

East Locust Creek Reservoir Water Rates Analysis

Water Resources Center
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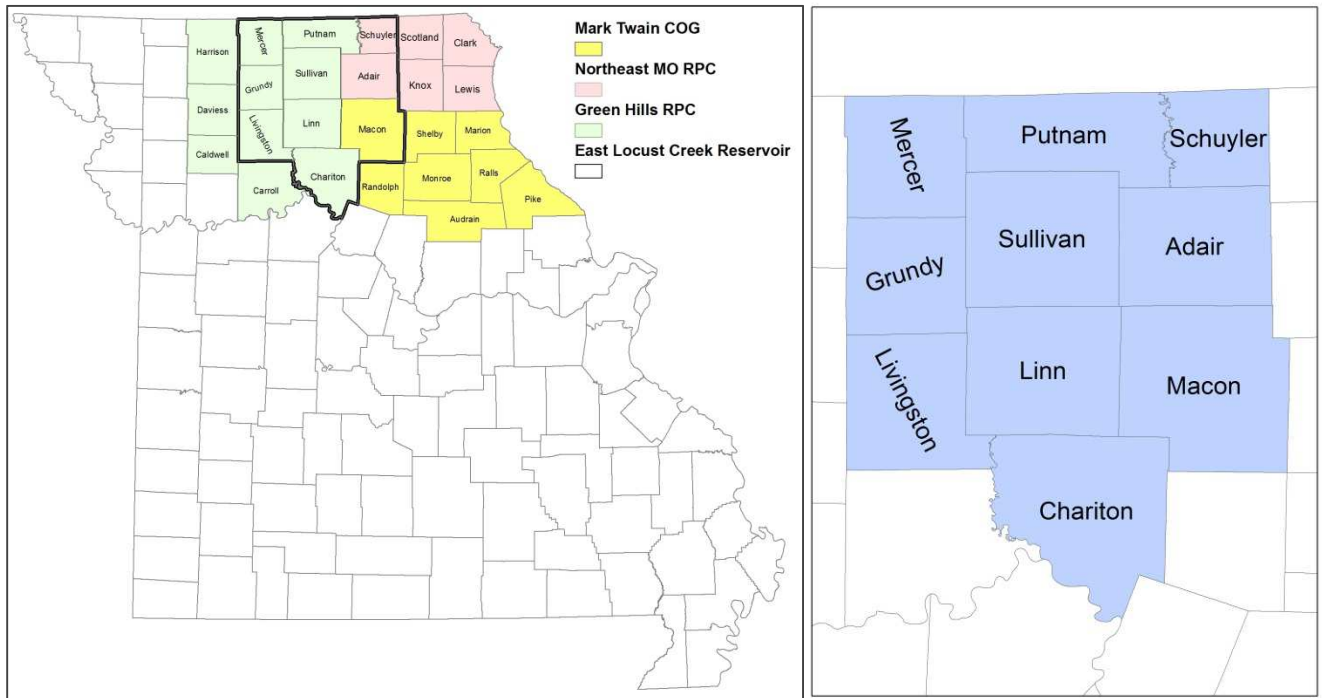
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East Locust Creek Reservoir Water Rates Analysis

The purpose of this report is to quantify the existing drinking water and sewer rates in the 10-county service region of the proposed East Locust Creek Reservoir. The reservoir service area (Figure 1) consists of all or portions of the 10 counties in three regional planning commission service areas; the Green Hills Regional Planning Commission (Green Hills RPC) area in North Central Missouri, the Northeast Missouri Regional Planning Commission (Northeast MO RPC), and the Mark Twain Regional Council of Governments (Mark Twain COG), as highlighted in the map below.

