ANDERSON REGIONAL
JOINT WATER SYSTEM

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

BOARD AGENDA

Board of Commissioners
December 2022

I. Minutes

1. None

II. Informational Reports

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

Future planned Board meeting dates are:

- February 22, 2023
- April 26, 2023
- June 28, 2023

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COMMITTEE SUMMARY

Executive Committee

December 5, 2022

11:30 am

I. Discussion Summary

1. **Strategic Plan Update**
   Staff presented the December update outlining Brand/Communication & Partnership. A copy is attached.

2. **Capital Project Update/Budget**
   Staff presented a look at the estimated spend rate for anticipated ARPA funding. The goal of accepting grant funding is that projects are budget neutral. Staff also looked a major budget impacting items for FY2024 to get an idea of potential increases.

3. **Continuous Improvement – Lime Tank Cleanout**
   Mr. Weber provided a presentation of the recent lime tank cleanout as well as changes in pumping and piping to increase reliability and decreases maintenance downtime.

Prepared by: Jeff Caldwell, Deputy Director

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Strategic Plan Update
December 2022

Strategic Planning Cycle

Strategic Plan Critical Objectives

BRAND - Focus on water quality so that the ARJWS is quality water attractive to existing and potential customers in the region.

FINANCIAL VIABILITY - Maintain revenues and cost efficiencies to provide financial viability for the mission.

COMMUNICATION AND PARTNERSHIP - Strengthen regional presence, cooperation, and communication among ARJWS and communities.

OPERATIONS AND ASSET SUSTAINABILITY - Encourage and invest in innovative and new technologies to improve water quality, optimize operations, and increase resiliency.

STAFF RETENTION - Develop staff and leadership excellence to meet current and future challenges.

Strategic Plan Timeline

BRAND

- Back in schools! 6 different schools, 7 classrooms, 4 career fairs.
- AOP Business Showcase event with 4,000 8th graders from tri counties.
- Planning 5-year anniversary event for Barrels & Beer – April 1st.
- Created and launched Lake Hartwell Partners for Clean Water website.
- Held 6 meetings for LHPCW with 73 members.
- Planning Earth Day Clean-up with LHPCW – April 22nd.

PLATFORM	REACH	
	FY23	FY22
TWITTER	2,193	10,938
FACEBOOK	29,209	113,028
INSTAGRAM	4,945	8,057
WEBSITE	4,342	10,993
EVENTS	4,040	1,114
TOURS	153	202
TOTAL	**44,882**	**144,332**

BRAND

Focus on water quality so that the ARJWS is quality water attractive to existing and potential customers in the region.

GOALS	STATUS	TARGET	MEASURE
Water Resources Advertisement (Value of Water)	Cancelled	12/31/2021	Meet Target
Present to AC Economic Development	07/13/2022	03/31/2022	Meet Target
Participate in classroom presentations	13	4 per year	Meet Target
Host plant tours	153	300 individuals	Meet Target
Develop website articles	4	12 per year	Meet Target
Develop social media presence	46	52 posts per year	Meet Target
Provide communication analytics	1	2 per year	Meet Target

Communication and Partnership

Strengthen regional presence, cooperation, and communication among ARJWS and the community.

- Administered the communications plan as appropriate.
- Partnered with Anderson County Soil and Water Conservation District and a Belton non-profit group in the award of 2 Kinder Morgan grants.
- Active in local, state, and national committees ranging from Greater Anderson Rotary, SC AWWA Source Water Protection, National Watershed Research Committee, National Water Supply Alliance, Society for Human Resource Management.

Communication and Partnership

Strengthen regional presence, cooperation, and communication among ARJWS and the community.

