TMDL: Plummer Creek, Indiana
Date:

DECISION DOCUMENT FOR APPROVAL OF THE PLUMMER CREEK, INDIANA, PATHOGEN TMDLS

Section 303(d) of the Clean Water Act (CWA) and EPA=s implementing regulations at 40 C.F.R. Part 130 describe the statutory and regulatory requirements for approvable TMDLs. Additional information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb Amust@ below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation. Use of the term Ashould@ below denotes information that is generally necessary for EPA to determine if a submitted TMDL is approvable. These TMDL review guidelines are not themselves regulations. They are an attempt to summarize and provide guidance regarding currently effective statutory and regulatory requirements relating to TMDLs. Any differences between these guidelines and EPA=s TMDL regulations should be resolved in favor of the regulations themselves.

1. Identification of Waterbody, Pollutant of Concern, Pollutant Sources, and Priority Ranking

The TMDL submittal should identify the waterbody as it appears on the State=s/Tribe=s 303(d) list. The waterbody should be identified/georeferenced using the National Hydrography Dataset (NHD), and the TMDL should clearly identify the pollutant for which the TMDL is being established. In addition, the TMDL should identify the priority ranking of the waterbody and specify the link between the pollutant of concern and the water quality standard (see section 2 below).

The TMDL submittal should include an identification of the point and nonpoint sources of the pollutant of concern, including location of the source(s) and the quantity of the loading, e.g., lbs/per day. The TMDL should provide the identification numbers of the NPDES permits within the waterbody. Where it is possible to separate natural background from nonpoint sources, the TMDL should include a description of the natural background. This information is necessary for EPA=s review of the load and wasteload allocations, which are required by regulation.

The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as:

(1) the spatial extent of the watershed in which the impaired waterbody is located;
(2) the assumed distribution of land use in the watershed (e.g., urban, forested, agriculture);
(3) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources;
(4) present and future growth trends, if taken into consideration in preparing the TMDL (e.g., the TMDL could include the design capacity of a wastewater treatment facility); and
(5) an explanation and analytical basis for expressing the TMDL through *surrogate measures*, if applicable. *Surrogate measures* are parameters such as percent fines and

turbidity for sediment impairments; chlorophyll *a* and phosphorus loadings for excess algae; length of riparian buffer; or number of acres of best management practices.

Comment:
Location Description: Plummer Creek in Indiana is located in Greene County, and flows west until it discharges into the lower West Fork of the White River. The Plummer Creek TMDL report also addresses several tributaries of the creek (Figure 1 of the TMDL; Table 1 below). Plummer Creek and related tributaries are approximately 35 miles in length, and the watershed covers approximately 59 square miles. Plummer Creek and related waters were listed on the Indiana 2004 303d list as impaired due to excessive *E. coli* (Table 1 of the TMDL).

Topography and Land Use: The land use in the Plummer Creek watershed is mainly forest and agricultural. The Indiana Department of Environmental Management (IDEM) analyzed the watershed, and based upon 1992 data, 69% was forest, 28% was agricultural. There are no major urbanized areas in the watershed. IDEM compared the 1992 data to 1976 data (Figure 3b of the TMDL), and since 1976, some of the agricultural land has become forested (1976 – 60% forest and 38% agricultural).

Pollutant of concern: IDEM has identified four waterbody segments of the Plummer Creek watershed as impaired on Indiana=s 2004 and 2006 303(d) lists for violations of *E. coli* water quality standards. Data in the watershed was first gathered in 1996, which supported the decision to list the watershed as impaired. A more intensive monitoring effort was performed in 2001, when IDEM sampled 16 sites. At these sites, all showed violations of the single day standard, and most showed violations of the geometric mean portion of the standard (Page 2 of the TMDL).

Pollutant point sources: IDEM has stated that there are no permitted point sources in the watershed. Most, if not all, homes in the watershed are on septic systems. Some of these systems are likely failing, and could be a source of *E. coli* (page 3 of the TMDL). There are no known Concentrated Animal Feeding Operations (CAFOs) in the watershed.

