

EXECUTIVE SUMMARY

for

PECULIAR, MISSOURI

2014 Water Rate Study Update

November 2014

Larkin Lamp Rynearson



—| LARKIN |—
LAMP RYNEARSON

In early 2013, Larkin Lamp Rynearson prepared a Water Rate Study for the City of Peculiar, MO. The Study recommended that the Water Rate Study be reviewed annually and the affiliated spreadsheets be adjusted to reflect updated information on revenue, expenses, active meters, and inflation rates. In 2014, Larkin Lamp Rynearson and City Staff worked together to update the information. This is an executive summary of these modifications.

Since the initial submission of the Water Rate Study, the City has had several notable events:

- A Capital Improvement Plan (CIP) was created with the assistance of Larkin Lamp Rynearson and a grant from the Missouri Department of Natural Resources (MDNR). The CIP recommended the City pursue Kansas City, MO as a direct source of potable water. This corresponds to Scenario 4 of the Water Rate Study. Thus, the updates to the Water Rate Study numbers are largely reflected in the Scenario 4 figures.
- The CIP also generated a list of internal waterline improvements along with associated costs. This new data superseded the capital improvements in the original Water Rate Study.
- The City Board of Aldermen has approved the following schedule of water rate increases:
 - \$1.50 per 1,000 gallons effective October, 2013
 - \$2.50 per 1,000 gallons effective October, 2014

The City Board of Aldermen has proposed the following future schedule of water rate increases:

- A minimum of \$2.00 per 1,000 gallons effective October, 2015
- A minimum of \$1.50 per 1,000 gallons effective October, 2016
- The City recently issued 20-year revenue bonds for capital improvements in the amount of \$1,245,000.00. The average interest rate on the bonds is 3.47%, which equates to annual principal and interest payments of \$87,346.00. Proceeds of the bond issue will fund the ground storage tank rehabilitation, three waterline projects, a portion of the sidewalk from City Hall to Legend Lane, and meter replacements.
- Drinking Water State Revolving Fund Loan Program funds are not available for the Kansas City Supply project. This increased the estimated Kansas City Transmission financing rate to 4.75%. However, the cost opinion on this project has been lowered from \$4.3 million to \$3.9 million.

The first step in updating the Water Study information was to modify the *Cost of Water Purchases* table to reflect the actual 2013 and 2014 rates from PWSD No. 2 and Kansas City, MO. These changes increased in the projected water purchase rates; which caused the projected Cost of Water Purchased expense to increase.

Purchase, sales, and active meter data within the *Projection of Water Operation Revenues with Rate Adjustment* table was then updated to reflect the most recent numbers available. The water purchased in

the 2012-2013 fiscal year was lower than the previous three years. With this information, the projected water needs of the City were reduced. The approved water rates were included into the Scenario 4 section of the table as well as a proposed \$1.25 increase in fiscal year 2017-2018, which modified the forecasted revenue from water rates.

Finally, projected numbers were replaced with numbers from the 2013-2014 and 2014-2015 budgets in the Scenario rate adjustment tables. Updated numbers included water purchased, sold, lost and rates; revenue; and expenses. As a part of this process the following revenues and expenses were added to the Rate Study Net Revenue spreadsheets or otherwise modified:

- Water Purchase Rate inflation factor lowered to 4.1% (historic population rate over the last two decades)
- **Gain on Sale of Asset** line with one revenue item in 2012-2013 fiscal year
- **Tower Rental** inflation factor changed to 2%
- **Reimbursed Expense** line added with historic revenue and no future revenue
- **Transfers-In-Water** line added with no historic or future revenue
- **G.O. Principal (transfer in from Fund 40)** modified to have a constant future revenue of \$68,000
- **Bond Proceeds** line added with budget numbers as follows
 - 2013-2014 \$1,250,000
 - 2014-2015 \$ 380,000
- Water purchases from Kansas City projected to begin in fiscal year 2017-2018
- **Benefits** with a 2% inflation factor
- **Employee Rewards** with a 0% inflation factor
- **Bankcard Fees** (only for the 2012-2013 and 2013-2014 fiscal years)
- **Public Hearing** with a \$500 constant cost (exception: 2012-2013 fiscal year at \$344)
- **Eco Dev Contractual** with a \$15,000 constant cost
- **Contractual Payroll** with a \$12,000 constant cost
- **Communications and Cell Phones** were combined into one line item (**Communications (Cell Phones)**) with level cost of \$1,680
- **Supplies** line item with a level cost of \$2,500
- **Vehicle Maintenance** inflation was changed to 10%
- **Safety Equipment** with a \$8,300 level cost
- **Tower Maintenance** inflation was changed to 3%
- **Meter Maintenance** inflation was changed to 20%

- **Equipment Maintenance** for 2013-2014 is \$10,000 and has a future level cost of \$30,000
- **Water Capital Purchase** records were updated and a 2014-2015 budget number of \$562,500 was added
- **Debt Service Principal Required** line was added with values provided by City
- **Interest** line item is now **Debt Service Interest** and historic and budgeted numbers updated
- **Bond Fees** line item is now labeled Debt Service Bond Fees and historic and budgeted numbers updated
- **Ground Water Storage Tank** line added with associated cost in 2012-2013
- **Debt Service City Hall (Capital Expense)** was added with historic charges to the Water Fund and no future costs
- **Transfers Out** line item relabeled as **Transfer (COP Payments) Out** and historic and budget numbers updated
- **Restricted Reserve** category added with an expense for 2014-2015 fiscal year
- **Capital Improvement Fund and Meter Replacement** and **Capital Improvement Projects** line items updated based upon revised future projects planning as previously discussed

