

Failure to comply with this Order is, by itself, a violation of Sections 640.131 and 644.076, RSMo. Continued noncompliance may result in the Department pursuing legal action for injunctive relief, additional administrative or civil penalties, a surcharge of 15% of the penalty described herein, ten percent interest on any amounts owed, attorney fees and costs, and/or any other remedy authorized by law, including but not limited to Sections 640.130, 640.131, 644.056, 644.076, and/or 644.096, RSMo.

FINDINGS OF FACT

1. Sheridan owns and operates Sheridan Community Public Water System (PWS), as defined by Section 640.102(6) RSMo and 10 CSR 60-2.015(8). Sheridan is located in Worth County, Missouri. Sheridan serves water for human consumption through pipes and or other constructed conveyances to an estimated 111 service connections and an estimated 200 people.

2. On October 24, 2008, the Department issued Missouri State Operating Permit (MSOP) No. MO-G640179 to Sheridan for the drinking water treatment plant (WTP). Filter backwash from the WTP discharges to a tributary to Platte River. Platte River and its tributaries are waters of the state as the term is defined by Section 644.016(27), RSMo.

3. On July 22, 2010, Department staff conducted an inspection of the WTP and observed that backwash water discharges from a small concrete box to waters of the state and that red sediment was deposited in Sheridan's street ditch for approximately 30 feet below the point of discharge. Additionally, Sheridan's annual reports and quarterly Discharge Monitoring Reports state that the backwash water is to be discharged to an open sewer.

4. Filter backwash, which contains lime sludge and chlorine, is a water contaminant as the term is defined in Section 644.016(24), RSMo.

5. Sheridan failed to meet the maximum contaminant level (MCL) for trihalomethane for the monitoring periods ending in September 2011, December 2011, September 2012, December 2012, June 2013, and September 2013.
6. MSOP No. MO-G640179 expired by its own terms on October 23, 2013. On September 12, 2013, the Department received Sheridan's application to renew the MSOP.
7. Sheridan failed to meet the MCL for haloacetic acids for the monitoring period ending in June 2014.
8. On December 10, 2014 and March 27, 2015, the Department offered Sheridan an Administrative Order on Consent consisting of a compliance schedule requiring Sheridan hire an engineer to design water system improvements to reduce Disinfection Byproduct (DBP) levels below MCLs.
9. Sheridan failed to meet the MCL for haloacetic acids during the monitoring period ending in September 2014.
10. On March 13, 2014 and November 13, 2014, Department staff conducted a compliance inspection of the WTP and documented the release of light brown effluent containing visible floating solids from the outfall during the filter backwash process.
11. On June 8, 2015, the Department notified Sheridan that its response to the proposed Administrative Order on Consent was overdue. Through discussions with the mayor he indicated that Sheridan would not sign the agreement.
12. On August 17, 2015, Department staff collected samples at Sheridan. The results showed levels of haloacetic acids (68.4 ug/L) and total trihalomethanes (108.0 ug/L) exceeding the MCL.

13. On August 27, 2015, the Department denied Sheridan's application to renew the MSOP due to Sheridan's failure to install a method to treat the filter backwash water.

14. This Order is necessary to compel compliance and/or to prevent or eliminate threats to human health and the environment.

STATEMENT OF VIOLATIONS

Sheridan has violated the following Missouri Safe Drinking Water Law and implementing regulations:

15. 10 CSR 60-4.090(1)(C) by failing to meet the MCL for haloacetic acids during the monitoring periods ending in June 2014 and September 2014.

Sheridan has violated the following Missouri Clean Water Law and implementing regulations:

16. Sections 644.051.1(1) and 644.076.1, RSMo, by causing pollution of a tributary to the Platte River, waters of the state, or placing or causing or permitting to be placed water contaminants in a location where it is reasonably certain to cause pollution of waters of the state.

