2005 Budget Study Session

Preliminary Water and Wastewater Rate Study Results

June 9, 2004

Presented By Black & Veatch

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Table 1
Water Utility
Historical and Projected
Number of Customers and Water Sales Volume

	Average Number of Customer Accounts				Water Sales Volume						
Year	Residential	Multifamily	Other (a)	Total	Residential	Multifamily	RWD	KU	Industrial	Other (b)	Total
					Mg	Mg	Mg	Mg	Mg	Mg	Mg
Historical											
1999	23,825	702	1,840	26,367	1,663,098	328,556	432,297	234,784	329,131	849,069	3,836,935
2000	24,524	706	1,879	27,109	1,904,549	344,516	486,271	263,011	351,583	1,032,719	4,382,649
2001	25,189	725	1,900	27,814	1,749,336	358,248	574,738	241,400	350,417	853,055	4,127,194
2002	25,904	737	1,935	28,576	1,949,449	338,280	495,386	249,368	331,535	990,249	4,354,266
2003	26,457	746	1,964	29,167	1,980,616	335,788	485,206	241,483	204,107	973,689	4,220,889
Projected											
2004	27,010	760	2,000	29,770	2,010,900	340,500	495,500	241,400	209,300	987,500	4,285,100
2005	27,560	770	2,030	30,360	2,051,800	345,000	506,000	241,400	214,600	1,001,300	4,360,100
2006	28,110	780	2,070	30,960	2,092,800	349,500	516,800	241,400	219,800	1,015,000	4,435,300
2007	28,660	790	2,100	31,550	2,133,800	354,000	527,800	241,400	225,100	1,028,800	4,510,900
2008	29,210	800	2,130	32,140	2,174,800	358,500	539,100	241,400	230,300	1,042,600	4,586,700
2009	29,760	810	2,170	32,740	2,215,700	363,000	550,700	241,400	235,600	1,056,300	4,662,700

(a) Includes all commercial, KU, industrial, RWD, and municipal accounts.
(b) Includes commercial and non-billed municipal water usage.
RWD - Rural Water Districts
KU - Kansas University
Mg - thousand gallons

- **Revenue projections based on continuation of recent growth trends.**
- **No significant new growth is projected for wholesale water sales.**
- **Projected wastewater volumes are based on historic billed wastewater volume to water sales volume ratios by customer class.**

Table 2
Water Utility
Historical and Projected Revenue
Under Existing Rates

Year	Water Sales Revenue (a)	Other Operating Revenue	System Development Charge Revenue	Interest Income (b)	Other Non-Operating Revenue	Total Revenue
	$	$	$	$	$	$
Historical						
1999	9,594,302	316,683	460,703	324,679	7,150	10,703,517
2000	10,514,492	343,444	388,609	339,359	7,600	11,593,504
2001	10,274,543	339,471	383,196	295,251	10,969	11,303,430
2002	10,546,598	327,197	408,720	166,777	22,450	11,471,742
2003	10,185,103	347,635	454,945	151,867	16,275	11,155,824
Projected						
2004	10,525,300	335,000	400,000	210,300	13,000	11,483,600
2005	10,723,500	335,000	400,000	245,400	13,000	11,716,900
2006	10,922,000	335,000	400,000	216,800	13,000	11,886,800
2007	11,121,400	335,000	400,000	218,900	13,000	12,088,300
2008	11,321,500	335,000	400,000	214,900	13,000	12,284,400
2009	11,521,800	335,000	400,000	236,500	13,000	12,506,300

(a) Projected water sales revenue based on rates in effect January 1, 2004.
(b) Includes interest earned on construction funds.

- **Projected water sales revenue is based on the application of existing 2004 water rates to projected water accounts and water sales volume.**
- **Other operating and non-operating revenue is conservatively based on average of past five years.**
- **Interest income is calculated based on projected average fund balances and interest rates of 2 percent for short-term funds and 3 percent for long-term funds.**

Table 3
Wastewater Utility
Historical and Projected Revenue
Under Existing Rates

Year	Wastewater Revenue (a)	Other Operating Revenue	System Development Charge Revenue	Interest Income (b)	Other Non-Operating Revenue	Total Revenue
	$	$	$	$	$	$
Historical						
1999	8,250,371	426,576	371,772	725,883	7,150	9,781,753
2000	8,794,647	429,675	415,387	1,009,564	7,600	10,656,873
2001	9,464,968	433,060	417,162	864,867	10,969	11,191,026
2002	10,129,844	410,949	387,519	542,703	22,450	11,493,465
2003	10,775,338	447,374	516,558	400,466	16,275	12,156,011
Projected						
2004	11,673,000	430,000	400,000	140,400	13,000	12,656,400
2005	11,901,700	430,000	400,000	200,700	13,000	12,945,400
2006	12,130,900	430,000	400,000	210,100	13,000	13,184,000
2007	12,359,900	430,000	400,000	526,600	13,000	13,729,500
2008	12,588,900	430,000	400,000	714,100	13,000	14,146,000
2009	12,817,200	430,000	400,000	817,500	13,000	14,477,700

(a) Projected wastewater sales revenue based on rates in effect January 1, 2004. Includes excess strength surcharge revenue.