Pollutant nonpoint sources: The Source Assessment Section of the TMDL submittal states that IDEM has identified potential nonpoint sources as:

- Wildlife – deer, geese, ducks, raccoons, turkey, and other animals
- Septic systems – those septics systems that are not directly discharging to a waterbody, but effluent can still reach the water (i.e., ponding, etc).
- Small livestock operations not regulated by CAFO regulations, may be a source of *E. coli*. This would include both the facilities and the related operations such as manure spreading on fields, etc. Some of these facilities are regulated by the State. IDEM has identified 3 Confined Feeding Operations (CFOs) in the watershed. These are regulated by state rules, and are not allowed to have a discharge which may cause or contribute to an exceedence of water quality standards.

Population and growth trends: IDEM noted that the land use changed little between 1992 and 1976. The State does not anticipate dramatic changes in the near future.

Priority ranking: This TMDL was prioritized by the IDEM to be completed at this time due to the water quality monitoring schedule. As stated in IDEM=s current listing methodology, the TMDL development schedule corresponds with IDEM=s basin-rotation water quality monitoring

schedule in order to take advantage of all available resources for TMDL development. The basin-rotation schedule will be used unless there is a significant reason to deviate from it. Priority may be upgraded or downgraded depending on designated uses, magnitude of impairment, implementation practices by other interested parties, or availability of new guidance.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this first element.

2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribal water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy (40 C.F.R. '130.7(c)(1)).
EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

The TMDL submittal must identify a numeric water quality target(s) B a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical (e.g., chromium) contained in the water quality standard. The TMDL expresses the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target. Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorus and the numeric water quality target is expressed as Dissolved Oxygen (DO) criteria). In such cases, the TMDL submittal should explain the linkage between the pollutant of concern and the chosen numeric water quality target.

Comment:
The Numeric Target Section of the TMDL submittal describes designated uses and numeric criteria applicable to this watershed.

Use Designation: The designated use for the waterbodies in the Plummer Creek watershed is for total body contact recreational use during the recreational season, April 1st through October 31st (327 IAC 2-1-6(d)).

Numeric Standards: 327 IAC 2-1-6(d) established the total body contact recreational use *E. coli* Water Quality Standard (WQS) for all waters in the non-Great Lakes system as follows: A*E. coli* bacteria, using membrane filter (MF) count, shall not exceed one hundred twenty-five (125) per one hundred (100) milliliters as a geometric mean based on not less than five (5) samples equally spaced over a thirty (30) day period nor exceed two hundred thirty-five (235) per one hundred (100) milliliters in any one (1) sample in a thirty (30) day period.@

Targets: 1The target for these TMDLs is the standard as stated in the previous paragraph, for both the geometric mean portion and the single sample maximum portion, which is applicable from April 1st through October 31st (e-mail from A. Pelloso, IDEM). If the numeric standard is met, the river should meet the assigned designated use (327 IAC 2-1-6(d)).

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this second element.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

A TMDL must identify the loading capacity of a waterbody for the applicable pollutant. EPA regulations define loading capacity as the greatest amount of a pollutant that a water can receive without violating water quality standards (40 C.F.R. '130.2(f)).

The pollutant loadings may be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. '130.2(i)). If the TMDL is expressed in terms other than a daily load, e.g., an annual load, the submittal should explain why it is appropriate to express the TMDL in the unit of measurement chosen. The TMDL submittal should describe the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In many instances, this method will be a water quality model.

The TMDL submittal should contain documentation supporting the TMDL analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling. EPA needs this information to review the loading capacity determination, and load and wasteload allocations, which are required by regulation.

TMDLs must take into account *critical conditions* for stream flow, loading, and water quality parameters as part of the analysis of loading capacity. (40 C.F.R. '130.7(c)(1)). TMDLs should define applicable *critical conditions* and describe their approach to estimating both point and nonpoint source loadings under such *critical conditions*. In particular, the TMDL should discuss the approach used to compute and allocate nonpoint source loadings, e.g., meteorological conditions and land use distribution.

