The Regular Meeting of the Washington County Service Authority Board of Commissioners, held in the E. W. Potts, Jr. Board Room located at 25122 Regal Drive, Abingdon, Virginia, was called to order by the Chairman at 6:01 pm.

ROLL CALL

Commissioners Present:

Mr. Mike White, Chairman

Mr. Jim McCall, Vice Chairman

Mr. Mr. Wayne Campbell

Mr. Eddie Copenhaver

Mr. Dwain Miller

Mr. Vernon Smith (arrived at 8:41 pm)

Mr. Kenneth Taylor

WCSA Officers Present:

Robbie Cornett; Secretary, General Manager

Melinda Jett; Treasurer, Controller Carol Ann Shaffer; Assistant Secretary, Administrative Assistant

General Counsel Present:

Thomas Dene, Esq.; Dene & Dene, P.C.

Consultants Present:

Dennis Amos, PE; Hurt & Proffitt, Inc. Kevin Heath, PE; The Lane Group, Inc. Bill King, PE; Thompson & Litton, Inc.

WCSA Staff Present:

Ryan Kiser, PE; Engineering Manager Holly Edwards; Customer Service Ken Perrigan; Meter Manager

3. Approval of the Amended Agenda

Mr. Miller motioned to approve the Amended Agenda, Mr. Campbell seconded and the Board approved voting 6-0-0-1.

4. Public Query and Comment

There was no public query or comment.

5. Approval of the Consent Agenda

- A. Approval of Minutes:
- September 25, 2017 Regular Meeting Minutes
- September 25, 2017 Recessed Meeting Minutes (held October 2, 2017)
- B. Routine Reports: September 2017
- Water Production
- Water Distribution
- Meter Department
- Wastewater Operations
- Customer Service
- Maintenance
- Engineering
- Accounting
- Health & Safety Report
- C. Financial Reports: September 2017
- Balance Sheet
- Income Statement
- Check Register / General Manager Financial Statement, Excluding Check # 39161

Mrs. Shaffer asked the Board to consider a change in the September 25, 2017 minutes. Regular Meeting "Commissioners Present" under the Roll Call listing Mr. White and Mr. Smith should read "Commissioners Absent". Mr. Taylor motioned to approve the Consent Agenda with the above mentioned change. Mr. Campbell seconded and the Board approved with a 6-0-0-1 vote.

6. Consideration of Check Register-Check # 39161

Mr. McCall motioned to approve check # 39161 written to W & L Construction. Mr. Miller seconded and the Board approved voting 5-0-1-1. Mr. Taylor abstained as he is employed by W and L Construction of Chilhowie, Virginia.

7. Virginia Department of Health Sustainability Presentation – Anthony Hess

Mr. Hess discussed the attached presentation.

8. Legal Counsel Report and Update – Mr. Dene

Mr. Dene presented the Board with a revision of the By Laws for their review and welcomed their thoughts and suggestions.

9. General Manager's Report & Update – Mr. Cornett

An outline of the presentation reviewed by Mr. Cornett is attached.

During his review, Mr. Cornett requested the Board's consideration to authorize staff to Procure for Bond Counsel.

Mr. McCall made a motion to approve the procurement of bond counsel. Mr. Miller seconded and the Board approved voting 7-0-0-0.

Mr. Cornett also asked if one Board member would like to attend a meeting in November between The Lane Group, WCSA and The Town of Abingdon to discuss joint wastewater opportunities. Mr. Miller volunteered to attend.

10. Water and Wastewater Construction Projects Update – Mr. Kiser

Mr. Kiser reviewed the attached presentation.

11. Operations Manager's Report and Update – Mr. Cheek

Mr. Cheek's reviewed the attached Operations Report and Update.

12. Engineer's Report and Update *Hurt & Proffitt – Mr. Amos*

Mr. Amos provided an update on;

• Exit 13 Phase 3 Sewer Design

Thompson & Litton - Mr. King

Mr. King updated the Board on the project below.

Lee Highway Corridor Sewer Project
 Phase 1

The Lane Group – Mr. Heath

Mr. Heath provided updates on the following projects.

- Galvanized Line Replacement Project Phase III
- Water Intake Permit Modification for South Fork and Middle Fork Intakes
- Mill Creek Water System Improvements
- Route 58 Water Supply Improvements Project
- Abingdon Tank Improvements Project
- Lee Highway Corridor Sewer Project
 Phase 1 Study
- Route 58 Water Supply Improvements Project

13. Consideration of Years of Service Awards – Mr. Cornett

Mr. Cornett recognized the following employees of WCSA who have reach a five year "increment" milestone based on a hire date of September 30th or earlier.