As these numbers were added/modified, the spreadsheets automatically revised projected revenue, expenses, and the water fund balance. Between fiscal year 2009-2010 and 2012-2013, the City's Water Fund Balance had negative net revenues every year. Without the issuing of the 20-year revenue bond for capital improvements during the 2013-2014 fiscal years, the negative net revenue trend would have continued. With the current schedule of water rate increases, the next three fiscal years are also projected to have negative net revenue. However, in fiscal year 2017-2018, the net revenue is projected to uptick and be positive. This is the same year in which the City is expected to starting purchasing water directly from Kansas City (which reduces the projected water purchase rate). This reduction in water supply costs along with an increase in water sales revenue is thus projected to overcome the expenses incurred to the Water Fund Balance. It should be noted that if the proposed 2017-2018 \$1.25 water rate increase (that is not a part of the approved and proposed schedule of water rate increases) is not adopted, the Water Fund's net revenue would be negative; however it would be the smallest deficiency since the 2009-2010 fiscal year.

This update to the Water Rate Study will allow the City to continue to make informed decisions related to the water needs of the City as well as the budgetary concerns that all cities must undertake. As indicated within, the Water Rate Study should be a living document that needs to be continually updated to reflect changes in revenue, expenses, water demands, inflation, and capital project needs.

**City of Peculiar
Water Capital Improvement Projects (Assests)**

Scenario 2

Cass No. 2 as Water Source and CIP

	Tank	KC Connection	Map & Model	Windmill Meter Replacement	211th St Upsizing	GIS/ARC Tech	Peculiar Dr North to Hurley	Sidewalk, City Hall to C/J Bridge	Broadway** Main to 3rd	E. 3rd Street** South to Legend	Spencer Addition Upgrades	Elm Street** Gregory and School Rd	Harr Grove South of Elm	Gregory ** Elm to Harr Grove	Tank Mixing System (2) **	Emergency Generator**	Peculiar Dr.** Willow to Maple	Water Tower Inspection	VFD Pump Replacement	Truck	Water Meter Reserve	CIP Reserve	Yearly Sub Total	Kansas City KC Connection*	CIP 1.245M 2013 Rev Bonds	Yearly Total	
2013-2014																									\$ 38,000.00	\$38,000	
2014-2015			\$0			\$25,000																\$25,000	\$25,000	\$75,000		\$87,346	\$162,346
2015-2016			\$0	\$5,000		\$5,000														\$35,000.00	\$30,000	\$30,000	\$105,000	\$0	\$87,346	\$192,346	
2016-2017			\$0	\$5,000		\$5,000																\$40,000	\$85,000	\$0	\$87,346	\$172,346	
2017-2018			\$5,000			\$5,000														\$35,500.00	\$40,000	\$50,000	\$135,500	\$0	\$87,346	\$222,846	
2018-2019			\$5,000			\$5,000																			\$0	\$87,346	\$358,828
2019+																									\$0	\$87,346	\$1,365,949
Total	\$0	\$0	\$20,000	\$0	\$0	\$45,000	\$0	\$0	\$184,045	\$278,154	\$0	\$261,482	\$0	\$184,248	\$100,000	\$35,000	\$452,156	\$15,000	\$30,000	\$70,500	\$130,000	\$145,000	\$1,950,584	\$0	\$562,077	\$2,512,661	

Scenario 3

Kansas City as Water Source (in 2017) and no additional CIP

	Tank	KC Connection	Map & Model	Windmill Meter Replacement	211th St Upsizing	GIS/ARC Tech	Peculiar Dr North to Hurley	Sidewalk, City Hall to C/J Bridge	Broadway** Main to 3rd	E. 3rd Street** South to Legend	Spencer Addition Upgrades	Elm Street** Gregory and School Rd	Harr Grove South of Elm	Gregory ** Elm to Harr Grove	Tank Mixing System (2) **	Emergency Generator**	Peculiar Dr.** Willow to Maple	Water Tower Inspection	VFD Pump Replacement	Truck	Water Meter Reserve	CIP Reserve	Yearly Sub Total	Kansas City KC Connection*	CIP 1.245M 2013 Rev Bonds	Yearly Total		
2013-2014																										\$0	\$0	
2014-2015						\$0	\$0	\$-			\$0																\$0	\$0
2015-2016				\$0		\$0	\$0														\$0			\$0	\$305,173		\$305,173	
2016-2017				\$0		\$0																		\$0	\$305,173		\$305,173	
2017-2018				\$-									\$-											\$0	\$305,173		\$305,173	
2018-2019				\$-										\$-	\$-	\$0	\$0							\$0	\$305,173		\$305,173	
2019+																								\$0	\$305,173	\$0	\$305,173	
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,525,867	\$0	\$1,525,867	

Scenario 4

Kansas City as Water Source (in 2017) and CIP

	Tank	KC Connection	Map & Model	Windmill Meter Replacement	211th St Upsizing	GIS/ARC Tech	Peculiar Dr North to Hurley	Sidewalk, City Hall to C/J Bridge	Broadway** Main to 3rd	E. 3rd Street** South to Legend	Spencer Addition Upgrades	Elm Street** Gregory and School Rd	Harr Grove South of Elm	Gregory ** Elm to Harr Grove	Tank Mixing System (2) **	Emergency Generator**	Peculiar Dr.** Willow to Maple	Water Tower Inspection	VFD Pump Replacement	Truck	Water Meter Reserve	CIP Reserve	Yearly Sub Total	Kansas City KC Connection*	CIP 1.245M 2013 Rev Bonds	Yearly Total	
2013-2014																										\$ 38,000.00	\$38,000
2014-2015						\$25,000																\$25,000	\$25,000	\$75,000		\$87,346	\$162,346
2015-2016				\$5,000		\$5,000														\$35,000.00	\$30,000	\$30,000	\$105,000	\$179,220	\$87,346	\$371,566	
2016-2017				\$5,000		\$5,000																\$40,000	\$85,000	\$179,220	\$87,346	\$351,566	
2017-2018				\$5,000		\$5,000														\$35,500.00			\$45,500	\$368,439	\$87,346	\$491,285	
2018-2019				\$5,000		\$5,000																		\$271,482	\$368,439	\$87,346	\$717,267
2019+																									\$0	\$87,346	\$1,724,388
Total	\$0	\$0	\$20,000	\$0	\$0	\$45,000	\$0	\$0	\$184,045	\$278,154	\$0	\$261,482	\$0	\$184,248	\$100,000	\$35,000	\$452,156	\$15,000	\$30,000	\$70,500	\$90,000	\$95,000	\$1,860,584	\$1,433,756	\$562,077	\$3,856,417	