Figure 1. East Locust Creek Reservoir Service Area



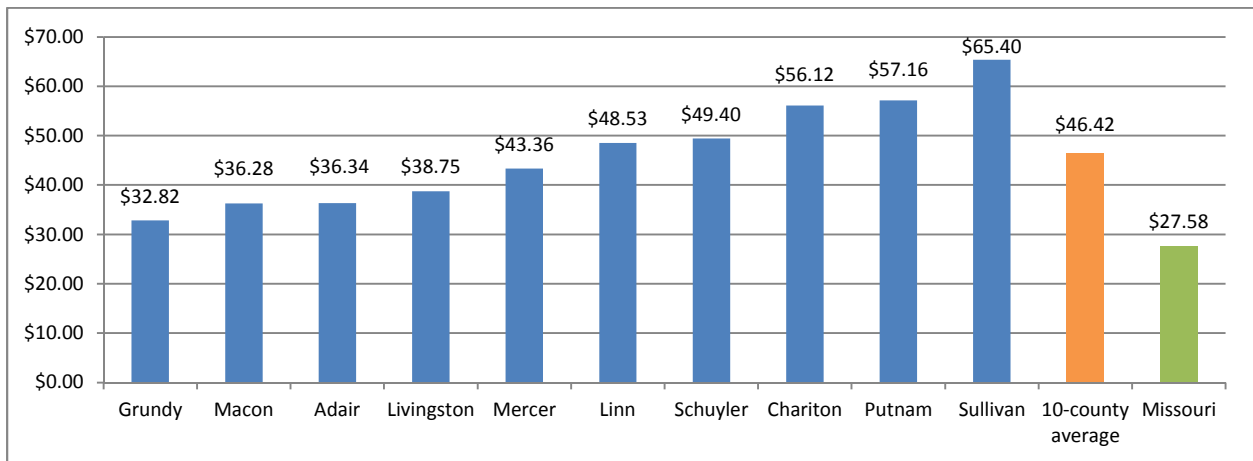
The drinking water rates for each County are compared to the 10-county average and the State of Missouri's average, in order to understand the difference in rates across the service area. To determine the rate impact on the population, the ratio of the rates to the median household income is

calculated on a county basis. The source of data for the drinking and wastewater rates are the surveys administered by Missouri Rural Water Association and Missouri Public Utility Alliance in 2014. The income data was obtained from the U.S. Census Bureau’s 2009-2013 American Community Survey’s median income in the past 12 months (\$1903).

County Drinking Water Rates

The 2014 monthly drinking water rates for 5,000 gallons in the 10-county region are presented in Figure 2. The water rates for all the 10 counties are above the state average (\$27.58). While Grundy, Macon, Adair, Livingston, and Mercer counties had water rates below the 10-county average (\$46.42), Linn, Schuyler, Chariton, Putnam, and Sullivan counties had water rates above the 10-county average.

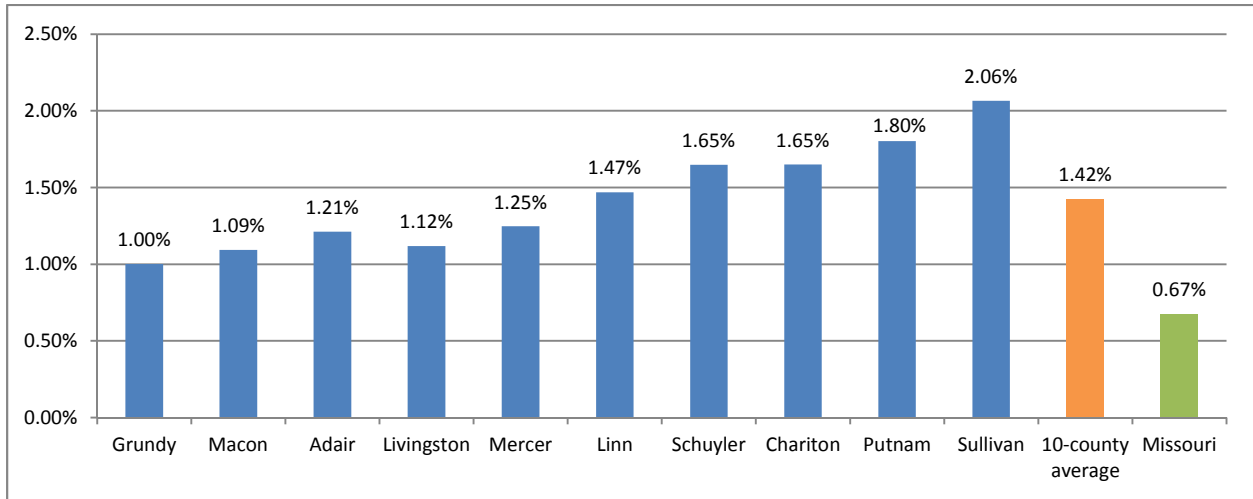
Figure 2. 2014 Drinking Water rates in the 10-county region



To determine the effect of drinking water rates on the households, a ratio of the drinking water rates to the median household income was calculated on a county basis (Figure 3). All the counties in the 10-county region spent more than the state average income (0.67%) on drinking water. While residents in Grundy, Macon, Adair, Livingston, and Mercer counties spent a lesser proportion of

their income on drinking water than the 10-county average (1.42%), residents in Linn, Schuyler, Chariton, Putnam, and Sullivan counties spent more than the 10-county average on drinking water.

