



2018 303(d) List  
Responses to Public Comments

Public Notice  
July 1, 2017 – October 13, 2017

Missouri Department of Natural Resources  
Water Protection Program  
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## Introduction

Pursuant to 40 CFR 130.7, States, Territories and authorized Tribes must submit biennially to the U.S. Environmental Protection Agency (USEPA) a list of water-quality limited (impaired) segments, pollutants causing impairment, and the priority ranking of waters targeted for Total Maximum Daily Load (TMDL) development. The Missouri Department of Natural Resources (department) placed the draft 2018 303(d) List of Impaired Waters on public notice from July 1, 2017 to October 13, 2017. All original comments received during this public notice period are available online on the department's website at <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>. Comments were received from the following groups or individuals:

- I. [Boone County](#)
- II. [City of Springfield](#)
- III. [City of Columbia](#)
- IV. [City of Rolla](#)
- V. [Kansas City Water Services](#)
- VI. [Missouri Public Utility Alliance \(MPUA\)](#)
- VII. [Missouri Municipal League](#)
- VIII. [LimnoTech](#)
- IX. [City of Wentzville](#)
- X. [Metropolitan St. Louis Sewer District \(MSD\)](#)
- XI. [Association of Missouri Cleanwater Agencies](#)
- XII. [HDR.Inc](#)
- XIII. [United States Environmental Protection Agency \(USEPA\) Region 7](#)
- XIV. [City of Independence](#)
- XV. [Dr. Barry Poulton](#)

This document summarizes and paraphrases the comments received, provides the department's responses to those comments, and notes any changes made to the final proposed 2018 303(d) List of Impaired Waters or supporting documentation. A priority ranking of impaired waters for TMDL development will be produced and placed on public notice following approval of the 2018 303(d) List by the Missouri Clean Water Commission.

## Summary of department actions as a result of public comments

### A. Waters removed from the Draft 2018 303(d) List (These water were not previously listed in 2016)

1. [Little Bonne Femme Creek \(WBID 1003\)](#) – Dissolved Oxygen
2. [Fenton Creek Tributary \(WBID 4120\)](#) – *Escherichia coli*
3. [Martigney Creek \(WBID 4109\)](#) – Chloride
4. [Straight Fork \(WBID 959\)](#) – *Escherichia coli*
5. [Grand Glaize Creek \(WBID 2184\)](#) – *Escherichia coli* SCR use only
6. [Gravois Creek \(WBID 1713\)](#) – *Escherichia coli* SCR use only

### B. Additional Waters Proposed to De-listed.

1. [Wilsons Creek \(WBID 2375\)](#) – *Escherichia coli*
2. [Trib to Red Oak Creek \(WBID 3360\)](#) – Dissolved Oxygen
3. [Trib to Red Oak Creek \(WBID 3361\)](#) – Dissolved Oxygen
4. [Strother Creek \(WBID 2751\)](#) – Lead in water
5. [Strother Creek \(WBID 2751\)](#) – Lead in sediment
6. [Strother Creek \(WBID 2751\)](#) – Nickel in sediment
7. [Strother Creek \(WBID 2751\)](#) – Zinc in water
8. [Strother Creek \(WBID 2751\)](#) – Zinc in sediment
9. [Strother Creek \(WBID 3965\)](#) – Arsenic in sediment
10. [Strother Creek \(WBID 3965\)](#) – Lead in sediment
11. [Strother Creek \(WBID 3965\)](#) – Nickel in sediment
12. [Strother Creek \(WBID 3965\)](#) – Zinc in sediment
13. [Strother Creek \(WBID 3965\)](#) – Zinc in water
14. [Big Creek \(WBID 2916\)](#) – Lead in Sediment
15. [McCoy Creek \(WBID 214\)](#) – Dissolved Oxygen
16. [River des Peres \(WBID 1710\)](#) – Dissolved Oxygen
17. [Mattese Creek \(WBID 3596\)](#) – Chloride
18. [Creve Coeur Creek \(WBID 1703\)](#) – Dissolved Oxygen

### C. Waters to be added to the Proposed 2018 303(d) List

1. [Big River \(WBID 2080\)](#) – Zinc in sediment
2. [Fenton Creek \(WBID 3595\)](#) – *Escherichia coli*
3. [West Fork Black River \(WBID 2755\)](#) – Zinc in water

### D. Other Changes

1. [Peruque Creek \(WBID 218\)](#) – Cause changed from Fishes Bioassessments/Unknown to Aquatic Macroinvertebrate Bioassessments/Unknown.

## Comments and Responses

### I. Boone County comments

#### Little Bonne Femme Creek (WBID 1003)

*Boone County requested that the department include more recent data collected by the department in 2017.*

#### Department Response

The department incorporated the 2017 data into the assessment worksheet. This new data provided additional samples with DO measurements above 5 mg/l. Incorporating the additional data shows that the water no longer meets the Listing Methodology Document definition of an impaired water. The department will remove this water from the proposed 2018 303(d) list.

