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COMMENTOR	Ltr #	COMMENT	RESPONSE
Ashley, Jodie & M	96-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Wawrzynek Family	142-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
"Concerned Resident"	621-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
"Residents"	373-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(Name is not given)	100-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(No name given)	34-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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(No Name Given)	188-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(No name given)	294-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(No Name Given)	463-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(No name given)	563-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
(No name was given)	442-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
`Amy Wareikis	27-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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A Concerned Citizen	589-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A Concerned Resident	688-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A. & S. Schneider	298-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A. J. Birch	597-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A. Nandone	334-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A. Scsott McWilliams	249-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
A. Smith	87-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
A. Tran	229-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Abington & Ambler	715-01	Overall, we find that the referenced document is seriously flawed and should be withdrawn pending completion of a scientifically defensible TMDL and amendment of the water quality criteria to reflect current science and the actual time frames necessary to protect the existing and designated uses. Specific comments supporting this conclusion are provided below. Herder	EPA disagrees, the TMDL is sound and scientfically supportable. The foundation of the TMDL is supported by sound science and is completely defensible. EPA can and will, if necessary, successfully defend the assumptions, theory and results of this TMDL.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-12	The model was prepared without measurement of specific, critical parameters including algal and periphyton growth rates, respiration rate, death rate, CBOD decay rate, sediment oxygen demand, nitrification and denification (sic) rates, nitrogen and phosphorus recycling rate from dead algae, and carrying capacity of periphyton (Report @ D-14). These parameters were subject to calibration until the model reproduced the observed DO data observed during the low flow survey period of 2002. However, the suitability of the calibration values for these critical parameters was not verified using an independent set of water quality data. Without such validation results, EPA cannot know whether the calibration values are accurate or horribly misrepresent Wissahickon Creek. EPAs failure to verify the accuracy of the model violates the Data Quality Act and is plainly inconsistent with EPAs own guidance on proper water quality model development. Herder	The commenter appears to misinterpret or clearly fails to understand EPAs guidance with respect to water quality model development. Guidance and policy has directed EPA not to delay the development of TMDLs until an absolute set of data and analysis is available for the waterbody. In fact guidance and policy directs EPA to factor the lack of data into the TMDL with the use of a margin of safety (MOS). In this case the MOS that was used was minimal. EPA would be willing to increase that safety factor. EPA protocol provides for an ideal procedure for the development of water quality models but clearly indicates that "these steps are generic and can be modified according to available data...".
Abington & Ambler	715-18	The Creek is only intended to maintain stocked trout until anglers catch the fish, the fish migrate out the mouth, or the fish die when water temperatures rise. Chronic impacts, such as effects on growth and/or reproduction, are not of concern for this type of fishery. However, the DO standard applies a minimum DO of 5.0 mg/l during the stocking period. This minimum DO is a chronic endpoint to ensure the maximum growth rate of trout. The endpoint provides unnecessary protection for the designated use (e.g., trout survival). Only acute endpoints are appropriate for trout stocking. The EPA 1986 DO Water Quality Criteria confirm that trout require a minimum DO of 3.0 mg/l to protect against acute effects. Herder	Pennsylvania Department of Environmental Protection (DEP) adopted the water quality standards for trout stocking. Since these are the existing applicable standards for the water, EPA appropriately used them to develop the TMDL. Issues with the standards should be addressed with the DEP.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-19	The ôtrout stock fisheryö designation from February 15 through July 31 is inappropriate for Wissahickon Creek because natural conditions are inimical for this designated use. PA DEP establishes a maximum temperature of 74¦F (23.3¦C) for trout stock fisheries. However, data collected by USGS clearly demonstrates that the temperatures in June and July frequently exceed 23.3¦C at the mouth of Wissahickon Creek, with temperatures recorded as high as 29¦C (see Figure 2). Further upstream, temperature is likely to be higher than these recorded values due to extremely shallow conditions and exposure to direct sunlight (Report @ 5-1). Consequently, the trout stock fishery designation should be limited to the period from February 15 through May 31. Herder	Pennsylvania Department of Environmental Protection (DEP) adopted the water quality standards for trout stocking. Since these are the existing applicable standards for the water, EPA appropriately used them to develop the TMDL. Issues with the standards should be addressed with the DEP.
Abington & Ambler	715-20	Based on this information, compliance with DO standards should be evaluated against a minimum DO of 3.0 mg/l and the trout stock fishery designation should be restricted to the period from February 15 through May 31. We intend to petition PADEP to establish a site-specific DO standard below 5.0 mg/l for Wissahickon Creek in light of EPAs own criteria and the temperature condition for these water. Herder	Pennsylvania Department of Environmental Protection (DEP) adopted the water quality standards for troout stocking. Since these are the existing applicable standards for the water, EPA appropriately used them to develop the TMDL. Issues with the standards should be addressed with the DEP. Petitioning DEP for a change in a standard is your option.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-23	The Report states "Although the TMDL and WLAs were calculated based on loads for critical low-flow conditions, those WLAs requiring reductions in existing loads must be implemented as concentrations of effluents in order to address reductions through reissue of NPDES permits" (@ 4-7). This statement is patently false. TMDLs may only specify allowable loads and achievement of those loads ensures water quality standards compliance. There is no demonstration that concentration-based limits are necessary to ensure standards compliance even when the TMDL mass limits are met. While NPDES permits may include limitations for both concentration and mass, this does not mean that concentration-based limits are demonstrated to be necessary for this TMDL. Herde	Both loads and concentrations were provided. If a facility wishes to adjust allowable flows from a facility downwards, the concentrations may be adjusted.
Abington & Ambler	715-25	Both narrative and numeric water quality objectives are to be set at the level necessary to protect stream uses. Federal regulations require states to have an implementation procedure that will be used in the application of narrative water quality criteria (40 CFR º131.11). This procedure provides the public with an objective means to determine how a rule will be interpreted and whether or not the actions in question actually violate state law. DEP has not developed such implementation procedures for siltation. Thus, there is no basis for knowing what the proper water quality objective needs to be or whether or not the current condition actually violates state standards. Proof must be independently presented in the administrative record demonstrating that a violation exists and demonstrating the level of water quality necessary to prevent the violation. Herder	The state has identified the Wissahickon as impaired through the section 303(d) listing process. In addition, the modeling has shown impairment at critical design periods. Federal regulations identify water quality modeling as one method of identfiying impairments or threathened waters,

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-30	Assuming that EPA does have authority to generate a TMDL to regulate instream loadings generated by storm event, the wrong causative agent is regulated. Bank erosion is alleged to be caused by excessive runoff velocities and volume. Thus, while the TMDL seeks to regulate outside inputs, the proper focus of the TMDL should be velocity reduction and reduced runoff flow (not loads) to the system. TMDLs are to regulate pollutants, not water quantity. This TMDL is arbitrary because it regulates sources that are not the cause of the impairment, if such impairment actually exists. At most, the TMDL should have made a recommendation that BMP measures should be employed to reduce stream flows during storm events. Herder	EPA agrees that flow velocity and volume need to be controlled and are the major source of the stream bank erosin. Please see the discussion on this issue in the TMDL report.
Abington & Ambler	715-21	The receiving waters were not listed for nitrates and therefore EPA has no authority to set a nitrate TMDL. Moreover, the nitrate drinking water objective used by EPA to set the TMDL only applies at water intakes and no such intake is identified in Wissahickon Creek. Therefore, the TMDL for nitrates should be withdrawn. Herder	The impact of WLAs on the Queen Lane water treatment plant was considered in this analysis. The WLAs for the Wissahickon Creek will be protective of the water supply. The Water qulaity standard will be met at the intake of the Queen Lane water treatment plant. The Wissahickon Creek supplies approximately 20-30% of the source water to the Queen Lane water treatment plant so the Wissahickon as part of the source water for the Queen Lane Plant must be considered in the anaylsis.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-24	Review of the siltation TMDL developed for the Wissahickon Creek indicates that the restrictions derived and to be imposed upon the local community are not consistent with state or federal law. The TMDL purportedly implements a narrative water quality standard. There are specific procedural requirements for doing so and this TMDL does not comply with those prerequisites. Herder	The TMDL is consistent with State and Federal Law as described below. In 1987 Congress amend the Clean Water Act (CWA) to require implementation, in tow phases, a comprehensive national program for addressing storm water dishcarges. Phase "I" was promulgated on November 16, 1990 and Phase "II" was finalized on December 8, 1999. Phase "II" NDPES regulations apply to all the Municipalities in this watershed and are considerd point sources and are permitted. Storm water discharges that are regulated under Phase I or Phase II of the NPDES storm water program are point sources that must be included in the WLA portion of a TMDL. ~ 40 C.F .R. º 130.2(h). Storm water discharges that are not currently subject to Phase I or Phase II of the NPDES storm water program are not required to obtain NPDES permits. 33 U .S.C. º1342(P)(1) & (P)(6). Therefore, for regulatory purposes, they are analogous to nonpoint sources and may be included in the LA portion of a TMDL. ~ 40 C.F .R. º 130.2(g).
Abington & Ambler	715-29	EPA has concluded that a 70% reduction in siltation is necessary. There is no indication regarding how this reduction will allow for full attainment of uses while other less restrictive reductions or measures would not. Thus, the restriction imposed was pure guesswork, an arbitrary approach to environmental regulation. Moreover, the TMDL indicated that the primary source of the stream siltation is the stream itself. Internal loadings are generated due to bank erosion, not due to outside inputs. The Act does not regulate the natural generation of pollutants by a water body. Herder	There is nothing "natural" about a Creek that runs almost entirely through an urban setting. This TMDL sets allcations to the source and the cause of the impairment as required by EPA guidance and regulations. NPDES-regulated stonn water discharges must be addressed by the wasteload allocation component of a TMDL. ~ 40 C.F.R. º 130.2(h). NPDES-regulated storm water discharges may ~ be addressed by the load allocation (LA) component of a TMDL. ~ 40 C.F .R. º 130.2 (g) & (h).

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-31	In short, the proposed TMDL for siltation should be withdrawn and reconsidered. Unless EPA can demonstrate that biota are currently impaired and the degree of siltation causing the impairment, further action on this TMDL should not occur. Moreover, assuming impairment is demonstrated and the cause is siltation, EPA should not seek to regulate external sources of silt as such loads are largely irrelevant to the cause of the impairment. A BMP program implemented by the state to reduce stream flow velocity would be the most appropriate approach. That approach does not require the adoption of an external load restriction. Herder	As a result of biological investigations conducted by the Pennsylvania Department of Environmental Protection (PA DEP) that identified observed impacts on aquatic life, much of the Wissahickon Creek watershed has been listed on the State's 303(d) list of impaired waters. Twenty one stream segments in the Wissahickon Creek watershed have been included on Pennsylvania's 303(d) list due to siltation impairments (Table 1-2; Figure 1-3). These include the six segments of Wissahickon Creek as well as 15 additional stream segments in the watershed. Sources of siltation impairments include urban runoff/storm sewers and habitat modification. This data was determined to using PADEP methodology to be impaired due to silation, thus requiring a TMDL to be developed.
Abington & Ambler	715-02	a) Q7-10 Flow Miscalculated The model purports to characterize Wissahickon Creek under critical conditions, described as the Q7-10. The Q7-10 was determined from an evaluation of historical flows at USGS Gauge 01474000 as 16.26 cfs (Report @ D-24). This flow includes the contribution from all direct dischargers. An extremely low base flow was predicted from this analysis (e.g., 1.4 cfs). However, the model set all point source dischargers at their permitted design flows, totaling 27.9 cfs, even though their actual contribution under drought conditions was only 14.9 cfs. Consequently, the model pairs incompatible conditions of drought stream flow with maximum POTW flows. Moreover, because the flow analysis did not attempt to pair the relevant plant flows occurring during the historical dry weather periods (e.g., POTW flows occurring during 1965 drought) the analyses underestimated the actual base flow. Herder	For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits.
Abington & Ambler	715-03	Inappropriate Plant Discharge Flows Used. Herder	For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-04	Under drought summer conditions, the cumulative discharge flows would be in the lower portion of this range. Therefore, EPA has improperly estimated expected POTW loadings during low flow conditions and development of a TMDL that sets concentration limits tied to the improper flows is inappropriate and unnecessary to ensure. Herder	For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits.
Abington & Ambler	715-05	The Report distinguishes between designated uses of trout stock fishery and warm water fishery. An evaluation of the USGS historical record of flow at the mouth of Wissahickon Creek demonstrates that the seven-day low flows occurring between February 15 and July 31 (e.g., the trout stock fishery season) are significantly greater than similar flows occurring for the warm water fishery season (Figure 1). The model should have evaluated the higher flow associated with trout season to develop the TMDL based on DO requirements for trout. Greater dilution is available during the ôtrout stockingö period and it was inappropriate to base the Q7-10 flow used in the analysis on flows occurring in the non-trout period. Herder	The TMDL considered seasonal limits based on Pennsylvania's seasonal limt strategy. Design conditins are consistent wioth PA DEP procedures. Please see the TMDL report for a discussion on sesasonal limits.
Abington & Ambler	715-06	In summary, the combination of stream dilution flow and point source permitted flow used in the model cannot occur; therefore the model evaluates fictitious conditions not representative of the situation of concern. The actual Q7-10 base flow is underestimated due to the failure to properly consider plant flows occurring simultaneously with the drought condition. Furthermore, separate seasonal stream dilution flows should have been determined to evaluate TMDL requirements for the two stream designations. Herder	For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-07	The model sets fixed re-aeration rates for all 115 segments representing Wissahickon Creek. This approach is contrary to standard engineering practice and EPAÆs own water quality modeling guidance, which is to calculate the re-aeration rate based on channel geometry and hydrology (already determined by the hydrodynamic portion of the TMDL model). No justification is provided for setting the re-aeration rates throughout the model, therefore the approach used for this critical parameter is arbitrary. Herder	As a response to comments, the water quality model was modified to include a reaeration equation as a function of streamflow. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development. Senstivity analyses were re-evaluated as a result of such changes.
Abington & Ambler	715-08	These statements are incompatible. How can the model only be moderately sensitive to decay rate, yet the appropriate decay rate for highly treated effluent (0.08/day) causes the model to severely over predict DO? A review of the calibration results, presented on Figures D-10, D-14, and D-18 of the Report, indicate that the model under-predicts DO through much of the study area. Thus, the selected decay rate has no basis in science and is arbitrary. Herder	Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. Obviously, with the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered over-aggressive to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety. For TMDL analysis and develpment of WLAs, if a lower Kd is used then a higher CBODu baseline load would result due to the higher CBODu/CBOD5 ratio associated with a low Kd. This effect on CBODu could further reduce the sensitivity of DO to Kd in TMDL analysis.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-09	The sediment oxygen demand (SOD) used in the model was based on calibrated values rather than measured SOD. The Modeling Report (@ 29) states that the SOD was adjusted based on load variation for the TMDL analysis. Both of these approaches are unacceptable. In the first case, given the potential cost for increased treatment, EPA should have obtained site-specific measurements of SOD for use in the model rather than guessing at the proper value. In the latter case, SOD adjustment based on load variation ignores the fact that treatment facilities, such as Ambler, discharge highly polished wastewater with no settleable solids present. It is unlikely that such effluent contributes to SOD. Furthermore, to the degree that EPA is claiming that SOD is caused by the wastewater discharges, the model does not account for settling of particulate CBOD (e.g., the CBOD load is oxidized in the water column). Consequently, by increasing the SOD to account for increased CBOD load, EPA is double counting the CBOD load and over-estimating its effect on DO. Use of an undocumented SOD and inconsistent SOD/CBOD assumptions is arbitrary and capricious.	The SOD was obtained through model calibration, which is the most widely accepted approach for deriving model parameters when no measured data are available. Note that in the SOD adjustment for TMDL analysis, the model considered the effluent characteristics of the dischargers through the use of a low value to cap the SOD immediately downstream of the dischargers when they discharge at their full permit capacity. For additional detail refer to the Section 4.2.2 of the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development. The model accounted for settling of particulate CBOD with a particulate/dissolved ratio of 30:70. Therefore, the CBOD was not double-counted.
		Herder	

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Abington & Ambler	715-10	The periphyton state variable is extremely important in that this variable controls the diurnal variability of DO predicted by the model (Report @ D-14). In fact, EPA's projections of minimum DO were essentially controlled by model predictions of periphyton. However, no data were collected to characterize periphyton in Wissahickon Creek for calibration of the model. In fact, the Report states "there is no data indicating the distribution of periphyton in the Wissahickon Creek system" @ D-15). In fact, the only data on periphyton cited in the Report references "a 1998 survey conducted by PA DEP" @ Page 1-3), but these data were not used to calibrate this state variable. It is inappropriate that point source dischargers will be required to spend millions of dollars on treatment based on model predictions dependent upon a parameter that was not even chatacterized during model calibration.	As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Also, caibration to periphyton mass was performed on data collected by PA DEP and ANSP in 1998. Documentation of model modifications and calibration are provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report.

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Abington & Ambler	715-13	As noted earlier, the model utilized a very conservatively developed Q7-10 flow, which was expected to occur less than one percent of the time during critical (e.g. warm weather) conditions. It is standard practice of the State of Pennsylvania to use a Q7-10 flow to ensure standards are not exceeded more frequently than one percent of the time (i.e., the compliance frequency required by state law). The Modeling Report identifies additional conservative assumptions that add to the MOS, including (1) the steady state modeling framework assumes permitted discharges are constant under the critical low-flow period, (2) the TMDL was based on the design flows allowed in the permit for each discharger, and (3) the use of critical conditions (e.g., drought flow, high temperature). EPA acknowledges that these are unlikely occurrences (Modeling Report @ 36). Compliance with water quality standards must be achieved at least 99 percent of the time (Report @ 1-10). EPA has made no demonstration that the multiple conservative assumptions used in the TMDL are needed to achieve 99 percent compliance. In fact, as the Q7-10 itself occurs less than one percent of the time, the additional conservative assumptions used in the TMDL Model greatly exceed PA DEPÆs requirement. Therefore, the MOS used in this model is unreasonable and unnecessary to achieve water quality standard compliance. Herder	The quoted "unlikely occurences" (from the draft Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development) by the commentor refers to the likelihood that POTWs discharge at permitted flow, and should not be taken out of context to describe all components of the implicit MOS. In the draft modeling report, implicit modeling assumptions were outlined on pp. 36-37 as: (1) The critical low-flow period results in a condition in which the point source flows account for over 98% of total flow within the reaches upstream of the confluence of Lorraine Run; (2) The steady state modeling framework assumes permitted discharges are constant under the critical low-flow period; and (3) The CBOD decay rate was set using the calibrated value of 0.18/day rather than using the 0.08/day corresponding to the discharge characteristics of effluents from a secondary treatment plant. The TMDL is required to consider critical conditions, so conservative assumptions (1) and (2) are necessary regardless of the implicit method of applying the MOS. Regarding assumption (3), see the response to comment 715-08. TMDLs requre application of a MOS in calculation. If an implicit MOS is not utilized, then an explicit MOS must be assumed as 10 percent of the total TMDL load, essentially reducing the combined WLAs by that amount.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-15	Monitoring data for the calibration period indicate that, with the exception of a small length of the Creek near its headwaters, the Creek was in compliance with the warm water fishery DO water quality standards for both average and minimum daily concentrations (see Figures C-3, C-6, D-10, D-14, and D-18). These data do not suggest that significant reductions in load are necessary to comply with DO water quality standards or that narrative criteria violations are being caused due to nutrients. Since EPA acknowledges that no reductions from point sources are necessary where ôdata was (sic) not available to suggest that DO criteria were not being metö (Report @ 5-1), the calibration data suggest that water quality problems in Wissahickon Creek do not exist. Therefore a TMDL is not necessary. Herder	Violations of the DO standard during summer 2002 were not confined to headwaters of Wissahickon Creek; violation were also observed at the downstream portion of Wissahickon Creek and on Sandy Run. Although localized portions of the Wissahickon Creek were in compliance with DO criteria, the entire extent of impaired streams in the watershed was included in analysis. The Wissahickon Creek is a complex system, and consideration must be made regarding impacts of sources of nutrients to all portions of the watershed. DO problems at downstream portions are affected by combined external loads from upstream portions of the watershed, regardless if localized stream sections experience no violations of DO criteria. Therefore, all portions of Wissahickon Creek and tributaries were analyzed downstream of major sources of nutrients to the stream.
Abington & Ambler	715-16	The Report indicates that compliance with the DO standard was based on meeting an average daily DO of 6.0 mg/l and a daily minimum of 5.0 mg/l (i.e., the trout stocking standard; @ D-28, D-31). However, the calibration period extends until August 11, when the warm water fishery standard is in effect. The report does not differentiate between the DO concentrations in Wissahickon Creek through the end of the trout stocking period and the subsequent warm water period even though EPA acknowledges, ôThis period of more stringent criteria was considered an essential distinction of critical conditions for the basinö. (Report @ 4-9) This lack of distinction is unacceptable and renders the results unusa Herder	The calibration period is independent of the TMDL analysis. Although the calibration period extended into the period designated as a warm water fishery, conditions within the stream are not believed to vary greatly over the sampling period. Data was used to calibrate the model to low-flow conditions in the stream for the summer period. Once calibrated, the model was reconfigured for critical 7Q10 conditions with dischargers at permitted flows. TMDL analysis was then based on appropriate DO criteria for determination of WLAs

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Abington & Ambler	715-22	TMDL is only set as necessary to meet water quality standards. The TMDL prepared for Wissahickon Creek is not necessary under non-drought conditions or during periods of lower temperature conditions. EPA, however, applies the TMDL requirements even at higher flows and lower temperatures. This expanded application of the TMDL is arbitrary and capricious and not authorized by federal law. If a TMDL is required for DO objectives, it should only apply for the month of July when stream flows are at or near Q7-10 conditions. Herder	WLAs consider seasonal variations for implementation. See Sections 4 and 5 of the revised TMDL report.
Abington & Ambler	715-26	EPAÆs presumption that a reference site is the proper basis for interpreting the narrative criteria and developing a TMDL is not supported in either rule or fact. First, there is no indication that the current siltation is actually impairing stream uses, which would require some demonstration of biological impairment and some scientific analysis tying that impairment to the pollutant of concern (See, EPA Water Quality Standards Handbook). Absent this demonstration, it is not even apparent that the narrative criteria are even exceeded for these waters. Herder	The purpose of the TMDL is not to demonstrate that the stream is impaired. Previous biological assessments performed by PA DEP have determined that the streams were impaired due to siltation, hence inclusion of Wissahickon Creek and tributaries on the state's 303(d) list of impaired waters. The reference site is a watershed with similar features and potential sources as Wissahickon Creek, but has been previously shown through similar PA DEP biological assessments to be unimpaired due to siltation. Therefore, the reference site is a reasonable basis for comparison regarding targets for siltation TMDL development for Wissahickon Creek.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-27	EPA has assumed that the water quality reflective of the reference site is necessary to ensure use protection from siltation. This is an assumption not supported by any evidence in the record. The fact that water quality is better elsewhere is not proof of the level of water quality necessary to protect beneficial uses. It is equally plausible that the level of siltation may be much greater than contained in the reference site without significantly impairing beneficial uses. Without such a demonstration (reference site water quality is necessary to protect uses) selection of this as the proper implementation of the narrative standards is arbitrary and capricious. Herder	The reference watershed approach is commonly used by PA DEP and EPA for TMDL development in Pennsylvania. Such an approach is generally selected when there are no numeric water quality criteria for endpoints in TMDL calculations. For siltation, no water quality standards are applicable, hence a reference unimpaired watershed was used to determine target loads for TMDL analysis. Previous biological assessments performed by PA DEP have shown that Ironworks Creek was unimpaired as a result of siltation. Therefore, review of water quality of Ironworks Creek was not necessary to prove that the stream was unimpaired and a viable candidate as a reference watershed. Several criteria were assessed in selection of the reference watershed that impact the sources and delivery of sediment to the streams (see Appendix E of the TMDL report). Ironworks Creek was determined to share many of these characteristics with Wissahickon Creek, hence providing a basis for the assumptions regarding applicability of the reference watershed for determination of TMDL endpoints.
Abington & Ambler	715-14	In summary, EPAs TMDL approach is contrary to accepted engineering practice and EPAs own modeling guidance which requires validation of models. Thus, this model and the TMDL violates the Data Quality Act and its implementating regulations as there is no indication as to the reliability of this model and it is inconsistent with published guidance. Finally the compiling of multiple conservative assumptions under rubric of a Margin of Safety without demonstrating such margin is reasonable or appropriate or necessary to implement state water quality standards, renders this entire analysis arbitrary and capricious.	The commenter clearly does not fully understand EPA guidance or has misinterpreted the guidance. The protocols and guidance clearly do not REQUIRE verification of a water quality model before it used for the developemnt of allocations. This comment is unfounded and without merit.
Abington & Ambler	715-11	EPA states, "For this study, the MOS is assumed implicit through conservative assumptions and the steady-state modeling approach of low flow conditions. (Report @ 4-3) Such an approach is unacceptable as it results in a model with an unknown level of safety. Herde	This appraco is consistent with EPA guidance that the commenter has so often quoted.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Abington & Ambler	715-17	Wissahickon Creek is designated for trout stocking and as a warm water fishery (Report @ 1-10). This designation establishes dissolved oxygen water quality standards of 6.0 mg/l (daily average) and 5.0 mg/l (minimum) for trout stocking (February 15 - July 31) and 5.0 mg/l (daily average) and 4.0 mg/l (minimum) for the remainder of the year (warm water fishery requirement). As a trout stock fishery, the Creek is not intended to maintain an indigenous population of trout. In fact, it cannot maintain a trout population because the waters are too warm (hence, the underlying warm water fisheries designation. Herder	EPA, as required by regulation, used the applicable state water quality standard for the development of this TMDL. If the commenter has concern about the appropriateness of this standard, then the commenter should contact the state.
Abington & Ambler	715-28	The reference stream is declared to be similar to Wissahickon Creek. This claim is not supported by substantial evidence. The critical factors to demonstrate similarity include the prevalence of biota in the stream in question and other essential characteristics that affect siltation (e.g., erodable soils but lack of "flashiness). These parameters, which governed the claimed need for TMDL development, were not examined. Thus the presence of improved biota in the reference stream, if such is the case, is not directly attributable to a lack of siltation. Herder	PA DEP biological assessments of both Wissahickon Creek and Ironworks Creek were reviewed for this approach. In addition, characteristics that affect siltation as mentioned by the commentor were considered and compared in Table E-1 of Appendix E. For instance, watershed slope, landuse distribution (indicative of impervious area), and geology are general watershed characteristics that impact "flashiness" of the streams. In addition, soil types, watershed slope, and geology are characteristics that can be related to soil erodability. Also, landuse distribution is an indicator of the similarity of sources of siltation from runoff.
Abington Wastewater	364-01	NPDES permit limits associated with the TMDLs for Abington Township will have a severe financial impact on Abington's sewer customers. We must have sufficient time to evaluate the water quality goals you have chosen to achieve, and the methods you have chosen to achieve them. We feel the modeling process must be subjected to a rigorous peer review in view of the costs involved. Robert S. Leber.	The model was made available to the stakeholders and their modeling and water quality analysis experts for detailed review and comment. EPA held several meetings and teleconferences with those experts to listen and address any technical issues that were of concern. The stakeholders will get another 30 day review period from June 9 to July 9, 2003 for further review. In addition, Pennsylvania Department of Environmental Protection has indicated that sufficient time will be provided to the municipalities in order to meet the requirements of the TMDL.

