



Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

## DEPARTMENT OF NATURAL RESOURCES

[www.dnr.mo.gov](http://www.dnr.mo.gov)

July 16, 2015

The Honorable LeRoy D. Benton, Mayor  
City of Fulton  
18 East 4<sup>th</sup> Street  
P.O. Box 130  
Fulton, MO 65251

RE: C295714-01 City of Fulton, MO – Wastewater Treatment Upgrades, Fulton Wastewater Treatment Facility, MO-0103331, Construction Permit No. CP0001727

Dear Mayor Benton:

The Department of Natural Resources' Water Protection Program has reviewed and approved the plans and specifications submitted by HDR Engineering, Inc. for the city of Fulton, MO. Please find enclosed Construction Permit No. CP0001727 and one set of approved specifications. One set of approved plans has been sent under separate cover by Mr. David C. Uhlig, P.E. You must maintain these with your official project file for a minimum of four years following completion of the project.

This permit will terminate 24 months from the date of issuance. In accordance with 10 CSR 20-6.010(4)(G), the department may grant an extension only one time. If you believe that an extension is necessary, you must submit a request and a justification in writing for the extension at least 30 days prior to the permit expiration date.

This construction permit does not change, alter, or modify any conditions or scheduling requirements of the August 21, 2013 Abatement Order on Consent between the city and the department.

Nothing in this permit removes any obligations to comply with county or other local ordinances or restrictions.

If you were adversely affected by this decision, you may appeal to have the matter heard by the Administrative Hearing Commission. To appeal, you must file a petition with the Administrative Hearing Commission 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 Administrative Hearing Commission.

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If you have any questions concerning this matter, please contact Mr. David C. Uhlig, P.E., of the Water Protection Program, at (573) 751-1302 or Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176.

Thank you for your efforts to help ensure clean water in Missouri.

Sincerely,

WATER PROTECTION PROGRAM



Cynthia M. Smith, P.E., SRF Project Engineering Unit  
Financial Assistance Center

CMS:duc

Enclosures

c: Mr. Brandon J. Coleman, Jr., P.E., HDR Engineering, Inc.  
Northeast Regional Office  
Ms. Joan Doerhoff, Water Protection Program, Compliance and Enforcement Section  
Mr. David C. Uhlig, P.E., Water Protection Program, Financial Assistance Center  
Mr. Terry Nelson, Water Protection Program, Financial Assistance Center

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



# CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

City of Fulton  
18 East 4<sup>th</sup> Street  
P.O. Box 130  
Fulton, MO 65251

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources.

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

July 16, 2015  
Effective Date

July 15, 2017  
Expiration Date

Sara Parker Pauley, Director, Department of Natural Resources

John Madros, Director, Water Protection Program

## **CONSTRUCTION PERMIT**

### **WASTEWATER TREATMENT FACILITY:**

The wastewater treatment facility project includes but is not limited to the following:

- addition of a drain structure to the equalization basin (EQB) to return wastewater to the treatment plant for processing
- replacement of the existing outfall structure in the EQB with an emergency over flow structure
- replacement of the existing aeration rotors with a fixed grid diffused aeration system, blowers, and submersible mixers
- installation of a third screw pump and a flow meter to convey and measure peak flows to the EQB for temporary storage
- construction of a new headworks structure with a mechanical bar screen and grit removal equipment
- construction of a new secondary clarifier
- replacement of the mechanisms in existing clarifier Nos. 1 and 2
- installation of flow metering equipment and structural improvements to the return and return/waste sludge lift station, modifying the effluent flow meter, construction of a ultraviolet disinfection structure
- modification of the existing effluent pumping station capacity and controls for automatic operation
- improvements to the site electrical distribution system and the standby power system
- modification of existing flow splitter boxes
- installation of a supervisory control and data acquisition (SCADA) system

The project includes the construction and installation of all necessary appurtenances to make a complete and usable wastewater treatment facility. The project will also include general site work appropriate to the scope and purpose of the project.

### **FINDING OF AFFORDABILITY:**

Pursuant to Section 644.145, RSMo, the department is required to determine whether a permit or decision is affordable and make a finding of affordability for each permit or decision.

An Affordability Determination and Finding was performed in accordance with RSMO §644.145 and is enclosed with this construction permit. The department finds the project is affordable with a medium economic burden to the community. See the attached document.