### II. City of Springfield comments

#### Pearson Creek (WBID 2373)

*The City of Springfield finds the biological impairment of Pearson Creek to be questionable based on inappropriate use of reference stream. Additionally, toxicity data provided by the City of Springfield provides strong evidence that there are no toxicity issues in Pearson Creek.*

#### Department Response

Pearson Creek was originally placed in Category 5 during the 2002 assessment cycle due to reduced aquatic biodiversity caused by unknown toxicity. In 2011 a TMDL was developed by EPA, but this TMDL was challenged in court and was later vacated. During the 2014 listing cycle, the department requested the water body be removed from Category 5 and placed into Category 3B (i.e., available data suggested noncompliance but there is insufficient data to conduct a full assessment in accordance with the Listing Methodology Document) based on a public comment received from the City of Springfield that the aquatic macroinvertebrate community was inappropriately assessed against biological reference streams provided within Table I of Missouri's Water Quality Standards. EPA rejected the delisting of Pearson Creek because it was originally listed as impaired for a documented decline in biotic diversity due to unknown pollutants. This cause of impairment was not dependent upon an assessment of the state's Macroinvertebrate Stream Condition Index (MSCI) score procedure (<http://dnr.mo.gov/env/wpp/waterquality/docs/2014-epa-approval-memo.pdf>). Additional studies by the department have been conducted for biotic diversity in Pearson Creek. The diversity has improved, but still shows signs of declined biodiversity and potential habitat issues. See the department's latest study here: <http://dnr.mo.gov/env/esp/wqm/docs/PearsonCreekFY15BioReport.pdf> )

Department staff reviewed the toxicity information and agrees the data is promising with respect to water quality status of the creek. However, the data does not include corresponding sediment data to show the concentrations of PAHs, metals, or other toxins that were used for toxicity tests. These toxicity tests also do not address the biodiversity of the stream. Lacking this information the department would not be confident in recommending a de-listing decision.

**Jordan Creek (WBID 3374)**

*The City of Springfield finds that the department’s rationale for listing Jordan Creek as impaired does not meet the weight of evidence requirements outlined in the 2018 Listing Methodology Document (LMD). The draft list identifies Jordan Creek as impaired based upon sediment samples that exceeded the 150 percent of the Probable Effect Concentration (PEC) threshold for Polycyclic Aromatic Hydrocarbon (PAH) compounds. However, sediment data alone is not sufficient for listing Jordan Creek as impaired.*

**Department Response**

Department staff reviewed the toxicity information and agrees the data is promising with respect to water quality status of the creek. However, the data does not include corresponding sediment data to show the concentrations of PAHs, metals, or other toxins that were used for toxicity tests. These toxicity tests also do not address the biodiversity of the stream. Lacking this information the department would not be confident in recommending a de-listing decision.

In reviewing the available data during the 2018 listing cycle, the Category 5 (303(d) List) decision was retained by the department. As stated, the geometric mean of sediment data was assessed following the 2018 LMD at 150 percent of the PEC thresholds for PAH compounds. The 150 percent PEC versus the 100 percent PEC threshold provides a conservative assessment of sediment toxicity and its potential for toxicity to aquatic life. In reviewing the sediment data collected in 2013, the geometric mean for the PAH compounds exceeded the 150 percent thresholds. Using 150% of the PECs allows for some unknown variability in regards to toxicity to aquatic life.

**Wilsons Creek (WBID 2375)**

*The City of Springfield provided a comment on Wilsons Creek for polycyclic aromatic hydrocarbons (PAHs) based upon additional data resulting in a geometric mean less than 150 percent of the probable effect concentration (PEC) threshold. Additionally, toxicity data made available on EPA’s Storage and Retrieval (STORET) website provides strong evidence that there are no toxicity issues in Wilsons Creek. In addition the city noted an error with the assessment worksheet and the listing for bacteria.*

### Department Response

Department staff reviewed the information and agrees the data is promising with respect to water quality status of the creek. However, the data does not include corresponding sediment data to show the concentrations of PAHs that were used for toxicity tests. Lacking this information the department would not be confident in recommending a de-listing decision.

The department agrees that there was an error with the proposed 2018 list to include Wilsons Creek as impaired for *Escherichia coli* (*E.coli*). The department will propose to delist Wilsons Creek (WBID 2375) for *E.coli*.

### **North Branch Wilsons Creek (WBID 3811)**

*The City of Springfield provided a comment stating it finds the department's supporting rationale for listing North Branch Wilsons Creek as impaired does not meet the weight of evidence requirements outlined in the 2016 LMD. North Branch Wilsons Creek is impaired for zinc based on sediment data that exceeds 150 percent of the PEC. Missouri's LMD states the department will use a weight of evidence analysis for evaluating all narrative criteria and in the case of toxic chemicals occurring in benthic sediment rather than water, the numeric thresholds used to determine the need for further evaluation will be the PEC. Accordingly, exceedances of PEC values should only be used to place water bodies in Category 3B of the LMD, or as part of the weight of evidence analysis. Without additional data or biological or toxicity data, there is insufficient evidence that North Branch Wilsons Creek is impaired. The city requests North Branch Wilsons Creek be delisted.*

### Department Response

The USEPA placed North Branch Wilsons Creek on the 2014 303(d) List for elevated zinc in sediment following the 2014 LMD approved by the Clean Water Commission on May 2, 2012. New information is not available and a lack of biological data does not provide good cause to delist the water. This water body will be prioritized for additional monitoring.

### **All Four Streams (Pearson, Jordan, Wilson, & North Branch Wilson)**

*The City of Springfield provided comments on the use of additional relevant physical and chemical data (ESBs, TOC ΣSEM-AVS/FOC/AVS, NIOCs). Additional comments were provided requesting the department to categorize all four streams as 5-alternative or 4B giving evidence of the City's IP and MOU as justification for giving low priority for TMDL development for these four streams.*

## Department Response

The use of the additional physical and chemical data is not addressed in the 2018 Listing Methodology Document. It is, however, addressed in the 2020 Listing Methodology Document. In the 2020 Listing Methodology Document, as well as during the biological workgroup and public availability meetings, the department discussed the use of this additional data, specifically the use of Total Organic Carbon (TOC). The department stated during the May 9<sup>th</sup>, 2017 meeting that the variability of TOC was too high, there is relatively little TOC data available, and additional information about the contaminant binding capacity relationship to organic carbon is not available (i.e. we don't know if there is a linear relationship throughout the full range of TOC). The department stands by its policy of not normalizing for TOC. See the department's responses to public comment on the proposed 2020 Listing Methodology Document for additional information. Additional chemical analysis procedures mentioned by the City of Springfield in their comment are addressed in the 2020 Listing Methodology Document.