*Yearly payment on a \$3,885,061 loan at 4.75% annual interest rate for 20 years. DNR State Revolving Fund (SRF) loan is NOT available.

** Unfunded Projects

Kansas City Connection \$3,885,061	CIP Large 2013 Revenue Bonds \$ 1,245,000.00	CIP Large 2013 Revenue Bonds Funded Projects	Unfunded	CIP Refin 2014 Revenue Bonds Funded Projects	
		Tank Rehab	\$ 300,000.00	KC Connection Engineering	\$ 250,000.00
SRF Funding		Peculiar Dr North to Hurley	\$ 640,393.00	211th Street Water Main Upsize	\$ 110,000.00
	20 years	Sidewalk City Hall to C/J Bridge	\$ 46,271.00		
	4.75%	Spencer Addition Upgrades	\$ 42,000.00		\$ 327,941.00
	(\$305,173.36)	Harr Grove South of Elm	\$ 33,000.00		\$ 259,059.00
		Windmill Meter Replacement	\$ 50,000.00		
		Total	\$ 1,111,664.00	Total	\$ 360,000.00

City of Peculiar
Cost of Water Purchases

	Year						
	2012	2013	2014	2015	2016	2017	2018
Total Water Purchases - gallons	94,070,020	82,684,500	89,712,558	93,390,773	97,229,134	101,225,251	105,385,609
Cass PWSD#2 Source							
Rate per 1,000 gallons* (Effective 5/1 ea. yr)	\$4.30	\$ 4.54	\$ 4.85	\$ 5.05	\$ 5.26	\$ 5.47	\$ 5.70
Assumed Increase			5%/3%	5%/3%	5%/3%	5%/3%	5%/3%
Cost of Water Purchased	\$ 423,766.00	\$ 419,630	\$ 425,000	\$ 463,637	\$ 502,563	\$ 544,895	\$ 590,937
Kansas City Source							
Rate per 1,000 gallons** (Effective 5/1 ea. yr)	\$ 2.78	\$ 2.93	\$ 3.08	\$ 3.23	\$ 3.40	\$ 3.57	\$ 3.74
Assumed Increase				5.0%	5.0%	5.0%	5.0%
Cost of Water Purchased				\$ 296,033	\$ 323,610	\$ 353,756	\$ 386,710

*Water rate from Cass 2 per Water Purchase Agreement consists of three components: Water cost from Kansas City, Cass 2 O&M cost, and Cass 2 debt service on shared facilities.
(Annual rate increase is assumed at 5% for KC rate and 3% for O&M)

**Includes Kansas City as a direct water wholesaler at their wholesale restricted rate plus 1 repump charge (Annual rate increase is assumed at 5%)

Water Cost Component - Cass 2	3.37	3.5385	3.715425	3.90119625	4.096256063	4.301068866
O&M Cost Component - Cass 2	0.64	0.73	0.7519	0.774457	0.79769071	0.821621431
SCADA cost component	0.17	0.17	0.17	0.17	0.17	0.17
Cost of recovery	0.36	0.41	0.41	0.41	0.41	0.41

Water Rates

	12/4/2012					7/1/2012		3/1/2010		6/1/2009	
	\$ per 1,000 gallons		Primacy Fee			\$ per 1,000 gallons		\$ per 1,000 gallons		\$ per 1,000 gallons	
	First 1,000 gallons	Over 1,000 gallons	3/4 inch	1-inch	4-inch	First 1,000 gallons	Over 1,000 gallons	First 1,000 gallons	Over 1,000 gallons	First 1,000 gallons	Over 1,000 gallons
Within City Limits	\$13.51	\$9.07	\$0.25	\$0.62	\$3.43	\$13.51	\$9.07	\$12.26	\$7.82	\$12.26	\$7.68
Outside City Limits	\$16.25	\$10.07				\$16.25	\$10.07	\$15.00	\$8.82	\$15.00	\$8.68

