Sample Rural Colorado Water and Sewer Utility Capital Costs

Municipality	Data	Water and Sewer Infrastructure Project Costs	Grant Funding Provided	Loan Funding Provided	Number of Taps	2011 Budgeted Monthly Combined W&S Rates	2005-2009 ACS * Median Household Income (MHI)	2011 Assessed Value	Financial Indicators: Rates as a Percent of MHI	Rates as a Percent of State Average Rates **	Debt per Tap ***	Debt as a Percent of Assessed Value
Boone (December 2010)	w/s	$2,599,297	$1,740,000	$829,294	176	$42 **1**	$27,813	$1,515,189	1.80%	64.61%	$4,711.90	55%
Boone (December 2011)	w/s	$2,599,297	$1,740,000	$829,294	176	$90 **1**	$27,813	$1,515,189	3.88%	139.17%	$4,711.90	55%
Cokedale	w/s	$1,397,115	$956,297	$430,818 **2**	92	$49	$35,419	$480,800	1.65%	75.23%	$4,682.80	90%
Eckley	w/s	$2,931,520	$1,652,520	$1,279,000 **3**	151	$52	$19,688	$771,010	3.17%	80.35%	$8,470.20	166%
Kit Carson	w/s	$3,000,125	$2,741,125	$259,000	141	$61	$56,250	$1,074,894	1.29%	93.81%	$1,836.88	24%
Seibert	w/s	$2,468,613	$2,318,613	$150,000	113	$72	$35,000	$1,119,205	2.45%	110.61%	$1,327.43	13%
Two Buttes	w/s	$1,291,500 **4**	$1,291,500	$0	35	$30	$24,722	$340,669	1.48%	47.01%	$0.00	0%

Cell bordering denotes "weak" rating

Notes

1. In 2011 the Town of Boone adopted new water and sewer rates. As a result, the combined monthly water and sewer rates are now set at $90.50 per month. If the new 2012 combined rate is substituted for the 2011 budgeted rate, the Town falls into weak categories in all four indicators.

2. The Cokedale water project has been completed. The sewer project has been delayed due to concerns with required rate increases, and the Town's desire to obtain additional grant funds.

3. The Eckley water project has been completed. The sewer project is underway, but a $1,079,000 loan has been tabled by the CWRPDA due to affordability concerns. The Town is now seeking funding from USDA Rural Development.

4. The Two Buttes project was for water only.

Financial Indicator Descriptions

RATES AS A PERCENT OF MEDIAN HOUSEHOLD INCOME
A common state and national measure of debt and operating capacity
Over 3% represents a hardship for the rate payers of the community

RATES AS A PERCENT OF STATE AVERAGES
A common state measure of debt and operating capacity
Over 100% is expected by some funding programs if an applicant seeks grant funding

DEBT PER TAP
A common state measure of debt capacity
Over $2,000 is a weak rating

DEBT AS A PERCENT OF ASSESSED VALUE
A common state measure of debt capacity
Over 50% is a weak rating

* ACS = American Community Survey - this is the new format for economic data from the U.S. Census Bureau
** Current state average water rate is $43.88, and state average sewer rate is $20.79
*** Original loan amount - current outstanding debt is less

Prepared by Barry Cress, Division of Local Government, 303-866-2352, December, 2011

Fees

1. Used to recover broad range of costs:

Meter testing/calibration fee	Meter size change fee
Meter turn off/on charge	Meter re-read charge
Meter removal charge	Sale of plan/specifications/blueprint copies
New account charge	Emergency water turn-on/off charge
Returned check charge/penalty	Fire protection charge
Appointment/field visit charge	Illegal turn-on penalty
Water tap testing	Illegal water use penalty
Bulk water sales - fire hydrant/water dock	Turn-off/on at main charge
Sales of materials	Delinquent charge

2. Tap, Plant Investment, Impact Fees
3. Availability of Service Fee
4. Readiness to Serve Fee
5. Fire Protection Fee
6. Drought Fee/ Surcharge

