2018 WATER SYSTEM IMPROVEMENTS METER REPLACEMENT

PRELIMINARY ENGINEERING REPORT

FOR

ROWAN WATER, INC.

December, 2018

BLUEGRASS ENGINEERING PLLC

222 East Main Street, Ste. 1 • Georgetown, KY 40324

ROWAN WATER, INC.
Preliminary Engineering Report
2018 Water System Improvements – Meter Replacements

1. PROJECT PLANNING

a. Location

Rowan Water, Inc. (RWI) is a water association that serves all of Rowan County, outside the city limits of Morehead, the northern portion of Elliott County, the western tip of Carter County, the northern edge of Morgan County and the southern portion of Fleming County.

This project is mostly defined by replacing all conventional meters' system wide with new radio read meters. A system map is attached to this Preliminary Engineering Report as **Appendix A**.

b. Environmental Resources Present

Due to the fact that there will be no excavation on this project, and the project will consist of removing existing meters from the meter box and replacing them with the new more technologically advanced radio read meters, Rowan Water, Inc. will seek a categorical exclusion for this project.

c. Population Trends

The 2010 population for Rowan County was 23,333. The Kentucky State Data Center projects the County population to grow continuously over the next thirty years. By 2040 the population is estimated to be 28,982. The projections from the Kentucky State Data Center for the next twenty years are:

2020	2025	2030	2035	2040
24,879	25,809	26,953	28,023	28,982

In 1987 RWI had a customer base of approximately 2,022 customers. The customers have grown to an average of 7,000 today. The majority of the customers are residential with the balance being commercial customers. Rowan Water has two wholesale customers, Fleming County Water Association and the City of Olive Hill.

d. Community Engagement

Rowan Water, Inc. monthly board meetings are open to the public for open dialogue with the community. This project will also have an advertised public meeting that will encourage participation by the community for feedback on the project. This public meeting will be able to address concerns, funding and revenue strategies, and to address the needs of the project for public benefit.

2. EXISTING FACILITIES

a. Location Map

A system map is attached in **Appendix A**.

b. History

RWI was established in 1968. Major expansions and renovations of its system were done in 1991, 1992, 1998, 2001, 2004, 2007, 2012, and 2016. RWI purchases 100 percent of its water from the Morehead Utility Plant Board. All expansions and renovations were on its distribution system.

c. Condition of Existing Facilities

The existing system is in relatively good shape. Most recently Rowan Water, Inc. replaced an aging standpipe tank on 3-C Trail with a new 150,000-gallon elevated tank. Rehabilitation work was also completed on the following tanks: Sawmill, Rock Fork, Pond Lick, Frank Johnson and Maxey Flats. A new pump station replaced an aging facility on 3-C Trail as well as updates to the Old Hilda and Sawmill pump stations. Therefore, most all of the water storage facilities and pump stations have been updated. The one area that is aged and in need of updates or repairs are the water meters.

The pipe in the distribution system is in fairly good order as RWI reports a water loss of between 15 and 20 percent. This despite over 600 miles of water main in five counties serving almost 7,000 customers. Most of this pipe is in a mountainous and rocky terrain.

d. Financial Status of any Existing Facilities

RWI submits an annual audit and PSC report to Rural Development and the Kentucky Public Service Commission.

Information regarding current rate structure, O&M cost, and user data will be compiled in the Summary Addendum to the PER.

e. Water/Energy/Waste Audits

RWI has not had a water energy audit completed, but the new pump station on 3-C Trail and the addition of Variable Frequency Drives to the existing Old Hilda and Sawmill pump stations have provided energy cost savings due to the way the VFD's ramp up and down with the demand for service. The installation of drive-by meters will reduce the gasoline consumption of meter reading vehicles dramatically, as well as reducing the wear and tear on company vehicles.

3. NEED FOR THE PROJECT

a. Health, Sanitation, and Security

The need for the new radio read meters is to reduce liability, increase efficiency, and continue to work toward a more reliable system. Liability is a huge risk for all utilities in this day and age, and this will remove meter readers from having to pull on and off busy

roads every month to manually read meters. It reduces threats to the meter reading personnel from vicious dogs, climbing fences, inclement weather and risk of not properly reinstalling the meter box lid after manual readings. Radio read meters will also allow Rowan Water, Inc. to put less personnel on reading meters and more personnel on reducing water loss.

b. Aging Infrastructure

Most all of the tanks and pump stations have been rehabilitated or updated in the last few years and the distribution system serves all of the customers in the county that are remotely feasible. However, this project will allow Rowan Water, Inc. to replace the one thing that needs attention and that is to replace its aging water meters. Most all aging meters read at less than 95% accuracy. Historically, meters are found in systems that have read at considerably lower levels. Simply put, installing new meters should instantly reduce water loss as the new meters are consistently accurate and the savings from inaccurate (low) meter readings help to make payments on this investment.

c. Reasonable Growth

Rowan Water has seen a 244 percent growth in customers over the past 30 years. With the population projected to continue to increase over the next 20 years, it is reasonable to expect that Rowan Water's customer base will continue to increase making the drive by radio read system even more valuable in its efficiency.