City of Peculiar

Projection of Water Operating Revenues with Rate Adjustment

	Y E A R								
	2009-2010 Actual	2010-2011 Actual	2011-2012 Actual	2012-2013 Actual	Amemded 2013- 2014 Budget	2014-2015 (Budget)	2015-2016 (Budget)	2016-2017 (Budget)	2017-2018 (Budget)
	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018
Total Water Purchases - gal.*	87,230,287	87,230,287	94,070,020	82,684,500	89,712,558	93,390,773	97,229,134	101,225,251	105,385,609
Total Water Sold - Assume 15% losses	74,145,744	74,145,744	79,959,517	70,281,825	78,852,970	79,382,157	82,644,764	86,041,463	89,577,768
Water Sold - City	73,327,252	79,076,847	79,076,847	69,505,984	77,982,512	78,505,857	81,732,448	85,091,652	88,588,919
Water Sold - Rural	818,492	882,670	882,670	775,841	870,458	876,300	912,316	949,812	988,849
Number of Active Meters**									
City	1,493	1,508	1,523	1537	1554	1569	1585	1601	1617
Rural	17	17	17	17	17	18	18	18	18
Total	1,509	1,525	1,540	1,554	1,571	1,587	1,602	1,618	1,635
Scenario 1 - No CIP									
City									
Minimum for 1,000 gal.	\$12.26	\$12.26	\$13.51	\$15.71	\$17.21	\$17.21	\$17.21	\$17.21	\$18.21
Rate per 1,000 above 1,000gal.	\$7.82	\$7.82	\$9.07	\$11.27	\$12.77	\$12.77	\$12.77	\$12.77	\$13.77
Rural									
Minimum for 1,000 gal.	\$15.00	\$15.00	\$16.25	\$18.45	\$19.95	\$19.95	\$19.95	\$19.95	\$20.95
Rate per 1,000 above 1,000gal.	\$8.82	\$8.82	\$10.07	\$12.27	\$13.77	\$13.77	\$13.77	\$13.77	\$14.77
Revenue from Minimum Bill	\$222,604	\$224,853	\$250,224	\$269,622	\$325,084	\$328,223	\$331,505	\$334,820	\$357,784
Revenue from usage above minimum	\$438,800	\$482,896	\$558,298	\$582,460	\$766,822	\$771,259	\$810,525	\$851,481	\$964,159
Primacy Fees				\$5,463	\$5,463	\$5,463	\$5,463	\$5,463	\$5,463
Total Revenue from Rates	\$661,404	\$707,748	\$808,522	\$857,545	\$1,097,369	\$1,104,944	\$1,147,493	\$1,191,764	\$1,327,405
City-Water Bill for 5,000 gallons	\$43.54	\$43.54	\$49.79	\$60.79	\$68.29	\$68.29	\$68.29	\$68.29	\$73.29
Rural-Water Bill for 5,000 gallons	\$50.28	\$50.28	\$56.53	\$67.53	\$75.03	\$75.03	\$75.03	\$75.03	\$80.03
Net Revenue	(\$26,275)	(\$104,738)	(\$211,661)	(\$352,630)	\$17,122	\$0	(\$28,470)	(\$415,995)	(\$359,899)
Scenario 2 - Cass 2 Source and All CIP									
Water Rates									
City									
Minimum for 1,000 gal.	\$12.26	\$12.26	\$13.51	\$15.71	\$16.71	\$19.21	\$20.71	\$20.71	\$21.96
Rate per 1,000 above 1,000gal.	\$7.82	\$7.82	\$9.07	\$11.27	\$12.27	\$14.77	\$16.27	\$16.27	\$17.52
Rural									
Minimum for 1,000 gal.	\$15.00	\$15.00	\$16.25	\$18.45	\$19.45	\$21.95	\$23.45	\$23.45	\$24.70
Rate per 1,000 above 1,000gal.	\$8.82	\$8.82	\$10.07	\$12.27	\$13.27	\$15.77	\$17.27	\$17.27	\$18.52
Revenue from Minimum Bill	\$222,604	\$224,853	\$250,224	\$269,622	\$315,656	\$366,299	\$398,805	\$402,793	\$431,340
Revenue from usage above minimum	\$438,800	\$482,896	\$558,298	\$516,199	\$736,824	\$891,947	\$1,032,482	\$1,084,653	\$1,226,519
Primacy Fees				\$5,463	\$5,463	\$5,463	\$5,463	\$5,463	\$5,463
Total Revenue from Rates	\$661,404	\$707,748	\$808,522	\$791,284	\$1,057,942	\$1,263,709	\$1,436,749	\$1,492,909	\$1,663,322
City-Water Bill for 5,000 gallons	\$43.54	\$43.54	\$49.79	\$60.79	\$65.79	\$78.29	\$85.79	\$85.79	\$92.04
Rural-Water Bill for 5,000 gallons	\$50.28	\$50.28	\$56.53	\$67.53	\$72.53	\$85.03	\$92.53	\$92.53	\$98.78
Net Revenue	(\$26,275)	\$190,803	(\$211,661)	\$352,730	\$99,122	(\$90,057)	(\$54,508)	\$11,262	\$67,451
Scenario 3 - Kansas City Source Only									
Water Rates									
City									
Minimum for 1,000 gal.	\$12.26	\$12.26	\$13.51	\$17.21	\$19.71	\$19.71	\$19.71	\$19.71	\$19.71
Rate per 1,000 above 1,000gal.	\$7.82	\$7.82	\$9.07	\$12.77	\$15.27	\$15.27	\$15.27	\$15.27	\$15.27
Rural				\$3.70					
Minimum for 1,000 gal.	\$15.00	\$15.00	\$16.25	\$19.95	\$22.45	\$22.45	\$22.45	\$22.45	\$22.45
Rate per 1,000 above 1,000gal.	\$8.82	\$8.82	\$10.07	\$13.77	\$16.27	\$16.27	\$16.27	\$16.27	\$16.27
Revenue from Minimum Bill	\$222,604	\$224,853	\$250,224	\$281,279	\$372,224	\$375,818	\$379,577	\$383,372	\$387,206
Revenue from usage above minimum	\$438,800	\$482,896	\$558,298	\$548,469	\$916,815	\$922,119	\$969,065	\$1,018,032	\$1,069,103
Primacy Fees				\$5,463	\$5,463	\$5,463	\$5,463	\$5,463	\$5,463
Total Revenue from Rates	\$661,404	\$707,748	\$808,522	\$835,210	\$1,294,501	\$1,303,400	\$1,354,105	\$1,406,867	\$1,461,772
City-Water Bill for 5,000 gallons	\$43.54	\$43.54	\$49.79	\$68.29	\$80.79	\$80.79	\$80.79	\$80.79	\$80.79
Rural-Water Bill for 5,000 gallons	\$50.28	\$50.28	\$56.53	\$75.03	\$87.53	\$87.53	\$87.53	\$87.53	\$87.53
Net Revenue	\$ (26,275.00)	\$ 186,862.00	\$ (211,661.00)	\$ (352,630.00)	\$ 1,159,622.00	\$ (348,211.00)	\$ 1,514,263.00	\$ 395,916.00	\$ (220,814.00)
Scenario 4 - Kansas City Source and All CIP									
Water Rates									
City									
Minimum for 1,000 gal.	\$12.26	\$12.26	\$13.51	\$15.71	\$17.21	\$19.71	\$21.71	\$23.21	\$24.46
Rate per 1,000 above 1,000gal.	\$7.82	\$7.82	\$9.07	\$11.27	\$12.77	\$15.27	\$17.27	\$18.77	\$20.02
Rural									
Minimum for 1,000 gal.	\$15.00	\$15.00	\$16.25	\$18.45	\$19.95	\$22.45	\$24.45	\$25.95	\$27.20
Rate per 1,000 above 1,000gal.	\$8.82	\$8.82	\$10.07	\$12.27	\$13.77	\$16.27	\$18.27	\$19.77	\$21.02
Revenue from Minimum Bill	\$222,604	\$224,853	\$250,224	\$269,622	\$325,084	\$375,818	\$418,034	\$451,345	\$480,378
Revenue from usage above minimum	\$438,800	\$482,896	\$558,298	\$516,199	\$766,822	\$922,119	\$1,095,898	\$1,251,204	\$1,401,426
Primacy Fees				\$5,463	\$5,463	\$5,463	\$5,463	\$5,463	\$5,463
Total Revenue from Rates	\$661,404	\$707,748	\$808,522	\$791,284	\$1,097,369	\$1,303,400	\$1,519,394	\$1,708,012	\$1,887,266
City-Water Bill for 5,000 gallons	\$43.54	\$43.54	\$49.79	\$60.79	\$68.29	\$80.79	\$90.79	\$98.29	\$104.54
Rural-Water Bill for 5,000 gallons	\$50.28	\$50.28	\$56.53	\$67.53	\$75.03	\$87.53	\$97.53	\$105.03	\$111.28
Net Revenues	\$ (26,275.00)	\$ (104,739.00)	\$ (211,661.00)	(\$352,630)	\$1,121,622	(\$483,918)	(\$426,247)	(\$328,539)	\$51,471

