Appomattox River Water Authority

21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

APPOMATTOX RIVER WATER AUTHORITY

Board of Directors Meeting

DATE: September 21, 2023

TIME: 2:00 pm

LOCATION: **South Central Wastewater Authority**
Board Room, Administration Building
900 Magazine Road
Petersburg, VA 23803

AGENDA

1. Call to Order/Roll Call
2. Approval of Minutes: Minutes of the Board Meeting held on May 18, 2023 (Exhibit A, pages 2 to 6)
3. Public Comment (Exhibit B, page 7)
4. Executive Director's Report:
    - Lake Modeling Presentation (Exhibit C, pages 8 to 19)
    - Lake Safety Update (Exhibit D, pages 20 to 24)
    - Status Report (Exhibit E, pages 25 to 34)
    - PFAS Update (Exhibit F, pages 35 to 41)
    - Purchase Repair Materials for Inventory (Exhibit G, page 42)
    - Financials (Exhibit H, pages 43 to 54)
5. Items from Counsel
6. Closed Meeting
7. Other items from Board Members/Staff Not on Agenda
8. Adjourn

Exhibit A

BOARD OF DIRECTORS MEETING
Appomattox River Water Authority
May 18, 2023, at 2:00 p.m.
Location: Appomattox River Water Authority
21300 Chesdin Road, South Chesterfield, VA 23803

MEMBERS PRESENT:
Doug Smith, Chairman (Colonial Heights)
Kevin Massengill, Vice-Chairman (Dinwiddie)
Joseph Casey, (Chesterfield)
March Altman, (Petersburg)
Jeff Stoke, (Prince George)

STAFF PRESENT:
Robert B. Wilson, Executive Director, (ARWA & SCWWA)
James C. Gordon, Asst. Executive Director (ARWA & SCWWA)
Arthur Anderson, (McGuireWoods)
Melissa Wilkins, Business Manager/FOIA (ARWA & SCWWA)
Kathy Summerson, Administrative Assistant (SCWWA)

ALTERNATES PRESENT:
Frank Haltom, Secretary/Treasurer (Alternate, Prince George)
Eddie Pearson, (Alternate, Dinwiddie)
Matt Rembold, (Alternate, Chesterfield)

OTHERS PRESENT:

ABSENT:
George Hayes, (Alternate, Chesterfield)
Todd Flippen, (Alternate, Colonial Heights)

The ARWA meeting was called to order by Mr. Smith, Chairman, at 2:05 p.m.

1. Call to Order/Roll Call

The roll was called:

Participating members at the table were:

Doug Smith	Present
Kevin Massengill	Present
Joseph Casey	Present
Frank Haltom	Present
March Altman	Present

Mr. Stoke was present but Mr. Haltom voted.

Ms. Wilkins recognized Ms. Summerson who is retiring after 21 years of service with both Authorities.

2. Approval of Minutes: Minutes of the Regular Meeting of the Board on March 16, 2023

Upon a motion made by Mr. Altman and seconded by Mr. Haltom the following resolution was adopted:

RESOLVED, that the Minutes of the Regular Meeting of the Board on March 16, 2023, are hereby approved:

For: 5 Against: 0 Abstain: 0

3. Public Comment

There were no public comments.

4. Executive Director's Report:

- **FY23/24 Budget**

  Mr. Wilson reported on the FY23/24 Budget, which was presented to the Board in January 2023. He stated the Board did have some comments and those adjustments were made to the budget. A public hearing was held on March 16, 2023. He stated there have been no comments or questions and requested the Board approve the budget as outlined in the Board package. Mr. Wilson reminded members to review the projected future rate increases in case they influence member retail rates. Mr. Anderson presented a Resolution to evidence the approval.

  Upon a motion made by Mr. Altman and seconded by Mr. Massengill the following resolution was adopted:

  RESOLVED, that the Board approves the Resolution included with the Board package of the Appomattox River Water Authority approving the Budget for FY 2023/24 and the related water rates:

For: 5 Against: 0 Abstain: 0

Vote:

Participating members at the table were:

Doug Smith	**Aye**
Kevin Massengill	**Aye**
Joseph Casey	**Aye**
Frank Haltom	**Aye**
March Altman	**Aye**

Absent During Vote: **None**

- **PFAS Update**

Mr. Wilson reported on PFAS. He stated this topic was brought up at the last Board meeting, so we are providing an update for both water and wastewater. Mr. Gordon will provide an update on PFAS and wastewater during the SCWWA meeting. Mr. Haltom asked if any research had been performed on the impact on localities and utilities to comply with this. Mr. Wilson answered there is research that shows the financial impact in the billions of dollars on the capital side. To compound matters operating costs, increase significantly. Mr. Gordon stated that at the association meeting on Monday one of the presenters stated that he was dealing with this in their offsite reservoir. In the next four to five years for a 4,000,000 gallon per day plant, the estimated cost is $22,000,000. Dr. Casey stated that some of the trace work being done led back to Richmond Airport and the use of FireFoam. FireFoam contains PFAS and is the most used effective agent in fighting fires, there is a cost benefit to using it. He further stated that Chesterfield does not use FireFoam for training, they train with a product that emulates FireFoam. Dominion Energy has a training facility at Dutch Gap that may be using FireFoam and may be looking into how to remedy their practice as well. Mr. Wilson stated that we do not have the science yet to support the numbers to demonstrate if there really is a health risk.

- **Bathymetric Study Results**

Mr. Wilson reported on the results from the Bathymetric Study. The annual sedimentation rate is slowing down.

We will continue this study on a ten to eleven year cycle. One question we are being asked by residents around the lake is if we are considering dredging. Dredging is one of the more expensive alternatives and you are not able to take advantage of the area dredged until the lake level drops. Mr. Wilson went on to explain that when we go to renew our VWP Permit, we must go through an alternative analysis. This analysis includes alternatives such as desalination, dredging, off river storage and raising the dam to name a few.

At our meeting in July, we will have Steve Nebiker, formally of Hydrologics, from Hazen and Sawyer to provide an update on lake level modeling.

Dr. Casey asked what the frequency was for updating the State Water Plan and Mr. Wilson stated he thought the state plan was every five years. The VWP Permit is every fifteen years and our Bathymetric is every ten to eleven years. Dr. Casey stated that he does not remember how we resolved in the past and knowing that raising the dam could be an alternative in the future but is there any guidance or requirements that the Authority provides for Mr. Wilson stated we tell them two feet higher than pool. He further stated we tell them we post the pool level relative to the dam elevation of 158 feet above sea level on our website, so if it is plus or minus you know how to adjust that.

Mr. Massengill asked when the VWP Application is due, and Mr. Wilson stated in 2028. We will start ahead of time.

- **Lake Safety**

Mr. Wilson reported on the lake safety meeting held on April 26, 2023. Dr. Casey stated Chesterfield Police now have a structured patrolling program on weekends and holidays. Their role includes the enforcement of speed rules on the lake. DWR's involvement will be limited to license enforcement. Mr. Massengill said they identified one problematic area, Whipponock Creek, where it comes out onto the main lake where there is an island. Their Board of Supervisors considered a resolution on Tuesday and had about a dozen people attend who questioned the location of one of the most eastern buoys. Their Board deferred taking any action. The purpose of the resolution is to allow DWR, Chesterfield County, or whoever is speed enforcement to be able to address that lawfully if needed to. The resolution will be brought back at their June meeting. He stated he wanted to add one thing to the notes that Mr. Wilson had, and that is the concept of the stakeholder committee and the thought that it may be bigger than lake safety. A Lake Chesdin Committee could potentially be formed who would advise the Authority as to issues affecting the lake. He stated that Lake Chesdin was recently named one of the best bass fishing lakes in the Commonwealth.

- **Status Report**

Mr. Wilson reported on the status report. He stated late yesterday afternoon we received information about the accident from last September and that information was forwarded to members. Dr. Casey requested a copy of the report be forwarded to Mr. Sarver who attended the lake safety meeting. Mr. Wilson stated he will forward a copy to Mr. Sarver.

Mr. Wilson stated the pontoon boat needs to be replaced. Staff priced a new tri-toon boat rigged for treating the lake. He stated the cost is approximately $65,000. We will be using the budgeted boat lift money of $25,000 and pull the remaining $40,000 out of the surplus.

Upon a motion made by Mr. Massengill and seconded by Dr. Casey the following resolution was adopted:

RESOLVED, that the Board approves the purchase of the boat as requested by Staff:

For: 5 Against: 0 Abstain: 0

Vote:

Participating members at the table were:

Doug Smith	**Aye**
Kevin Massengill	**Aye**
Joseph Casey	**Aye**
Frank Haltom	**Aye**
March Altman	**Aye**

Absent During Vote: **None**

- **Financials**

Ms. Wilkins reported on the Financials.

5. Items from Counsel

There were no items from Counsel.

6. Closed Session

Mr. Anderson read the Resolution to go into Closed Session (attached).

Upon a motion made by Mr. Massengill and seconded by Dr. Casey the Board went into Closed Session at 2:50 p.m.

For: 5 Against: 0 Abstain: 0

Upon a motion made by Dr. Casey and seconded by Mr. Altman the Board came out of Closed Session at 3:22 p.m.

Mr. Anderson read the Certification regarding the Closed Session and, upon a motion made by Dr. Casey and seconded by Mr. Altman, it was approved by a unanimous roll call vote (attached).

Vote:

Doug Smith	**Aye**
Kevin Massengill	**Aye**
Joseph Casey	**Aye**
Frank Haltom	**Aye**
March Altman	**Aye**

Absent During Vote: **None**

Mr. Smith thanked Mr. Wilson for the outstanding job he and his staff were doing. The Board voted to give Mr. Wilson a 5% salary increase effective July 1, 2023.

Upon a motion made by Mr. Altman and seconded by Mr. Massengill the following resolution was adopted:

RESOLVED, that the Board approves the Executive Director receive a 5% salary increase effected July 1, 2023:

For: 5 Against: 0 Abstain: 0

Vote:

Doug Smith	**Aye**
Kevin Massengill	**Aye**
Joseph Casey	**Aye**
Frank Haltom	**Aye**
March Altman	**Aye**
Absent During Vote:	**None**

Ms. Wilkins requested that Mr. Smith put this in writing to her.

7. Other Items from Board Members/Staff Not on Agenda

There were no other items from Board Members/Staff not on the agenda.

8. Adjourn

Mr. Smith stated, if there is no other business, and asked for a motion to adjourn.

Upon a motion by Dr. Casey and seconded by Mr. Haltom the meeting was adjourned at 3:25 p.m.

Mr. Stoke left at 3:25 p.m.

MINUTES APPROVED BY:

_____

Frank Haltom/Secretary/Treasurer

RESOLUTION

OF THE APPOMATTOX RIVER WATER AUTHORITY
APPROVING THE BUDGET FOR FISCAL YEAR 2024
AND SETTING THE RELATED WATER RATES

WHEREAS, during fall 2022 and winter 2023 the staff of the Appomattox River Water Authority (the "Authority") developed the Authority's proposed budget and water rates for Fiscal Year 2024 and at the meeting held on January 26, 2023, presented the proposed budget and water rates to the Board of the Appomattox River Water Authority (the "Authority Board"); and

WHEREAS, at the meeting of January 26, 2023, the Authority Board provided its preliminary approval of the proposed budget and water rates for Fiscal Year 2024 and scheduled a public hearing to be held at its meeting held on March 16, 2023, in accordance with Virginia Code Section 15.2-5136(G); and

WHEREAS, the Authority Board held the public hearing on the proposed Fiscal Year 2024 budget and water rates at its meeting on March 16, 2023; and

WHEREAS, following the public hearing the Authority staff adjusted the proposed budget and water rates in response to comments received from representatives of the Authority's member jurisdictions;

NOW, THEREFORE, BE IT RESOLVED that the Authority Board hereby approves (a) the Fiscal Year 2024 budget submitted as an attachment to this resolution and (b) the water rates for Fiscal Year 2024 as set forth below:

RATES ($/1,000 gallons)

	FY2024
Chesterfield County	1.0616
City of Colonial Heights	1.0889
Dinwiddie County	1.4851
City of Petersburg	1.0586
Prince George County	1.3898

BE IT FURTHER RESOLVED that the Authority Board acknowledges that the above-stated water rates will be subject to change in accordance with the Authority's water service agreement in effect between the Authority and each of its five member jurisdictions, based on, among other things, the amount of water actually purchased by each member jurisdiction and the amounts of revenues received and expenses incurred by the Authority during Fiscal Year 2024.

APPOMATTOX RIVER WATER AUTHORITY
21300 Chesdin Road
Petersburg, VA 23803

SOUTH CENTRAL WASTEWATER AUTHORITY
900 Magazine Road
Petersburg, VA 23803

GUIDELINES FOR PUBLIC COMMENT AT SCWWA/ARWA BOARD OF DIRECTORS MEETINGS

If you wish to address the SCWWA/ARWA Board of Directors during the time allocated for public comment, please raise your hand or stand when the Chairman asks for public comments.

Members of the public requesting to speak will be recognized during the specific time designated on the meeting agenda for "Public Comment Period." Each person will be allowed to speak for up to three minutes.

When two or more individuals are present from the same group, it is recommended that the group designate a spokesperson to present its comments to the Board and the designated speaker can ask other members of the group to be recognized by raising their hand or standing. Each spokesperson for a group will be allowed to speak for up to five minutes.

During the Public Comment Period, the Board will attempt to hear all members of the public who wish to speak on a subject, but it must be recognized that on rare occasion presentations may have to be limited because of time constraints. If a previous speaker has articulated your position, it is recommended that you not fully repeat the comments and instead advise the Board of your agreement. The time allocated for speakers at public hearings are the same as for regular Board meeting, although the Board can allow exceptions at its discretion.