17. Sections 644.051.1(2) and 644.076.1, RSMo, and 10 CSR 20-7.031(4) by discharging water contaminants into waters of the state which reduced the quality of such waters below the water quality standards established by the Missouri Clean Water Commission.

CORRECTIVE ACTIONS

Pursuant to Section 640.130 RSMo, the Department hereby orders Sheridan to complete each of the following corrective actions:

18. Within 30 days of the effective date of this Order, Sheridan shall obtain the services of a professional engineer, licensed to work in the State of Missouri, to evaluate system modifications necessary to bring Sheridan into compliance with the DBP rules, 10 CSR 60-4.090 and 10 CSR 60-4.094.

19. Within 60 days of the effective date of this Order, Sheridan shall submit, to the Department contact provided below, for review and approval, an interim plan to reduce disinfection byproducts while final system modifications are being completed. Within 30 days of receiving Department approval, Sheridan shall implement interim measures for reducing DBP's.

20. Within 90 days of the effective date of this Order, Sheridan shall submit engineering plans and specifications for water system modifications necessary for permanent/primary connection to Nodaway County PWSD #1. System modifications shall be designed in accordance with the *Minimum Design Standards for Missouri Community Water Systems* effective December 10, 2013. Plans and specifications shall be accompanied with an application for a "Permit to Construct" and submitted to the Department's Water Protection Program, Public Drinking Water Branch, Infrastructure and Engineering Section, P.O. Box 176, Jefferson City, Missouri 65102.

21. Within 18 months of the issuance of the construction permit for connection to Nodaway County PWSD#1, Sheridan shall complete construction of water system modifications as approved by the Department.

22. Within 21 calendar days of completion of construction, Sheridan shall submit verification that the existing treatment plant has been physically disconnected from the distribution system in accordance with the provided plans and specifications.

23. Within 21 calendar days of completion of construction, Sheridan shall submit a Statement of Work Completed Form, completed by a professional engineer registered in Missouri, to the Department's Water Protection Program, Public Drinking Water Branch, Infrastructure and Engineering Section, P.O. Box 176, Jefferson City, Missouri 65102.

24. Should Sheridan choose to maintain the existing wells as an emergency source then the wells shall be maintained in accordance with 10 CSR 23-3.020(2). Failure to maintain emergency wells may require the wells be permanently abandoned in accordance with 10 CSR 23-3.110.

25. Sheridan shall perform and certify completion of Public Notice in accordance with the requirements of 10 CSR 60-8.

26. Immediately upon the effective date of this Order, Sheridan is ordered to cease all discharges of filter backwash water from the WTP; to pump and haul filter backwash water from the WTP to a permitted wastewater treatment facility with the capacity to treat the water. Sheridan is ordered to continue pumping and hauling filter backwash water to prevent any discharges from the WTP until a permanent method to treat the filter backwash water is established and a new MSOP is issued by the Department or until the WTP is properly closed. Additionally, Sheridan is ordered to maintain pumping and hauling receipts and submit a copy of the receipts to the Department by the tenth day of the month following the month that the receipts are written.

The receipts shall include the date the filter backwash water was pumped; number of gallons pumped; and the name of the hauler and the permitted wastewater treatment facility accepting the filter backwash water.

27. Within 30 days of the effective date of this Order, Sheridan is ordered to submit written correspondence to the Department documenting Sheridan's plan to permanently disable or remove the WTP discharge pipe.

28. In the event Sheridan operates the WTP at any time in the future, Sheridan shall apply for and obtain a Missouri State Operating Permit for the discharge of WTP filter backwash water prior to any discharge from the WTP.

29. In the event that filter backwash water is discharged, Sheridan is ordered to report the discharge to the Department by phone at (816) 251-0700 between 8:00 a.m. and 5:00 p.m. Monday through Friday or to the Department's 24-hour spill line at (573) 634-2436 after hours, weekends, and holidays.