COMMUNICATION AND PARTNERSHIP			
GOALS	**STATUS**	**TARGET**	**MEASURE**
Administer Communication Plan	On Target	As needed	Meet Deadline
Direct Resources to Public Outreach	$14,000	$25,000 per year	Meet Target
Plan all member events	0	2 per year	Meet Target
Hold open house events for new member employees	0	2 per year	Meet Target
Active in water resources committee/LHPCW	5	12 per year	Meet Target
Explore Joint Resources Program			
Approved Resolution to Aid Member Agency	04/27/2022	12/31/2021	Meet Deadline
Compile Area Inventory (Similar size systems)	New Direction	12/31/2021	Meet Deadline

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BOARD MEMORANDUM

December 2, 2022

Subject

Finance and Administration Report

Discussion

Billing

Meters were read on November 30, 2022, with usage down 17.22% from last month (for the same number of days) and down 7.74% from last year (for the same number of days).

AGENCY	PREV.YR SAME MONTH	LAST MONTH	CURRENT
# of Billing Days	**30**	**28**	**30**
Anderson	129,006,544	143,163,421	130,576,395
Big Creek	22,100,000	13,700,000	22,800,000
Broadway	21,701,351	20,077,714	18,609,541
Clemson	65,373,608	66,741,454	61,873,900
Clemson University	30,030,285	33,202,353	27,971,928
Hammond	57,326,572	60,992,473	50,228,487
Homeland Park	19,206,440	16,151,873	16,754,958
Pendleton	10,726,441	10,125,885	9,270,764
Powdersville	4,170,788	7,497,524	3,949,225
Sandy Springs	59,987,605	53,931,988	46,253,392
Starr-Iva	33,620,082	33,855,486	29,733,238
West Anderson	35,159,727	50,442,481	33,532,810
Williamston	15,043,189	13,835,403	12,949,752
TOTAL	**503,452,632**	**523,718,055**	**464,504,390**

Finance/Budget Summary

For the month ending November 30, 2022, ARJWS is trending appropriately for revenues and expenses for the first four months of the fiscal year.

See the Profit & Loss report for additional information.

Safety Training

November

Subject: **Sexual Harassment and Discrimination for Employees**
Training Date: **November 23, 2022**
ARJ Staff – 14
Sexual Harassment and Discrimination for Managers
ARJ Staff – 6

Prepared by: Jodi Logan, Billing/Purchasing Coordinator
Approved by: Jeff Caldwell, Deputy Director

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

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Profit & Loss
For the Month ending November 30, 2022

5+7

	Annual Budget	YTD Budget (5 months)	YTD Actual	Year End Projection	Ideal Percentage	% of Budget	YTD Variance	
Operating Revenue								
Operations and Maintenance	5,729,325	2,387,219	2,407,205	5,749,312	42%	42%	19,987	
Capital Charges	5,331,369	2,221,404	2,221,404	5,331,369	42%	42%	-	
Renewal and Replacement								
Water System	1,499,760	624,900	625,191	1,500,051	42%	42%	291	
Pump Station	67,738	28,224	28,262	67,776	42%	42%	38	
Miscellaneous	51,616	21,507	107,072	137,182	42%	207%	85,566	A
Total Operating Revenue	12,679,808	5,283,253	5,389,134	12,785,689				
Operating Expenses								
Salaries and Wages	1,727,500	719,792	688,691	1,696,399	42%	40%	(31,101)	
Payroll Taxes and Employee Benefits	726,400	302,667	298,791	722,524	42%	41%	(3,876)	
Operations and Maintenance								
Administrative Expenses	310,790	129,496	93,632	274,926	42%	30%	(35,864)	
Operations Expenses								
Lab Supplies/Uniforms/Safety Equipment	118,900	49,542	33,242	102,600	42%	28%	(16,300)	
Chemicals	801,600	334,000	372,236	839,836	48%	46%	38,236	
Sludge and Chemical Disposal	175,000	72,917	25,415	175,000	42%	15%	(47,502)	
Utilities and Security	1,113,300	463,875	438,816	1,088,241	42%	39%	(25,059)	
Maintenance Expenses	372,135	155,056	125,649	342,728	42%	34%	(29,407)	
Professional Fees	98,000	40,833	23,425	80,592	42%	24%	(17,408)	
Insurance	111,800	46,583	36,847	111,800	42%	33%	(9,736)	
Debt Expenses	5,331,370	2,177,134	1,974,688	5,331,370	42%	37%	(202,447)	
Source Water Protection	50,000	20,833	33,456	62,622	42%	67%	12,622	B
Miscellaneous Expenses	123,900	51,625	19,519	91,794	42%	16%	(32,106)	
Total operating expenses before depreciatic	11,060,695	4,564,353	4,164,406	10,920,433				
Net operating income	1,619,113	718,900	1,224,728	1,865,256				
Raw Water								
Raw Water Income	58,811	24,505	111,720	146,026				
Raw Water O&M Expenses	-	-	108,229	108,229				
Raw Water Operating Income	58,811	24,505	3,491	37,797	42%	6%	(21,014)	
Non-Budget Impacting Items								
Junior Lien Bond Payments	240,957	100,399	95,000	240,957	42%	39%	(5,399)	
Water Quality Monitoring Project	52,000	21,667	8,905	52,000	42%	17%	(12,762)	
Alum Pump Replacement	-	-	22,600	22,600	100%	100%	22,600	
	240,957	100,399	95,000	240,957				