WATER RATE STUDY

for

PECULIAR, MISSOURI

April 2013

**Larkin Lamp Rynearson
Project No.: 0313001.01**

**Water Rate Study
for
Peculiar, Missouri**

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
I. Introduction.....	3
II. Background and Current Water Rates	3
A. General.....	3
B. Service Meters, Water Rates, and Service Tap Fees.....	4
III. Water Rate Analysis	5
A. General	5
B. Usage and Customer Information	5
C. Projected Water Sales, and Revenue	6
D. Financial Information and Budget Projections	6
E. Asset Replacement/Capital Improvement Plan.....	8
IV. Wholesale Water Sources	8
A. Cass County P.W.S.D. No. 2	8
B. Kansas City.....	9
V. Proposed Water Rates	10
A. Rate Design	10
B. Water Rate Adjustment.....	10
VI. Rate Comparisons	11
VII. Conclusions.....	12

TABLES:

Table II.1 – Active Water Meters 4

Table II.2 – Service Tap Fees 4

Table II.3 – Existing Water Rates 4

Table II.4 – Primacy Fees 4

Table V.1 – Initial Proposed Water Rates..... 11

APPENDICES

Appendix A Historic Water Purchases

Appendix B Scenario 1, 2, 3, and 4 of the Five-Year Balance Sheet

Appendix C Supporting Schedules

- Cost of Water Purchases
- Water Revenue and Expense History from City
- Capital Improvement Projects
- Projection of Water Operating Revenues with Rate Adjustments

I. Introduction

The purpose of this study is to evaluate the current water rate of Peculiar, Missouri (City) and project rate changes necessary for the period 2013-17. Also part of this study is to compare the projected wholesale rate from the current supply to costs (capital plus O&M) for a direct supply from Kansas City. The analysis will determine adequacy to cover current and future expenses, including existing and proposed debt service. The City recognizes that rate examination is necessary for three reasons: 1) to cover existing expenses; 2) to provide revenue to meet inflationary increases in operation and maintenance costs and; 3) to provide revenue to cover existing and proposed capital improvements. Some expense items such as health care insurance and vehicle operating costs have been increasing well beyond the overall consumer price index (CPI) and are more difficult to predict.

The water rate computations are based on cost of service method with a single uniform rate. Principles outlined in the American Water Works Association M1 Manual *Principles of Water Rates, Fees, and Charges* are followed. Proposed rates are also compared to existing rates for some other local water systems.

The City operates under a fiscal year that ends in September.

II. Background and Current Water Rates

A. General

The City distributes water to approximately 1,540 customers. The City is supplied by P.W.S.D. No. 2 of Cass County, Missouri (District).

A recent history of water purchase quantities is found in Appendix A. Appendix B has four different scenarios for the City's Balance Sheet through Fiscal Year 2017. Appendix C has supporting schedules. A rate structure in this study is proposed to meet the projected operation and maintenance expenses with alternates for possible capital improvements.