For streams to be placed in Categories 5-alternative or 4B the department expects a watershed based approach will be used to ensure water quality standards are met in a timely fashion. In order to use the 5-alternative or 4B approach the appropriate information must be provided to the department that demonstrates that the approach used will be as or more effective than a TMDL. The department will have a public meeting on January 18, 2018 to discuss these items, and additionally will have further information posted on the 303(d) website about these requirements. Both will be available prior to and during the public notice of the department's TMDL priority list, which will occur after the Clean Water Commission approves the proposed 2018 303(d) List. The department will consider these comments when generating the draft TMDL priorities list.

### **III. City of Columbia comments**

#### **TMDL Priority for Columbia area impaired streams**

*The City of Columbia provided comments requesting the department to categorize Hinkson Creek (WBIDs 1007 & 1008), Hominy Branch (WBID 1011), Grindstone Creek (WBID 1009), Gans Creek (WBID 1004), and Little Bonne Femme Creek (WBID 1003) as 5-alternative or 4B giving evidence of the City's IMP as justification for giving low priority for TMDL development.*

## Department Response

For streams to be placed in Categories 5-alternative or 4B the department expects a watershed based approach will be used to ensure water quality standards are met in a timely fashion. In order to use the 5-alternative or 4B approach the appropriate information must be provided to the department that demonstrates that the approach used will be as or more effective than a TMDL.

The department will have a public meeting on January 18, 2018 to discuss these items, and additionally will have further information posted on the 303(d) website about these requirements. Both will be available prior to and during the public notice of the department's TMDL priority list, which will occur after the Clean Water Commission approves the proposed 2018 303(d) List. The department will consider these comments when generating the draft TMDL priorities list.

**IV. City of Rolla comments**

**TMDL Priority for Rolla area impaired streams**

*The City of Rolla provided comments requesting the department to categorize Dutro Carter Creek (WBIDs 3569 & 3570), Burgher Branch (WBID 1865), Little Dry Fork (WBIDs 1863 & 1864), and Little Beaver Creek (WBID 1529) as 5-alternative or 4B giving evidence of the City's IMP as justification for giving low priority for TMDL development.*

Department Response

For streams to be placed in Categories 5-alternative or 4B the department expects a watershed based approach will be used to ensure water quality standards are met in a timely fashion. In order to use the 5-alternative or 4B approach the appropriate information must be provided to the department that demonstrates that the approach used will be as or more effective than a TMDL. The department will have a public meeting on January 18, 2018 to discuss these items, and additionally will have further information posted on the 303(d) website about these requirements. Both will be available prior to and during the public notice of the department's TMDL priority list, which will occur after the Clean Water Commission approves the proposed 2018 303(d) List. The department will consider these comments when generating the draft TMDL priorities list.

**V. Kansas City Water Services comments**

**TMDL Priority for Blue River Watershed impaired streams**

*The Kansas City Water Services provided comments requesting the department to categorize Blue River watershed impaired streams as 5-alternative or 4B giving evidence of the City's BRIWP as justification for giving low priority for TMDL development.*

Department Response

For streams to be placed in Categories 5-alternative or 4B the department expects a watershed based approach will be used to ensure water quality standards are met in a timely fashion. In order to use the 5-alternative or 4B approach the appropriate information must be provided to the department that demonstrates that the approach used will be as or more effective than a TMDL.

The department will have a public meeting on January 18, 2018 to discuss these items, and additionally will have further information posted on the 303(d) website about these requirements. Both will be available prior to and during the public notice of the department's TMDL priority list, which will occur after the Clean Water Commission approves the proposed 2018 303(d) List. The department will consider these comments when generating the draft TMDL priorities list.

**Brush Creek (WBID 3986)**

*The Kansas City Water Services provided comments regarding Brush Creek (WBID 3986) and the PAHs impairment. They cited lack of biological data as well as the use of procedures mentioned in the 2020 Listing Methodology Document, specifically the use of Total Organic Carbon (TOC) and Total PAHs.*

Department Response

Brush Creek was originally put on the 2014 303(d) List by USEPA using our Listing Methodology Document at the time. Since Brush Creek has been listed previously, the department must show good cause to delist the stream. Lack of any biological data does not meet those requirements.

The 2018 draft list was generated using the protocols outlined in the 2018 Listing Methodology Document. Unfortunately, the department cannot use procedures from a Listing Methodology Document that has not been approved by the Clean Water Commission (i.e. 2020 Listing Methodology Document) to generate the current list. Also, within the 2020 Listing Methodology Document the department states that it will not normalize for TOC with the explanation presented in the 2020 Listing Methodology Document as well as at the May 9<sup>th</sup>, 2017 Biological Workgroup meeting.

**VI. Missouri Public Utility Alliance (MPUA) comments**

**East Fork Locust Creek (WBID 608)**

*The MPUA provided comments regarding the E.coli impairment of East Fork Locust Creek and the source being identified as municipal point source discharges. The MPUA also added that the Milan WWTP has been upgraded to include UV disinfection and that this upgrade occurred after the data in the assessment worksheet, therefore the data in the assessment worksheet is no longer valid.*

### Department Response

The department appreciates the MPUA's comment. The assessment unit was not aware that the upgrade had occurred at the Milan WWTP facility. Unfortunately, without additional data that has been collected after the upgrade, the department cannot show that the impairment has been corrected and delist this stream. Because of this new information, the department will prioritize sampling to assess current stream conditions. The department will include this facility in our future QAPPs as resources allow.

