ANDERSON REGIONAL
JOINT WATER SYSTEM

998 Hunters Trail Anderson, SC 29625 Phone: 864-332-6534 Fax: 864-224-6116

BOARD AGENDA

Board of Commissioners
January 2022

I. Minutes December 14, 2021

II. Informational Reports

1. Executive Committee Meeting Summary
2. Finance and Administration Report
3. Operations Report
4. Sustainability Report
5. Engineering Report

Future planned Board meeting dates are:

- February 16, 2022
- April 27, 2022
- June 22, 2022

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www.arjwater.com

MINUTES OF THE ANDERSON REGIONAL JOINT WATER SYSTEM December 14, 2021

LET THE MINUTES SHOW THAT THE MEDIA WERE NOTIFIED OF THIS MEETING IN ACCORDANCE WITH THE SOUTH CAROLINA FREEDOM OF INFORMATION ACT.

A QUORUM OF THE BOARD IS PRESENT.

COMMISSIONERS PRESENT: Benjie McGill, City of Clemson; Patrick Jackson, Starr-Iva; Dyke Spencer, Powdersville; David Rogers, Town of Williamston; Chuck Cortez, Big Creek-Hammond; Douglas Locke, Broadway; Jeremy Gillespie, Sandy Springs; Scott Banks, City of Anderson; Larry Harrell, Homeland Park; Mitch Ellenburg, Belton-Honea Path; Phillip Mishoe, Town of Central

ABSENT: Dwight Edwards, West Anderson; Evan Link, Town of Pendleton; Edgar Scott, Sandy Springs

OTHERS PRESENT: Scott Willett, ARJWS; Jeff Caldwell, ARJWS; Lisa Evatt, ARJWS; Kendall Cleary, AJRWS; Christopher Weber, ARJWS; Trey Burns, ARJWS; David Gailey, ARJWS; Jodi Logan, ARJWS

Chairman Dyke Spencer called the Board meeting of Anderson Regional Joint Water System to order at 11:59 a.m. on December 14, 2021.

Chairman Dyke Spencer asked for any Commissioner comments. Mr. Spencer asked for a moment of silence for the passing of Tommy Phillips who retired from ARJWS in August 2005 and served 15 years on Broadway Water Board of Directors. Mr. Spencer also asked for the Board to share memories of Mr. Phillips. Mr. Cortez congratulated Tracy Durham with Sandy Springs Water District for winning SCRWA Manager of the Year, Starr-Iva Water District won System of the Year, and David Gailey for passing the Utility Management Certification For Demonstrated Knowledge In The Complex Field of Water and Wastewater Management. Mr. Jackson suggested ARJWS host a Drought Response Plan workshop in the near future.

There were no public comments.

Mr. Jackson made a motion to approve the October 27, 2021 minutes and Mr. Locke seconded.

Motion carried.

I. Consent Calendar (Old Business)

None

II. Items requiring immediate action

None

III. Discussion (New Business).

1. Strategic Plan Update: Brand, Communication, Partnerships

Mr. Caldwell gave a presentation on ARJWS Strategic Plan Update for December 2021. He outlined the Strategic Planning Cycle, Strategic Plan Critical Objectives, Strategic Plan Timeline, Brand, and Communication and Partnerships and discussed each briefly.

2. Executive Director's Report (Oral)

Mr. Willett gave an update on the Reallocation Study of Lake Hartwell. ARJWS is seeking to add to state law reaffirming state authority over water resources. Mr. Willett has spoken to Senator Gambrell and with the support of Senator Alexander, Mr. Willett expects help on state level for Return Flow Credits.

Mr. Willett gave a summary of funding resources from SC RIA to each Board member. He discussed the American Rescue Plan Act (ARPA) and briefly spoke on the SRF Funding increase for FY 2022 to FY 2026 and SC Drinking Water SRF Funding Increase for FY 2022.

IV. Informational Reports

1. Finance and Administration Report
2. Operations Report
3. Personnel Report
4. Engineering Report
5. Executive Committee Meeting Summary
6. Sustainability Report

These reports are for information and for each Member to review as written. A copy of each report is attached to the file copy of these minutes.

V. Adjournment

With no further business, Mr. Jackson made a motion to adjourn at 12:52 p.m. and Mr. Cortez seconded. Motion carried.

