB Trust Fund	Retirees Health I	76,000	includes SGP			
from Mitigation Fund:	Annual Approp	100,000				
from Grace Fund:	Filter M&O	125,000				
from Free Cash:						
	Clean & Rehab Wells		100,000			
	Emergency Main Breaks		30,000			
	Media Replacement		130,000			
	Replace Old Mains		40,000			
	NAWTP Residuals		100,000			
	Rate Study		35,000			
	Master Plan update		60,000			
	Return to Free Cash		(3,558)			
		Total	991,442			
Revenue Estimate FY 22	7/20/2021 billing	1,478,615				
	10/4/2021 billing	1,471,284				
	1/20/2021 billing	1,223,647				
	4/20/2021 billing	1,199,349				
	Fire Protection	40,000				
	Repairs/Misc	65,000				
	Cross Conn	22,000				
	Rent	426,762	Solar revenue 90%			
	Demand	300,000				
	Projected Income	6,226,657	401,550	Surplus FY 22		
	Mitigation	75,000				
	Units	8,816				
	Services	6,807				
	Free Cash	1,157,598				
	Appropriations	991,442				
	Balance	166,156				
UPDATED 12/10/2021						

WRIGHT-PIERCE

BID TABULATION

Project Name: Assabet Well No. 3 Connection

Issuing Office: 600 Federal St., Suite 2151, Andover, MA 01810 Tel: (978) 416-8000

Project No.: 20645A

Location: Acton, Massachusetts

Bid Date: 12-16-21

BID QUANTITIES				BIDDER'S NAME					
				N.Granese & Sons, Inc. 59 Jefferson Avenue Salem, MA 01970		Waterline Industries, Corp. 7 London Lane Seabrook, NH 03874		D&C Construction Co., Inc. 649 Broad Street Weymouth, MA 02189	
	Item	Qty.	UNIT	UNIT AMT	BID	UNIT AMT	BID	UNIT AMT	BID
BASE BID									
1A	Construction of the Assabet Well No. 3 Connection, complete with all appurtenances, except unit price items listed below.	1	LS	$643,000.00	$643,000.00	$814,750.00	$814,750.00	$800,000.00	$800,000.00
1B	Ledge Excavation, Disposal, and Replacement Backfill	10	CY	$150.00	$1,500.00	$250.00	$2,500.00	$0.01	$0.10
1C	Excavation of Unsuitable Material and Replacement with Suitable Material	10	CY	$75.00	$750.00	$75.00	$750.00	$100.00	$1,000.00
1D	Test Pits	4	EA	$1,500.00	$6,000.00	$500.00	$2,000.00	$500.00	$2,000.00
2	Electrical Sub-Bid	1	LS	$136,310.00	$136,310.00	$117,677.00	$117,677.00	$136,310.00	$136,310.00
TOTAL BASE BID AMOUNT ITEMS (1 - 2)					**$787,560.00**		**$937,677.00**		**$939,310.10**