Rates

1. Types of Rate Structures
    a. Flat Rate
    b. Uniform Rate
    c. Descending Block Rate
    d. Ascending Block Rate
2. Inside/Outside Rate Differences
3. Measures of Rate Burden

CALCULATING WATER USER FEES

I. Compute Number of Equivalent 5/8" Taps

Tap Size	Number of Customers		Volume Equivalency Ratio		Equivalent 5/8" Taps
5/8"	900	x	1.00	=	900
3/4"	0	x	1.50	=	0
1"	20	x	2.50	=	50
1 1/2"	30	x	5.00	=	150
2"	25	x	8.00	=	200
3"	25	x	16.00	=	400
TOTAL	1,000				1,700

II. Project Billable Volume

Projected volume of water billed (including growth in gallons) 160,000,000

III. Determine Total Revenue Required from Rates

(last item on worksheet #3) $303,500

Enter variable costs (worksheet #3) $64,400

IV. Compute Rates For Metered Customers

A. Uniform Volume Rate

1.	$303,500 (Revenue Required from Rates)	/	160,000,000 (Projected Billable Volume)	=	$0.0019 (Cost Per Gallon)
2.	$0.0019 (Cost Per Gallon)	x	1000	=	$1.90 (Cost Per 1000 Gallons)
3.	$0.0019 (Cost Per Gallon)	x	7.48	=	$0.0142 (Cost Per Ccf)

* 1 Cu. Ft. water = 7.48 gallons

B. Uniform Volume Rate Plus Service Charge

1. Service Charge

a.	$303,500 (Revenue Required from Rates)	-	$64,400.00 **(Variable Costs)***	=	$239,100.00 (Fixed Costs)
b.	$239,100.00 (Fixed Costs)	/	1,700 (5/8" Equivalent Taps)	=	$140.65 (5/8" Service Charge)
c.	$140.65 (5/8" Service Charge)	x	1.5 (3/4" Equivalency Ratio)	=	$210.97 (3/4" Service Charge)

* Variable costs can include utilities, repairs, fuel, supplies, etc. which may change from year to year.

CALCULATING WATER USER FEES

$140.65	x	2.5	=	$351.62
(5/8" Service Charge)		(1" Equivalency Ratio)		(1" Service Charge)
$140.65	x	5	=	$703.24
(5/8" Service Charge)		(1 1/2" Equivalency Ratio)		(1 1/2" Service Charge)
$140.65	x	8	=	$1,125.18
(5/8" Service Charge)		(2" Equivalency Ratio)		(2" Service Charge)
$140.65	x	16	=	$2,250.35
(5/8" Service Charge)		(3" Equivalency Ratio)		(3" Service Charge)

2. Uniform Volume Rate

a.	$64,400.00	/	160,000,000	=	$0.0004
	(Variable Costs)*		(Projected Billable Volume)		(Cost Per Gallon)
b.	$0.0004	x	1000	=	$0.40
	(Cost Per Gallon)				(Cost Per 1000 Gallons)
c.	$0.0004	x	7.48	=	$0.0030
	(Cost Per Gallon)				(Cost Per Ccf)

V. Compute Rates for Unmetered Customers

a.	$303,500	/	1,700	=	$178.53
	(Revenue Required from Rates)		(5/8" Equivalent Taps)		(5/8" Unit Rate)
b.	$178.53	x	1.5	=	$267.79
	(5/8" Unit Rate)		(3/4" Equivalency Ratio)		(3/4" Annual Charge)
	$178.53	x	2.5	=	$446.32
	(5/8" Unit Rate)		(1" Equivalency Ratio)		(1" Annual Charge)
	$178.53	x	5	=	$892.65
	(5/8" Unit Rate)		(1 1/2" Equivalency Ratio)		(1 1/2" Annual Charge)
	$178.53	x	8	=	$1,428.24
	(5/8" Unit Rate)		(2" Equivalency Ratio)		(2" Annual Charge)
	$178.53	x	16	=	$2,856.47
	(5/8" Unit Rate)		(3" Equivalency Ratio)		(3" Annual Charge)