Respectfully submitted,

Phillip Mishoe
Secretary/Treasurer

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COMMITTEE SUMMARY

Executive Committee

January 18, 2022

11:30 am

I. Discussion Summary

1. UCMR5 Update

The contaminants list for UCMR5 includes 29 PFAs and one metal (Lithium). The monitoring scope for water systems includes all members of ARJWS. According to guidance documents, EPA will fund the cost for analyses and shipping for small systems (<10,000 people served) which includes Broadway, Homeland Park, Pendleton, Starr-Iva, Central, Williamston, and Clemson University. All other systems will be responsible for the cost of analyses. (Source: SC Drinking Water Watch website)

Important Dates:
March 16-17, 2022 – Public webinar on the final revisions of UCMR5
December 31, 2022 – Deadline for large systems to update sampling locations

2. Joint Resources Program Agreement

A draft of the agreement was provided. After discussion, the committee instructed staff to provide a Resolution for review toward ARJWS board adoption.

3. Legislative Update – Scott Willett

Mr. Willett provided an update on the proposed legislation H4778 to require return flow credits for all Army corps of Engineers reservoirs. The legislation has been introduced in the SC House and referred to the Agriculture, Natural Resources, and Environmental Affairs.

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BOARD MEMORANDUM

January 12, 2022

Subject

Finance and Administration Report

Discussion

Billing

Meters were read on December 29th, 2021, with usage down 9.15% from last month (for the same number of days) and up 9.03% from last year (for the same number of days).

AGENCY	PREV.YR SAME MONTH	LAST MONTH	CURRENT
# of Billing Days	**30**	**30**	**29**
Anderson	110,004,162	129,006,544	127,529,037
Big Creek	23,500,000	22,100,000	24,500,000
Broadway	19,004,273	21,701,351	18,820,247
Clemson	45,172,888	65,373,608	56,251,220
Clemson University	15,874,372	30,030,285	22,369,091
Hammond	49,144,008	57,326,572	37,732,643
Homeland Park	18,648,937	19,206,440	16,392,613
Pendleton	8,671,172	10,726,441	9,688,520
Powdersville	4,192,382	4,170,788	4,183,108
Sandy Springs	47,349,925	59,987,605	31,097,965
Starr-Iva	27,236,711	33,620,082	27,221,877
West Anderson	36,587,542	35,159,727	33,277,109
Williamston	14,115,316	15,043,189	13,075,740
TOTAL	**419,501,688**	**503,452,632**	**442,139,170**

Finance/Budget Summary

For the month ending December 31, 2021, ARJWS is slightly over budget in revenue collections primarily due to the unbudgeted collection of $40,000 from Pioneer Water for water rights. This is an annual collection that should end with the adoption of the new allocation from the Corps.

For expenses, the ideal percentage column reflects that not all expenses are linear over 12 months. Expenses such as chemicals and power are seasonal based on water produced. ARJWS is trending appropriately for all expense categories except for chemicals. Chemicals are over budget due to using bulk sodium hypochlorite for disinfection rather than onsite generation.

Safety Training

December
Subject: **Safety Tool-Box Talk – LOTO**
Training Date: **December 21st**

January
Subject: **Cold Stress in the Workplace**
Training Date: **January 27, 2022**

Prepared by: Kendall Cleary, Accounting Manager
Approved by: Jeff Caldwell, Deputy Director

