Missouri
Department of
Natural Resources

DRAFT SHOAL CREEK TMDL
PUBLIC COMMENTS

Public Notice
Aug. 29 – Sept. 28, 2003

Shoal Creek
WBID # 3230

Barry and Newton counties, Mo.

Missouri Department of Natural Resources
Water Protection Program
PO Box 176
Jefferson City, MO 65102-0176
800-361-4827 / 573-751-1300

FAPRI
At the University of Missouri
Food and Agricultural
Policy Research Institute

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WPCP

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Missouri Department of Natural Resources
Water Pollution Control Program
Planning Section
P.O. Box 176
Jefferson City, MO 65102-0176

September 9, 2003

I have reviewed the draft TMDL and would like to make the following comments.

- I would suggest deleting the last sentence of the first paragraph of page 3 that reads: "This is most likely due to efforts that have already occurred in the Shoal Creek watershed to deal with excessive nutrients reaching the creek (see Section 9. Implementation)." In my opinion, this is very unlikely. The 319 program started in 1996 and its impacts could not possibly have been felt that early in the process. Yet fecal coliform concentrations reported for 1996 by Crowder College are lower than they were for 1992 and 1993. According to Dan Philbrick (personnal communication) the land that borders the stream for 1.5 mile above the sampling point was part of an estate that was rented to various managers. This land is now under a new owner that manages it himself. It is stocked at grazing capacity. It is not clear when the change of ownership occurred but the previous managers used to overstock this land and bring in extra feed. This would likely create some bacteria problems in the stream.

- On page 12, it is important to specify that the model was calibrated using two years of **flow** values. If not specified, it could imply that water quality were collected on a daily basis as well.

- Figure 3 on page 13 appears to be truncated and what happens at low frequencies is not visible.

- I noticed you have added the data from Crowder College on Figure 3. This curve was built from data collected over 10 years with at most 10 to 11 samples per annual recreation season. The other curves are all built from data (measured or simulated) taken at one week intervals over one recreation season. It is therefore questionable to

show them on the same graph, unless you can assume that all the years are statistically similar, which is not true.

- Figure 5 needs additional comments that indicate that the frequency assigned to a fecal coliform load is the frequency of the flow for that day.

- There is a discussion on page 16 about George's plant permit violations and the corresponding enforcement actions. These facts relate to nutrients and wastewater discharges off the property, not to bacteria. While under normal working conditions, George's plant does not discharge any effluent off their property (short of a pipe break or leaks or other extraordinary circumstances), the surface runoff may contain bacteria. There should be a requirement for fecal monitoring upstream and downstream of the property as well as in the wells and in the wastewater, especially since Pogue Creek is classified as a losing stream by the Missouri Department of Natural Resources. All the irrigated areas drain toward Pogue Creek. Apparently, the permit was given without any discussion of the potential for fecal coliform contamination of the shallow aquifer or of the stream. There is nothing in the George's plant engineering and monitoring reports that relates to bacteria.

- It is not clear at all how the margin of safety is calculated. The last paragraph on page 18 specifies that "the Margin of Safety is based on the standard deviations that result for each segment of the curve." What standard deviation are we talking about? Is it the standard deviation of measured data, simulated data, or something else? What does it account for? Since it is critical in the determination of the load allocation, it would be necessary to specify how it is calculated, and understand what justifies using this value.

- On page 21, the last line should read: "a 66 percent reduction in the surface runoff **fecal coliform loadings** to the stream." Bold letters emphasize what needs to be added.

- Finally, my suggestion is to add a paragraph emphasizing the non feasibility of the Missouri fecal coliform water quality standard as it currently stands. The model indicates that it is possible to reduce high fecal coliform concentrations to low probabilities but very difficult to completely suppress them.

Sincerely,

Claire Baffaut

Email: BaffautC@missouri.edu
Phone: (573) 882-1251

STATE OF MISSOURI
Bob Holden, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.state.mo.us

October 20, 2003

Ms. Claire Baffaut
University of Missouri Columbia
Food and Agriculture Policy Research Institute
101 South Fifth Street
Columbia, MO 65201

Dear Ms. Baffaut:

Thank you for reviewing the Shoal Creek TMDL and taking the time to comment. Your comments are of particular interest to the department since you put so much work into the Shoal Creek project and provided us with a computer model for the watershed.

The following responses correspond to the comments you provided.