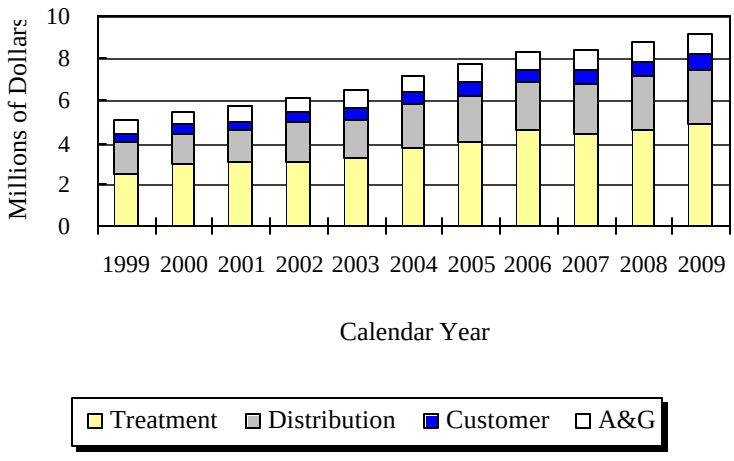
(b) Includes interest earned on construction funds.

- **Projected wastewater revenue is based on the application of existing 2004 wastewater rates to projected accounts and billed wastewater volume.**
- **Other operating and non-operating revenue is conservatively based on average of past five years.**
- **Interest income is calculated based on projected average fund balances and interest rates of 2 percent for short-term funds and 3 percent for long-term funds.**

Table 4
Water Utility
Historical and Projected
Operation and Maintenance Expense

Year	Treatment Expense	Distribution Expense	Customers Meters & Billing Expense	Admin. & General Expense	Total
	$	$	$	$	$
Historical					
1999	2,498,414	1,514,025	420,100	631,000	5,063,539
2000	2,940,017	1,508,191	416,400	619,500	5,484,107
2001	3,058,383	1,538,472	448,000	733,900	5,778,755
2002	3,056,998	1,906,878	522,000	683,600	6,169,476
2003	3,173,174	1,933,690	550,000	820,400	6,477,264
Projected					
2004	3,741,300	2,078,000	592,000	768,700	7,180,000
2005	4,098,900	2,168,100	617,900	807,100	7,692,000
2006	4,579,500	2,262,400	634,400	862,900	8,339,200
2007	4,468,000	2,361,000	662,400	878,000	8,369,400
2008	4,664,900	2,464,000	691,900	918,800	8,739,600
2009	4,870,200	2,571,700	722,700	960,400	9,125,000

Historical and Projected Operation and Maintenance Expense

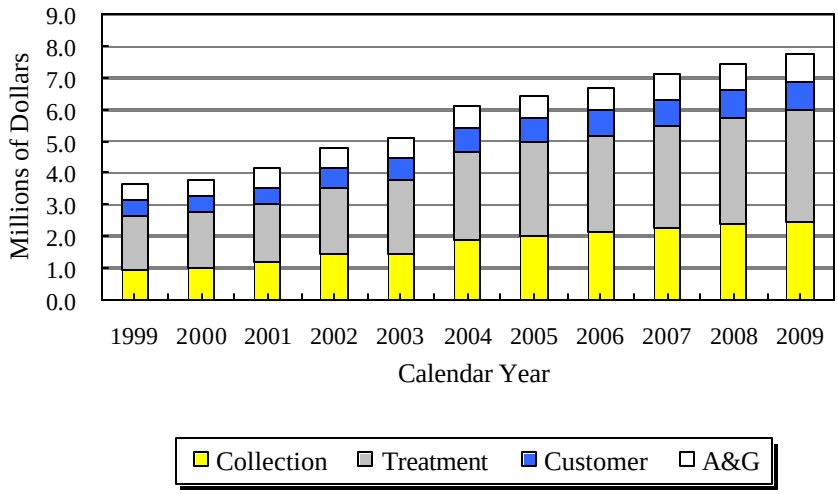


- **Transfers to General Fund and salaries and wages are assumed to increase at a rate of 5 percent per year.**
- **All other expenditures are assumed to increase at a rate of 3 percent per year.**
- **Projected expenditures associated with Power, Chemicals, and Raw Water includes adjustment for growth.**
- **Known increases in O&M costs due to new facilities are also included in the projections.**

Table 5
Wastewater Utility
Historical and Projected
Operation and Maintenance Expense

Year	Collection Expense	Treatment Expense	Customers Meters & Billing Expense	Admin. & General Expense	Total
	$	$	$	$	$
Historical					
1999	949,769	1,668,685	513,324	493,150	3,624,928
2000	999,653	1,787,793	508,831	485,242	3,781,519
2001	1,174,062	1,822,779	547,564	597,514	4,141,918
2002	1,439,929	2,112,985	637,876	611,415	4,802,205
2003	1,461,081	2,315,588	672,252	656,853	5,105,774
Projected					
2004	1,910,700	2,765,600	723,400	708,200	6,107,900
2005	2,034,700	2,939,100	755,200	735,800	6,464,800
2006	2,119,400	3,067,500	775,400	749,100	6,711,400
2007	2,252,800	3,251,700	809,800	805,300	7,119,600
2008	2,372,300	3,393,900	845,700	841,000	7,452,900
2009	2,472,000	3,541,900	883,200	878,400	7,775,500

Historical and Projected Operation & Maintenance Expense



- **Transfers to General Fund and salaries and wages are assumed to increase at a rate of 5 percent per year.**
- **All other expenditures are assumed to increase at a rate of 3 percent per year.**
- **Projected expenditures associated with Power, Chemicals, and Raw Water includes adjustment for growth.**
- **Known increases in O&M costs due to new facilities are also included in the projections.**