Attachments: Profit & Loss Summary – Budget, Actual and Forecast

ANDERSON REGIONAL
JOINT WATER SYSTEM

Profit & Loss
For the Month ending December 31, 2021

	Annual Budget	YTD Budget (6 months)	YTD Actual	6+6 Year End Projection	Ideal Percentage	% of Budget Used	YTD Variance	
Operating Revenue								
Operations and Maintenance	5,363,635	2,681,818	2,655,030	5,336,847	50%	50%	(26,788)	
Capital Charges	5,221,245	2,610,623	2,610,623	5,221,245	50%	50%	-	
Renewal and Replacement								
Water System	1,498,635	749,318	787,234	1,536,551	50%	53%	37,916	
Pump Station	67,738	33,869	36,181	70,050	50%	53%	2,312	
Miscellaneous	51,105	25,553	74,978	100,530	50%	147%	49,425	A
Total Operating Revenue	12,202,358	6,101,179	6,164,044	12,265,223				
Operating Expenses								
Salaries and Wages	1,650,100	825,050	716,275	1,541,325	50%	43%	(108,775)	
Payroll Taxes and Employee Benefits	645,700	322,850	315,592	638,442	50%	49%	(7,258)	
Operations and Maintenance								
Administrative Expenses	417,435	208,718	83,742	292,459	50%	20%	(124,976)	
Operations Expenses								
Lab Supplies/Uniforms/Safety Equipment	136,700	68,350	47,474	115,824	50%	35%	(20,877)	
Chemicals	572,000	286,000	401,754	687,754	51%	70%	115,754	B
Sludge and Chemical Disposal	150,000	75,000	138,955	250,000	100%	93%	63,955	
Utilities and Security	1,105,600	552,800	528,215	1,081,015	55%	48%	(24,585)	
Maintenance Expenses	299,200	149,600	203,758	353,358	50%	68%	54,158	C
Professional Fees	110,000	55,000	43,537	98,537	50%	40%	(11,463)	
Insurance	94,900	47,450	12,528	94,900	0%	13%	(34,922)	
Debt Expenses	5,221,245	2,610,623	2,611,901	5,221,245	50%	50%	1,279	
Source Water Protection	51,000	25,500	1,795	27,295	50%	4%	(23,705)	
Miscellaneous Expenses	131,000	65,500	90,679	156,179	50%	69%	25,179	D
Total operating expenses before depreciatio	10,584,880	5,292,440	5,196,203	10,558,331				
Net operating income	1,617,478	808,739	967,842	1,706,892				
Raw Water								
Raw Water Income	58,223	29,112	118,426	147,538				
Raw Water O&M Expenses	-	-	89,205	89,205				
Raw Water Operating Income	58,223	29,112	29,221	58,333	50%	50%	110	
Non-Budget Impacting Items								
Junior Lien Bond Payments	246,090	123,045	108,000	246,090	50%	44%	(15,045)	
Alum Tanks Replacement	136,350	68,175	28,745	136,350	50%	21%	(39,430)	
Filter PLC Cabinets	137,700	68,850	90,051	137,700	50%	65%	21,201	
	520,140	260,070	226,796	520,140				

	Cash Balances	Days Cash on Hand
Operating Cash	1,772,371	61
Capital Project Fund	2,595,555	
R&R Funds (Restricted)	1,629,802	
	5,997,728	

A: Over budget due to the annual Pioneer payment of $40,000 and a termination balance returned from the refunding of Series 2011A.

B: Over budget due to using bulk sodium hypochlorite for disinfection.

C: Over budget primarily due to the Ozone generator repair.

D: Miscellaneous expenses are over budget primarily due to payments for dues and renewals that are only paid once per year.

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BOARD MEMORANDUM

January 24, 2022

Subject
Operations and Maintenance Report

Discussion

Operations

As of January 5, 2022, Lake Hartwell's surface elevation was 657.24 ft, 2.76 ft. below full pool. Raw water is being drawn from the top gate of the intake structure. Water temperature at the top gate is 59°F. The Joint Water System reached 100% of settled water turbidity goals for the month of December. Raw water pH levels are relatively constant. Settled and Finished water pH levels are normal. The maximum day for December water production was 39.2% of Finished water capacity.