## PERMIT CONDITIONS:

The permittee is authorized to construct subject to the following conditions:

1. All construction shall be in accordance with the plans and specifications submitted by HDR Engineering, Inc. on June 1, 2015 and approved by the department on July 16, 2015.
2. Regulation 10 CSR 20-4.040(19)(B)1 requires that projects be publicly advertised, allowing sufficient time for bids to be prepared and submitted. Projects should be advertised at least 30 days prior to bid opening.
3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).
4. As per 10 CSR 20-4.040, all changes in contract price or time within the approved scope of work must be by change order in accordance with Section 20 of this rule.
5. This construction permit does not authorize discharge.
6. State and Federal Law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Northeast Regional Office per 10 CSR 20-7.015(9)(E)2.
7. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri State Operating Permit to discharge stormwater. The permit requires Best Management Practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits may only be obtained by means of the department's ePermitting system available online at [www.dnr.mo.gov/env/wpp/epermit/help.htm](http://www.dnr.mo.gov/env/wpp/epermit/help.htm).

See [www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm](http://www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm) for more information.

8. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of Jurisdictional Waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at (573) 751-1300 for more information.

See [www.dnr.mo.gov/env/wpp/401/](http://www.dnr.mo.gov/env/wpp/401/) for more information.

9. Upon completion of construction:
  - A. The city of Fulton, MO will become the continuing authority for operation, maintenance, and modernization of these facilities;
  - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D).

**APPENDIX #3 – AFFORDABILITY:**

**Missouri Department of Natural Resources  
Water Protection Program  
Affordability Determination and Finding  
(In accordance with RSMo 644.145)**

**City of Fulton**  
Residential Connections: 3,667  
Commercial Connections: 626, including 15 Industrial and 25 City  
Total Connections: 4,293

**Introduction & Scope**

Section 644.145 RSMo requires the Missouri Department of Natural Resources (Department) 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 or publicly-owned treatment works.”

The City of Fulton (City) has entered into Abatement Order on Consent AOC No. 2013-WPCB-1241 with the Department, which requires the City to complete improvements to its collection system that will eliminate inflow and infiltration (I/I) and reduce the amount of Sanitary Sewer Overflows (SSOs) the wastewater treatment facility (facility) experiences. These improvements also include eliminating all discharges from the facility’s peak flow clarifier. In addition, the City will construct upgrades to its current facility that will enable the effluent to comply with all permitted effluent limitations contained in draft Missouri State Operating Permit (MSOP) No. MO-0103331. The AOC further provides an extension of time for the City to comply with Escherichia Coliform and ammonia limits as set forth in draft MSOP No. MO-0103331. The City has explained to the Department that it is not beneficial for the City to invest its finances in completing the upgrades to its facility until the City determines its design flow after completing I/I improvements to the collection system.

This affordability finding covers the City’s initial obligations to implement its I/I Program and complete upgrades to its facility that will enable the effluent to comply with all permitted effluent limitations contained in draft MSOP No. MO-0103331.

The City plans to spend at least \$693,000.00 for capital improvement items to address I/I in its collection system. The 2013 Facility Plan improvements consist of improvements which will address issues identified in the Abatement Order on Consent (AOC) No. 2011-WPCB-1122. Improvements include the elimination of Outfall 002 as well as ammonia and disinfection improvements. Improvements are also designed to meet the current draft operating permit which reduces the allowable BOD and TSS limits. While this project will decrease the effluent ammonia levels and will be capable of being operated to achieve some denitrification, it will not significantly decrease the effluent Total Nitrogen (TN) and Total Phosphorus (TP) effluent levels. The expected capital cost of the project (in 2013 dollars) is \$12,980,000.

Once the 2013 Facility Plan improvements are operational, it is proposed that the receiving stream (Stinson Creek) be allowed to assimilate and that the Stinson Creek TMDL be re-evaluated to determine if biological nutrient removal is necessary. If required, the biological nutrient removal improvements will consist of a RAS selector basin, aeration basin baffle walls and mixers, replacement of RAS pumps, aeration basin distribution box replacement, an alum system, and site piping modifications. These improvements are expected to limit effluent concentrations to a quarterly average of 8 mg/L TN and 1.0 mg/L TP. The 2013 cost of the improvements is \$3,500,000. Biological nutrient removal improvements are proposed to be constructed by 2026. At a 3% cost inflation per year, the 2026 cost of the improvements is \$5,200,000.