4. ALTERNATIVES CONSIDERED

The only alternative considered to the drive by radio read meters would be the installation of a land-based radio read meter system. The land-based system is the latest in technology that allows the utility to read all meters from the office. This system is relatively new but is cost prohibitive for Rowan Water's application at this time. The drawback is the terrain in Rowan county and the surrounding counties is considered mountainous and the land-based system would require numerous antennas and repeaters to receive reliable signals to the office. In addition, the meters are very expensive. This option is not financially feasible.

5. SELECTION OF AN ALTERNATIVE

There is only one alternative and that is to install the new drive by radio read meters. As described in ALTERNATIVES CONSIDERED the cost of the land-based system is not feasible with the requirements of numerous antennas and repeaters to navigate the mountainous terrain. The drive by radio read meters will provide updated meter accuracy by replacing aged meters, and reduce liabilities to Rowan Water personnel and the general public as well.

6. PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

a. Preliminary Project Design

New drive-by radio read system will include replacing approximately 6,000 unreliable meters system wide with new well tested technology that allows the utility to increase accuracy in their billing and reduce liability issues with company personnel and the general public. Efforts shall be made to insure contractor is aware of the locations of all meters within the system for a timely and efficient change out. If contingencies are available at the end of construction, a new meter reading truck outfitted with the lap tops for reading is also requested.

b. Project Schedule

1. Secure Letter of Conditions from Rural Development in March, 2019.
2. Land Purchases and Easements are not required.
3. Division of Water Submittal is not required.
4. Advertise for Bids May, 2019
5. Contract Award/Begin Construction in August, 2019
6. Substantial Completion – January, 2020
7. Final Completion – February, 2020

c. Permit Requirements

1. Kentucky Division of Water Approval – N/A
2. Rowan County Fiscal Court – N/A
3. Kentucky Department of Highways – N/A

d. Total Project Cost Estimate

The total project cost Estimate is **$1,722,000**

See attached detailed Engineer's Estimate in **Appendix B.**

e. Annual Operating Budget – *All items below will be covered in the Summary Addendum.*