Comment:
Loading capacity: IDEM has determined that the loading capacity for the impaired waterbodies is the water quality standard; that is, 125 cfu/100 ml (geometric mean of 5 samples equally spaced over a 30 day period) and a sample maximum of 235 cfu/100 ml (e-mail from A. Pelloso, IDEM). IDEM believes the geometric mean portion of the WQS provides the best overall characterization of the status of the watershed. The U.S. EPA agrees with this, as stated in the preamble of "The Water Quality Standards for Coastal and Great Lakes Recreation Waters Final Rule" (69 FR 67218-67243, November 16, 2004) on page 67224 "…the geometric mean is the more relevant value for ensuring that appropriate actions are taken to protect and improve water quality because it is a more reliable measure, being less subject to random variation, and more directly linked to the underlying studies on which the 1986 bacteria criteria were based." IDEM will be relying on the geometric mean portion of the WQS to track implementation activity and results.

Typically loading capacities are expressed as a mass per time (e.g. pounds per day). For *E. coli*, however, states often use concentration to measure loading capacity rather than mass per time, with concentration being the amount of matter in a given volume. This approach is consistent with EPA's regulations which define "load" as "an amount of matter . . . that is introduced into a receiving water. . . ." (40 CFR §130.2). To establish the loading capacities for the Plummer Creek Watershed, IDEM used Indiana's WQS for pathogens which has a geometric mean for a 30

day period and a single sample maximum of an amount of bacteria colonies per 100 milliliters of receiving water. Thus, the loading capacity is expressed as a concentration, i.e. the amount of bacteria colonies per volume of water. A loading capacity is "the greatest amount of loading that a water can receive without violating water quality standards." (40 CFR §130.2). So, a loading capacity set at the WQS will assure that the water does not violate WQS.

Method for cause and effect relationship: The load duration curve (LDC) approach was used in developing this TMDL, with an explanation found in the Linkage Analysis and *E. coli* Load Duration Curves Section of the TMDL. A very simplified explanation is provided below.

1. Flow data - First, continuous flow data are required, and are provided by U.S. Geological Survey (USGS) gage 03360500 located near Newberry, Indiana, on the West Fork White River in Greene County. The data reflect a range of natural occurrences from extremely high flows to extremely low flows.
2. Water Quality data - This dataset is the monitored *E. coli* data from the 2001 intensive survey.
3. Water Quality Duration Curves (Attachment B of the TMDL submittal) – These plots are derived from the flow data and water quality data described above. Existing monitored water pollutant loads, represented by the diamond-shaped points on the plot, are compared to target loads, the water quality standard line. If the existing loads are below (less than) the target line, no reduction needs to occur. Conversely, if the existing loads are above (greater than) the target load, a reduction is necessary to reach the target.
4. Load Duration Curves (Attachment C of the TMDL submittal) - The final step is to link the geographic locations of load reductions needed to the flow conditions under which the exceedences occur. Specific locations contributing to *E. coli*, represented by the graphs, are identified to determine under what flow conditions the *E. coli* exceedences are occurring. Most of the LDCs in Appendix C of the TMDL show that the greatest exceedences occur under dry flow, although significant exceedences do occur at mid-range and moist conditions. By knowing the flow conditions under which exceedences are occurring, IDEM can focus implementation activities on those sources most likely to contribute loads.

The TMDL submittal focuses on 4 LDCs for the Plummer Creek watershed. IDEM believes that these 4 sites best represent the loads and sources in the watershed. However, IDEM also developed reductions based upon LDCs for all 16 sampling sites in the watershed (Table 2 of the TMDL).

1IDEM's pathogen TMDL approach is based upon the premise that all discharges (point and non-point) must meet the WQS when entering the waterbody. If all sources are meeting the WQS at discharge, then the waterbody should meet the WQS and the designated use. The plots show under what flow conditions the water quality exceedences occur. Those exceedences at the right side of the graph occur during low flow conditions, suspected to be septic systems malfunctions, livestock in the streams, and illicit sewer connections; exceedences on the left side of the graphs occur during higher flow events, such as storm runoff. IDEM has reviewed these load duration curves, and believes that *E. coli* sources are attributed to both wet-weather and dry-weather events.