Table 6
Water Utility
Major Capital Improvement Program

Line No.	Description	2004	2005	2006	2007	2008	2009	Total
		$	$	$	$	$	$	$
1	Kaw WTP Supply Improvements (c)	97,000	501,000	0	0	0	0	598,000
2	Bowersock Dam Maintenance & Improvements (c)	0	0	0	1,170,000	0	0	1,170,000
3	Residuals Monofill (b)	1,040,000	0	0	0	0	0	1,040,000
4	Kaw WTP - Central Service Level Discharge Piping Modifications (c)	0	811,000	0	0	0	0	811,000
5	Kaw WTP - High Service HSKW (c)	0	0	0	0	158,000	0	158,000
6	Clinton WTP Expansion (a)	548,000	2,920,000	5,259,000	0	0	0	8,727,000
7	Clinton WTP - High Service HSCW (a)	0	0	326,000	0	0	0	326,000
8	Clinton WTP - High Service HSBA (a)	151,000	473,000	492,000	0	0	0	1,116,000
9	Operations and Maintenance Building (c)	0	0	0	0	1,139,000	4,737,000	5,876,000
10	30" Main - 8th St/Tennessee/9th St (a) (c)	0	0	0	0	441,000	1,376,000	1,817,000
11	30" Main - Indiana St from 5th to 8th St (a) (c)	0	0	0	231,000	721,000	0	952,000
12	36" Main - Indiana St From Kaw WTP to 5th St (a) (c)	0	0	0	237,000	739,000	0	976,000
13	16" Main - W 6th from Wakarusa Dr to 6th St (West) Elevated Tank (a)	624,000	0	0	0	0	0	624,000
14	12" Main - W 6th from Deer Tun to 6th St (West) Elevated Tank (a)	281,000	0	0	0	0	0	281,000
15	12" Main - W 6th from 6th St (West) Elevated Tank to K-10 (a)	374,000	0	0	0	0	0	374,000
16	16" Main - W 6th from 6th St (West) Elevated Tank to K-10 (a)	551,000	0	0	0	0	0	551,000
17	Storage Facility T1 - 6th Street (West) Elevated Tank (a)	0	0	0	1,685,000	0	0	1,685,000
18	Repaint Kasold Ground Storage Tank (c)	395,000	0	0	0	0	0	395,000
19	Repaint Clinton WTP Ground Storage Tanks (c)	0	0	0	796,000	0	0	796,000
20	Waterline Rehabilitation and Replacement Program (a) (c)	1,040,000	1,082,000	1,125,000	1,170,000	1,217,000	1,265,000	6,899,000
21	Security Improvements (b)	416,000	541,000	562,000	585,000	730,000	0	2,834,000
22	Misc Water System Improvements (b) (c)	1,040,000	1,082,000	1,125,000	1,170,000	1,217,000	1,265,000	6,899,000
23	KAW WTP - LT2ESWTR - UV (b)	0	0	0	0	0	523,000	523,000
24	Clinton WTP - LT2ESWTR - UV (b)	0	0	0	0	0	523,000	523,000
25	Total Capital Improvements	6,557,000	7,410,000	8,889,000	7,044,000	6,362,000	9,689,000	45,951,000

(a) Project required to meet anticipated growth related requirements.
(b) Project required by EPA and KDHE regulations.
(c) Project required to improve system reliability or transmission capacity.

- **As presented in Table VI-3 of Water Master Plan (December 2003).**
- **Cost estimates are adjusted for price inflation.**

Table 7
Wastewater Utility
Major Capital Improvement Program

Line No.	Description	2004	2005	2006	2007	2008	2009	Total
		$	$	$	$	$	$	$
	Collection System							
1	Pipe Project - Central Basin (c)	820,000	0	0	0	0	0	820,000
2	Pipe Project - East Lawrence Basin (c)	369,000	0	0	0	0	0	369,000
3	Pipe Project - Kansas River Basin (c)	652,000	91,000	94,000	0	0	0	837,000
4	Pipe Project - Wakarusa River Basin (c)	939,000	2,698,000	1,675,000	0	0	0	5,312,000
5	Pipe Project - Yankee Tank Creek Basin (c)	0	0	0	0	0	1,685,000	1,685,000
6	Pump Station Project - Wakarusa River Basin (c)	260,000	0	225,000	0	0	0	485,000
7	Pump Station Project - Kansas River Basin (c)	260,000	0	941,000	1,960,000	0	695,000	3,856,000
8	Force Main Project - Kansas River Basin (c)	0	0	788,000	0	0	0	788,000
	Treatment System							
	Kansas River WWTP							
9	Add Roof to Dewatering Biosolids Storage Basin (c)	437,000	0	0	0	0	0	437,000
10	Vehicle & Equipment Storage Building (c)	0	487,000	0	0	0	0	487,000
11	Anaerobic Digester Improvements (a)	0	0	2,700,000	0	0	0	2,700,000
	Wakarusa River WWTP							
12	Acquire WWTP Site (a)	520,000	541,000	563,000	0	0	0	1,624,000
13	6.9 mgd WWTP w/BNR & Solids Processing (a)	0	0	0	5,499,000	5,719,000	54,536,000	65,754,000
14	WWTP Excess Flow Handling Facility (a)	0	0	0	0	1,095,000	5,315,000	6,410,000
15	Second Electrical Power Feed to WWTP (a)	0	0	0	0	110,000	519,000	629,000
16	Flood Projection & WWTP Site Fill (a)	0	0	0	0	329,000	1,557,000	1,886,000
	Other							
17	I/I Removal (c)	676,000	704,000	732,000	761,000	791,000	823,000	4,487,000
18	CMOM (Capacity, Management, Operations, & Maintenance) (b)	208,000	0	0	0	0	0	208,000
19	General Sanitary Sewer Improvements (c)	624,000	649,000	675,000	702,000	730,000	760,000	4,140,000
20	General Pumping Station Improvements (c)	208,000	217,000	225,000	234,000	244,000	254,000	1,382,000
21	General WWTP Improvements (c)	208,000	217,000	225,000	234,000	244,000	254,000	1,382,000
22	Total Wastewater	6,181,000	5,604,000	8,843,000	9,390,000	9,262,000	66,398,000	105,678,000