### **Little Beaver Creek (WBID 1529)**

*The MPUA provided comments regarding the E.coli impairment of Little Beaver Creek and the source being identified as municipal point source discharges. The MPUA also added that the Rolla SW WWTP has been upgraded to include UV disinfection and that this upgrade occurred after the data in the assessment worksheet, therefore the data in the assessment worksheet is no longer valid.*

### Department Response

The department appreciates the MPUA's comment. The assessment unit was not aware that the upgrade had occurred at the Rolla SW WWTP. Unfortunately, without additional data that has been collected after the upgrade, the department cannot show that the impairment has been corrected and delist this stream. Because of this new information, the department will prioritize sampling to assess current stream conditions. The department will include this facility in our future QAPPs as resources allow.

## **VII. Missouri Municipal League comments**

### **Humansville WWTP – Brush Creek (WBID 1371)**

*The Missouri Municipal League believes the current conditions of the stream have improved since the time the data was collected, therefore the data used for assessment is no longer valid.*

### Department Response

The department agrees the data used for assessment is old. The department will investigate when the last time the treatment plant was upgraded. If the facility has been upgraded to address the impairment, the department will prioritize sampling on Brush Creek (WBID 1371).

Unfortunately, without evidence of an upgraded facility as well as data collected after the upgrade, the department cannot show that the impairment has been corrected and delist this stream. The department will include this facility in our future QAPPs as resources allow.

**Monett WWTP – Clear Creek (WBID 3239)**

*The Missouri Municipal League believes the current conditions of the stream have improved since the time the data was collected, therefore the data used for assessment is no longer valid.*

Department Response

The department agrees the data used for assessment is old. The department will investigate when the last time the treatment plant was upgraded. If the facility has been upgraded to address the impairments, the department will prioritize sampling on Clear Creek (WBID 3239).

Unfortunately, without evidence of an upgraded facility as well as data collected after the upgrade, the department cannot show that the impairment has been corrected and delist this stream. The department will include this facility in our future QAPPs as resources allow.

**Owensville WWTP – Red Oak Creek and Tributary to Red Oak Creek (WBIDs 2038, 3360 & 3361)**

*The Missouri Municipal League provided comments that the current assessment does not follow the 2018 Listing Methodology Document protocol and should be re-assessed.*

Department Response

The department agrees that the waters needed to be re-assessed. In doing so, the department has determined that the Tributary to Red Oak Creek (WBIDs 3360 & 3361) should be delisted. Red Oak Creek will remain on the 2018 303(d) list and the assessment worksheet has been updated on the department’s 303(d) website. The department is currently collecting more data on Red Oak Creek and will re-assess this water during the 2020 assessment cycle.

**Montgomery City East WWTF – Elkhorn Creek (WBID 189)**

*The Missouri Municipal League believes the current conditions of the stream have improved since the time the data was collected, therefore the data used for assessment is no longer valid.*

Department Response

The department agrees some of the data used for assessment is old. The last time the treatment plant was upgraded was in 2012. The department will prioritize future sampling on Elkhorn Creek (WBID 189). Unfortunately, without data collected after the facility upgrade, the department cannot show that the impairment has been corrected and delist this stream. The department will include this facility in our future QAPPs as resources allow.

### **Versailles WWTF – Straight Fork (WBID 959)**

*The Missouri Municipal League provided comments regarding the E.coli impairment of Straight Fork. The Missouri Municipal League asks that the new 2018 listing be held off until more data is collected since the Versailles WWTF was upgraded in 2016 and UV disinfection was installed and went online in June of 2015.*

#### Department Response

The department agrees that since the listing for this water is new this cycle, the listing is inappropriate given that it is not representative of current conditions. The Versailles WWTF was upgraded in 2016 to include UV disinfection of its effluent. Also, the most recent monthly DMRs (May –October of 2017) show the WWTF is meeting its permit limits as well as Water Quality Standards for *Escherichia coli*. The department will remove Straight Fork from the proposed 2018 303(d) list for *Escherichia coli* and will prioritize the water for future monitoring to ensure instream water quality is being maintained. Straight Fork will remain on the proposed 2018 303(d) list for low dissolved oxygen until further data is collected. The department will include this facility in our future QAPPs as resources allow.

## **VIII. LimnoTech comments**

### **Courtois Creek (WBID 1943)**

*LimnoTech provided comments that a treatment plant for the Doe Run Viburnum facility was constructed and became operational in October of 2016. A previous discharge to a tributary of Indian Creek was also eliminated. This facility discharges into Indian Creek, which flows into Courtois Creek. LimnoTech also provided data for one sediment chemistry sample collected in September of 2017. LimnoTech requested that Courtois Creek be delisted.*

#### Department Response

The department appreciates the information on the updated facility and the submittal of QA acceptable data from LimnoTech. This allows the department to have evidence to stratify the data. Unfortunately, only one sample was collected and the department needs at least three samples to make an assessment for sediment. Not stratifying the data still leads to a geometric mean above 150% of the PEC value for lead. The new data looks promising, but until more data is collected or received, Courtois Creek will remain on the proposed 2018 303(d) list. The department will include this stream in our future QAPPs as resources allow. The department is willing to continue working with third parties for data collection in a timelier manner.

### **Indian Creek (WBID 1946)**

*LimnoTech provided comments that a treatment plant for the Doe Run Viburnum facility was constructed and became operational in October of 2016. A previous discharge to a tributary of Indian Creek was also eliminated. This facility discharges into Indian Creek, which flows into Courtois Creek. LimnoTech also provided data for one sediment chemistry sample and one water chemistry sample both collected in September of 2017. LimnoTech requested that Indian Creek be delisted.*

#### **Department Response**

The department appreciates the information on the updated facility and the submittal of QA acceptable data from LimnoTech. This allows the department to have evidence to stratify the data. Unfortunately, only one sample for each media type (water and sediment) was collected and the department needs at least three samples to make an assessment for sediment. Not stratifying the sediment data still leads to a geometric mean above 150% of the PEC value for lead. The department also needs more than one water sample to assess against Water Quality Standards. The new data looks promising, but until more data is collected or received, Indian Creek will remain on the proposed 2018 303(d) list for lead and zinc in sediment. There is a TMDL for lead and zinc in water, so Indian Creek will not appear on the proposed 2018 303(d) list for those pollutants. The department will include this stream in our future QAPPs as resources allow. The department is willing to continue working with third parties for data collection in a timelier manner.