	Cash Balances	Days Cash on Hand	
Operating Cash	2,275,941	75	C
Capital Project Fund	3,631,651		
System R&R Fund (Restricted)	737,873		
Pumped R&R Fund (Restricted)	525,919		
Raw Water O&M	181,283		
Raw Water R&R	239,754		
	7,592,421		

A: Over projected revenue due to the annual Pioneer payment of $40,000 and $51,000 in year-to-date interest earned on bank balances

B: Over budget due to one-time payments to the Watershed-Based Plan for Twelvemile River & Contribution to Watershed Research Council

C: Increase in response to September transfer for the Series 2017B bond payment

PUMPED REPAIR & REPLACEMENT ACCOUNT

November 30, 2022

DATE	TRANSACTION MEMO	CREDIT	DEBIT	BALANCE
11/01/2022	Balance Forward LGIP Investment			$518,586.52
11/23/2022	System Transfer for October 2022 Billing	$5,648.06		$524,234.58
11/30/2022	Interest Earned November 2022	$1,684.19		$525,918.77
11/30/2022	Ending Balance LGIP			**$525,918.77**

SYSTEMS REPAIR & REPLACEMENT ACCOUNT

November 30, 2022

DATE	TRANSACTION MEMO	CREDIT	DEBIT	BALANCE
11/01/2022	Balance Forward LGIP Investment			$610,803.97
11/23/2022	System Transfer for October 2022 Billing	$124,979.97		$735,783.94
11/30/2022	Interest Earned November 2022	$2,089.03		$737,872.97
11/30/2022	Ending Balance LGIP			**$737,872.97**

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BOARD MEMORANDUM

December 13, 2022

Subject

Operations and Maintenance Report

Discussion

Operations

As of December 13, 2022, Lake Hartwell's surface elevation was 655.16 ft, 4.84 ft. below full pool. Raw water is being drawn from the top gate of the intake structure. Water temperature at the top gate is 58.4°F. The Joint Water System reached 97% of settled water turbidity goals for the month of November. Raw water pH levels are relatively constant. Settled and Finished water pH levels are normal. The maximum day for November water production was 42.3% of Finished water capacity.