i) Income
ii) Annual O&M Costs
iii) Debt Repayments
iv) Reserves

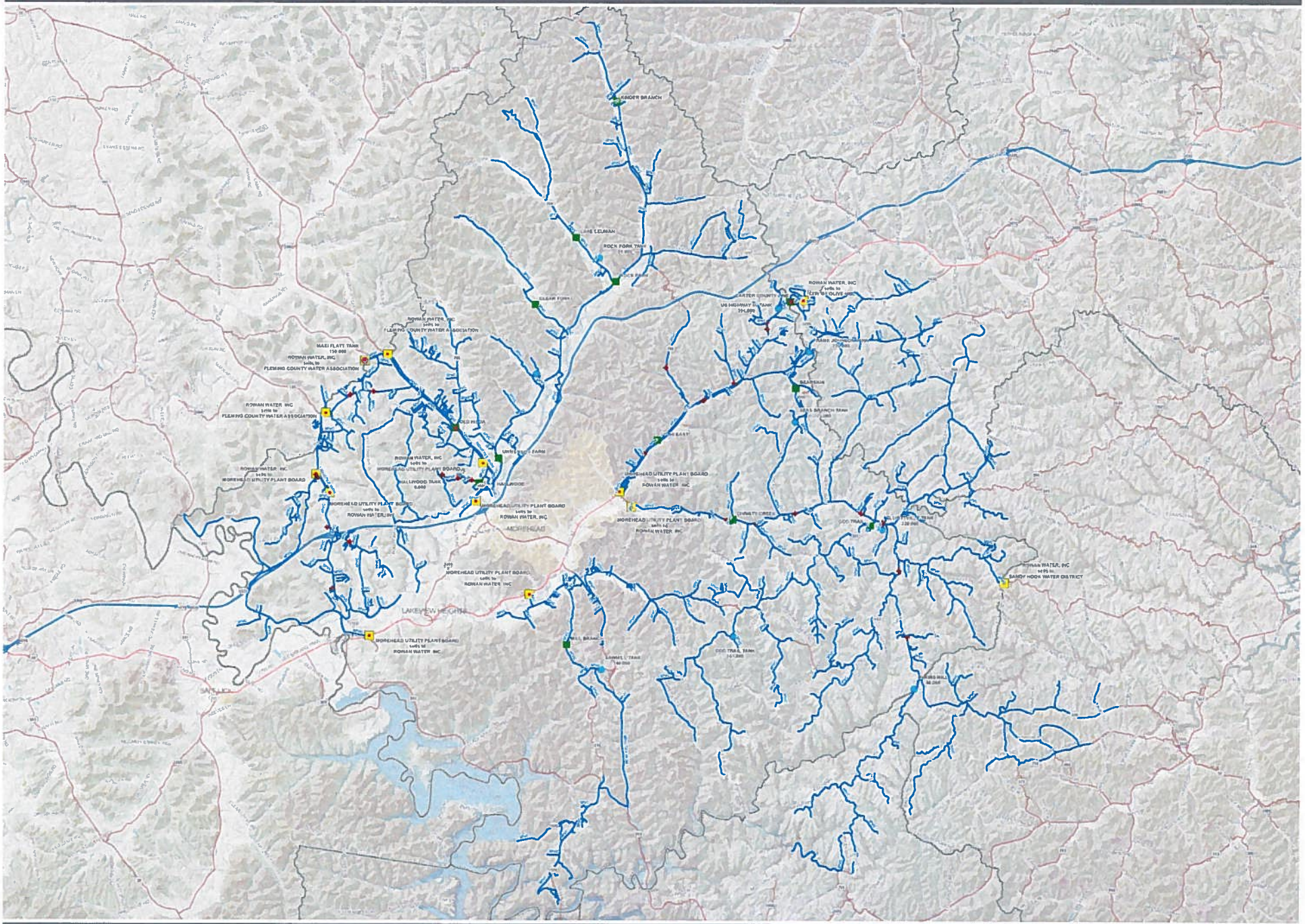
7. CONCLUSIONS AND RECOMMENDATIONS

Rowan Water, Inc. will replace approximately 6,000 of their 7,000 meters system wide. Approximately 1,000 radio read meters have been installed in recent projects allowing Rowan Water, Inc. to experience this technology and the benefits thereof first hand. The 6,000 old and unreliable meters will be replaced with the same radio read meters that they have currently in the system, so they can maintain the consistency with which they are accustomed. Due to the magnitude of the number of meters to be replaced, Rowan Water, Inc. will bid out the purchase and installation of the meters over a six-month period. The start-up package shall also include training and software.

APPENDIX A

ROWAN WATER, INC.

WATER DISTRIBUTION SYSTEM



APPENDIX B

BLUEGRASS ENGINEERING PLLC

Client: ROWAN WATER, INC.

Project: METER REPLACEMENT

Date: 11/2/2018

Construction Costs					
Item #	Description	Quantity	Unit	Unit Cost	Item Cost
1	METER REPLACEMENTS	6000	EA	$ 200	$ 1,200,000
2	LABOR	6000	EA	$ 40	$ 240,000
Total - Construction Cost					$ 1,440,000

Non-Construction Costs	
Contingencies	$ 140,000
Administrative Expenses/Interest	
Legal Expenses	$ 15,000
Land, Appraisals, Easements	
Planning	
Engineering Fees - Design	$ 94,000
Engineering Fees - Construction Administration	$ 23,000
Engineering Fees - Inspection	
Engineering Fees - Other	$ 10,000
Total - Non-Construction Costs	
Total - Project Costs	$ 1,722,000

SUMMARY ADDENDUM

TO

PRELIMINARY ENGINEERING REPORT

DATED March 2019

FOR

Rowan Water, Inc. – Meter Replacement Project
(Name of Project)

APPLICANT CONTACT PERSON Jerry Patrick, Manager

APPLICANT PHONE NUMBER (606) 784-9818

APPLICANT TAX IDENTIFICATION NUMBER (TIN) 61-0701413

ITEMS IN BOLD ITALIC PRINT ARE APPLICABLE TO SEWER SYSTEMS.

In order to avoid unnecessary delays in application processing, the applicant and its consulting engineer should prepare a summary of the preliminary report in accordance with this Guide.

Please complete the applicable sections of the Summary Addendum. ***Please note, if water and sewer revenue will both be taken as security for the loan, all user information and characteristics of both utility systems will be needed even though the project will benefit only one utility.***

Feasibility reviews and grant determinations may be processed more accurately and more rapidly if the Summary/Addendum is submitted simultaneously with the preliminary engineering report, or as soon thereafter as possible.