PENALTY

Pursuant to Section 640.131 RSMo and 10 CSR 60-6.070, the Department hereby orders Sheridan to pay administrative penalties for the above-referenced violations as follows:

30. The conduct referenced herein poses a major potential risk to human health, safety, and the environment, and was at least a moderate deviation from the Missouri Safe Drinking Water Law and its implementing regulations. Using the gravity-based matrix, the base penalty falls within a range of \$61.00 to \$100.00. The Department documented 60 days of violation of the Missouri Safe Drinking Water Law.

Sheridan failed to take appropriate corrective action after being informed of the requirements by the Department on at least three separate occasions, and also failed to respond to requests to settle. In light of these factors, an administrative penalty in the amount of \$2,000.00 is justified.

31. Within 60 days from the date of issuance of this Order, Sheridan shall pay to the Department an administrative penalty in the amount of \$2,000.00.

32. Such payment shall be made by check made payable to: *Worth County Collector as Treasurer of the Worth County School Fund*.

33. Such payment must be delivered to the Missouri Department of Natural Resources, Accounting Program, P.O. Box 477, Jefferson City, MO 65102, for forwarding to the Worth County Treasurer.

SUBMISSIONS

34. All other documentation submitted to the Department for compliance with this Order shall be submitted within the timeframes specified to:

Mr. Brent Weis
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, Missouri 65102-0176

OTHER PROVISIONS

35. Any request for an extension of time or to otherwise modify this Order may be considered on a case-by-case basis, if Sheridan makes a written request to the Department and otherwise provides appropriate justification and/or documentation to the Department in a timely manner. Any modification of this Order shall be in writing.

36. Compliance with this Order resolves only the specific violations described herein, and this Order shall not be construed as a waiver or modification or any other requirements of the Missouri Safe Drinking Water Law and regulations, MCWL and regulations, or any other source of law. Nor does this Order resolve any future violations of this Order or any law or regulation. Consistent with 10 CSR 60-6.070(6) and 10 CSR 20-3.010(5), this Order shall not be construed as satisfying any claim by the state or federal government for natural resource damages.

37. This Order shall apply to and be binding upon Sheridan and any of its agents, subsidiaries, successors, assigns, affiliates, or lessees, including the officers, agents, servants, corporations and any persons acting under, through, or for Sheridan. Any changes in ownership or corporate status, including but not limited to any transfer of assets or real or personal property, shall not relieve Sheridan of its obligation to comply with this Order.

38. For any plan or submittal from Sheridan that is required by this Order and subject to Department approval under this Order, the Department may approve, disapprove, require revisions, or otherwise modify any such plan or submittal. Any such Department decision shall be conveyed in writing to Sheridan. Disapproval may result in further orders or pursuit of other forms of relief by the Department. If the Department requires revisions, Sheridan shall submit a revised version of the plan or submittal within ten business days after receiving notice of the Department's required revisions, or within such other timeframe as the Department may specify. If the Department approves or modifies in writing such plan or submittal, it shall become enforceable under this Order, and Sheridan shall commence work and implement such approved or modified plan in accordance with the schedule and provisions contained therein.

COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, the Cost Analysis for Compliance (CAFCom), which addresses the obligations included within this Order, is attached hereto as Exhibit 1. This CAFCom does not address future improvements that may be necessary to comply with the MCWL or its implementing regulations. This Order requires Sheridan to pump and haul the filter backwash water to a permitted wastewater treatment facility until the WTP can dispose of the filter backwash water in compliance with the MCWL.

NOTICE OF APPEAL RIGHTS

If you are adversely affected by this decision, you may be entitled to pursue an appeal before the Administrative Hearing Commission (AHC) pursuant to 10 CSR 20-1.020 and Sections 640.013, 640.130, 640.131, 621.250, 644.056, and 644.079, RSMo.