Once the Tier I biological nutrient removal improvements are operational, it is proposed that Stinson Creek again be allowed to assimilate and that the Stinson Creek TMDL again be re-evaluated to determine if enhanced nutrient removal is necessary. If required, the enhanced nutrient removal improvements will consist of a denitrifying sand filtration facility, an intermediate pumping station, and associated site work and site piping. These improvements are expected to limit effluent concentrations to a quarterly average of 4 mg/L TN and 0.1mg/L TP. The 2013 cost of the improvements is \$7,500,000. Enhanced nutrient removal improvements are proposed to be constructed by 2035, if required. At a 3% cost inflation per year, the 2035 cost of the improvements is \$14,400,000.

A third tier of nutrient removal phase was considered but deemed impractical and unaffordable. Tier 3 would consist of running half of the effluent flow through a membrane treatment plant. The combined effluent would likely have limits of 2 mg/L TN and 0.05 TP (Striking a Balance Between Nutrient Removal and Sustainability<sup>1</sup>). This would require the installation of microfiltration and reverse osmosis (RO) membranes. Additionally, the RO brine would require disposal. The estimated capital cost for a membrane plant to treat half of Fulton's peak day flow would be approximately \$30-40 million dollars, in 2013 dollars, assuming deep well injection is an appropriate RO brine disposal method. The \$30-40 million dollars would be in addition to the disinfection and ammonia, Tier 1, and Tier 2 improvements, while representing very marginal nutrient removal (approximately 2 mg/L TN and 0.05 mg/L TP). Operating costs would double over the Tier 2 operating costs. The authors of the referenced paper cite that using RO to remove TN and TP is, "impractical due to high costs, significant impacts on GHG (greenhouse gasses), and brine disposal challenges." (pg 635).

<sup>1</sup>Falk MW, Reardon DJ, Jimenez J, Neethling JB. Water Environment Federation. Presented at the Nutrient Recovery and Management Conference, 2011.

**Statutory Criteria**

**(1) A community's financial capability and ability to raise or secure necessary funding**

Municipal Bond Rating (if applicable):	<u>No Bond Rating</u>
Bonding Capacity:	<u>\$10 Million</u>
(General Obligation Bond capacity allowed by constitution:	
Cities = up to 20% of taxable tangible property	
Sewer Districts = up to 5% of taxable tangible property)	
Current outstanding debt:	<u>\$16.915 Million<sup>1</sup></u>

As of January 2012, the City has an obligation to pay \$2.165 million to the State Revolving Fund (SRF) for sewer projects. The City estimates that the remaining sewer SRF loan, in the amount of \$2,165,000, will be paid off in 2021 and the Drinking Water SRF loan will be paid off in 2029.

The City operates the Wastewater Department on the monthly charge for the average residential household using 5,000 gallons per month. The City passed a 25% rate increase in December 2010 and an additional rate increase of 25% was passed in December 2011. This gave the City approximately \$400,000.00 annually to spend towards I/I improvements in its collection system. Currently, the sewer rate is \$32.86 a month, not including a half-cent sales tax from the City's Capital Improvement Plan, which is approximately \$6.50 a month for sewer, and an additional \$6.50 per month for drinking water. According to the City, this rate structure is sufficient to pay for the I/I Improvements. Therefore the City has demonstrated financial capability to raise and secure the necessary funding.

**(2) Affordability of pollution control options for the individuals or households of the community**

Current annual operating costs (exclude depreciation):	<u>\$1,226,843.00</u>
Current user rate:	<u>\$39.36</u>
Estimated capital cost of pollution control options:	<u>\$33,273,000.00</u>
Annual costs of additional after 2016 upgrades are completed	<u>\$1,600,000.00</u>
Annual costs of additional after 2026 upgrades are completed	<u>Unknown</u>
Annual costs of additional after 2036 upgrades are completed	<u>Unknown</u>
Estimated resulting monthly user rate after the 2016 upgrades:	<u>47.03</u>
Estimated resulting monthly user rate after the 2036 upgrades:	<u>\$73.21</u>
Adjusted Median Household Income:	<u>\$44,303.00</u>
Resulting User Rate as a percent of Median Household Income:	<u>1.98%</u> (does not include future operational cost increases for Tiers 1 and 2 for nutrient removal)

	Financial Impact	Residential Indicator (Usage Rate as a percent of Median Household Income)
	Low	Less than 1% MHI
	Medium	Between 1% and 2% MHI
X	High	Greater than 2% MHI, (The percentage of MHI as calculated above does not consider operational costs of nutrient removal therefore it is assumed that the percentage is greater than 2%)

The residential user rate is 1.98% of MHI and will be a high burden for most customers.