Operations and Maintenance Highlights

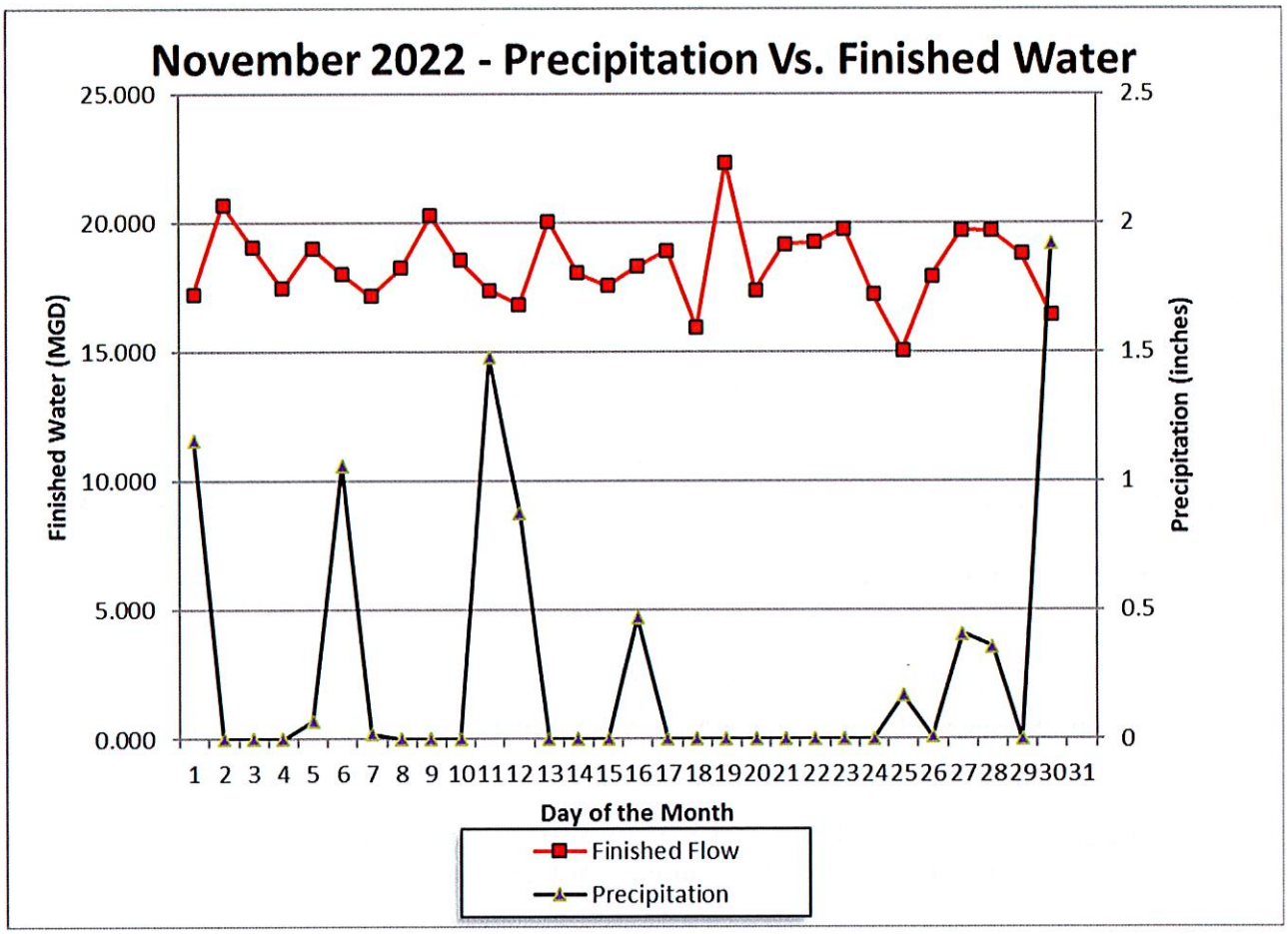
- Completed fall clarifier cleanouts
- Base power rates increased effective 10/01/2022
  - On peak usage: 6.0548 ¢ up to 7.5757 ¢ (25% increase)
  - Off peak usage: 2.3995 ¢ up to 3.9214 ¢ (63% increase)

In addition to water quality sampling for the Lake Hartwell Water Treatment Plant, Joint Water System staff processed 149 Total Coliform distribution samples for local entities during the month of November.