(a) Project required to meet anticipated growth related requirements.
(b) Project required by EPA and KDHE regulations.
(c) Project required to improve system reliability or transmission capacity.

- **As presented in Table IV-4 of Wastewater Master Plan (December 2003).**
- **Cost estimates are adjusted for price inflation.**

Table 8
Water Utility
Major Capital Improvement Program Financing

Line No.		2004	2005	2006	2007	2008	2009	Total
		$	$	$	$	$	$	$
	Source of Funds							
1	Beginning of Year Balance	4,023,400	1,623,500	8,214,500	2,029,100	7,421,100	3,671,200	4,023,400
2	Bond Proceeds	0	11,300,000	0	10,900,000	0	13,000,000	35,200,000
3	SRF Loan Proceeds	0	0	0	0	0	0	0
4	Cash Financing of Construction	4,100,000	3,700,000	2,600,000	2,500,000	2,500,000	2,500,000	17,900,000
5	Interest Income	57,100	116,100	103,600	111,600	112,100	140,700	641,200
6	Total Funds Available	8,180,500	16,739,600	10,918,100	15,540,700	10,033,200	19,311,900	57,764,600
7	**Application of Funds**							
8	Major Capital Improvements	6,557,000	7,410,000	8,889,000	7,044,000	6,362,000	9,689,000	45,951,000
9	Bond Issuance Costs	0	169,500	0	163,500	0	195,000	528,000
10	SRF Loan Issuance Costs	0	0	0	0	0	0	0
11	Deposits to Bond Reserve Fund	0	945,600	0	912,100	0	1,087,800	2,945,500
12	Total Funds Applied	6,557,000	8,525,100	8,889,000	8,119,600	6,362,000	10,971,800	49,424,500
13	End of Year Fund Balance	1,623,500	8,214,500	2,029,100	7,421,100	3,671,200	8,340,100	8,340,100

- **Revenue bonds are assumed to be issued in June of each year, as needed.**
- **Bonds assumed to be issued with 20 year terms and an average interest rate of 5.5 percent.**
- **Bond issuance costs are estimated to be 1.5 percent of issue amount.**
- **No new State Revolving Fund (SRF) loans are expected during the study period.**

Table 9
Wastewater Utility
Major Capital Improvement Program Financing

Line No.		2004	2005	2006	2007	2008	2009	Total
		$	$	$	$	$	$	$
	Source of Funds							
1	Beginning of Year Balance	3,450,400	1,318,000	9,527,900	3,213,700	33,479,600	26,826,400	3,450,400
2	Bond Proceeds	0	12,300,000	0	41,300,000	0	47,000,000	100,600,000
3	SRF Loan Proceeds	0	0	0	0	0	0	0
4	Cash Financing of Construction	4,000,000	2,600,000	2,400,000	2,000,000	2,000,000	2,000,000	15,000,000
5	Interest Income	48,600	127,700	128,800	431,400	608,800	707,700	2,053,000
6	Total Funds Available	7,499,000	16,345,700	12,056,700	46,945,100	36,088,400	76,534,100	121,103,400
7	**Application of Funds**							
8	Major Capital Improvements	6,181,000	5,604,000	8,843,000	9,390,000	9,262,000	66,398,000	105,678,000
9	Bond Issuance Costs	0	184,500	0	619,500	0	705,000	1,509,000
10	SRF Loan Issuance Costs	0	0	0	0	0	0	0
11	Deposits to Bond Reserve Fund	0	1,029,300	0	3,456,000	0	3,932,900	8,418,200
12	Total Funds Applied	6,181,000	6,817,800	8,843,000	13,465,500	9,262,000	71,035,900	115,605,200
13	End of Year Fund Balance	1,318,000	9,527,900	3,213,700	33,479,600	26,826,400	5,498,200	5,498,200

- **Revenue bonds are assumed to be issued in June of each year, as needed.**
- **Bonds assumed to be issued with 20 year terms and an average interest rate of 5.5 percent.**
- **Bond issuance costs are estimated to be 1.5 percent of issue amount.**
- **No new State Revolving Fund (SRF) loans are expected during the study period.**