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Abington Wastewater	364-03	Significant additional energy consumption will result, along with its associated environmental, geopolitical and social costs. Increased sludge production resulting from stringent CBOD, and phosphorous limits places additional pressure on the shrinking number of biosolids disposal options that remain available. We believe that the costs are great enough that the probability of real water quality improvement must be very high to justify the costs. Robert S. Leber.	Pennsylvania has established water quality standards for the Wissahickon watershed that must be met. It is the responsibility of those discharging pollutants to the waters to assure that these standards will not be violated due to those discharges. The National Pollutant Discharge Elimination System (NPDES) permit is the vehicle for assuring that any party discharging wastewater to a waterbody does not violate those water quality standards. The NPDES permits will be based on the TMDL requirements.
Abington Wastewater	364-04	The designated use of the Wissahickon watershed is trout stocking fishery. Trout stocking occurs between February 15 and July 31. We request that seasonal limits be considered, which will protect the trout stocking use during the stocking season, and which will protect the stream as a warm water fishery the remainder of the year. We request that TMDLs calculated to protect designated uses during low flow seasons be recalculated to reflect the higher flows during seasons with higher stream flow. Robert S. Leber.	Seasonal limits have been considered consistent with the Pennsylvania Department of Environmental Protection's rules and policy. Please see the TMDL report for further discussion of seasonal limits.
Abington Wastewater	364-03	Significant additional energy consumption will result, along with its associated environmental, geopolitical and social costs. Increased sludge production resulting from stringent CBOD, and phosphorous limits places additional pressure on the shrinking number of biosolids disposal options that remain available. We believe that the costs are great enough that the probability of real water quality improvement must be very high to justify the costs. Robert S. Leber.	It is the responsibility of a permittee to assure that waste discharged from a facility that is permitted to discharge will not cause water quality standards violations.
Abraham Johnson	209-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Adam M. Sutton	25-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Adel A. Baker	205-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Adrian Hawthorne	459-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Agnes M. Leinheisin	161-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Aisha N. Raye	448-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Al Fry	366-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Albert G. Aldingo	293-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alexander Fiebrysch	616-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alexander Mills	480-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alice Gartland	237-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alireza Z. Zarandi	704-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alisa Leposki	180-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Alison Black	642-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alison Danilak	503-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Alyson Quinn	10-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amanda M.	719-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amber Crossen	560-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amin Shabazz	465-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Amy Cravetz	244-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amy Hunter	317-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amy Marie Young	665-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Amy Purcell	282-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Andrew Griffith	410-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Andy Sunberg	631-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Angel & April Henkel	248-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ann Marie Ploser	251-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anna C. Moore	210-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anna Marie Rubbo	515-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anne M. Heiple	203-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anne N. McCormick	125-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Anne Pirmann	486-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Annette F. Viola	219-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anthony Galzarano	339-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Anthony Preston	418-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Any Anu-Birge	481-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Appel & Malfara	103-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Ashley Parker	595-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Avery Hadley	527-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
B &C Hadley	553-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
B. & E. Finneny	175-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bailer Chase Timeny	113-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara & J. Mancini	357-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Barbara A. Hauck	29-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara A. Luberski	511-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara A. Selepak	65-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara Egan	327-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara Hoekje	30-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Barbara McAJ	201-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Bardia Bakhtari	197-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bates and Sapathi	495-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
BCW&SA	713-01	The proposed CBOD 5 limits exceed the typical limits available with commonly utilized processes at wastewater treatment plants. To meet these limits with current technology will require an additional treatment process such as filtration, a process which is more commonly associated with water treatment plants. Butler	Additional treatment processes will probably be required at some of the facilities. Filtration is not an uncommon treatment practice at wasterwater facilities.
BCW&SA	713-02	We question the goal of achieving 10 mg/1 at the mouth of the Wissahickon Creek and the tighter effluent limits imposed on wastewater treatment plants since they are apparently based on the use of a single grab sample instead of several 24 hour composite samples that were available from the study. Butler	The impact of WLAs on the Queen Lane water treatment plant was considered in this analysis. The WLAs for the Wissahickon Creek will be protective of the water supply. The Water qulaity standard will be met at the intake of the Queen Lane water treatment plant. The Wissahickon Creek supplies approximately 20-30% of the source water to the Queen Lane water treatment plant so the Wissahickon as part of the source water for the Queen Lane Plant must be considered in the anaylsis.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
BCW&SA	713-03	With an influent Total Kjeldahl Nitrogen (TKN), concentration of 40 mg/1 whereby 15 of that is organic nitrogen means 25 mg/1 of ammonia nitrogen is present to be treated. Once the 25 mg/1 of ammonia nitrogen is converted to nitrate and nitrate nitrogen, you would have to reduce the nitrate/nitrite nitrogen from 25 to a proposed limit of 17.66 mg/l. It is our experience in the design of treatment plants that a reduction of 8 mg/1 of total nitrate/nitrite nitrogen is difficult. It would be easier to denitrify from 25 parts to 6 or 8 parts than it would be to denitrigy to 17 parts. Therefore, the need for denitrifcation for the Wissahickon Water shed is questioned and would cause only a partial need for de nitrification at the treatment plant facilities.	As a response to comments, modifications were made to the water quality model. As a result of model modifications, WLAs were recalculated and updated in the revised TMDL report.
		Butler	
Beasl R. Johnson	06-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Beatrice Donnelly	108-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Beatrice E. Donnelly	117-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Becky Long	419-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Becky Rhoads	94-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ben & Sarah Dziedzic	567-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ben Swartz	399-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Benjamin Danilak	504-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Benjamin Wwiner	498-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Betty Blein	405-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Beverly Dale	532-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bill Mower	112-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brenda Taylor	350-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brian Antczak	35-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brian Garbacz	702-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Brian Jeffries	285-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brian Longo	270-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brian M. Donath	286-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bridget Flynn`	464-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bridget M. Unneny	208-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Brien Connelley	17-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Britt Nemeth	672-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bruce D. Giermann	550-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bruce M. Cohen	549-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bryan Schwartz	50-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Bud Roats	469-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
C and J Ferris	39-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
C. & C. Drucquer	475-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Calndida Taifor	137-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Carla McKie	488-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Carmen F. Volpe	64-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Carol F. Roth	119-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Carol Farris	569-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Carol Gana	143-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Caroline Slanga	213-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Casey & O'Neill	97-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Catherilne M. Evans	336-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Catherine Mondi	302-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Catherine Vine	274-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cathie Gillard	650-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Cathleen Carr	195-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Cathy A. Winterbotto	53-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Cathy Sponburgh	148-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Celie Moore	604-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Charles Bender	543-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Chet Cybularz	618-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Child of G. Kirns	721-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Chris Burke	15-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Chris Connor	280-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Chris Ireland	225-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Chris Switsky	485-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Christina C. Pelosi	319-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christina Scherwin	227-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christine Bischoff	499-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christine Lliu	531-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christine Lutz	438-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christine McCarnik	322-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Christine Witmer	256-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christopher Burke	564-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Christopher Patusky	680-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-03	Third. and given that the Delaware River Basin Commission (DRBC) considers this to be a groundwater-stressed basin, the TMDL should include a recommendation for conducting an Integrated Resource Planning approach as endorsed by DRBC. This approach may reveal water quantity based management options that could result in a lower cost to achieve compliance with water quality standards. These options might include shifting water supply to surface water sources to restore baseflow to depleted areas of the creek. This framework may prove valuable for this basin in which water supply, assimilative capacity for wastewater treatment, and trout fishery all compete as ses requiring certain flow quantity and quality levels to co-exist. PWD is prepared to support such an effort in the basin and is already collaborating in a research project with the American Water Works Association Research Foundation to develop a tool that can support this type of management framework Kumar Kishinchand	Conducting an Integrated Resource Planning approach may can be part of the implementation plan for the watershed. EPA aggrees that it could provide some valuable information, but does not need to be part of the TMDL.
City of Philadelphia	689-04	More specifically, reductions in the rate of stormwater runoff, increased recharge of these flows to the groundwater table, and restoration of the streambanks and in-situ habitat structure are needed. We fully support this goal and would welcome the opportunity to share strategies with EPA on how to make progress. We do however find ourselves in the difficult position of supporting the goal, but not agreeing with the process that defined and documented the TMDL, its allocations. and their inherent uncertainty. Kumar Kishinchand	EPA aggrees that reductions in the rate of stormwater runoff, increased recharge of these flows to the groundwater table, and restoration of the streambanks and in-situ habitat structure are needed in the watershed. We fully support this goal also and would welcome any strategies that PWD would like to share with EPA.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-06	We have achieved much progress working with the PA DEP's Act 167 Stormwater Management planning program to pilot techniques for integrating best management practices evaluation with measures that are protective 'of the stream banks, and frameworks that allow bank restorations to be undertaken in a complementary fashion. We recommend that this process should be called for in the TMDL recommendations and that the siltation TMDL be subject to revision once this more detailed modeling framework is in place. In summary, we would be interested in working with EPA to define an adaptive management process that would enable interim progress to be made in parallel with refinement of the technical basis of the TMDL. Kumar Kishinchand	EPA aggrees that PA Act 167 should be utlized. In Pennsylvania, Pennsylvania's Stormwater Management Act of 1978 (Act 167) requires each county to develop plans for each of its watersheds within its boundaries. This would be an excellent mechanism to properly plan watershed improvement projects in the Wissahickon. The watershed covered by an Act 167 Plan may cover a number of municipalities and could also cross county boundaries. Act 167 Plans must include provisions for improved water quality, groundwater recharge, post-construction storm water control standards, and stream bank protection strategies in addition to other storm water controls. In addition, a community must enact, administer, and enforce storm water ordinances within six months of PADEP's approval of the Act 167 Plans. An Act 167 Plan has not yet been prepared for the Wissahickon Watershed.
City of Philadelphia	689-07	We believe the document should more clearly state that the Draft Siltation TMDL is an initial estimate and has not been calibrated fully using the reference reach approach described in the document. Again, we do not argue the cause, only the inflexibility contained in a number that was generated without the benefit of fully executing the process described in the document. Until such time as these revisions can be made, we suggest that the percent removal values should not be included, and that the LA and WLA's be called initial goals or written to contain a similar caveat. Kumar Kishinchand	The modeling framework used for TMDL analysis is not subject to revision for this TMDL. However, if additional data becomes available that is believed to provide sufficient detail to indicate that the TMDL is inaccurate, the TMDL can be revised in the future. The WLAs and associated percent removals will remain in the TMDL report.See 689-15 response

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-10	PWD supports the concept of nitrogen-nitrate removal requirements in the WLAs for the nutrient TMDL and believes that they are supportive of the initiatives that both of our agencies are making in the area of source water protection. In addition to the aquatic life protection criteria. PWD is fully supportive of efforts to reduce nutrient inputs that contribute to potential excursion of the N02-NO3 water quality criteria as well as the growth of periophyton and other algae that can increase the level and cost of treatment that needs to be applied in our drinking water plants. Although its designated use is a trout stocked fishery, the Wissahickon Creek constitutes about 20% of the source water for our Queen Lane Water treatment plant. As such, we would like to encourage EPA to retain the nitrate removal requirements in the TMDL if at a minimum as margin of safety to protect against excursions of the water quality criteria from a water supply use standpoint. Kumar Kishinchand	The impact of WLAs on the Queen Lane water treatment plant was considered in this analysis. The WLAs for the Wissahickon Creek will be protective of the water supply. The Water qulaity standard will be met at the intake of the Queen Lane water treatment plant.
City of Philadelphia	689-12	On average, nitrate levels in the Wissahickon Creek are currently 5 mg/L. Currently conventional drinking water treatment does not remove nitrate and additional treatment technologies would be more expensive to add than removing nitrate at the source of discharge. Therefore, we encourage EPA to note the water supply use in the document and offer reasonable assurance in the modeling analysis that the nutrient removal requirements proposed in the WL A are protective of the drinking water supply use that the creek does indeed serve. Kumar Kishinchand	The impact of WLAs on the Queen Lane water treatment plant was considered in this analysis. The WLAs for the Wissahickon Creek will be protective of the water supply. The Water qulaity standard will be met at the intake of the Queen Lane water treatment plant.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-13	We also encourage EPA to consider the drinking water implications of alternatives that may be proposed to exclude nitrogen removal at upstream point sources. particularly when considering the compounding effect of our previous recommendation to use the gage-derived 7Q 10 flow conditions. Kumar Kishinchand	The impact of WLAs on the Queen Lane water treatment plant was considered in this analysis. The WLAs for the Wissahickon Creek will be protective of the water supply. The Water qulaity standard will be met at the intake of the Queen Lane water treatment plant. It is impossible for the TMDL to be based solely on the 7Q10 at the mouth when the sum of design flows of the dischargers exceed this flow. For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not historically discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits. Therefore, to include these design flows with a bcakground flow under 7Q10 conditions, a unique methodology was required. Water supply is not a designated use of Wissahickon Creek as stated in the comment.
City of Philadelphia	689-21	EPA should consider allowing the State Stormwater management planning process (Act 167) to refine the technical basis for the TMDL using the more detailed modeling approach that is typically employed. We believe that sediment reduction benefits could occur in parallel with such as municpal efforts to comply with the Stormwater Phase II program evolve. Kumar Kishinchand	EPA aggrees that PA Act 167 should be utlized. In Pennsylvania, Pennsylvania's Stormwater Management Act of 1978 (Act 167) requires each county to develop plans for each of its watersheds within its boundaries. This would be an excellent mechanism to properly plan watershed improvement projects in the Wissahickon. The watershed covered by an Act 167 Plan may cover a number of municipalities and could also cross county boundaries. Act 167 Plans must include provisions for improved water quality, groundwater recharge, post-construction storm water control standards, and stream bank protection strategies in addition to other storm water controls. In addition, a community must enact, administer, and enforce storm water ordinances within six months of PADEP's approval of the Act 167 Plans. An Act 167 Plan has not yet been prepared for the Wissahickon Watershed.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-22	A comparison of the sediment caused by streambank erosion (LA) to the sediment from surface runoff in a given municipality (WLA) appears to be 5 to 10 times greater for any given subwatershed. Given this indication that streambank erosion is the major source of sediment to the Wissahickon Creek, the AI process should allow utilities to adopt a flexible BMP process which allows for sediment loads reduced by streambank restoration (LA) to be traded for required sediment load reductions by surface runoff (WLA). The streambank restoration approach when combined with proper geofluvialmorphological and natural channel stream design techniques actually result in improved sustainable habitat for aquatic life helping to achieve the ultimate TMDL endpoints of aquatic life protection and restoration. Thus a combination of land based and stream based BMPs could result in a net environmental benefit that would be much more than just sediment load reduction and provide the most cost effective and sustainable actions. Kumar Kishinchand	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. Urban areas with high percent impervious ground cover are often difficult places to incorporate many of the BMPs listed. Protecting water quality in these areas is difficult for many reasons including, diverse pollutant loads, large runoff volumes, limited areas suitable for surface water treatment systems, high implementation costs, and destruction of natural buffer zones adjacent to water bodies. There are however, numerous case studies and a growing amount of research that exists on this subject that indicates using a combination of BMPs to fit the constraints of urban areas can be successful in restoring water quality and recharging the groundwater. The streambank restoration approach when combined with proper geofluvialmorphological and natural channel stream design techniques are definitley important for reducing the impact of storm water.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-25	It is important to note that the sediment and erosion damage that has been caused to the stream has been caused over a period of decades of upstream development. and therefore will most likely require a similar timeframe for its restoration. Since the Siltation TMDL is in need of further refinement and the coordination of multiple stakeholders efforts are necessary for successful and cumulative BMP implementation. it is recommended that EPA commit resources to development of an implementation plan, TMDL refinement, and/or an interim implementation process for the Wissahickon Creek Siltation TMDL. The development of an interim implementation process or refinement of the TMDL could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. Kumar Kishinchand	EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process.
City of Philadelphia	689-26	We recommend that this process should be called for in the TMDL recommendations and that the siltation TMDL be subject to revision once this more detailed modeling framework is in place. Therefore, we would be interested in working with EPA to define an adaptive management process that would enable interim progress to be made in parallel with refinement of the technical basis of the TMDL. Kumar Kishinchand	The modeling framework used for TMDL analysis is not subject to revision for this TMDL. However, if additional data becomes available that is believed to provide sufficient detail to indicate that the TMDL is inaccurate, the TMDL can be revised in the future. The WLAs and associated percent removals will remain in the TMDL report.See 689-15 response

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-27	This type of approach could also prove very beneficial to coordinate the complex and difficult actions that each municipality would need to accomplish and prevent problems between stakeholders that will rely on upstream municipality improvements to be completed before downstream efforts can be initiated. Kumar Kishinchand	EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process. The first step to effectively address the complex and varied nature of this part urban, part suburban, and rural watershed, is to develop a Watershed Management Plan which contains a plan of action for flow and pollutant load reduction and groundwater recharge. The Plan should address three major facets of watershed rehabilitation including 1) flow and pollutant reduction mechanisms (structural and nonstructural BMPs); 2) political mechanisms (Memorandum Of Agreements between municipalities and revised municipal ordinances); and 3) funding mechanisms (state and federal grants, local utility fees etc.)
City of Philadelphia	689-28	Given the comments made by EPA at the public meetings to the effect that an opportunity will be afforded to revise this TMDL at a future date, we believe the document should more clearly state that the Siltation TMDL is an initial estimate and has not been fully calibrated usinng the reference reach approach described in the document. Again. we do not argue the cause, only the inflexibility contained in a number that was generated without the benefit of fully executing the process described in the document. Until such time as these revisions can be made, we suggest that the percent removal values should not be included and that the LA and WLAs be called initial goals or written to contain a similar caveat. Kumar Kishinchand	The modeling framework used for TMDL analysis is not subject to revision for this TMDL. However, if additional data becomes available that is believed to provide sufficient detail to indicate that the TMDL is inaccurate, the TMDL can be revised in the future. The WLAs and associated percent removals will remain in the TMDL report.See 689-15 response