In 2010, the City entered into a contract with the District for up to 0.7 million gallons per day (MGD) of water supply. The City purchases water from the District in three locations. Master Meter #1 is located at 211th and Harper Road and contains a flow control valve linked to the City's SCADA system. The control valve opens and closes based on levels in the City's ground storage tank or based on the levels in the elevated storage tank when the ground storage tank is out of service. Master Meter #2 is located at 211th and Peculiar Drive and serves the section of the City east of Highway 71. This area is fed directly from the District's 203rd St. Tank, and is on a higher pressure gradient than other areas of the City. Master Meter #3 is located at Sienna Street and Peculiar Drive, just north of Sutter's Creek subdivision. Master Meter #3 serves several subdivisions along Peculiar Drive and is also fed directly

from the 203rd St. Tank. Maximum pressure to these subdivisions is reduced to 75 psi (static) by a pressure reducing valve inside Master Meter #3.

B. Service Meters, Water Rates and Service Tap Fees

The growth the City experienced throughout the first half of the last decade beginning in 2000 has all but halted due to the recent economic conditions. The active meter numbers have slightly increased the last two years as shown in Table II.1.

Table II.1: Active Water	
2010	1,530*
2011	1,535*
2012	1,540

*Estimate

The City Council approved an Ordinance to set Service Tap Fees in December 2011. The current service tap fees are shown in Table II.2.

Table II.2: Service Tap Fees		
Residential	Up to ¾" Meter	\$ 1,600
Commercial	1" and greater Meter	\$ 1,900

The current Water Rates are shown in Table II.3. The last rate modification was in June of 2012 which raised all rates by \$1.25.

Table II.3: Existing Water Rates		
	Within City Limits	Outside City Limits
First 1,000 gallons- minimum	\$ 13.51	\$16.25
In excess of 1,000 gallons	\$ 9.07 per 1000 gallons	\$10.07 per 1000 gallons

The City also collects a primacy fee for MO-DNR based upon meter size. These fees can be seen in Table II.4.

Table II.4 Primacy Fees	
Meter Size	Primacy Fee per month
¾" Meter	\$0.25
1" Meter	\$0.62
4" Meter	\$3.43

III. Water Rate Analysis

A. General

The method used to recommend proposed rates for the District is influenced by the methods in the American Water Works Association M1 Manual *Principles of Water Rates, Fees, and Charges*.

The following information was used as a basis for rate design:

1. Water usage, water revenue, and customer information from 2010 through 2012.
2. Financial reports from the past three years.
3. Projected inflation in Operation and Maintenance expenses throughout the study period.
4. Planned CIP improvements

Revenue requirements are determined on a cash-basis method. The objective of the cash-basis method is to determine all cash needs, including debt obligations, within the study period. Revenue requirements include operation and maintenance expenses, water purchase expense, planned capital improvements, debt obligation, and to establish an annual capital improvement fund. The effect of growth in the number of customers and expense inflation are recognized in the projections for the study period and explained within the study.

B. Usage and Customer Information

Information provided by the City included water purchased, water sold, financial reports, bill frequency analysis, and the water purchase contract.

Historic water purchases for the period 2010 through 2012 are shown in Appendix A. The City began purchasing water from the District in 1990.

The historic water records were used to project future water purchases and sales. Unaccounted for water is the difference between the finished water purchased to the distribution system and the actual metered water sales. Unaccounted for water is expressed as a percentage of the finished water supplied to the distribution system. This includes water lost during water main breaks, water used for flushing dead end lines, water used for fire protection and other unmetered uses. In the past, records for this number did not indicate loss within the system. Based on discussions with City personnel, unaccounted for water was assumed to be approximately 15%, which is above the DNR goal of 10% for unaccounted for water.

The projections of water use on the Balance Sheets were used to estimate revenue generated for the 2013 to 2017 period. The projections on the Balance Sheets in Appendix B are estimated using City records and reasonable assumptions for growth and inflation. Based upon average monthly users within each of the City's rate structure groups, a revenue model (based in Excel) was utilized to project future water revenue based on the different rate structures given in each of four scenarios. The rate model is sufficiently accurate as the revenue projected for 2012 by the model is very close to the actual revenue from 2012.

C. Projected Water Needs, Sales, and Revenue

Recent historical water purchase quantities are in Appendix A. The projection of water sales on the Balance Sheets in Appendix B and supporting schedules in Appendix C are used to estimate revenue that will be generated for fiscal years 2013-17.

Projected revenue is calculated using the projected water sales and an assumed water rate per 1,000 gallons that will meet all expenses, debt service requirements, and provide adequate reserves. Any rate increases projected are designed to maintain positive case balances throughout the period. Ideally, a water system should build reserves as the system ages in order to fund a portion of replacement cost out of reserves.

An annual growth in water purchases for the period 2013-17 is assumed at 5% per annum based upon previous water records. We believe the next five years will cycle to more typical growth in meter numbers and the drought weather pattern of 2010-2012 is likely to return to more normal conditions. More information on projected water sales are contained on the Balance Sheets in Appendix B.

Revenue was calculated by using the projected water demands and sales and determining the appropriate water rates to generate adequate revenues over the next five years.

The City has experienced a large variance in unaccounted for water loss over the past three years. Unaccounted for water loss was assumed to be 15% based on discussions with the City based on industry standards. This rate is greater than the DNR goal of 10% or less average unaccounted for water for water systems of this size. The City has a number of dead end lines that need to be flushed monthly and a fire department that draws water from hydrants in town to provide fire protection. Both of these activities are additional sources of unaccounted for water that make a substantial impact on unaccounted for water in the system.

D. Financial Information and Budget Projections

Financial records from the City were used to project revenues and expenses shown on the Five-Year Balance Sheets in Appendix B. These figures are used to develop a five-year budget with the following assumptions:

1. Annual water purchases will increase 5% per year in the five year study period. Fluctuations in demand due to climate conditions make accurate predictions difficult. The factors that influence water sales the most are the weather and the local economy. The period 2010-12 had drier than normal summers which kept usage high during the peak summer months. The poor housing market has greatly reduced growth in the number of meters the past 3 years.
2. Each expense item was given an annual inflation factor for the study period based on past experience with similar systems. These factors are listed in a middle column of the Five-Year Balance Sheet Projections.