Capital Financing Alternatives

	Alternative 1		Proposed Plan (a)		Alternative 2		Alternative 3		Alternative 4	
	Water	Wastewater	Water	Wastewater	Water	Wastewater	Water	Wastewater	Water	Wastewater
Source of Funds										
Debt	100.0%		71.0%	87.0%	50.0%		25.0%		0.0%	
Cash	0.0%		29.0%	13.0%	50.0%		75.0%		100.0%	
Indicated Revenue Increases										
2005	2.0%	8.0%	4.0%	9.0%	6.0%	24.0%	8.0%	38.0%	12.0%	43.0%
2006	2.0%	8.0%	4.0%	9.0%	6.0%	24.0%	8.0%	38.0%	11.0%	43.0%
2007	2.0%	8.0%	4.0%	9.0%	6.0%	24.0%	8.0%	37.0%	10.0%	43.0%
2008	3.0%	8.0%	4.0%	9.0%	5.0%	4.0%	8.0%	37.0%	10.0%	43.0%
2009	3.0%	8.0%	4.0%	9.0%	5.0%	0.0%	7.0%	37.0%	9.0%	43.0%
Cummulative	12.6%	46.9%	21.7%	53.9%	31.3%	98.3%	45.6%	389.7%	64.0%	498.0%
Minimum Combined Debt Service Coverage	150.1%		215.0%		513.8%		1082.6%		1082.6%	
Required Debt Service Coverage	140.0%		140.0%		140.0%		140.0%		140.0%	

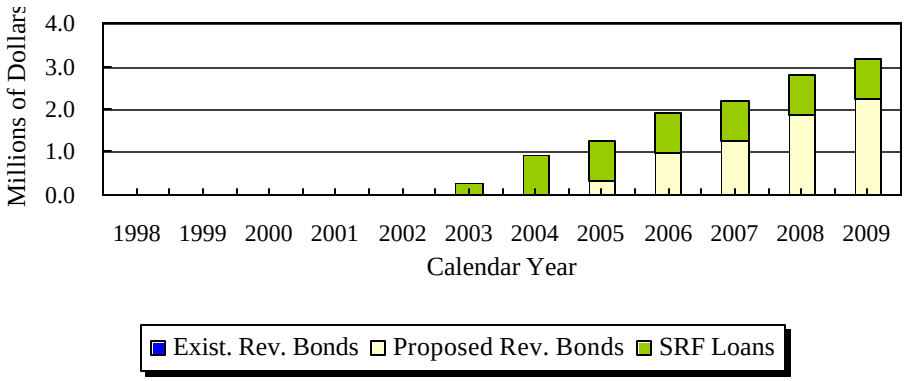
(a) Designed to drawdown available fund balances and result in a positive net annual balance by calendar year 2010.

- **The 140% minimum coverage requirement is not a controlling factor for this study period.**
- **Consideration should be given to lowering the coverage requirement on future bond issues.**

Table 10
Water Utility
Debt Service on Outstanding and Proposed Bonds

Year	Existing Revenue Bonds	Proposed Revenue Bonds	Existing SRF Loans	Proposed SRF Loans	Total
	$	$	$	$	$
Deposits to Principal and Interest Account					
2004	0	0	937,200	0	937,200
2005	0	551,600	937,200	0	1,488,800
2006	0	945,600	937,200	0	1,882,800
2007	0	1,477,700	937,200	0	2,414,900
2008	0	1,857,700	937,200	0	2,794,900
2009	0	2,492,300	937,200	0	3,429,500
Payments to Bondholders					
2004	0	0	937,200	0	937,200
2005	0	310,800	937,200	0	1,248,000
2006	0	945,600	937,200	0	1,882,800
2007	0	1,245,400	937,200	0	2,182,600
2008	0	1,857,700	937,200	0	2,794,900
2009	0	2,215,200	937,200	0	3,152,400

Historical & Projected Water Debt Service Payments

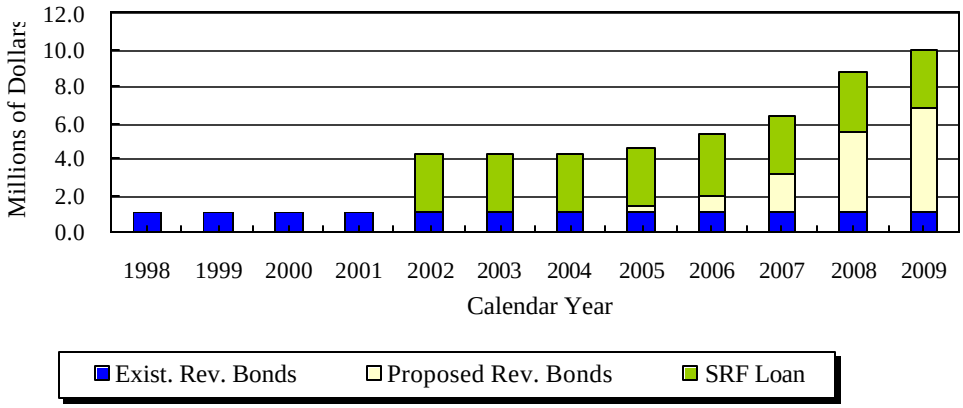


- **Bonds assumed to be issued with 20 year terms and an average interest rate of 5.5 percent.**
- **No new State Revolving Fund (SRF) loans are expected during the study period.**
- **Debt in 2009 will be less than 18 percent of total revenue requirements in 2009.**

Table 11
Wastewater Utility
Debt Service on Outstanding and Proposed Bonds

Year	Existing Revenue Bonds	Proposed Revenue Bonds	Existing SRF Loan	Proposed SRF Loans	Total
	$	$	$	$	$
Deposits to Principal and Interest Account					
2004	1,035,400	0	3,206,700	0	4,242,100
2005	1,039,400	600,400	3,206,700	0	4,846,500
2006	1,042,200	1,029,300	3,206,700	0	5,278,200
2007	1,046,300	3,045,300	3,206,700	0	7,298,300
2008	1,045,800	4,485,300	3,206,700	0	8,737,800
2009	1,051,200	6,779,500	3,206,700	0	11,037,400
Payments to Bondholders					
2004	1,034,700	0	3,206,700	0	4,241,400
2005	1,039,000	338,300	3,206,700	0	4,584,000
2006	1,041,300	1,029,300	3,206,700	0	5,277,300
2007	1,046,700	2,165,100	3,206,700	0	6,418,500
2008	1,044,800	4,485,300	3,206,700	0	8,736,800
2009	1,050,700	5,777,800	3,206,700	0	10,035,200