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-29	The attachment of a WLA and a percent removal requirement for sediment as shown in the TMDL document to all of the current and future stormwater permits in the watershed creates serious concern for PWD. First, the suggested presence of these "hard" values in the document creates a false belief that the load estimations are precise and accurate representations of the environment and that the removal percentages can be easily measured and achieved by simple techniques easily implemented by a municipality. The situation however is far from reality, therefore, we recommend that the document clearly state that these are estimates or examples used as a guideline or starting point from which municipalities can work from to developing an adaptive management plan. Kumar Kishinchand	EPA regulations require that a TMDL include WLAs, which identify the portion of the laoding capacity allocated to indeividual existing and future point sources(s) under 40 C.F.R. 130.2 (h) and 40 C.F.R. 130.2(i). In addition, a TMDL is a planning tool and should be used in this case as a target for reductions through the establishment of Best Management Practices.
City of Philadelphia	689-30	A "phased" WLA may be a more appropriate term for these values since they are subject to change as new information becomes available. The document could further outline a potential phased process mentioning the current siltation WLAs as a benchmark or pilot value that needs further field data collection for revision of the model, but provides a starting point for the Adaptive Implementation process to begin until the model is revised. Any mention of a percent removal value in these tables based on the gross assumptions used in the siltation model would be distracting from the main goal of the Adaptive Implementation process and should be removed. If percent removals are required or necessary. they could be developed at a later date in the phased TMDL approach process, but would not detract from the Adaptive Implementation process. Kumar Kishinchand	EPA requires that a TMDL include WLAs, which identify the portion of the laoding capacity allocated to indeividual existing and future point sources(s) under 40 C.F.R. 130.2 (h) and 40 C.F.R. 130.2(i). In addition, a TMDL is a planning tool and should be used in this case as a target for reductions through the establishment of Best Management Practices. The percent removals are just of simple calculation of the allocation. We believe that this information helps the reader identify and prioritize the where to begin planning implementation.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-31	There are a number of significant watershed features that the GWLF model did not account for in the siltation WLAs for portions inside the City of Philadelphia. Therefore. we recommend that the model be adjusted to examine sensitivity to these features and new WI-As be determined accounting for the following features: Dense old growth tree coverage reducing runoff more than just simple forest or tree cover as assumed for forested or parklands in most models. Significant stretches of natural stone banks and streambeds reducing estimated sediment erosion. Significant stretches of hydrologic modification such as armored streambanks that prevent streambank erosion and reduce sediment loading. It is not clear from the report that the LER's have taken into consideration that some of the stream banks in subwatershed 5 are either rock formations or armored (e.g. Monoshone Creek) We would be happy to work with EPA to incorporate refinements from local knowledge into the TMDL. Kumar Kishinchand	Other than modifications to the vegetation cover factor (C) and the conservation practices factor (P) utilized in the empirical algorithms utilized by AVGWLF, all input parameters were initialized within AVGWLF using spatial datasets populated by the Environmental Resources Research Institute of the Pennsylvania State University. Justification for modification of C and P factors were based on habitat assessments provided by PADEP for waterbodies in the Wissahickon Creek watershed as well as the Ironworks Creek watershed. Analyses of sensitivities of the features suggested in the comment would have required similar detailed survey of the entire watershed for completeness, but such detail was not prescribed in the approach selected for TMDL development. Instead, model parameters were based solely on AVGWLF datasets and PADEP habitat assessments. The LER of the streambank erosion routine within AVGWLF is limited in the ability to model spatial variation other than the watershed-specific values included in AVGWLF.
City of Philadelphia	689-01	Nutrient TMDL - Consistent with State guidance. the 7Q 10 flow used for the nutrient TMDL should be derived from measured streamflow gages. The draft TMDL approach utilizes flows from point source discharger records that are not congruous with streamflow history and thereby overestimate the available assimilative capacity of the stream. In the interest of ensuring aquatic life protection in the Philadelphia reaches of the creek and consistent with past precedent, we believe the 7Q10 must be adjusted to represent actual monitored flows. This adjustment will also implicitly account for any cessation in the flow augmentation to Lorainne Run from Coorson's Quarry. Kumar Kishinchand	The flow budget and distribution of inflows to Wissahickon Creek and tributaries during low flow periods were determined using observed summer 2002 flow monitoring data. This distribution was used to estimate the distribution of baseflow during 7Q10 conditions. For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not historically discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits. For TMDL calculation, it is doubtful that the methodology underestimated the assimulative capacity of the streams since the majority of headwater inflows were 0.105 cfs or less. Furthermore, it was found that all violations of the DO criteria were upstream of Lorraine Run, so any change in assumptions for Coorson's Quarry flow will not impact TMDL calculations.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-02	Although its designated use is a trout stocked fishery, the Wissahickon Creek constitutes about 20% of the source water for our Queen Lane Water treatment plant. We would encourage EPA to note this use in the document and offer reasonable assurance in the modeling analysis that the nutrient removal requirements proposed in the WLA will reduce periophyton and nuisance algal growths covered in the narrative water quality criteria, to a level sufficient to protect the quality of the drinking water supply for the City of Philadelphia under the flow conditions listed above. Kumar Kishinchand	The impact of WLAs on the Queen Lane water treatment plant was considered in analysis. No WLAs for Wissahickon Creek will result in negative impacts to the water supply of the treatment plant.
City of Philadelphia	689-05	In short. the comparative data for the reference watershed was not supplied. nor were direct comparisons made to substantiate the reference condition. Technically, we find that there is no basis for the TMDL since there is no indication that the desired sediment load simulated in Ironworks Creek actually represents the sediment load monitored in Ironworks Creek. Again. we do not argue that improvements may resolve an impairment to the aquatic habitat, but believe that refinements can be made using existing resources and regulatory programs outside the TMDL arena. Kumar Kishinchand	"The empirical formulation of the AVGWLF model used for TMDL analysis does not necessitate detailed calibration. However, where data is available, limited calibration can be performed. With a brief calibration of the model to Wissahickon Creek data (Appendix E of the draft Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania), the model was shown to represent conditions in the region with reasonable assurance. For Ironworks Creek, no water quality data was available for model calibration. However, in the absence of data, site-specific values of model input parameters were used. These site specific values were provided by the AVGWLF GIS interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. This formulation was determined sufficient in estimating sediment loads to Ironworks Creek in the absence of data for calibration. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-08	In the interest of ensuring aquatic life protection in the Philadelphia and consistent with State guidance and past practice, we request that TMDL be based on the 7Q 10 flow derived from actual long term streamflow measured by USGS. This would require corresponding adjustments to the load allocations and margin of safety determined with the " water quality model. At a minimum, one could not conceivably arrive at a 10% margin of safety given that more than a 100% difference exists between the estimated and the monitored 7Q10. Additionally, and under the above premise, further direct investigation should be made into the flow variability issue prior to accommodating requests to examine new load allocations under a reduced margin of safety. Kumar Kishinchand	"The flow budget and distribution of inflows to Wissahickon Creek and tributaries during low flow periods were determined using observed summer 2002 flow monitoring data. This distribution was used to estimate the distribution of baseflow during 7Q10 conditions. For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not historically discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits. The prescribed methodology was utilized to ensure protection of aquatic life for the critical low-flow condition. For the nutrient TMDL, the margin of safety for TMDL calculation was implicit through conservative assumptions rather than a direct application of a 10% factor as specified in the comment. "
City of Philadelphia	689-09	We believe that the 7Q10 flows derived from the USGS gage at the creek's mouth more accurately reflect the lumped operation of the quarry and water supply effects on baseflow in the upper basin, and their resulting impact on stream flow available for astewater assimilation. So that the aquatic life criteria can be protected at a level equal to the w astewater disposal and water supply uses occurring concurrently in the basin and for reasons to follow. we strongly encourage that past precedent be used here. Kumar Kishinchand	"It is impossible for the TMDL to be based solely on the 7Q10 at the mouth when the sum of design flows of the dischargers exceed this flow. For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not historically discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits. Therefore, to include these design flows with a bcakground flow under 7Q10 conditions, a unique methodology was required. Water supply is not a designated use of Wissahickon Creek as stated in the comment."
City of Philadelphia	689-11	The data collected for the TMDL has shown periods when nitrate has exceeded 10 mg/ L and the model simulations indicate that 7 mg/L is reached under the 40.8 cfs low-flow assumption. Since the majority of the creek water enters a PWD drinking water intake. controlling nitrate to reasonable levels to prevent these eursions is critical to our continued safe operation. Kumar Kishinchand	The impact of WLAs on the Queen Lane water treatment plant was considered in analysis. No WLAs for Wissahickon Creek will result in negative impacts to the water supply of the treatment plant.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-14	The method used to select the loading rates documented in table 4-6 on p. 4-17 appear arbitrary in absence of an explaination as to how these rates were determined. It is apparent that the rates in subwatershed 5 are categorically higher in every case despite being one of the only sub-basins with active development controls and a stormwater management ordinance in place. Please provide an explanation of the method used to derive the loadinarates shown in Table 4-6 and the rationale behind their selection that would justify orders of magnitude higher loading rates for subwatershed 5 as opposed to other subwatersheds. With this information, we could then work with EPA to identify any discrepancies in the assumptions of the features of the watershed within Subwatershed 5 that would be making such a significant impact compared with other parts of the watershed. Kumar Kishinchand	"Sediment loading rates were determined through empirical equations and input parameters provided by the AVGWLF model interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. While the unit area loading rates for sediment are partially dependent on landuse/type and management, there are other variables that play a role, including the soil erobibility factor (K) and the slope of the land, which can vary by watershed. The slope of the land in the downstream portion of the Wissahickon watershed is much steeper than the upper portion, which results in the larger unit-area loading rates for the downstream portion of the watershed."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-15	The method for the selection of sediment endpoints makes several large assumptions that need to be explained. It is assumed that the method uses the Generalized Watershed Loading Function model calibrated against flow and TSS concentrations during storm events. However, it was our understanding that the calibration process made use of the single USGS gage and associated TSS observations. The model uses pollutant source generation rates (unit area loading rates) to represent the contribution of TSS from land surfaces and delivery ratios to represent the sediment transport processes. The nature of a calibration process based on observations at a single downstream point necessitates the simultaneous adjustment of the source generation rates and the transport process to match observations. There is no defensible way to show if the proper processes were calibrated. This is important because the source generation rates attributed to various land surfaces are the basis for the WLA accounting procedure. Kumar Kishinchand	"The loading rates were determined through the empirical formulas within GWLF, with model variables parameterized using site specific data provided by the AVGWLF GIS interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. The empirical formulation of the AVGWLF model used for TMDL analysis does not necessitate detailed calibration. However, where data is available, limited calibration can be performed. With a brief calibration of the model to Wissahickon Creek data (Appendix E of the draft Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania), the model was shown to represent conditions in the region with reasonable assurance. Calibration was limited to factors for vegetation cover and conservation practices, with site specific variables associated with empirical estimation of source generation rates and transport processes (utilizing the Universal Soil Loss Equation) previously parameterized in AVGWLF by the Environmental Resources Research Institute of the Pennsylvania State University. The estimates for the vegetative cover (C) and conservation practices (P) factors in AVGWLF have been compiled by county, so the C and P factor values attributed to each watershed are based on the county that a particular watershed is located in (Evans et al. 2001). The C and P factors may be adjusted if specific local information is available. The C and P factors were adjusted for the Wissahickon Creek watershed based on habitat assessment information provided by PADEP. In general, the Wissahickon Creek watershed exhibited poorer habitat (i.e., riparian vegetation, bank condition, disruptive pressure, and bank vegetative protection) than the reference watershed. Therefore, C and P values in the Wissahickon watershed were increased to indicate poorer habitat conditions. This methodology was determined sufficient and defensible for estimation of sediment loads for Wissahickon Creek."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-16	Gage data is available at Fort Washington, but was not used to calibrate the upper part of the basin. The simulated flows for each subwatershed are not provided in the document aking it difficult to apply any local knowledge constructively. A analysis of the two gages was made to see if regional differences existed between the upper and lower parts of the basin. The runoff per unit area above and below the Fort Washington gage suggests that the upstream runoff is actually 25% greater per unit area than the area below the gage. (TT) We would be interested in working with EPA to make more direct comparisons to observed data in order to ensure that physiographic and other spatial differences are reflected accurately in the loading rates and runoff volumes. More detail on the gage comparison is provided below. (EPA) Kumar Kishinchand	"The Fort Washington USGS gage (01473900) was not used for hydrology calibration in the Wissahickon Creek watershed because there is a data gap between March 1969 and June 2000. There are only 15 months of recent flow data available at that station (6/1/2000-9/30/2001). Therefore, it was determined that the gage at the mouth of Wissahickon (01474000) would be more representative of hydrology trends in the watershed since it had flow data available for the entire modeling period (April 1993 through March 2001) representative of a variety of hydrologic conditions. "
City of Philadelphia	689-17	The comparison that was performed involved data from flow monitoring gages at the mouth of the Wissahickon Creek and at Fort Washington that for various time periods subtracting baseflow (using the USGS YSEP method). The results suggested that the observed runoff per square mile of drainage area is actually 25% higher above Ft. Washington (40.8 mi) than flows from the area downstream of the gage ('3.? mi-). This results in an additional 1.6 billion ;gallons of stormwater runoff per year (see Table 1). We believe it %%0LIld lend credibility to the TNIDL if document could provide the sub-basin-specific runoff parameters used in the model and make a comparison with the Fort Washington gage to calibrate the upper 2/3 of the basin to actual streamflow data. Kumar Kishinchand	The sediment loading rates listed in Table 4-6 are determined sufficient in describing the variability of sediment loads by sub-basin and landuse. The Fort Washington gage was not used for hydrology calibration because of a lack of sufficient flow data. See response to comment 689-16.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-18	Documentation of the sediment loading from Ironworks Creek was never provided in the draft therefore making a direct comparison with the Wissahickon Creek impossible. If any difference was observed in the supporting analysis., this could simply be a function of watershed size. Ironworks is a headwaters creek that is a fraction of the size and a lower stream order than the Wissahickon Creek. This-is an important consideration. Kumar Kishinchand	"There are no quantitative water quality data available for the Ironworks Creek watershed to make a direct comparison to the Wissahickon Creek watershed data. Sediment loading rates were determined through empirical equations and input parameters provided by the AVGWLF model interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. These sediment loading rates for the Ironworks Creek watershed were used for comparison of Wissahickon Creek sediment loads to to those of the reference watershed. To account for differences in watershed size, adjustments were made to the size of the reference watershed. See Section E.1 of Appendix E. "
City of Philadelphia	689-19	Siltation-is the result of a process of deposition and accumulation of sediment from all upstream sources. It has been recognized for years (USDA . etc.) that sediment yield is a function of contributing watershed size. Just because a headwaters creek may not have -siltation-issues does not mean that its sediment yield is not contribution to downstream "siltation'" problems. Thus. any reductions via WLA needs to be distributed across the entire watershed. including those areas draining to unimpaired reaches. We suggest that the recommendations outline steps that be taken to improve the understanding of these relationships. Kumar Kishinchand	"The division of the Wissahickon Creek watershed into five subwatersheds accounts for the the spatial variability of sediment loads and delivery to downstream portions of the watershed, thus including distribution of WLAs within TMDL calculation. In addition, percent reductions were specified for each impaired segment and consider upstream reductions prior to calculation. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
City of Philadelphia	689-20	The model uses lateral erosion rates (LERs) which are simply estimates of erosion per length of stream. We believe that a discussion on how these rates were derived and calibratedwould lend credibility to the document. It is recommended that these sources of sediment be identified in the model and WLA results for improved selection of BMPs. Also. the modeling approach appears to attribute all of the siltation to suspended sediment load. There is no recognition of bed load, or what modelers often refer to as sand load. According to the literature, bed-load transport is about 5-25% of that in suspension. The model does not take into account bed-load. therefore a significant portion of the load is lost in the calculations. Kumar Kishinchand	"Instream sediment loads were calculated within AVGWLF using a simple watershed-specific lateral erosion rate (LER) for streams. The source of the sediment from streambank erosion or relationship to bed load is not specified. For a more detailed discussion of the streambank erosion algorithm, see the AVGWLF Version 4.0 UserÆs Guide (Evans et al. 2001)."
City of Philadelphia	689-23	If a phased approach is truly being endorsed for siltation, the initial reductions set an nherently unachievable goal. If an 80% percent reduction in the concentration of sediment from surface runoff as for some municipalities is required, this likely would result in a requirement that stormwater discharge concentrations would need to be in the range of 10 - 20 mg/1 for over 90¦,'0 of storm events. These are concentrations below the requirements for point sources such as WWTP. If Stormwater loading of sediment from surface runoff needs to be reduced by 80%, this means controlling sediment loadings on the largest. low frequency storm events where most of the sediment loading occurs. Kumar Kishinchand	Percent reductions are based on annual predictions of sediment loads. Implementation of WLAs and required reductions for MS4s do not translate to numeric water quality criteria. See Appendix I.
City of Philadelphia	689-24	These large storms cannot be controlled by BMPs, which onlv effectively treat 1 to 2 year storms. If most of sediment loading is streambank erosion caused by low frequency. high intensity storms. than stream restoration is the only effective BMP and land based strategies would not be cost effective. Kumar Kishinchand	"TMDL analysis determined that although streambank erosion accounts for the majority of sediment load to Wissahickon Creek (requiring significant load reductions), MS4s also required load reductions."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Claire Hart	332-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Clare A. Bohn	13-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Claudia McSill	363-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Clean Water Action	691-01	A recent Source Water Assessment conducted by the PWD under contract to the state Department of Environmental Protection (DEP) ranked the sewage treatment plants that discharge into the Wissahickon as a major source of the pollution that threatens the Queen Lane intake. This TMDL offers an opportunity to address this problem, improving both the health of the Creek itself and the quality of drinking water for hundreds of thousands of people. Wendelgass/Van Rossum, etc.	The TMDL does address the water quality and supply issues.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Clean Water Action	691-02	We believe that the draft TMDL rightly identifies the five wastewater treatment plalnts (WWTPs) discharging into the watershed as the major source of nutrient impairment in the Creek. While nonpoint sources such as the golf courses contribute to the Creek's impairment, numerous studies have shown levels of impairment to be highest immediately downstream of the outfalls for the WWTPs. It is clear to us that it would be impossible to clean up the Creek without significantly decreasing the nutrients discharged by these sewage treatment plants. Their permitted discharge are clearly the major contributor to nutrient loads and consequent impairment of the Creek. Wendelgass/Van Rossum, etc.	The TMDL has addresssed the need for point source control of nutrients in order to assure that water quality standards are met.
Clean Water Action	691-05	Nutrient Reductions: While we believe that the WWTPs are the appropriate targets for reductions in the TMDL, we are concerned that the EPA may be backing away from the significant reductions needed to bring the Creek into conformity with water quality standards. In particular, we are concerned with proposals to scale back nutrient reductions in return for higher levels of dissolved oxygen (DO) in the effluent from the WWTPs. Wendelgass/Van Rossum, etc.	EPA is not backing away from any needed controls. We are basing the propsed limits for both the point sources and nonpoint sources onthe water quality data, effluent information and the calibrated water quality data developed for the Wissahickon watershed. EPA believes that higher levels of DO in the effluent is a proper consideration when it will benefit the receiving waters. This is common practice when developing effluent limits for point sources.
Clean Water Action	691-07	As a result, we oppose the suggestion to offset nutrient reductions with higher levels of DO in the effluent from the WWTPs. We urge EPA to require the nutrient reductions predicted in the analysis that assumes an effluent DO of 6.0 mg/L, while at the same time, requiring dischargers to meet an effluent DO of 7.0. We believe this will be the most protective scenario with the greatest margin of safety, and the one most likely to bring the Creek into compliance with water quality standards. Wendelgass/Van Rossum, etc	Our allocations are based on an effluent DO of 7 mg/l. The margin of safety for this TMDL is housed in other conservative assumptions incorporated into the model. Please see the TMDL and modeling reports for further infiormation on the margin of safety.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Clean Water Action	691-09	Implementation: The required nutrient reductions must be incorporated into the NPDES permits for the WWTPs that are up for renewal later this year and early in 2004. While a delay in meeting the new limits to allow for plant renovation may be appropriate, the limits must be incorporated into these new permits and cannot be allowed to wait for another five years. Wendelgass/Van Rossum, etc	The federal regulations at 40CFR122.44(d)(1)(vii)(B) require effluent limits be "...consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the state and approved by EPA...". EPA expects that when the permits are up for renewal they will be issued consistent with the requirement.
Clean Water Action	691-10	While we support the recommendations regarding implementation of BMP's for Trewellyn Creek, Lorraine Run and the headwaters of Pine Run, the TMDL is silent on who will implement these BMP's, how and when. Encouraging infiltration and additional tree canopy are important changes, but absent information on how they will be implemented and by whom, we are skeptical of a "reasonable assurance of success". Wendelgass/Van Rossum, etc	Please see the discussion on reasonable assurance for the sediment TMDL in the TMDL report.
Clean Water Action	691-12	The greatest reductions in runoff are assessed in Philadelphia and the most urbanized, developed suburbs. While there are activities that can be implemented in such communities, it will be moredifficult to achieve significant reductions in those communities than in the upstream communities that still retain significant amounts of undeveloped lands. While some of the recommended BMP's, such as riparian buffer zones and stormwater retention, are possible in urbanized areas, others, like cover crops are of limited applicability. Wendelgass/Van Rossum, etc	Please see the expanded discussion of sediment controls and reasonable assurance in the revised TMDL report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Clean Water Action	691-13	We would also encourage greater focus on stormwater infiltration throughout the watershed rather than retention and release as a better strategy to replenish groundwater and reduce erosion. In addition, despite the fact that bank erosion accounts for a significant portion of the sediment runoff, the recommendations proposed for controlling sediment runoff only minimally address bank erosion. Wendelgass/Van Rossum, etc	Flow volume and velocity and the need to control in order to reduce the stream bank erosion is discussed in more detail in the revised TMDL report. Please refer to that document for further information.
Clean Water Action	691-14	Finally, we are concerned that because MS4 permits will be awarded before the TMDL is finalized, no reductions in levels in these permits will occur for at least another five years, when the permits come up for renewal. This guarantees at least another five years of sediment impairment for the Creek. We encourage EPA and DEP to consider re-opening the MS4 permits in 2004 to incorporate the reductions indicated by this TMDL. Wendelgass/Van Rossum, etc.	EPA and DEP will address the sediment reduction needs through the existing permit consistent with EPA's clarifying memorandum (memo) concerning MS4 and TMDLs (memo dated November 22, 2002). This clarification memo states that in most cases no specific numerical limits are needed for the first round of MS4 permits in areas where TMDLs hav been completed and BMPs will suffice. The success of these BMPs will be reviewed and considered for the second round where numerical limits MAY be needed.
Clean Water Action	691-03	Critical Conditions: We believe that summer low-flow is the appropriate choice for the critical low-flow condition, although we believe the critical period extends through August and September. Based on the data in the TMDL, these are the months when nutrient levels reach their highest and DO levels their lowest. It is important that the critical flow period reflect this reality and protect the Creek when it is the most stressed, in August and September. Wendelgass/Van Rossum, etc	"The critical condition utilized for TMDL development is believed to be protective of any low-flow period during the summer period, which extends into September. Although calibration was confined to a single two week sampling period in August 2002, flow conditions within the watershed were adjusted to 7Q10 low-flow conditions that may occur at any time during the summer period. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Clean Water Action	691-04	We do not believe that the calculation used for critical low flow is justified. The calculation results in a critical low flow of over 250% of the 7Q10. Using a critical low flow that is higher than the 7Q10 allows for more assimilative capacity in the stream than actually exists and, there fore, allows for greater discharges than are warranted. Adjusting the critical low flow from 16.26 cfs to 40.8 cfs is a mathematical manipulation that is not adequately justified in the draft TMDL. Wendelgass/Van Rossum, etc.	"The TMDL requires calculation of WLAs for each discharger at permitted design flows. However, with all dischargers at design flows, the 7Q10 is exceeded. Therefore, a unique approach was required to estimate the background 7Q10 flow (minus discharges) which was then distributed throughout the watershed. Once the background 7Q10 was determined, contributions from dischargers were added to the model at design flows for TMDL analysis. Therefore, overstatement of the 7Q10 critical streamflow results only from the increase of discharge flows to their permitted maximum; the assimulative capacity was not overestimated."
Clean Water Action	691-08	Coorson's Quarry: We are also concerned that the analysis of the flows from Coorson's Quarry suggests that the loss of this input would cause downstream portions of the Creek to violate DO standards. In light of this, we believe the TMDL should compute two sets of discharge limits, one assuming continued operation of the Quarry and the second without continued discharges from the Quarry. Both sets of limits should be incorporated into the NPDES permits for the WWTPs so that their discharges would have to be reduced if the Quarry ceases its discharges. Failure to do so would mean continued impairment for the Creek if the Quarry ceases operation. The TMDL should ensure that this does not occur. Wendelgass/Van Rossum, etc	"Discontinuance of flows from Coorson's Quarry could result in violation of DO standards at downstream portions of Wissahickon Creek. Section 5 of the TMDL report specifically states that ""continued operation of the quarry is encouraged, and if operation is discontinued, prior notice should be provided to PA DEP so that appropriate action can be taken to prevent undesirable impacts on aquatic life."" The revised NPDES for Coorson's quarry requires a minimum flow of 225 gpm." Please see Appendix D of the TMDL report for a further discussion on the impacts of Coorson's Quarry discharge.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Clean Water Action	691-11	Total Nitrogen: We question why the TMDL was done for nitrate/nitrite and ammonia rather than total Nitrogen. Experts with whom we have consulted suggest that total Nitrogen and total Phosphorus are the pollutants of concern and have asked why EPA analyzed only some of the Nitrogen inputs. Wendelgass/Van Rossum, etc	"The choice of constituents for TMDL analysis generally dependent on the level of technology and data utilized. For example, total phosphorus was used as a control endpoint for determining lake eutrophication when the Vollenweider model was the primary tool available for determining lake impacts. Thereafter, when better understanding of eutrophication kinetics and more sophiscated eutrophication models such as WASP/EUTRO became available, the eutrophication control scheme would be developed based on PO4 because it was understood that PO4 rather than total phosphorus is the limiting factor for algae growth. Similar concept applies to the choice of NH4 and NO3/NO2 instead of total nitrogen for Wissahickon Creek since a sophisticated eutrophication model is available for the TMDL development. For detail regarding general governing equations of WASP/EUTRO, see Appendix F of the Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Clyde Taylor	340-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Colleen Reegan	284-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Colleen Tomlinson	269-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Corri Gottesman	377-01	I request that the standards allow for a least parts of the Wissahickon to be swimmable in the summer months and that these areas are identified with signage. I request that nutrients are reduced in addition to raising DO levels.	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Cowan Assoc.	711-01	We have had insufficient time to review and understand methodology used in development of the stream model. Kee	Almost 90 days of public comment and review has been provided for this TMDL in addition to the significant number of stakeholder meetings held over the past several years.
Cowan Assoc.	711-03	Revisions made to NPDES discharge limits between February 11, 2003 and March 10, 2003 were released without explanation as to what was wrong with original model assumptions, thus raising the suspicion that sound science and sufficient data collection to understand stream environs was not as important as providing a number to appease plaintiffs in EPA's court case Kee	EPA has and will continue to make available the technical and scientific basis for the TMDL. Many meetings have been held with the stakeholders in the watershed to give them the opportunity to understand the science and input into the process. Many attended these meetings and many did not. The commenter should understand that EPA has put forth considerable efforrt in establishing a TMDL that is sound in science. EPA does not understand the commenters statement that no explanation was provided. Several technical public meetings were held to discuss and describe the basis of the modeling and if the commenter had attended these meetings it would have been clear that EPA was dedicated to assuring that the basis of this TMDL was sound.
Cowan Assoc.	711-05	N02-NO3limit of 10 mg/l set for Wissahickon dischargers is not applicable for the Wissahickon since there are no potable water intakes on the Wissahickon. Thus,a "desired goal" of 10 mg/l N02-NO3is not applicable for the Wissahickon. Kee	The goal of 10 mg/L NO2-NO3 is not a desired goal but a need to protect the City of Philadelphia's drinkingwater supply intake on the Schuylkill River just a few 100 yards below the confluence with the Wissahickon. The Wissahickon is a significant portion of the water intake and as thus must be considered a "potable water source". Restricting the need to meet potable water requirements to just withdrawals on the creek itself is a narrow interpretation of the water supply protection requirements.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cowan Assoc.	711-06	Similar conditions exist in the upper Wissahickon. Therefore, rather than require North Wales WWTP to provide additional treatment, it is suggested that BMPs may be the more practical route for stream improvement. This point is borne out when considering that base flow is reported as 0.1 cfs with a model input nighttime dissolved oxygen low value of 4.8 mg/l existing above the North Wales WWTF. Kee	The 4.8 mg/L below North Wales does not reflect critical design conditions. It is projected that a much more significant impact on water quality can be expected at those critical environmental conditions. It should be clear that point source control is needed when the wastewater flow from a municipal facility is almost 10 times larger than the receiving stream's low flow base flow.
Cowan Assoc.	690-03	A CBOD5 TMDL varying from 1.0 mg/l to 4.10 mg/l were proposed as TMDL depending upon amount of dissolved oxygen in the effluent. It should be understood by the modelers that proposing a CBOD5 at or near 1.0 mg/l is meaningless. When very little soluble organic matter (biodegradable organic) is present, the CBOD5 test has little, if any, stoichiometric validity. Kee	The model and the allocations have changed based on comments received. Please see Section 5 of the TMDL report for Nutrients for the seasonal allocations which takes into account the feasiblity and validity of the numeric value.
Cowan Assoc.	690-04	We are concerned that TMDL limits set forth do not take into consideration biological imitations of sewage treatment in regard to temperature and season. Complete removal of BOD5 and nitrogen conversion cannot occur during periods of lower biological activity when sewage and air temperatures are low, nor is there a need to meet such stringent limits when stream assimilation capacity is greater. Kee	The model and the allocations have changed based on comments received. Please see Section 5 of the TMDL report for Nutrients for the seasonal allocations which takes into account temperature and seasonal changes.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cowan Assoc.	690-05	The model, based upon one dry weather period when comprehensive data were gathered on stream conditions and point dischargers' stream contribution, is a good first step. However, it does not provide sufficient base of information to request that a point source discharger assumes the burden of expensive WWTF modifications that are not warranted on the assumption that they are fully responsible for stream condition. Kee	The fact that a few of the WWTFs are located at and near the headwaters of the Wissahickon Creek has an enormous impact on the water quality in the Wissahickon. The TMDL does not state that the WWTFS are the one and only contributor in the stream, but based on flow and critical conditions of the Creek, they are the most significant. These allocations are not unique to the Wissahickon, these levels of treatment are required at many facilities elsewhere in Pennsylvannia as well and across the country.
Cowan Assoc.	690-01	Computer model was developed under the assumption of a dry weather stream flow of 40.8 cfs (7Q10 flow). Based upon North Wales WWTF permitted capacity of 1.3 cfs, North Wales contributed 3.17% of the stream flow under modeling conditions. Review of data during the 2002 summer sampling period, North Wales generated an average flow of 0.32 cfs - 1/4 of their permitted capacity and less than 1% of the 7Q10 flow. Furthermore, reviewing diurnal flow patterns at North Wales WWTF, night time discharge was only 40% of average flow of 0.21 mgd (0.14 cfs) during the study period. Flow rates as low as 10,000 gpd per day were recorded. Refer to attached graph and tabulation prepared by Environmental Engineering and Management Assoc. Kee	"TMDL analysis was based on local impacts to streams; the majority of contributions to the 7Q10 flow was provided well below the location of North Wales. As a result, overall impact of the North Wales discharge to Wissahickon Creek cannot be summarized as an overall percentage of the estimated 7Q10 flow."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cowan Assoc.	690-02	When comparing this to a Wissahickon upstream base flow of 0.1 cfs (64,600 gpd) [TMDL Report, page D-9, numbered paragraph 6], it would seem that night timedissolved oxygen values are not the result of a North Wales discharge that is diluted by a ratio of 2 parts stream flow to 1 part treated effluent, especially when dissolved oxygen in the plant effluent is well over 6.0 mg/l. More puzzling is the dissolved oxygen level in the tributary to the Wissahickon into which North Wales WWTF discharges. Dissolved oxygen levels as measured by PaDEP were below 3 mg/l in the early morning hours.Since this tributary passes through a residential subdivision, investigation should be undertaken to determine if factors other than treated sewage are causing low dissolved oxygen, algae, and periphyton growth. Based upon this information, it seems difficult to imagine that North Wales treated effluent affects the stream to the degree indicated in the model. Kee	"Section D.4.3 of Appendix D of the TMDL report provides analyses of sensitivity of instream DO to varying percentages of discharge flows (+/- 50%). Relative to impacts of biological processes simulated, diurnal variability of discharge flows is determined to have minimal impact on instream DO."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cowan Assoc.	690-06	Overland contribution surely affects vegetative growth and proliferation that is not considered in the model. While not an aquatic biologist, I surmise that stream plant growth occurs much like your lawn grass. A base growth is established that lives as long as nutrients and water are available. You feed it periodically to make it flourish andproliferate. In the Wissahickon, this proliferation period is not only from WWTF discharges, but from overland discharge of fertilizer from lawns, plant decay, and animaldischarges. This base growth provided by all contributors will not be corrected by limitations placed on point source dischargers. As an example, to do a stream study in dry weather above and below golf courses and to report that there is no nutrient change upstream and downstream when no runoff is occurring stretches the creditability of the reader as to their lack of effect during fertilization seasons. Kee	"Stream algal growth is stimulated by nutrient availability in the water column under favorable light and temperature conditions. Attached algae are not rooted aquatic vegetation so they are not directly reliant on the availability of nutrients in the sediments of the stream bed. A key consideration is the long term typical concentration of nutrients available during periods of low flow, normally in summer periods when temperatures are high as well. This the period where nutrient control is most important and when in many portions of the river the dominant source of upstream flow and nutrients is associated with point source discharges. Runoff can contribute nutrients as well, but these contributions are of short duration (during and after storms) and
Cowan Assoc.	690-07	TMDL limits should not be set on one sample period, especially when millions of dollars will be spent to achieve limits that may not (and probably will not) remove stream vegetative growth. TMDL limits must be seasonal. Traditionally, PaDEP has allowed a 3 to 1 ratio. Trout stocking stream classification is not realistic in a stream whose makeup is 92% treated effluent in drought conditions. Modeling should take into account actual WWTF discharge during low flow periods. WWTF is discharging a nitrogen stabilized effluent that may not be as critical as phosphorus to plant growth. Kee	"TMDL limits are not set on one sample period, but rather the critical period representative of low-flow conditions with discharges at permitted design flows. Calibration was performed for average conditions over a two week, low-flow period of summer 2002. TMDL limits are reported as seasonal and have been updated in Section 5 of the TMDL report. The trout stocking designated use is not in question for development of this TMDL. For TMDL development, permitted design flows must be used for calculation of WLAs. The model used for TMDL development considers both phosphorus and nitrogen in simulation of biological and chemical processes."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Cowan Assoc.	711-04	The use of a deoxygenation rate (Kd) of 0.18 l/day for a stream composed of basically nitrified treated effluent where a Kd of 0.07 l/day is expected indicates a model forced to "work" based on a limited database. It is suggested that before NPDES limits are set for major dischargers, additional work be done to establish reasons why such a high Kd was used. Kee	Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. With the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered inappropriate to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety.
Cowen Assoc.	711-02	EPA should not base TMDL criteria on one set of data, during a drought period, with a stream criteria of trout stocking, on a stream with no trout (at least in the North Wales area), that will require the expenditure of very large sums of money without knowing that the expenditures will achieve some desired goal. This is not sound science and reinforces the belief that methodology was used to pick a convenient scapegoat(s) - treatment plant dischargers. Kee	The foundation of this TMDL is indeed based on sound science. When a facility's effluent flow is almost 10 times the base flow of the receiving water, one would tend to believe that indeed the efluent should be considered as a major source of pollution to the water. And why are there no trout?
Coyle, Wotemate & R.	102-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Craig Carracappa	135-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Crystal Hudak	19-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Cynthia J. Mollen	233-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
D & A Tester	204-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
D & D Renshaw	446-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
D & R Dinke	413-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
D. Birch	572-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Daniel Kensinger, MD	283-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Daniel M. Dixon	300-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Daniel O'Kavage	238-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Daniel O'Kavage	245-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Daphne Holzman	374-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Darcy L. Seagraves	478-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dave Joyce	541-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David Abelson	230-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David Apple	182-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David Brett	666-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David D. Ward	500-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
David Harrod	400-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David J. Goodwin	643-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David Kane	651-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David M. Fleece	633-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David R. Culp, Esq.	380-02	Sewage discharges into the Wissahickon Creek must be reduced so that the Creek can meet basic water quality standards. Berry and Culp	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
David Scott Smith	92-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
David Younkin	566-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Deborah Holjes	316-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Deborah Hue	111-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Debra A. Tomlin	26-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Denise Bonno	437-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Denise J. Carroll	574-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Denise Kobie	425-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Devin K. Smith	91-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Diana Gomez	554-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Diana Iskolsky	158-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Diana Winters	617-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Diane Butler	194-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Diane Huebner	421-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Diane Lenox	250-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Don Brady	427-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Don Nalezyty	493-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Donka Miller	88-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Donna J. Williams	428-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Donna Kennedy	344-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Donna M. Ruczyski	661-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Donna M. Spano	620-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Donna M. Stevenson	23-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Doris Loder	447-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorma C. Morrow	673-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Dorothy A. Dudek	128-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorothy C. Guy	526-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorothy J. Maple	368-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorothy M. Horner	358-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorothy Miller	124-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dorothy O'Donnell	138-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Dr. Anne Norton	611-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dr. Frank P. Clamo	116-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dr. Rebecca Conrad	519-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Dr. Susan B. Hyatt	457-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
E. D. Brchan, Jr.	01-0	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ed Pickersgill	190-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Ed Rosenberger	330-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Edith Clinton	393-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Edith Taylor	343-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
EDrik Moore	61-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
EEMA	71-01	Environmental Engineering & Management Associates, Inc. (EEMA) hereby requests the United States Environmental Protection Agency Region III (USEPA) to prepare additional WLAs for the major dischargers with effluent DOs of 7.5 mg/l, 7.75 mg/l and 8.0 mg/l. Bill Brown	EPA has made the requested model runs for the allocations. However, based on various discussions with several of the municipal representatives, it was determined that the highest effluent DO value they were comfortable with was 7.0 mg/l. We made the final allocations based on that information from the munipalities. A table is included in the modeling report that presents the comparison of the