1. We agree with your comment. The last sentence of the first paragraph on page 3 has been deleted.
2. We made the correction you suggested and changed "daily" to "flow."
3. Figure 3 is indeed truncated. This is explained in the paragraph preceding the figure.
4. The data from Crowder College has been removed from Figure 3 and a separate graph has been developed with that data (Figure 4).
5. The correction has been made. Note that, with the addition of a separate graph for the Crowder College data, Figure 5 is now Figure 6.
6. The situation regarding George's processing plant is as you describe it. The possibility of reopening George's recently renewed permit was discussed and discarded. Because the permit is no-discharge, George's impact on a TMDL stream was considered to be minimal. Therefore, a re-opener clause allowing us to reopen the permit based on a TMDL study was not included. Your point is well taken, however, and new requirements for monitoring fecal coliform will be considered when the permit comes up for renewal in 2007.
7. As you are well aware, the department worked with you on wording for the Margin of Safety to explain the standard deviations. This was included in the TMDL.
8. The suggested verbiage was added.

9. As explained by your office in a follow-up e-mail dated September 18, 2003, this comment means that "[FAPRI doesn't] think it is possible to achieve Missouri Water Quality Standards in this creek without changes in practices that will produce major shifts in the economic picture of this watershed. Removing poultry litter for example will require farmers to buy nitrogen fertilizer to maintain their grazing capacities. [FAPRI doesn't] know that they can afford this."

We believe the Water Quality Standards are achievable. Poultry litter is a problem mainly during storm run-off, which is manageable with better timing of application and improved buffer/riparian zones. Furthermore, poultry litter is not the only problem. Dealing with faulty on-site septic and removing more cows from the stream, together with improving litter handling/application as above, should reduce fecal coliform to below the standard. If not, the TMDL will be reevaluated. No change was made to the TMDL in response to this comment.

Again, thank you for your comments. Since FAPRI developed the model for this TMDL and has done so much work in this watershed, these comments are particularly appreciated. If you have other questions or wish to discuss this further, please contact Anne Peery of the Planning Section at (573) 526-1426 or at Missouri Department of Natural Resources, Water Pollution Control Program, P. O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Becky L. Shannon, Chief
Planning Section

BLS:apd

MISSOURI DEPARTMENT OF CONSERVATION

Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JOHN D. HOSKINS, Director

RECEIVED

SEP 16 2003

WPCP

Department of Natural Resources
WPCP, Planning Section
P. O. Box 176
Jefferson City, MO 65102-0176

To Whom It May Concern:

Thank you for posting the Draft Shoal Creek TMDL for public review. I shared the proposal with each of the Fisheries Management Biologists, from Missouri Department of Conservation's Southwest Region, who are involved with Shoal Creek and the surrounding watershed. Please consider the following comments when preparing the final TMDL for Shoal Creek. These comments are verbatim.

- "Is there a certain time of year when it would be better to spread litter? (Times of low rainfall, for example summer or winter when whole body contact and recreation is minimal)."
- "What can reasonably be accomplished, a 50% or a 100% reduction of cattle in the stream."
- "I do not think maintenance will fix a faulty septic system, I think it would need to be repaired or better yet replaced."
- "I think it would be more achievable to reduce bacteria in surface runoff rather than reducing runoff by 66%."

Again, thank you for the opportunity to comment, and if you have any questions, please contact me at the Southwest Regional Office, 417/895-6881, ext. 1063.

Sincerely,

Larry Martien

Larry Martien
Fisheries Management Biologist

c: Kevin Richards, Chris Vitello, Tim Banek, Rick Horton

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STATE OF MISSOURI
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DEPARTMENT OF NATURAL RESOURCES
www.dnr.state.mo.us

October 7, 2003

Mr. Larry Martien
Missouri Department of Conservation
Southwest Regional Office
2630 North Mayfair
Springfield, MO 65803-5018

Dear Mr. Martien:

Thank you for reviewing the Shoal Creek TMDL and taking the time to comment.

The following responses correspond to the comments you provided. For the first two, Claire Baffaut, FAPRI, responds.

1. "It is reasonable to expect less bacteria transport when litter is spread in the summer, when rain is not as likely. Temperatures are also higher which speeds up the bacteria die-off on the ground surface. According to Craig Coberly [George's], the poultry industry would be willing to listen to that one. Poultry producers will never agree to clean up in the winter because the litter composting provides heat in the poultry houses."
2. "As far as cattle in the stream, I don't think 100% reduction all over the watershed is achievable and enforceable. What might be more reasonable is to achieve 100% within a certain distance upstream of the known swimming holes. A general awareness should reduce the number all over the watershed after that." Claire indicated that she believes a 50 percent reduction can reasonably be accomplished.
   The department would add that it remains to be seen just how much of a reduction the stakeholders can and will achieve. The second item just after Figure 7 on page 21 has been changed to "A 50 – 100 percent reduction…"
3. We agree. The sentence on page 22, first paragraph states, "Education is needed, possibly in combination with local ordinances, to identify and replace failing septic systems and encourage the proper maintenance of the systems that are still functional." This sentence is consistent with the rest of the references to septic systems throughout the document.
4. Good catch. Some words were inadvertently left out. This item now reads "A 66 percent reduction in the *fecal coliform loadings due to* surface runoff events."