### **Crooked Creek (WBID 1928)**

*LimnoTech provided comments that discharges for the Casteel Mine were eliminated in May of 2016 and the discharges for the BRRF were eliminated in March of 2016. LimnoTech also provided data for one sediment chemistry sample collected in September of 2017. LimnoTech requested that Crooked Creek be delisted.*

#### **Department Response**

The department appreciates the information on the elimination of discharges and the submittal of QA acceptable data from LimnoTech. This allows the department to have evidence to stratify the data. Unfortunately, only two samples were collected since the elimination of discharges and the department needs at least three samples to make an assessment for sediment. Not stratifying the data still leads to a geometric mean above 150% of the PEC value for cadmium and above the PEC for lead. The new data looks promising, but until more data is collected or received, Courtois Creek will remain on the proposed 2018 303(d) list. The department will include this stream in our future QAPPs as resources allow. The department is willing to continue working with third parties for data collection in a timelier manner.

**Strother Creek (WBID 2751 & 3965)**

*LimnoTech provided comments that a new treatment plant was constructed at the Doe Run Buick Mine facility, which discharges into Strother Creek. The new plant began operation in November of 2015. LimnoTech also provided two water chemistry sample and six sediment chemistry samples (including one duplicate sample) all collected in September of 2017. LimnoTech requested that Strother Creek be delisted.*

Department Response

The department appreciates the information on the updated facility and the submittal of QA acceptable data from LimnoTech. This allows the department to have evidence to stratify the data. The new data provides enough information to show that Strother Creek (WBIDs 2751 & 3965) is no longer impaired for arsenic, nickel, lead, and zinc in sediment. With the elimination of the outfall, the reduction in sediment contamination, as well as water samples showing levels meeting Water Quality Standards, the department believes this shows that Strother Creek (WBIDs 2751 & 3965) is no longer impaired for lead and zinc in water. The department will propose to delist Strother Creek (WBIDs 2751 & 3965) from the 2018 303(d) list for lead in water and sediment, arsenic in sediment, nickel in sediment, and zinc in water and sediment.

**Bee Fork (WBID 2760)**

*LimnoTech provided comments that Doe Run previously discharged to Bee Fork from the Fletcher Mine and Mill facility, but the discharge was eliminated in December of 2016. LimnoTech also provided one water chemistry sample collected in September of 2017. LimnoTech requested that Bee Fork be delisted.*

Department Response

The department appreciates the information on the removal of a discharge and the submittal of QA acceptable data from LimnoTech. This allows the department to have evidence to stratify the data. Unfortunately, only one sample was collected and the department needs at least three samples to make an assessment for water. The new data looks promising, but until more data is collected or received, Bee Fork will remain on the proposed 2018 303(d) list. The department will include this stream in our future QAPPs as resources allow. The department is willing to continue working with third parties for data collection in a timelier manner.

**Big Creek (WBID 2916)**

*LimnoTech provided two water chemistry samples and three sediment chemistry samples (one duplicate) all collected in September of 2017. LimnoTech requested that Big Creek be delisted.*

Department Response

The department appreciates the submittal of QA acceptable data from LimnoTech. Because no information was provided that would allow the department to stratify the data, the department must consider this data with the previous data collected. Re-assessment including the data provided by LimnoTech resulted in a sediment lead geometric mean below the 150% PEC threshold. The sediment cadmium geometric mean was still above the 150% PEC threshold. Big Creek has a TMDL for cadmium, lead, and zinc. Because these pollutants have TMDLs, they do not appear on the 303(d) list. The new data still shows chronic exceedances for cadmium and lead. The department will propose to delist Big Creek for lead in sediment. Big Creek will remain on the proposed 303(d) list for cadmium in sediment. Big Creek will also remain in Category 4A for cadmium and lead in water.

**IX. City of Wentzville Comments**

**McCoy Creek (WBID 214)**

*The City of Wentzville provided comments that a 319 project ended in 2015 to do improvements to the Dry Branch watershed. Dry Branch enters into McCoy Creek just upstream of where the data for the assessment was collected. The most recent data collected in 2016 shows improvement in water quality.*

Department Response

The department appreciates the information regarding the completion date of the project. Additionally, the department notes the Wentzville Water Reclamation Plant underwent upgrades in 2014-2015 which would allow stratifying the data. The department concurs that the 2016 data shows no exceedances of the dissolved oxygen criterion as well as a reduction in the average amount of nutrients. The department will propose to delist McCoy Creek from the 2018 303(d) list.

**Peruque Creek (WBID 218)**

*The City of Wentzville provided comments that the older data is no longer representative of current conditions and Peruque Creek should be delisted for low dissolved oxygen (DO). The City also requested clarification on the Fishes Bioassessments/ Unknown listing, noting that biological data was not present in the assessment worksheet.*

## Department Response

The department updated the assessment worksheet to include biological data. The most recent biological study in 2014-2015 showed DO issues as well as a complete lack of *plecoptera* from the invertebrate samples. This study also compared the recent data to the 2002 data and showed lower scores for the more recent data. Peruque Creek will remain on the proposed 2018 303(d) list for low dissolved oxygen and, the department will change the listing from Fishes Bioassessments/Unknown to Aquatic Macroinvertebrate Bioassessments/Unknown.