5 Years of Service

Holly Edwards Ryan Kiser Randall Mitchell Carol Ann Shaffer Travis Thompson

10 Years of Service

Karen Lester

Tommy Orfield

Mark Osborne

Brian Phillips

Eugene Rolen

15 Years of Service

Sharon Kennedy

Wesley Saltz

20 Years of Service

Ken Perrigan

30 Years of Service

Stephen Sproles

Mr. Taylor motioned to recognize these employees for their years of service, Mr. Miller seconded and the Board approved voting 7-0-0-0.

14. Consideration of Construction Bids for the Richie Road Water Line Extension Project – Mr. Kiser

Mr. Kiser recommended the Board consider awarding the project to Ramirez Contracting subject to VDH approval, and fund the \$21,205 shortfall in available funding with WCSA reserves.

Mr. Taylor motioned to accept the recommendation. Mr. Copenhaver seconded; the motion carried with a unanimous Board vote.

15. Consideration of Change Order No. 2 for the Haskell Station Road Water Line Extension Project – Mr. Kiser

Mr. Kiser recommended the Board favorably consider approving Change order No. 2.

Mr. McCall motioned to approve the change order as recommended. Mr.

Miller seconded and the Board agreed voting 7-0-0-0.

16. Consideration of a Leak Abatement Policy Amendment for HomeServe Customers - Mrs. Edwards Mr. Copenhaver asked if WCSA would request HomeServe's consideration to pay WCSA monthly installments to help cover the cost of their customer's high water bills due to water leaks. Mr.

Mrs. Edwards will ask HomeServe for the total cost of leak repairs for WCSA customers as requested by Mr. Copenhaver.

Cornett offered to ask HomeServe.

17. Final Bill Charges – Mrs. Edwards

The dispute committee recommended the Board consider a change in the final bill process policy to prorate final bills based on the number of days in the billing period plus usage on the account. Mr. McCall motioned to approve the change as recommended, Mr. Taylor seconded and the Board approved voting 7-0-0-0.

18. Closed Meeting – 8:40 pm

Mr. Taylor moved that the Board adjourn for Closed Meeting in accordance with the Virginia Freedom of Information Act,

Code of Virginia Section 2.2-3711 Paragraph (A) (3); Acquisition of Real Property

- 1. Discussion or consideration of the acquisition of real property for a public purpose where discussion in an open meeting would adversely affect the bargaining position or negotiation strategy of the public body.
 - a. Negotiations related to a new sewer line on the Lilly property.

In addition to the Board, the presence of Thomas Dene, WCSA Counsel and Robbie Cornett, WCSA General Manager were requested.

Mr. Campbell seconded and the Board approved voting 7-0-0-0.

Return to Open Meeting – 9:21 pm

Mr. Taylor motioned to return to Public Session. Mr. Campbell seconded and the Board approved with a 7-0-0-0.

Mr. Taylor then read the Certification of Closed Meeting;

Whereas, the Washington County Service Authority has convened a Closed Meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act:

And Whereas, Section 2.2-3712 Paragraph D of the Code of Virginia requires a certification by this Authority that such Closed Meeting was conducted in conformity with Virginia law;

And Now, therefore, be it resolved that the Authority hereby certifies that to the best of each member's knowledge, (1) only public business matters lawfully exempted from meeting open requirements by Virginia law were discussed in the Closed Meeting to which certification this resolution applies, and (2) only such public business matters as were identified in the motion convening the Closed Meeting were heard, discussed or considered by the Authority.

Aye by Mr. Miller, Mr. Campbell, Mr. Taylor, Mr. White, Mr. McCall, Mr. Copenhaver and Mr. Smith, confirming no outside discussion took place other than Closed Meeting topics.

19. Late Items

No late items were discussed.

20. Adjourn - 9:23 pm

Mr. Taylor made a motion to adjourn, Mr. Miller seconded and the Board approved voting 7-0-0-0.

Mr. Mike White, Chairman

Carol Ann Shaffer, Assistant Secretary

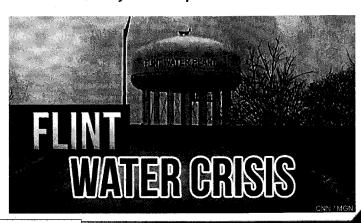
Building Waterworks Sustainability

Anthony Hess VDH - Office of Drinking Water Capacity Development Division

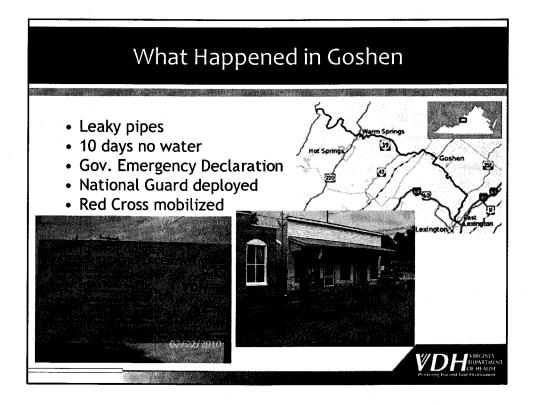
Collaborating across Virginia to Improve the Technical, Managerial and Financial Capacity of Waterworks