Since economic factors are difficult to predict, especially in the areas of personnel and utility costs, these expenses should be evaluated periodically and adjustments made if necessary to insure adequate revenue from the water rate structure.

The City plans on developing a capital improvement fund for small maintenance improvements and maintenance projects that are not a part of long-term planning. This will include as an emphasis on water meter replacement. This fund can be found at the bottom of the expense section of the Five-Year Balance Sheet Projections.

The projected revenues generated from sales also includes the adjustments to the rates necessary to maintain sufficient reserve funds for day-to-day operations and reasonable accumulations for system replacement. These numbers were projected over the next five years with allowances for inflation and population growth.

The Five-Year Balance Sheet projection includes the following expense items broken down by accounting category and the assumed inflation factor (Appendix B):

1% Annual Inflation

- Cell Phones
- Tower Maintenance
- Bond Fees
- Transfers Out

2% Annual Inflation

- Benefits/Payroll Taxes
- Uniforms
- Travel and Training
- Employee Testing
- Office Supplies
- Dues and Subscriptions
- Audits
- Accounting
- Legal
- Litigation
- Engineering
- Administration Building Maintenance
- Public Works Building Maintenance
- Vehicle Maintenance

- Fuel and Oil
- Meter Maintenance
- Depreciation

3% Annual Inflation

- Salaries and Wages
- Pump/Line Maintenance
- Workers Compensation
- Postage
- Office Machines
- Contractual – Water
- IT Maintenance
- Software Costs
- Telephone
- Utilities

Other

- Expenses not listed above and revenues were based on prior years growth or decline
- Contractual Studies and Capital Improvement Projects were based on establish plans for the next five years. A summary of this information can be found in Appendix C.

E. **Asset Replacement/Capital Improvement Plan:**

The City should periodically authorize a Capital Improvement Plan study that updates the hydraulic model and projects system improvements on an annual basis for a least a five-year period in times of rapid growth or 10 years in slower economic growth periods. This would include in-depth review of the condition and capacity of the main system components in order to formulate a Replacement/Improvement Plan for the large system assets such as the water mains, meters, pumps, valves, meter vaults, SCADA system, and storage tank coatings. The scope, priorities, and cost estimates should be revisited annually during the budget process. Improvements of this nature have been included in the projected rates based upon information provided by the City.

IV. Wholesale Water Sources

A. **Cass County P.W.S.D. No. 2:**

As mentioned previously, the City originally entered into a water purchase contract with PWSD No. 2 in 1990. In 2010, a new contract was established with a maximum quantity of 0.70 million gallons per day. The City purchases water from the District in three locations. Master Meter #1 is located at 211th and Harper Road and contains a flow control valve linked to the City’s SCADA system. The

control valve opens and closes based on levels in the City's ground storage tank. Master Meter #2 is located at 211th and Peculiar Drive and serves the section of the City east of Highway 71. This area is fed directly from the District's 203rd St. Tank, and is on a higher pressure gradient than other areas of the City. Master Meter #3 is located at Sienna Street and Peculiar Drive, just north of Sutter's Creek subdivision. Master Meter #3 serves several subdivisions along Peculiar Drive and is also fed directly from the 203rd St. Tank. Maximum pressure to these subdivisions is reduced to 75 psi (static) by a pressure reducing valve inside Master Meter #3.

The current water rate from the District is \$4.30 per 1,000 gallons. Rates may be adjusted bi-annually with written notice and calculated per Attachment I of the Agreement. The City may terminate this contract with one year written notice.

Based upon the Consolidation Report between the District and the City, future water rates from the District were estimated to annually increase by 5% for water costs and 3% for operation and maintenance costs. This is shown on the Cost of Water Purchases table in Appendix C.

B. Kansas City:

Currently, the District purchases water from Kansas City and resells some of this water to the City. The District adds an operation and maintenance on shared facilities component, a cost recovery component on shared facilities, and a monthly meter charge share based on KCMO service charges. The City is interested in purchasing water directly from Kansas City in order to reduce their costs associated with water purchases. The City would need to install a 12-inch water main to purchase from this supply and pay a connection fee to Kansas City. Based upon the Capital Project Requests information, a 20-year, 2.5% loan of \$4,300,000 (including a connection fee to Kansas City) was added into the future capital costs with an annual expense of \$275,833 for a loan payback starting in 2015. Scenarios utilizing a Kansas City source have this accounted for in the Capital Improvements Projects line of the expenses section outlined within the Five-Year Balance Sheets. The annual loan payments are on the Capital Improvements Projects in Appendix C.

On May 1, 2013 the water rate from Kansas City to the District will increase to \$3.16. This is classified as the restricted wholesale rate with two repumping fees. To project future cost escalations from Kansas City, a 5% increase per year was utilized in the Cost of Water Purchases table in Appendix C.

V. Proposed Water Rates

A. Rate Design:

The American Water Works Association (AWWA) recommends for similar sized water systems two types of rate structures for consideration; a single-block rate structure and a two-block/multi-block rate structure. The City currently uses a single-block rate structure for its customers. The City charges a uniform rate structure for water to all of its in-town customers.

B. Water Rate Adjustment:

Appendix B has the following four scenarios for the City's five-year Balance Sheet:

Scenario 1: Minimum Rate adjustment to maintain positive Net Revenue if no Capital Improvement Projects are undertaken and the City continues to purchase water from P.W.S.D. No. 2. Projections of water purchase expense and water revenues are shown in Appendix B. The only proposed rate increase is \$3.05 to all water rates.