## X. Metropolitan St. Louis Sewer District (MSD) comments

### 1. Bacteria Data Qualifiers

*MSD provided comments requesting clarification of the use of data qualifiers in regards to bacteria and other data.*

#### Department Response

The department appreciates the comment from MSD. This topic has been discussed in past public meetings, and because the clarifications would not constitute changes to the actual methods of assessment, the department will clarify how data qualifiers are handled for assessments in the proposed 2020 Listing Methodology Document. Please consult that document for further information and details.

### 2. Assessment Worksheets Linked in 303(d) list/Sorting

*MSD provided comments that they would like to have links to the assessment worksheets available in the 303(d) list as well as sorting in a more efficient manner.*

#### Department Response

The department appreciates the feedback on the organization of, and the access to, the data. The department will continue to work on making the data more user friendly.

### 3. Fenton Creek tributary (WBID 4119)

*MSD provided comments that one bacteria result is causing the exceedance of the Secondary Contact Recreation use. Additionally MSD provided comments that the samples were collected during elevated flows.*

#### Department Response

The department does not agree that the sample collected on 5/11/2015 is driving the exceedance of the secondary contact use. Five of the seven samples exceed the WQS criterion for secondary contact use. Additionally, the occurrence of elevated flow should not discount the validity of the data. The use should still be protective during times when recreation can reasonably be assumed to occur. Flood or peak flow (flows exceeding 95<sup>th</sup> percentile flow) conditions would be an example of where it would be unreasonable to assume the use could occur (physical safety concerns outweigh human health concerns). Fenton Creek Tributary (WBID 4119) will remain on the proposed 2018 303(d) list.

#### **4. Fenton Creek tributary (WBID 4120)**

*MSD provided comments that one bacteria result is causing the exceedance of the Whole Body Contact Recreation use. Additionally MSD provided comments that the samples were collected during elevated flows.*

#### Department Response

The department agrees that the sample collected on 5/11/2015 is driving the exceedance of the whole body contact use. However, the occurrence of elevated flow should not discount the validity of the data. The use should still be protective during times when recreation can reasonably be assumed to occur. Flood or peak flow (flows exceeding 95<sup>th</sup> percentile flow) conditions would be an example of where it would be unreasonable for the use to occur (physical safety concerns outweigh human health concerns). Fenton Creek Tributary (WBID 4120) will be removed from the proposed 2018 303(d) list and placed into category 2B, with priority added for additional monitoring in the future.

#### **5. Grand Glaize Creek (WBID 2184)**

*MSD provided comments that one bacteria result is causing the exceedance of the Secondary Contact Recreation use, additionally this sample was collected during elevated flows.*

#### Department Response

The department agrees that the sample collected on 5/17/2015 is driving the exceedance of the secondary contact use. However, the occurrence of elevated flow should not discount the validity of the data. The use should still be protective during times when recreation can reasonably be assumed to occur. Flood or peak flow (flows exceeding 95<sup>th</sup>

percentile flow) conditions would be an example of where it would be unreasonable to assume the use could occur (physical safety concerns outweigh human health concerns). Grand Glaize Creek (WBID 2184) will be removed from the proposed 2018 303(d) list for the Secondary Contact Recreation use, but will remain on the proposed 2018 303(d) list for impairment of the Whole Body Contact Recreation use.

**6. Gravois Creek (WBID 1713)**

*MSD provided comments that one bacteria result is causing the exceedance of the Secondary Contact Recreation use, additional this sample was collected during elevated flows.*

Department Response

The department agrees that the sample collected on 4/22/14 is driving the exceedance of the secondary contact use. However, the occurrence of elevated flow should not discount the validity of the data. The use should still be protective during times when recreation can reasonably be assumed to occur. Flood or peak flow (flows exceeding 95th percentile flow) conditions would be an example of where it would be unreasonable to assume the use could occur (physical safety concerns outweigh human health concerns). Gravois Creek will be removed from the proposed 2018 303(d) list for the Secondary Contact Recreation use, but will remain on the proposed 2018 303(d) list for impairment of the Whole Body Contact Recreation use.

**7. Little Antire Creek (WBID 4115)**

*MSD provided comments that one bacteria result is causing the exceedance of the Secondary Contact Recreation use. Additionally MSD provided comments that the samples were collected during elevated flows.*

Department Response

The department agrees that the sample collected on 5/17/2016 could be driving the exceedance of the secondary contact use. However, the occurrence of elevated flow should not discount the validity of the data. The use should still be protective during times when recreation can reasonably be assumed to occur. Flood or peak flow (flows exceeding 95th percentile flow) conditions would be an example of where it would be unreasonable to assume the use could occur (physical safety concerns outweigh human health concerns). This was not the case for Little Antire Creek. Little Antire Creek will

remain on the proposed 2018 303(d) list for impairment of the Whole Body Contact Recreation use.

#### **8. Martigney Creek (WBID 4109)**

*MSD provided comments that there were some errors in assessing the hydrologic condition of the stream when the samples were taken. MSD also supplied additional 2016 and 2017 chloride data. Based on the errors and new data Martigney Creek should be delisted for chloride.*

##### Department Response

The department agrees that some errors were made in assessing the hydrologic condition of the stream when samples were taken. Daily average flows were looked at instead of instantaneous values. When considering the instantaneous values for all of the potential chronic and acute WQS exceedances, there was still one acute exceedance and four chronic exceedances, mostly in 2014. The department re-assessed the stream given the new data. Since 2014 is no longer in the last three years of available data, 2014 data is no longer available for consideration. For the 2015-2017 period, there was only one chronic chloride exceedance during stable flow conditions. As a result of this re-assessment, the department will remove Martigney Creek from the proposed 2018 303(d) list.