Water Quality Data

	Raw	Settled	Finished
pH	7.03	6.62	7.17
Turbidity (NTU) Range	1.20-5.30	0.36-1.00	0.03-0.03
Turbidity (NTU) Average	2.09	0.62	0.03
Turbidity (NTU) Exceedance	-	3%	0%
Total Organic Carbon	1.74	-	0.82
Fluoride Average (ppm)	-	-	0.66
Phosphate Average (ppm)	-	-	1.33 (wet)
Residual Disinfectant (ppm)	-	-	1.76
TTHM (DBP)	-	-	6.0 ppb
Methylisoborneol (MIB)	14.4 NG/L	-	2.0 NG/L
Geosmin	2.0 NG/L	-	<1.0 NG/L

Weather Data



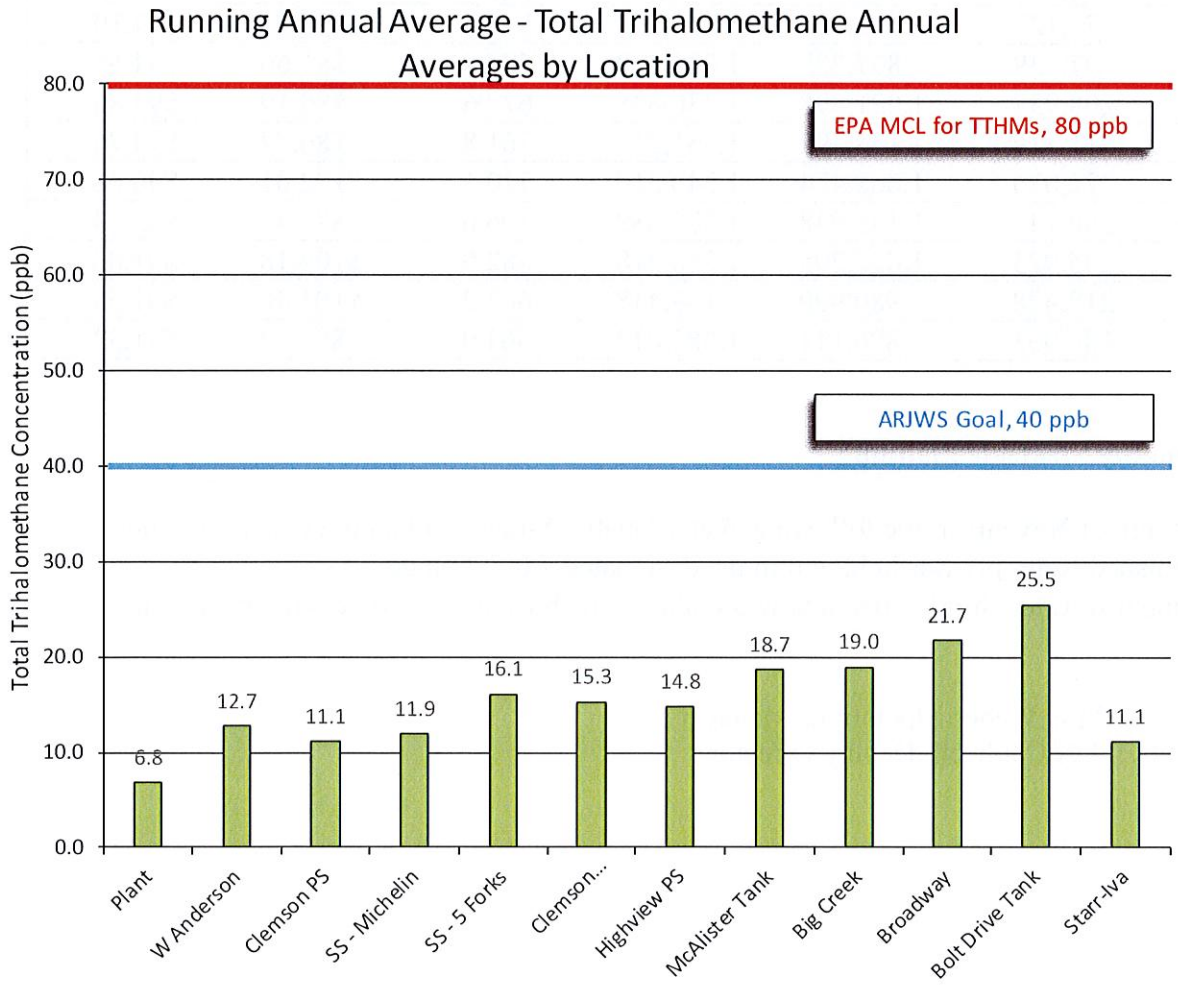
	Minimum	Maximum	Total
Rainfall	0.00 in.	1.92 in.	8.01 in.
Temperature	45° F	82° F	N/A
Humidity	17%	100%	N/A