Historical & Projected Wastewater Debt Service Payments



- **Bonds assumed to be issued with 20 year terms and an average interest rate of 5.5 percent.**
- **No new State Revolving Fund (SRF) loans are expected during the study period.**
- **Debt in 2009 will be about 56 percent of total revenue requirements in 2009.**

Table 12
Combined Utilities
Comparison of Projected Revenue Under Indicated Revenue Adjustments With Projected Revenue Requirements

Line No.	Description	2005	2006	2007	2008	2009
		$	$	$	$	$
1	Revenue Under Existing Rates	22,625,200	23,052,900	23,481,300	23,910,400	24,339,000
2	Indicated Additional Revenue Required	1,500,100	3,173,100	5,035,300	7,104,500	9,399,900
3	Total	24,125,300	26,226,000	28,516,600	31,014,900	33,738,900
4	Other Operating Revenue	765,000	765,000	765,000	765,000	765,000
5	System Development Charge Revenue	800,000	800,000	800,000	800,000	800,000
6	Interest Income	701,400	734,400	837,100	932,000	1,041,100
7	Total Revenue	26,391,700	28,525,400	30,918,700	33,511,900	36,345,000
8	Operation and Maintenance Expense	14,156,800	15,050,600	15,489,000	16,192,500	16,900,500
9	Net Operating Revenue	12,234,900	13,474,800	15,429,700	17,319,400	19,444,500
	Debt Service					
10	Existing Revenue Bonds	1,039,400	1,042,200	1,046,300	1,045,800	1,051,200
11	Proposed Revenue Bonds	1,152,000	1,974,900	4,523,000	6,343,000	9,271,800
12	Existing SRF Loans	4,143,900	4,143,900	4,143,900	4,143,900	4,143,900
13	Proposed SRF Loans	0	0	0	0	0
14	Total Debt Service (a)	6,335,300	7,161,000	9,713,200	11,532,700	14,466,900
15	Routine Capital Additions	775,200	798,500	822,600	847,300	872,800
16	Deposits to Operating Reserve	159,600	7,400	149,412	174,545	182,544
17	Cash Financing of Construction	6,300,000	5,000,000	4,500,000	4,500,000	4,500,000
18	Net Annual Balance	(1,335,200)	507,900	244,488	264,855	(577,744)
19	Beginning of Year Balance (b)	10,740,900	9,405,700	9,913,600	10,158,088	10,422,942
20	End of Year Balance (b)	9,405,700	9,913,600	10,158,088	10,422,942	9,845,199
	Annual Debt Service (c)					
21	Revenue Bonds	1,688,058	3,016,238	4,457,163	7,387,768	9,043,700
22	Total Debt	5,831,981	7,160,161	8,601,086	11,531,691	13,187,623
	Debt Service Coverage					
23	Revenue Bonds	724.8%	446.7%	346.2%	234.4%	215.0%
24	Total Debt	209.8%	188.2%	179.4%	150.2%	147.4%
25	Effective Annual Revenue Increase	6.63%	6.69%	6.75%	6.81%	6.87%

(a) Accrued monthly payments to the Principal and Interest Account.
(b) Excludes operating reserve, bond reserve and meter deposits.
(c) Debt service payments to the bondholders from funds deposited into the Principal and Interest Account.

Combined annual revenue increases are about 7% per year.

Table 12a
Water Utility
Comparison of Projected Revenue Under Indicated Revenue Adjustments With Projected Revenue Requirements

Annual revenue increases are proposed to be 4% per year.

Li N		Year	Revenue Increase	Months Effective	2005 $	2006 $	2007 $	2008 $	2009 $
1	Reven Existing Rates				10,723,500	10,922,000	11,121,400	11,321,500	11,521,800
	Additio enue Required								
2		2005	4.0%	12	428,900	436,900	444,900	452,900	460,900
3		2006	4.0%	12		454,400	462,700	471,000	479,300
4		2007	4.0%	12			481,200	489,800	498,500
5		2008	4.0%	12				509,400	518,400
6		2009	4.0%	12					539,200
7	Subtotal				428,900	891,300	1,388,800	1,923,100	2,496,300
8	Total Revenue Under Existing Rates				11,152,400	11,813,300	12,510,200	13,244,600	14,018,100
9	Other Operating Revenue				335,000	335,000	335,000	335,000	335,000
10	Other Non-Operating Revenue				13,000	13,000	13,000	13,000	13,000
11	System Development Charge Revenue				400,000	400,000	400,000	400,000	400,000
12	Interest Income - Operations				129,300	113,200	107,300	102,800	95,800
13	Interest Income - Reserve Funds				160,700	181,500	202,300	222,700	248,600
14	Total Revenue				12,190,400	12,856,000	13,567,800	14,318,100	15,110,500
15	Operation and Maintenance Expense				7,692,000	8,339,200	8,369,400	8,739,600	9,125,000
16	Net Revenue				4,498,400	4,516,800	5,198,400	5,578,500	5,985,500
	Debt Service								
17	Existing Revenue Bonds				0	0	0	0	0
18	Proposed Revenue Bonds				551,600	945,600	1,477,700	1,857,700	2,492,300
19	Total Revenue Bonds				551,600	945,600	1,477,700	1,857,700	2,492,300
20	Existing SRF Loans				937,200	937,200	937,200	937,200	937,200
21	Proposed SRF Loans				0	0	0	0	0
22	Total Debt Service				1,488,800	1,882,800	2,414,900	2,794,900	3,429,500
23	Routine Capital Additions				384,900	400,200	407,900	420,300	432,900
24	Deposits to Operating Reserve				159,600	7,400	91,300	95,000	99,300
25	Cash Financing of Construction				3,700,000	2,600,000	2,500,000	2,500,000	2,500,000
26	Net Annual Balance				(1,234,900)	(373,600)	(215,700)	(231,700)	(476,200)
27	Beginning of Year Balance (a)				7,081,600	5,846,700	5,473,100	5,257,400	5,025,700
28	End of Year Balance (a)				5,846,700	5,473,100	5,257,400	5,025,700	4,549,500