Operations Highlights

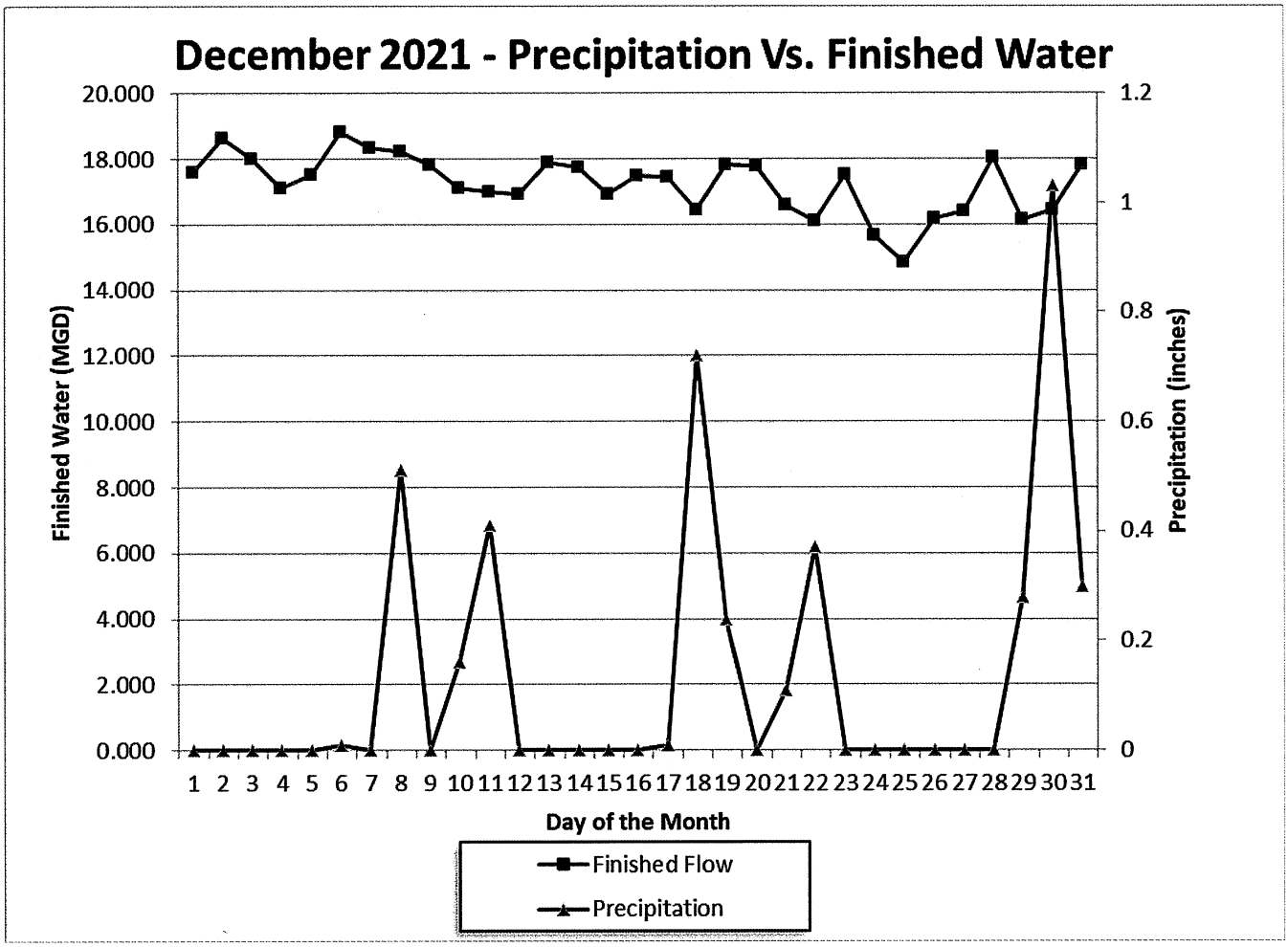
- Placing MIOX back online in early January to help mitigate bulk hypochlorite costs
- Successfully transitioned to 757 coagulant for improved cold water settling performance
- Bradley Smith received his "B" treatment license

In addition to water quality sampling for the Lake Hartwell Water Treatment Plant, Joint Water System staff processed 162 Total Coliform distribution samples for local entities during the month of December.

Water Quality Data

	Raw	Settled	Finished
pH	6.84	7.20	7.11
Turbidity (NTU) Range	1.30 to 4.20	0.42 to 0.92	0.03-0.05
Turbidity (NTU) Average	1.94	0.65	0.04
Turbidity (NTU) Exceedance	-	0%	0%
Total Organic Carbon	1.42	-	1.11
Fluoride Average (ppm)	-	-	0.66
Residual Disinfectant (ppm)	-	-	1.72
TTHM (DBP)	-	-	4.1 ppb
Methylisoborneol (MIB)*	6.8 NG/L	-	<1.0 NG/L
Geosmin*	2.3 NG/L	-	<1.0 NG/L

*Note: For the general population, detection of MIB & Geosmin occurs at 10 NG/L. Sample results from October.