I. GENERAL

A. Proposed Project: Provide a brief description of the proposed project. In addition to this summary, the applicant/engineer should submit a project map of the service area.

The proposed project will replace approximately 6,500 manual read meters with radio read meters. This project will increase the financial efficiency by replacing older meters that are in a state of disrepair and assuring that the meters are correctly measuring water usage.

II. FACILITY CHARACTERISTICS OF EXISTING SEWER SYSTEM *NA*

A. Sewage Treatment:

1. Type _____

2. Method of Sludge Disposal _____

3. Cost per 1,000 gallons if sewage treatment is contracted:
$ _____

4. Date Constructed _____

B. Treatment Capacity of Sewage Treatment Plant _____

C. Type of Sewage Collector System (Describe)

D. Number and Capacity of Sewage Lift Stations

E. Sewage Collection System:

Lineal Feet of Collector Lines, by size 6" _____ *8"* _____
10" _____ *12"* _____, *Larger* _____
Date(s) Constructed _____

F. Conditions of Existing System: Briefly describe the conditions and suitability for continued use of facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

III. FACILITY CHARACTERISTICS OF EXISTING WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

Rowan Water Inc. (RWI), purchases water from the Morehead Utility Plant Board. A new water purchase contract was signed in 2001 and is valid for 40 years. The contract allows RWI to purchase up to 2.7 MGD capacity of the plant capacity which is currently 8.5 MGD. RWI's water purchases average 1.3 to 1.7 MGD.

If the applicant purchases water:

Seller(s):

1. Morehead Utility Plant Board

Price/1,000 gallons:

1. $1.398/1000 plus $25,000/month (debt service)

Present Estimated Market Value of Existing System: $ 10,400,000

B. Water Storage:

Type: Ground Storage Tank X Elevated Tank _____

Standpipe _____ Other _____

Number of Storage Structures 10

Total Storage Volume Capacity 951,000 Gallons

Date Storage Tank(s) Constructed 1970 & after

C. Water Distribution System:

Pipe Material PVC & small amount of AC

Lineal Feet of Pipe: 2" & 3" Diameter 792,500 4" 728,654

6" 389,260 8" 58,360

10" 63,888 12" 8,448

16" 2,000

All pipe footage is an estimate only.

Date(s) Water Lines Constructed 1970 – present

Number and Capacity of Pump Station(s) 10: 70 gpm to 300 gpm

D. Condition of Existing Water System:

Briefly describe the condition and suitability for continued use of facility now owned by the applicant. Include any major renovation that will be needed within five to ten years.

Rowan Water, Inc. continually develops projects that maintain and upgrade the water system resulting in a system that is in very good condition.

E. Percentage of Water Loss Existing System 15%

IV. EXISTING LONG-TERM INDEBTEDNESS

A. List of Bonds and Notes:

Date of Issue	Bond/Note Holder	Principal Balance	Payment Date	Bond Type Water/Sewer*	Amount on Deposit in Reserve Account
1991 Issue	USDA RD	$760,680	June/Dec	100 % 5.00 %	$
1992 Issue	USDA RD	$237,417	June/Dec	100 % 5.00 %	$
1998 Issue	USDA RD	$912,567	June/Dec	100 % 4.50 %	$
2001 Issue	USDA RD	$281,951	June/Dec	100 % 4.50 %	$
2004 Issue	USDA RD	$406,519	June/Dec	100 % 4.50 %	$
2004 Issue	USDA RD	$179,886	June/Dec	100 % 4.50 %	$
2007 Issue	USDA RD	$537,106	June/Dec	100 % 4.125 %	$
2012 Issue	USDA RD	$887,222	June/Dec	100 % 2.75 %	$
2012 Issue	USDA RD	$95,298	June/Dec	100 % 2.75 %	$
2017 Issue	USDA RD	$573,209	June/Dec	100 % 2.625 %	$
					$395,000

* If a combined issue, show attributable portion to each system.

B. Principal and Interest Payments: (Begin with Next Fiscal Year Payment)

		PAYMENT YEAR: 2019		PAYMENT YEAR: 2020		PAYMENT YEAR: 2021	
DATE OF ISSUE	BOND HOLDER	PRINCIPAL PAYMENT	INTEREST PAYMENT	PRINCIPAL PAYMENT	INTEREST PAYMENT	PRINCIPAL PAYMENT	INTEREST PAYMENT
1991	RD	36,400	38,700	38,200	36,900	39,000	36,100
1992	RD	11,400	11,000	11,900	10,400	12,400	9,800
1998	RD	28,900	37,500	30,200	36,200	31,500	34,900
2001	RD	7,300	12,000	7,700	11,700	8,100	11,400
2004	RD	8,500	17,100	8,900	16,700	9,300	16,300
2004	RD	4,000	7,400	4,100	7,200	4,200	7,000
2007	RD	8,700	21,900	9,100	21,600	9,500	21,300
2012	RD	14,900	23,500	15,300	23,120	15,700	22,740
2012	RD	1,600	2,530	1,640	2,490	1,680	2,450
2017	RD	16,400	28,600	16,800	28,200	17,250	27,750
TOTAL		138,100	200,230	143,840	194,510	148,630	189,740