To appeal, you must file a petition or notice of appeal with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal must be directed to:

Administrative Hearing Commission
United States Post Office Building, Third Floor
131 W. High Street
P.O. Box 1557
Jefferson City, MO 65102
Telephone: 573-751-2422
Fax: 573-751-5018
Website: ahc.mo.gov

SIGNATURE AUTHORITY

SO ORDERED this 1st day of June 2016 by:

DEPARTMENT OF NATURAL RESOURCES



John Madras, Director
Water Protection Program

- c: Mr. Mitch Roberts, Kansas City Regional Office
Mr. Tim Duggan, Missouri Attorney General's Office
Ms. Diane Huffman, Environmental Protection Agency
Missouri Clean Water Commission
Department of Natural Resources, Accounting Program

**Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)**

**Sheridan Water Treatment Plant
City of Sheridan
Missouri State Operating Permit # MO-G640179 (Expired)**

Section 644.145 RSMo requires the Department of Natural Resources (DNR) to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works.”

This cost analysis is based on data available to the Department and data obtained from readily available sources.

Current Facility Description:

The Sheridan Water Treatment Plant (WTP) treats water for human consumption for the city of Sheridan, Missouri. The WTP filters are routinely backwashed to remove particles separated out during the filtration process. The filter backwash water, which contains lime sludge and chlorine, is discharged from the WTP without first receiving treatment.

Flow evaluated:

Residential Connections:	111 ⁱ
Commercial Connections:	
Total Connections for this facility:	111 ⁱ

Requirements Now Being Enforced:

Missouri State Operating Permit (MSOP) No. MO-G640179 was issued to the city of Sheridan on October 24, 2008. MSOP No. MO-G640179 permitted the city to discharge filter backwash meeting effluent limits specified in the MSOP, operate a no-discharge sludge holding system for the WTP filter backwash and solids, and land apply the WTP sludge. On July 22, 2010, March 13, 2014, and November 13, 2014, department staff conducted inspections of the WTP and observed that filter backwash containing solids is discharged from the WTP to waters of the state. The MSOP expired on October 23, 2013. The WTP is not currently authorized to discharge. The city is required to pump and haul the filter backwash water to a permitted wastewater treatment facility until the WTP can dispose of the filter backwash water in compliance with the MCWL .

Anticipated Costs Associated with Complying with the New Requirements:

It is estimated that the city backwashes 500-600 gallons between two and three times each week. This would result in the city pumping and hauling minimum of 4,000 gallons and a maximum of 7,200 gallons of backwash water each month. With information obtained from several pumping companies across the state, the department estimates that it will cost the city \$0.17 per gallon to pump and haul backwash water for off-site treatment.

(1) A city’s financial capability and ability to raise or secure necessary funding;

Current User Rates:	\$0 ⁱⁱ
Municipal Bond Rating (if applicable):	N/A
Bonding Capacity: <i>(General Obligation Bond capacity allowed by constitution: cities=up to 20% of taxable tangible property sewer districts or villages=up to 5% of taxable tangible property)</i>	Unknown
Current outstanding debt for the city:	Unknown

Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure: N/A

Other indicators: Unknown

(2) Affordability of pollution control options for the individuals or households at or below the median household income level of the city;

A Current Costs

Current operating costs (exclude depreciation): Unknown

Current user rate: \$0ⁱⁱ

B Estimated Costs to Pump and Haul

Estimated cost to pump and haul each month: \$680 - \$1,224ⁱⁱⁱ

Estimated user cost per household per month: \$6.13 - \$11.03^{iv}

Median household income (MHI): \$40,812^v

Cost per household as a percent of median household income ^{**}: 0.18% - 0.32%^{vi}

^{**} The cost per household as a percent of median household income will be used throughout this analysis and as the residential indicator in Criteria 7 below

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

The discharge of effluent that does not comply with permitted effluent limitations contributes to the further impairment of the receiving stream and endangers the aquatic life in the stream, livestock, wildlife, and public health. Such discharges have the potential to contaminate lakes and streams causing serious water quality problems that negatively impact the beneficial uses listed in 10 CSR 20-7.031.