Weather Data

	Minimum	Maximum	Total
Rainfall	0.00 in.	1.03 in.	4.15 in.
Temperature	31.6° F	76.9° F	N/A
Humidity	22%	100%	N/A

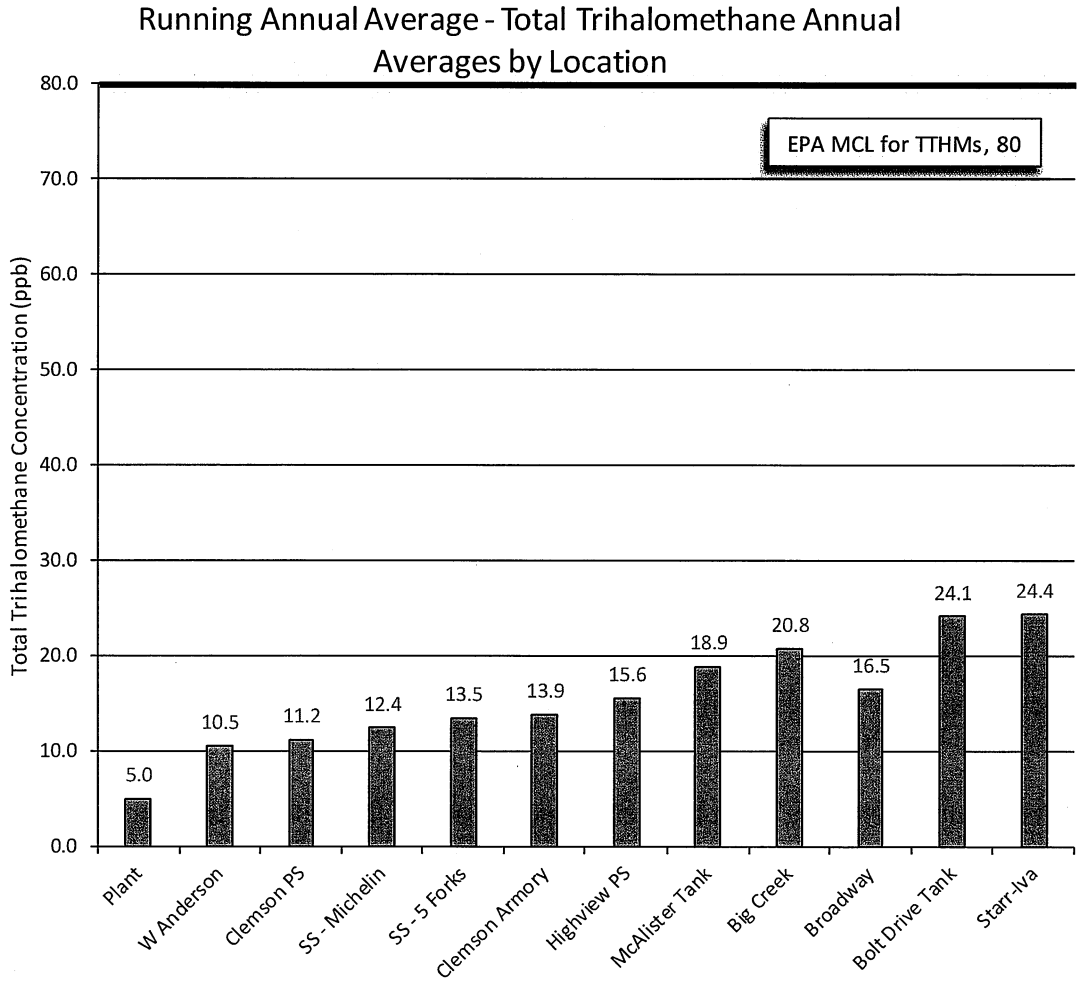
Water Production Data

	Average	Minimum	Maximum	Total
Raw Water (MG)	17,193,000	14,873,000	18,932,000	532,987,000
Finished Water (MG)	17,237,000	14,850,000	18,811,000	534,349,000
Finished Max Capacity	35.9%	30.9%	39.2%	35.9%

Total Trihalomethane Discussion

Trihalomethanes (THMs) are one type of disinfection byproduct that can form during the treatment process and within the distribution system. THM concentrations vary primarily as a function of total organic carbon (TOC), temperature, disinfectant type, and residence time. THMs can have adverse health effects at high concentrations, and the EPA has established compliance criteria for these compounds in aggregate, termed Total Trihalomethanes (TTHMs). These criteria are established in Stage 2 of the Disinfection Byproduct Rule, which has a numerical MCL of 80 micrograms per liter (or parts per billion, ppb) based on a Locational Running Annual Average. ARJWS Operations Staff collects monthly, one-time samples, as a spot check for TTHM formation in the transmission system. The running annual averages of those results are shown in the figure below.