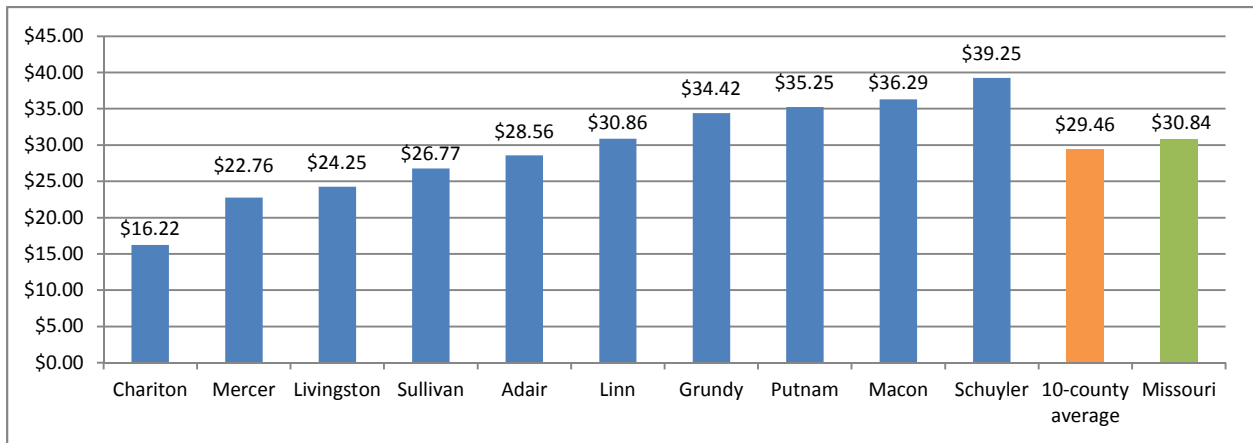
Figure 3. Drinking Water rates as a percent of median household income



County Wastewater Rates

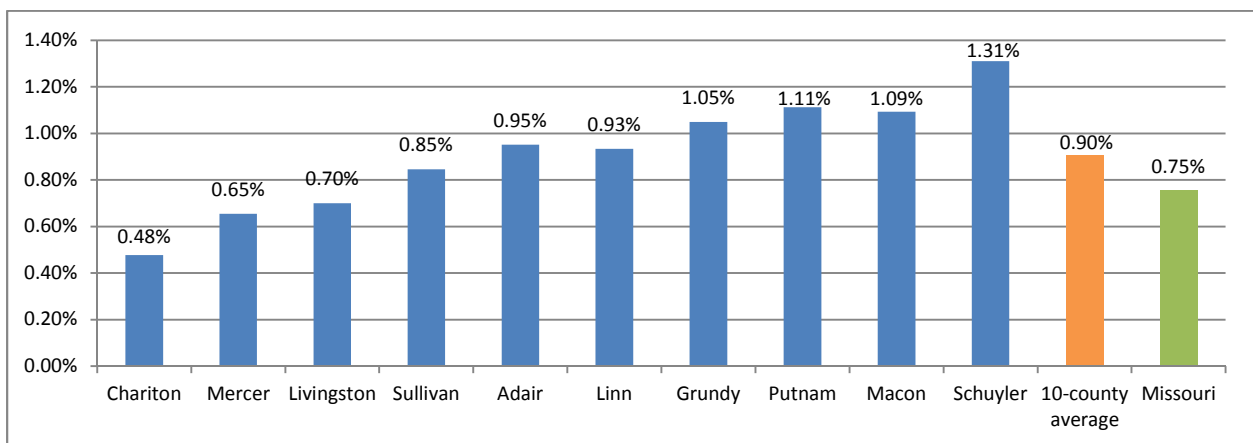
The 2014 minimum monthly wastewater rates for the 10-county region are presented in Figure 4. Chariton, Mercer, Livingston, Sullivan, and Adair counties had wastewater rates below the 10-county average rate (\$29.84) and the state average (\$30.84). Linn, Grundey, Putnam, Macon, and Schuyler counties had wastewater rates above the 10-county average and the state average.