V. EXISTING SHORT-TERM INDEBTEDNESS

A. List of All Short Term Debts: (Do Not Show Any Debt Listed in Paragraph IV Above)

Lender or Lessor	Date of Issue (Month & Year)	Principal Balance	Purpose (Water and/ or Sewer)	Payment Date	Principal & Interest Payment (P&I)	Date to Be Paid In Full

VI. LAND AND RIGHTS - EXISTING SYSTEM(S)

Number of Treatment Plant Sites: Water _____ *Sewer* _____

Number of Storage Tank Sites Water 10 *Sewer* _____

Number of Pump Stations: Water 10 *Sewer* _____

Total Acreage: Water 5 Acres *Sewer* _____ *Acres*

Purchase Price: Water $ _____ *Sewer* $ _____

VII. NUMBER OF EXISTING USERS

	Water	*Sewer*
Residential (In Town) *	6,424	
Residential (Out of Town) *		
Non-Residential (In Town)	694	
Non-Residential (Out of Town) – wholesale customer	2	
Total	7,120	
Number to Total Potential Users Living in the Service Area	7,450	

*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residence.

VIII. CURRENT WATER AND SEWER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION

Meter Size	Water Connection Fee	*Sewer Connection Fee*
5/8" x 3/4"	$ 800.00 (Residential)	$
1"	$ Actual Cost plus 15% overhead charge	$

IX. SEWER RATES - EXISTING SYSTEM N/A

Percentage of Water Bill _____ ***%*** ***Minimum Charge*** ***$*** _____

Other: (If Charge Not Based on Water Bill) _____

Date This Rate Went Into Effect _____

X. WATER RATES - EXISTING SYSTEM

Existing Rate Schedule: See attached Sheet

Date This Rate Went Into Effect: August 3, 2017

XI. ANALYSIS OF ACTUAL WATER USAGE - EXISTING SYSTEM - 12 MONTH PERIOD

For Period 01/01/2017 to 12/31/2017.

MONTHLY WATER USAGE	Average		Residential		Commercial	
			No. of Users	Usage 1,000	No. of Users	Usage 1,000
5/8" x 3/4" meter	Residential	Commercial				
0 - 1,000 Gal.	900	900	973	876	59	53
1,001 - 2,000 Gal.	1,650	1,650	925	1,526	27	45
2,001 - 3,000 Gal.	2,300	2,800	1094	2,516	19	53
3,001 - 4,000 Gal.	3,000	3,000	998	2,994	12	36
4,001 - 5,000 Gal.	4,050	4,050	767	3,106	12	49
5,001 - 6,000 Gal.	5,200	5,200	521	2,709	7	36
6,001 - 7,000 Gal.	6,200	6,300	335	2,077	2	13
7,001 - 8,000 Gal.	7,400	7,400	221	1,635	2	15
8,001 - 9,000 Gal.	8,500		144	1,224		
9,001 - 10,000 Gal.	9,400		97	912		
10,001 - 11,000 Gal.	10,300		69	711		
11,001 - 12,000 Gal.	11,400		50	570		
12,001 - 13,000 Gal.	12,300		33	406		
13,001 - 14,000 Gal.	13,400		23	308		
14,001 - 15,000 Gal.	14,300		20	286		
15,001 - 16,000 Gal.	15,200		16	243		
16,001 - 17,000 Gal.	16,300		13	212		
17,001 - 18,000 Gal.	17,200		10	172		
18,001 - 19,000 Gal.	18,200		10	182		
19,001 - 20,000 Gal.	19,300		7	135		
20,000 & Over	45,000		25	1,125		
	Subtotal		*6351*	*23,926*	*140*	*299*
	Average Monthly Usage			3,767		2,138
3/4" meter						
	Residential	Commercial				
	13700	30,750	11	151	12	369
	Subtotal		*11*	*151*	*12*	*369*
1" meter						
0-20,000 Gal.	17800		16	285	0	0
20,000 & Over	23850		0	0	14	334
	Subtotal		*16*	*285*	*14*	*334*
1.5" meter						
		4,100			2	8
	Subtotal		*0*	*0*	*2*	*8*
2" meter						
	Residential	Commercial				
	37700	62,700	19	716	14	878
	Subtotal		*19*	*716*	*14*	*878*
Wholesale Customers						
Fleming Cty WA		158,300			3	916.557
City of Olive Hill		10,100			2	38.986
Sandy Hook WD					1	0
		Subtotal			*6*	*955.543*
		Totals	**6397**	**25,078**	**188**	**2,844**