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	72-01	Environmental Engineering & Management Associates, Inc. (EEMA) hereby requests the United States Environmental Protection Agency Region III (USEPA) provide a copy of the computer model's), all data, all documentation and related materials used in the development of the Nutrient TMDL for the Wissahickon Creek. A fully usable copy of the TetraTech model's.) on or before Thursday, February 20, 2003. Bill Brown	All requested information was provided to the commenter.
EEMA	73-01	Tables indicating wasteload allocations (WLAs) in pounds should be separate from tables indicating WLA concentrations for wastewater treatment plants. Similarly, no actual numeric limit should be indicated or proposed for nitrite-nitrate concentration from the wastewater treatment plants, since the proposed nutrient concentrations and loads establish phosphorus as the limiting nutrient. Bill Brown	These concerns were addressed in the final TMDL report. Please refer to that report for further information.
EEMA	73-03	For the Christina River TMDL, a Hydrodynamic and Water Quality Model Report was prepared. Was a similar document prepared for the Wissahickon Creek TMDL, and if so, can EEMA obtain a copy of it? Bill Brown	A similar report was developed and was made available on the INTERNET. A revised report will be available with the final TMDL.
EEMA	104-01	Given the stringent limits proposed in the Wissahickon TMDL document, it is hoped that the April 9, 2003, court date will not preclude the meaningful incorporation of public comments in the final TMDL. Bill Brown	All comments were fully considered. The April 9, 2003 end date was extended by agreement with the Plaintiffs in order to more fully consider the comments received.
EEMA	199-01	EEMA formally requests an extension of the public comment period. Bill Brown	An extension to October 9, 2003 was agreed to between Plaintiffs and EPA.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-01	The development of the Christina River TMDL followed a process that allowed the public and municipal dischargers protracted periods of time to address the model and TMDL documents. As a point of reference, the following dates are provided for the Christina River TMDL: Bill Brown	EPA is aware of the process used in the Christina TMDL. We have provided significant input from stakeholders in the Wissahickon watershed over the last 4 to 5 years. We discussed modeling needs before any modeling took place. We discussed the modeling approach as it was being developed. We held numerous public meetings to present findings and status reports on the model. We invited stakeholders to participate in the development of a monitoring strategy for data collection to calibrate the model. After Pennsylvania Department of Environemtnal Protection completed the sampling (No municipalities accepted the offer to particpate in the stram data collection process. However, they did provide some additional effluent data for the period) we gave the stakeholders an opportunity to review the resulting data. Through extensive negotiations with the Plaintiffs, EPA extended the review and comment period by 30 days. We held several public meetings during the public comment period. We held several techical teleconferences with the stakeholders and their modeling experts to dicsuss and address technical issues. And we have again extended the review period by re-noticing the final report for a 30 day comment period strating June 9 and ending July 9, 2003. We willhold two more public meetings during that period, one specifically for technical issues and one for
EEMA	693-02	It should be noted that the Hydrodynamic and Water Quality Model of the Christina River Basin Final Report was issued more than three months prior to commencement of the public comment period for the TMDL. Neither the public in general, nor the dischargers specifically, were expected to concurrently review the Model Report and the overall TMDL documents in a six-week period. More than sixteen (16) months elapsed between the initial presentation of the model results and allocations (May 2000) and the finalization of the TMDL (October 2002). Bill Brown	We are aware of the time frame of both the Christina and Wissahickon TMDL development.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-03	NIER, an EPA contractor, collected data in 1998, and prepared a draft Report in July, 1999. More than two years elapsed before Tetra Tech was contracted to prepare the Wissahickon Creek TMDL. The failure of NIER to prepare a credible work product resulted in wasting more than three years of time available to prepare the TMDL. The failure of EPAÆs contractor should not have the end result of compressing the sampling and modeling period for the Wissahickon Creek TMDL into a 9-month period. While Tetra Tech and EPA may claim that they had limited time and funds for collecting data in the Wissahickon Creek, that is not an acceptable rationale for proposing a computer model whose outputs will require municipalities to expend millions of dollars in construction costs and hundreds of thousands of dollars in increased annual operation expenses, and which cannot be demonstrated to accurately represent the Wissahickon Creek Bill Brown	EPA believes that significant opportunities for the stakeholders to be involved in the development of this particular TMDL was made. EPA further believes that the model developed does indeed reflect the conditions of the Wissahickon. Please see the modeling report for further discussions on the model. Note that the stakeholders in the Wissahickon had significant opportunity to participate in data collection and model selection. The commenter is referred to the public participation section of the TMDL report.
EEMA	693-05	Pennsylvania Department of Environmental Protection (PADEP) has confirmed that when the Wissahickon Creek TMDL is finalized, PADEP intends to issue the concentrations as NPDES limits. Therefore, proposed concentrations for NPDES permitted facilities must be posted for 30 days prior to finalization of the TMDL. Bill Brown	EPA is not sure to what this comment refers. The limits will be placed in the permits as they are renewed. These permits will go through the normal process including the comment period. In addition, the proposed concentrations are now going throough a 30 day comment period trough the TMDL process. EPA is unsure as to what the commenter means as to the 30 day "posting" of the concentrations.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-32	25 PA Code Chapter 96.3.d states that the water quality criteria for nitrite-nitrate nitrogen established for the protection of potable water supply [10 mg/l] shall be met at least 99% of the time at the point of all existing or planned surface potable water supply withdrawals. No potable water supply intake exists on the Wissahickon Creek, nor is any potable water supply intake planned for the Wissahickon Creek. Application of potable water supply criteria is inappropriate. Since the proposed ortho-PO4-P limits will produce a nitrogen to phosphorus ratio greater than 10:1, phosphorus will be the limiting nutrient in the creek (Thomann and Mueller, p. 399). Limiting phosphorus alone is consistent with 25 PA Code Chapter 96.5.c. No nitrite-nitrate NPDES effluent concentrations should be proposed for any wastewater treatment plant as part of the Wissahickon Creek TMDL. Bill Brown	EPA disagrees with the commenters conclusion. While we agree that there are no water supplies on the Wissahickon Creek, the water supply for the residents of the City of Philadelphia consists of a significant portion of Wisahickon water. It is hoped that the commenter agrees it necessary to assure that those citizens of Philadelphia should be provided with a good source of drinking water. Since the Wissahickon water is part of that supply, it is necessary that those sources discharging a contaminant, in this case nitrate, assure that the contaminant is at levels that will not jeopardize the City's drinking water. EPA believes it is appropriate to consider the need for notrate controls at the major municipal wastewater treatment facilities in order to protect the City's water.
EEMA	693-33	25 PA Code Chapter 96.4.g indicates that ammonia-nitrogen (NH3-N) should be mathematically modeled at a Q30-10 design flow condition. The Tetra Tech model utilizes a Q7-10 flow. Establishing NPDES effluent concentrations for ammonia-nitrogen based upon the Tetra Tech model would violate the PA Code. No changes to any of the existing wastewater treatment plant NPDES effluent permit limits for ammonia-nitrogen should occur as a result of the Wissahickon Creek TMDL. Bill Brown	State Code indicates that the 7 day 10 year low flow will be used for determining controls necessary to attain and maintain water quality criteria to protect fish and aquatic life. The NH3 concentrations were based on that protection. In addition, NH3 toxicity was eveluated based on the 30 day 10 year flow.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-34	The draft TMDL does not include any calendar dates describing when the proposed restrictive limits will apply. The higher in-stream DO concentrations for Trout Socked Fisheries are only applicable February 15 to July 31, with corresponding low flow (Q7-10) conditions occuring during the months of June and July. No in-stream samples below any wastewater treatment plant discharging in excess of 1.0 MGD during drought conditions showed a minimum daily DO that violate the DO standards for the remainder of the year, August 1 to February 14. Bill Brown	The observations were based on existing conditions. EPA evaluations based on desgin conditions show excessive violations of the dissolved oxygen criteria. Please note that the TMDL is a seasonal evaluation and the TMDL report identifies seasonal limits. See Appendix D for a discussion on seasonal limits.
EEMA	693-35	According to Section III of the Field Survey Workplan prepared by PADEP for field data collection in the Wissahickon Creek, PADEP utilized a hand-held YSI 556 Multi Probe System to measure dissolved oxygen (DO) within the creek. According to the manufacturer's specifications, this meter has an accuracy of ¦ 2% of the reading or ¦ 0.2 mg/l, whichever is greater. Since all of the DO readings were below 10 mg/l, the accuracy of all DO measurements is ¦ 0.2 mg/l. This is particularly significant when evaluating the compliance of stream segments with the year-round minimum DO criteria of 4.0 mg/l and the February 15 to July 31 minimum DO criteria of 5.0 mg/l. Bill Brown	Noted
EEMA	73-02	Are the proposed load reductions intended to be annual or seasonal load reductions? If they are proposed as seasonal reductions, what are the intended dates for the proposed limits? Bill Brown	Load reductions are to be seasonal. See Section 5 of the revised TMDL report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	73-04	Could TetraTech please forward a list of the coefficients used in the models, the value for each coefficient, and how the values were select. Bill Brown	"Additional information was provided in a Tetra Tech, Inc. technical memo on March 19, 2003. However, model modifications and resulting re-calibration have resulted in changes to coefficient values. Information in the technical memo has been updated and included in Appendix F of the revised modeling report."
EEMA	73-05	Could TetraTech provide documentation (or comment fields) describing the model output files, especially the CBOD5, NH3-N, NO3-NO2, PO4-P, and DO? Bill Brown	Information is provided in Appendix F of the revised modeling report.
EEMA	73-06	Appendix F needs Tables F-19 and F-20 included. Tables in Appendix F are missing the last column on the right (Ortho-P Percent Reduction). Bill Brown	"Information was corrected in the addendum to the draft TMDL report provided on March 10, 2003. The revised TMDL report also reflects corrections."
EEMA	73-07	PADEP has indicated that the proposed Ortho-P limits will actually be Ortho-P limits. Does EPA concur with this statement? Bill Brown	TMDL allocations are provided for Ortho-P.
EEMA	105-01	Upon reviewing Appendix F, Tables 4-1 and 4-2, and the tables in the Executive Summary, it became apparent that for many segments the Load Allocation from the referenced upstream segment was substantially greater than the TMDL for the upstream segment. Major Effluent Dischargers DO at 6.0 mg/l 1. Segment Name Sandy Run Segment ID 971215-1133-ACE LA for CBOD5 is listed as 53.213 lbs. from Pine Run (971215-1303), but total TMDL for CBOD5 in Pine Run (971215-1303) is listed as 34.679 lbs. Bill Brown	TMDL allocations have been updated and are reported in the revised TMDL report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	105-02	Segment Name Wissahickon Creek Segment ID 971222-1130-ACE a. LA for CBOD5 is listed as 116.124 lbs. from Wissahickon Creek (971218-1345), but total TMDL for CBOD5 in that segment is listed as 59.4217 lbs. b. LA for NH3-N is listed as 0.037 lbs. from Trewellyn Creek, but NH3-N TMDL for Trewellyn Creek (971217-1145) is listed as 0.014 lbs. c. LA for NO3-N is listed as 0.151 lbs. from Trewellyn Creek, but NO3-N TMDL for Trewellyn Creek (971217-1145) is listed as 0.046 lbs. Bill Brown	TMDL allocations have been updated and are reported in the revised TMDL report.
EEMA	105-03	Segment Name Wissahickon Creek Segment ID 971222-0930-ACE LA for CBOD5 is listed as 138.977 lbs. from Wissahickon Creek (971222-1130), but total TMDL for CBOD5 in that segment is listed as 116.473 lbs., and that value (116.473 lbs.) appears incorrect. Bill Brown	TMDL allocations have been updated and are reported in the revised TMDL report.
EEMA	105-04	Segment Name Wissahickon Creek Segment ID 971209-0930-ACE a. LA for CBOD5 is listed as 807.746 lbs. from Wissahickon Creek (971222-0930), but total TMDL for CBOD5 in that segment is listed as 541.021 lbs. b. LA for CBOD5 is listed as 105.559 lbs. from Sandy Run (971215-1133), but total TMDL for CBOD5 in Sandy Run is listed as 93.7851 lbs. c. LA for CBOD5 is listed as 140.434 lbs. from Lorraine Run (971215-1000), but total TMDL for CBOD5 in Lorraine Run is listed as 53.056 lbs. d. LA for NH3-N is listed as 2.502 lbs. from Lorraine Run (971215-1000), but total TMDL for NH3-N in Lorraine Run is listed as 2.039 lbs. Bill Brown	TMDL allocations have been updated and are reported in the revised TMDL report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	105-05	Segment Name Wissahickon Creek Segment ID 971209-1430-ACE a. Upstream segment values for CBOD5 and NH3-N may change, which will change LAs for this segment. b. TMDL values include only LA from upstream segment. Background sources were not included in TMDL values. Bill Brown	TMDL allocations have been updated and are reported in the revised TMDL report.
EEMA	199-02	The effluent characteristics clearly identify the WWTP discharges to be the result of prior secondary treatment with nitrification. However the model segments have values which correspond to an effluent with primary treatment only. The in-stream CBDO deoxygenation rates should be around 0.07 1/day and most model segments are set to 0.18 1/day and up to 0.30 1/day. Using 0.07 1/day would significantly impact the DO concentration and possibly alter the WLA for the dischargers. Bill Brown	"Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. With the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered inappropriate to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety."
EEMA	199-03	Where or rather how are the MIN values calculated for DO, for example those values in Figure D-21? Are the numbers for daily minimum DO extracted from the WASP.DMP file? If not, where could they be found? Bill Brown	See Appendix F of the revised modeling report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	199-04	SOD values appear to be based on the load values of the dischargers. How is this realized and what is the rational behind this approach? Bill Brown	"A simple and widely accepted approach based on linear assumptions (Chapra, 1997) was used in this study, assuming a linear relationship between the load reduction and SOD adjustment. The basic rationale behind this approach is that the loads of CBOD and other nutrients from sources impact the SOD. Therefore, it is reasonable to assume that the SOD is a function of the loading rate from the dischargers, with reductions of SOD always accompanying a reduction of load. Actually, if the SOD does not respond to load reductions of CBOD, NH4, NO3, and PO4, then the DO standard will unlikely be met with the load reduction schemes. The model considered the characteristics of effluent by setting the maximum SOD value for the baseline case to a relatively low value close to the lower bound of the range of SOD (2.0 to 10.0) as indicated in Surface Water Quality Modeling (Chapra, 1997)."
EEMA	199-05	Please outline where the numbers for the NH3 and PO4 flux originated from, particularly in view of the given sampling data. Have the sediments been tested to establish flux rates? Bill Brown	Comment was addressed in the modeling report.
EEMA	199-06	WASP6 permits the use of LGHT values of 1 or 2 and the current input uses the value 6. Is this value related to anything other than just procedure selection and if yes what does this number do in WASP5? Bill Brown	See Appendix F of the modeling report.
EEMA	199-07	Please elaborate on the general use and the specific number of sections M, N, O and P to help understand their relation to the modeling task. Bill Brown	See Appendix F of the modeling report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	199-08	EEMA is again requesting a copy of the model report, a list of the coefficients used in the models, the value for each coefficient and how the values were selected. Bill Brown	Modeling report was provided. See Appendix F of the revised modeling report regarding coefficients used in the model.
EEMA	693-04	The wastewater treatment plant effluent concentrations presented in the March 10, 2003, Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania, Draft Addendum, were substantially different than the values presented in the January 2003, Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania, Draft, as documented below. Bill Brown	Correct. The purpose of the addendum was to present new allocations resulting from modifications to the water quality model and to remedy errors found in the draft TMDL report. The model was updated as a result of errors discovered after the draft TMDL report was released in January 2003.
EEMA	693-06	All of the physical characteristics listed above identify the Wissahickon Creek as significantly different from the Appoquinimink Creek and the Christina River, two waterbodies frequently referenced by Tetra Tech in the documents associated with the TMDL for the Wissahickon Creek. Any modeling assumptions specific to the Appoquinimink Creek and the Christina River cannot be directly applied to the Wissahickon Creek without field verification and validation. Bill Brown	It is understood that the Christina River and Appoquinimink Creek are significantly different from Wissahickon Creek. Modeling assumptions specific to these waterbodies were not applied directly to Wissahickon Creek; only overall approaches were used as guidance. Parameterization of modeling processes of Wissahickon Creek were confined to site-specific data or resulted from calibration.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-07	In section D.5.1 in Appendix D of the draft TMDL EPA describes the development of the critical low flow condition. EPA states that after it calculated the background flows at critical conditions, 1.4 cfs, (average POTW flows were subtracted from the 7Q10), the 12.5 cubic foot per second (ft 3 /s) flow from CoorsonÆs Quarry was not accounted for. EPA states the loss of flow is attributed to infiltration to ground water during the low flow period. It remains somewhat difficult to assess the correctness of this approach. Bill Brown	"The 7Q10 flow is based on historical data that represent a variety of conditions in Wissahickon Creek over the historical period. Furthermore, Wissahickon Creek has experienced a gradual decrease in baseflow over time. It is true that the methodology of accounting for the low-flow budget of Wissahickon Creek is uncertain. In the absence of a sufficient dataset to make more detailed assumptions regarding the relationship between baseflow, discharge flows, groundwater infiltration, and Coorson's Quarry flow, a conservative approach was utilized to ensure that the Wissahickon Creek is protected under critical conditions when the waters are most vulnerable. Such an approach assumed average flows from discharges in calculation of the flow budget during critical low-flow conditions. The modeling approach also purposefully did not take into account the loss of volume resulting from groundwater infiltration, as such losses have not been quantified for Wissahickon Creek. The impact of this interaction is considered minor in comparison to other processes in the streams. Moreover, acceptable model calibration indicated that the processes included (absent infiltration losses) were sufficient in describing the system's assimulation and transport of nutrients. As a result, infiltration losses were ignored in model simulation as a conservative assumption regarding the critical condition of the stream."
EEMA	693-08	Most importantly, however, it points toward an inherent inconsistency as far as the critical flow simulation is concerned. The data review (EPA, Feb 2002) clearly states that critical conditions exist for low flow situations. Since much of the flow is dominated by the WWTP discharges it is questionable to use design flows for evaluating critical conditions. The fact that this stream is quite unique insofar as it is dominated by WWTP flow during the summer months has not been adequately incorporated into the modeling effort. The common approach to use the 7Q10 flow is not applicable to this case, rather it should be clear that critical flow conditions must be tied to what the municipalities really discharge rather then creating a hypothetical flow scenario. Bill Brown	"For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-09	PADEP collected in-stream water samples at more than 30 locations in July and August, 2002; no sediment samples were collected or analyzed. In the upper 15 kilometers of the Wissahickon Creek, sediments are composed primarily of gravel and cobbles. Silt and sand in addition to gravel and cobbles form a significant component of sediments within 7 kilometers of the mouth. Clearly the SOD of the stream segments varies, but no analytical data are available to accurately calibrate the model. Bill Brown	"It is rarely the case that data are available to describe all processes in a waterbody, therefore it is widely considered an acceptable approach to obtain the values of unknown parameters through model calibration with best available data. Following this convention, SOD values for the Wissahickon model were obtained."
EEMA	693-10	Section 4.2.2 of the Modeling Report for Wissahickon Creek states, "Another important re-configuration of the water quality model for this adjustment was the adjustment of the SOD rate based on the load variation. A reasonable approach for this adjustment was to relate theperc entage of the SOD adjustment to thepercentage of load change. This mechanism was suggested by Army Corps of Engineers for the Inland Bays model, and by Hydroqual, Inc. for the Appoquinimink Creek Model." Tetra Techs March 19, 2003 Technical Memo states that boundary-segment impact coefficients were introduced into the SOD calibration to overcome the limitation in the previous Army Corps of Engineers and Hydroqual formula. Tetra Tech also states that an impact factor was introduced to differentiate the effect of a discharge on different segments in order to obtain a more accurate estimate of SOD adjustment. Bill Brown	"In Surface Water Quality Modeling (Chapra, 1997), the author stated that one of the most common approaches to determine SOD adjustment following load reduction is to assume linearity and allow adjustment of SOD in direct proportion to external load reductions. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-11	The weight factors assigned to individual constituents in the WWTP effluent to measure their impact on the SOD are not entirely clear. In particular, the weight factor of 0.5 associated with CBOD seems to conflict with the characteristics of the effluent. The effluent characteristics are those of a highly treated effluent with particulate CBOD material mostly removed. As a result, CBOD will remain in solution and therefore only marginally contribute to the benthic CBOD, hence load reductions in CBOD should have very little if no influence on SOD. Bill Brown	"The separate mass balance for benthic CBOD and DO option was not considered due to limitation of data and the fact that this approach, while requiring significantly more effort, might not be effective because it does not sufficiently address the diagenesis processes in the sediment. Therefore, a simple and widely accepted approach based on linear assumptions (Chapra, 1997) was used in this study, assuming a linear relationship between the load reduction and SOD adjustment. The basic rationale behind this approach is that, if the waste loads of CBOD and other nutrients from the dischargers do not have detectable impact on the SOD as indicated in the comment, the SOD which is necessary for the model to reproduce the observed DO profile could not be explained. Therefore, it is reasonable to assume that the SOD is a function of the loading rate from the dischargers, with reductions of SOD always accompanying a reduction of load. Actually, if the SOD does not respond to load reductions of CBOD, NH4, NO3, and PO4, then the DO standard will unlikely be met with the load reduction schemes. The model considered the characteristics of effluent by setting the maximum SOD value for the baseline case to a relatively low value close to the lower bound of the range of SOD (2.0 to 10.0) as indicated in Surface Water Quality Modeling (Chapra, 1997)."
EEMA	693-12	Similarly, the weights associated with reductions in effluent ammonia, ortho-phosphate, and nitrite/nitrate should have little to no direct influence on SOD, as phytoplankton and periphyton metabolize these nutrients. Consequently, the influence is really more through an indirect path by which dying phytoplankton and periphyton settle into the sediments. Unfortunately, neither the ratio of particulate to dissolved CBOD is given (the particulate portion mostly comprised of the dead phytoplankton and periphyton re-cycled into the CBOD pool) nor is the settling velocity of the particulate CBOD indicated. Neither of these values was provided in the calibration report. Bill Brown	"It is reasonable to assume that the SOD is a function of the loading rate from the dischargers, thus a reduction of SOD always accompanies a reduction of load. The model considered the characteristics of the effluent by setting the maximum SOD value for the baseline case to a relatively low value close to the lower bound of the range of SOD (2.0 to 10.0) as indicated in Surface Water Quality Modeling (Chapra, 1997). CBOD was assumed 70% dissolved and 30% particulate, and was obtained through calibration. The net settling velocity of particulate CBOD was 0.059 meter/day in the calibration run."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-13	Hence, it is questioned how any SOD adjustment could be considered ôaccurateö when field values do not exist, and the model utilized is a completely new version of a model previously developed for watersheds that do not resemble the geologic, topographic, or demographic characteristics of the Wissahickon Creek. Bill Brown	"The Wissahickon model was developed based on the general water quality modeling framework WASP/EUTRO with model updates for periphyton growth dynamics, thus it is applicable to Wissahickon through customizing the general framework to site-specific conditions. In Surface Water Quality Modeling (Chapra, 1997), the author stated that one of the most common approaches to determine SOD adjustment following load reduction is to assume linearity and allow adjustment of SOD in direct proportion to external load reductions. "
EEMA	693-14	The WASP5 model selected to address algal growth was a version modified by Hydraulic and Water Resources Engineers, Inc. (HWRE) as a subcontractor to Tetra Tech, Inc. for EPA Region 1 and Maine Department of Environmental Protection. Tetra Tech made minor code modifications to this model to fully incorporate oxygen generation and consumption terms by periphyton metabolism in the DO balance equations. Tetra Tech also added a simplified diurnal simulation module to allow for more accurate representation of DO fluctuation in the receiving water. Bill Brown	Correct.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-15	While the suggested rates for growth, die-off, and respiration are similar to those of phytoplankton and therefore appear to be in a reasonable range, values like the carrying capacity appear to be selected according to what the model needed rather than being justified through sampling data. The 1998 PADEP/ANSP periphyton study presents some data on periphyton, including such important parameters like canopy coverage and Chl-a. Neither one of these two parameters appear to have entered the calibration procedure, or at least no mention is made how this information could have entered the process and how the chosen model parameters relate to these samples and observations. The original model addresses algal growth in Maine. The model was then modified and expanded. However, no field calibration or validation was performed to verify that the new, untested model developed for Maine actually simulated the effect of periphyton activity on DO in the Wissahickon Creek in southeastern Pennsylvania. Bill Brown	The WASP5 model was updated to include variation of solar radiation and utilized the 1998 PA DEP/ANSP data for parameteriztion. Chl-a data from the study have been used to calibrate periphyton mass. The Modeling Report for Wissahickon Creek has been updated to discuss the new features of the modified WASP5 model. Calibration results are also reported in the modeling report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-16	The effluent characteristics clearly identify the WWTP discharges to be the result of prior secondary treatment with nitrification. This means that the effluent is highly treated and stabilized, and should have a corresponding CBODu/CBOD5 ratio in the neighborhood of 3. Sampling data compiled by PADEP in 2002 also supports a CBODu/CBOD5 of 3. In-stream CBOD deoxygenation rates, Kd, for this type of well-treated effluent should be around 0.07 1/day. However, the model segments (computational segments, i.e. a total of 115) have values that are considerably higher; in fact for most of the stream are set to 0.18 1/day, which corresponds to an effluent that was subject to primary treatment only. Tables 3a and 3b of this document contain the values for Kd, SOD, and re-aeration utilized in the models by Tetra Tech. Bill Brown	"Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. With the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered inappropriate to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety."
EEMA	693-17	Tetra Tech states in section 3.5.1 of Modeling Report for Wissahickon Creek, ôthe reason for using a higher value for Kd was because that [sic] the model tended to over-predict DO when Kd was set at 0.08/day, even when other parameters were set within an acceptable and reasonable range. This statement seems to state that Tetra Tech could not calibrate the model using field data, so Tetra Tech chose to ignore the data. Bill Brown	"Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. With the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered inappropriate to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-18	In section 3.5.2.c of the Modeling Report for Wissahickon Creek, Tetra Tech states, ôthe DO results are moderately sensitive to the change in the decay rate. This sensitivity, however, was not shown to have a significant impact on TMDL analysis results due to consideration of the CBODu/CBOD5 ratio in the projection analysisö. The above statements appear to be inaccurate and not supportable. Appendix A includes summary of a modified version of Tetra TechÆs model. By simply modifying three (3) variables within Tetra TechÆs model, the DO was as accurately predicted with a Kd value of 0.07/day. Bill Brown	"Mention of impacts on TMDL analysis results refer to calculation of WLAs, not the prediction of DO. The calculation of WLAs was not shown to be significantly impacted by minor changes in the decay rate."
EEMA	693-19	Preliminary model runs indicate that the Kd value of 0.07/day does have a significant impact on the TMDL analysis results when compared to a Kd value of 0.18/day. Preliminary model runs have produced model results showing adequate DO levels with only nominal changes in the parameters appear to have entered the calibration procedure, or at least no mention is made how this information could have entered the process and how the chosen model parameters relate to these samples and observations. Bill Brown	"Mention of impacts on TMDL analysis results refer to calculation of WLAs, not the prediction of DO. The calculation of WLAs was not shown to be significantly impacted by minor changes in the decay rate."
EEMA	693-20	Attachment B of Tetra TechÆs March 19, 2003 Technical Memo indicates that only seven (7) stream segments had a re-aeration coefficient different from 0.8/day. Tables 3a and 3b of this document contain the values for Kd, SOD, and re-aeration utilized in the models by Tetra Tech. It remains unclear why this value was chosen and applied as a constant (almost) throughout the modeling domain. Bill Brown	"Previously, the reareation coefficient was obtained through calibration. As a response to comments, the model was updated to include a flow-induced reareation formula to calculate the reareation coefficient at each segment. This change improved the predictive capability of the model"