Disinfection Byproduct Analysis Report



Monthly Power Consumption Update

For the month of December, ARJWS treated 534,349,000 gallons of water at a power cost of $87.42 per million gallons produced. The 12 month Running Annual Average is currently at $93.38.

Monthly Power Consumption Data

Month	On Peak kW	Off Peak kW	Total kW	Finished Water MG	$/ MG	12 month Average
Dec – 20	172,800	864,000	1,036,800	550.6	$81.30	$97.43
Jan – 21	208,800	856,800	1,065,600	595.9	$86.81	$96.62
Feb – 21	194,400	871,200	1,065,600	530.6	$92.36	$96.48
Mar – 21	168,000	787,200	955,200	559.9	$75.67	$94.39
Apr – 21	194,337	880,130	1,074,467	571.7	$89.46	$94.23
May – 21	215,996	909,415	1,125,411	662.4	$74.97	$92.58
Jun – 21	218,574	1,098,505	1,317,079	667.4	$94.20	$94.16
Jul – 21	271,224	947,223	1,218,447	649.6	$122.47	$94.06
Aug - 21	281,251	974,455	1,255,706	666.0	$116.14	$94.99
Sep - 21	236,672	1,031,508	1,268,180	620.1	$104.64	$94.15
Oct - 21	228,046	894,233	1,122,279	593.7	$96.90	$92.95
Nov – 21	199,551	874,347	1,073,898	544.6	$91.66	$93.16
Dec - 21	186,656	794,378	981,035	534.3	$87.42	$93.38

Water Quality Strategic Planning

For the month of December, the following Water Quality Strategic Planning goals were met:

- Finished water pH was held within the designated 7.0-7.2 range.
- Finished water chlorine residual was maintained above a 1.2 ppm leaving the facility.

Orthophosphate corrosion inhibitor technique

Metal pipe naturally corrodes based on the chemical properties surrounding it. Corrosivity of water is directly related to pH. Lower pH concentrations, less than 7.0, are considered acidic, and therefore increase corrosion to metal piping. For this reason, The Lake Hartwell Water Treatment Plant adds lime to increase the finished water pH to a value > 7. In addition, orthophosphate is added to create a protective barrier on the inner linings of all distribution and premise piping. The orthophosphate barrier keeps water from contact with bare metal.

The Lake Hartwell Water Treatment Plant has determined to adjust the baseline numbers for orthophosphate to a running annual average to establish a consistent dose rate. During the month of December, the Lake Hartwell Water Treatment Plant Finished water running annual average dose rate is within the desired 1.0 ppm to 1.6 ppm protective barrier range at 1.44 ppm.

Prepared by: Chris Weber, Operations Manager
Approved by: Jeff Caldwell, Deputy Director

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BOARD MEMORANDUM

January 24, 2022

Subject
Sustainability Report

Asset Management

ARJWS is tracking maintenance tasks of all assets. **Preventative Maintenance tasks (PMs) are performed on every asset on a weekly, monthly, quarterly, bi-annually, or annual basis. Work Orders consist of installations or repairs required on an asset that are separate from the PM schedule.** The current target is 400 completed tasks for the month.

PMs Completed	230
PMs Deferred	227
Work Orders Open	34
Work Orders Completed	10
Hours Documented	In process
Cross-Training Hours	In process

The effectiveness of the asset management program on ARJWS's ability to deliver the highest quality drinking water can be measured by treatment reliability. The table below shows overall reliability for the month of December.