Figure 4. 2014 Wastewater rates in the 10-county region



Similar to drinking water, we calculated a ratio of wastewater rates to the median household income on a county basis (Figure 5). Residents in Sullivan, Adair, Linn, Grundy, Putnam, Macon, and Schuyler counties spent more than the state average (0.75%) proportion of income on wastewater but Chariton, Mercer and Livingston counties spent less than the state average. Residents in six counties (Adair, Linn, Grundy, Putnam, Macon, and Schuyler) spent a relatively higher proportion of income than the 10-county average on wastewater rates while residents in four counties (Chariton, Mercer, Livingston, and Sullivan) spent a relatively lower proportion of income than the 10-county average.

Figure 5. Wastewater rates as a percent of median household income



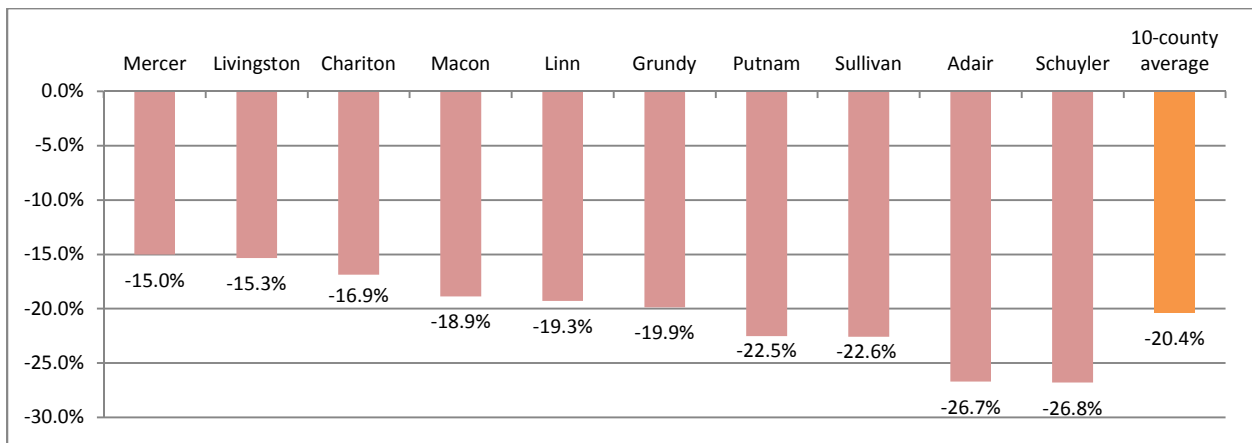
Income Measures

The median household incomes of the counties were compared to the state average to understand the differences across the 10-county region (Table 1). All the counties have a median household income below Missouri’s median household income (\$49,109). The median household income of four counties (Schuyler, Adair, Sullivan, and Putnam) was below the 10-county average (\$39,100) and that of six counties (Grundy, Linn, Macon, Chariton, Livingston, and Mercer) above the 10-county average. A graphic representation of the comparison of median household income to that of Missouri is presented in Figure 6.

Table 1. Income for the 10-county region

County	Median household income
Schuyler	\$35,954
Adair	\$36,000
Sullivan	\$38,014
Putnam	\$38,052
Grundy	\$39,349
Linn	\$39,645
Macon	\$39,846
Chariton	\$40,822
Livingston	\$41,580
Mercer	\$41,741
10-county average	\$39,100
Missouri	\$49,109

Figure 6. Comparison of median household income of 10-county region to Missouri



Summary and Conclusions

In summary, drinking water rates and wastewater rates in the 10-county region are relatively higher than the state of Missouri. The disparity in drinking water rates is relatively higher than wastewater rates across communities in the 10-county region. The communities in the 10-county region spend a relatively higher proportion of income on drinking water and wastewater than the rest of the state of Missouri. Although the average drinking water rate (\$27.58) for the state is below the average wastewater rate (\$30.84), the drinking water rates are higher than the waste water rates for eight counties (Adair, Chariton, Linn, Livingston, Mercer, Putnam, Schuyler, and Sullivan) in the 10-county region. Further, all the counties in the 10-county region have significantly lower median household income than the state median household income indicating a higher burden on these communities. The results of this study emphasize the need for a regional water system that reduces the burden of drinking water bills on low-income counties while ensuring a reliable and sustainable water supply.

Next Steps:

- 50-year projection of water rates with a target date of completion of the final study tentatively set at 3 months after the North Central Missouri Water Reliability Study is complete (Spring/Summer 2016)
- Interim estimate of construction, transmission costs, and operations, maintenance, and replacement costs (Allstate Consultants)
- Estimation of wholesale water rates and transmission delivery rates
- A robust water rates model will be built to evaluate impacts of various project management decisions on regional water rates and impacted communities