<sup>1</sup> Per e-mail from City on 3/14/2012

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

Under the Missouri Clean Water Law and the Federal Clean Water Act, SSOs are prohibited because they cause public health and environmental hazards. Effective June 30, 2010, a revision to 10 CSR 20-7.015, Effluent Regulations eliminated the provision that allowed facilities to discharge effluent from their peak flow clarifiers, because these discharges bypass secondary treatment, a requirement of the Clean Water Act. Additionally, draft MSOP No. MO-0103331 requires disinfection to treat bacteria, and establishes stringent effluent limitations on the receiving stream, Stinson Creek, a Class C receiving stream, which is protected for warm water aquatic life, human health-fish consumption, whole body contact recreation, and livestock and wildlife watering. Stinson Creek was also on the 2008 Missouri 303(d) list for low dissolved oxygen and organic sediment and is now subject to the Stinson Creek TMDL. The City plans to spend approximately \$12,980,000 toward I/I improvements and facility upgrades over the next 13 years.

**(4) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations:**

Potentially Distressed Populations	
Unemployment <sup>2</sup> for [Fulton, Callaway County]	6.8%
Adjusted Median Household Income <sup>3</sup> [Fulton, Callaway County]	\$44,303.00
Percent Population Growth/Decline <sup>4</sup> (1990-2010)	+25.8%
Percent of Households in Poverty <sup>5</sup>	13.0%

**(5) An assessment of other community investments relating to environmental improvements**

The City has no other obligations under this AOC.

**(6) An assessment of factors set forth in the United States Environmental Protection Agency's (EPA) guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards**  
See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.

<sup>2</sup> Unemployment data from Missouri Department of Economic Development for December 2011 - <http://www.missourieconomy.org/pdfs/urel1112.pdf>

<sup>3</sup> Median Household Income data from American Community Survey – Median income in the past 12 months – <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

Note: The median household income is adjusted for inflation according to the method suggested in the EPA CSO guidance for financial capability assessment and schedule development (<http://www.epa.gov/npdes/pubs/csoc.pdf>)

<sup>4</sup> 2010 Census Population Data - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>  
2000 Census Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls> 1990 Census Population Data – <http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf>

<sup>5</sup> Poverty data – American Community Survey - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>

Secondary indicators for consideration:

Socioeconomic, Debt and Financial Indicators

Indicators	Strong (3 points)	Mid-Range (2 points)	Weak (1 point)	Score
Bond rating indicator <sup>6</sup>	Above BBB or Baa	BBB or Baa	Below BBB or Baa	N/A <sup>6</sup>
Overall net debt <sup>7</sup> as a % of full market property value <sup>8</sup>	Below 2% 1.58%	2% - 5%	Above 5%	3
Unemployment Rate	>1% below Missouri's average	± 1% of Missouri's average	>1% above Missouri's average	2
Median household income	More than 25% above Missouri's MHI	± 25% of Missouri's MHI	More than 25% below Missouri's MHI	2
Property tax revenues <sup>9</sup> as a % of full market property value	Below 2% 0.5%	2% - 4%	Above 4%	3
Property tax collection rate <sup>10</sup>	Above 98% 106.4%	94% - 98%	Below 94%	3

Average Score for Financial Capability Matrix: 2.6

Residential Indicator (from Criteria #2 above): 1.98% (The percentage of MHI as calculated above does not consider operational costs of nutrient removal therefore it is assumed that the percentage is greater than 2%)

Financial Capability Matrix

Financial Capability Indicators Score from above ↓	Residential Indicator (User rate 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	Low Burden	X Medium Burden

Suggested Financial Burden:

Medium Burden

(7) *An assessment of any other relevant local community economic condition:*

Fulton's population grew 25.8% from 1990-2010. In terms of economic strength, Callaway County is fairly above average when compared to other counties in the State. The percentage of labor force is 2% above the State average, the per capita wealth<sup>11</sup> is 2% above the State average, and per capita income is 23% below the State's average.

In terms of retail sales, Callaway County loses retail customers to surrounding counties and the County residents spend less than the state average on retail goods and services. The buying power index of Callaway County residents is about average when compared to the rest of the regional economy<sup>12</sup>.