#### **9. River des Peres tributary (WBID 4111)**

*MSD provided comments that there were some errors in assessing the hydrologic condition of the stream when the samples were taken. Based on the errors and new data River des Peres should be delisted for chloride.*

##### Department Response

The department agrees that some errors were made in assessing the hydrologic condition of the stream when samples were taken. Daily average flows were looked at instead of instantaneous values. When considering the instantaneous values for all of the potential chronic and acute WQS exceedances, there was still one acute exceedance and six chronic exceedances in the last three years of available data. The department re-assessed the stream given the new data. The River des Peres tributary will remain on the proposed 2018 303(d) list.

## 10. Gravois Creek (WBID 1712)

*MSD provided comments that the geometric mean was not correctly calculated. MSD asked that only the parent of the duplicate be used for assessment. MSD also provided comments that only one acute and one chronic exceedance occurred in the last three years of available data. Thus Gravois Creek should be delisted for chloride.*

### Department Response

The department agrees that the geometric mean for 2013 was incorrect. However, the corrected geometric mean is still above the Whole Body Contact Recreation criterion. The department stands by the averaging of field duplicate samples. Although the purpose of the duplicate samples is for quality assurance purposes, that does not make the sample results any less valid. In order to not count the one sampling event as two distinct samples (and thereby potentially have two distinct exceedances), the department averages the duplicate samples because they are both representative of conditions in the stream. Gravois Creek (WBID 1712) will remain on the proposed 2018 303(d) list for *E.coli*.

The two toxicity events are of the same parameter and separated by a year. These are two distinct toxic events caused by the same pollutant. Due to being two distinct events for the same pollutant, Gravois Creek (WBID 1712) will remain on the proposed 2018 303(d) list.

## 11. Mattese Creek (WBID 3596)

*MSD provided comments that only one acute and one chronic exceedance occurred in the last three years of available data. MSD also provided additional data from 2016 and 2017. Thus Mattese Creek should be delisted for chloride.*

### Department Response

The department appreciates the additional data on Mattese Creek. The department re-assessed the stream using the additional data and notes there was only one exceedance of the chronic WQS for chloride during stable conditions in the last three years of available data. The department will therefore propose Mattese Creek (WBID 3596) be delisted for chloride.

**12. Creve Coeur Creek (WBID 1703)**

*MSD provided comments that there were some errors in the assessment worksheet.*

Department Response

The department appreciates Metropolitan St. Louis Sewer District finding these errors and the worksheet was lacking hydrologic codes. The department re-assessed the water after updating the worksheet and notes there were still two samples where chronic chloride exceedances occurred during stable flow. Creve Coeur Creek will remain on the proposed 2018 303(d) list.

**13. Tributary to Gravois Creek (WBID 4051)**

*MSD provided comments that two samples look to be duplicates and need to be averaged or only use the parent sample.*

Department Response

The department agrees that the two samples are duplicates and should have been averaged for the assessment. The department re-assessed the water after averaging the duplicates and notes the geometric mean is still above the criterion for Whole Body Contact Recreation. See response to number 10 above for use of parent samples only for assessment purposes. Gravois Creek Tributary (WBID 4051) will remain on the proposed 2018 303(d) list.

**14. Fee Fee Creek (WBID 1704)**

*MSD provided comments that they would like to have the “(new)” removed from the water body name. Also the worksheet is missing hydrologic codes.*

Department Response

The department will log the request to change the stream name in the WQS, but the change will have to be made in a future rulemaking. The missing hydrologic codes can be added to the assessment worksheet for clarity, but doing so will not change the assessment since there was more than one acute criterion exceedance for chloride. Fee Fee Creek (WBID 1704) will remain on the proposed 2018 303(d) list for chloride.

**15. Antire Creek (WBID 2188) and Bonhomme Creek (WBID 1701)**

*MSD agrees with the delisting of Antire Creek and Bonhomme Creek. MSD also submitted comments in regards to watershed improvement projects.*

Department Response

The department appreciates the comments and will make sure this information is transmitted to other program staff involved in watershed improvement efforts.

**16. Creve Coeur Creek (WBID 1703)**

*MSD provided comments that older data is no longer representative due to watershed improvement projects. MSD also provided additional 2017 data and information regarding the removal of bypasses and the repair or replacement of sewer pipe in the Creve Coeur Creek watershed.*

Department Response

The department appreciates the additional information provided by MSD. Due to the extensive pipeline work and the removal of bypasses, the department re-assessed the water using 2010-2017 data. The re-assessment shows that water quality is improving in Creve Coeur Creek and that it no longer meets the Listing Methodology Document definition of an impaired stream. The department will propose to delist Creve Coeur Creek for low dissolved oxygen.

**17. River des Peres (WBID 1710)**

*MSD provided comments that older data is no longer representative due to watershed improvement projects. MSD also provided comments that some of the dissolved oxygen data they collected was during flood/backwater conditions and is not representative.*

Department Response

The department agrees that dissolved oxygen readings taken during backwater conditions from the Mississippi River are not representative of conditions in River des Peres. After removing those samples identified as collected during backwater conditions, the department re-assessed the water and has determined that River des Peres is no longer impaired for low dissolved oxygen. The department will propose to delist River des Peres (WBID 1710) for dissolved oxygen. River des Peres (WBID 1710) will remain on the proposed 2018 303(d) list for Escherichia coli.

**XI. Association of Missouri Cleanwater Agencies**

**Assessment Worksheets**

*The Association of Missouri Cleanwater Agencies made a comment during the October 4<sup>th</sup> Clean Water Commission Hearing thanking the department for preparing assessment worksheets for each new proposed water that is going to be added to the 2018 303(d) list, and for providing transparency to the listing process.*

**Department Response**

The department appreciates the comment.