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-21	In addition, it is unclear why the values were altered for some of the upstream sections of Sandy Run and Wissahickon Creek. Furthermore, it is not clear from any of the provided documents why the option of using analytical expressions (these are available as a modeling option) were switched off and not used. It appears as if much higher re-aeration rates will result when using the analytical expressions in the model particularly for the lower sections of the stream. While it may be justified to use a constant re-aeration coefficient, no mention is made as to why this was done particularly in view of the significantly changing stream geometry (width and therefore flow depth), slopes, and flows. Since this mechanism has such a high impact on the in-stream DO concentration, much more effort should have been expended to evaluate and determine what these coefficients are for various sections of the stream system. Bill Brown	"Previously, the reareation coefficient was obtained through calibration. As a response to comments, the model was updated to include a flow-induced reareation formula to calculate the reareation coefficient at each segment. This change improved the predictive capability of the model"
EEMA	693-22	In addition, low-level dams are located throughout the watershed. The average channel slope ranges from 0.0008 to 0.017. (Patrick Center for Environmental Research, 1998). In the upper 15 kilometers of the Wissahickon Creek, sediments are composed primarily of gravel andcobbles. Clearly there are locations along the Wissahickon Creek where re-aeration will substantially increase with increases in flow. This too has not been adequately incorporated into the model. Bill Brown	"Previously, the reareation coefficient was obtained through calibration. As a response to comments, the model was updated to include a flow-induced reareation formula to calculate the reareation coefficient at each segment. This change improved the predictive capability of the model"

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-23	Section D.4.2.b of the Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania, Draft, and Section 3.4.2.d of the Modeling Repor for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, Draft state that the concentrations of ammonia, nitrate/nitrite, ortho-phosphate, CBODu, and DO for the point sources were specified based on the observed data provided by the dischargers. This is a false statement. The majority of the values included in Table 3.1 of the Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, Draft were obtained from a single instantaneous grab sample collected by PADEP. Furthermore, back-calculations of the initial nitrate/nitrite values and ortho-phosphate values presented in Tables 4-3 to 4-7, and the tables in Appendix F, of the March 10, 2003, Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania, Draft Addendum, confirm that Tetra Tech utilized the instantaneous grab sample value for the model rather than the 24-hour composite sample values provided by the dischargers. Bill Brown	"Discharger concentrations of ammonia, nitrate/nitrite, ortho-phosphate, CBODu, and DO in model calibration runs were initially based on composite sample values provided by dischargers. After calibration of key parameters associated with CBOD, ortho-phosphate, nitrate/nitrite, and DO, ammonia was found to present difficulty in calibrating. However, when discharger ammonia concentrations were replaced with values obtained from instantaneous grab samples collected by PA DEP, the model calibrated with reasonable assurance. Table 3.1 of the draft Modeling Report for Wissahickon Creek, Pennsylvania was incorrect and has been corrected in the revised report. Likewise, percent reduction calculations in Appendix F of the modeling report have been revised. WLAs are unaffected by changes in percent reduction calculation of Appendix F; previous error was related to comparison of allocated concentrations to incorrect baseline concentrations (i.e., PA DEP grab samples rather than POTW data) for percent calculations. Any change in WLAs are based on additional model modifications in response to comments."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-24	A similar back-calculation of Tables 4-3 and 4-4, and the Tables in Appendix F, in the January 2003, Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania, Draft, indicates that prior to March 2003 Tetra Tech had utilized the nitrate/nitrite and ortho-phosphate values provided by the dischargers. For some reason Tetra Tech chose to change the model input values from the average value of several 24-hour composite samples to an isolated grab-sample value. Bill Brown	"Discharger concentrations of ammonia, nitrate/nitrite, ortho-phosphate, CBODu, and DO in model calibration runs were initially based on composite sample values provided by dischargers. After calibration of key parameters associated with CBOD, ortho-phosphate, nitrate/nitrite, and DO, ammonia was found to present difficulty in calibrating. However, when discharger ammonia concentrations were replaced with values obtained from instantaneous grab samples collected by PA DEP, the model calibrated with reasonable assurance. Table 3.1 of the draft Modeling Report for Wissahickon Creek, Pennsylvania was incorrect and has been corrected in the revised report. Likewise, percent reduction calculations in Appendix F of the modeling report have been revised. WLAs are unaffected by changes in percent reduction calculation of Appendix F; previous error was related to comparison of allocated concentrations to incorrect baseline concentrations (i.e., PA DEP grab samples rather than POTW data) for percent calculations. Any change in WLAs are based on additional model modifications in response to comments."
EEMA	693-25	This list in EPAs guidance (EPA 1997) should be expanded by including carrying capacity of unit stream bed for periphyton, death and growth rate of periphyton, as well as the nutrient loadings PO4 and NO2/NO3 and possibly solar radiation. Bill Brown	EPA Region III will mention this suggestion to our Headquarters office for consideration if/when the guidance is updated.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-26	Tetra Tech offers a number of attempts to evaluate and demonstrate sensitivities of in-stream DO to several constituent loads and reaction coefficients. Among these are the two different flow rates of the WWTPs (draft report), CBOD5, PO4, NH3, NO3, and DO variations in the effluent as well as phytoplankton respiration and growth rates, CBOD decay rate, benthic PO4 and NH4 release rates, SOD, and light extinction coefficients. Many of these sensitivities have been computed by multiplying the chosen coefficient with a factor of 0.5 or 1.5, i.e 50% higher and 50% lower. Some others have been perturbed with a 20% percent change (K1C in Figure D.5 in the draft Modeling Report) while others are perturbed using a 80% value (K2C in Figure D.6 the same draft report). The resulting graphs are somewhat misleading as they suggest different impacts. It should come as no surprise that a 20% percent perturbation is likely to result in a different impact than compared to an 80% perturbation of another parameter. These two sensitivities are not comparable; in fact they bear little information content for assessing sensitivity. Bill Brown	"Sensitivity was re-analyzed with the updated model of Wissahickon Creek (updates were in response to comments) using uniform percent disturbance of parameter values (i.e., +/- 20%). Results are reported in the revised TMDL report and and modeling report."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-27	An acceptable procedure would perturb the coefficients using a number of different values starting out using small variations and then increasing them. This would reveal any non-linearities in the sensitivities, as compared to assuming that a 10% perturbation will result in a sensitivity that is only half of a 20% perturbation. Also, these perturbations should be judged and compared to what can realistically be expected, i.e into what range the values should fall. A 30% perturbation may result in values that are out of common range, while a 50% perturbation in another parameter is well within. Hence, the presented sensitivity analysis must be considered somewhat incomplete and does not really contain the information substance one should expect. Bill Brown	"The sensitivity analyses undertaken are believed to be sufficient in addressing questions regarding sensitivities of the parameters. The additional effort required to produce the additional scenarios suggested in the comment are not believed to provide the ""information substance"" expected. "
EEMA	693-28	The sensitivity analysis should have been part of the calibration effort and not have been delivered after the model was setup. In fact, the calibration should have consisted of the following steps: 1) Identify the most important parameters that will influence the modeling objective. 2) Find reasonable values (literature or model defaults) for all others 3) From the important group identify all those for which data is available so they can be established without a doubt (for example, in-stream Kd and CBODu to CBOD5 ratio) 4) Establish literature based bounds for the remaining set 5) Identify those parameters through calibration 6) Perform a sensitivity analysis to show and demonstrate that the selected values are eithernot overly sensitive hence, can stay as selected even though some uncertainty remains, or are sensitive for which a separate chain of reasoning must be developed.7) Perform a validation or verification run to clearly show that the selected set is acceptable and indeed represents the aquatic domain. Bill Brown	The commenter has described the process used by EPA. The outline of the calibration procedure suggested in the comment was prescribed for the Wissahickon Creek modeling, with the exception of a full model validation/verification run due to lack of sufficient data."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
EEMA	693-29	Tetra Tech has acknowledged that SOD is a "very important parameter", yet no field sampling or analysis of sediments was performed as part of the development of this TMDL. A modeling approach for increasing and decreasing SOD based on pollutant loads, which was originally developed for inland bays and a river in central Delaware, was applied to a stream in Pennsylvania that is not similar geographically, topographically, or demographically to a bay or the Appoquinimink River (central Delaware). Bill Brown	"This approach, as stated in Surface Water Quality Modeling (Chapra, 1997), was not a localized approach, but one of the most commonly used approaches for SOD adjustment following load reduction."
EEMA	693-30	Tetra Tech refers to the periphyton respiration rate as "very sensitive". A periphyton model originally prepared for the State of Maine was modified to simulate periphyton growth and corresponding DO variations in a creek in southeastern Pennsylvania. No field measurements or independent validation of the model was performed. Bill Brown	"In the most recent version of the model (updates were in response to comments), the periphyton biomass was calibrated based on data collected in 1998."
EEMA	693-31	The endpoint of the Nutrient TMDL is to address average and minimum dissolved oxygen criteria in the Wissahickon Creek during critical low flow periods occurring during the trout stocking season. The key modeling parameters for estimating DO were based upon models developed for foreign ecoregions, assumptions not supported by field data, and values contradicting field data. Bill Brown	"The Wissahickon model was developed based on the general water quality modeling framework WASP/EUTRO with model updates for periphyton growth dynamics, thus it is applicable to Wissahickon through customizing the general framework to site-specific conditions. In Surface Water Quality Modeling (Chapra, 1997), the author stated that one of the most common approaches to determine SOD adjustment following load reduction is to assume linearity and allow adjustment of SOD in direct proportion to external load reductions. "
EEMA/Gilmore/Ambler	694-01	The comments presented in this letter were indentical to thos comments made in letter number 693	The comments presented inthis letter were the same as those from letter number 693. Please refer to respones to comments from letter number 693.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Eleanor Robinson	154-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Eleanor Smush	684-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Elizabeth Griffitgh	156-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Elizabeth McNally	296-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Elizabeth Nichols	452-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Elizabeth O'Brien	408-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Ellen Sheehan	602-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ellen R. Giermann	528-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ellen R. Miades	85-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ellen Saloml	33-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Eric Mitchell	518-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Eric Mitchell	520-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Erica Leary	254-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Erin Snell	314-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ester T. Hannon	429-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Esther Villalongo	352-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Evan Hoffrichter	708-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Evan Post	685-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Evan Tierney	189-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Evelyln O'Brian	20-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Evelyn Jain	383-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Fabian Lima, Esq.	647-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Felicia Mitchell	271-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Fidler Family	415-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Florence Dumonil	136-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Fralnk B. Axelrod	54-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Fran Hirsh	566-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Francis Corcoran	239-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Francis D. Gurtner	115-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Francis Melvin	648-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Frank Malley	525-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Fred Vincent	614-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Frederick L. Ulmer	624-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
G & D Deahl, Butler	506-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
G. and D. Richardson	48-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
G. D. &I M. Bowers	436-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
G. R. & T. Kappe	424-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gabrielle Badaway	313-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gentry Jensen	387-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Geoffrey Schulz	628-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
George Gould	402-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
George Lonsdorf	318-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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George Tsirikos	396-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gerald F. Melusky	166-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gerald McMenamin	307-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gerald Quinn, Jr.	157-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Geraldilne Lutman	600-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Geraldine Drummond	622-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Geraldine D. Pimento	472-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gierschick-Liantonio	660-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gilmore & Assoc.	487-01	Ambler Borough is essentially built out. Given the size of the Borough relative to the entire watershed, the age of the community, and the age of the infrastructure, it appears totally unrealistic to impose a 70 percent reduction on sediment. Mark E. Tomczyk	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. Urban areas with high percent impervious ground cover are often difficult places to incorporate many of the BMPs listed. Protecting water quality in these areas is difficult for many reasons including, diverse pollutant loads, large runoff volumes, limited areas suitable for surface water treatment systems, high implementation costs, and destruction of natural buffer zones adjacent to water bodies. There are however, numerous case studies and a growing amount of research that exists on this subject that indicates using a combination of BMPs to fit the constraints of urban areas can be successful in restoring water quality and recharging the groundwater. A detailed article about an urban retrofit in Seattle, WA may be found at http://seattlepi.nwsource.com/local/95881_model20.shtml A detailed description of storm water treatment practices to achieve Storm Water Phase II Retrofit in Madison, Wisconsin can be found on EPA's web site at www.epa.gov/owow/nps/natlstormwater03.

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Gilmore & Assoc.	487-02	What analysis has been performed to evaluate the impacts of instituting a TMDL on a community such as Ambler? What analysis has been performed regarding the availability of feasible technology to actually achieve the reductions and limits as proposed in the TMDL? What analysis and evaluations have been conducted regarding the economic impact of communities as it relates to redevelopment? What analysis and evaluation has been conducted regarding the anticipated cost for a community such as Ambler to comply with the proposed TMDL? Mark E. Tomczyk	This type of anaylsis is outside the scope of developing a TMDL for the Wissahickon Creek watershed. However, this will be an essentail piece of developing the implementaion plan in the watershed for Storm water Management. An Internet Guide to Financing Storm water Management This guide addresses the complex series of questions that managers must answer when developing plans to pay for storm water programs. For example: 1. How much revenue will we need? 2. What are the alternative ways to generate revenue? 3. How can we match sources to needs? 4. How much are people willing to pay? This guide is a compilation of effective funding tools that has evolved during the past 25 years as public managers have developed interesting, innovative approaches to paying for runoff programs. http://stormwaterfinance.urbancenter.iupui.edu/ Important Note #1: The Center for Urban Policy and the Environment as well as the American Waterworks Association are also excellent reference points of contact for information on funding. They have extensive lists of contacts and papers explaining how other cities and towns have worked through the Storm Water Phase II implementation. Important Note #2 : Studies show that municipal storm water management can cost residents on average between $6.00 to $22.00 a year in increased fees.

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Gilmore & Associates	492-05	Finally, what type of financial assistance (i.e., Federal or State) is available to implement major modifications to sewage treatment plants and storm water drainage systems? Toby J. Kessler	Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of 2002, HR 1070, S 2544) The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state. In addition to these grants and loans, Municipalities themselves have the option of developing storm water utility fees or to incorporate costs to operate storm water facilities in the water or sewer bill of residents.
Gilmore & Associates	492-01	Why did the EPA revise their model, as described in the addendum report, such that nitrate levels (N02 + N03-N) are less than 10 mg/L at the mouth of the Wissahickon? Is the EPA mandating that nitrate levels at the mouth of the Wissahickon meet drinking water standards? Toby J. Kessler	EPA has re-evaluated the need for NO2-NO3 controls for the protection of the City of Philadelphia's drinking water supply. The procedure used in the final TMDL evaluation considers the dilution of the Wissahickon water with the water from the Schuylikll River before the water intake. EPA modified the evaluation from 10 mg/L at the mouth to 10 mg/l at the intake.

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Gilmore & Associates	492-02	Why does the Wissahickon have to meet siltation levels of the "reference watershed" ? Is there some intermediary siltation level that would be suitable? Toby J. Kessler	"The reference watershed approach is commonly used by PA DEP and EPA for TMDL development in Pennsylvania. Such an approach is generally selected when there are no numeric water quality standards for endpoints in TMDL calculations. For siltation, no numeric water quality criteria are applicable, hence a reference unimpaired watershed was used to determine target loads for TMDL analysis."
Gilmore & Associates	492-03	The margins of safety are approximately 10 percent of the proposed TMDLs. Is it reasonable to insist on this MOS considering such a high cost of upgrade for sewage treatment facilities? Toby J. Kessler	No wasteload reductions were specified for sewage treatment facilities to meet siltation TMDLs.
Gilmore & Associates	492-04	Has this model assumption been confirmed through field tests? Toby J. Kessler	The model has been calibrated using data collected by Pennsylvania Department of Environmental Protection in 2002. Please see the TMDL report for a discussion on the calibration process.
Gina M. Kerns	321-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Glen Sacks	679-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Glenn Case	77-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Glenn Gilmlan	272-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gordon Felton	444-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gordon Morewood, MD	667-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gordon Rohlfing	441-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Grace C. Heywood	214-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Grace Gonglewski	538-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Grace Joyner	412-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Grace Tomon	335-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Gret Gentile	345-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Harold Krieger	356-01	EPA used entirely too many acronyms during the meeting without considering ordinary citizens as stakeholders who may not be familiar with these terms.	During the meetings, EPA did identify the acronyms in the beginning of the presentation, in an attempt to avoid confusion. EPA will take this into consideration and try to avoid using acronym at any future meetings held regarding the Wissahickon Creek Total Maximum Daily Load.
Harold Krieger	356-02	Why weren't the residents given a copy of the draft report? Attempts to locate the Wissahickon TMDL on the web site were unsuccessful. The fact that there were 2 separate TMDLs was not clearly presented.	EPA did intend to have copies of the report available at the public meeting, however the copies were not received from the copy center in time for the meeting. EPA will take extra care to provide copies of the report at any future meetings. EPA did have some technical problems with our Regional web site at the beginning of the public comment period and these problems are resolved. It is very challenging to write and present extremely technical material to the general public, EPA will try to make the information presented during the meetings simple and clear.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Harold Krieger	356-03	I failed to see the connection between a summertime drought sampling and its impact on siltation. There should have been 2 separate meetings if there are 2 separate TMDL cases.	A key consideration is the long term typical concentration of nutrients available during periods of low flow, normally in summer periods when temperatures are high as well. This is the period where nutrient control is most important and when in many portions of the river the dominant source of upstream flow and nutrients is associated with point source discharges. In the report, there are two separate TMDLs, one for nutrients at low flow and one for siltation for average annual conditions.
Harold Krieger	356-08	I raised the question of fecal coliform data in the creek and did not receive a satisfactory answer. Is there coliform data on the creek? Why was this not included in the TMDL? Wouldn't fecal coliform contribute to one or both TMDLs?	TMDLs are developed from the State of Pennsylvania's Section 303(d) List. The Pennsylvania Department of Environmental Protection (PADEP) does not have fecal coliform sampling as part of the statewide monitoring program. As a result, without sufficient data, PADEP did not identify the Wissahickon Creek as impaired due to fecal coliform.
Harold Krieger	356-09	The most important hindrance to the survival of fish and macros in the Wissahickon is copper. PA doesn't have standards to regulate copper. POTW's increasing oxygen in their effluent will have no effect on this nor upon the phosphates from dishwasher detergents. When will EPA and DEP regulate these 2 materials?	This comment does not relate to the proposed TMDL for the Wissahickon Creek. There is no defined date when PA will regulate these pollutants.
Harold Krieger	356-04	Golf courses do not fertilize during the summer so how can you base nutrient data from a golf course during a time when there is no run-off?	Runoff can contribute nutrients as well, but these contributions are of short duration (during and after storms) and therefore contribute less to growth of attached algal in the stream. The supplementary sampling performed above and below golf courses was intended to evaluate if there were contributions from the golf courses during critical low flow periods when no runoff was occurring. This data and critical condition was not established for the siltation TMDL.
Harold Krieger	356-05	During the presentation, it was not made clear the actual units of the TMDL data. Pounds per year of what?	"For nutrient TMDLs, wasteload allocations and load allocations are expressed as concentrations in milligrams per liter (mg/L). For siltation TMDLs, wasteload allocations and load allocations are expressed as pounds per year (lbs/yr)."

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Harold Krieger	356-06	How can you use Ironworks creek as a reference watershed when there was no flow data for this creek? Also, Ironworks is 1/4 the length, it is steeper, it differs in POTWs, etc. I fail to see how this is an accurate reference watershed.	"The challenge in selection of a reference watershed was identification of an unimpaired stream with similar watershed characteristics as the Wissahickon Creek watershed (see Section E.1 of Appendix E). Based on selection criteria, Ironworks Creek was determined to be the best candidate for a reference watershed. Default parameters included in AVGWLF were calibrated for specific data sets included in the AVGWLF interface by the Environmental Resources Research Institute of the Pennsylvania State University. Where data were lacking for additional calibration, the default AVGWLF parameters were considered sufficient and scientifically defensible given the detail of study (calibration) used for derivation of these parameters. Therefore, water quality data were not considered a requirement for a candidate reference watershed. There was no USGS gage located in the Ironworks Creek watershed for hydrology calibration, however, the nearby Little Neshaminy watershed was used as a reference for hydrology since it had similar characteristics to Ironworks Creek.
Harold Krieger	356-07	I was under the impression that suspended matter comes from two main sources - stream bank erosion and sanitary sewage. I was not clear where the suspended solid data came from if EPA or Tetra Tech did not take samples.	Sources of siltation result from two primary sources: stream bank erosion and surface runoff. POTW effluent is not considered a major source of siltation; concentration of suspended solids in POTW effluent is negligible relative to loads from the primary sources identified.
Heather Cohen	240-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Helen Roman	395-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Henry R. Watkins	512-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Hiul Csounsen	98-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Horstman Assoc.	696-01	Comments made in this letter were identical to comments made in letter 693.	The comments presented inthis letter were the same as those from letter number 693. Please refer to respones to comments from letter number 693.
Hugh Seid	573-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ida Jaffe	42-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ines Stelzer	311-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Isobel Berry, Esq.	380-01	Sewage discharges into the Wissahickon Creek must be reduced so that the Creek can meet basic water quality standards. Berry and Culp	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J & M Reumann	407-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J. & L. Harvey	612-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J. & S. Powers	540-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J. F. Hickey	217-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J. Iverson	559-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
J. M.	544-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J. T. Weber	235-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
J.and R.Neloomilen	141-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jack Faulkner	242-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jack Stringer	608-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jaclyn Schindler	323-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Jacob Dorof	707-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jacquelin Nyzio	70-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James Bhilippon	458-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James Garvey	76-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James J. Donahue	371-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James McFarlane	196-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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James McLaughlin	211-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James P. Greene	409-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James Salom	32-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
James Ultierdell	658-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jan Williamson	440-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jane Daniels	546-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Jane Kauer	637-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jane Shields	634-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jane Smith	353-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Janet Hudick	362-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Janet Samuel	675-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jay Woltemate	275-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Jean C. Allis	337-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jean McWilliam	609-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jeanne Katz	683-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jelesiewicz	342-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jenifer Leonard	44-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jennifer A. Pearson	223-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Jennifer Cote	36-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jennifer Prozzo	471-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jesse Lytle	509-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jesse Myers	542-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jessica Lember	585-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jessica Popowicz	398-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Jessica Potvin	89-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jessica S. Kondrat	165-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jessica S. Kondrat	192-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jevels Vern	276-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jill Price	221-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jim McKinney	389-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Jim Moran	278-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jim Ms...	84-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jim Westerfer	140-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Joan Farhat	587-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Joanne M. Durkin	131-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Jocelyn C. Bates	386-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Joe & Hermaine Zurf	649-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Joelle Herr	629-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John & Margaret S.	263-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John B. Alger310	310-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John Bies	588-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John C. Manton	109-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
John F. Ciocari, Jr.	202-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John H. Arnold	331-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John H. Trotter	253-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John Johnson	453-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
John Marshall	133-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
John O. Chambers	378-01	The Wissahickon Creek Watershed in Montgomery Township is fully developed. I'll ask in this letter how the Environmental Protection Agency or the Pennsylvania Department of Environmental Protection anticipates that Montgomery Township will be able to meet the requirement of a siltation load reduction of 20 to 30 percent. Montgomery Township objects to the TMDL loading for siltation, unless it can be shown exactly how this will be accomplished, and how it will be funded.	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. BMPs best suited for urban areas include; retrofit existing runoff management facilities to increase their size or promote enhanced infiltration, install trash capturing devices in the utilities, install inlet and grate inserts that trap oil and sediment, disconnect rather than eliminate impervious areas with vegetated buffers, infiltration devices or other pervious materials, bioretention landscaping in parking lots, etc. There is an approach for highly urbanized areas that has been developed by the EPA which is described in National Management Measures to Control Nonpoint Source Pollution from Urban Areas, December 2002, which would be an excellent resource for watershed restoration in portions of the Wissahickon. (www.epa.gov/owow/nps/urbanmm/index/htm) Additional watershed restoration resources (BMPs) are included following this discussion. Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of