Speakers should keep in mind that Board of Directors meetings are formal proceedings and all comments are recorded on tape. For that reason, speakers are requested to speak from the podium and wait to be recognized by the Chairman. In order to give all speakers proper respect and courtesy, the Board requests that speakers follow the following guidelines:

- Wait at your seat until recognized by the Chairman;
- Come forward and state your full name and address. If speaking for a group, state your organizational affiliation;
- Address your comments to the Board as a whole;
- State your position clearly and succinctly and give facts and data to support your position;
- Summarize your key points and provide the Board with a written statement or supporting rationale, when possible;
- If you represent a group, you may ask others at the meeting to be recognized by raising their hand or standing;
- Be respectful and civil in all interactions at Board meetings;
- The Board may ask speakers questions or seek clarification, but recognize that Board meetings are not a forum for public debate; Board Members will not recognize comments made from the audience and ask that members of the audience not interrupt the comments of speakers and remain silent while others are speaking so that other members in the audience can hear the speaker;
- The Board will have the opportunity to address public comments after the Public Comment Period has been closed;
- At the request of the Chairman, the Executive Director may address public comments after the session has been closed as well; and
- As appropriate, staff will research questions by the public and respond through a report back to the Board at the next regular meeting of the full Board. It is suggested that citizens who have questions for the Board or staff submit those questions in advance of the meeting to permit the opportunity for some research before the meeting.

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Exhibit C

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

DATE: September 21, 2023

SUBJECT: Lake Model Presentation

As part of the FY24 budget process, staff requested demand projections from each member's utility director for a ten-year planning window (through FY33/34). These demand projections were forwarded to Hazen (formally Hydrologics) to determine the impact on lake levels through the planning period.

Mr. Steve Nebiker of Hazen will present how the projected finished water demands impact the withdrawal limits outlined in the current Virginia Water Protection Permit (VWP permit #: 01-1719). The limits given in the VWP are for raw water withdrawals:

- A maximum daily withdrawal of 86.24 mgd.
- A maximum monthly withdrawal of 2.289 BG which works out to an average day for the month of 76.3 mgd.
- A maximum annual withdrawal of 17.934 BG which works out to an average day of 49.1 mgd for a calendar year of 365 days.

For Mr. Nebiker's presentation we used the limiting factor as the maximum annual withdrawal of 17.934 BG for raw water which converts to 49.1 mgd average daily withdrawal. The raw water withdrawal is higher than the water delivered to customers. The total raw water withdrawn on a daily basis includes water for backwashing filters, Clari- Vacs for cleaning the basins, and house (plant) water.

Mr. Nebiker will also review the performance goals the Board approved for acceptable lake level drawdown and illustrate the impact on the acceptable frequencies if the projected finished water demands come to fruition. Preliminary discussions with the Authority's largest customer, Chesterfield County, indicate the immediate need for an additional 10 mgd will be delayed. A delay for this additional consumption would delay the immediate need for raw water improvements. However, extending the current actual raw water projections outward using the period from 2016 to 2020 to determine the projected increases indicates that we hit the 49.1 mgd average day withdrawal in 2034. From this analysis

it is evident that we need to update the Alternative Analysis for additional raw water sources. Funding for the Alternative Analysis is included in the existing VWP permit renewal appropriation.

A copy of Mr. Nebiker's presentation is attached as Attachment C-1.

Board Action Requested:

This report is submitted for information purposes and discussion. No Board action is requested.

Hazen

Exhibit C-1

Chesdin Reservoir
Water Supply Reliability Analysis

July 20, 2023

Steven Nebiker
Casey Caldwell

Reliability Assessment

- Evaluate system reliability at various demand levels using new reservoir bathymetry
- Show the reliability metrics that were used in 2013 to support the approval of the current minimum release permit
  - Metrics were developed with ARWA and VA DEQ
  - Current permit issued in Nov 2013; expires in Oct 2028

Key Provisions of Permit

a. A maximum daily withdrawal of 86.24 million gallons per day (mgd).

b. A maximum monthly withdrawal of 2.289 billion gallons.

c. A maximum annual withdrawal of 17.934 billion gallons.

3. The permittee shall estimate inflow in units of cubic feet per second (cfs) to the Chesdin Reservoir on a daily basis by monitoring the stream flow gages detailed herein and by applying the equation "Inflow = Qmo + Qdc * 2.475", where:

   a. Qmo is the previous day's provisional mean daily flow at the United States Geologic Survey Appomattox River at Route 602 near Mannboro Gaging Station (No. 02040892);

   b. Qdc is the previous day's provisional mean daily flow at the United States Geologic Survey Deep Creek near Mannboro Gaging Station (No. 02041000); and

   c. 2.475 is the adjustment factor for drainage area.

4. The permittee shall provide releases from Chesdin Reservoir through the Brasfield Dam in accordance with the following. The releases shall include the volume of water discharged from the Water Treatment Plant and returned immediately below the Brasfield Dam:

   a. Releases shall be provided in accordance with the following table until such time when the normal target pool elevation of the reservoir is increased above 158 feet above mean sea level (msl) NGVD29:

Inflow (cfs)	Outflow
≤60	100% of Inflow
>60 and ≤ 120	90% of Inflow
>120 and ≤ 200	Lesser of 80% of Inflow or Q_{max} [1]
≥200	Lesser of 75% of Inflow or Q_{max} [1]

Notes:

1. Q_{max} shall be determined using the below chart and shall regulate releases for the rest of the year (March 2nd through the following March 1st):

Condition	Q_{max} Flow (cfs)
Normal (non-drought) conditions or $Q_{JanFeb} \geq 1600$	250
Drought Watch or $Q_{JanFeb} \geq 915$ and < 1600	190
Drought Warning or $Q_{JanFeb} < 915$	140

   b. Funding was appropriated by the 2013 General Assembly for expanding capacity at the Chesdin Reservoir. Should the Authority undertake a project under this appropriation, a major modification to this permit is required.

5. A Standard Operating Plan for determining inflows to the Chesdin Reservoir and releases from Brasfield Dam shall be submitted to DEQ for review and approval within 120 days of permit

Updated sedimentation survey

Table No. 1
Chesdin Reservoir Storage Volumes (Full Pool)

Date	Chesdin Reservoir Storage (MG)	TOTAL Sedimentation (MG)	Sedimentation as % of AS-BUILT Total Storage
1968 As-Built[1]	10,490	0	0
2000[2]	9,565	925	8.8%
2011[3]	9,269	1,221	11.6%
2023[4]	9,192	1,298	12.4%
2073 (Projected)	8,824	1,666	15.9%

Notes:

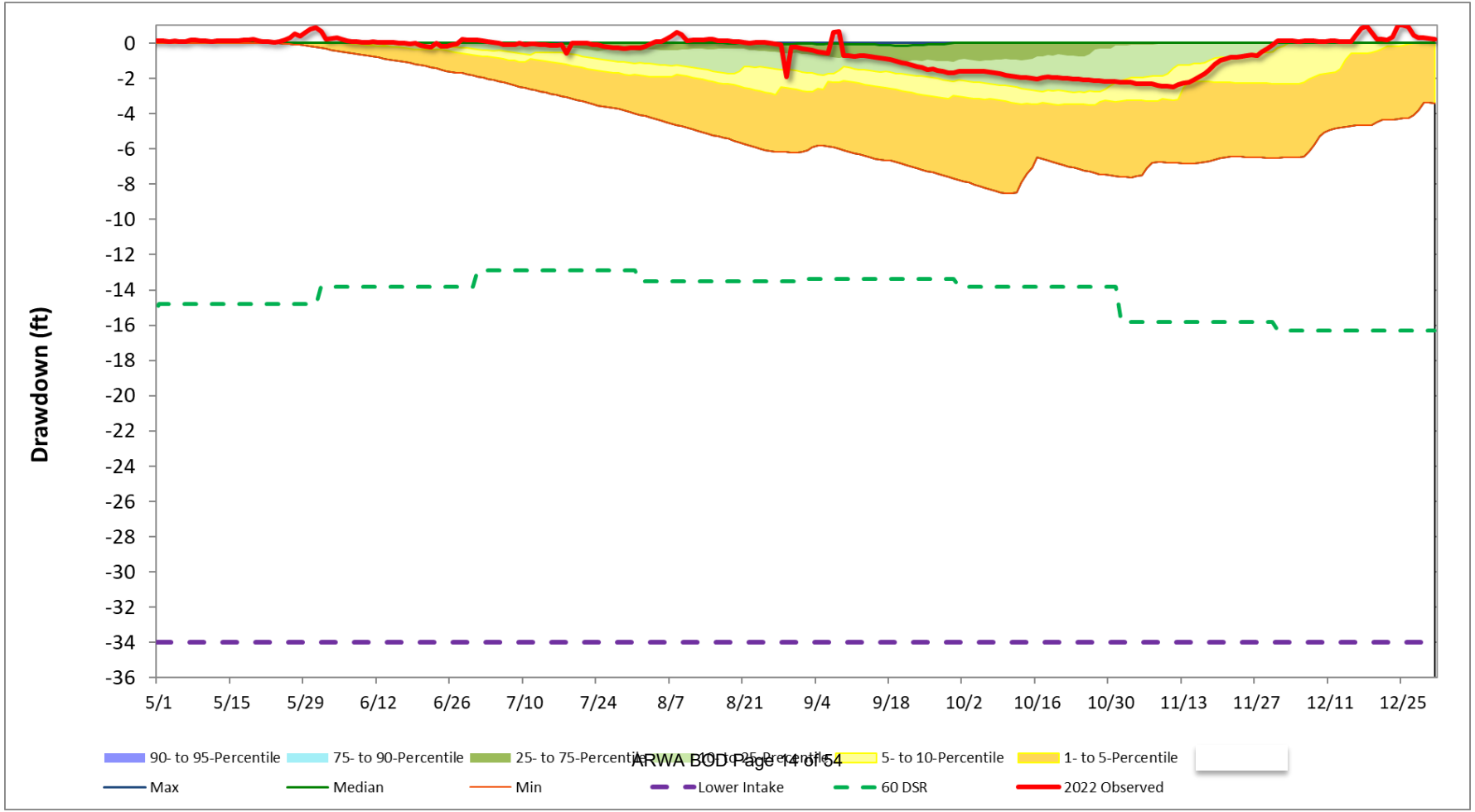
1. As-Built volume was recalculated in the 2000 Source Water Study by Gannett Fleming. This was determined by digitizing original contour maps.
2. Results from Hydrographic Survey performed by Ocean Surveys in April 2001.
3. Results from Hydrographic Survey performed by Ocean Surveys in May 2011.
4. Results from Hydrographic Survey performed by Ocean Surveys in January 2023.

So average rate of sedimentation over next 50 years = (1666 – 1298 MG) / 50 years = 7.4 MG / yr (prior estimate we used was 22 MG/yr)

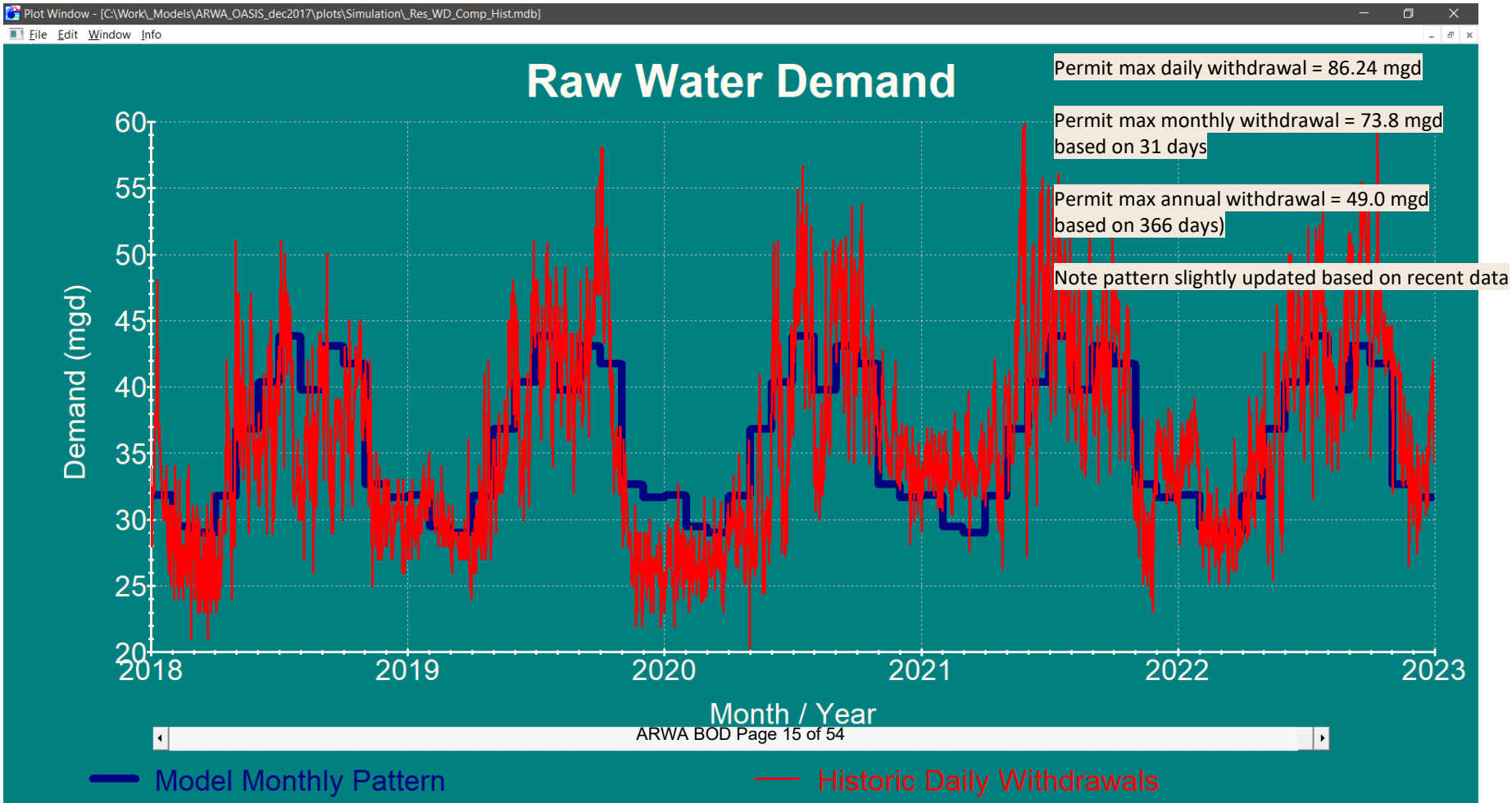
Full pool = 157.2 feet (NAVD 88); 158.0 feet (NVGD 29)
Lowest intake = 123.2 feet (34 feet down per ARWA)
Estimated storage = 83 MG

SAE curve in OASIS in NAVD88;
SAE based on usable storage (total – sediment), with max of 9192 MG at full pond.

