



## Facing Challenges and Seeking Funding

**E**lk City is located in southeast Kansas approximately twelve miles northwest of the city of Independence and sixteen miles south southwest of the Public Wholesale Water Supply District 23 (PWWS D 23) new treatment plant presently under construction. Elk City has a population of approximately 300. The city obtains its water supply from the city's treatment plant on the Elk River.

The Director of the Water, Wetlands and Pesticides Division of the United States Environmental Protection Agency Region 7 office sent to the city a Notice of Violation on July 22, 2016. The city is in violation of the maximum contaminant levels for trihalomethanes (THMs) and haloacetic acids (HAAs). The Notice of Violation letter noted that violations are subject to penalties of up to \$37,500 per day per violation.

Previous and subsequent to the Notice of Violation, Kansas Department of Health and Environment (KDHE)

officials have discussed a KDHE loan and loan forgiveness (that part of a loan that is not required to be paid back) for the city but only for projects that involve the city purchasing water from another water supply. The United States Department of Agricultural, USDA Rural Development (USDA) officials have also discussed funding only projects that involve the city purchasing water.

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### Studying the situation by others

A 2014 engineering report, updates in 2015 to engineering reports, funding options and discussions have been addressing the city purchasing water from another water supply to bring the city's drinking into compliance with THMs and HAAs. The issue of the city upgrading its water treatment plant had not been seriously considered during that time.

One option was the city and Chautauqua Co. RWD 4 participating in a project to purchase water from the city of Independence. Another option presently is the city purchasing water from PWWS D 23. Both of these options had KDHE loan forgiveness promised and USDA grants proposed. However, the overall costs to the city residents are high.

In 2016 Mayor Robert "Bobby" McCollam and the city council decided to evaluate alternatives from the city's perspective. The city hired Willis

Wilson of Aqua Tech Engineering Consultants in Augusta, Kansas. “The alternatives previously presented by others did not include all the costs to the city residents and did not include upgrading the city water treatment plant,” says the Mayor.

### Purchasing Water vs. Producing Water

The nearby Table 1 shows some recent estimated project costs, funding, and annual payments for construction loan debt for four alternatives. The city’s resultant annual payments for city loan amounts are on line 6 and are based on the proceeding numbers in the table.

As seen in the table, the KDHE loan forgiveness and USDA grants greatly affect the city’s annual payments for loan debt. The ability of agencies to give money that does not have to be paid back greatly affects decisions even to the point of a water supplier possibly selecting a more costly project for the residents but with a lesser annual payment for loan debt.

The city has understood that KDHE has not been supportive in providing loan forgiveness to the city to upgrade the city water treatment plant. But that's not the direction the city wants to go. “The KDHE official’s opinion and advice have been considered by the council but the city has decided to apply for the KDHE loan and loan forgiveness anyway because it is in the best interest of the city residents,” says Mayor McCollam.

Sometimes the overall cost to residents of a project can be less for a project that has a larger annual payment for debt incurred. That is because the cost of purchased water is much more than the cost of producing water at a

TABLE 1: Elk City Water Supply Alternatives				
Project and City Costs, Loan Forgiveness, and Grant	Elk City Connection to Independence with RWD	Elk City Connection to Independence without RWD	Elk City Connection to PWWSO 23 near Fredonia	Elk City Water Treatment Plant Upgrade
1. Estimated Project Cost	\$1,933,000	\$2,425,000	\$1,635,000	\$1,108,000
2. Elk City Share of Cost	\$1,409,000	\$2,425,000	\$1,635,000	\$1,108,000
3. KDHE Loan Forgiveness	\$285,250	\$0	\$490,000	\$0
4. USDA Grant	\$386,000	\$0	\$789,000	\$0
5. Elk City Net Cost	\$737,750	\$2,039,000	\$356,000	\$1,108,000
6. Annual Debt Payment	\$25,800	\$84,800	\$12,500	\$38,700
7. Per Cent KDHE Loan Forgiveness and USDA Grant	64%	0%	78%	0%

Table 2: Cost Comparison of Purchasing Water and Producing Water by City				
Prices, Cost, and Savings	At 40% City Unbilled		At 35% Unbilled	
	Purchase Water from PWWSO 23	City Water Treatment Plant Production	Purchase Water from PWWSO 23	City Water Treatment Plant Production
Water Purchase Price	\$5.75	Not Applicable	\$5.75	Not Applicable
Water Production Price	Not Applicable	\$1.50	Not Applicable	\$1.50
City's Cost for 10 MGY Annually	\$57,500	\$15,000	\$52,900	\$13,800
<b>Residential Price for Purchase or Production at 6.0 MGY City Sales Annually</b>	<b>\$9.58</b>	<b>\$2.50</b>	<b>\$8.82</b>	<b>\$2.30</b>
City's Annual Cost Savings	Not Applicable	\$42,500	Not Applicable	\$39,100
Residential Price Savings	Not Applicable	\$7.08	Not Applicable	\$6.52

All prices are per 1,000 gallons  
 MGY is million gallons per year  
 Past city records indicate 35% - 40% unbilled water in city



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water treatment plant. That is the case at Elk City.

For instance, Table 2 shows the difference in pricing, difference in cost, and savings between purchasing water from PWWS D 23 and producing water at the city water treatment plant. It is estimated that the city has 35 percent to 40 percent unbilled water;

the table gives information for both percentages. The table assumes 6.0 MGY city water sales and the corresponding purchase and production amounts.