XV. FACILITY CHARACTERISTICS OF PROPOSED WATER SYSTEM

A. Water Source: Describe adequacy of source (quality and quantity). Include an explanation of raw water source, raw water intake structure, treatment plant capacity, and current level of production (WTP). Also describe the adequacy of Water Purchase Contract if applicable.

Water Supply described in Section III-A.

B. Water Storage:

Type: Ground Storage Tank X Elevated Tank _____

Standpipe _____ Other _____

Number of Storage Structures 10

Total Storage Volume Capacity 951,000

C. Water Distribution System:

Pipe Material PVC, AC

Lineal Feet of Pipe: 3" Diameter _____ 4" _____

6" _____ 8" _____

10" _____ 12" _____

Number and Capacity of Pump Station(s) 10; 70 to 300 gpm

XVI. LAND AND RIGHTS - PROPOSED WATER SYSTEM

Number of Treatment Plant Sites	0
Number of Pump Sites	0
Number of Other Sites	0
Total Acreage	0 Acres
Purchase Price	$ 0

XIX. NUMBER OF NEW WATER USERS

Residential (In Town) *	0
Residential (Out of Town) *	0
Non-Residential (In Town)	0
Non-Residential (Out of Town)	0
Total	0
Number to Total Potential Users Living in the Service Area	0

*Note: Residential Users: Classify by type of user regardless of quantity of water used. This classification should include those meters serving individual rural residences.

XX. PROPOSED WATER CONNECTION FEES FOR EACH SIZE WATER METER CONNECTION:

Meter Size	Connection Fee
5/8" x 3/4"	$ No Change
1 - Inch	$ No Change
1-1/2 Inch	$ No Change
2 - Inch	$ No Change
3 - Inch	$
4 - Inch	$
5 - Inch	$
6 - Inch	$

XXII. WATER RATES - PROPOSED

A. Proposed Rate Schedule without RUS Grant:

Rowan Water System Improvements - Meter Replacement
Summary Addendum
Funding Option 2 - 40 year Payback Schedule with no Grant
First Year of Operation - Year Ending in 2020

Total Project Cost	*$1,700,000*
Proposed Funding	
RD Grant Funds	$0
Proposed Bond Amount	$1,700,000
Proposed Debt Service	
RD Loan Annual Debt Service (First 2 years of 40 year loan are deferred) 40 years @ 3.25%	$76,550
RD Loan Debt Service Coverage (10% of Annual Debt Service)	$7,660
Total New Project Debt Service	*$84,210*
Additional Expenses & Anticipated Debt Service	
Estimated Annual O & M Increase	$151,088
Short-Lived Assets	$33,000
Total Additional Expenses & Anticipated Debt Service	*$184,088*
Total Annual Increase (Total New Project Debt Service + Total Additional Expenses)	$268,298
Balance Available for Coverage (For Planned & Ongoing Immediate Projects)	$54,278
Total Additional Annual Revenue Required	**$214,020**
Total Additional Annual Revenue Required	$214,020
Total 2015 Billed Water Revenue	$2,784,611
Percentage Rate Increase	*8.00%*

	In Gallons	2018 Existing Rates	Proposed Rates
5/8" Meter	First 2,000	$18.53	$19.42
	Next 3,000	$7.45	$8.17
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 10,000	$6.15	$6.74
	Next 10,000	$5.95	$6.52
3/4" Meter	First 4,000	$33.43	$36.64
	Next 1,000	$7.45	$8.17
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
1" Meter	First 5,000	$40.88	$44.80
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
1.5" Meter	First 15,000	$110.38	$120.98
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
2" Meter	First 25,000	$178.38	$195.50
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
	Wholesale	$1.93	$2.12

The above proposed rate, without RUS grant, must be completed for each grant. If the applicant/engineer desires, there is no objection to recommending a proposed rate with an estimated RUS grant in the Table below. However, the preparer should remember that the Table (A) above must be completed prior to Table (B).