What Happened in Flint

"The Flint water crisis started with a bankrupt city trying to save money" Vox Explainers





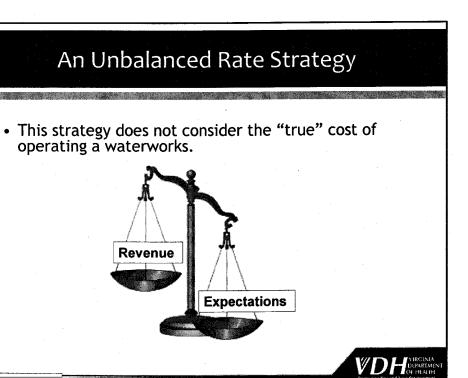


A Common Rate Misstep

 Many waterworks set their rate structure to cover only the cost of their operations







• Sufficient revenue to pay expenses • Sufficient revenue to pay debts • A Level of Service to meet expectations

Rates Should Provide:

- Savings for a rainy day
- Savings to pay for infrastructure replacement
- Coverage for Inflation/increasing costs
- Water that is affordable
- Rate Stability





Cost of Doing Nothing

Inflation					
	2005	2015	Change		
Bread	\$1.05	\$1.43	36%		
Apples/lb	\$0.97	\$1.40	44%		
Oranges/lb	\$0.89	\$1.23	38%		
Electricity/KWH	\$0.10	\$0.13	30%		
Coffee/lb	\$3.24	\$4.49	39%		
Average Change	TREE T		37%		
Average Change/Year			4%		
Dollar	\$1.00	\$1.21	21%		
Average					
Change/Year			2%		

U.S. Bureau of Labor and Statistics



Reality vs. Expectations

Level of Service

- Quality/adherence to Regulations
- Disruptions of service
- Complaints (red water, pressure, odor, taste, etc.)



Rusted iron water pipe Credit: Timothy Ford, Montana State University



Reality vs. Expectations

Level of Service

- Cost goes up with each additional level of service
- Important for economic development
- Defines consumer confidence



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Assess What You Have

Asset Management Plan

- Inventory of infrastructure (including pipes)
- Criticality, condition, and service life of assets
- Cost to replace in today's dollars





Plan for Future

Capital Improvement Plan (CIP)

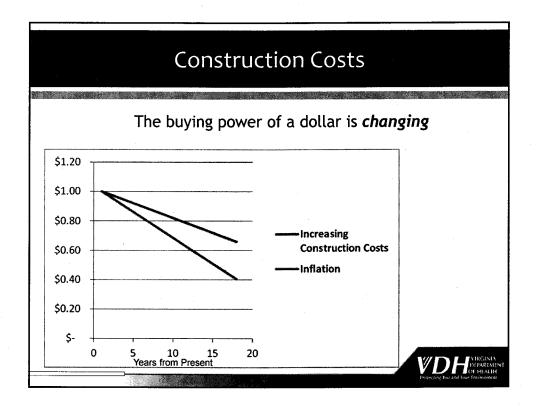
- System doesn't heal itself
- Replacements must be planned