In Table 2 the city's annual cost savings is approximately \$40,000 for producing water at the city water treatment plant. That is, the city will

**Table 3: Additional Annual Cost to City and Estimated Resultant Residential Pricing**

Prices, Costs, and Savings	At 40% Unbilled Water			At 35% Unbilled Water		
	Purchase Water from PWWS D 23 with 78% agency loan/grant funding	City Water Treatment Plant Production with 50% agency loan/grant funding	City Water Treatment Plant Production without agency loan/grant funding	Purchase Water from PWWS D 23 with 78% agency loan/grant funding	City Water Treatment Plant Production with 50% agency loan/grant funding	City Water Treatment Plant Production without agency loan/grant funding
Annual Debt / Loan Payment	\$12,500	\$19,400	\$38,700	\$12,500	\$19,400	\$38,700
Water Purchase or Production cost	\$57,500	\$15,000	\$15,000	\$52,900	\$13,800	\$13,800
City Total Additional Annual Cost	\$70,000	\$34,400	\$53,700	\$65,400	\$33,200	\$52,500
Additional Residential Price for 1,000 gallons for Purchase or Production, and Debt at 6.0 MGY City Sales Annually	\$11.87	\$5.73	\$8.95	\$10.90	\$5.53	\$8.75
Present Residential Price	\$7.50	\$7.50	\$7.50	\$7.50	\$7.50	\$7.50
Estimated New Residential Price	\$19.17	\$13.23	\$16.45	\$18.40	\$13.03	\$16.25
Monthly Price for 3,000 gallons	\$79.51	\$61.69	\$71.35	\$77.20	\$61.09	\$70.75
Monthly Price for 5,000 gallons	\$117.85	\$88.15	\$104.25	\$114.00	\$87.15	\$103.25
Prices are in dollars per 1,000 gallons						
Past city records indicate 35% - 40% unbilled water			MGY is million gallons per year			
			Monthly base cost is \$22.00			

incur \$40,000 less in expenses by not purchasing water from PWWS D 23. This cost savings is approximately \$6.50 - \$7.00 less per 1,000 gallons purchased by the residents.

This cost savings is somewhat offset by the potential KDHE loan forgiveness and USDA grant for purchasing water. However, if the \$40,000 annual cost of

the purchased water is added to the annual payments, the cost of the water treatment plant project is much lower than if the city purchases water.

### Elk City decision

Through the leadership of Mayor McCollam and the evaluation and support of city engineer Willis Wilson, Elk City is choosing to upgrade the city water treatment plant. That upgrade will save money for the city residents as compared to purchasing water from another water supply.

However, without KDHE loan forgiveness and USDA grant funding, the city residents will pay much more for water. Table 3 shows the annual city cost and estimated pricing for purchasing water, for producing water by the city's treatment plant without subsidy, and producing water with agency subsidy. Pricing will be high for the water treatment plant without the subsidy, higher for purchasing water, and much lower for the water treatment plant with the subsidy.

It is also ironic and sad that the city residents will also have to make up \$15,000 - \$20,000 per year because USDA has provided funding so that the RWD customers presently buying water from Elk City can purchase water from the city of Independence. As a result, Elk City will pay more for water and the RWD customers may also end up paying more.

An application for a USDA loan and grant has been submitted in order to

## Where Elk City Ranks . . .

Elk City has been in violation of THMs and HAAs for many, many years. It was only in the last few years that a newly elected Mayor and supportive City Council have seriously addressed making improvements to the city water supply. During this time State and Federal agencies were looking at funding needed improvements but only improvements that result in the city purchasing water from another water supply. Both locations of purchasing water were with or from other entities already receiving monies from these agencies.

Because the Elk City situation involves compliance with federal drinking water standards, the Elk City project has been highly ranked. As recently as the February 1, 2017, in KDHE's Intended Use Plan (IUP) the Elk City project ranked the 5th highest out of 44 projects with 33 points.

In that IUP there were eight projects proposed to receive loan forgiveness. The highest ranked 6 projects in the IUP included Elk City and had to do with compliance in drinking water quality. In that IUP the highest ranked 6 projects accounted for \$3.56 million of the \$3.75 million in loan forgiveness. The Elk City project had a loan amount of \$1.141 million with a loan forgiveness of \$342,000. This project was for a "Transmission line to a new source."

In the July 1, 2017, KDHE IUP Elk City was taken off the list and some other projects on the IUP have been funded. The July 1 IUP has \$1.378 million in compliance related projects out of \$3.833 million of total loan forgiveness.

Elk City's compliance issue and the EPA Notice of Violation should rank the city's new submittal very high for loan and loan forgiveness. Along with the possibility of USDA Rural Development's loan and grant, Elk City should be able to bring the drinking water into compliance and provide a long term water supply in a less expensive way.



Operators Michael Kane and Lucas Raynor evaluate permanganate dosages for manganese removal from river water at Elk City's water treatment plant.

**USDA has had a good record in funding loans and grants to water suppliers that are in need for compliance purposes**

Water Supply Loan Fund, the USDA Water and Wastewater Loan and Grant program place high emphasis on affordability.

The Elk City residents will be fortunate if they receive some grant and loan forgiveness for choosing a project that brings the drinking water into compliance with federal requirements at much lower price to the residents.

assist the city in achieving compliance with federal drinking water regulations at a lower project cost and a much lower cost to residents. USDA has had a good record in funding loans and grants to water suppliers that are in

need for compliance purposes. Without the USDA funding, the residents' water cost will be even higher. But this is where RD "shines", that is, helping keep water cost affordable to the residents. Unlike the Kansas Public

*Pat McCool has worked as a consultant to KRWA since January 2004. He previously worked for KDHE for 30 years. Pat has a bachelor degree in Chemical Engineering and a masters degree in Environmental Engineering from the University of Kansas.*



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