**Conclusion**

As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in a medium burden with regard to the community's overall financial capability and a financial impact for most individual customers/households.

**New Permit Requirements or Requirements Now Being Enforced:**

The proposed new permit requirements may require the design, construction and operation of new technology. The facility is required to; upgrade to meet TMDL effluent limits for Carbonaceous Biochemical Oxygen Demand, Total Suspended Solids, Total Nitrogen and Total Phosphorus.

<sup>6</sup> City of Fulton has never had a bond rating (per Mayor Benton on 3/14/2012)

<sup>7</sup> 2010 Fulton Comprehensive Annual Financial Report (Table 13 – page 73)

<sup>8</sup> 2010 Fulton Comprehensive Annual Financial Report (Table 13 – page 73)

<sup>9</sup> 2010 Fulton Comprehensive Annual Financial Report (Table 9 – page 69)

<sup>10</sup> 2010 Fulton Comprehensive Annual Financial Report (Table 9 – page 69)

<sup>11</sup> Per capita wealth is calculated by taking a sum of appraised value of residential property, mobile homes and motor vehicles and this sum is then divided by County population.

<sup>12</sup> Source: [http://www.missourieconomy.org/pdfs/central\\_wia\\_retail\\_trade\\_analysis.pdf](http://www.missourieconomy.org/pdfs/central_wia_retail_trade_analysis.pdf)



APPENDIX 5 – STINSON CREEK TOTAL MAXIMUM DAILY LOAD IMPLEMENTATION MEMORANDUM OF UNDERSTANDING:

**Stinson Creek Total Maximum Daily Load Implementation Memorandum of Understanding**

The parties to this Stinson Creek Total Maximum Daily Load ("TMDL") Implementation Memorandum of Understanding ("MOU") are the Missouri Department of Natural Resources ("MDNR") and the City of Fulton, Missouri ("City"). The City and MDNR may collectively be referred to as the "Parties".

1. **Background.** The City of Fulton is the continuing authority for the Fulton Wastewater Treatment Facility ("WWTF"), which is operated under the Missouri State Operating Permit MO-0103331 ("NPDES permit"). The Parties entered into an Abatement Order on Consent ("AOC") on August 2, 2011 that includes obligations under a wastewater collection system and treatment facilities correction and management program. The Parties revised the AOC to modify schedules for program implementation which was fully executed on August 21, 2013.

The Fulton WWTF discharges to Stinson Creek, which was first listed on Missouri's Section 303(d) List of impaired waters in 1994 due to low dissolved oxygen and violation of general criteria due to high volatile suspended solids levels. MDNR and the United States Environmental Protection Agency ("USEPA") developed a TMDL to ultimately restore stream conditions and attain water quality standards. MDNR placed the proposed Stinson Creek TMDL on public notice on September 28, 2009. TMDL comments were provided by the City, the Missouri Public Utilities Alliance ("MPUA"), and USEPA with concerns over various scientific and implementation issues. The final Stinson Creek TMDL was approved by the USEPA on May 26, 2010. On January 11, 2013, MDNR placed the Fulton WWTF NPDES permit renewal on public notice, which was consistent with the approved TMDL implementation plan. USEPA made an interim objection to the draft NPDES permit during the public notice period, requesting that MDNR demonstrate that the draft permit is consistent with TMDL wasteload allocation ("WLA") assumptions. The City's draft NPDES permit was revised and went through public notice from June 28 to July 29, 2013 and the Parties entered into a revised AOC and this MOU to resolve USEPA's interim objection.

2. **Total Maximum Daily Load Implementation Overview.** This MOU establishes phased implementation of the Stinson Creek TMDL using an adaptive management approach, in which plant improvements are followed by water quality studies and assessments until beneficial uses are restored, subsequent TMDL phases are developed, or the City implements the final phase of nutrient removal upgrades (Tier 2 as referenced in the June 2013 draft NPDES permit). Revisions to the TMDL, including revised wasteload and load allocations, may be undertaken in the event that new dissolved oxygen criteria and/or nutrient criteria are established for Stinson Creek. Any new site-specific DO or nutrient criteria would need to be approved by the Missouri Clean Water Commission ("MCWC") and USEPA.