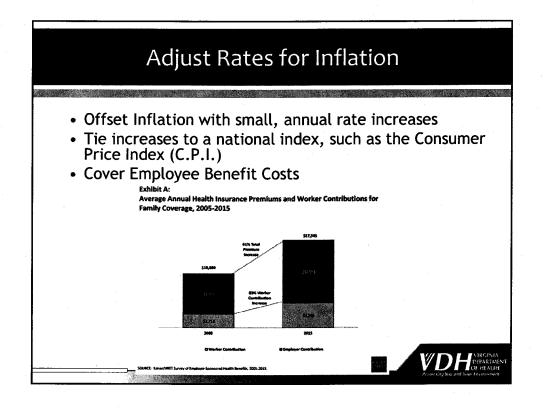


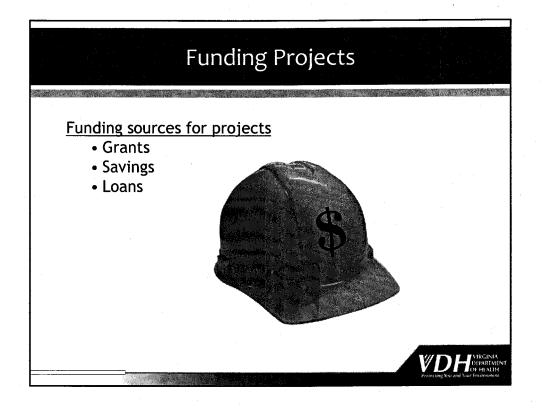


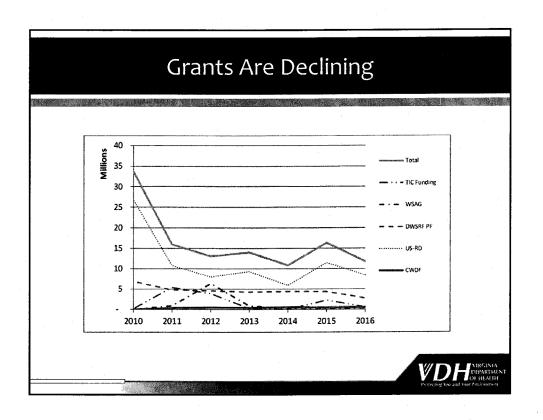
Plan for Future Capital Improvement Plan (CIP) • Prioritize based on Asset Management Plan • Start with the most critical asset in the worst condition Aggressive High Monitoring Risk Aggressive Monitoring Low High Low Consequence VDH MIRGINA DEPARTM OF HEADE

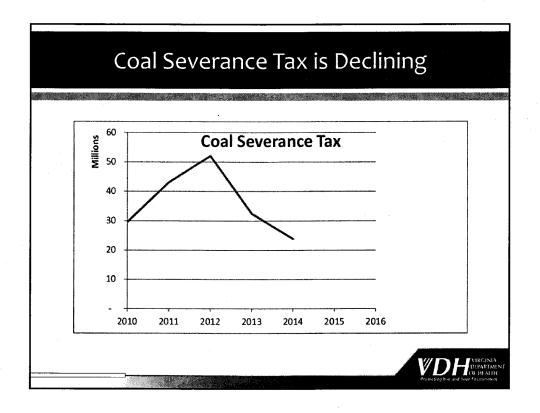
The compound annual growth rate of heavy construction indicates that construction costs have increased 3.5% on average.











Grants Are Declining

Waterworks can <u>not</u> rely upon grants to fund infrastructure replacement



Savings

- •Start early, save often; just like retirement.
- •Small annual increases are most successful.
- Automatic savings works even better.

VIDE VIRGINIA
DEPARTMENT
OF HEALTH
Protecting You and Your functionment

Savings

- Build it into your Budget
 "Infrastructure Replacement Fund"
- Savings Should *Exceed* Depreciation
 - Depreciation considers original purchase price <u>not</u> the cost to purchase in today's dollars
 - Many items may already be completely depreciated



Loans

- Drinking Water State Revolving Fund (DWSRF)
- Rural Development (RD)
- Virginia Resource Authority (VRA) Pooled Loan Program
- Local Lenders





Loans Require a Credit Review

Waterworks must pass Credit Review to get a loan





Credit Review

Debt Service Coverage Ratio

- Measures the utility's ability to pay for debt
- Rates must be high enough to cover debt plus a safety factor





Credit Review

Savings

- Days Cash on Hand Ratio measures how long the utility could operate from unrestricted savings
- Rates must be high enough to accumulate savings



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Credit Review

Operating Ratio

Measures whether revenues are enough to pay for expenses



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Protecting two and four fruitmoned

Disadvantaged Terms

Financially Disadvantaged communities have Median Household Income (MHI) less than or equal to 80% of average MHI (currently 52,000)

These waterworks may receive lower rates or extended loan terms

Washington County \$43,310 from US Census data



Rates Tied to Better DWSRF Loan Terms

Annual Rates need to equal 1% of Median Household Income (MHI) for average gallons per month for financially disadvantaged communities

\$36.09/month for Washington County

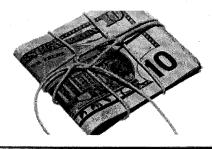




Rates Tied to Grants

Annual Rates need to equal 1.5% of Median Household Income (MHI) USDA Rural Development