(a) Ex meter deposits.

Drawdown of available fund balances.

Table 12b
Wastewater Utility
Comparison of Projected Revenue Under Indicated Revenue Adjustments With Projected Revenue Requirements

Annual revenue increases are proposed to be 9% per year.

Line No.				2005	2006	2007	2008	2009
				$	$	$	$	$
1	Revenue [illegible]sting Rates			11,901,700	12,130,900	12,359,900	12,588,900	12,817,200
	Additional [illegible] Required							
	Year	evenue ncrease	Months Effective					
2	2005	9.0%	12	1,071,200	1,091,800	1,112,400	1,133,000	1,153,500
3	2006	9.0%	12		1,190,000	1,212,500	1,235,000	1,257,400
4	2007	9.0%	12			1,321,600	1,346,100	1,370,500
5	2008	9.0%	12				1,467,300	1,493,900
6	2009	9.0%	12					1,628,300
7	Subtotal			1,071,200	2,281,800	3,646,500	5,181,400	6,903,600
8	Total Revenue Under Existing Rates			12,972,900	14,412,700	16,006,400	17,770,300	19,720,800
9	Other Operating Revenue			430,000	430,000	430,000	430,000	430,000
10	Other Non-Operating Revenue			13,000	13,000	13,000	13,000	13,000
11	System Development Charge Revenue			400,000	400,000	400,000	400,000	400,000
12	Interest Income - Operations			73,000	81,300	95,200	105,300	109,800
13	Interest Income - Reserve Funds			338,400	358,400	432,300	501,200	586,900
14	Total Revenue			14,227,300	15,695,400	17,376,900	19,219,800	21,260,500
15	Operation and Maintenance Expense			6,464,800	6,711,400	7,119,600	7,452,900	7,775,500
16	Net Revenue			7,762,500	8,984,000	10,257,300	11,766,900	13,485,000
	Debt Service (a)							
17	Existing Revenue Bonds			1,039,400	1,042,200	1,046,300	1,045,800	1,051,200
18	Proposed Revenue Bonds			600,400	1,029,300	3,045,300	4,485,300	6,779,500
19	Total Revenue Bonds			1,639,800	2,071,500	4,091,600	5,531,100	7,830,700
20	Existing SRF Loans			3,206,700	3,206,700	3,206,700	3,206,700	3,206,700
21	Proposed SRF Loans			0	0	0	0	0
22	Total Debt Service			4,846,500	5,278,200	7,298,300	8,737,800	11,037,400
23	Routine Capital Additions			390,300	398,300	414,700	427,000	439,900
24	Deposits to Operating Reserve			0	0	58,112	79,545	83,244
25	Cash Financing of Construction			2,600,000	2,400,000	2,000,000	2,000,000	2,000,000
26	Net Annual Balance			(74,300)	907,500	486,188	522,555	(75,544)
27	Beginning of Year Balance (a)			3,685,300	3,611,000	4,518,500	5,004,688	5,527,242
28	End of Year Balance (a)			3,611,000	4,518,500	5,004,688	5,527,242	5,451,699

(a) Excludes operating reserve and b[illegible]ve.

Drawdown of available fund balances.

Requested Policy Guidance

1. **Are any changes in the basic assumptions required?**

2. **Should the proposed mixture of cash versus debt financing be altered?**

3. **Are the proposed annual revenue increases for each utility acceptable?**

4. **Should the 140 percent debt service coverage requirement be lowered to 125 percent in future revenue bond issues?**

Existing Water Rate Structure

Minimum Charge

- Current method used by the City of Lawrence to recover customer related costs.
- Includes 2,000 gallons of water within minimum monthly charge.
- About $4.54 of the current $6.55 minimum charge for a customer served by a 5/8-inch water meter is related to a minimum volume allowance.
- Advantages – Increases the level of monthly revenue that is not dependent on weather conditions. Recovers some system availability related costs.
- Disadvantages – Increases costs to the very low water users.

Declining Block Rates

- Current water rate structure used by the City of Lawrence.
- It is a single rate structure applicable to all customer classes.
- Advantages – Recognizes differences in customer class demands and provides equitable cost recovery by customer class.
- Disadvantages – May be misunderstood by customers because the reduction in rates for larger quantities of water can be perceived as quantity discounts. It typically does not encourage conservation.

Proposed Water Rate Structure

Service Charges

- Commonly applied charge by utilities designed only to recover customer related costs. Does not include any minimum usage allowance.
- Advantages – Simple application. Small water users only pay for water actually used.
- Requires a change in the City's billing system and potential customer education.