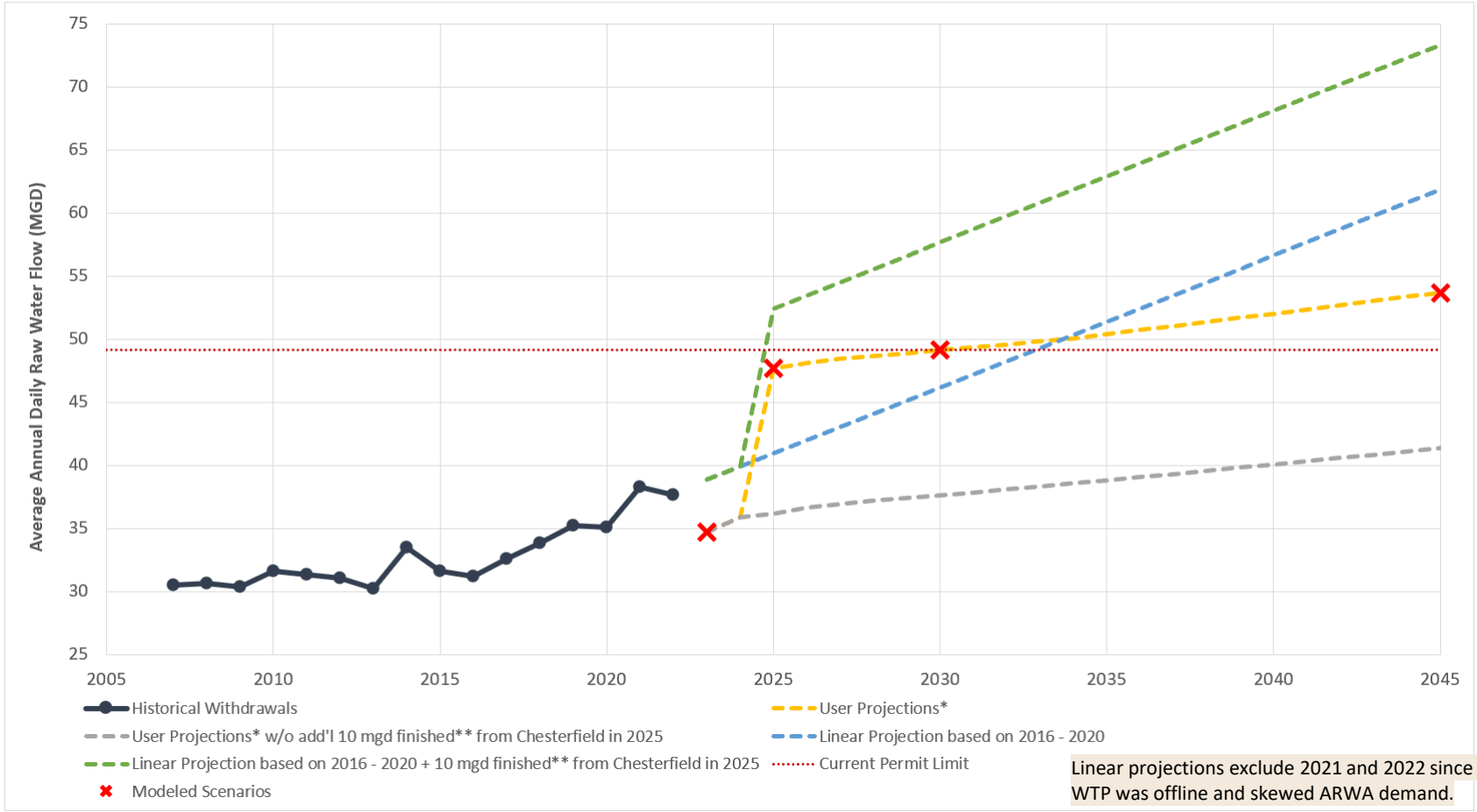
2022 Chesdin Drawdown vs. Percentiles from Simulated Record at projected 2023 demand levels (34.7 mgd)



Daily Historic Demand vs. Monthly Pattern



Summary of Raw Water Demands



Linear projections exclude 2021 and 2022 since Chesterfield's Addison-Evans WTP was offline and skewed ARWA demand.

Historical WDs and trend lines are based on calendar year

* ***User projections are for finished water and fiscal year (July to June) [typically similar to calendar year];***

** ***Add 15% to finished water for estimated raw water demand***

System Performance Goals

- Drought plan activation frequency
  - Voluntary – 1 in 5 years
  - Mandatory – 1 in 25 years
  - Emergency – 1 in 97 years (hydrologic period of record)

- Drawdown frequency
  - Recreation > 2 ft (May 15 – Sep 30) – 1 in 5 years
  - Recreation > 4 ft (May 15 – Sep 30) – 1 in 10 years
  - Out-Migration > 3.5 ft, 45+ consecutive days (Sep 1 – Nov 30) – 1 in 17 years

- Maintain minimum storage – 60 days of supply
  - Based on usable storage (total – sediment – lowest intake)
  - Changes depending on demand year due to sedimentation
    - So current year = 9192 MG – 83 MG (intake) = 9109 MG
    - Year 2045 = 9192 MG – (83 MG + (2045 – 2023) * 7.4 MG/yr) = 8946 MG
    - Elevation of intake ignored; no use of SAE for that demand year; instead, assumed intake is above sed pool, use storage instead of elevation.
  - Days of supply remaining (DSR) = usable storage / daily raw water demand

Reliability Metrics

Drought Plan	Trigger	Current 2023 34.7 MGD	2025 47.7 MGD	2030 49.1 MGD	2045 53.7 MGD
Frequency of Trigger Activation	Stage 1 (Voluntary)	1 in 8 yrs	1 in 4 yrs	1 in 4 yrs	1 in 3 yrs
	Stage 2 (Mandatory)	1 in 48 yrs	1 in 10 yrs	1 in 7 yrs	1 in 6 yrs
	Stage 3 (Emergency)	< 1 in 97 yrs	1 in 48 yrs	1 in 48 yrs	1 in 32 yrs
Frequency of Drawdown Event	Rec > 2 ft	1 in 5 yrs	1 in 3 yrs	1 in 3 yrs	1 in 2 yrs
	Rec > 4 ft	1 in 32 yrs	1 in 7 yrs	1 in 7 yrs	1 in 5 yrs
	Mig > 3.5 ft, 45+ days	1 in 32 yrs	1 in 11 yrs	1 in 11 yrs	1 in 7 yrs
Preserves 60-day supply?*		Yes (115 days)	No (52 days)	No (46 days)	No (28 days)

Red = goal not met
Yellow = within 1 event of goal
Green = goal met

Recreation statistics are for May 15 – Sep 30

Out-Migration statistics are for Sep 1 – Nov 30

* Storage available with projected levels of sedimentation from 2023 survey and lower intake level of 123.2 ft (34 ft drawdown)

Conclusions

- Chesdin Reservoir remains reliable at current system demand level
  - **Drawdown in 2022 was typical of a normal year**
- Reliability metrics will not be met in the near future if demand projections materialize

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Exhibit D

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

DATE: September 21, 2023

SUBJECT: Lake Safety Update

At the May meeting, the Board asked staff to perform some additional tasks related to lake safety:

- Draft a statement summarizing the boating accident findings from the September 17, 2022 accident. That summary was completed on May 23rd, circulated to members via email and posted on the website. A copy of the summary is included as Attachment D-1.
- Provide supporting documentation to Dinwiddie County and Chesterfield County on the distance for the exclusionary zone for incorporation into the respective ordinances. This information was forwarded to both members on May 23rd.
- The Board requested an update on citations issued on the lake for this year. Staff requested this information from both DWR and the Chesterfield County Police Department. For May and June, the following enforcement took place:
    - Chesterfield County
        - 16 violations – All 16 violations were given warnings and no citations or summons were issued.
            - ✓ (15) Boat registration issues.
            - ✓ (1) Reckless operation of a jet ski.
    - DWR
        - 12 violations – Citations written for each offense
            - ✓ (7) Boat registration issues
            - ✓ (3) No life jacket on PWC (personal watercraft – jet ski)

- ✓ (1) Fishing without a license
- ✓ (1) Underage possession of alcohol

- I talked with First Sergeant Woodruff of DWR and inquired how many additional citations had been written since the end of June and he advised another 30 to 40 citations had been issued through August 24th. Currently, the DWR conservation officer out of Isle of Wight is covering Lake Chesdin. I offered to have maintenance staff take officers around the lake if that would assist with familiarizing themselves with the lake.

- The Board requested staff put together maps illustrating the locations of the exclusionary zone and approved No Wake zones for inclusion on the website. Staff is currently putting this information together. An example is included as Attachment D-2.
- Staff is working on website improvements related to boater safety.

In August, Dinwiddie County successfully navigated the public and application process to install a No Wake zone at the entrance to Whipponock Creek from Lake Chesdin. Authority staff installed the buoys and provided the required lat/long locations.

On August 12th the first "Glow Party" was held on the lake. DWR conservation officers, Chesterfield County Police Department marine division and the Dinwiddie County Sheriff's Office monitored the event. First Sergeant Woodruff from DWR summarized the event as follows:

- There were approximately 40 boats max with a couple coming and going at different times. At night there approximately 18-20 boats until midnight.
- He was told one person jumped into the water and cut their face on a rock but it did not develop into an emergency situation.
- There was one fight where people dispersed when DWR officers approached the beach. No action was necessary.
- There three or four instances where random fireworks were shot from land towards the lake.
- Music was turned off from the event organizer at 10:00 pm as advertised. There were boats that played music later and DWR officers stayed until the boats went home.

On Tuesday, September 5th we received an inquiry from a boater requesting permission to go inside the exclusionary zone to search for a sunk air boat with side scan imaging. We did not grant his request. Maintenance staff used authority side scan and searched the area. They were unable to locate anything. The boater would not provide the owner or registration number for the air boat. We forwarded the information to First Sergeant Woodruff of DWR for further investigation. We did provide DWR with the name and contact information for the person that wanted to perform the side scan. There are two issues here. First, a boating accident on the lake without notifying DWR and second, a sunk vessel with fuel on board and not reporting to the authority.

<u>Board Action Requested:</u>

This report is submitted for information purposes and discussion. No Board action is requested.

Appomattox
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21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

May 23, 2023

September 22, 2022 Boating Accident Findings and Response

The Appomattox River Water Authority (ARWA) owns and operates Lake Chesdin as a surface water impoundment that provides potable drinking water to five members: Chesterfield County, Dinwiddie County, Prince George County, the City of Colonial Heights, and the City of Petersburg. All five members acknowledge the importance of balancing a potable water resource with recreational use. Therefore, when an incident occurs on the lake, the ARWA Board of Directors and staff review all associated reports and findings to determine if there are additional navigational aids or warnings that need to be installed or ordinances considered so that a similar occurrence does not happen in the future.

On September 17, 2022, there was a fatal boating accident on Lake Chesdin. Unfortunately, two individuals were thrown into the water and lost their lives. We would like to take a moment to remember these individuals and convey our deepest sympathies, thoughts, and prayers to the families.

Multiple agencies participated in this investigation with the lead agency being the Department of Wildlife Resources (DWR). The findings from the investigation were completed in late April and forwarded to the Dinwiddie Commonwealth Attorney's Office for review. The Commonwealth Attorney determined no further legal action would be taken.

The ARWA Board of Directors and staff reviewed the findings and held additional discussions with DWR staff. The report and follow up discussions established that sight distance and lake conditions did not contribute to the cause of the accident. No recommendations were made for additional navigational aids or new lake ordinances to increase safety.

To be proactive, the ARWA Board of Directors instructed staff to perform the following tasks:

- Post the maximum speed limit at all public access ramps. The maximum speed limit by ordinance on the lake is 45 mph. The speed limit signs have been installed.
- Develop information for the ARWA website, www.arwava.org and signage with QR codes to make lake ordinances and boating safety requirements available to boaters as they access the lake. Information should include:

    - Locations of DWR permitted NO Wake zones:

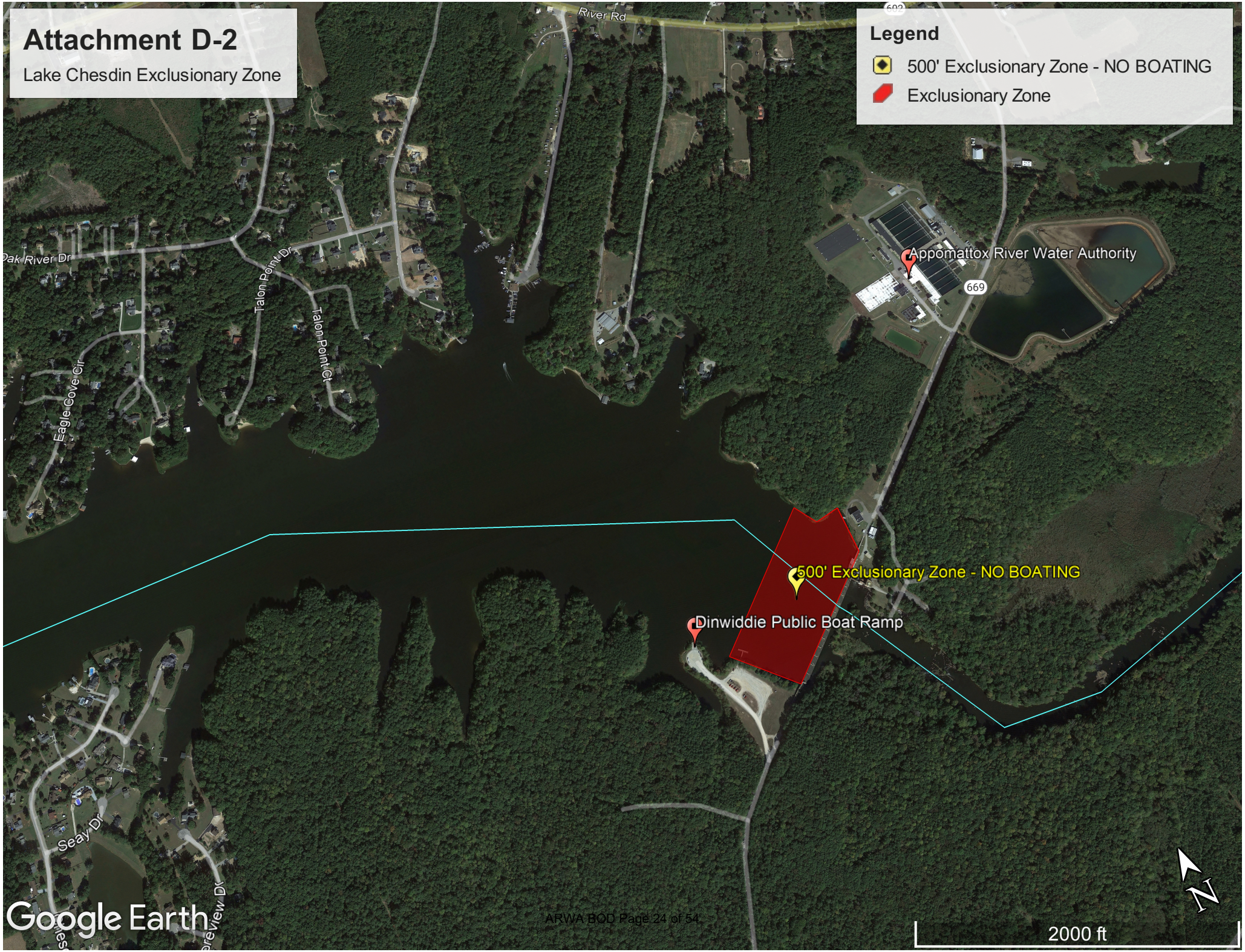
- DWR public boat ramp (Dinwiddie side)
- Whipponock marina (Dinwiddie side)
- Seven Springs marina (Chesterfield side)
- Entrance to Eagle Cove (Chesterfield side)
- Cattle Creek at Chesdin Landing (Chesterfield side)
- Whipponock Creek – under review (Dinwiddie side)

- Exclusionary zone requirements. No boats allowed within 500' of the dam.
- The posted 45 mph maximum speed limit.
- A link to boater safety information.
- Contact information if someone observes something on the lake. "See something, say something."