**XII. HDR.Inc**

**Move waters to a low priority for TMDL development**

*HDR, Inc made comments during the October 4<sup>th</sup> Clean Water Commission Hearing on behalf of several clients. HDR's comments were in regards to Integrated Watershed Planning and TMDL priorities on multiple listed waters.*

**Department Response**

For streams to be placed in Categories 5-alternative or 4B the department expects a watershed based approach will be used to ensure water quality standards are met in a timely fashion. In order to use the 5-alternative or 4B approach the appropriate information must be provided to the department that demonstrates that the approach used will be as or more effective than a TMDL. The department will have a public meeting on January 18, 2018 to discuss these items, and additionally will have further information posted on the 303(d) website about these requirements. Both will be available prior to and during the public notice of the department's TMDL priority list, which will occur after the Clean Water Commission approves the proposed 2018 303(d) List. The department will consider these comments when generating the draft TMDL priorities list.

**XIII. United States Environmental Protection Agency (USEPA) Region 7**

**Big River (WBID 2080)**

*USEPA provided comments that zinc was not included in the TMDL cited by the state for this segment.*

### Department Response

The department appreciates USEPA pointing out this oversight. While implementation of the Big River TMDL for other metals from similar sources should also correct the zinc impairment, the department acknowledges it must retain the impairment on the 303(d) list. The department looks forward to working with EPA on a TMDL amendment or Category 5-alt listing for this water body pollutant pair. The department will restore the listing on the 303(d) list.

### **Fenton Creek (WBID 3595)**

*USEPA provided comments that the state's assessment spreadsheet and data both identify this segment as impaired by Escherichia coli.*

### Department Response

After reviewing the assessment spreadsheet, the department agrees this water should be maintained on the list. The department made an error in delisting this stream and will restore this listing on the 303(d) list.

### **Locust Creek (WBID 606)**

*USEPA provided comments that the delisting sheet identifies this water body as being proposed for delisting aquatic macroinvertebrate bioassessment/unknown. It did not appear as impaired under Section 303(d) on the 2016 Missouri list for aquatic macroinvertebrate bioassessment, only for Escherichia coli, for which it remains proposed for listing by the state in 2018.*

### Department Response

The department appreciates the clarification and comment. The department has determined that this was a record keeping error made by the department which has been subsequently corrected.

### **Peruque Creek (WBID 217)**

*USEPA provided comments that the delisting rationale does not include any data supporting the lack of sedimentation in this segment. For this delisting to be supported, submit the MDNR (2002) study and any sediment data supporting proposed delisting.*

#### Department Response

The department will submit the report with the data included in support of the proposed delisting.

#### **Shoal Creek (WBID 3230)**

*USEPA provided comments that the delisting sheet identifies this water body as being proposed for delisting fecal coliform. It did not appear as impaired under Section 303(d) on the 2016 Missouri list. The EPA approved a bacteria TMDL for this segment in 2007.*

#### Department Response

The department appreciates USEPA providing this clarification. This was also a change in the pollutant. Shoal Creek has an approved TMDL for bacteria based on the original listing for fecal coliform. The department collected additional E.coli data and is changing the pollutant to E.coli, but the TMDL still addresses the pollutant of concern.

#### **Strother Creek (WBID 2751)**

*USEPA provided comments that this delisting was not identified on the delisting worksheet. Is the aquatic macroinvertebrate delisting rationale the same as for Salt Pine Creek (2113), in that a specific pollutant(s) is taking the place of the biological listing?*

#### Department Response

The department presumes the invertebrate community is impaired due to the pollutants already listed and are removing this cause until the metals pollutants are corrected. Once corrected, the department will re-assess the invertebrate community status, and if still impaired the department will place this water on the list for an impaired invertebrate community. The macroinvertebrate worksheet will be maintained as additional evidence that the listed pollutants are having adverse effects on the aquatic community.

#### **West Fork Black River (WBID 2755)**

*USEPA provided comments pointing out that water chemistry data from site 2755/22.4 showed three exceedances for the acute zinc criterion. Acute WQS must be met in the mixing zone [10 CSR 20-7.030(5)4.A]. This water body should be added to the 303(d) list for zinc in water as the criteria was exceeded more than once in the last three years for which data is available.*

Department Response

The USEPA is correct that the three samples collected in 2014 at site 2755/22.4 exceeded the acute criterion. As noted in the regulation cited above, mixing zone samples must meet acute criteria. As a result of this assessment, the department will place WBID 2755 on the proposed 2018 303(d) list for zinc in water.

**XIV. City of Independence**

**Bacteria Worksheets**

*The City of Independence provided comments on some erroneous values in a few of the bacteria worksheets in the Independence area.*

Department Response

The department appreciates the City of Independence finding and submitting comments on these errors. The errors have been corrected in the bacteria worksheets. The department notes, however, that none of these errors caused an inappropriate listing nor did the correction of these errors cause a listing to change.

**XV. Dr. Barry Poulton**

**Hinkson Creek (WBIDs 1007 & 1008)**

*Dr. Barry Poulton provided comments asking to the department to consider adding Hinkson Creek (WBIDs 1007 & 1008) to the proposed 2018 303(d) list for Dissolved Oxygen and Chloride based on two articles published in 2017 on Hinkson Creek.*

Department Response

The department appreciates Dr. Poulton bringing these journal articles and new data to our attention. The department reviewed the journal articles in response to this comment and notes that – 1) the state’s Dissolved Oxygen standards were not correctly referenced or interpreted, and 2) the articles did not provide enough data for the department to conduct an assessment following our Listing Methodology Document. The department reached out to the lead author and primary researcher, Dr. Jason Hubbart, and requested the data used in these studies. Dr. Hubbart declined to share the data from the published articles. Since the department does not have access to the data, an assessment following the state’s LMD cannot be conducted at this time. As soon as the data is made available, the department can conduct an assessment for these criteria.