Uniform Rates by Customer Class

- Applies a constant unit price for water regardless of the amount used by a user within a customer class. To properly recognize difference in water demand, four separate volume charges are required. Separate charges would be applicable to (1) Residential, (2) Multifamily, (3) Commercial, Municipal, and KU, and (4) Industrial customers.
- Advantages – Simple application. All residential customers pay the same volume charge that is based on their average demand exerted on the water system. Residential water users that irrigate their yards do not get a price reduction due to the volume of water used. All non-residential users are charged a different volume charge based on their demands exerted on the water system. A uniform volume charge has historically been applied to the water usage of the City's wholesale water customers.
- Disadvantages – Requires a change in the City's billing system and potential customer education. Customer bills depend on how they are classified; some large commercial customers may desire to be classified as industrial to get a lower charge.

Alternative Water Rate Structure

Service Charges – As Previously Proposed

Residential Inverted Block Rate

- The applicable rate rises with each successive block resulting in the average cost of water increasing with increased customer usage. This recovers more costs from irrigation users who exert the highest demand on the water system.
- Advantages – Provides desirable cost signals, generally promotes conservation of water resources, customers usually benefit from lower base rates during non-summer season.
- Disadvantages – Potentially penalizes large families that cannot reduce water usage.

Uniform Rates by Customer Class for All Other Customers

Water Rate Structure Recommendations

For ease of customer understanding and application, it is recommended that the minimum charges current applicable to both water and wastewater customers be converted to service charges.

To promote conservation and provide greater understanding of the water rate structure, it is recommended that the existing declining block structure be replaced with a system of uniform volume charges by customer class.

If it is desired to promote more water conservation through water price signals, it is recommended that an inverted block rate for residential customers be phased-in over the study period to avoid rate shock to the irrigation customers.

Fire Protection

Public Fire Protection

- Provided to all customers on a community-wide basis through public fire hydrants located throughout the water system. This service is currently recovered from all inside City customers based on allocated cost of service.

Private Fire Protection

- Provided to individual customers that receive additional fire service through private hydrants, standpipes, or sprinkler connections. This service is currently recovered from all inside City customers based on allocated cost of service.
- Such charges could be directly charged to customers that have private fire connections. The most common method of charging for private fire service is to base the charge on the size of the customer's fire service connection as this size is the best measure of the demand that can be put on the system in case of a fire.

Wastewater Rate Structure

Minimum Charge

- Recovers a share of customer billing and service costs as well as a share of infiltration/inflow (I/I) costs.

Volume Charge

- Recovers all other normal strength related costs.

Surcharges

- Recovers costs for high strength wastewater from monitored customers.

Recommendation

- It is recommended that the City consider replacing the minimum charge with a service charge as previously noted. The City may also wish to consider a policy on how to recover I/I related costs..

I/I Cost Recovery

Infiltration/inflow (I/I) includes flow entering the sewer system from groundwater infiltration through sewer pipe and main joints and inflow from manhole covers and other access points.

Each customer class should bear its proportionate share of the costs associated with I/I, as the wastewater system must be adequate to convey and process the total wastewater flow.

	Indicated 2006 5/8-Inch Inside City Minimum Charge				
Customer Related I/I Portion	I/I Costs	Customer Costs	Total 5/8-Inch Service Charge	Minimum Usage	Total 5/8-Inch Minimum Charge
	$	$	$	$	$
0%	0.00	1.80	1.80	9.49	11.29
33%	2.90	1.80	4.70	8.57	13.27
50%	4.35	1.80	6.15	8.11	14.26
67%	5.81	1.80	7.61	7.65	15.26
100%	8.71	1.80	10.51	6.73	17.24

Current recovery basis. The wastewater rate manual suggests that most I/I costs be recovered on a customer basis.

- **All other I/I costs are recovered by the volume charge.**
- **EPA regulations allow I/I costs to be recovered on a customer, volume, area, or combination basis.**

System Development Charges

Current Charges

- Current charges are based on a system buy-in methodology, which puts new customers on an equitable basis with existing customers by requiring them to buy-in to the existing utility system.
- The charges were initially imposed on January 1, 2001 at a reduced rate. The rate was gradually increased to give customers time to adapt to the new charge.

Proposed Charges

- It is proposed that the City consider changing the methodology used to determine system development charges from a system buy-in basis to a combined system buy-in / incremental cost-pricing methodology. The primary difference would be to not credit outstanding or proposed debt on expansion related facilities so that new customers would pay a fair share of both existing and expansion related facilities.
- It is also proposed that the City determine water system development charges on a maximum day demand basis instead of an average usage basis to better reflect how the water system is actually used and that all water customers pay the same charges based on meter size.
- Preliminary calculations indicate that the proposed charges would be about two times higher than current charges.

Requested Policy Guidance

1. Should the existing water and wastewater minimum charges be replaced by a system of service charges?

2. Does the City wish to:

- **(a) Retain the existing declining block water rate structure?**
- **(b) Adopt uniform volume charges by customer class?**
- **(c) Adopt uniform volume charges by customer class and phase-in inverted block rates for residential customers?**
- **(d) Consider other options?**

3. Should private fire protection charges be implemented?

4. What level of Infiltration/Inflow related costs should be recovered in the customer charge?

Requested Policy Guidance

5. Should system development charges be developed as proposed?

6. What transition period, if any, should be used to fully implement the proposed system development charges?

Questions/Answers