\$54.14/month for Washington County





Rates Tied to Better DWSRF Loan Terms

WCSA Average usage 3,729 gallons

Minimum no usage = \$22.64

Per 1000 more gallons = \$4.66 * 3 = \$13.98

Per 1000 more gallons = \$6.80 * 1 = \$6.80

WCSA Average bill = \$43.42

Washington County 1% MHI = \$36.09

Washington County 1.5% MHI = \$54.14



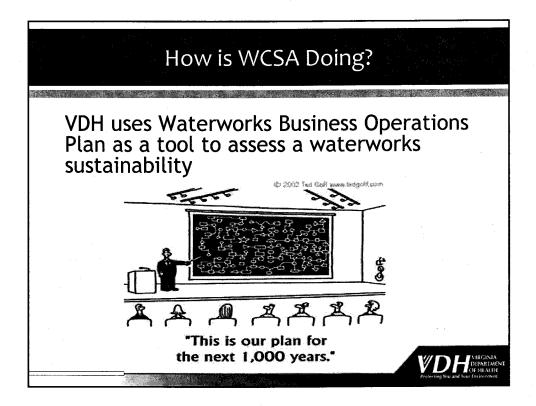


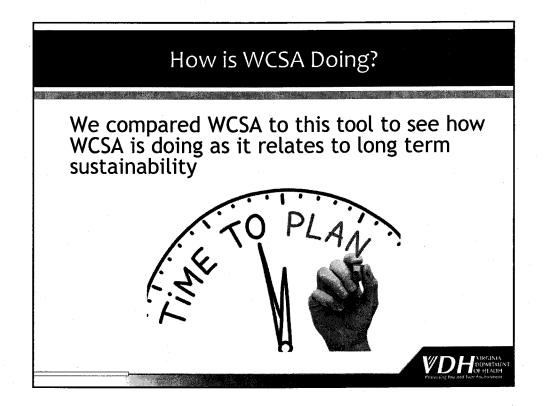
Disadvantaged Terms

- Waterworks are expected to meet or exceed the target rate criteria at the time of project completion.
- WCSA meets VDH requirement but not USDA Rural Development requirement



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How is WCSA Doing?

Waterworks Business Operations Plan looks at sustainability factors in three areas

- Technical
- Managerial
- Financial



How is WCSA Doing?

Technical Sustainability indicators

- Water Accountability
- Compliance with Regulations
- Understands what is happening in distribution system



Technical	
Meters tested and replaced periodically	٧
Pressure monitoring of the distribution system	٧
Periodic leak detection of distribution system	٧
Repairs leaks when discovered	٧
Periodic water audits	١
Eliminated all unmetered use possible	
Estimates unmetered use such as flushing, fireflow, etc.	Ŋ
Active Cross Connection Program	V
Active security measures in place: physical and cyber	١
Physical connections with other waterworks	٧
Planned for future needs of water based upon	
development	١
Active Safety program	١
Sufficient Properly licensed operators to cover sick	
leave, vacations, succession planning, etc.	¥
Completes all required sampling	V
Completes all required Monthly reporting	¥
No Violations in last 12 months	٧
Has a map of waterworks	٧
Has a hydraulic model of waterworks	٧
Calibrates hydraulic model of waterworks	٧



How is WCSA Doing?

Managerial Sustainability indicators

- Operations Planning and SOPs
- Preventative maintenance
- Customer Communications
- Planning for the future and emergencies



Managerial = =	
Has Operations Plan	٧
Has Standard Operating Proceedures	٧
Has Asset Management Plan	√
Completes Scheduled Preventative Maintenance	٧
Utilizes Work Order Mangement System for	
Peventative Maintenance and other maintenance tasks	٧
Emergency Management Plan	٧
Knows which hats must be worn and has designated	
someone for each of those	٧
Organizational Chart	٧
Job Descriptions for all positions	٧
Formal Customer Complaint procedure exists	. 🗸
Information about complaints used when considering	
preventative maintenance scheduling, planning for	
replacement of assets (asset management and capital	
improvement)	V
Has Insurance	٧
Keeps records of samples, MORs, complaints, etc.	√
Provides funding and time off for operator training	٧



How is WCSA Doing?

Financial Sustainability indicators

- Things that affect credit score
- Savings for a rainy day
- Good financial procedures



	WCSA	en Name and American
Financial (1994)		
Operations Reserve = 1/8 Total Expenses less		
depreciation	٧	
Emergency Reserve = cost to replace most critical asset	v	
Capital Replacement Reserve = some savings toward		
future replacement of infrastructure	<u> </u>	
Debt Service Coverage = 1.15	٧	
Annual Audits	٧	
No Qualifications on Audits	٧	
Annual Budget	V	
Periodicaly check Trial Budget vs Actual Budget	₹	
Budget Procedures		
Conducts Rate Studies	٧	
History of periodical Rate increases	٧	
Revenues Exceed Expenses	٧	
Capital Replacement savings exceeds depreciation	¥	
Average Rate as % of Median Household Income ≥1.0		
but ≤ 2.0 .	<u> </u>	
Water Operations supported soley by water revenues	<u> </u>	
Billing and collections handled in-house	V	
Billing and collections software interfaces with	-	A
Accounting Software	V 4	