B. Recommended Rate Schedule with RUS Grant:

Rowan Water System Improvements - Meter Replacement
Summary Addendum
Funding Option 1 - 40 year Payback Schedule with Grant
First Year of Operation - Year Ending in 2020

Total Project Cost	*$1,722,000*
Proposed Funding	
RD Grant Funds	$430,500
Proposed Bond Amount	$1,291,500
Proposed Debt Service	
RD Loan Annual Debt Service (First 2 years of 40 year loan are deferred)	$59,400
40 years @ 3.38%	
RD Loan Debt Service Coverage (10% of Annual Debt Service)	$5,940
Total New Project Debt Service	*$65,340*
Additional Expenses & Anticipated Debt Service	
Estimated Annual O & M Increase	$151,088
Short-Lived Assets	$33,000
+ *Total Additional Expenses & Anticipated Debt Service*	*$184,088*
Total Annual Increase (Total New Project Debt Service + Total Additional Expenses)	$249,428
Balance Available for Coverage (For Planned & Ongoing Immediate Projects) -	$54,278
Total Additional Annual Revenue Required	**$195,150**
Total Additional Annual Revenue Required	$195,150
Total 2017 Billed Water Revenue ÷	$2,784,611
Percentage Rate Increase	*8.00%*

	In Gallons	2018 Existing Rates	Proposed Rates
5/8" Meter	First 2,000	$18.53	$19.42
	Next 3,000	$7.45	$8.17
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 10,000	$6.15	$6.74
	Next 10,000	$5.95	$6.52
3/4" Meter	First 4,000	$33.43	$36.64
	Next 1,000	$7.45	$8.17
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
1" Meter	First 5,000	$40.88	$44.80
	Next 10,000	$6.95	$7.62
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
1.5" Meter	First 15,000	$110.38	$120.98
	Next 10,000	$6.80	$7.45
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
2" Meter	First 25,000	$178.38	$195.50
	Next 10,000	$6.45	$7.07
	Next 15,000	$6.15	$6.74
	Over 50,000	$5.95	$6.52
	Wholesale	$1.93	$2.12

XXV. FORECAST OF WATER USAGE - INCOME - EXISTING SYSTEM - EXISTING USERS

MONTHLY WATER USAGE		AVERAGE Residential	AVERAGE RATE Residential	Residential No. of Users	Residential Usage 1,000	Residential Income	Commercial No. of Users	Commercial Usage 1,000	Commercial Income
5/8" x 3/4" meter									
0 - 1,000 Gal.		900	$ 19.42	973	876	18,896	59	53	1,146
1,001 - 2,000 Gal.		1,650	$ 19.42	925	1,526	17,964	27	45	524
2,001 - 3,000 Gal.		2,300	$ 21.87	1094	2,516	23,927	19	44	416
3,001 - 4,000 Gal.		3,000	$ 27.59	998	2,994	27,535	12	36	331
4,001 - 5,000 Gal.		4,050	$ 36.17	767	3,106	27,741	12	49	434
5,001 - 6,000 Gal.		5,200	$ 45.45	521	2,709	23,682	7	36	318
6,001 - 7,000 Gal.		6,200	$ 53.07	335	2,077	17,780	2	12	106
7,001 - 8,000 Gal.		7,400	$ 62.22	221	1,635	13,750	2	15	124
8,001 - 9,000 Gal.		8,500	$ 70.60	144	1,224	10,166	0	0	0
9,001 - 10,000 Gal.		9,400	$ 77.46	97	912	7,513	0	0	0
10,001 - 11,000 Gal.		10,300	$ 84.32	69	711	5,818	0	0	0
11,001 - 12,000 Gal.		11,400	$ 92.70	50	570	4,635	0	0	0
12,001 - 13,000 Gal.		12,300	$ 99.56	33	406	3,285	0	0	0
13,001 - 14,000 Gal.		13,400	$ 107.94	23	308	2,483	0	0	0
14,001 - 15,000 Gal.		14,300	$ 114.80	20	286	2,296	0	0	0
15,001 - 16,000 Gal.		15,200	$ 121.62	16	243	1,946	0	0	0
16,001 - 17,000 Gal.		16,300	$ 129.52	13	212	1,688	0	0	0
17,001 - 18,000 Gal.		17,200	$ 136.52	10	172	1,365	0	0	0
18,001 - 19,000 Gal.		18,200	$ 143.97	10	182	1,440	0	0	0
19,001 - 20,000 Gal.		19,300	$ 152.17	7	135	1,065	0	0	0
20,000 & Over		45,000	$ 332.77	25	1,125	8,318	0	0	0
		Sub-Total		*6351*	*23,926*	*$ 223,292*	*140*	*290*	*$ 3,400*
Average Monthly Rate									
Average Monthly Usage									
3/4" meter	Resid	13,700	$ 111.39	11	151	1,222			
	Comm	30,750	$ 236.16				12	369	2,834
		Sub-Total		*11*	*151*	*$ 1,222*	*12*	*369*	*$ 2,834*
1" meter									
0 - 20,000 Gal.		17,800	$ 142.33	16	285	2,277			
20,000 & Over		23,850	$ 186.91				14	334	2,617
		Sub-Total		*16*	*285*	*$ 2,277*	*14*	*334*	*$ 2,617*
1.5" meter									
		4,100	$ 120.88				2	0	242
		Sub-Total					2	0	$ 241.96
2" meter	Resid	37,700	$ 285.33	19	716	5,420			
	Comm	62,700	$ 450.10				14	878	6,301
		Sub-Total		*19*	*716*	*$ 5,420*	*14*	*878*	*$ 6,301*
Wholesale									
Fleming Cty WA		158,300	$ 335.60				3	475	1,007
City of Olive Hill		10,100	$ 21.41				2	20	43
Sandy Hook WD		0	$ -				1	0	0
		Sub-Total					*6*	*495*	*$ 1,049.61*
		Totals		**6397**	**25,078**	**$ 232,211**	**188**	**2,365**	**$ 16,443**