Again, thank you for your comments. The Department of Conservation's interest in the TMDL process and concern for the health of Missouri's water resources are appreciated. If you have other questions or wish to discuss this further, please contact Anne Peery of the Planning Section at (573) 526-1426 or at Missouri Department of Natural Resources, Water Pollution Control Program, P. O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Becky L. Shannon, Chief
Planning Section

BLS:apd

Anne Peery
09/23/2003 09:20 AM

To: "John G Schumacher" <jschu@usgs.gov>
cc:
Subject: Re: Shoal Creek TMDL Public Notice

John,
Thanks for your comments on this TMDL. I see I never acknowledged that we received them and I apologize. I forwarded them on to the modeler working on Shoal, Mark Osborn. We will certainly consider them and see what adjustments we can make. Just to touch on the length of the impairment, your point is well made. Unfortunately it takes tantamount to an act of God to change these things on the 303(d) list, but we have already made an adjustment in our database. John Ford says he took about 3.5 miles off of the downstream end of the impairment. We'll add some wording to the TMDL to cover that.

As far as being able to find the TMDL on the Internet, the links should work well by now (again, sorry I did not answer you sooner). Did you go from our homepage?
http://www.dnr.mo.gov/wpscd/wpcp/homewpcp.htm
From there you can go through the TMDLs Under Development link or scroll on down and use the Draft Shoal Creek TMDL link. Or you can go to the "Impaired Waters and Total Maximun Daily Loads" link on the sidebar and scroll down to the Draft TMDLs link.

Again, thanks for your comments,

Anne Peery
TMDL Developer
DNR/ Water Pollution Control Program
573-526-1426
nrpeera@mail.dnr.state.mo.us
"John G Schumacher" <jschu@usgs.gov>

"John G Schumacher" <jschu@usgs.gov>
09/02/2003 09:24 AM

To: "Anne Peery" <nrpeera@mail.dnr.state.mo.us>
cc:
Subject: Re: Shoal Creek TMDL Public Notice

Anne,

Thanks for the notice on the Shoal Creek TMDL. Its probably too late but there are better graphics on the USGS study results that could be used. Also, I'm concern about the conclusion that poultry is an issue "only" during runoff. If your speaking only about the site at highway 97 that may be true, but Pogue Creek has significant poultry throughout the year and horses are a problem in Woodward Creek. The FAPRI has a great data set for highway 97, but be careful because a lot of other hydrologic factors come into play and the SWAT model is really only gross approximation. Also, they did not collect up and over flood peaks to see how the distribution changed during a single event. The best indicator is the "real field data" they collected (DNA) and the data from the our August 2002 seepage run, which folks seem to overlook, that really pinpointed the sources of FC along the reach from highway W to highway 97. Also, the impaired reach really should not extend downstream of highway 97 to Capps Creek as sampling above Capps creek has shown that FC levels are well below the limit. I know folks in that area are concerned about the designation downstream as there are several swimming holes in that reach.

john

P.S. When trying your links all I can find is the information sheet, the link to the draft TMDL seems to take me to a page where I can click on the draft link but it goes back to the info sheet.

Anne Peery
10/17/2003 10:43 AM

To: "John G Schumacher" <jschu@usgs.gov>
cc:
Subject: Re: Shoal Creek TMDL Public Notice

John,
This is to let you know about some other changes we made to the TMDL (besides the length of the impairment) in response to your comments below . In regard to poultry being an issue during runoff, we changed the word "only" to "mainly". We also added a paragraph discussing horses to the Source Assessment section (section 1.6). We do have a copy of your recent study and re-examined it. Since, as you pointed out, it pinpoints sources of FC along the reach from highway W to highway 97, it will be very useful to the watershed group as they work on the implementation plan. As you may already know, they will be addressing several sources of FC, including chicken litter, cattle, horses and septic.
Again, thanks for your input. It was helpful and, as always, highly valued.