Technical

- Water Accountability (only 55%)
 - Water audits weekly or monthly instead of annually
 - Replace meters (mostly 20+ years old)
 - Replace leaky water pipes
 - Base this upon an updated Asset Management plan and Capital Improvement Plan



Technical

- Workforce Changes
 - Transition from general labor to skilled labor (operators, maintenance crews, meter readers, customer service, etc.)
 - •They've had to learn about water sampling, disinfection, asbestos pipe abatement, safety changes, technology changes and on it goes.



Opportunities for Improvement

Managerial

- Update Work Order Management System
 - User friendly
 - Details status of a work order
 - Provides historical analysis



Managerial

- Update Asset Management Plan
 - Develop Realistic Asset Management Goals
 - Incorporate information from repair crews and work orders
 - Use Asset Management Plan to prioritize Capital Improvement Plan



Opportunities for Improvement

Managerial

- Update Emergency Management Plan
 - Train/drill on those regularly (Tabletop Exercises, etc.)
 - Consider mutual aid agreements like VA WARN



Financial

- Revise Repair and Replacement Reserve (currently depreciation reserve) to align with Asset Management Goals
 - Depreciation reflects original purchase price not cost to replace
 - Much of infrastructure completely depreciated



Opportunities for Improvement

Financial

- Consider a transition to Asset Based Accounting
 - Helps better identify the true cost of assets
 - Better plan for their repair or replacement



Financial

- Interface billing and collections with:
 - Accounting software
 - Work order software
 - GIS software
 - Asset Management software



Opportunities for Improvement

Financial

- Rates
 - Adjust at least enough annually to keep up with inflation ≈ 2.5%
 - Adjust to meet goals based upon
 - Asset Management Plan
 - Preventative Maintenance
 - Capital improvement plan



Thanks for Inviting Me

Anthony Hess, MBA Sustainability Coordinator VDH - Office of Drinking Water 131 Walker St. Lexington, VA 24450 Phone: (540) 463-0419

Collaborating across Virginia to Improve the Technical, Managerial and Financial Capacity of Waterworks



1 General Manager's Report and Update

October 23, 2017

2 Introduction

- **▶** Financials
- **▶** Customer Service
- ▶ Accounting
- ▶ Notable Items
- ▶ Looking Ahead
- **Financials: Water Revenue**
- 4 Financials: Wastewater Revenue
- 5 Financials: Water Expenses

6 Customer Service

- ▶ Highlands Union Bank Remit Plus
 - · One Month in; Stable Results
- ▶ Initial Thoughts on Possible Policy Amendments:
- 1. If Customer has not Been Disconnected for Nonpayment for the Previous 12 Months, They Earn One Waiver?
 - · Can They Accumulate More Than One Waiver?
 - Should This Reset After Use of Waiver?
- 2. If Customer has not Received a Late Fee Penalty for the Previous 12 Months; They Earn One Waiver?
 - Can They Accumulate More Than One Waiver?
 - Should This Rest After Use of Waiver?
- ▶ Amendments Must be Approved by Board and Bond Counsel / Lenders

7 Top 10 Largest Producing Meters?

- 1. Southwest Virginia Regional Jail@ 85,000/day
- 3. Emory & Henry College.....@ 69,000/day
- 4. Johnston Memorial Hospital..........@ 61,000/day
- 6. AFG Industries.....@ 22,000/day
- 8. Wolf Hills Energy......@ 17,000/day
- 9. Greenfield Mobile Home......@ 15,000/day

8 Top 10 Customers

- 1. Southwest Virginia Regional Jail...@ 85,000/day
- 2. Johnston Memorial Hospital......@ 83,000/day
- 4. Emory & Henry College......@ 78,000/day
- 6. Mid Mountain Foods......@ 66,000/day

7. AFG Industries	@:	22,000/day
8. Wolf Hills Industry	@	17,000/day
9. Greenfield Mobile Home	@	15,000/day
10.Hunt Assisted Living	@	3,000/day

9 Accounting

- ▶ FYE 2017 Audit Finalization
 - Good Audit; No Qualifications
 - Committee Presentation Being Scheduled
 - · December 18, 2017 Board Presentation
- ▶ Fringe Benefit Audit
 - Uniform Taxation
 - Working With Vendor to Address Pants and Coveralls
- ▶ Bond Counsel Procurement
 - Consider Authorizing Staff to Procure for this Service?
- ▶ Compensation & Benefit Study
 - Prepared and Issued Request for Proposals
 - Shortlist, Interviews and Negotiations to Follow
- ▶ Reserve Investment
 - Continue to Research Best Option for WCSA