XXXVI. CURRENT OPERATING BUDGET - (WATER SYSTEM) -

		Year Ending 2017
A.	Operating Income:	
	Water Sales	$ 2,784,611
	Miscellaneous	$ 151,029
	Other (Describe)	
	Less Allowances and Deductions	
	Total Operating Income	$ 2,935,640
B.	Operation and Maintenance Expenses: (Based on Uniform System of Accounts prescribed by National Association of Regulatory Utility Commissioners)	
	Operation Expense	$ 1,896,946
	Maintenance Expense	$ 171,004
	Customer Accounts Expense	$ 10,990
	Administrative and General Expense	$ 522,003
	Total Operating Expenses	$ 2,600,943
	Net Operating Income	$ 334,697
C.	Non-Operating Income:	
	Interest Expense	$ (184,002)
	Interest Income	$ 5,092
	Other (Identify)	$ 1,650
	Gain on sale of assets	$ 13,816
	Total Non-Operating Income	$ (163,444)
D.	Net Income	$ 171,253
E.	Debt Repayment:	
	RUS Interest	
	RUS Principal	$ 116,975
	Non-RUS Interest	
	Non-RUS Principal	
	Total Debt Repayment	$ 116,975
F.	Balance Available for Coverage	$ 54,278
	Balance Available	$ 54,278
	Coverage Ratio	1.46

XXXVII. PROPOSED OPERATING BUDGET - (WATER SYSTEM)

(1st Full Year of Operation) Year Ending 2020

A.	Operating Income:	
	Water Sales	$ 2,983,854
	Miscellaneous	$ 160,000
	Other (Describe)	
	Less Allowances and Deductions	
	Total Operating Income	$ 3,143,854
B.	Operation and Maintenance Expenses: (Based on Uniform System of Accounts prescribed by National Association of Regulatory Utility Commissioners)	
	Operation Expense	$ 2,007,139
	Maintenance Expense	$ 180,938
	Customer Accounts Expense	$ 11,628
	Administrative and General Expense	$ 552,326
	Total Operating Expenses	$ 2,752,031
	Net Operating Income	$ 391,823
C.	Non-Operating Income:	
	Interest Expense	$ (194,510)
	Interest Income	$ 7,500
	Other (Identify)	
	Gain on sale of assets	
	Total Non-Operating Income	$ (187,010)
D.	Net Income	$ 204,813
E.	Debt Repayment:	
	RUS Interest	
	RUS Principal	$ 143,840
	Non-RUS Interest	
	Non-RUS Principal	
	Total Debt Repayment	$ 143,840
F.	Balance Available for Coverage	$ 60,973
	Short Lived Assets	$ 33,000
	Debt Reserve	$ 5,940
	Balance Available	$ 22,033
	Coverage Ratio	1.42

XV. ESTIMATED PROJECT COST – WATER

Development	$ 1,585,400
Land and Rights	
Legal	15,000
Engineering	79,100
Interest	25,000
Contingencies	17,500
Initial Operating and Maintenance	0
Other (Refinance existing loan)	0
TOTAL	$ 1,722,000

XXXVI. PROPOSED PROJECT FUNDING

Applicant - User Connection Fees	$ 0
Other Applicant Contribution	0
RUS Loan	1,291,500
RUS Grant	430,500
ARC Grant (If applicable)	0
CDBG (If applicable)	0
Other (Specify)	0
Other (Specify)	0
TOTAL	$ 1,722,000