Scenario 2: Minimum Rate adjustment to maintain positive Net Revenue if all currently proposed Capital Improvement Projects proceed, a capital improvement fund for small unplanned projects and a meter replacement fund is created, and the City continues to purchase water from P.W.S.D. No. 2. Projections of water purchase expense and water revenues are shown in Appendix B. This scenario has two rate increases, the first being \$3.60 to all water rates.

Scenario 3: Minimum Rate adjustment to maintain positive Net Revenue if no Capital Improvement Projects are undertaken and the City begins to purchase water from Kansas City in 2015. Projections of water purchase expense and water revenues are shown in Appendix B. This scenario has two rate increases, the first being \$3.40 to all water rates.

Scenario 4: Minimum Rate adjustment to maintain positive Net Revenue if all currently proposed Capital Improvement Projects proceed, a capital improvement fund for small unplanned projects and a meter replacement fund is created, and the City begins to purchase water from Kansas City in 2015. Projections of water purchase expense and water revenues are shown in Appendix B. This scenario has two rate increases, the first being \$3.60 to all water rates.

Each scenario has multiple rate increases to accommodate increasing expenses and capital improvement projects. Even without any new capital improvements, the current water rates are not adequate and will continue to lag behind water expenses at the increasing levels discussed in Section III. Inflation of expenses will erode City water fund reserves without significant growth in the customer base or a rate adjustment. The City is currently planning to rehabilitate their existing ground storage tank at a cost of \$265,000. This cost is only able to be recouped with rate increases in the next two years.

Table V-1 shows a summary of the rates after the first proposed rate increase (additional rate increases can be seen in the scenario balance sheets in Appendix B).

Table V-1 Initial Proposed Water Rates:

Scenarios	1		2		3		4	
	Inside City	Outside City	Inside City	Outside City	Inside City	Outside City	Inside City	Outside City
1 st 1,000 gal. - minimum	\$16.56	\$19.30	\$17.11	\$19.85	\$16.91	\$19.65	\$17.11	\$19.85
In Excess of 1,000	\$12.12	\$13.12	\$12.67	\$13.67	\$12.47	\$13.47	\$12.67	\$13.67

VI. Rate Comparisons

The City's water rates are comparable to other area water systems. A cost analysis for an average water bill is shown at the end of these rates:

Cass PWSD No. 9:

Water Rate: Minimum residential charge \$15.50 (first 1,000 gallons)
Per hundred gallons thereafter \$8.00 / 1000 gallons

Cass PWSD No. 10:

Water Rate: Minimum residential charge \$17.00 (first 1,000 gallons)
Per hundred gallons thereafter \$12.00 / 1000 gallons

Cass PWSD No. 11:

Water Rate: Minimum residential charge \$30.50 (first 1,000 gallons)
Per hundred gallons thereafter \$1.000 / 100 gallons

City of Archie, Missouri

Water Rate: Minimum residential charge \$19.50 (first 1,000 gallons)
1,000 to 4,000 gallons \$16.55/1000 gallons
Per hundred gallons thereafter \$1.100/100 gallons

City of Belton, Missouri

Water Rate: Cost per 100 gallons \$0.8802 / 100 gallons
Minimum Bill of 1,500 gallons \$28.85

City of Harrisonville, Missouri

Water Rate: Minimum residential charge \$11.12
Per hundred gallons thereafter \$0.7055/100 gallons

City of Raymore, Missouri

Water Rate: Cost per 1000 gallons \$5.52 / 1000 gallons
Minimum Bill of 2,000 gallons \$11.04

The following table compares the cost of 5,000 gallons from several area water systems and the first proposed increase for the City’s rates:

<u>Water System</u>	<u>5,000gal Water Bill</u>
Lee’s Summit, Missouri	\$23.98
Raymore, Missouri	\$27.50
Pleasant Hill, Missouri	\$37.86
Harrisonville, Missouri	\$39.34
Garden City, Missouri	\$44.72
Cass PWSD No. 9	\$47.50
Peculiar, MO (Existing)	\$49.79/56.53
Belton, Missouri	\$59.66
Cass PWSD No. 10	\$65.00
Peculiar, MO (Scenario 1)	\$65.04/71.78
Peculiar, MO (Scenario 3)	\$66.79/73.53
Peculiar, MO (Scenario 2)	\$67.79/74.53
Peculiar, MO (Scenario 4)	\$67.79/74.53
Cass PWSD No. 7	\$81.15
Cass PWSD No. 11	\$82.70
Archie, Missouri	\$80.15

VII. Conclusions

1. The existing water rate is not adequate for the near term. Current economic conditions now require that the City increase rates in order to keep up with the inflation of expenses. If the City continues purchasing water from PWSD No. 2 and decides construct no improvements, a single rate increase of \$3.05 will be required; however, in lieu of the first proposed increase, two increases will be required to construct all of the capital improvement projects (\$3.60 and \$2.00). If the City decides to pursue a water supply from Kansas City and perform no improvement projects, two rate increases would be required (\$3.40 followed by \$1.90). Pursuing the Kansas City source and all capital improvements projects, two larger rate increases would be required (\$3.60 and \$4.10). The goal of these rate increases is to ensure that no one year has negative net revenue. With this goal in mind, large rate increases needed at the beginning of the study period, led to larger positive net revenues in later years. The largest net revenues were seen in Scenarios 3 and 4, after water begins to be purchased from Kansas City. Note that after the scope period of this study, water purchases from PWSD No. 2 will drop by \$0.17 per 1,000 gallons (SCADA debt pay off).
2. The Revenue and Expense projections should be updated annually to ensure adequate revenue will be available to keep up with inflation and to fund future improvements. Actual revenue and expenses should be entered into the spreadsheets after completion of the year-end financial report. Active meter numbers and inflation rates should be reviewed annually for needed adjustments. If necessary, the water rates can be adjusted annually as needed.