  This task is under development.

In addition to DWR, the Chesterfield County Police Department, Dinwiddie Sheriff's Office and the State Police provide enforcement support on the lake. The Chesterfield County Police Department is providing additional boat patrols on weekends and holidays including speed limit enforcement.

We hope everyone who enjoys a day on the water will continue to do so. We encourage boat passengers to wear life jackets and be familiar with safe boating operations. We thank everyone for their continued protection and safe use of this valuable water resource and recreational amenity.


Attachment D-2
Lake Chesdin Exclusionary Zone
Legend
500' Exclusionary Zone - NO BOATING
Exclusionary Zone
River Rd
602
Appomattox River Water Authority
669
Talon Point Dr
Talon Point Ct
Eagle Cove Cir
Seay Dr
500' Exclusionary Zone - NO BOATING
Dinwiddie Public Boat Ramp
N
2000 ft
Google Earth

Appomattox
River
Water
Authority

21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

Exhibit E

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

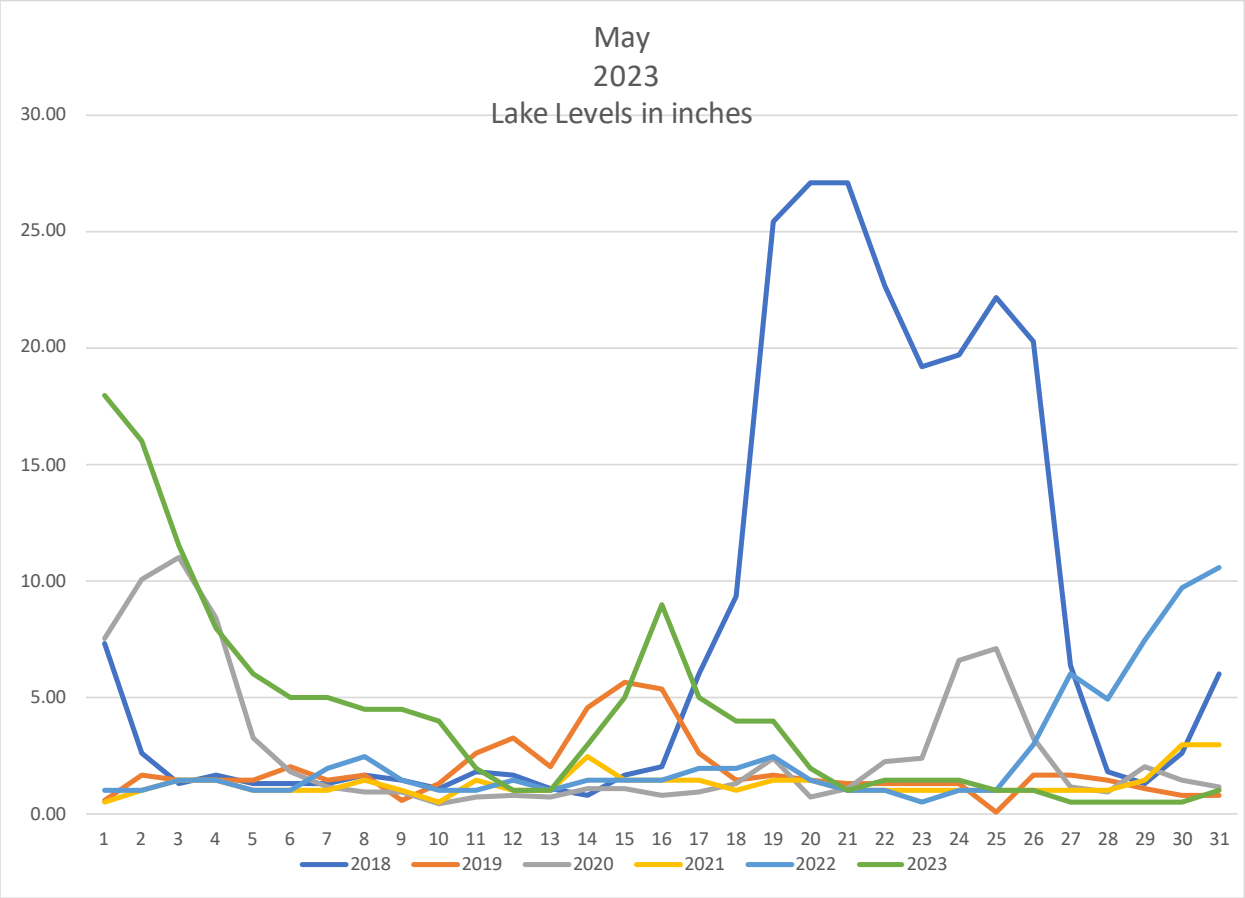
DATE: September 21, 2023

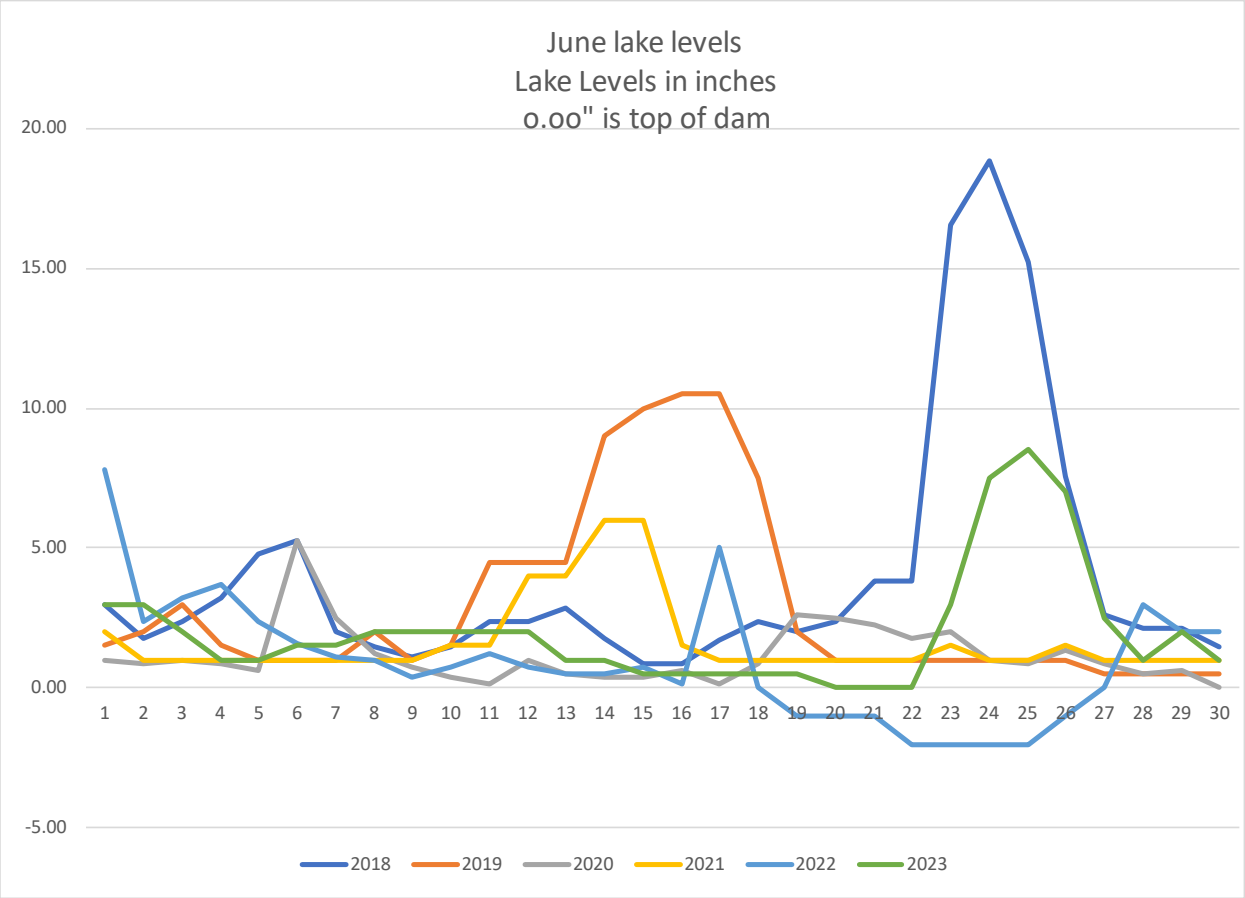
SUBJECT: Status Report
May/June/July/August