Anne Peery
TMDL Developer
DNR/ Water Pollution Control Program
573-526-1426
nrpeera@mail.dnr.state.mo.us
"John G Schumacher" <jschu@usgs.gov>

"John G Schumacher" <jschu@usgs.gov>
09/02/2003 09:24 AM

To: "Anne Peery" <nrpeera@mail.dnr.state.mo.us>
cc:
Subject: Re: Shoal Creek TMDL Public Notice

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john

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Missouri-American Water Company

Joplin, District • 2650 E. 32nd St. Suite 121 • P.O. Box 3090 • Joplin, MO 64803-3090
Phone: (417) 623-3238 • Fax: (417) 623-0502

Greg A. Weeks, P.E.
Manager

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WPCP

September 25, 2003

Missouri Department of Natural Resources
Water Pollution Control Program
Planning Section
P.O. Box 176
Jefferson City, MO 65102-0176

RE: Shoal Creek TMDL Comments

Missouri-American Water Company, Southwest Region utilizes Shoal Creek as a source of potable water supply for the City of Joplin and other surrounding communities. Keeping and maintaining superior water quality in all areas of this stream and watershed is of utmost importance to us. In that effort, we would like to take this opportunity to offer our support of this TMDL.

As a representative of Missouri-American Water Company who has attended public meetings regarding the TMDL, I wish to remain a participant in the Shoal Creek Watershed Partnership. Naturally, we remain interested, as well as somewhat concerned, that the water quality in the 13-mile area of the upper watershed has been deemed impaired for full body contact. This impaired designation concerns us specifically because this area has normally been considered an area of highest water quality for Shoal Creek (trout and other non-tolerant fish species are found in Capps Creek and lower portions of Clear Creek). We wonder if lower portions of Shoal Creek and its watershed are also potentially impaired as well.

Again, we would like to extend our support to this project and offer any assistance and/or expertise that might be considered relevant in support of the State's effort to clean up this area of the watershed.

Sincerely,

Karen Conrad
Water Quality Specialist

Cc: Thomas Simmons
Bruce Manning

STATE OF MISSOURI
Bob Holden, Governor • Stephen M. Mahfood, Director
DEPARTMENT OF NATURAL RESOURCES
www.dnr.state.mo.us

October 7, 2003

Ms. Karen Conrad
Missouri-American Water Company
2650 East 32nd Street, Suite 121
P. O. Box 3090
Joplin, Missouri 64803-3090

Dear Ms. Conrad:

Thank you for reviewing the Shoal Creek TMDL and taking the time to comment.

Your offer of support for the Shoal Creek TMDL is sincerely appreciated, as is your expressed desire to remain part of the Shoal Creek Watershed Partnership. We will continue to include you in all mailings.

Your concern that lower portions Shoal Creek might potentially be impaired is valid. The potential for pollution is always present. Currently, the Department of Natural Resources is not monitoring in lower Shoal Creek. So what can you do to protect this creek? My staff is aware of sixteen Stream Teams who have done monitoring in the Shoal Creek watershed, with four actually monitoring Shoal Creek itself. These people are an important part in a stream's protection, since they can spot problems and reveal trends. In addition, the newly formed watershed partnership can be very useful. The strategies the partnership is developing should lower fecal coliform in the upper watershed and bring the creek back within Water Quality Standards. But beyond this one problem, the partnership is free to look at any other problems that need attention and can go on to develop a full watershed management plan that will protect Shoal Creek's water quality into the future.

Again, thank you for your comments. Missouri-American Water Company's interest in the TMDL process and concern for the health of Missouri's water resources are appreciated. If you have other questions or wish to discuss this further, please contact Anne Peery of the Planning Section at (573) 526-1426 or at Missouri Department of Natural Resources, Water Pollution Control Program, P. O. Box 176, Jefferson City, MO 65102-0176.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

Becky L. Shannon, Chief
Planning Section

BLS:apd

Shoal Creek TMDL Comment by Leslie Holloway, Missouri Farm Bureau, 9/26/03

To voice objections by her constituents, Leslie Holloway asked to meet with the department over concerns about the Shoal Creek TMDL, which was on Public Notice at the time. She met with Sharon Clifford and Becky Shannon on Friday, September 26, 2003 to object to the inclusion of poultry growers' names in the TMDL. As part of the Wasteload Allocation section of the TMDL, all of the permits in the Upper Shoal Creek Watershed were listed along with the names of the permit holders. The department agreed there was no reason to list individuals' names and has modified the TMDL as follows:

- Letters of Approval have been aggregated and the TMDL simply states how many LAs there are in the watershed and of what type.
- MOG (general) permits remain listed individually but without a facility name, which is the field that caused individual's names to pop up. The department will just use permit numbers on those.
- Missouri State Operating Permits for wastewater facilities will have the facility name attached.