EPA agrees with this review. Using the load duration curve approach allows IDEM to determine which implementation practices are most effective for reducing *E. coli* loads based on flow magnitude. For example, if loads are significant during storm events, implementation efforts can target those best management practices (BMPs) that will most effectively reduce storm water runoff. This allows for a more efficient implementation effort. This TMDL is concentration-based, and ties directly into Indiana's numeric water quality standard for *E. coli*. The target for this TMDL is the water quality standard, and therefore meeting this loading capacity should result in attainment of water quality standards.

The load duration curve is a cost-effective TMDL approach, to address the reductions necessary to meet WQS for *E. coli* bacteria. The approach also aids in sharing the responsibility for *E. coli* reductions among various stakeholders in the TMDL watershed, which encourages collective implementation efforts.

Weaknesses of the TMDL analysis are that non-point source (NPS) load allocations were not assigned to specific sources within the watershed, and the identified sources of *E. coli* were assumed based on the data collected in the watershed, rather than determined by detailed monitoring and sampling efforts. Moreover, specific source reductions were not quantified. However, EPA believes the strengths of the State's proposed TMDL approach outweigh the weaknesses and that this methodology is appropriate based upon the information available. In the event that *E. coli* levels do not meet WQSs in response to implementation efforts described in the TMDL submittal (Pages 9 - 11), the TMDL strategy may be amended as new information on the watershed is developed, to better account for contributing sources of the impairment and to determine where reductions in the Plummer Creek watershed are most appropriate.

Critical conditions: There is no one critical condition for this TMDL that will assure attainment of WQSs (page 7 of the TMDL). The critical condition for pollutant loadings is mainly under dry conditions, which would generally be in the late summer. Under these conditions, the impairments are due to septic discharge, wildlife, and domestic animals in the streams, all of which are not related to run-off. However, exceedences are also occurring during mid-range to moist conditions, which would indicate the sources under these conditions would be related to run-off events from farm fields, tile drainage, and near-stream pasturing.

By using the LDC method, all these "critical conditions" are accounted for in the loading allocations. IDEM will be able to determine which flow regime (dry, moist, wet, etc.) is best targeted for implementation activities.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this third element.

4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity attributed to existing and future nonpoint sources and to natural background. Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. '130.2(g)). Where possible, load allocations should be described separately for natural background and nonpoint sources.

Comment:
Load Allocation: The Load Allocation Section of the TMDL submittal and related material states that the load allocation for the segments in the watershed is equal to the Water Quality Standard: *E. coli* may not exceed the geometric mean of 125 cfu/100 ml and the single sample maximum of 235 cfu/100 ml, from April 1st through October 31st. IDEM did not determine a natural background load due to insufficient data, however, impacts from wildlife were considered as a source.

IDEM calculated the geometric means and reductions needed for each sampling site in the watershed (Table 2 of the TMDL). As previously discussed, IDEM developed load duration curves (LDCs) for the Plummer Creek watershed. These LDCs can be used to determine a daily mass loading, if needed. The daily mass loading will vary depending on stream flow. These curves will be used by IDEM to target those critical flow regimes for implementation (Page 8 of the TMDL), and to determine the reduction needed for each sampling site in the watershed (Table 2 of the TMDL). Thus, rather than determine reductions based upon land use types or source categories, the reductions are based upon geographical location .

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fourth element.

5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to individual existing and future point source(s) (40 C.F.R. '130.2(h), 40 C.F.R. '130.2(i)). In some cases, WLAs may cover more than one discharger, e.g., if the source is contained within a general permit.

The individual WLAs may take the form of uniform percentage reductions or individual mass based limitations for dischargers where it can be shown that this solution meets WQSs and does not result in localized impairments. These individual WLAs may be adjusted during the NPDES permitting process. If the WLAs are adjusted, the individual effluent limits for each permit issued to a discharger on the impaired water must be consistent with the assumptions and requirements of the adjusted WLAs in the TMDL. If the WLAs are not adjusted, effluent limits contained in the permit must be consistent with the individual WLAs specified in the TMDL. If a draft permit provides for a higher load for a discharger than the corresponding individual WLA in the TMDL, the State/Tribe must demonstrate that the total WLA in the TMDL will be achieved through reductions in the remaining individual WLAs and that localized impairments will not result. All permittees should be notified of any deviations from the initial individual WLAs contained in the TMDL. EPA does not require the establishment of a new TMDL to reflect these revised allocations as long as the total WLA, as expressed in the TMDL, remains the same or decreases, and there is no reallocation between the total WLA and the total LA.