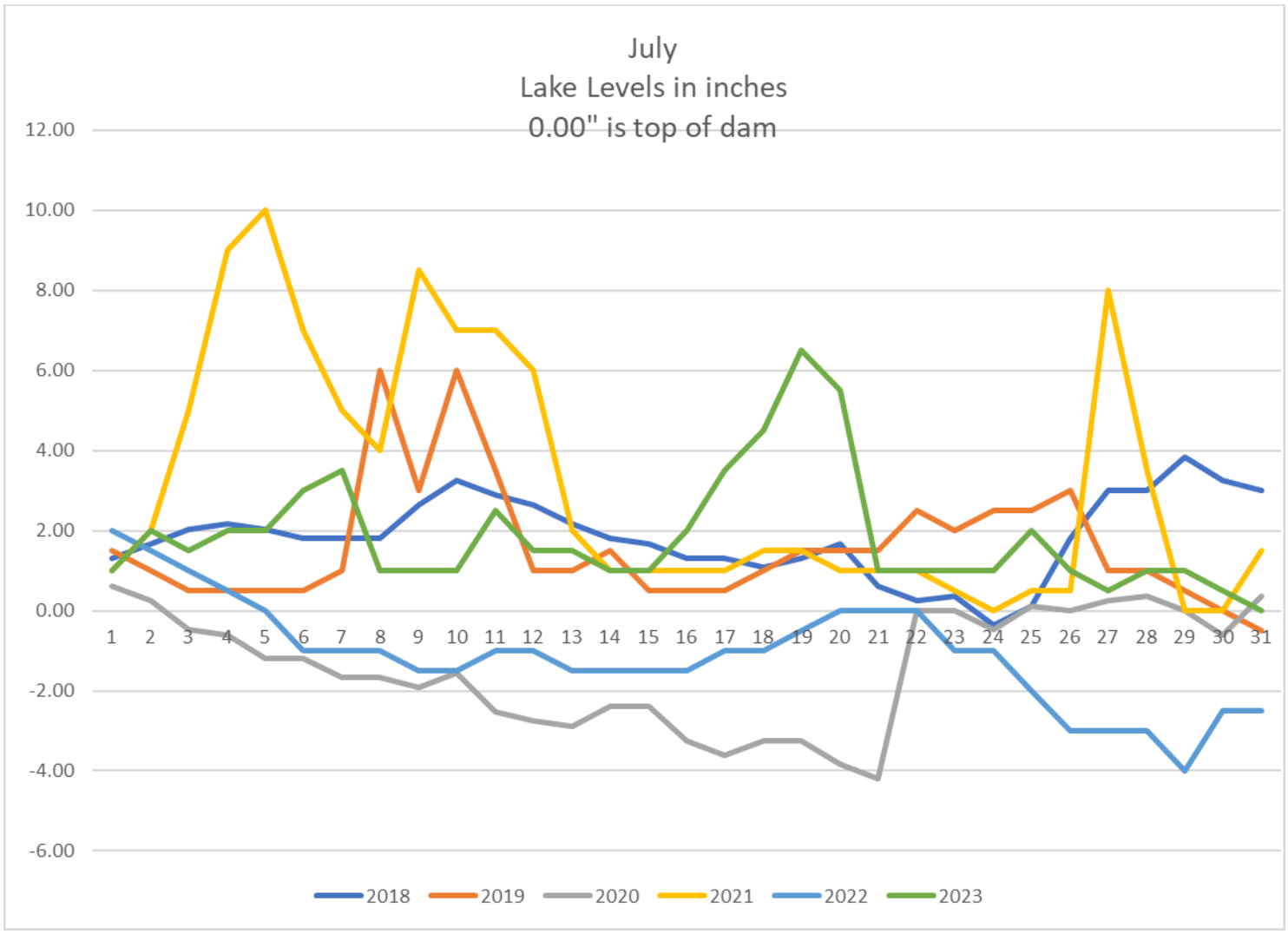
- General

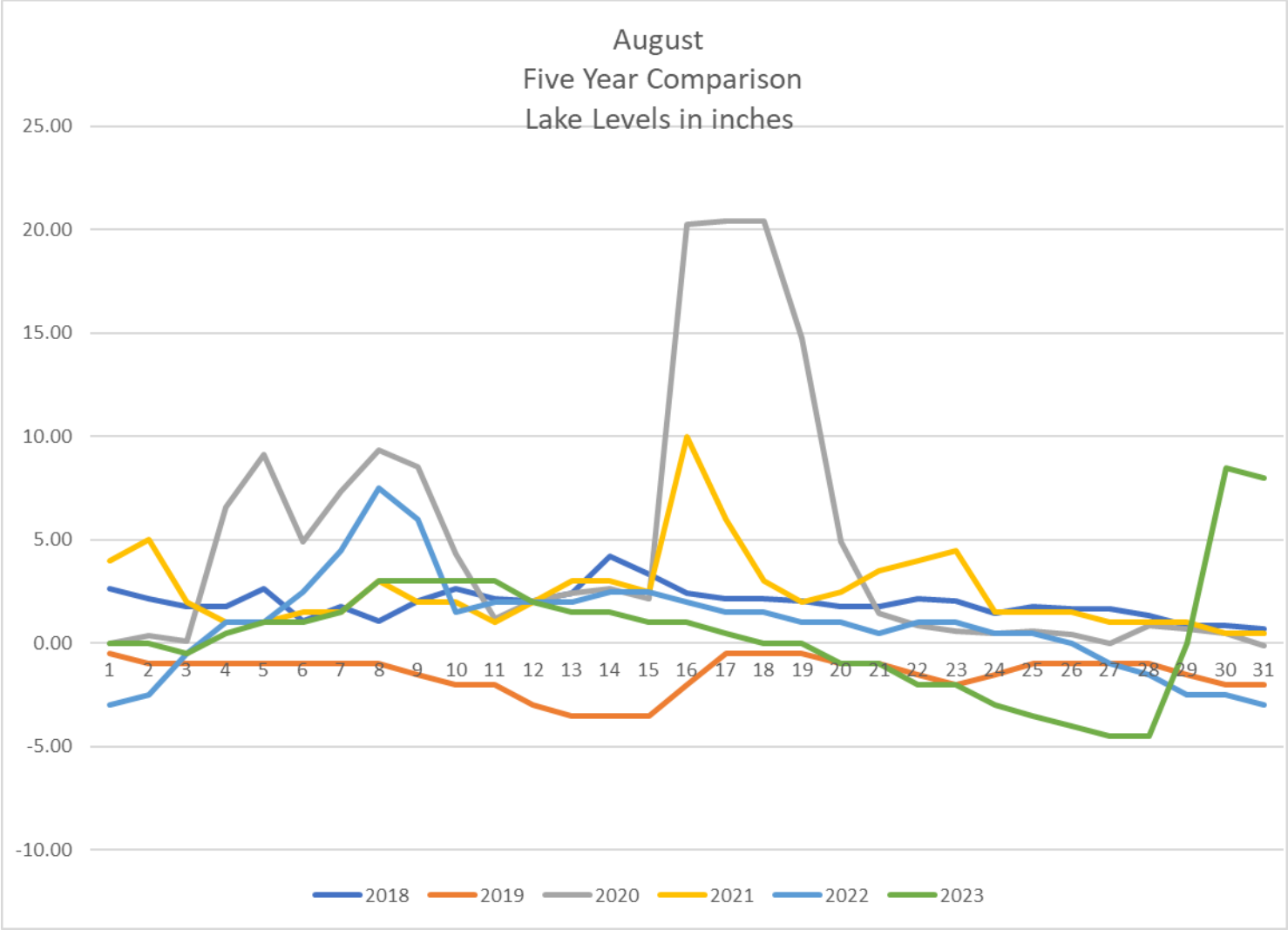
- The following is an update for May/June/July/August plant operations. With the cancellation of the July meeting this report is somewhat large. A lot of the information was emailed to members throughout the period to keep them informed.
- The executive director will be out of the office October 5th through October 8th.
- The new Crater Planning District Commission executive director, Mr. Jay Ellington, toured the plant on July 11th.
- Officers from Fort Gregg-Adams toured the plant on July 19th.
- The executive director and assistant executive director will be attending WaterJam on September 13th and 14th.

- Lake Level Update


May
2023
Lake Levels in inches
30.00
25.00
20.00
15.00
10.00
5.00
0.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
2018
2019
2020
2021
2022
2023


June lake levels
Lake Levels in inches
o.oo" is top of dam
20.00
15.00
10.00
5.00
0.00
-5.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
2018
2019
2020
2021
2022
2023


July
Lake Levels in inches
0.00" is top of dam
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
2018
2019
2020
2021
2022
2023


August
Five Year Comparison
Lake Levels in inches
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
2018
2019
2020
2021
2022
2023

Month	Stage 1 – Drought Watch			Stage 2 – Drought Warning			Stage 3 – Drought Emergency		
	Percent Usable Storage (%)	NAVD88 Elevation (ft msl)	NGVD29 Elevation (ft msl)	Percent Usable Storage (%)	NAVD88 Elevation (ft msl)	NGVD29 Elevation (ft msl)	Percent Usable Storage (%)	NAVD88 Elevation (ft msl)	NGVD29 Elevation (ft msl)
Full Pool	*100*	*157.2*	*158*	*100*	*157.2*	*158*	*100*	*157.2*	*158*
Jan	75	154	154.8	60	151.5	152.3	40	147.3	148.1
Feb	80	154.8	155.6	65	152.3	153.1	42.5	147.9	148.7
Mar	82.5	155.2	156	70	153.2	154	45	148.5	149.3
Apr	85	155.5	156.3	70	153.2	154	45	148.5	149.3
May	85	155.5	156.3	70	153.2	154	45	148.5	149.3
Jun	82.5	155.2	156	67.5	152.7	153.5	45	148.5	149.3
Jul	80	154.8	155.6	65	152.3	153.1	42.5	147.9	148.7
Aug	75	154	154.8	60	151.5	152.3	40	147.3	148.1
Sep	70	153.2	154	55	150.7	151.5	40	147.3	148.1
Oct	65	152.3	153.1	50	149.7	150.5	35	146	146.8
Nov	70	153.2	154	52.5	150.2	151	35	146	146.8
Dec	75	154	154.8	55	150.7	151.5	37.5	146.6	147.4

- Operations

  - 2023 VA VWEA/AWWA Partnership Award. This is the twenty-fifth year in a row for meeting all the criteria for this award. The criteria for this award is no violations during the reporting period and filter turbidities are less than 0.10 95% of the time. We have three people on staff that have been here the entire twenty-five years – Mike Callen, Plant Manager, Kenny Nugent – Lead Operator, and Jerry Martin – Maintenance Chief.
  - The average daily finished water consumption for May was 33.36 mgd and the total withdrawn from the lake was 1.169 BG. The average daily finished water consumption for June was 35.94 mgd and the total withdrawn was 1.213 BG. The average daily finished water consumption for July was 36.78 mgd and the total withdrawn was 1.318 BG. The average daily finished water consumption for August was 41.10 mgd and the total withdrawn was 1.375 BG

    The maximum VWP permit criteria is:
    - Daily maximum withdrawal is 86.24 mgd.
    - Monthly maximum withdrawal is 2.289 billion gallons.
    - Maximum annual withdrawal is 17.934 billion gallons (49.1 mgd average)

  - The May 1st lake level was +18.00 and the August 31st lake level was 8.5".
  - Collected carbon cores off filters and sent out for evaluation.
  - Completed drop tests for filters.

- Tested generators and closed system power transfer.
- On-going operator training for new operators including safter handling of chemicals. Updating operations SOP's and JSA's (job safety analysis for particular tasks and SOP's).
- Assisted maintenance with chemical treatment of lake.
- Stripped and waxed filter floor in front of filters 1-16.
- Reviewed SCADA screens submitted by vendor and made improvements. Running two SCADA systems as we transition from WonderWare to IFIX.
- Security firmware upgrades to all controllers.
- Worked with maintenance on hypo tank feed line and pump header replacement.
- Improved and formalized procedures for daily checks by operators.
- Eric Salamon celebrated his five-year anniversary. Mr. Salamon is a Class I shift lead operator.
- Sent operator assistants to Virginia Tech for training.
- Tatum Branch passed his Class IV license test and Corey Grant passed his Class III license test.
- Calibrated all sedimentation NTU meters.
- Working on filter drop tests.
- Upgraded flow meter for increased accuracy on ortho chemical feed.

➢ Maintenance

- Treated lake for algae on May 17, May 18, July 6, July 7, July 26, August 23 and August 25.
- Worked with contractor to repair 54" leak. Repair was completed without interruption to members.
- Re-piped suction lines for sodium hypo pumps #1-#6.
- Completed over 200 PM's (preventative maintenance work orders).
- Worked with divers on underwater inspections. Locked out and tagged out pumps and screens for inspection.
- Removed P24 (split case horizontal pump) out of RW2 and took to Atlantic Pump for repair. Sent motor to motor shop for rehab. Reinstalled both pump and motor.
- Mounted new surveillance cameras on RWPS2, FWPS2, and operations (visual for ramp and basins).
- Assisted contractor with new AC units for PLC room in the Pre-Chemical Building and first floor of Pre-Chemical Building – new power circuits and cored walls.
- Replaced bulkhead fitting on fluoride tank. This required notification and fluoride being offline.
- Hired a new maintenance mechanic.
- Installed new communications cable to maintenance entrance gate for delivery access.
- Replaced ventilation fans at both the Swift Creek and Temple Avenue meter vaults.

➢ Instrumentation

- Continuing to work with SCADA vendor on operations conversion. Had GE IFIX reps on site with Emerge to work through performance issues.

- Replaced Lakeview PLC (scheduled)
- Installed new surveillance camera server.
- Completed conversion from hosted email exchange to Office 365.
- Offboarded PC vendor and onboarded new PC vendor. Worked with both vendors for a successful transition (new services contract).
- Upgraded electronics at Temple Avenue meter vault.

➢ Laboratory

- Monthly eDMR submittals to DEQ for May, June, July and August. This is for lagoons.
- Monthly Compliance Monitoring Data Portal (CMDP – bac-t and chemistry) submitted to VDH.
- Monthly Water Quality Reports submitted to industries.
- Performed lake analysis for algae to support decisions to treat lake.
- Continuing to build Flow Cam library for algae analysis.
- Whole Effluent Toxicity (WET) testing for lagoon outfalls.
- Groundwater monitoring completed for quarter number two and quarter three for the monitoring wells around the lagoons.
- Bac-t testing for members.
- Staff attended Good Laboratory Practice Conference.
- Assisted operations with troubleshooting titrator, pH meter and turbidimeter in operator's laboratory.

➢ 30" Transmission Fortification

- Project complete.

➢ Liquid Lime System

- Rough in electrical materials on site.
- Contractor submitting shop drawings to engineer for review.
- Contractor scheduled to be on site the week of July 17th.
- Contractor is tying reinforcing steel for secondary containment area.

➢ 54" water line leak

- There was a leak on the 54" water line between clearwell #1 and clearwell #2. An outside contractor was called into make the repair. The leak was found on a 54" dresser style coupling. The contractor was able to make the repair without any interruption to members.

➢ Hydrilla

- We met with Peter Nash of WSP to discuss the lack of progress on the Hydrilla Management Team. Mr. Nash introduced us to a new hire that will be taking the lead on resurrecting this

committee. Mr. Nash is scheduling an evening meeting at ARWA in the next couple of weeks to meet with committee members and discuss a path forward.

- Lead and Copper Rule

  - We are forwarding information to members via email as we get it.
  - As a reminder, the service inventory for each member is due to VDH by **October 16, 2024**.

- Elevated Tank Study

  - Purchase Order issued through professional services contract to W|W Associates.
  - Budget $200K and purchase order issued for $160.5K.
  - Purchase order tasks include field survey, geotechnical report, hydraulic analysis, concept plans, and preliminary engineering report (PER) for VDH. If a balloon must be flown to satisfy planning requirements, that will be time and materials.
  - Preliminary area onsite selected for tank locations.
  - Considering two 2.5 MG elevated tanks with 107' diameter steel bowls on a concrete pedestal.

- Inundation Study for waste lagoons

  - This is a DCR regulatory requirement.
  - The east lagoon, closest to Chesdin East Pump Station, will have an engineering analysis performed to determine the impact on Mr. Radcliffe's property and pond if the dam were to experience catastrophic failure. This will include evaluating the spillway for Mr. Radcliffe's dam.
  - We have contacted Mr. Radcliffe and Mr. Dyson for access and advised of the inundation study. Study concluded catastrophic breach of lagoon dam would not inundate the existing house, nor the proposed house, or their existing pond dam.
  - The study has been submitted to DWR for comment. Since there are two residents directly downstream of the lagoon dam, the hazard classification will be increased to "high hazard" based on the requirements of the Virginia Soil and Water Conservation Board's Impounding Structure Regulations. The requirements for the new classification will be handed down after DCR's review. Most likely that will require some type of notification requirements.
  - As a reminder in the FY25/26 proposed budget there is a placeholder of $8 million to either line the lagoons or potentially construct a third. Additional information on the lagoon is included in the VPDES discussion.

- VPDES renewal for waste lagoons

  - We have reviewed the draft permit for the waste lagoons. The WET limit for survival (of flathead minors) has been reduced from 1.44 to 1.29. A TDS (total dissolved solids) limit has been added.
  - The draft permit acknowledges there may be groundwater influence from the lagoons. We have submitted test data from the surrounding groundwater monitoring wells over the last ten years. Even though there is influence for the water in the lagoons, the results are still below

the groundwater drinking standards. Nevertheless, we will be required to develop and submit a Site Characterization Plan within 180 days of permit renewal date. We have contacted Peter Nash at WSP who has assisted us with the past groundwater monitoring and has a professional relationship with DEQ to assist with the Site Characterization Plan. A proposal from him is forthcoming.

- There is an appropriation in the FY25 budget for $8.0 million to address the lagoons – either line or build lagoon #3.

➢ Docks

Date	Address	Locality	Construction
5/19/2023	9269 Eagle Cove Circle	Chesterfield	New
7/6/2023	15236 Isle Pines Drive	Chesterfield	New

➢ Replace Pontoon Boat

- Tentative delivery date is the end of September.

➢ Miscellaneous

- The Authority received an inquiry from Waterford Landing requesting the requirements for dredging for their community boat ramp. Staff provided a bulleted list of the requirements for dredging greater than 25 cubic yards of material, links to examples on the VMRC website for completing the required JPA (Joint Permit Application) for maintenance dredging operations and contact information for the Corps representative.