Total Suspended Solids (TSS) is a measure of the filterable solids present in a wastewater or effluent sample that includes dissolved solids and settleable solids. The concentration of total dissolved solids affects the water balance in the cells of aquatic organisms. An organism placed in water with a high concentration of solids will shrink somewhat because the water in its cells will move out. This will in turn affect the organism's ability to maintain the proper cell density, making it difficult to keep its position in the water column. It might float up or sink down to a depth to which it is not adapted, and it might not survive. Higher concentrations of suspended solids can serve as carriers of toxics, which readily cling to suspended particle. Total solids also affect water clarity. Higher solids decrease the passage of light through water, thereby slowing photosynthesis by aquatic plants. Water will heat up more rapidly and hold more heat; this, in turn, might adversely affect aquatic life that has adapted to a lower temperature regime. The city is required to eliminate the discharge from the WTP by pumping and hauling until a permanent method of disposing of the filter backwash water is approved.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

This information could not be found through readily available data.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

- (a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.
- (b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

Socioeconomic Data:

Potentially Distressed Populations – City of Sheridan	
Unemployment	2.4% ^{vii}
Adjusted Median Household Income (MHI)	\$40,812 ^v
Percent Change in MHI (2000-2013)	+100.5% ^{viii}
Percent Population Growth/Decline (2000-2013)	+69.2% ^{ix}
Change in Median Age in Years (2000-2013)	-11.1 ^x
Percent of Households in Poverty	15.7% ^{xi}
Percent of Households Relying on Food Stamps	22.6% ^{xii}

Opportunity for cost savings or cost avoidance:

If available, connection to a larger centralized water system in the area may be more cost effective for the city.

The city may apply for State Revolving Fund (SRF) financial support in order to help fund water and wastewater improvements. Other loans and grants also exist for which the city may be eligible. Contact information for the Department’s Financial Assistance Center (FAC) and more information can be found on the department’s website at <http://dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm>.

Opportunity for changes to implementation/compliance schedule:

The Administrative Order allows the city to request an extension of milestones in the Order’s schedule of compliance within 10 business days of the Order.

(6) An assessment of other investments and operating costs relating to environmental improvements and public health protection;

The department does not have any information related to the city’s investments in environmental improvements.

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, that evaluate the city’s financial capability to finance improvements to its wastewater collection and/or treatment systems;

Secondary indicators for consideration:

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond Rating Indicator	Above BBB or Baa	BBB or Baa	Below BBB or Baa	N/A
Overall Net Debt as a % of Full Market Property Value	Below 2%	2% - 5%	Above 5%	Unknown
Unemployment Rate ^{vii}	>1% below Missouri average of 4.1%	± 1% of Missouri average of 4.1%	>1% above Missouri average of 4.1%	3 City rate = 2.4% 2.4% – 4.1% = -1.7 -1.7/4.1 = -0.414 -0.414 x 100 = 41.4%

Median Household Income ^v	More than 25% above Missouri MHI (\$49,008)	± 25% of Missouri MHI (\$49,008)	More than 25% below Missouri MHI (\$49,008)	2 City MHI = \$40,812 \$40,812 - \$49,008 = -\$8,196 -\$8,196/\$49,008 = -0.167 -0.167 x 100 = -16.7%
Percent of Households in Poverty ^{*xi}	>10% below Missouri average of 11.7%	± 10% of Missouri average of 11.7%	>10% above Missouri average of 11.7%	1 City rate = 15.7% 15.7% - 11.7% = 4 4/11.7 = 0.342 0.342 x 100 = 34.2%
Percent of Households Relying on Food Stamps ^{*xii}	>5% below Missouri average of 10.6%	± 5% of Missouri average of 10.6%	>5% above Missouri average of 10.6%	1 City rate = 22.6% 22.6% - 10.6% = 12 12/10.6 = 1.132 1.132 x 100 = 113.2%
Property Tax Revenues as a % of Full Market Property Value ^{xiii}	Below 2%	2% - 4%	Above 4%	3 Tax Revenue = \$11,524 \$11,524/\$1,152,443 = 1.0%
Property Tax Collection Rate	Above 98%	94% - 98%	Below 94%	Unknown