10 Lee Highway Corridor Project

- ▶ The Lane Group Coordinated a Meeting Between WCSA and Town of Abingdon to Explore Joint Wastewater Opportunities
 - Expand Existing Agreement
 - · Study Regional Partnership
- ▶ Proposed November Meeting to Include a Board Member From Each Board
- ▶ WCSA Board Member Volunteer?
- ▶ The Lane Group Coordinated Meeting Between WCSA and BVUA to Explore Joint Wastewater Opportunities
 - Regional Treatment Plant

Loves Travel Stop Pump Station Site

- ▶ September 2017
 - School Requests Termination of Wastewater Discharge Permit From DEQ
 - DEQ Released Permit
 - WCSA Signs and Records Deed
 - WCSA now Owns the Property

12 Connection & Monthly User Fee Survey

- ▶ With Staffs Help, Survey is Complete
- ▶ Scope:
 - Water and Sewer Connection and Monthly User Fees
 - Statewide Comparison 160 +/- Utilities
 - 100 Mile Radius Comparison 30 +/- Utilities
 - Minimum Bill: Do Other Utilities Charge a Minimum Bill and if so how Much

- ▶ Background Information Provided to Help
- ▶ Please let us Know if Questions

13 Looking Ahead

- ▶ Water Quality
- ▶ Water Withdrawal

Permit

- ▶ Lee Highway Corridor Sewer Project
- ▶ Meter Replacement
- ▶ Strategic Planning
- ▶ Comp. & Benefit Study



Inside Engineering Projects

Ritchie Road Water Line Project-

- Bids were received on October 12th.
- Low bidder is Ramirez Contracting.
 Bid price \$167,536
- Further discussion in Agenda Item #14



Inside Engineering Projects

Haskell Station Road Extension Project

- Project completed within budget
- Further discussion in Agenda Item # 15

Potential New Water Line Extensions



- Rattle Creek staff has submitted Environmental Assessment to VDH and has also began formulating the Erosion and Sediment Control Plan
- Chip Ridge staff is formulating the Erosion and Sediment
 Control Plan
- Rich Valley Road staff has submitted the Environmental

 Assessment to VDH
- Sugar Cove Road staff has requested the Categorical Exclusion from VDH

Potential New Water Line Extensions



Joint Permit Applications for Stream Crossings

- Rattle Creek 6 stream crossings, permit application has been submitted
- Sugar Cover Road 1 stream crossing, permit application has been submitted
- Rich Valley Road 25 stream crossings, permit application



Potential New Water Line Extensions

- Hidden Valley Phase 2 funding in place
- Staff has located a well site location and is working with the property owner.
- Staff also has a preliminary project meeting with Mount Rogers and department of Housing and Community Development



Potential New Water Line Extensions

Mendota

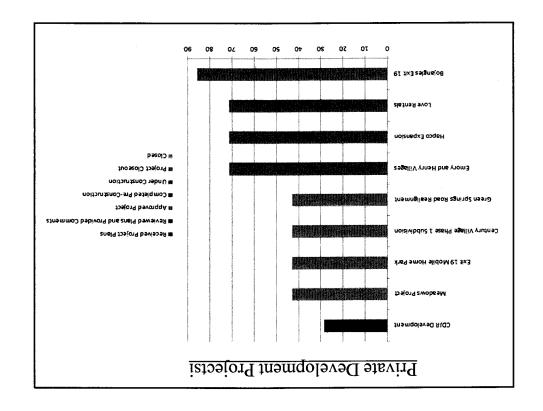
- Staff continues to track user agreements. Currently participation levels area at 55%.
- Next steps will be for staff to identify where the participation clusters are and possible ways to phase the project, ways to serve the project from a hydraulic standpoint and funding avenues.

Potential New Water Line Extensions



Archery Range Road/Mary's Chapel

- Staff continues to track user agreements. Participation levels are at 57%.
- Next steps will be looking at the hydraulics for best way to serve project.