Water Production Data

	Average	Minimum	Maximum	Total
Raw Water	18,394,000	15,069,000	22,339,000	551,805,000
Finished Water	18,801,000	17,229,000	20,287,000	564,024,000
Finished Max Capacity	39.2%	35.9%	42.3%	39.2%

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.



Monthly Power Consumption Update

For the month of November, ARJWS treated 564,024,000 gallons of water at a power cost of $93.57 per million gallons produced. The 12 month Running Annual Average is currently at $91.32.

Monthly Power Consumption Data

Month	On Peak kW	Off Peak kW	Total kW	Finished Water MG	$/ MG	12 month Average
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
Jan – 22	198,616	786,624	985,240	558.2	$88.94	$93.97
Feb – 22	184,554	859,075	1,043,630	502.6	$95.57	$94.65
Mar – 22	173,122	760,085	955,200	550.6	$85.31	$94.10
Apr – 22	197,139	837,209	1,034,348	587.8	$81.66	$94.56
May - 22	208,937	1,021,598	1,230,535	677.6	$80.19	$93.85
June - 22	217,719	1,143,497	1,361,216	761.8	$86.77	$94.76
Jul – 22	272,036	1,068,474	1,340,510	720.1	$102.01	$96.66
Aug – 22	240,141	1,135,948	1,376,089	706.0	$88.42	$92.74
Sep – 22	235,923	1,022,295	1,258,218	682.5	$104.18	$91.82
Oct – 22	212,428	980,990	1,193,418	663.2	$101.46	$91.58
Nov – 22	186,903	896,111	1,083,014	564.0	$93.57	$91.32

Water Quality Strategic Planning

For the month of November, 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.

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

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BOARD MEMORANDUM

December 15, 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	244
PMs Deferred	149
Work Orders Open	34
Work Orders Completed	10

The effectiveness of the asset management program on ARJWS's ability to deliver the highest quality drinking water can be measured by treatment reliability. A decrease of reliability is defined by a capacity reduction for 72 hours or more. The table below shows overall reliability for the month of November.

Plant Rated Capacity	42.00 MGD		
Reliable Capacity	30.24 MGD	**% of rated capacity**	72%
3-year Max Day (same month) + 10%	22.51 MGD	**Reliability**	134%
3-year Max Day (Next 90 days) + 10%	21.85 MGD	**Reliability**	138%

Limiting treatment component is the transfer pump station, Pump #2 is currently down due to a failed retainer bearing and Pump #3 is down to replace a check valve.

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	Websites	Events	Tours	Total
Reach	186	1,019	471	904	0	24	2,604
Engagement	11.24%	11.10%	45.86%				

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. Clemson Biological Sciences Class
    a. Two different classes came out for a tour.
2. Clemson W.O.W. (What's in our Waters) Program
    a. Back at Daniel High School after a 2-year hiatus.
3. Anderson Area Chamber of Commerce Leadership Anderson
    a. Trey Burns selected as Vice-Chairman of the Board.

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	100	8.1
Hurricane Creek	133	8.3
Town Creek	233	5.0
Six and Twenty Creek	100	n/a

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