			2002, HR 1070, S 2544) The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state. In addition to these grants and loans, Municipalities themselves have the option of developing storm water utility fees or to incorporate costs to operate storm water facilities in the water or sewer bill of residents.
Joseph F. Parker	372-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Joseph Stinson	12-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Josh Bond	636-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Joye Sherman	134-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Judith Thalheimer	508-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Judy Cando	663-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Judy Rubin	516-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Judy Rubin	521-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Justin Berg	599-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
K. & M. Tickner	401-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
K. McKerzu	228-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
K. Narrison	676-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
K. Rile & L. Smith	398-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
K.J. Clarke	341-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kaela Parkhouse	639-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kanielle Elefant	99-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kareln H. Crosby	626-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Karen Ave.	406-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Karen Bustard	575-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Karen M. Smith	93-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Karen Stankovics	127-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Karen Whipple 522	522-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Karen Winward	247-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Kate Stouch	212-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Katherilne Murphy	132-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kathleen Donohue	05-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kathleen Kantanick	172-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kathleen Miller	07-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kathryn A. Dettmer	677-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Kathryn Nagele	200-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kathy Brescia	107-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Katie Bernhardt	174-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Keisha Bowman	483-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kelly Breauer	179-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kelly J. Dunne	326-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Kelly M. Brown	652-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kenneth Winterbottom	52-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kenneth Wolfgang	576-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kevin C. Kaufmaln	662-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kevin Smith	379-01	Sewage discharges must be severely limited to preserve the creek and to meet basic water quality standards.	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kierman Shaft	682-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Kim E. Hanley	627-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kim Empson	529-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kim Glodek	324-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kimberly Mills	490-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kira Jurman	43-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kit Wallace	582-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Kristin & Linda Cox	416-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kristine Terrado	375-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kurt Behrendt	423-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Kyle J. Lewis	610-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
L & L. Rossio	144-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
L. D. Westerfer	261-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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L. Jones	558-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
L. Keisw	259-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
L. R & K. Miles	533-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
L.Huff & S. Meserva	129-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Laura E. Seamar	279-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Laurel M. Drew	479-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Lauren Hill	122-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lauri J. Durnin	607-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Laviania Rauscher	11-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lawrelnce O. Stevens	24-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Leah Finlay	501-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lee Horne	385-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
LeeAnn Eckroade	411-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Leonard T. Perrone	700-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lianne M. DiMarco	37-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lilnda Weimar	299-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lily Chang	262-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Linda Bantel	470-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Linda Corson	384-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Linda Macdonaldo	354-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Linda Miniscalco	638-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Linda Sorrentino	79-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lisa Gruver	82-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lisa Kolden	265-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
LLaurence E. Fanell	432-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lori Jenneson	404-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Louise Barteau	561-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lucian Lewandowski	168-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lucy Sorensen	391-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lucy Veniziale	260-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Lugh Gresham	176-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lynn Giordano	530-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Lynn Philippon	474-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M & G Stumpf	369-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M & M.I Marmer	494-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M. & B. Shofran	83-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
M. & J. Wiotkowski	306-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M. and J. Oranski	110-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M. D. Moore	467-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
M. S. Kleinberg	31-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Majke Seawright	605-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Manuel A. Gongon	451-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mara Wolfgang	454-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marcia Bloomfield	630-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marcus Buffington	420-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marcy K. Bacine	466-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Margaret Jones	118-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Margaret Wehmeyer	659-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Maria Di Pietro	155-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Maria E. Orr	243-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Maria Napoli	255-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mariana Sorensen	394-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marianne Raudenvbush	151-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marica Mignacca	69-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Marie Cavalcante	02-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marie E. Fontini	431-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Marisa L. Crandall	392-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mark & Cindy Powell	468-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mark J. Davis	246-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mark Ostorman	443-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mark Sullivan	273-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary & Joe Ciotti	433-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary A.	655-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary Ann Maugh	185-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary C. Daugherty	686-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mary D. Arcari	365-01	The Springfield Twp. drainage ditch flooded my home and others causing costly damage. Our township is built out so where is the water to go? Your consideration and suggestions would help.	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. Urban areas with high percent impervious ground cover are often difficult places to incorporate many of the BMPs listed. Protecting water quality in these areas is difficult for many reasons including, diverse pollutant loads, large runoff volumes, limited areas suitable for surface water treatment systems, high implementation costs, and destruction of natural buffer zones adjacent to water bodies. There are however, numerous case studies and a growing amount of research that exists on this subject that indicates using a combination of BMPs to fit the constraints of urban areas can be successful in restoring water quality and recharging the groundwater. A detailed article about an urban retrofit in Seattle, WA may be found at http://seattlepi.nwsource.com/local/95881_model20.shtml A detailed description of storm water treatment practices to achieve Storm Water Phase II Retrofit in Madison, Wisconsin can be found on EPA's web site at www.epa.gov/owow/nps/natlstormwater03. BMPs best suited for urban areas include; retrofit existing runoff management facilities to increase their size or promote enhanced infiltration, install trash capturing devices in the utilities, install inlet and grate inserts that trap oil and sediment, disconnect rather than eliminate impervious areas with vegetated buffers, infiltration devices or other pervious materials, bioretention landscaping in parking lots, etc. There is an approach for highly urbanized areas that has been developed by the EPA which is described in National Management Measures to Control Nonpoint Source Pollution from Urban Areas, December 2002, which would be an excellent resource for watershed restoration in portions of the Wissahickon. (www.epa.gov/owow/nps/urbanmm/index/htm) Additional watershed restoration resources (BMPs) are included following this discussion.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Mary E. Powera	537-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary Jane Duffy	351-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary K. Farley	95-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mary L. Nolan	593-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Maryan Stasiorowski	355-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Maryellen Hill	291-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Massilillano Cavicch	16-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mathew J. Kluge	226-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matt Brienkerhoff	216-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matt Maguire	177-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matt Montagna	619-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matthew Brasch	297-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Matthew Farabaugh	301-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matthew J. Selepak	63-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Matthew Sharp	497-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Meghan Raisch	86-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Melissa Tiroelo	450-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Merck & Co.	717-02	Comments on: Draft Uncertainty Analysis Work Plan. EPA Watgershed Program Phase 2 and 3 Activities.	These comments are part of the record but have been responded to previously. Additional response is not now required.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck & Co.	717-03	Attachment A. Wissahickon Creek TMDL for Nutrients Adaptive Implelmentation Alternative. April 11, 2003.	This was a proposed alternative approach to implementation of the TMDL. It was proposed by Merck representing several of the municipalities. Discussions were held on this proposal but a final proposal, including all impacted point sources, was not developed and submitted to EPA.
Merck & Co.	717-04	Comments on: Draft Quality Assurance Project Plan. An Integrated Environmental Monitoring and Data Management System Workplan for: Phase 2 Watershed Characterization.	These comments were submitted to EPA responding to a proposed QA/QC plan for additional data colection effort for the Wissahickon Creek watershed. These comments were responded to through the final QA/QC plan in mid-2002.
Merck Pharm.	697-01	In light of the many documented challenges that still face EPA in its effort to understand and model the Wissahickon Creek Watershed, Merck believes that this effort should not be forced ahead in an effort to meet a publication date of April 9, 2003. It is our understanding that EPA believes that this date is in some way binding upon it as a result of the consent decree entered into in American Littoral Society, et al. v. United States Environmental Protection Agency, et al., Civil No. 96-489 (E.D. PA, April 9, 1997). Merck notes, however, that the TMDL development schedule imposed by Paragraph 15 of that decree does not establish deadlines for the publication of TMDLs for individual watersheds, but rather imposes targets based on the percentage of outstanding TMDLs performed by certain milestone dates. As a result, the consent decree affords the Agency a great deal of discretion in the scheduling of its TMDL workload. Richard Davis	EPA has, through negotiations with the Plaintiffs, extended the date for completion of this TMDL until October 9, 2003. Although there are no specific waters identified in the TMDL lawsuit settlement agreement, Pennsylvania identified the Wissahickon watershed as two of the waters to be completed to meet the April 9, 2003 commitment date. As the developement of this TMDL proceded through model development, EPA and PA continued to consider this TMDL as part of the April 9, 2003 commitment. If it was decided that sufficient information was not available to develop a scientifically supportable TMDL, a replacement watershed would have had to be identified and a TMDL developed for that watershed. We believe that sufficient information was available and did not see a need to substitute another water for the Wissahickoon. The Wissahickon continues to be a water that fulfills the requirements of the lawsuit Consent Decree.
Merck Pharm.	697-02	Good science should never be sacrificed, particularly where a schedule provides such flexibility. EPA should exercise its discretion to defer issuance of the TMDL assessment for the Wissahickon Creek Watershed until the supporting science is in place.	EPA agrees that good science is important. We do not believe that good science was sacrificed in this particular TMDL and have no plans to defer the issuance of this TMDL. Please see the TMDL report and the modeling report to see the science and basis for this TMDL and underlying water quality model.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-03	Regardless of the approach selected, however, the Agency should not adopt the draft TMDL as proposed in light of the fatal legal deficiencies described in these comments. Merck commits to work closely and constructively with the Agency as it evaluates alternative approaches that both satisfy the terms of the consent decree and result in a lawful, scientifically sound action.	EPA has modified the draft TMDL based on comments received. We appreciate the willingness of Merck to work with us, on behalf of some of the municipalities, in evaluating implementation alternatives. EPA believes that the legal issues raised by Merck are without merit.
Merck Pharm.	697-04	Merck believes that PADEPÆs Section 303(d) list of certain Wissahickon Creek watershed segments as impaired by nutrients is not supported by a database that demonstrates that the designated uses (trout stocking, warm water fishery) are impaired.	Pennsylvania has responded to Merck's concerns on the listing of the Wissahickon on the section 303(d) list of waters. Merck should refer to that correspondence from Pennsylvania for a complete discussion on the appropriateness of listing the waters.
Merck Pharm.	697-05	Based on the database presented in the Data Review (EPA, February 2002) and the July-August 2002 PADEP stream survey, Merck believes that on the main stem of Wissahickon Creek the only segments that should be listed as impaired due to nutrient enrichment-related low DO concentrations are the segments located upstream of River Mile 10.	EPA disagrees. Waters are to be identified as impaired or threathened. In some areas of the Wissahickon the waters are threathened due to the loadings of pollutants allowed by the existing NPDES permits for the five municipal facilities. Federal regulations at 40 CFR 130.7(b)(5)(ii) allows use of "...predictive models" that "indicate nonattainment of applicable water quality standards" for listing a water on the section 303(d) list of waters. Model runs made under existing pernit comnditins show significant water quality problems inthe watershed. Please see the modeling report for more information.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-06	Merck wants to emphasize that its position on the inadequate data for the Section 303(d) listing of Wissahickon Creek mainstem segments is not intended as a conclusion that a watershed management program for nutrients is not necessary. Merck supports the Wissahickon Creek watershed management program including the simulation modeling and prediction of allowable nutrient loadings to prevent impairment of designated uses. MerckÆs position is, however, that the watershed management plan for nutrients should be performed under the authority of the CWA continuing planning process provisions (Section 303(e)) and not under the authority of Section 303(d), because the impairment of the designated uses of the Wissahickon Creek mainstem segments downstream of River Mile 10 by the current nutrient loadings has not been demonstrated. The exceptions are those segments that do not meet the minimum DO criterion, and these are limited areas of the headwaters and mid-stem of the creek and several effluent-dominated tributaries.	The present TMDL was completed under the provisions of the Clean Water Act section 303(e). Part of the Continuing Planning Process (CPP) is the development and implementation of TMDLs. See federal regulations at 130.7(a) where it requires the TMDL and listing process to be part of the CPP and where the approved loads are to be incorporated into any water quality management plan. Also 40 CRR130.5(b)(3). Impairment in the watershed based on existing allowable loadings has been shown through modeling analysis.
Merck Pharm.	697-07	The draft TMDL, if implemented as proposed, will result in major costs to the POTWs in the watershed. Because of the stringency of the proposed limits, capital cost for new and upgraded equipment will be significant and there will large, permanent increases in operating costs. Because of this, it is essential that the nutrient TMDLs be scientifically sound and no more restrictive than is required to achieve the water quality criteria and standards. The draft TMDL for nutrients does not meet this objective, as discussed in the following comments.	EPA firmly believes that the TMDL is based on sound science and is therefore an appropriate tool to serve as the basis for requiring municipal facilities to reduce the discharge of contaminants to the surface waters in order to protect aquatic and public health.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-30	EPA has assumed that there is a linear relationship between CBOD in the ambient surface water and the SOD (Tetra Tech memo, Section 1). It uses this assumption to justify lowering the effluent CBOD in the POTW discharges. EPAÆs technical guidance manual for TMDLs specifically advises against this practice: "Until such time when models (such as that of Di Toro, et. al., 1990) are readily available to explicitly couple particulate carbon deposition and sediment oxygen demand, it is beyond the scope of most waste load allocation studies to predict future SOD rates with any credibility since SOD is not linearly proportional to the waste loading of organic carbon in freshwater systems."	Ditoro's diagenesis model is among the most advanced modeling frameworks available that predict SOD. However, only in few real world cases has this approach been utilized due to the amount of data required. Instead, the linear assumption (as used in this study) is one of the most commonly used approaches in practice (Chapra, 1997) due to its simplicity, applicability, and partial justifiability. All natural phenomeon and systems are governed by nonlinear dynamics, however, the dominant mathematical approaches for modeling these systems are often based on linear approximation due to limitations of human knowledge, data availability, and solution methods. WIth the data available for Wissahickon Creek, linear approximation was the most feasible method for estimation of SOD. This method has been proven successful in other TMDL applications including the Appoquinimink River (DNREC, 2001), Indian River, Indian River Bay, and Rehoboth Bay (DNREC, 1998) TMDLs of Delaware.
Merck Pharm.	697-52	EPA's position on uncertainty analysis is not unique and indeed, is recommended by virtually every expert in water quality modeling. An important conclusion and recommendation of the National Research Council's (NRC) TMDL report is that: "EPA needs to provide guidance on model application so that thorough uncertainty analyses will become a standard component of TMDL studies. Prediction uncertainty should be estimated in a rigorous way, and models should be evaluated and selected considering the prediction error need." (NRC, 2001, page 55)	Noted and please see the response to comment 697-52.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-53	There is no measure of the sensitivity or accuracy of the nutrient model DO predictions in the TMDL Report. Thus, there is no way that the accuracy and potential effectiveness of the proposed WLAs can be assessed. Given that the proposed WLAs would require POTWs in the Wissahickon Creek watershed to make major capital expenditures for additional advanced treatment and would have large, continuing operational costs for these treatment upgrades, this absence of any evaluation of the uncertainty of the model predictions is unacceptable. Merck believes that EPA must conduct a comprehensive uncertainty analysis of the nutrient model predictions, after it is properly calibrated and validated, before it can adopt any WLAs for CBOD5, NH3-N, NO3+NO2-N, or O-PO4-P for the Wissahickon Creek watershed.15.	Please see the modeling report that accompanies the TMDL report. Also note that EPA guidance "Protocol for Developing Nutrient TMDLs", November 19099, discusses uncertainty. "Considerable uncertainty is usually inherent in...predicting water quality response... These uncertainties, however, should not delay development of the TMDL and implementation of control measures." The guidance goes on to recommend a larger margin of safety (MOS) as the uncertainty increases. The margin of safety is a required componenet of a TMDL and accounts for the uncertainty about the p[ollutant loads and the quality of the receiving waters. As the protocol recommends a greater MOS should be included when there is more uncertainty in the information used to develop the TMDL. In this case, EPA has used a small MOS but would be willing to increase that factor if the commenter and others feel that the uncertainty in the model is fairly large.
Merck Pharm.	697-57	The WLAs should be established on a monthly basis during the period from February 15-July 31, because the stream flows, temperatures, and solar energy differ vastly from month to month during this time period.	EPA has used the Pennsylvania Department of Environmental Protection's procedures and policies for establishing seasonal WLAs. Seasonal limits were established for the May through June period, July through October period and the November through April period. Please see the TMDL report for a discussion on seasonal limits and the basis for those limits.
Merck Pharm.	697-59	While it is true that applying the nutrient WLAs calculated for warm weather, low flow periods to the entire year is conservative, such WLAs are unnecessary toachieve the water quality standards at most other meterological and stream flow conditions and would impose a substantial and unnecessary economic burden on all the point sources in the watershed.	EPA did not apply the warm weather low flow WLAs to entire year. Please see the TMDL report discussion on seasonal limits.
Merck Pharm.	697-62	Once the nutrient model is adequately calibrated and validated, EPA should evaluate the required WLAs for each month from February 15-July 31. Alternatively, seasonal WLAs could be developed by grouping months with similar environmental conditions (e.g., February 15-March 30; April 1-June 30).	The model is adeqautely calibrated with some verification. Please see the modeling report. EPA used the state's policy and guidance for seasonal limits. Please see the TDML report for a discussion on the seasonal limits.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-63	The proposed WLAs for CBOD5, NH3-N, NO3+NO2-N, and o-PO4-P cannot be applied to the period from August 1-February 14, because the TMDL study did not evaluate the loadings of these pollutants that are required to achieve the applicable DO criteria for this 6.5-month period.	These limits were not applied to the October 30 through May 1 period. Please see the TMDL report discussion on seasonal allocations.
Merck Pharm.	697-64	The nutrient TMDL must not use the WLAs developed for the summer, low flow conditions for the August 1 through February 14 period, because it has not been demonstrated by EPA that periphyton growth is significant and that the DO criterion is violated during this time period. The TMDL should either: (1) conduct separate and adequate modeling for this time period; or (2) exempt the point sources from the WLAs developed in this TMDL study for this time period.	Summer conditions wee not used for the October through May period. Please see the TMDL report for a further discussion on the seasonal limits and when the TMDL applies..
Merck Pharm.	697-65	The proposed nutrient WLAs for NO3+NO2-N are unnecessary based upon available data. The available data indicate that limitations on phosphorus will be the most effective approach for reducing periphyton and macrophyte growth.	NO3+NO2 allocations are not based on achieving the DO standard in stream but rather for the protection of the City of Philadelphia's water suppy intake on the SchuylikIl River. Please see the TMDL report for a firther discussion on how the Wissahickon water quality was factored into the water supply protection.
Merck Pharm.	697-66	If both total phosphorus and total nitrogen are controlled, the POTW must install treatment for both types of pollutants that will more than double the required capital and operating costs required to meet the WLAs.	We agree.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-68	Because the text and Table 4-3 of the TMDL Report explicitly show that the Merck discharge is not assigned a WLA we assume that it is EPAÆs intent that PA DEP assign appropriate limits as a part of the permitting process. However, it is MerckÆs understanding that all point sources must be assigned a WLA when a TMDL is adopted. Merck notes that the entries in Tables F-6 and F-16 of Appendix F show a WLA for the Merck discharge. MerckÆs point source discharge should be assigned an appropriate WLA in the final TMDL to assure consistency with the CWA requirements. As a matter of record, we again would emphasize that it is unlikely that there would be a discharge from MerckÆs outfall during the critical low flow period because storage basin would have been emptied early in an extended dry period.	An allocation wil be provided in the final report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-70	EPA recommends the probabilistic modeling approach for waste load allocation modeling for all types of pollutants (EPA, 1991). In the case of the Wissahickon Creek watershed, which has 5 major permitted dischargers, it is statistically virtually impossible (p = 0.0000003 10) that every point source will discharge at its maximum monthly average permitted load and flow at the same time. It is even less probable that this unique event would coincide with low stream flow and critical summer temperatures. POTWÆs do not discharge at their maximum monthly average design flow except during wet weather periods, which by definition do not cause the critical 7Q10 low stream flow.	The commenter clearly misinterpreated, or misunderstands, EPA's document. EPA's "Guidance for Water Quality-based Decisions: The TMDL Process", April 1991, briefly discusses the probabilistic and Monte Carlo approaches but clearly makes no recommendations for their use. Under the section of the guidance discussing multiple discharges, there is no recommendation for the use of the probabilistic approach for nutrients. However the guidance does refer the reader to the Technical Support Document (TSD - EPA 1990) for a recommended approach for TOXICS. We have indeed found references to the probabilistic approach in the guidance but we failed to find a specific recommendation for its use. Likewise, the EPA guidances "Technical Guidance Manual for Developing Total Maximum Daily Loads, Book 2", March 1997 and "Protocol for Developing Nutrient TMDLs", November 1999 both discuss the probabilistic methods and the advantages and disadvantages but again makes no recommendations for their use under specific circumstances. The guidance makes it clear that it is the analyst's decision as to what approach is used. The Protocol document cited above does,however, make a recommendation - "Recommendation: In general, a steady-state analysis should be widely useful for developing a nutrient TMDL. Point sources, sediment oxygen demand, ground water inflows, and upstream background loads are approximately constant or can be adequately averaged (USEPA, 1995a). A dynamic [not probabilistic] analysis might be justified when standards require that minimum dissolved oxygen levels be maintained at all times and nutrient loads are known to cause varied levels of dissolved oxygen in the stream." The March 1997 guidance makes the same observation. We failed to find any specific recommendation to use the probabilistic approach for developing nutrient TMDLs in EPA guidance.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-71	EPA should revise the POTW flows that it uses in the evaluation of critical low flow conditions in order to more accurately represent the actual conditions that would occur during an extended dry period. There is a simple approach for doing this. EPA can use the existing POTW data to develop a ratio between the low discharge flow months and the high flow months. For example, if during a typical year the highest monthly average flow from a particular POTW is 5 million gallons per day (MGD) and the lowest monthly average flow is 3 MGD, the ratio of the lowest (dry weather) monthly average flow to the peak (wet weather) monthly average flow would be 0.6. EPA can then use this ratio to adjust the POTW design flow to a dry weather condition for use in the TMDL model for critical low flow conditions. Note that using a separate ratio for each POTW would account for the extent of inflow and infiltration to each system.	EPA applied the standard apporach used by Pennsylvania Department of Environmental Protection (DEP) for establishing permit conditions as documented in various DEP policy and procedures papers. The approach used by EPA is standard practice for permit development.
Merck Pharm.	697-74	Merck recognizes that EPA was on a tight schedule for this TMDL. However, we believe that EPA should formally issue all necessary corrections to the TMDL reports and allow additional time for public comment.	EPA has made modifications to the TMDL report and is providing additional comment period. The comment period runs from June 9, 2003 to July 9, 2003.
Merck Pharm.	697-75	EPA should not issue WLAs for NO3+NO2-N based on the water supply use because there has been no demonstration that this use is impaired in the Wissahickon Creek watershed.	EPA is concerned with the City of Philadelphia water supply intake, of which the Wissahickon Creek water is a significant portion. The NO3 allocations were based on the need to protect the drinking water of the citizens of the City of Philadelphia.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-78	EPA has repealed the July 13, 2001 final TMDL rule (65 Fed. Reg, 43586 (July 13, 2000)), which required that implementation procedures be included in TMDLs. 68 Fed. Reg. 13608 (March 19, 2003). The current (1992) regulations at 40 C.F.R. Parts 9, 122, 123, 124 and 130 do not require TMDLs to include implementation plans. Instead, implementation plans are to be included in the stateÆs continuous planning process (CPP) that is authorized by Section 303(e) of the Clean Water Act.	EPA agrees that implementation plans are not a requirement of a TMDL under the existing federal regulations. EPA does not believe that the allocations are or should be considered as implementation plans. Please note that section 303(e) refers to a state's Continuing Planing Process not a continuous planning process.
Merck Pharm.	697-79	Merck believes that EPAs recommended implementation procedures for nutrients (the NPDES permit limits in Tables 4-3 and 4-4 of the TMDL Report and Addendum) be removed so that the PADEP can address the appropriate methods for achieving the TMDLs in its CPP.	The commenter is referred to 40 CFR 130.2 for the definition of a TMDL and a WLA. Federal regulations require each TMDL to include WLAs for each individual point source and load allocations for nonpoint sources. A TMDL is the sum of the individual WLAs and LAs for nonpoint and natural sources (40 CFR 130.2(i)). Federal regulations at 122.44(d)(1) require permit effluent limits to be consistent with the available WLAs. EPA will not remove the nutrient allocations. PA will implement them through the permitting process as provided for through federal regulations. Also note that a TMDL and its associated portions can be defined in terms of pounds per day or some other appropriate unit.
Merck Pharm.	697-80	The principal reason for not including implementation procedures in the TMDL is that this step may preclude consideration of alternate approaches for meeting the TMDL allocations. In the case of the Wissahickon Creek TMDL the possibility exists for alternatives to additional treatment at each point source.	EPA has considered numerous treatment alternatives between the point sources. These were based in part on discussions with representatives of the municipalities as well as with Pennsylvania Department of Environmental Protection. If there are other options that the point sources of pollution consider as viable, the municipalities should feel free to share them with EPA so that they can be reasonably considered in the TMDL process. Discussions between EPA and the municipalities did not result in any additional considerations or approaches from the municipalities.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-81	One alternative is the recommendation made by Everett (February 2002) ù maximizing the riparian canopy to reduce solar radiation on the creek.11 Another potential alternative is regionalization of some or all treatment ù for example, two or more POTWs could combine their current effluents at a regional tertiary treatment plant. This alternative is not unique, the City of San Antonio, Texas has used this alternative for a number of years. In-stream aeration is another alternative that has been used on the Pigeon River in North Carolina and Tennessee to increase stream DO concentrations.	Riparian cover may be an area that the municipalities may wish to consider in a trading activity. Combining discharges would be anther option but without direct municipal input as to the feasibility of such an approach, EPA cannot assume that it would be viable. If this alternative is something that would be of interest to some of the muicipalities, then it would be beneficial to provide EPA with details. Opportunity existed to provide those types of options and considerations during the previous comment period including the several meetings held between EPA and Merck (attending the meetings representing the municipalities).
Merck Pharm.	697-82	Because there are alternative methods potentially available for achieving the TMDL objectives for nutrients, Merck urges EPA to remove the implementation methods from the TMDL Report so that PA DEEP can develop and implement the most efficient procedures in its CPP.	EPA does not believe that the loads/concentrations for each point source consitutes an implementation plan. In fact, the federal regulations require each TMDL developed to include individual WLAs for each of the point source contributors. EPA will not be removing the loads/concentrations for the point sources.
Merck Pharm.	697-86	Based on EPAs descriptions of model development and calibration in Appendix E, Merck believes that EPA has not demonstrated that the siltation model is a suitable prediction tool. We recommend that EPA find a suitable reference watershed ù one with stream flow and sediment load data and that is unimpaired ù to revise its siltation TMDL model.	EPA believes the selected reference watershed is appropriate. Please see the TMDL report and the Modeling report for more information. The model used by EPA for the sediment TMDL is the model developed by Pennsylvania Department of Environmental Protection (DEP). It has been used extensively by DEP in the development of sediment TMDLs throughout the state.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-08	EPA has not validated the calibrated nutrient model with an independent data set and therefore it has not demonstrated that the model has acceptable predictive capability.	"A separate dataset was available for summer 1998, but the flow conditions in the watershed were highly questionable regarding representation of low-flow conditions. Also, little data was available regarding daily discharges and instream flow over the sampling period. However, using available data, the model was reconfigured and model results were compared to instream observations of 1998. This limited validation showed promising results, and provided indication that the model could predict system response under variable conditions. However, dischargers repeatedly commented on the validity of the 1998 dataset, so results of model validation were not included in the TMDL report. Furthermore, validation results indicated highly unfavorable impacts resulting from discharger contributions, and with questions raised regarding validity of data used, presentation of such results was determined unwarranted. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-09	The model calibration performed by EPA for the nutrient TMDL suffers from all of the potential problems identified by Martin and McCutcheon. Because EPA did not attempt to validate the nutrient model with an independent field data set, it is impossible to assess the accuracy of the model predictions of DO and indeed, to even determine if the model has any predictive capabilities.	"The data collected in summer 2002 represented ideal conditions for model calibration. The goal of data collection was to obtain a dataset during the critical summer period with low flow characteristics at least as low as 7Q2 conditions. Fortunately, drought conditions of summer 2002 provided a wealth of data over a two week period with each day close to 7Q2 conditions. To simulate steady-state conditions in a waterbody, it is critical that the data used for calibration be representative of conditions analyzed. With a dataset ideally representative of dry conditions, and two weeks of data available for conversion of observations to average conditions over the sampling period, the limitations and uncertainty of the data for which the model was calibrated was not a concern. More of a concern was the availability of a similar dataset with equal confidence for model validation. A separate dataset was available for summer 1998, but the flow conditions in the watershed were highly questionable regarding representation of low-flow conditions. Also, little data was available regarding daily discharges and instream flow over the sampling period. However, using available data, the model was reconfigured and model results were compared to instream observations of 1998. This limited validation showed promising results, and provided indication that the model could predict system response under variable conditions. However, dischargers repeatedly commented on the validity of the 1998 dataset, so results of model validation were not included in the TMDL report. Furthermore, validation results were highly unfavorable regarding impacts from discharger contributions, and with questions raised regarding validity of data used, presentation of such results was determined unwarranted. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-10	Extensive, quality-assured field data are available for performing validation of the nutrient model with an independent data set. The 1998 study by the National Institute of Environmental Renewal (NIER) provided an extensive database of diurnal DO measurements and supporting water chemistry data (EPA, February 2000, pages 2-4 through 2-8). In a letter responding to MerckÆs comments on the Data Report, the PADEP stated that EPA's modelers agreed that the NIER database was suitable for validating certain portions of the model. The July 1999 PADEP diurnal DO study (EPA, February 2000, pages 2-16 through 2-18) is another independent database that can be used for model validation.	"A separate dataset was available for summer 1998, but the flow conditions in the watershed were highly questionable regarding representation of low-flow conditions. Also, little data was available regarding daily discharges and instream flow over the sampling period. However, using available data, the model was reconfigured and model results were compared to instream observations of 1998. This limited validation showed promising results, and provided indication that the model could predict system response under variable conditions. However, dischargers repeatedly commented on the validity of the 1998 dataset, so results of model validation were not included in the TMDL report. Furthermore, validation results indicated highly unfavorable impacts resulting from discharger contributions, and with questions raised regarding validity of data used, presentation of such results was determined unwarranted. "
Merck Pharm.	697-11	It is clear that there are adequate databases available to perform a thorough validation of the Wissahickon Creek nutrient model. In fact, there may be sufficient data to perform quantitative estimates of model predictive capability as recommended by Martin and McCutcheon (1999, pages 80-86). Given that field data are available to validate the nutrient model, EPA must conduct such a validation to demonstrate that the model has acceptable predictive capability. This is especially essential in this case where there are strong indications that the model in important respects is not predictive.	"A separate dataset was available for summer 1998, but the flow conditions in the watershed were highly questionable regarding representation of low-flow conditions. Also, little data was available regarding daily discharges and instream flow over the sampling period. However, using available data, the model was reconfigured and model results were compared to instream observations of 1998. This limited validation showed promising results, and provided indication that the model could predict system response under variable conditions. However, dischargers repeatedly commented on the validity of the 1998 dataset, so results of model validation were not included in the TMDL report. Furthermore, validation results indicated highly unfavorable impacts resulting from discharger contributions, and with questions raised regarding validity of data used, presentation of such results was determined unwarranted. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-12	The model predictions of DO shown in Figure D-10 of Appendix D show that the nutrient model is not adequately calibrated.	"As a response to comments, modifications were made to the hydrodynamic model to better predict water depth in the headwater portions of the watershed. It was determined that necessary attention was not placed on accurate prediction of water depth in these portions, which directly influence the degree of biological activity of periphyton growth processes. As a response to additional comments, other model modifications were also performed to the water quality model to address spatial variability of substrate availability, solar radiation, and temperature, as well as an improved methodology for prediction of reaeration. The modified model was recalibrated and diurnal DO variability was better captured by model predictions, especially in the headwater areas noted by the commentor. Model modifications are documented in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. Also, increased modeled diurnal DO variability resulted in necessary recalculation of WLAs as prediction of minimum DO in upper portions Wissahickon Creek were refined. "
Merck Pharm.	697-13	Because the predictions of diurnal DO concentrations are the foundation of thennutrient TMDL, the poor calibration of the DO data shown in Figure D-10 is of great concern. If the model is incapable of accurately duplicating the calibration data set, without any attempt at validation with an independent field data set, then its predictive capabilities for setting nutrient waste load allocations (WLA) and load allocations (LA) are not demonstrated.	"As a response to comments, modifications were made to the hydrodynamic model to better predict water depth in the headwater portions of the watershed. It was determined that necessary attention was not placed on accurate prediction of water depth in these portions, which directly influence the degree of biological activity of periphyton growth processes. As a response to additional comments, other model modifications were also performed to the water quality model to address spatial variability of substrate availability, solar radiation, and temperature, as well as an improved methodology for prediction of reaeration. The modified model was recalibrated and diurnal DO variability was better captured by model predictions, especially in the headwater areas noted by the commentor. Model modifications are documented in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. Also, increased modeled diurnal DO variability resulted in necessary recalculation of WLAs as prediction of minimum DO in upper portions Wissahickon Creek were refined. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-14	EPAs TMDL Report provided inadequate documentation of the modifications that were made to the WASP5 model to simulate periphyton and its effects on the nutrient and dissolved oxygen balances for Wissahickon Creek and its tributaries. Adequate documentation of these modifications was not provided until March 18 th , leaving Merck and other stakeholders with limited time to review these modifications.	Since an extension was negotiated with the Plaintiffs, Merck and others have had additional time to review the material provided and submit additionl comments.
Merck Pharm.	697-15	The periphyton model description provided by Tetra Tech has an inconsistency with respect to the input variables describing the maximum growth rate.	K2C is the maximum growth rate for periphyton
Merck Pharm.	697-16	In Attachment A, Section A.4. Parameterization, item (1) identifies the variable K2C as the ôperiphyton growth rateö and refers to Equation A-13 as well as other equations in Attachment A that contain the periphyton growth rate, G. We assume that K2C is the maximum growth rate for periphyton used in Equation A-13, but this assumption should be verified by Tetra Tech. If K2C is not the maximum growth rate G2max shown in Equation A-13, then an explanation is needed for how this variable is used in the simulation.	K2C is the maximum growth rate for periphyton
Merck Pharm.	697-17	The periphyton model simulation ignores the influence of riparian canopy on periphyton populations and growth rates, and this is likely one reason why diurnal DO concentrations are so poorly simulated by the model.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Documentation of model modifications is provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-18	The periphyton survey data are shown in Table 2.2 of the Data Report and show that the density of periphyton growth is strongly correlated to the percentage of riparian canopy. This important variable is ignored in the nutrient TMDL model.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Documentation of model modifications is provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."
Merck Pharm.	697-19	The riparian canopy, which is most dense during the months when the critical low flows occur, has very significant effects on the DO concentrations and nutrient dynamics in Wissahickon Creek. In areas with dense riparian canopy, solar energy is restricted which limits that growth rate and standing crop of periphyton. This limitation in turn decreases the diurnal variations in DO concentrations in these areas.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Documentation of model modifications is provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."
Merck Pharm.	697-20	The other effect of low solar energy and periphyton standing crop in certain areas of the creek and tributaries is that the amount of nutrients removed from the water column by periphyton growth is limited and these nutrients are thus transported downstream. These nutrients are then available for periphyton growth in locations where solar energy and available substrate are sufficient to sustain maximum growth rates. Because the nutrient TMDL model does not account for the effect of riparian canopy on periphyton populations in the creek and tributaries, its nutrient transport simulations are incorrect and unrepresentative of the creek and tributaries.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Documentation of model modifications is provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-21	The modeling suggests that loadings of CBOD5 and ammonia-nitrogen have equal or greater impact on DO concentrations than nutrient-mediated periphyton growth in a number of stream segments. For example, the addition of one mg/L of DO to the North Wales Boro and Upper Gwynedd Township Sewer District (UGTSD) treatment plant effluents (increasing the effluent DO concentration from 6 mg/L to 7 mg/L) greatly increases the segment 971222-1345-ACE waste load allocations (Tables 4-1 and 4-2, TMDL Report). The increased effluent DO concentration increases the UGTSD WLA for CBOD5 by 271%, for NH3-N by 194%, and for o-PO4-P by 262%. The WLAs for CBOD5, NH3-N, and o-PO4-P predicted for the Pine Run segments show a similar response to increased effluent DO concentrations as shown in the upper segment of Wissahickon Creek. In segment 971222-0930-ACE of Wissahickon Creek this relationship between effluent DO concentration and the WLAs is not present, suggesting that the calibration of the model in that segment is primarily sensitive to the nutrient loadings.	"The model does show that periphyton growth has a greater impact on DO than CBOD5 and NH4. However, for TMDL analysis, the DO concentration is more sensitive to variation of CBOD5 and NH4 than to the variation of only nutrients. Because of the effluent dominance of Wissahickon Creek during the critical period, nutrients are not limiting factors to periphyton growth (Kelly and Biggs, 2002). As shown in a series sensitivity runs, the ortho-phosphate only begins to show detectable limiting effect on periphyton growth when its load is reduced by over 99%. Obviously, with the load reduction presented in the TMDL scenarios, the nutrient loadings were much higher than its limiting threshold, resulting in insignificant response of periphyton to the nutrient reduction, hence less impact on DO than CBOD5."
Merck Pharm.	697-22	This increase in the allowable WLA for the traditional oxygen-demanding constituents does not make sense if the principal cause of low DO concentrations in this segment of Wissahickon Creek is periphyton growth due to nutrient loadings. Review of the 1998 NIER database and 2002 PADEP database quite clearly show that it is the diurnal variations of DO caused by periphyton that are the principal cause of the violation of the minimum DO criterion that applies during the February 15 through July 31 period.	"Diurnal DO fluctution is the greatest cause of DO violation. However, diurnal DO fluctuation was caused by periphyton metabolism, and the rate of periphyton growth was directly related to instream nutrient levels. However, as shown in a series sensitivity runs, ortho-phosphate showed detectable limiting effect on periphyton growth only when its load was reduced by over 99%, which is obviously unacceptable to dischargers. Therefore, TMDL development resorted to reducing the oxygen consuming constituents such as CBOD to prevent DO violations and lessen restrictions on effluent nutrient loads."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-23	The first-order biodegradation rates for CBOD used in the nutrient model are too high for highly treated, nitrified POTW effluents and cause the model to overestimate the oxygen demand in the creek that is caused by CBOD.	"Although the characteristics of the effluent suggests a bottle decay rate of around 0.08/day, this value is not representative of conditions within the streams because a significant contributor of in-stream CBOD is the autochthonous source related to periphyton metabolism. Autochthonous CBOD is generally associated with higher decay rates in the range of 0.32 to 0.50/day (Toerien and Tavari, 1982). Therefore, to use a low decay rate such as 0.08/day would lead to possible underestimation of the oxygen consumption by the instream CBOD. In addition, instream decay rates are generally higher than the bottle rate (Bowie et al, 1985). As shown in a study of the Upper Mississippi River (Lung, 2001), when a WWTP upgraded from primary to secondary treatment, which corresponded a change in the bottle rate from approximately 0.30/day (primary treatment) to 0.075/day (secondary treatment) (Chapra, 1997), the instream decay rate decreased from 0.35/day to 0.25/day. With the effect of autochthonous CBOD and the disparity between bottle decay rate and instream decay rate, it is considered inappropriate to use the decay rate of 0.08/day in the model. Instead, a higher value was used to provide an additional protective margin of safety."
Merck Pharm.	697-24	The first-order biodegradation rates (kd at 20 ¦C) for CBOD used in the nutrient model range from 0.07 to 0.18 day -1 . In over 90% of the modeled segments the biodegradation rate used for calibration and the TMDL runs is 0.18 day -1 The use of these high biodegradation rates is a principal cause for the model predicting the need for major CBOD5 reductions by point sources.	See response to 697-23