Comment:
Wasteload Allocation: Wasteload allocations are discussed in the Wasteload Allocation Section and the Reasonable Assurance Activities Section of the TMDL submittal and the related material. The wasteload allocation for all facilities subject to NPDES regulation is equal to the Water Quality Standard: monthly geometric mean of 125 cfu/100ml and a single sample maximum of 235 cfu/100ml, from April 1st through October 31st. The TMDL submittal indicates there are no known

point sources located in the watershed; however, IDEM points out that not all sites have been inspected. There may be animal feeding operations which the state determines are CAFOs requiring a permit, and in the future the state may determine an area needs a MS4 permit. The TMDL allows for these potential future point sources by setting a WLA of 125 cfu/100 ml (geometric mean of 5 samples in 30 days) and a single sample maximum of 235 cfu/100 ml. Thus, any future point source will have a permit limiting the pathogen discharge to the WQS and the source should not cause or contribute to a pathogen impairment.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this fifth element.

6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety (MOS) to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA '303(d)(1)(C), 40 C.F.R. '130.7(c)(1)). EPA=s 1991 TMDL Guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

Comment:
The Margin of Safety Section of the submittal states that there is an implicit margin of safety because no rate of decay was used in calculations or in load duration curves for the pathogens. Since pathogenic organisms have a limited capability of surviving outside their hosts, a rate of decay would normally be used. However, it was determined by IDEM that it is more conservative to use the water quality standard of 125 cfu/100 ml geometric mean and a single sample maximum of 235 cfu/100 ml *E. coli*, and not to apply a rate of decay which could result in a discharge limit greater than the water quality standard.

EPA finds that the TMDL submittal from IDEM contains an appropriate MOS satisfying all requirements concerning this sixth element.

7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The TMDL must describe the method chosen for including seasonal variations. (CWA '303(d)(1)(C), 40 C.F.R. '130.7(c)(1))

Comment:
The Seasonality Section of the TMDL addresses seasonality by using WQS for total body contact during the recreational season (April 1st through October 31st) defined previously. Any high or low flows are addressed within the TMDL because this is a concentration-based TMDL, and IDEM has analyzed impacts based upon the LDC method, which accounts for seasonal variations in flows and thus in loads. Therefore all the standards will be met regardless of the season or flow events.

EPA finds that the TMDL submittal from IDEM satisfies all requirements concerning this seventh

element.

8. Reasonable Assurances

When a TMDL is developed for waters impaired by point sources only, the issuance of a National Pollutant Discharge Elimination System (NPDES) permit(s) provides the reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R.122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with Athe assumptions and requirements of any available wasteload allocation@ in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA=s 1991 TMDL Guidance states that the TMDL should provide reasonable assurances that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to implement water quality standards.

EPA=s August 1997 TMDL Guidance also directs Regions to work with States to achieve TMDL load allocations in waters impaired only by nonpoint sources. However, EPA cannot disapprove a TMDL for nonpoint source-only impaired waters, which do not have a demonstration of reasonable assurance that LAs will be achieved, because such a showing is not required by current regulations.

Comment:
There are several reasonable assurance actions that will be taken to help implement the TMDL. They are in the Reasonable Assurance Activities Section of the TMDL submittal and include, briefly:

- Confined Feeding Operations (CFOs) management of manure, litter, and process wastewater;
- Watershed projects – IDEM has hired a Watershed Specialist as a liaison between planning and activities. IDEM has also worked with the USDA NRCS to improve water quality in the area. NRCS is working with numerous stakeholders in the watershed to fund watershed restoration efforts under a variety of NRCS funding.
- TMDLs completed and implemented in other portions of the watershed can contribute to the water quality of this watershed. A TMDL for Richland Creek is currently being completed. Richland Creek is a tributary to Plummer Creek, to the improvements on Richland Creek will also improve Plummer Creek.
- The Sycamore Land Trust currently owns land in Greene County, and expects to continue conservation efforts in the area.

EPA finds that this criterion has been adequately addressed.