Appomattox
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21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

Exhibit F

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

DATE: September 21, 2023

SUBJECT: PFAS Update

The fifth Unregulated Contaminant Monitoring Rule (UCMR 5) was issued by EPA in December 2021. UCMR 5 is sampling for 29 PFAS compounds. A summary of the proposed sampling requirements and 29 PFAS compounds being sampled is included as Attachment F-1.

Currently two of our members are participating in UCMR 5, City of Colonial Heights and Chesterfield County. The City of Colonial Heights had samples collected on April 24, 2023. The results from this sampling event were made available on June 13, 2023. Of the 29 PFAS compounds sampled, there were two exceedances; (1) perfluorobutanoic acid or PFBA and (2) perfluoropentanoic acid of PFPeA. The reporting limit for PFBA is 0.005 ug/l (parts per billion) and value sampled was 0.0070 ug/l and the reporting limit for PFPeA is 0.003 ug/l and value sampled was 0.0034 ug/l.

Chesterfield County is not scheduled for their UCMR 5 sampling until January of 2024.

There are two companies 3M and Dupont starting to negotiate settlements. Both VAMWA and VMDWA are looking at how utilities and authorities should align themselves legally to determine how to limit the exposure created by the impact of these compounds. This is a developing process.

More updates will be provided as they become available.

Board Action Requested:

No Board action is requested.

United States Environmental Protection Agency

The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5)

Program Overview Fact Sheet

What is the Unregulated Contaminant Monitoring Rule (UCMR)?

As part of its responsibilities under the Safe Drinking Water Act (SDWA), the U.S. Environmental Protection Agency (EPA) implements Section 1445(a)(2), Monitoring Program for Unregulated Contaminants. SDWA requires that once every five years, EPA issue a list of priority unregulated contaminants to be monitored by certain public water systems across States, Tribes, and Territories. These contaminants may be present in drinking water but are not yet subject to EPA drinking water standards. Under the Unregulated Contaminant Monitoring Rule (UCMR), EPA collects nationally representative drinking water occurrence data to support EPA's future regulatory determinations and, as appropriate, assist in the development of national primary drinking water regulations (NPDWRs). For each UCMR cycle, EPA establishes a new list of contaminants for monitoring, specifies which systems are required to monitor, identifies the sampling locations, and defines the analytical methods to be used. On December 17, 2021, EPA Administrator Michael Regan signed the final "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 5) for Public Water Systems" and the rule was subsequently published in the *Federal Register* on December 27, 2021 (86 FR 73131). The 5-year UCMR 5 cycle spans 2022 – 2026, with preparations in 2022, sample collection from 2023 – 2025, and completion of data reporting in 2026.

Which water systems will participate in UCMR 5?

Section 2021 of America's Water Infrastructure Act of 2018 (AWIA) (Public Law 115-270) amended SDWA and specifies that, subject to the availability of EPA appropriations for such purpose and sufficient laboratory capacity, EPA must require all public water systems serving between 3,300 and 10,000 people to monitor and ensure that a nationally representative sample of systems serving fewer than 3,300 people monitor for the contaminants in UCMR 5 and future UCMR cycles. Systems serving a population of more than 10,000 people (large systems) continue to be responsible for participating in the UCMR program.

EPA anticipates approximately one-third of all systems will collect samples each year between 2023 and 2025. If EPA does not receive the appropriations needed in a given year, EPA will reduce the number of small systems that will be asked to perform monitoring.

Size Category (Number of People Served)	Monitoring Design (CWSs and NTNCWSs)[2]	Total # of Systems per Size Category
Small Systems[1] (fewer than 3,300)	Nationally representative sample	800
Small Systems[1] (3,300-10,000)	All systems, if confirmed by EPA	5,147[3]
Large Systems (10,001 and over)	All systems	4,364[3]
Total		10,311

1. This requirement is based on the availability of appropriations and sufficient laboratory capacity
2. Community Water Systems (CWSs), Non-Transient Non-Community Water Systems (NTNCWSs)
3. Counts are approximate

What contaminants are in UCMR 5?

UCMR 5 specifies monitoring for 29 per- and polyfluoroalkyl substances (PFAS) and lithium listed in the table below.

Contaminant	CASRN[1]	MRL[2] (µg/L)	Additional Information
25 PFAS: EPA Method 533			
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	0.005	PFAS are a group of synthetic chemicals used in a wide range of consumer products and industrial applications including: non-stick cookware, water-repellent clothing, stain-resistant fabrics and carpets, cosmetics, firefighting foams, electroplating, and products that resist grease, water, and oil. PFAS are found in the blood of people and animals and in water, air, fish, and soil at locations across the United States and the world.
1*H*,1*H*, 2*H*, 2*H*-perfluorodecane sulfonic acid (8:2FTS)	39108-34-4	0.005	
1*H*,1*H*, 2*H*, 2*H*-perfluorohexane sulfonic acid (4:2FTS)	757124-72-4	0.003	
1*H*,1*H*, 2*H*, 2*H*-perfluorooctane sulfonic acid (6:2FTS)	27619-97-2	0.005	
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	0.003	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	0.002	
hexafluoropropylene oxide dimer acid (HFPO-DA)(GenX)	13252-13-6	0.005	
nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	0.02	
perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	113507-82-7	0.003	
perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	0.004	
perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	0.003	
perfluorobutanesulfonic acid (PFBS)	375-73-5	0.003	
perfluorobutanoic acid (PFBA)	375-22-4	0.005	
perfluorodecanoic acid (PFDA)	335-76-2	0.003	
perfluorododecanoic acid (PFDoA)	307-55-1	0.003	
perfluoroheptanesulfonic acid (PFHpS)	375-92-8	0.003	
perfluoroheptanoic acid (PFHpA)	375-85-9	0.003	
perfluorohexanesulfonic acid (PFHxS)	355-46-4	0.003	
perfluorohexanoic acid (PFHxA)	307-24-4	0.003	
perfluorononanoic acid (PFNA)	375-95-1	0.004	
perfluorooctanesulfonic acid (PFOS)	1763-23-1	0.004	
perfluorooctanoic acid (PFOA)	335-67-1	0.004	
perfluoropentanesulfonic acid (PFPeS)	2706-91-4	0.004	
perfluoropentanoic acid (PFPeA)	2706-90-3	0.003	
perfluoroundecanoic acid (PFUnA)	2058-94-8	0.002	
4 PFAS: EPA Method 537.1			
N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2991-50-6	0.005	See above for PFAS information.
N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2355-31-9	0.006	
perfluorotetradecanoic acid (PFTA)	376-06-7	0.008	
perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.007	
Metal/Pharmaceutical: EPA Method 200.7; SM[3] 3120 B (2017); SM[3] 3120 B-99 (1999); ASTM[4] D1976-20			
lithium	7439-93-2	9	Naturally occurring metal that may concentrate in brine waters; lithium salts are used as pharmaceuticals, used in electrochemical cells, batteries, and in organic syntheses.

1. CASRN – Chemical Abstracts Service Registry Number
2. MRL – Minimum Reporting Level
3. SM – Standard Methods
4. ASTM – ASTM International

Where will samples be collected?

UCMR 5 samples will be collected at entry points to the distribution system (EPTDS) for all contaminants.

- With prior approval, large ground water systems that have multiple EPTDSs can sample at representative sampling locations rather than at each EPTDS through a Ground Water Representative Monitoring Plan (GWRMP).
- Systems that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler. The representative EPTDS must be a location within the purchaser's water system. This EPTDS sampling location must be representative of the highest annual volume.

What is the sampling frequency and timing?

Water systems will be required to collect samples based on the typical UCMR sampling frequency and timeframe.

Water Source	Timeframe	Sampling Frequency
Surface water, ground water under the direct influence of surface water, or mixed sources systems	Year-Round	Systems must monitor 4 times during a consecutive 12-month monitoring period. Sample events must occur 3 months apart.
Ground water systems	Year-Round	Systems must monitor 2 times during a consecutive 12-month monitoring period. Sample events must occur 5-7 months apart.

What does UCMR 5 participation involve? Who pays?

All systems required to participate in UCMR 5 will *collect* samples. As with previous UCMRs, *large* systems make arrangements with approved laboratories and pay for their own sample shipping and analytical costs; EPA arranges for the analysis of *small*-system samples and pays for shipping and analytical costs. All laboratories conducting analyses for UCMR 5 must receive EPA approval to perform those analyses (UCMR Laboratory Approval Program).

How did EPA select the UCMR 5 contaminants?

The National Defense Authorization Act for Fiscal Year 2020 (NDAA) specifies that EPA shall include all PFAS in UCMR 5, for which a drinking water method has been validated by the Administrator and that are not subject to an NPDWR. Accordingly, UCMR 5 includes all 29 PFAS that are within the scope of EPA Methods 533 and 537.1, as well as lithium. In evaluating contaminants for UCMR 5, EPA considered the fourth Contaminant Candidate List (CCL 4) as well as contaminants nominated by the public for potential inclusion on the fifth CCL (CCL 5) and other priority contaminants.

EPA selected UCMR contaminants using a multi-step prioritization process. The first step identified contaminants that were not monitored under previous UCMR cycles; may have significant occurrence nationally; and have a completed, validated drinking water method. The next step focused on contaminants associated with one or more of the following considerations: an available health assessment to facilitate regulatory determinations; high public concern; critical health endpoints (for example, a likely or suggestive carcinogen); active use (for example, pesticides); and/or an occurrence data gap. Then EPA considered stakeholder input; looked at cost-effectiveness of analytical methods (single methods that address multiple contaminants of interest); considered implementation factors (such as laboratory capacity); and further considered available health data (e.g., children), occurrence data, and persistence/mobility data.

What are the public health benefits of the UCMR program?

The UCMR program provides EPA and other interested parties with nationally representative occurrence data on emerging contaminants in drinking water. The data can be used to support EPA's regulatory determinations and may support additional actions to protect public health.

The public benefits from the information about whether or not unregulated contaminants are present in their drinking water. If contaminants are not found, consumer confidence in their drinking water should improve. If contaminants are found, related health effects may be avoided when subsequent actions, such as regulations, are implemented, reducing or eliminating those contaminants.

Where can consumers find UCMR results?

All systems are required to report their data to EPA. The analytical results from UCMR are stored in the National Contaminant Occurrence Database (NCOD) for drinking water. For a summary of the UCMR results, tips for querying NCOD, and health effects information (including reference concentrations), please refer to the UCMR Occurrence Data webpage.

The Public Notification Rule requires that all systems notify their customers of the availability of UCMR results no later than 12-months after results are known. Community Water Systems (CWSs) are also required to report UCMR results in their annual Consumer Confidence Report (CCR) when unregulated contaminants are detected (the CCR Rule does not apply to non-community water systems). CWSs may include their public notice within CCRs, also known as annual drinking water quality reports, which are to be delivered to all billing customers by July 1 of each year. CWSs must report the average of the year's monitoring results and the range of detections. To obtain a copy of their CCR, consumers may check their water bill for information or contact their water supplier. Additional information about the CCR including details on reporting requirements can be found on the CCR Homepage.

What are the key deadlines and requirements?

Due Date	Requirement	Report via SDWARS[1]
Following Rule Publication on December 27, 2021		
August 1, 2022	**Laboratories** seeking approval must complete and submit the necessary registration form and application materials in order to participate in the laboratory approval process. Contact UCMR_Lab_Approval@epa.gov for more information.	
December 31, 2022	**Large systems** must register for EPA's web-based reporting system "SDWARS", accept their notification letter, and update sampling location(s) and zip code(s). If applicable, the system may update their monitoring schedule. After December 31, 2022, large systems must contact UCMR_Sampling_Coordinator@epa.gov to request any changes.	X
December 31, 2022	**Small systems** must register for SDWARS, accept their notification letter and update sampling location(s), shipping address, and zip code(s). Systems must provide an explanation and obtain approval for any requested monitoring schedule change. Contact the UCMR Message Center at UCMR5@glec.com for more information.	X
6 months prior to the water system's scheduled sample collection	**Large ground water systems** (or large surface water systems with ground water sources) that wish to monitor from representative EPTDSs may submit a ground water representative monitoring plan (GWRMP) approved under a prior UCMR cycle or a proposal for a new representative sampling plan. Systems scheduled for sample collection in 2023 are encouraged to submit plans by December 31, 2022, to allow time for review by EPA and, as appropriate, the State. Contact UCMR_Sampling_Coordinator@epa.gov for more information.	
Following Sample Collection		
Within 90 days of sample collection	**Laboratories** post data to SDWARS.	X
Within 30 days of laboratory posting data	**Large water systems** review and approve the data. If the system has not acted upon the data after 30 days, the data are considered approved and ready for state and EPA review.	X

1. Safe Drinking Water Accession and Review System (SDWARS).

What are the data elements EPA will collect?

EPA will collect the following information in EPA's web-based data reporting system, SDWARS.

Public Water System Identification (PWSID) Code	Disinfectant Type	Analysis Date
Public Water System Name	Treatment Information	Sample Analysis Type
Public Water System Facility Identification Code	Sample Collection Date	Analytical Result–Sign
Public Water System Facility Name	Sample Identification Code	Analytical Result–Measured Value
Public Water System Facility Type	Contaminant	Additional Value
Water Source Type	Analytical Method Code	Laboratory Identification Code
Sampling Point Identification Code	Extraction Batch Identification Code	Sample Event Code
Sampling Point Name	Extraction Date	Historical Information for Contaminant Detections and Treatment
Sampling Point Type Code	Analysis Batch Identification Code	Potential PFAS Sources

Where can I find more information?

- Safe Drinking Water Information Website for information on how to submit drinking water comments or questions to EPA Office of Ground Water and Drinking Water
- UCMR Website for information on current and past UCMRs, occurrence data, and public meetings
- EPA Ground Water and Drinking Water Website for information on source water protection, drinking water regulations, monitoring requirements for States and systems, SDWA on Tribal lands, and laboratory certification
- EPA PFAS Website for information on the Agency's actions to address PFAS

Questions?

- Contact the UCMR Message Center at UCMR5@glec.com for general information about monitoring requirements or navigating SDWARS
- Contact UCMR_Sampling_Coordinator@epa.gov for changes to large water system inventory and/or schedule after December 31, 2022
- Contact UCMR_Lab_Approval@epa.gov for information on the laboratory approval program and general laboratory support

Appomattox
River
Water
Authority

21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

Exhibit G

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

DATE: September 21, 2023

SUBJECT: Purchase Repair Materials for Inventory

In July we experienced a leak on the 54" water line between Clearwell #1 and Clearwell #2. A contractor was brought in to assist maintenance staff with the repair. Fortunately, the repair was made by tightening the bolts on an existing dresser style coupling without interruption of service to members.