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-25	The range of kd at 20 ¦C that is typically applied to activated sludge effluent is reported to range from 0.05-0.1 day -1 (Table 6.5, Thomann, R.V. and Mueller, J.A., 1987). EPAÆs TMDL guidance document for streams suggests a value of kd of 0.1 day -1 for CBOD in POTWs with advanced waste treatment (i.e., nitrification)(EPA, 1997). The CBODu concentrations shown in Table 3.1 of the Modeling Report clearly demonstrate that the effluents from the POTWs that discharge to Wissahickon Creek and its tributaries reflect the application of advanced wastewater treatment. The biodegradation rates for CBOD used in the nutrient model are from 180% to 360% greater than the range of rates reported in the literature for effluents from biological treatment plants that achieve nitrification (advanced treatment). These overly high biodegradation rates are one probable cause of the model predictions that substantial reductions in the existing effluent CBOD5 loadings are needed to achieve the DO criteria.	See response to 697-23
Merck Pharm.	697-26	If EPA had used more realistic CBOD biodegradation rates in the model, the model predictions would likely show that significant reductions in the existing CBOD5 loadings are not required to achieve the minimum DO criterion. Such a prediction would be consistent with the measured DO data for the creek, which show that it is the diurnal DO concentration variations caused by photosynthetic activity that are causing violations of the minimum DO criterion. The daily average DO concentrations at all monitoring stations comply with the average DO criterion, which supports the assumption that the existing CBOD5 and NH3-N loadings are not the cause of the DO standard violations.	"See response to 697-23. Also, as shown by the sensitivity analysis in the modeling report, DO is not highly sensitive to Kd. Moreover, for TMDL analysis and develpment of WLAs, if a lower Kd is used then a higher CBODu baseline load would result due to the higher CBODu/CBOD5 ratio associated with a low Kd. This effect on CBODu could further reduce the sensitivity of DO to Kd in TMDL analysis."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-27	The nutrient model uses an unproven relationship between CBOD and sediment oxygen demand (SOD), which is another reason why the model predicts the need to significantly reduce CBOD loadings.	"A simple and widely accepted approach based on linear assumptions (Chapra, 1997) was used in this study, assuming a linear relationship between the load reduction and SOD adjustment. The basic rationale behind this approach is that the loads of CBOD and other nutrients from sources impact the SOD. Therefore, it is reasonable to assume that the SOD is a function of the loading rate from the dischargers, with reductions of SOD always accompanying a reduction of load. Actually, if the SOD does not respond to load reductions of CBOD, NH4, NO3, and PO4, then the DO standard will unlikely be met with the load reduction schemes. The model considered the characteristics of effluent by setting the maximum SOD value for the baseline case to a relatively low value close to the lower bound of the range of SOD (2.0 to 10.0) as indicated in Surface Water Quality Modeling (Chapra, 1997)."
Merck Pharm.	697-28	EPA has postulated a direct cause-effect relationship between CBOD and SOD in the nutrient model (Modeling Report, page 29). EPA has assumed that a fraction of the CBOD in the water column is transferred directly to the SOD in each stream element. In the memo provided by EPAÆs contractor, this fraction of CBOD transferred to the SOD is identified as 50% (Tetra Tech memo, Section 1). This assumption guarantees that CBOD will act a significant DO sink in the nutrient model.	"Actually, this assumption guarantees a sufficient amount of DO recovering from CBOD reduction. For example, based on the formula, when the CBOD is reduced by 60%, the SOD can be reduced by 30%, thus providing a good opportunity for a load reduction to improve DO. If the SOD is disassociated from the CBOD load, then the load reduction scheme will likely require unrealistic nutrient reductions."
Merck Pharm.	697-29	The calibration of the nutrient model used SOD as one of the principal input variables and this variable has a significant influence on the DO predictions. EPA states in the Modeling Report that this adjustment is ôreasonableö but offers no support for this statement. The available database for Wissahickon Creek and its tributaries (Data Report, periphyton study, TMDL Report) provide no support for the assumption that SOD has a significant influence on the ambient DO concentrations in the watershed.	The impact of SOD on DO concentration is shown by the sensitivity analysis reported in the modeling report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-31	To the extent that SOD is a significant oxygen sink in the Wissahickon watershed, it is most likely the SOD created by the growth and death of periphyton that is important.	"Periphyton metabolism contributes to a significant portion of the SOD. However, the assumed linearity between CBOD and SOD presents a viable alternative rather than simply excluding the dischargers' load from the cycle."
Merck Pharm.	697-32	Attachment A to the Tetra Tech memo provides the equations that relate periphyton growth and death to the DO oxygen simulation. Equation A-20 is the relationship between periphyton death and CBOD. Thus, periphyton death is related indirectly to SOD by way of water column CBOD for which EPA assumes a 50% transfer to SOD. In fact, this presumed relationship does make sense for a solid material that is attached to the bottom of the stream (i.e., the periphyton) because it assumes that the dead periphyton dissolves to form soluble CBOD or, alternatively, is suspended in the water column (presumably, the 50% CBOD transfer assumes that 50% of the CBOD is particulate that settles) and then settles back to the bottom to exert SOD. A more realistic scenario is that when the periphyton dies a fraction of the dead biomass remains on the bottom of the stream and exerts a direct oxygen demand on the overlying water (SOD). The dead periphyton that does become detached from the bottom should be assumed to be transported as a combination of particulate (settleable) carbon and dissolved carbon (from cell lysis). It should not be linked directly to water column CBOD because there are no studies that demonstrate that this is a potential pathway to SOD. In addition, CBOD associated with dead periphyton cannot be assumed to have the same properties or decay rate as the CBOD that remains in the treated POTW effluents.	"(1) The CBOD and organic carbon essentially represent the same thing in different forms. CBOD actually is a surrogate of organic carbon, which expresses organic carbon in terms of oxygen for the sake of mathematical simplicity. Therefore, when the commentor stated that "dead periphyton that becomes detached from the bottom should be assumed to be transported as a combination of particulate (settleable) carbon and dissolved carbon", it means essentially the same as replacing the "carbon" with CBOD. (2) As stated in the updated modeling report, one of the major reasons for using a higher CBOD decay rate was because that the CBOD originated from periphyton is relatively labile, thus by combining the CBOD from the dischargers and periphyton would imply a higher decay rate for the mixed CBOD."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-33	If EPA had linked periphyton death directly to SOD rather than to the water column CBOD concentrations, the model would be more representative of the actual DO dynamics that occur in the Wissahickon Creek watershed. By linking periphyton death to CBOD concentrations in the water column, the model formulation used by EPA guarantees that the CBOD discharged by the POTWs will be a major contributing factor to predicted DO concentrations, even if the effluent CBOD has little effect on the DO concentrations, which strongly appears to the case.	"Linkage of periphyton death to CBOD does not imply that CBOD from POTWs are the major contributing factor to the predicted DO concentrations. The reason allocations were focused on effluent CBOD load was to lessen required nutrient load reductions necessary for reduction of periphyton impacts on diurnal DO fluctuations. If POTWs discharge CBOD at permitted levels, the CBOD load could have significant impact on the DO concentration under the critical condition."
Merck Pharm.	697-34	The treatment of surface reaeration as a calibration variable rather than allowing it to be calculated with an equation that relates it to physical stream properties contributes to the inadequacy of the modelÆs predictive capability.	"As a response to comments, the water quality model was modified to include a reaeration equation as a function of streamflow. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Merck Pharm.	697-35	EPA has used the calibration process to set the surface reaeration coefficients in the nutrient model, which control the amount of oxygen supplied to the water column by transport across the water surface. EPA's contractor stated that it did not use a reaeration equation based on the physical characteristics of the stream because it needed calibrated values to be able to use low SOD values to represent the dischargers' nutrient loadings (Tetra Tech memo, Section 3). According to the consultant, when a reaeration equation was used, the predicted DO concentrations were too high unless high SOD values were used in the model.	"As a response to comments, the water quality model was modified to include a reaeration equation as a function of streamflow. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Merck Pharm.	697-36	EPA's modeling approach was necessitated by its reliance on SOD as a major variable controlling the DO concentrations in the creek and tributaries. However, as stated earlier in these comments, there are no data that support the assumption that SOD is a significant oxygen sink in the Wissahickon Creek watershed. In fact, the very depths in most of the watershed (Modeling Report, Appendix A) suggest that SOD may be an insignificant oxygen sink in most stream segments.	"The SOD was obtained through model calibration, which is the most widely accepted approach for deriving model parameters when no measured data are available. Note that the magnitude of the impact of SOD on DO would depend on other factors such as reareation. In general, the higher the reareation coefficient, the smaller the impact of SOD on DO. In the updated model, a reareation equation was incorporated (and calibrated to data) that predicted higher reareation rates for shallow sections of stream, thus a smaller impact of SOD on DO at the shallow section."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-37	As a general principle of DO modeling, one of the many published reaeration equations should be used to predict site-specific reaearation coefficients, if at all possible. Because these equations account for changes in the surface reaeration rate as the physical characteristics of the streambed (depth, width, velocity) change, they are preferred because they improve the predictive capability of the model when changes in stream flows must be simulated. In addition, use of equations to predict segment reaeration rates eliminates one of the model parameters that must be set by calibration, which reduces the degrees of freedom and improves the possibility of achieving a unique solution to the DO concentration simulation. EPA should have selected one or more of the standard reaeration equations available in the WASP5/EUTRO model to predict surface reaeration and calibrate the model for DO simulation using the other parameters available, which are more than adequate for this task.	"As a response to comments, the water quality model was modified to include a reaeration equation as a function of streamflow. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development. Updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."
Merck Pharm.	697-38	EPA should have calibrated the nutrient model by using the coefficients and relationships for periphyton, which clearly is the principal cause of the minimum DO concentrations in the watershed.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Also, caibration to periphyton mass was performed on data collected by PA DEP and ANSP in 1998. Documentation of model modifications and calibration are provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-39	An important variable that has not been considered in the model is the riparian canopy and its effect on solar radiation at different points in the watershed. Also, as indicated in the preceding comment the assumed linkage between periphyton death and the SOD is unrealistic and not technically justified.	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Also, caibration to periphyton mass was performed on data collected by PA DEP and ANSP in 1998. Documentation of model modifications and calibration are provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."
Merck Pharm.	697-40	EPA should recalibrate the model using assumptions about principle model variables that are more reasonable, given the available data for the watershed. It is not reasonable to assume that discharges with CBODu concentrations of 6 mg/L or less contribute significantly to SOD in a very shallow stream. It is also unreasonable to assume that the solar energy available for periphyton growth is equal for all locations in the entire watershed, when the database clearly documents that it is not. Finally, the relationship between SOD and periphyton death should be reevaluated and corrected to account for the fact that some or all of the dead periphyton may remain attached to the stream bottom and exert SOD directly.	"Under the current permit condition, the CBODu from the five major dischargers ranged from approximately 17 mg/L to 25 mg/L, which is enough to result in significant impacts on DO concentration. In the updated model, spatial variability of solar radiation has been accounted for through a spatial variable shading factor. As for the relationship between periphyton and SOD, it was indirectly addressed in the model by allowing the variation of nutrient load to impact the SOD adjustment."
Merck Pharm.	697-41	The sensitivity analyses of the nutrient model performed by EPA are incomplete and do not adequately assess the predictive capability of the model.	"As a response to comments, sensitivity analyses was peformed on effluent concentrations of ortho PO4-P, NO2+NO3-N, CBOD, and NH3-N. Relative to design flows used in TMDL analysis (from 1.29 to 10.1 cfs), background flows of headwater boundary conditions (from 0.085 to 0.105 cfs) had negligeable impacts on calculation of WLAs. Therefore, sensitivity analysis of boundary (background) concentrations was determined superfluous. Results of analysis are included in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-42	A significant missing sensitivity analysis is for the nutrient loadings in the creek and tributaries. The sensitivity of DO average and minimum concentrations to the point source and background loadings of O-PO4-P and NO2+NO3-N should be analyzed. A corresponding sensitivity analysis of DO concentrations to the point source CBOD and NH3-N loadings should also be performed. These sensitivity analyses will indicate the relative importance of point source nutrient loadings and CBOD loadings to the DO concentration predictions and will represent an integration of the model parameter calibrations for each category of waste load (i.e., nutrients versus oxygen-demanding substances).	"As a response to comments, sensitivity analyses was peformed on effluent concentrations of ortho PO4-P, NO2+NO3-N, CBOD, and NH3-N. Relative to design flows used in TMDL analysis (from 1.29 to 10.1 cfs), background flows of headwater boundary conditions (from 0.085 to 0.105 cfs) had negligeable impacts on calculation of WLAs. Therefore, sensitivity analysis of boundary (background) concentrations was determined superfluous. Results of analysis are included in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Merck Pharm.	697-43	Another sensitivity analysis that should be performed is to run the model with zero (0) loading for all of the point sources. This run will indicate the importance of the assumed boundary concentrations of nutrients and oxygen-demanding substances on the model predictions. Our review of the boundary concentrations that were assumed by EPA (Modeling Report, Table B.1) suggests that some of the values chosen may represent significant loadings on the system and thus affect the model predictions.	"Relative to design flows used in TMDL analysis (from 1.29 to 10.1 cfs), background flows of headwater boundary conditions (from 0.085 to 0.105 cfs) had negligeable impacts on calculation of WLAs. Therefore, sensitivity analysis of boundary (background) concentrations was determined superfluous."
Merck Pharm.	697-44	The sensitivity analyses performed by EPA confirm that the nutrient model calibration has been inappropriately parameterized and as a result the model incorrectly predicts that CBOD discharged by POTWs is as significant as nutrients for determining the minimum DO concentrations.	"As a response to comments, model modifications were performed to the water quality model to address spatial variability of substrate availability, solar radiation, and temperature, as well as an improved methodology for prediction of reaeration. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-45	The undemonstrated relationship between SOD and periphyton death rate (which is linked to the water column CBOD) used in the nutrient model confounds the calibration by making the CBOD discharged by the point sources of more importance than periphyton growth and death and particulate organic matter introduced to the stream during runoff events. The relative sensitivity of the DO concentration to the CBOD decay rate (Figure D.4) is a consequence of using the in-stream CBOD concentration as the major source of SOD in the model.	"(1) The CBOD loads from the dischargers were never given importance over periphyton growth and death. The reason allocations were focused on effluent CBOD load was to lessen required nutrient load reductions necessary for reduction of periphyton impacts on diurnal DO fluctuations. (2) the sensitivity of DO to Kd is not related to ""using the instream CBOD concentration as the major source of SOD"". Kd only imposed an effect on instream CBOD and has no impact on SOD because there is neither a diagenesis module nor a separate benthic CBOD/DO mass balance module in the model to link Kd to SOD. "
Merck Pharm.	697-46	The modeled DO concentrations are relatively insensitive to the discharger flow rates (Figure D.1 and D.2) and surface reaeration coefficient (Figure C.1, Tetra Tech memo). This is because the nutrient model uses calibrated surface reaeration coefficients that do not change as a function of water depth and velocity. This makes no sense; all available technical literature show that surface reaeration in shallow streams is strongly influenced by water depth and velocity (Table A-24, EPA, 1997).	"As a response to comments, the water quality model was modified to include a reaeration equation as a function of streamflow. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development. Senstivity analyses were re-evaluated as a result of such changes."
Merck Pharm.	697-47	If the periphyton simulation module had been implemented with a scientifically-supported relationship between periphyton death and SOD and the linkage to in-stream CBOD were eliminated, it would have been possible to calibrate the model correctly by using the periphyton growth equations and accounting for solar energy decreases in areas with significant riparian canopy, using an equation for calculating the surface reaerationcoefficient as a function of stream hydraulics calibrating he CBOD decay rate (Kd) to better represent the existing POTW effluent quality, and calibrating SOD as needed assuming that the additional contributions needed, if any, are related to organic detritus deposited during runoff events.	"As a response to comments, model modifications were performed to the water quality model to address spatial variability of substrate availability, solar radiation, and temperature, as well as an improved methodology for prediction of reaeration. As a result of model refinement, subsequent calibration resulted in better understanding of all chemical/biological processes mentioned by the commentor. However, CBOD decay rates were not modified. For a detailed discussion of model modifications, see the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-48	At the request of stakeholders Tetra Tech ran the nutrient model with the typical diurnal variation in POTW effluent flow rates (Tetra Tech memo, Section 4, Attachments D and E). In the memo Tetra Tech states that the diurnal variation in POTW flows has ôlittle impactö on diurnal DO swings (Tetra Tech, Section 4). In fact, this statement is incorrect for the majority of the stream locations shown in Attachment E.	"Sensitivity analysis showed that the diurnal DO fluctuation is primarily caused by periphyton rather than the diurnal fluctuation of flow. See the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Merck Pharm.	697-49	Downstream of the Abington (Figure E-1), North Wales (Figure E-2), and Dublin (Figure E-3) POTWs the diurnal flow variations result in a change in the minimum DO concentration predicted by the model of at least 0.5 mg/L. The minimum DO concentrations downstream of the Upper Gwynedd Township (Figure E-4) and Ambler (Figure E-5) POTWs vary by about 0.3 mg/L from the predicted DO values when their effluent flows are assumed to be constant.	"Sensitivity analysis results were refined as additional model modifications were performed. For the updated model, the improved formulation of reaeration and resulting simulated DO as a function of streamflow provided refinement in sensitivity analysis of varying effluent flow. As shown in Figures K-22 through K-26 in Appendix K of the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, it is obvious that fluctuation of effluent flow has insignificant impact on the DO fluctuation range."
Merck Pharm.	697-50	It is apparent that the diurnal variation in the effluent flow from the POTWs should be included in the model calibration and validation in order to achieve adequate predictive capability.	"The updated model simulated the diurnal DO fluctuation reasonable well. See appendix J of the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development."
Merck Pharm.	697-51	The absence of any type of uncertainty analysis in the TMDL Report and supporting documents renders the nutrient model as an unacceptable predictive tool for developing TMDLs.	"Several uncertainty analyses were performed on various factors to assess model sensitivity and uncertainty. These results are reported in the TMDL report and the Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development. In response to comments, additional sensitivity analysis were performed and added to the reports. To account for model uncertainty in TMDL calculations, and to ensure that TMDLs were protective of the streams, an implicit margin of safety was assumed through conservative modeling assumptions. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-54	The hydrodynamic component of the nutrient model does not maintain a flow balance, which is a serious deficiency that may impact its predictive capabilities.	"In the absence of a sufficient dataset to make more detailed assumptions regarding the relationship between baseflow, discharge flows, groundwater infiltration, and Coorson's Quarry flow, a conservative approach was utilized to ensure that the Wissahickon Creek is protected under critical conditions when the waters are most vulnerable. Such an approach assumed average flows from discharges in calculation of the flow budget during critical low-flow conditions. The modeling approach also purposefully did not take into account the loss of volume resulting from groundwater infiltration, as such losses have not been quantified for Wissahickon Creek. The impact of this interaction is considered minor in comparison to other processes in the streams. Moreover, acceptable model calibration indicated that the processes included (absent infiltration losses) were sufficient in describing the system's assimulation and transport of nutrients. As a result, infiltration losses were ignored in model simulation as a conservative assumption regarding the critical condition of the stream."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Merck Pharm.	697-55	EPA states that after it calculated the background flows at critical conditions (by subtracting the POTW flows from the 7Q10), the 12.5 cubic foot per second (ft 3 /s) flow from Coorson's Quarry was not accounted for because it resulted in a negative flow at the downstream stream flow monitoring station. The loss of flow is attributed to infiltration to ground water during the low flow period. Therefore, EPA added the 12.5 ft 3 /s flow from Coorson's Quarry to the base flow for the model calibration and TMDL runs. While we understand the need to have the model not show a negative flow at the down tream end of the watershed, this artificial adjustment may have significant consequences on the TMDL. If stream flow during critical conditions is lost to ground water, then the water depths in some portions of the stream channel will be lower than those used in the model. This condition may either increase or decrease periphyton production. Also, if stream flow is lost to ground water, the nutrients carried in the stream flow will also be lost thus decreasing the downstream mass loadings. These conditions can have significant impacts on the predicted WLAs and thus this issue merits additional evaluation. This is another factor that supports our position that the nutrient model is not a suitable predictive tool for this TMDL.	"In the absence of a sufficient dataset to make more detailed assumptions regarding the relationship between baseflow, discharge flows, groundwater infiltration, and Coorson's Quarry flow, a conservative approach was utilized to ensure that the Wissahickon Creek is protected under critical conditions when the waters are most vulnerable. Such an approach assumed average flows from discharges in calculation of the flow budget during critical low-flow conditions. The modeling approach also purposefully did not take into account the loss of volume resulting from groundwater infiltration, as such losses have not been quantified for Wissahickon Creek. The impact of this interaction is considered minor in comparison to other processes in the streams. Moreover, acceptable model calibration indicated that the processes included (absent infiltration losses) were sufficient in describing the system's assimulation and transport of nutrients. As a result, infiltration losses were ignored in model simulation as a conservative assumption regarding the critical condition of the stream."
Merck Pharm.	697-56	On page 1-1 of the TMDL Report EPA states that: ôSeparate studies are underway to address those impairments resulting from à low dissolved oxygen concentrations.ö Given that the nutrient TMDL is based on achieving the DO criteria for Wissahickon Creek and its tributaries, this statement makes no sense. EPA should clarify what it means by this statement and should not conduct any other TMDL in this watershed to address low DO concentrations.	"Two waterbodies in the Wissahickon Creek watershed have been included on PennsylvaniaÆs 303(d) list due to low DO/organic enrichment impairments (see the Data Review for Wissahickon Creek, Pennsylvania), namely, Monoshone Creek and Valley Road Tributary. Both waterbodies are tributaries of Wissahickon Creek, but are not listed as impaired due to nutrients and are therefore not addressed in nutrient TMDL development. Valley Road Tributary is scheduled for an illicit connections survey, while efforts are ongoing to abate illicit connections in the Monoshone Creek (personal communication with Laurel Ateyeh, PADEP). Impairments in these tributaries will be addressed in future projects unrelated to the nutrient TMDLs."