Financial Capability (FCI) Indicators Average Score: 2
Pump and Haul Residential Indicator (RI, from Criteria #2 above): 0.18% - 0.32%

* Financial Capability Indicators are specific to the State of Missouri

Financial Capability Matrix:

Financial Capability Indicators Score from above ↓	Residential Indicator (User cost as a % of MHI)		
	Low (Below 1%)	Mid-Range (Between 1.0% and 2.0%)	High (Above 2.0%)
Weak (below 1.5)	Medium Burden	High Burden	High Burden
Mid-Range (1.5 – 2.5)	Low Burden	Medium Burden	High Burden
Strong (above 2.5)	Low Burden	Medium Burden	High Burden

Estimated Financial Burden for Pump and Haul: Low Burden

The resulting financial burden has been determined by comparing the Financial Capability Indicator score (FCI) with the Residential Indicator (RI) stated in Criteria #2. The cost associated with pumping and hauling the filter backwash water could result in a low financial burden placed on the city due to the Mid-Range FCI paired with the Low RI.

(8) An assessment of any other relevant local economic condition.

The Department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score.

The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri. The range covers 1,191 score points (-245 to 946).

Based on the assessment tool, the city of Sheridan was designated as a category 3 community. This means that the city's socioeconomic status and population is predicted to remain stable over time. Future changes in only a few of the 19 weighted factors could cause your community to experience either a rise or decline of population.

Conclusion and Finding

On August 27, 2015, the department denied the city's application to renew MSOP No. MO-G640179 due to the city's failure to install a method to treat the WTP discharge to comply with the permitted effluent limitations. Since the city's MSOP application was denied, the city is not authorized to discharge from the WTP.

The Department considered the eight (8) criteria presented in subsection 644.145.3 when evaluating the cost associated with the relevant actions. The department estimates that the resulting monthly user costs for pumping and hauling the filter backwash water from the WTP to a permitted wastewater treatment facility could be \$6.13 - \$11.03.

This determination is based on readily available data and may overestimate the financial impact on the city.

ⁱ Missouri Department of Natural Resources, Safe Drinking Water Information System, January 2016

ⁱⁱ The city of Sheridan does not own and/or operate a wastewater treatment system; therefore, the residents do not pay for sewer service.

ⁱⁱⁱ Cost per month = 4,000 gallons x \$0.17/gallon = \$680

Cost per month = 7,200 gallons x \$0.17/gallon = \$1,224

^{iv} Cost per household each month = \$680/111 connections = \$6.13

Cost per household each month = \$1,224/111 connections = \$11.03

^v American Community Survey, U.S. Census Bureau,

<http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

^{vi} (Cost per household per month/(MHI/12)) x 100 = Cost per household as a percent of MHI

(\$6.13/(\$40,812/12)) x 100 = 0.18%

(\$11.03/(\$40,812/12)) x 100 = 0.32%

^{vii} Missouri Department of Economic Development (November 2015)

<http://www.missourieconomy.org/indicators/unemp/index.stm>

^{viii} 2000 Median Household Income,

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_00_SF3_DP3&prodType=table; and American Community Survey, U.S. Census Bureau,

<http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

^{ix} Total Population Universe: Total Population American Community Survey B01003,

<http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

^x 2000 Median Age, Demographic Profile 1- Census 2000 – Summary File 1

<http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>; Median Age by Sex – American Community Survey 5-year Estimates – B01002,

<http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?ref=geo&refresh=t>

^{xi} Poverty data – American Community Survey,

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_13_5YR_S1701&prodType=table

^{xii} Food Stamps/SNAP ACS Community Survey 5-year Estimates - S2201,

<http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

^{xiii} Missouri State Auditor, 2014 Property Tax Rates, Report No. 2015-004, January 2015