9. Monitoring Plan to Track TMDL Effectiveness

EPA=s 1991 document*, Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001), recommends a monitoring plan to track the effectiveness of a

TMDL, particularly when a TMDL involves both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur. Such a TMDL should provide assurances that nonpoint source controls will achieve expected load reductions and, such TMDL should include a monitoring plan that describes the additional data to be collected to determine if the load reductions provided for in the TMDL are occurring and leading to attainment of water quality standards.

Comment:
The Monitoring Section of the TMDL submittal states that monitoring will occur on the 5-year rotating basin schedule or when some of the TMDL implementation is in place. Monitoring will be adjusted as needed for continued source identification and determination whether standards are being met.

EPA finds that this criterion has been adequately addressed.

10. Implementation

EPA policy encourages Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired by nonpoint sources. Regions may assist States/Tribes in developing implementation plans that include reasonable assurances that nonpoint source LAs established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. In addition, EPA policy recognizes that other relevant watershed management processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implementation plans.

Comment:
Implementation is discussed in the Reasonable Assurance Section of the TMDL submittal. As discussed in Section 8 of this document, a number of programs are funding activities in the watershed. The Potential Future Activities Section of the TMDL submittal is focused on BMPs, riparian area management, manure collection and storage, contour row crops, manure nutrient-testing, drift fences, pet clean-up and education, and septic management and public education.

EPA reviews, but does not approve, implementation plans. EPA finds that this criterion has been adequately addressed.

11. Public Participation

EPA policy is that there should be full and meaningful public participation in the TMDL development process. The TMDL regulations require that each State/Tribe must subject calculations to establish TMDLs to public review consistent with its own continuing planning process (40 C.F.R. '130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval should describe the State=s/Tribe=s public participation process, including a summary of significant comments and the State=s/Tribe=s responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. '130.7(d)(2)).

Provision of inadequate public participation may be a basis for disapproving a TMDL. If EPA

determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

Comment:
IDEM held a kick-off meeting for this TMDL for stakeholders and the public on November 8, 2005, in Bloomfield, Indiana. The TMDL was put on public notice from February 13, 2006, to March 15, 2006, to provide the public an opportunity to provide comments and input on the TMDL. The draft TMDL was included on the IDEM State Calendar, and the IDEM TMDL website. Public notices were also sent to interested parties and local government officials. The presentations for all the public meetings were included in the final TMDL submittal. U.S. EPA sent IDEM comments on the draft TMDL, and the comments were adequately addressed in the final TMDL. No other comments were received.

EPA finds that the TMDL submittal from Indiana satisfies all requirements concerning this eleventh element.

12. Submittal Letter

A submittal letter should be included with the TMDL submittal, and should specify whether the TMDL is being submitted for a *technical review* or *final review and approval*. Each final TMDL submitted to EPA should be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State=s/Tribe=s intent to submit, and EPA=s duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final review and approval, should contain such identifying information as the name and location of the waterbody, and the pollutant(s) of concern.

Comment:
EPA received the Plummer Creek TMDL on April 13, 2006, accompanied by a submittal letter dated April 6, 2006. In the submittal letter, IDEM stated this TMDL is "the Final TMDL submission from the State of Indiana." Four segments are addressed in the TMDL, listed in Table 1 below. Plummer Creek is impaired for Recreational Use on Indiana=s 303(d) list due to *E. coli*.

13. Conclusion

After a full and complete review, EPA finds that the TMDLs for the Plummer Creek Watershed satisfies all of the elements of approvable TMDLs. This approval is for 4 TMDLs addressing 4 waterbodies, for one pollutant each, addressing a total of 4 impairments.

EPA=s approval of this TMDL does not extend to those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove TMDLs for those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under the CWA Section 303(d) for those waters.

Table 1

Waterbody Name	303(d) List ID	Segment ID Number(s)	Length (miles)	Impairment

Black Ankle Creek, Dry Branch	139	INW0246_00	11.11	*E. coli*
Plummer Creek	139	INW0246_T1023 INW0249_T1024	15.05	*E. coli* *E. coli*
Flyblow Branch, Burcham Branch, Letsinger Branch, Unnamed tributary	139	INW0249_00	9.18	*E. coli*