During the repair we found we did not have the necessary materials in inventory for a repair of this size and nature. Therefore, we developed a list of 54" materials to stock in case there is a future event. The list includes a 54" flanged butterfly valve, one stick of 54" pipe, two flanged by plain end pieces of pipe for the 54" butterfly valve, repair clamps, megalug style fittings and required gasket and bolt kits. The estimated cost for these materials is $275K to $300K.

Funding to purchase these materials can either be out of the true-up for the FY23 audit (anticipating a surplus) or the Operating Reserve. The FY23 audit true-up will be presented at the November meeting.

The reason we are requesting Board approval is that this is an unbudgeted expense and the purchase does not meet the definition of an emergency purchase. We are recommending to proceed with the ordering since the lead time on some of the materials is up to thirty-four weeks.

<u>Board Action Requested:</u>

Staff requests the Board authorize the executive director to proceed with ordering 54" materials for inventory. Staff recommends the purchase of these materials be funded by surplus funds from the FY23 true-up.

Appomattox
River
Water
Authority

21300 Chesdin Rd. - S. Chesterfield, VA 23803 - Phone (804) 590-1145 - Fax (804) 590-9285

Exhibit H

TO: Appomattox River Water Authority Board of Directors

FROM: Robert B. Wilson, Executive Director
James C. Gordon, Assistant Executive Director

DATE: September 21, 2023

SUBJECT: Financial Investing

At the August 18, 2022 meeting, the Board authorized staff to invest various funds based on the following resolution:

> Resolved, that the Board authorizes staff and investment advisers to invest the various funds that we participate with the Authority, whether trustee held or whether we hold them, and to provide quarterly reporting to the Board. Staff and investment advisers can invest funds that have time frame criteria up to ten years for the maximum extent, and are to make sure we are purchasing within the 98% - 102% of par for those treasury securities within those parameters, then staff can invest as appropriate.

With the volatility of the market at the time, the first investment was only for a year for the ERRF and debt service reserve. We have discussed reinvesting both of these funds with our financial adviser, Davenport and counsel. Through discussions and evaluations, we determined that we will be investing both the ERRF and debt service reserve, per the terms stated in the resolution, for the next three years.

Additional information from Davenport is included as Attachment H-1.

This is being provided for informational purposes and update to the Board.

Board action requested:

No Board action is requested.

Debt Service Reserve Fund Investment

Appomattox River Water Authority

September 21, 2023

DAVENPORT PUBLIC FINANCE 1863

Background | Investment Options

- The Authority, with the assistance of legal counsel and Davenport, evaluated its investment options in 2022 and proceeded with the purchase of two (2) U.S. Treasury Notes:
  - A $2.5 million U.S. Treasury Note in the Equipment Repair & Replacement Fund (ERRF) with an interest rate of 3.79% that matures on August 31, 2024; and
  - A $2.0 million U.S. Treasury Note in the Debt Service Reserve Fund (DSRF) with an interest rate of 3.88% that matures on September 30, 2023.

- With the upcoming maturity of the U.S. Treasury Note in the DSRF, the Authority may want to consider its options for reinvestment.

- Article VII of the Master Trust Agreement (see Appendix A) addresses the permitted investment options for funds held with the Trustee, allowing for the Authority to direct the Trustee to invest funds in the DSRF in:
  - U.S. Treasury indebtedness;
  - Commonwealth of Virginia indebtedness;
  - Alternative money market instruments (i.e., LGIP); or
  - Any other investment permitted by the Investment of Public Funds Act, Chapter 45 of Title 2.2 of the Code of Virginia (except Obligations of Federal Agencies and Commercial Paper).

Source: Master Trust Agreement.

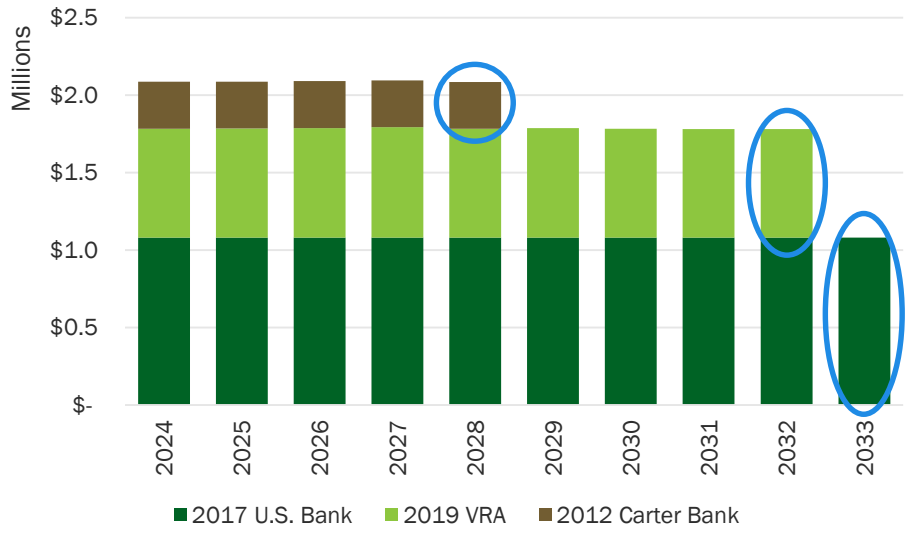
Debt Service Reserve Fund Requirement

- The DSRF is required to be funded at a level equal to the Maximum Annual Debt Service on the Authority's outstanding revenue bonds.
  - As of 6/30/2023, the required balance was $2,094,831.
- The Reserve Requirement for existing revenue bonds is scheduled to decline at the final maturity for each outstanding revenue bond series:
  - 2012 Carter Bank Revenue Bonds – 10/1/2027
  - 2019 VRA Revenue Bonds – 10/1/2031
  - 2017 U.S. Bank Revenue Bonds – 10/1/2032
- The issuance of future revenue bonds will require additional deposits to the DSRF.
  - Based on discussions with staff, an additional revenue bond issuance is being considered in 2025-26.

Total Debt Outstanding

FY	Principal	Interest	Total
Totals	$ 16,582,000	$ 2,069,350	$ 18,651,350
2024	1,679,000	406,952	2,085,952
2025	1,723,000	364,483	2,087,483
2026	1,770,000	320,106	2,090,106
2027	1,821,000	273,831	2,094,831
2028	1,858,000	225,855	2,083,855
2029	1,605,000	180,777	1,785,777
2030	1,644,000	138,753	1,782,753
2031	1,685,000	95,220	1,780,220
2032	1,730,000	49,950	1,779,950
2033	1,067,000	13,423	1,080,423

Existing Revenue Bond Debt Service



Source: Master Trust Agreement, Bond Documents.

Debt Service Reserve Fund | Investment Options

- The table below reflects the estimated annual earnings* on a potential $2.0 million investment in the DSRF.
  - The portions of the DSRF associated with each of the Authority's revenue bonds may not be eligible for longer-term investments due to their final maturities.
  - U.S. Bank has indicated that an annual fee of $1,200 would be charged should the DSRF be invested in LGIP.

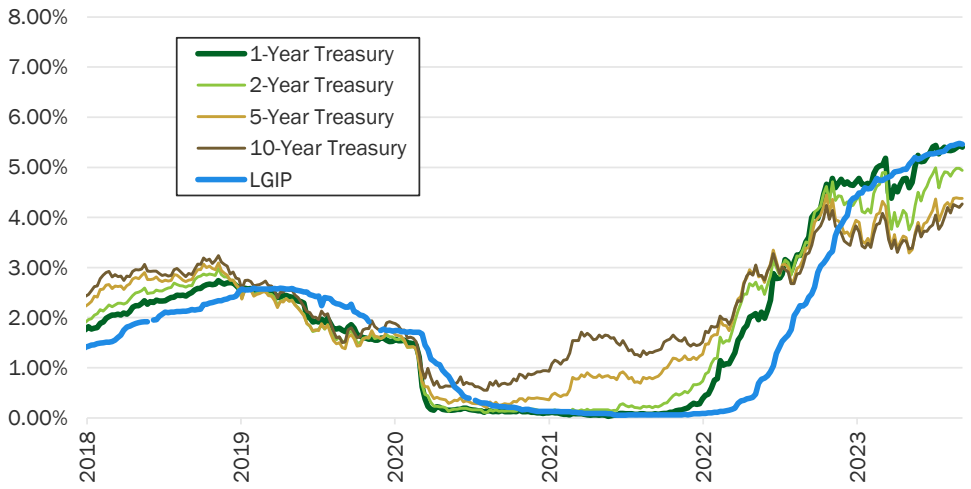
A	B	C
	Current Rate as of 9/7/2023	Investment Amount $2,000,000
First American Funds	5.19%	$103,800
LGIP		
Total Earnings	5.46%	$109,200
Less: U.S. Bank Fee		($1,200)
Net Earnings(1)		$108,000
Treasuries		
1-Year	5.40%	$108,000
2-Year	4.94%	$98,800
3-Year	4.66%	$93,200
5-Year	4.38%	$87,600
7-Year	4.35%	$87,000

*Estimated annual earnings subject to change based upon actual purchase price and terms of investments.
(1) Includes U.S. Bank fee of $1,200 per year for investing via an entity other than U.S. Bank.

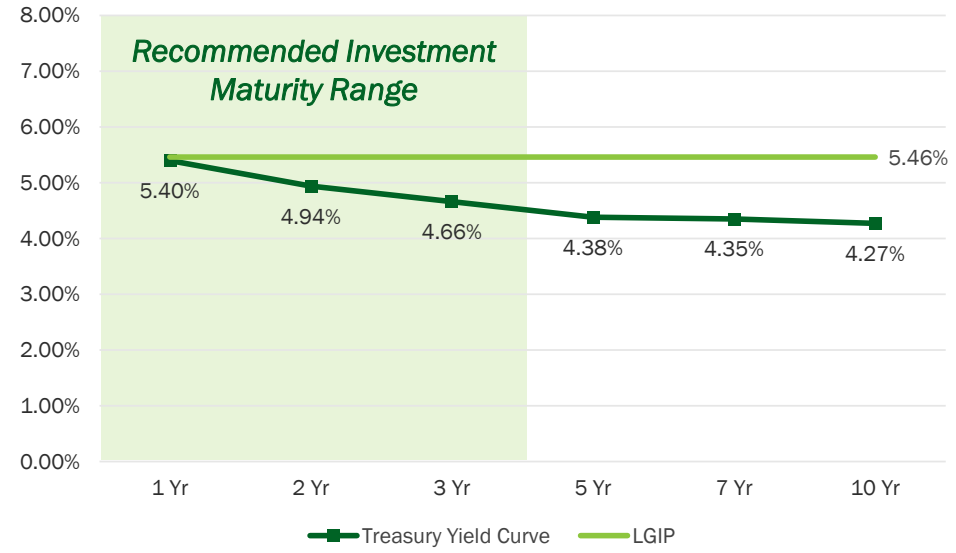
Source: Local Government Investment Pool, First American Funds (FGZXX Class Z).

Interest Rate Environment and Recommendation

Historical Interest Rates (2018 to Present)



Current Interest Rates (as of 9/7/2023)



Recommendation

- Based on discussions with Staff and Authority Counsel, Davenport recommends considering an investment in one or more U.S. Treasury Bonds with a final maturity on or before 10/1/2027.
  - This can be accomplished through one or more Treasury purchases with a single or laddered maturities.
- An investment as described above would accomplish the following:
  - Facilitate the ability to reduce the balance of the DSRF at the maturity of the 2017 Carter Bank loan;
  - Lock in an interest rate for the next 3-4 years;
  - Allow for the Authority to revisit the investment of the DSRF.

Note: As provided for in the Authority's bond documents, certain investment purchase parameters must be met to avoid any potential mark-to-market funding requirements.

Municipal Advisor Disclosure

The enclosed information relates to an existing or potential municipal advisor engagement.

The U.S. Securities and Exchange Commission (the "SEC") has clarified that a broker, dealer or municipal securities dealer engaging in municipal advisory activities outside the scope of underwriting a particular issuance of municipal securities should be subject to municipal advisor registration. Davenport & Company LLC ("Davenport") has registered as a municipal advisor with the SEC. As a registered municipal advisor Davenport may provide advice to a municipal entity or obligated person. An obligated person is an entity other than a municipal entity, such as a not for profit corporation, that has commenced an application or negotiation with an entity to issue municipal securities on its behalf and for which it will provide support. If and when an issuer engages Davenport to provide financial advisory or consultant services with respect to the issuance of municipal securities, Davenport is obligated to evidence such a financial advisory relationship with a written agreement.

When acting as a registered municipal advisor Davenport is a fiduciary required by federal law to act in the best interest of a municipal entity without regard to its own financial or other interests. Davenport is not a fiduciary when it acts as a registered investment advisor, when advising an obligated person, or when acting as an underwriter, though it is required to deal fairly with such persons.