Plant Rated Capacity	48.00 MGD		
Reliable Capacity (December)	30.24 MGD	**% of rated capacity**	63.00%
3-year Max Day (same month) + 10%	21.65 MGD	**Reliability**	139.69%
3-year Max Day (Next 90 days) + 10%	22.88 MGD	**Reliability**	132.17%

For December 2021, the limiting treatment component was the transfer pump station. Currently pumps #2 and #6 are out of service. Our staff is replacing the check valve on Pump #2 and a replacement for Pump #6 is scheduled for delivery this month.

Brand

ARJWS uses many different platforms in order to engage with the public to bring awareness to the system as well as educate and inform about relevant topics of interest to water supply, water treatment, regulatory issues, etc.

Platform	Twitter	Facebook	Instagram	Website	Events	Tours	**Total**
Reach	544	2,650	501	615	0	0	**4,310**
Engagement	5.84%	11.08%	21.47%				

Reach is the total amount of people impacted on each platform.
Engagement is the percentage of people reached who interacted with the content published (likes, shares, comments, website visits, etc.)

Communication and Partnership

ARJWS's goal is to strengthen regional presence, cooperation, and communication among ARJWS and communities.

1. Upstate Forever Three and Twenty Watershed Plan
    a. 10 septic tank repairs/replacements completed, including 4 on the lakefront.
    b. $28,500 left in 319 grant.
2. Anderson Soil & Water Conservation District
    a. $1,000 mini grant generated from Barrels & Beer for an Anderson County project.
    b. Jan 31st deadline.
3. Anderson Area Chamber Water Resources Committee
    a. Committee discussion related to operational sustainability due to covid.
    b. Additional positive discussion on the future direction of the committee.
4. Lake Hartwell Partners for Clean Water
    a. Looking into SCDHEC 319 grant funding to create more watershed plans for Lake Hartwell to protect our source water.
    b. Logo design for group.

Source Water Protection

The ARJWS has adopted the four creeks upstream of our intake and sample each once per month. These creeks account for approximately 80% of our source water supply.

	E. Coli (cfu/100 mL)	Dissolved Oxygen (ppm)
Hembree Creek	133	9.2
Hurricane Creek	400	6.5
Town Creek	33	6.5
Six and Twenty Creek	67	8.0

Prepared by: Trey Burns, Sustainability Manager
Approved by: Jeff Caldwell, Deputy Director

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BOARD MEMORANDUM

January 24, 2022

Subject

Engineering Report

Discussion

Alum Bulk Storage Tanks Improvements

This project will demo the existing Alum tank and add two (2) new 10,000 tanks. ARJWS received a SCDHEC construction permit on December 2, 2021. Piping, valves, fittings, and instrumentation are being ordered. Once a delivery date is confirmed for the materials, the tank delivery will be scheduled. This is tentatively scheduled for February 2022.

Disinfection

In December, ARJWS relied on bulk hypochlorite to meet the disinfection needs. This allowed increased confidence in product reliability through the holidays. Current plans are to transition back to onsite generation in January.

Energy Assessment

ARJWS is working with Clemson University's Industrial Assessment Center to conduct an Energy Assessment. Our staff provided a pre-assessment form along with system information as well as utility cost to the Clemson team. Our staff meet with the Clemson team on October 14th to review the initial information, tour the treatment plant, and discuss preliminary suggestions including landscaping and rights-of-way maintenance, lighting, VFD's, Ozone optimization, micro-turbines, etc.... The Clemson team will submit a final report detailing all recommendations.

PLC Upgrades

MR Systems is scheduled to complete the FY2022 PLC Upgrade Project with the upgrade of RTU-2. This panel controls operations related to raw water, clarifiers, filters, clearwell, transfer pumps, etc. and is critical to the reliability of our remote operations. During the installation of the new equipment, the treatment plant will be placed in manual operations and this work will be performed at night during low demand.

Voluntary Treatment Plant De-rating

ARJWS has requested a temporary treatment plant de-rating in order to meet operational requirements while navigating Covid-19 protocols. The request actually decreases the filters from high-rate (>4gpm/sf) to rapid-rate (up to 4gpm/sf) reducing the rated treatment capacity from 48 to 42 MGD, but more importantly reducing the operator certification requirement from a "B" to the "C". SCDHEC has verbally approved the request. This change can be reversed at the direction of ARJWS.

Prepared by: Jeff Caldwell, Deputy Director
Approved by: Scott Willett, Executive Director