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3. **Implementation of Wastewater Treatment Facility Improvements.** Each phase of WWTF improvements are established within this MOU and are consistent with the renewed NPDES operating permit and the City's investment and financing in wastewater infrastructure. The NPDES permit's schedule of compliance may be modified upon application if the City is ~~not~~ financially incapable of implementing the next phase of upgrades. Alternatively, a discharger-specific variance may be granted upon application if the City is found to be financial incapable to implement the next phase of upgrades. This permit may be reopened and modified if changes become necessary to assure compliance with Missouri's Water Quality Standards.

The City will develop a UAA Factor 6 variance related to the nutrient WLAs that are beyond the limits of technology and/or affordability. The variance will be based upon the sequences covered in this MOU and will be consistent with the process within the 10 CSR 20-7.031 rulemaking proposed in June 2013. The variance will resolve the difference between the existing TMDL WLAs and the final limits established in the permit for enhanced nutrient removal (Tier 2 as referenced in the June 2013 draft NPDES permit). The variance will be presented to the MCWC for approval. If approved by the MCWC, MDNR will submit the variance to USEPA for approval.

4. **Stream Assessments, Impairment Decisions, and Subsequent TMDL Phases.** After each phase of WWTF improvements, MDNR will perform an in-stream water quality study to determine whether applicable water quality standards have been attained in Stinson Creek.
  - a. Attainment will be assessed by: (1) comparing monitoring results to the state's numeric criteria for dissolved oxygen and narrative criteria for the protection of aquatic life, as translated using the Missouri Stream Condition Index (MSCI) scale described in the February 2002 MDNR document "Biological Criteria for Wadeable/Perennial Streams in Missouri" (or subsequently developed methods agreed to by the department and the city) and (2) applying procedures described in that version of the MDNR "Methodology for the Development of the Section 303(d) List" in effect at the time of the assessment. MSCI scores will be compared to those of reference streams applicable to Stinson Creek (e.g., size, geology, etc.) contained within the Ozark/Moreau/Loutre Ecological Drainage Unit. The City will pursue continued implementation consistent with the phased approach outlined in this Agreement if Stinson Creek is found to continue to be impaired. If narrative criteria for the protection of aquatic life are attained and statewide dissolved oxygen criteria are not attained, then these findings may form the basis for development of site-specific dissolved oxygen criteria. MDNR will work collaboratively with the City to design and schedule monitoring activities. The Parties will meet to present and discuss stream assessment findings at least 90 days prior to MDNR's public notice of the impairment decision during the next biennial Integrated Missouri Water Quality Report (305(b) Report).

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- b. If Stinson Creek is determined to be attaining applicable water quality standards, then MDNR will remove Stinson Creek from Category 4 during the next 305(b) Report and no further additional actions shall be required under this MOU or the TMDL.
  - c. Phased limits and improvements may also be modified if new data or analyses reasonably demonstrate that water quality standards may be attained by different receiving water quality targets or improvements (e.g., enhanced nitrogen removal may be delayed if enhanced phosphorus removal is demonstrated to lead to attainment of water quality standards or habitat improvements may result in use attainment). In addition, phased limits and improvements may be modified if a demonstration is made that factors other than point source nutrient or organic loading cause the impairment (e.g., habitat, nonpoint source pollution or impacts, etc.).
5. **MOU Implementation Schedule.** The Parties will implement the MOU commitments within the timeframes included in Attachment 1. Schedules may be modified due to various circumstances including, but not limited to, monitoring delays due to adverse hydrologic conditions, sequencing of the next 305(b) Reports, time requirements for criteria or TMDL approval, and MDNR or City funding limitations.
6. **NPDES Permit Modifications and MOU Termination.** If MOU timelines are adjusted during implementation, MDNR will modify the NPDES permit schedule of compliance upon the application for modification by the City. In addition, MDNR will modify the City's NPDES permit upon application to establish a longer schedule of compliance, when practical, if MDNR does not perform stream assessments, the Parties disagree on assessment findings, or if USEPA disapproves the use attainment decision or a subsequent TMDL phase. If water quality standards are attained, the City will apply for NPDES permit modification to remove future permit limits and schedules of compliance. In addition, the effluent limitations and requirements that resulted in water quality standards attainment will be maintained. MDNR will not unreasonably withhold any permit modification requests under these provisions. This MOU will be fulfilled and terminated after water quality standards are attained and permit modification is complete. Should future upgrades be necessary, the City may utilize new socio-economic data to evaluate affordability and seek additional variance from water quality standards.