September 2017 Operational Update

October 23, 2017

2 Discussion Items

- ▶ People
- ▶ Safety
- ▶ Department Highlights
- ▶ No Financials pending final numbers
- ▶ Forward Looking Statement

3 Safety

- ▶ Focus on Work Area Awareness & Safety. Avoiding the Crush Zone
- ▶ VDOT Work Zone Safety Training -Certification

4 People

- ▶ Posted both Internally and Externally (Bristol Paper and Web Site) for Maintenance Planner/Crew Member
 - Interviewing
 - · 3 Internal Candidates
 - 2 External from Pool of around 10 Applications Candidates

5 2017 Sept Water Production Highlights

- ▶ SFI & MFDWP Issue Resolution
 - Raw Water Feed to the Plant
 - Running Potable water to Energy Recovery Building to provide water to cool hydro turbine seals and to power the Cla-Valve. -Complete
 - CR Underwood working with Cla-Val, WCSA wants performance such that valve provides stable control – CRU Rescheduled for Nov 1st.
- System Operation
 - Water Quality
 - · Brumley Gap Area, Systematic Flushing
 - Hidden Valley DBP Exploratory Well Approved, Site Selected, Working with Out of State Landowner
 - Water Production
 - Raw Water Production down about 5% to 4.79 MGD, due to many accomplishments, but leak repair from TV major contributor. Additional Work in Progress – Anticipating Conducting Another AWWA Water Audit within the next 60 days to confirm System Improvements

6 2017 Sept Wastewater Process Highlights

▶ I&I

- Team Approach with Maintenance
 - Prioritized and Categorized I&I Issues
 - Working on Customer Notifications for Smoke Testing

▶ Operational

- Hall Creek Internal Plant SCADA
 - · Headworks Issues, in process of correcting
 - · Did have an Overflow due to Excessive Rags clogging pumps

- Collection System SCADA
- ▶ Capital
 - Scoping Equipment needs for Hall Creek Headworks
 - · Plan is to utilize RFP Process Move to Higher Priority
 - Scoping Process to Retrofit Damascus Plant to extend useful life
- 7 Hall Creek Waste Water Plant 0.65 MGD
- 8 Hall Creek Overview Screen
- 9 Hall Creek Trending Screen
- 10 Hall Creek Process Summary
- 11 Hall Creek Process Control Chart
- 12 2017 Sept Distribution Highlights
 - ▶ Providing Technical Support to SFI and MFDWP Issues
 - ▶ Executing PSV/PRV Preventive Maintenance Program
 - Establishing Baseline for each PRV, Hydraulic Grade lines
 - ▶ Continued with Customer Education & Inspections of Cross Connections and Back Flow Prevention
 - ▶ Recall we are systematically approaching water losses, Non Revenue Water, NRW
 - Drew Circle around the MFDWP to mass balance
 - Found Imbalance from Taylor's Valley Spring water to what was being supplied to the MFDWP
 - Located Leaks which then increased the spring line pressure and created more leaks.
 Valve issue with maintaining consistent hydraulic grade line.
 - Replaced 8" Flowmeter & Wiring, Now Balance works
 - ▶ Scheduling AWWA Water Audit in Near Future

2017 Sept Metering Highlights

- ▶ Meter Replacement, Very Large Project
 - · Then start on RFP
- ▶ This is critical in determining WCSA's cash flow basis. We do not want this project to warrant a rate increase, but need facts to make this determination.
- ▶ This is key to Work Order based Management, PM's (CMMS), Asset Conditions and turning all this Data in Actionable Information

14 2017 Sept Water Maintenance Highlights

- **▶** System Improvements
 - Roses & Food City Fire System Isolation Valves
 - · Potable Water at MFDWP Energy Recovery Building
 - Jumping Over on Wallace Pike (80%, 1 mile) & Old Saltworks (70%, 1 Mile from Hillman to Walden Rd) to eliminate dual lines
 - Next is Pocahontas towards Ramblewood
- ▶ Routine Activities
 - ∘ Leaks 11 (2015 Avg. 30)
 - Main Line Breaks 4 (2015 Avg. 6)
 - After Hours Responses 28 (2015 Avg. 38)

· After Hours Responses a Target Area for Improvement

▶ Costs

- Preventive Maintenance
 - Mobile Equipment
 - Tanks
 - Pump Stations
 - Fire Hydrants

15 Year to Date we are Tracking Under Budget

16 Forward Looking Statement

- ▶ Customer Relationships
 - Fire Departments
 - · Hydrants & Training Well in Progress
 - Water & Sewer Customers
 - · More Customer Engagement at Time of Contact
 - · Door Hangers

▶ Quality

- System Pressure/Flow Variations as Detected During Hydrant Stress Tests
- Brumley Tank water turnover improvements
- Hidden Valley DBP

▶ Costs

- Production Costs (Water Loss and I&I)
- Continue to work with all Departments to reduce Non Revenue Activities (NRA)
- Hydrants as a Device to "Stress Test" our Water Delivery System to identify Problems Early
- Construct Hydraulic Grade lines in our GIS to aid in Troubleshooting and Early Detection
- Work with Engineering/Operations on How to Work Together to Obtain the Most Value in our Construction Projects