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Appomattox River Water Authority-Balance Sheet

For Month Ending August 31, 2023

Assets			
Current Assets			
	Petty Cash	$	400
	SunTrust Operating Fund	$	1,144,117
	SunTrust Replacement Fund	$	-
	Total Unrestricted Cash	**$**	**1,144,517**
	Water Revenue	$	3,142,254
	LGIP-O&M Reserve	$	6,823,361
	LGIP-Revenue Surplus	$	2,659,345
	ERRF (Equipment Repair/Replacement)	$	2,558,975
	Debt Service Reserve	$	2,090,412
	Bond Principal/Interest	$	2,392,859
	Bond Construction	$	148,224
	Total Restricted Cash	**$**	**19,815,430**
	Total Checking/Savings	**$**	**20,959,947**
	Accounts Receivable	**$**	**14,800**
	Other Current Assets	**$**	**59,471**
	Inventory	**$**	**907,236**
Total Current Assets		**$**	**21,941,455**
Fixed Assets			
	Right to Use Lease Assets	$	21,869
	Accum amort-right of use lease	$	(11,841)
	Land and Land Rights	$	1,044,167
	Water System	$	99,933,139
	Equipment	$	1,893,883
	Hydro	$	34,873
	Construction in Progress	$	635,475
	Accumulated Amortization	$	(34,705)
	Accumulated Depreciation	$	(56,760,355)
Total Fixed Assets		**$**	**46,756,502**
Other Assets			
	Def Outflow-OPEB GLI	$	20,809
	Def Out Res-Post ER Pension Costs	$	-
	Deferred Outflow-OPEB GLI	$	-
	Def Out Res-Net Dif Pension Inv	$	-
	Def Out Res-OPEB Experience	$	24,843
	Def Out Res-OPEB Assumptions	$	3,182
	Def Out Res-OPEB Subsequent	$	13,173
	Total Other Assets	**$**	**62,007**
Total Assets		**$**	**68,759,964**

Appomattox River Water Authority-Balance Sheet

For Month Ending August 31, 2023

Liabilities & Equity

Current Liabilities			
	Accounts Payable	$	77,739
	Retainage Payable	$	10,161
	Accrued Interest Payable	$	106,942
	Accrued Interest-GASB 87	$	23
	Lease Liability-current portion	$	6,010
Total Current Liabilities		**$**	**200,875**
Long Term Liabilities			
	Def Inf Res-Net Dif Pension Inv	$	468,320
	Def Inf Res-Pen Chg Assumptions	$	(62,672)
	Def Inf Res-Pens Dif Proj/Act E	$	215,138
	Net Pension Liability	$	(1,738,602)
	Def Infl-OPEB Chg of Assumptions	$	13,925
	Deferred Inflow-OPEB GLI	$	25,976
	Deferred Inflow-Expect & Actual	$	55,359
	Bonds Payable-2010	$	-
	Bonds Payable-2012	$	1,399,000
	Bonds Payable-2017	$	9,553,000
	Bonds Payable-2019 Refunding Bond Payment	$	5,630,000
	Bonds Payable-2019 Def Amt on Refunding	$	(74,959)
	Lease Liability-non-current	$	4,265
	Accrued Leave Payable	$	215,938
	Post Employment Benefit	$	37,888
	OPEB Liability-GLI	$	83,805
Total Long-Term Liabilities		**$**	**15,826,380**
Total Liabilities		**$**	**16,027,256**
Equity			
	Retained Earnings	$	1,361,901
	Reserve for Water Revenue	$	16,414,413
	Reserve for Operations	$	-
	Reserve for Suplus	$	-
	Reserve for Replacements	$	2,500,000
	Reserve for Bond Interest	$	106,942
	Reserve for Debt Service	$	2,094,831
	Reserve for Bond Principal	$	1,679,000
	Reserve for Reserve	$	-
	Fixed Assets, Net of Debt	$	30,375,833
	Net Income	$	(1,800,212)
Total Equity		$	52,732,708
Total Liabilities & Equity		**$**	**68,759,964**
		$	-

Appomattox River Water Authority
YTD Income Statement for the period ending August 31, 2023

Water Rate Center	*Budget FY 22/23*	*Budget Year-to-Date*	*Actual Year-to-Date*	*YTD Budget vs. Actual*	*Variance Percentage*
Revenues and Expenses Summary					
Operating Budget vs. Actual					
Revenues					
Water Sales	$ 12,318,213	$ -	$ -	$ -	#DIV/0!
Rent/Misc. Income	$ 30,000	$ -	$ 920	$ 920	#DIV/0!
Total Operating Revenues	**$ 12,348,213**	**$ -**	**$ 920**	**$ 920**	**#DIV/0!**
Expenses					
Personnel Cost	$ 3,006,372	$ 501,062	$ 470,886	$ (30,176)	-6.02%
Contractual/Professional Services	$ 1,218,289	$ 205,548	$ 150,663	$ (54,885)	-26.70%
Utilities	$ 953,100	$ 158,850	$ 175,387	$ 16,537	10.41%
Communication/Postal/Freight	$ 46,500	$ 7,750	$ 7,952	$ 202	2.60%
Office/Lab/Janitorial Supplies	$ 105,000	$ 17,500	$ 12,607	$ (4,893)	-27.96%
Insurance	$ 125,000	$ 125,000	$ 139,423	$ 14,423	11.54%
Lease/Rental Equipment	$ 20,000	$ 3,333	$ 2,025	$ (1,308)	-39.24%
Travel/Training/Dues	$ 62,500	$ 10,417	$ 8,957	$ (1,460)	-14.02%
Safety/Uniforms	$ 40,000	$ 6,667	$ 4,073	$ (2,593)	-38.90%
Chemicals	$ 3,750,000	$ 625,000	$ 811,001	$ 186,001	29.76%
Repair/Maintenance Parts & Supplies	$ 350,000	$ 58,333	$ 55,955	$ (2,378)	-4.08%
Total Operating Expenses	**$ 9,676,761**	**$ 1,719,460**	**$ 1,838,929**	**$ 119,469**	**6.95%**
Operating Results Suplus/(Deficit)	**$ 2,671,452**	**$ (1,719,460)**	**$ (1,838,009)**	**$ (118,549)**	**6.89%**
Replacement Outlay Budget vs. Actual					
Machinery & Motors-Process	$ 157,500	$ 157,500	$ 19,834	$ (137,666)	-87.41%
Instrumentation	$ 68,000	$ 68,000	$ 10,205	$ (57,795)	-84.99%
Computer Equipment	$ 15,000	$ 15,000	$ -	$ (15,000)	-100.00%
Furniture/Fixtures	$ 30,000	$ 30,000	$ 19,410	$ (10,590)	-35.30%
Maintenance Equipment	$ 115,000	$ 115,000	$ -	$ (115,000)	-100.00%
Elevated Tank-Engineering Report	$ 200,000	$ 200,000	$ 7,235	$ (192,766)	-96.38%
Total Capital Outlay	**$ 585,500**	**$ 585,500**	**$ 56,683**	**$ (528,817)**	**-90.32%**
Construction Outlay Budget vs. Actual					
In-Plant Capital Upgrade	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
BOD Designated Surplus Fund					
Liquid Lime System	**$ -**	**$ -**	**$ 69,300**	**$ -**	**#DIV/0!**
Firewall Upgrade	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Replacement Doors	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
VWP Permit	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
FlowCam	**$ -**	**$ -**	**$ 2,868**	**$ -**	**#DIV/0!**
Debt Service Budget vs. Actual					
Interest Income	**$ -**	**$ -**	**$ 166,648**	**$ 166,648**	**#DIV/0!**
Other (Income)	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Sell of Asset	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Interest Expense	**$ 406,952**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Int on Purchase of US Treas	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Bond Issuance Cost	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Principal Payments	**$ 1,679,000**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Other Income/Other Expense					
Alum Litigation Proceeds-Received YTD	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**
Alum Litigation Proceeds-Credited to Members YTD	**$ -**	**$ -**	**$ -**	**$ -**	**#DIV/0!**

Appomattox River Water Authority
Executive Review
Cash And Debt Highlights
As of August 31, 2023

Highlights: ARWA Cash Positions		***30-Jun-23***	***31-Aug-23***	***Change***	***Explanation***
Unrestricted Cash & Investments:					
Petty Cash		$ 400.00	$ 400.00	$ -	see explanation (a) below
SunTrust Operating Account		$ 455,919.40	$ 1,144,117.23	$ 688,197.83	see explanation (b) below
SunTrust Replacement Fund		$ -	$ -	$ -	see explanation (c) below
Restricted Cash and Investments:					
Water Revenue		$ 3,090,283.77	$ 3,142,253.63	$ 51,969.86	see explanation (d) below
LGIP-O&M Reserve		$ 6,761,467.76	$ 6,823,360.74	$ 61,892.98	see explanation (e) below
LGIP-Revenue Surplus		$ 2,783,851.20	$ 2,659,345.30	$ (124,505.90)	see explanation (f) below
ERRF (Equipment Repair/Replacement)		$ 2,558,975.00	$ 2,558,975.00	$ -	see explanation (g) below
Debt Service Reserve		$ 2,089,495.89	$ 2,090,412.49	$ 916.60	see explanation (h) below
2012 Bond	Principal/Interest	$ 619,851.45	$ 625,019.72	$ 5,168.27	
2017 Bond	Principal/Interest	$ 492,972.60	$ 973,816.38	$ 480,843.78	
2019 Bond	Principal/Interest	$ 752,898.33	$ 794,022.99	$ 41,124.66	
2017 Construction		$ 146,998.32	$ 148,223.97	$ 1,225.65	
Total Cash and Investments		***$ 19,753,113.72***	***$ 20,959,947.45***	***$ 1,206,833.73***	

Highlights: ARWA Outstanding Bonds	***30-Jun-23***	***31-Aug-23***	***Change***
2012 Bond	$ 1,399,000.00	$ 1,399,000.00	$ -
2017 Bond	$ 9,553,000.00	$ 9,553,000.00	$ -
2019 Bond	$ 5,630,000.00	$ 5,630,000.00	$ -
2019 Bond-Def Amt on Refund	$ (74,959.43)	$ (74,959.43)	$ -
Total Bonds Outstanding	***$ 16,507,040.57***	***$ 16,507,040.57***	***$ -***

Explanation of Unrestricted and Restricted Cash positions:

a. On-Hand Petty Cash for incidental expenses
b. Financial Policy: Based on next four months of O&M expense
c. Pass-through account: From US Bank to SunTrust Bank for Replacement Fund Requisitions
d. Financial Policy: Held by Trustee for all operating water revenues
e. Financial Policy: 50% of current FY O&M Budget
f. Board Approval: Surplus Revenue approved for specific projects.
g. Financial Policy: Must maintain a minimum of $2.5M
h. Financial Policy: Held by Trustee, funded at such amount as may be necessary.

2012	Principal	Interest	Total
Year Ended June 30			
2013	$ -	$ 93,906.15	$ 93,906.15
2014	$ 193,000.00	$ 109,321.50	$ 302,321.50
2015	$ 199,000.00	$ 103,245.50	$ 302,245.50
2016	$ 205,000.00	$ 96,983.50	$ 301,983.50
2017	$ 211,000.00	$ 90,535.50	$ 301,535.50
2018	$ 218,000.00	$ 83,886.00	$ 301,886.00
2019	$ 225,000.00	$ 77,019.50	$ 302,019.50
2020	$ 232,000.00	$ 69,936.00	$ 301,936.00
2021	$ 239,000.00	$ 62,635.50	$ 301,635.50
2022	$ 247,000.00	$ 55,102.50	$ 302,102.50
2023	$ 255,000.00	$ 47,321.50	$ 302,321.50
2024	$ 263,000.00	$ 39,292.50	$ 302,292.50
2025	$ 271,000.00	$ 31,015.50	$ 302,015.50
2026	$ 280,000.00	$ 22,475.00	$ 302,475.00
2027	$ 288,000.00	$ 13,671.00	$ 301,671.00
2028	$ 297,000.00	$ 4,603.50	$ 301,603.50
	$ 3,623,000.00	**$ 1,000,950.65**	**$ 4,623,950.65**

Maintenance Projects*
charged to members based on Allocations

2017	Principal	Interest	Total
Year Ended June 30			
2018		$ 94,350.00	$ 94,350.00
2019	$ 750,000.00	$ 330,225.00	$ 1,080,225.00
2020	$ 769,000.00	$ 311,115.98	$ 1,080,115.98
2021	$ 789,000.00	$ 291,516.34	$ 1,080,516.34
2022	$ 809,000.00	$ 271,413.50	$ 1,080,413.50
2023	$ 830,000.00	$ 250,794.88	$ 1,080,794.88
2024	$ 851,000.00	$ 229,647.90	$ 1,080,647.90
2025	$ 872,000.00	$ 207,972.56	$ 1,079,972.56
2026	$ 895,000.00	$ 185,743.70	$ 1,080,743.70
2027	$ 918,000.00	$ 162,936.16	$ 1,080,936.16
2028	$ 941,000.00	$ 139,549.94	$ 1,080,549.94
2029	$ 965,000.00	$ 115,572.46	$ 1,080,572.46
2030	$ 989,000.00	$ 90,991.14	$ 1,079,991.14
2031	$ 1,015,000.00	$ 65,780.82	$ 1,080,780.82
2032	$ 1,040,000.00	$ 39,928.92	$ 1,079,928.92
2033	$ 1,067,000.00	$ 13,422.86	$ 1,080,422.86
	$ 13,500,000.00	**$ 2,800,962.16**	**$ 16,300,962.16**

Maintenance Projects*
charged to members based on Allocations

2019	Principal	Interest	Total
Year Ended June 30			
2020	$ -	$ 75,205.83	$ 75,205.83
2021	$ 90,000.00	$ 167,283.25	$ 257,283.25
2022	$ 545,000.00	$ 160,940.03	$ 705,940.03
2023	$ 555,000.00	$ 149,759.83	$ 704,759.83
2024	$ 565,000.00	$ 138,011.18	$ 703,011.18
2025	$ 580,000.00	$ 125,495.06	$ 705,495.06
2026	$ 595,000.00	$ 111,887.68	$ 706,887.68
2027	$ 615,000.00	$ 97,223.93	$ 712,223.93
2028	$ 620,000.00	$ 81,701.76	$ 701,701.76
2029	$ 640,000.00	$ 65,204.26	$ 705,204.26
2030	$ 655,000.00	$ 47,762.13	$ 702,762.13
2031	$ 670,000.00	$ 29,438.75	$ 699,438.75
2032	$ 690,000.00	$ 10,021.25	$ 700,021.25
	$ 6,820,000.00	**$ 1,259,934.94**	**$ 8,079,934.94**

This was both an expansion and maintenance project
Charged as follows: (45.62%-expansion, 54.38%-allocation

2022	$ 1,601,000.00	$ 487,456.03	$ 2,088,456.03
2023	$ 1,640,000.00	$ 447,876.21	$ 2,087,876.21
2024	$ 1,679,000.00	$ 406,951.58	$ 2,085,951.58
2025	$ 1,723,000.00	$ 364,483.12	$ 2,087,483.12
2026	$ 1,770,000.00	$ 320,106.38	$ 2,090,106.38
2027	$ 1,821,000.00	$ 273,831.09	$ 2,094,831.09
2028	$ 1,858,000.00	$ 225,855.20	$ 2,083,855.20
2029	$ 1,605,000.00	$ 180,776.72	$ 1,785,776.72
2030	$ 1,644,000.00	$ 138,753.27	$ 1,782,753.27
2031	$ 1,685,000.00	$ 95,219.57	$ 1,780,219.57
2032	$ 1,730,000.00	$ 49,950.17	$ 1,779,950.17
2033	$ 1,067,000.00	$ 13,422.86	$ 1,080,422.86