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7. **Correspondence.** Correspondence or documentation with regard to the conditions outlined in this MOU shall be directed to:

Mr. Bill Johnson  
City of Fulton, Missouri  
East 4<sup>th</sup> Street  
P.O. Box 130  
Fulton, MO 65251

Mr. John Madras  
Water Protection Program  
Missouri Department of Natural Resources  
P.O. Box 176  
Jefferson City, MO 65102

Agreed to this 15<sup>th</sup> day of March, ~~2013~~ 2014



John Madras, Director  
Water Protection Program  
Missouri Department of Natural Resources

Agreed to this 8 day of January, ~~2013~~ 2014



The Honorable Mayor LeRoy Benton  
City of Fulton, Missouri

ATTACHMENT 1 - MOU IMPLEMENTATION SCHEDULE

Task	Responsible Party	Target Completion Period
WWTF Improvements – 2013 Facility: Planning, Design, Construction, & Start-Up (Covered by AOC) <ul style="list-style-type: none"> <li>• Bypass (Outfall 002) Elimination</li> <li>• Preliminary Treatment Upgrades</li> <li>• Ammonia Removal</li> <li>• Additional Clarification</li> <li>• Disinfection</li> </ul>	City	Present - Dec 2016
Establish Water Quality Improvement Goals & Beneficial Use Assessment	MDNR & City	Present - Dec 2014
Develop Quality Assurance Project Plan (QAPP) for Water Quality Studies	MDNR & City	Aug 2016 – Dec 2016
This timeframe will be needed allow the stream to respond to the first round of plant upgrades that are required to occur as a result of the AOC between Department and the City		Dec 2016-May 2017
*Field Water Quality Studies: Dependent upon Stream Response & Hydrologic Conditions. Stream studies to evaluate the first round of upgrade will be concluded around September of 2018. Given the 305(b) report is a biennial report occurring on even number years, the first instance of removal from the report would occur after September 2018 would be in 2020. If at the end of September 2018 the Department decides that the data collected does not support removal from the 305(b) report the facility will proceed to the next stage of the schedule which is biological nutrient removal facility planning and design.	MDNR & City	May 2017 – Jan 2019
Remove the impairment from the biennial Integrated Missouri Water Quality Report (305(b) Report) if data supports use attainment.	MDNR & City	Jan 2019 - Dec 2020
WWTF Improvements – Biological Nutrient Removal Facility Public Outreach, Engineer Selection, Facility Planning, Bond Election, Financing, Planning, & Design, & Bidding (Tier 1 as referenced in the June 2013 draft NPDES permit, only if needed depending upon use attainment)	City	Dec 2020– May 2024
WWTF Improvements – Biological Nutrient Removal Contract Award, Construction & Start-Up (Tier 1 as referenced in the June 2013 draft NPDES permit, only if needed depending upon use attainment)	City	May 2024 - Dec 2026
Develop Revise Quality Assurance Project Plan (QAPP) for Water Quality Studies based upon prior water quality study findings and any new data quality objectives.	MDNR & City	Jan 2027 – May 2027
*Field Water Quality Studies: Dependent upon Stream Response & Hydrologic Conditions. Stream studies to evaluate the first round of upgrade will be concluded around September of 2028. Given the 305(b) report is a biennial report occurring on even number years, the first instance of removal from the report would occur after September 2028 would be in 2030. If at the end of September 2028 the Department decides that the data collected does not support removal from the 305(b) report the facility will proceed to the next stage of the schedule which is biological nutrient removal facility planning and design.	MDNR & City	May 2027 – Jan 2029
Remove the impairment from the biennial Integrated Missouri Water Quality Report (305(b) Report) if data supports use attainment	MDNR & City	Jan 2029 - Dec 2030
WWTF Improvements – Enhanced Nutrient Removal Public Outreach, Engineer Selection, Facility Planning, Bond Election, Financing, Design, Bidding Facility Planning & Design (Tier 2 as referenced in the June 2013 draft NPDES permit, only if needed depending upon use attainment)	City	Dec 2030 – May 2033
WWTF Improvements – Enhanced Removal Contract Award, Construction & Start Up (Tier 2 as referenced in the June 2013 draft NPDES permit, only if needed depending upon use attainment)	City	May 2033 – Dec 2035

\* If the Department determines that the data from the field water quality studies does not support use attainment, the next phase of WWTF improvements shall be implemented as soon as practical.