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Merck Pharm.	697-58	The proposed TMDLs (Tables 4-1 and 4-2, TMDL Report) are not tied to a specific time period during the year. In fact, the language on page 4-7 of the TMDL Report suggests that EPA intends for the WLA effluent concentrations for CBOD5, NH3-N, NO3+NO2-N, and o-PO4-P to apply throughout the year. The TMDL evaluation conducted by EPA does not support its proposal, and indeed could not support such a proposal because in the colder months of the year the combination of lower stream temperatures and solar radiation will assure that the minimum DO criterion of 5 mg/L and the daily average criterion of 6 mg/L for the February 15-July 31 period will be achieved.	WLAs were calculated for the critical summer period. Adjustment to WLAs for the the remainder of the year were based on standard PA DEP procedures as discussed in Section 5 of the TMDL report.
Merck Pharm.	697-60	It is incorrect to assume that the 7Q10 flow will occur during the months of February through June and this assumption in the nutrient modeling results in overly restrictive WLAs for these months.	WLAs were calculated for the critical summer period. Adjustment to WLAs for the the remainder of the year were based on standard PA DEP procedures as discussed in Section 5 of the TMDL report.
Merck Pharm.	697-61	At the lower water temperatures that occur during the majority of the months between February 15 and July 31 the growth rate of periphyton and the biodegradation rates of CBOD and ammonia nitrogen are lowered compared to the critical low flow, summer period. Also, the saturation DO concentration in the surface water is greater at low water temperatures, which will increase natural surface reaeration rates. Finally, during the winter and spring the photic period is shorter than in July and therefore less solar energy is available for aquatic plant growth. Because of all of these environmental factors, the potential for low daily average and daily minimum DO concentrations in the Wissahickon Creek watershed during most of the February 15 through July 31 period is low compared to the critical low flow conditions used in the nutrient TMDL model.Therefore, model predictions of WLAs are not appropriate for the time period from February 15 through June 30.	WLAs were calculated for the critical summer period. Adjustment to WLAs for the the remainder of the year were based on standard PA DEP procedures as discussed in Section 5 of the TMDL report.

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Merck Pharm.	697-67	Appendix D (page D-9) states that the Merck discharge was used as a headwater flow for Segment 971218-1345-ACE. In the TMDL Report (page 4-7) EPA states that WLAs for nutrients were only assigned to the five major point sources in the watershed. However, in Appendix F Tables F-6 and F-16 both show a WLA for MerckÆs outfall. The WLAs shown are based on the flow used as a headwater flow (0.1 cubic feet per second) and have very low concentrations for CBOD5 and all nitrogen species. The concentration of o-PO4-P shown in these tables is 2.28 mg/L.	"In the TMDL report (page 4-7) states that ""reductions were confined to major dischargers in the basin"" and that ""impacts of minor dischargers were negligible, with reductions in WLAs unnoticeable."" WLAs were calculated for all dischargers, major and minor. Merck is not considered one of the five major dischargers. The estimated load from Merck's outfall recieved a WLA, but no reductions in loads were determined necessary to meet the TMDL."
Merck Pharm.	697-69	The use of full POTW design flows for developing the nutrient TMDLs for the critical low flow condition is unnecessary to assure that the DO criteria are consistently achieved.	"For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits."
Merck Pharm.	697-71	EPA should revise the POTW flows that it uses in the evaluation of critical low flow conditions in order to more accurately represent the actual conditions that would occur during an extended dry period. There is a simple approach for doing this. EPA can use the existing POTW data to develop a ratio between the low discharge flow months and the high flow months. For example, if during a typical year the highest monthly average flow from a particular POTW is 5 million gallons per day (MGD) and the lowest monthly average flow is 3 MGD, the ratio of the lowest (dry weather) monthly average flow to the peak (wet weather) monthly average flow would be 0.6. EPA can then use this ratio to adjust the POTW design flow to a dry weather condition for use in the TMDL model for critical low flow conditions. Note that using a separate ratio for each POTW would account for the extent of inflow and infiltration to each system.	"For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits."

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Merck Pharm.	697-73	Another error in the TMDL Report and appendices are all references to o-PO4. EPA has subsequently stated that all ortho-phosphorus values in the TMDL are intended to be o-PO4-P values. Given that this difference in reporting represents a factor of 4 in terms of reported phosphorus concentrations, it is obvious that this type of error can seriously compromise the publicÆs ability to review and comment on the TMDL.	"Errors stated by the commentor were corrected in the TMDL report addendum provided on March 4, 2003. With the end of the comment period on March 28, 2003, sufficient time was available for review of corrected information. "
Merck Pharm.	697-76	EPA should not adopt WLAs for CBOD and NH3-N because there is no credible evidence that discharges of these pollutants are causing or contributing to impairments in the main stem of Wissachickon Creek.	"The scientific basis of the nutrient TMDL, regarding the impact of CBOD and NH3-N on impairments in Wissahickon Creek and tributaries, is determined sufficient using the modeling framework and assumptions developed."
Merck Pharm.	697-77	As shown in Table 3.1 of the Modeling Report, four of the five POTWs in the watershed are achieving CBODu concentrations of 6 mg/L or less. At these CBODu concentrations, the CBOD5 concentrations in the effluents are close to the analytical method detection limit (2 mg/L) and in the range of the method precision. The proposed CBOD5 concentrations for the effluent 6 mg/L DO case (Addendum, Table 4-3) are below the method detection limit for the standard BOD test for 3 of the 5 POTWs and compliance with such limits could not even be demonstrated by standard self-monitoring requirements.	"In response to comments, the modeling system was updated and calibration was refined. As a result, WLAs have been recalculated and updated in the TMDL report. To address concerns of dischargers regarding WLAs, a phased TMDL approach is recommended that allows less-stringent discharges for an interim period to provide sufficient time for additional data collection or studies. For more information, see Section 5 of the revised TMDL report."
Merck Pharm.	697-83	The TMDL Report does not indicate why EPA selected a reference watershed to develop siltation loads when that reference station does not have measured stream flow data or sediment data.	"The challenge in selection of a reference watershed was identification of an unimpaired stream with similar watershed characteristics as the Wissahickon Creek watershed (see Section E.1 of Appendix E). Based on selection criteria, Ironworks Creek was determined to be the best candidate for a reference watershed. "

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Merck Pharm.	697-84	Ironworks Creek also does not have any suspended sediment data that can be used for model calibration (Appendix E, page E-10). Therefore, EPA used the siltation model default parameters to estimate the sediment loads from the reference watershed.	Correct.
Merck Pharm.	697-85	Merck believes that EPA has not used a realistic reference watershed for the siltation TMDL. Basically, there was no reason to select the Ironworks Creek watershed as a reference if it has no usable stream flow or suspended sediment data. EPA could just as easily used Wissahickon Creek watershed data with the default siltation model parameters as the reference. Alternatively, if Little Neshaminy Creek is similar to the Ironworks Creek watershed, it should also be similar to the Wissahickon Creek watershed. Therefore, why didnÆt EPA just select the Little Neshaminy Creek watershed as the reference watershed?	"The challenge in selection of a reference watershed was identification of an unimpaired stream with similar watershed characteristics as the Wissahickon Creek watershed (see Section E.1 of Appendix E). Based on selection criteria, Ironworks Creek was determined to be the best candidate for a reference watershed. Default parameters included in AVGWLF were calibrated for specific datasets included in the AVGWLF interface by the Environmental Resources Research Institute of the Pennsylvania State University. Where data are lacking for additional calibration, the default AVGWLF parameters were considered sufficient and scientifically defensible given the detail of study (calibration) used for derivation of these parameters. Therefore, water quality data were not considered a requirement for a candidate reference watershed. There was no USGS gage loacted in the Ironworks Creek watershed for hydrology calibration, however, the nearby Little Neshaminy watershed was used as a reference for hydrology since it had similar characteristics to Ironworks Creek. Use of the Wissahickon Creek default parameters as the basis of the reference watershed, as the commentor suggested, would not have been consistent with the reference watershed approach used by Pennsylvania in TMDL development unless the GIS datasets used for parameterization were representative of unimpaired conditions. Also, since Little Neshaminy Creek is an impaired waterbody, it could not be a candidate for a reference watershed either.
Merck Pharm.	697-87	It is inappropriate to include suspended solids in POTW effluents in a siltation TMDL because the properties of biological treatment effluent solids and the sediments causing siltation are vastly different.	"For TMDL calculation, design flows and water quality must be considered in the overall load assessment of the impaired waterbody. WLAs for POTW effluents were based on design flows and permitted TSS levels, but no load reductions are assigned. POTW TSS loads are considered minor and do not contribute to siltation problems in Wissahickon Creek. However, WLAs are assigned to provide the dischargers what they rightfully and legally discharge given permit requirements. "

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Merck Pharm.	697-88	Because the siltation TMDL is structured to model soil particles suspended in runoff and control them through BMPs, it is inappropriate to include the POTW effluent TSS in this TMDL. This is a classic case of mixing ôapples and orangesö and is unnecessary because in the end, the TMDL does not indicate that any control of POTW TSS is required.	"The TMDL does not indicate control of POTW TSS levels. On the otherhand, WLAs are assigned to provide the dischargers what they rightfully and legally discharge given permit requirements. No TSS reductions were specified for POTW discharges as a result of the siltation TMDL."
Mercurig Family	568-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Merilyn Ingalls	705-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Merk & Co.	717-01	Comments on Data Review for Wissahickon Creek (EPA, February 2002) and the Pennsylvania CWA Section 303(d) Listings, Merck & Co., Inc. West Point, Pa.	These cooments are part of the record but have been responded to previously. Additional response is not now required.
Michael Alstein	121-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Brotschul	264-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Michael Charles Deen	56-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Cramer	635-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Egrich	367-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Girard	329-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Golightly	646-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michael Steimetz	671-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Michael Welsh	348-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michel ZuZu	167-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michelle Jamison	523-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Michelle Sperry	66-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mid-Atlantic- Law	695-02	The Commentors are concerned that EPA is trading nutrient reductions in return for higher levels of dissolved oxygen (DO) levels in the effluent from the WWTPs. Aeration of the WWTPs effluent will not have a long-lasting downstream impact on DO levels. While there may be a temporary DO increase for a short distance downstream of each WWTP, this improvement will diminish as the water travels downstream, leaving the portions of the Creek in Philadelphia below minimum DO WQSs in violation of the CWA. See 33 U.S.C. 1313(d)(1)(C) (the TMDL shall be established at a level necessary to implement the applicable [WQS]). Therefore, EPA must require nutrient reductions based on an effluent DO of 6.0 mg/L, (the minimum DO WQS) while at the same time, requiring dischargers to meet an effluent DO of 7.0.This will ensure compliance with WQSs and will also provide the required margin of safety. 33 U.S.C. 1313(d)(1)(C). James M. Stuhltrager	Introducing dissolved oxygen to the water via the ffluent discharges will increase DO levels in the stream. Several model runs were made at varying effluent DO concentrations and all runs show at allocated loads in-stream DO concentrations at or above the water quality standards. Please see Appendix D for more information.
Mid-Atlantic- Law	695-05	EPA must ensure that the limits required in the TMDLs are incorporated into the applicable MS4 permits. The Commentors are concerned that because MS4 permits will be awarded before the TMDLs are promulgated, these permits will not incorporate the requirements of the TMDLs for at least another five years, when the permits come up for renewal. This guarantees at least another five years of siltation impairment for the Creek. The Commentors urge EPA and Pennsylvania to ôreopenö the applicable MS4 permits in 2004 to incorporate the reductions indicated by these TMDLs. James M. Stuhltrager	EPA regulations only require under 40 C.F.R. 122.44(d)(1)(vii)(B) that effluent limits in permitsbe consistent with the assumptions and requirements of any available wasteload allocation in the approved TMDL. EPA does not have the authority to re-open permits in this state delegated National Pollutant Discharge Elimination System Program.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mid-Atlantic- Law	695-06	EPA has not produced an identifiable plan to implement the applicable WQSs through these draft TMDLs. The draft TMDLs do not identify any Best Management Practices (BMP's) that could reduce nonpoint sources of either nutrients or siltation. Without an implementation plan for nonpoint source controls, stakeholders do not have any guidance to establish effective BMPs. We encourage EPA to focus on stormwater infiltration as a strategy to reduce erosion and the corresponding nutrients and siltation loads. James M. Stuhltrager	EPA policy encourages Regions to work in partnership with States to achieve allocations established for 303(d) listed waters. EPA policy also recognizes that other relevant watershed mangement processes may be used in the TMDL process. EPA is not required to and does not approve TMDL implemenation plans. EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process.
Mid-Atlantic- Law	695-01	The Commentors agree that summer low-flow is the appropriate choice for the critical low-flow condition. However, EPA's calculation of critical low condition is not correct. EPA's low flow calculation is 250% greater than the measured 7Q10 flow. See Comments of J. Kent Crawford. Using a critical low flow that is higher than the 7Q10 allows for more assimilative capacity in the stream than actually exists and allows for discharges that will cause violations of WQSs. Because the TMDLs use an incorrect low flow, they fail to "implement the applicable [WQS]." 33 U.S.C. 1313(d)(1)(C). They also fail to establish a "margin of safety" that takes into account "any lack of knowledge" of water quality. Ibid James M. Stuhltrager	"The TMDL requires calculation of WLAs for each discharger at permitted design flows. However, with all dischargers at design flows, the 7Q10 is exceeded. Therefore, a unique approach was required to estimate the background 7Q10 flow (minus discharges) which was then distributed throughout the watershed. Once the background 7Q10 was determined, contributions from dischargers were added to the model at design flows for TMDL analysis. Therefore, overstatement of the 7Q10 critical streamflow results only from the increase of discharge flows to their permitted maximum; the assimulative capacity was not overestimated. It should be noted that at design flows, impacts to Wissahickon Creek and tributaries are increased as there is more discharger flow with no associated increase in background low-flow for increased assimilative capacity."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Mid-Atlantic- Law	695-03	Studies demonstrate that discharge from Coorson's Quarry results in improved DO levels downstream. The loss of this discharge would cause downstream portions of the Creek to violate DO standards. Because neither EPA nor Pennsylvania can ensure that Coorson's Quarry will continue to discharge, the TMDLs should compute two sets of discharge limits: one assuming continued operation of the Quarry and the second without continued discharges from the Quarry. Both sets of limits should be incorporated into the NPDES permits for the WWTPs so that their discharges would have to be reduced if the Quarry ceases its discharge. Failure to do so would result in water quality violations if the Quarry ceases operation. James M. Stuhltrager	"Discontinuance of flows from Coorson's Quarry could result in violation of DO standards at downstream portions of Wissahickon Creek. Section 5 of the TMDL report specifically states that ""continued operation of the quarry is encouraged, and if operation is discontinued, prior notice should be provided to PA DEP so that appropriate action can be taken to prevent undesirable impacts on aquatic life."" The revised NPDES for Coorson's quarry requires a minimum flow of 225 gpm."
Mid-Atlantic- Law	695-04	EPA bases the TMDLs on yearly average siltation loads and are therefore more accurately called "Total Average Yearly Loads," not "Total Maximum Daily Loads." The CWA requires Total Maximum Daily Loads be established for impaired waterways, not Average Yearly Loads. Because the TMDLs do not provide maximum daily loads, they clearly fail to meet the requirements of the Clean Water Act. 33 U.S.C. 1313(d)(1)(C). James M. Stuhltrager	Federal regulations at 40 CFR 130.2(i) define total maximum daily load. This definition states that "TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure." EPA believes that the allocation presented in the TMDL report is consistent with the definition of a TMDL as found in the above cited regulation.
Mindy Feinberg	220-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mira Ruth Kolb	304-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Misschael McDavitt	150-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Monica N. Bryson	160-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Mr. & Mrs. G. DiCaro	215-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
N & D Bergman	370-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
N. & A. McDowell	674-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
N. Rox	596-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Nadine J. Amsterdam	325-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nancy	670-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nancy Grove	193-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nancy Landers	502-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nandita Sapre	292-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Naomi Powell	513-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Natalie Rintoul, MD	657-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nathan Sivin	397-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Neal Kortrey	403-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Neal Orzeck	08-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nell McS. Wulfhart	477-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nick Nolen	62-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Nick Parera	640-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nick Usrey	489-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Nina Lior	46-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Opal Riplay	382-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
OrtizCohenKory,DiCic	718-01	The Wissahickon Creek is not only used for fishing, swimming, hiking, biking and other recreational activities by thousands of people, it is also an important source of drinking water forthe 300,000 residents of Northwest Philadelphia. Wissahickon Creek flows into the Schuylkill River immediately upstream of the Queen Lane intake; which provides drinking water for residents of Manayunk, Roxborough, Chestnut Hill, Mt. Airy; Germantown and East Falls. The Philadelphia Water Department has estimated that one-third of the water for the Queen Laneplant is provided; by the Wissahickon Creek. Further, the Wissahickon Creek has been listed as impaired by the PADEP and is dire need of a real, workable plan to clean up the creek to protect the health of our community. □ Angel L. Ortiz, Frank DiCicco, David Cohen, and Matthew Kory 's letters were the same. - Lenka.	Thank you for your comments. EPA has considered the state water quality standards for the Wissahickon Creek in the development of this TMDL, as well as the need tp protect the Cuity's water supply.
OrtizCohenKory,DiCic	718-02	To this end, I believe the final TMDL should require significant reductions in the nutrient discharges of the five major sewage treatment plants upstream from Philadelphia that are identified inthe TMDL as the major sources of nutrient pollution in the creek. These plants are permitted to discharge up to 18 million gallons of treated sewage a day into the Wissahickon Creek. The combined effects of these effluent discharges are to increase bacteria, fungi and, algae growth which leads to unacceptably low levels of dissolved oxygen in the creek, thereby significantly impairing the health of the creek. Angel L. Ortiz, Frank DiCicco, David Cohen, and Matthew Kory 's letters were the same. - Lenka.	EPA in the TMDL is recommending the reduction of nutrients from the 5 major point sources.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
OrtizCohenKory,DiCic	718-03	The draft TMDL plan to simply add more air to the effluent discharge will not address the problem of excessive nutrients in the creek and; will not, therefore, clean; up the creek to acceptable water quality standards. The sewage treatment plants must be required to reduce their levels of nutrient discharges, not just aerate the discharges, in order to ensure that the Wissahickon Creek gets cleaned up to adequately protect the. health of our environment and the health of the hundreds of thousands of citizens who rely on the Wissahickon Creek for recreation and a source of drinking water.	The combinatioin of increased dissolved oxygen and reduced nutrients will protect the Wissahickon watershed
P. Dutill	101-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
P. R.	277-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Page Schmick	346-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pam C. Loebell	562-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pamela C. White	583-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pamela diCenzo	435-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pamela H. Haskell	505-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pat Grunder	388-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pat Robinson	687-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pat Santillo	426-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Patricia A. Barford	414-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Patrick Korshnon	281-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Patrick Bieslin	14-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Patrick T. Schwab	22-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Paul B.	186-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Paul L. Selbst	349-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Paul S. Kopel	461-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Pearl Spear	430-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Penelope J. Marr	169-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-01	Tables 2.2 and 4.2.4 This table shows a breakdown of land uses in the watershed. It states that approximately 50% of the watershed is classified as urban/residential and the remainder is farmland/forest/mining/transitional. It is unreasonable to categorize the entire watershed as falling under the MS4 (municipal separate storm sewer system) program that was designed to deal with urban runoff when one-half of the watershed is acknowledged to be not urban. Brezina	Decisions about allocations of pollutant loads within a TMDL are driven by the quantity and quality of existing and readily available water quality data. The amount of storm water data available for a TMDL varies from location to location. Nevertheless, EPA expects TMDL authorities will make separate aggregate allocations to NPDES-regulated storm water discharges 3 (in the form of WLAs) and unregulated storm water (in the form of LAs). It may be reasonable to quantify the allocations through estimates or extrapolations, based either on knowledge of land use patterns and associated literature values for pollutant loadings or on actual, albeit limited, loading information. EP A recognizes that these allocations might be fairly rudimentary because of data limitations. EP A also recognizes that the available data and information usually are not detailed enough to determine waste load allocations for NPDES-regulated storm water discharges on an outfall-specific basis. In this situation, EP A recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, ~, municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (~, for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial storm water sources or dischargers). Until better information is available that defines the extent of the drainage area covered by each MS4 permit, it is assumed that all area within each respective municipal boundary is included in that municipality's MS4 permit. Once more data becomes available that explicitly defines the MS4 drainage

			areas, waste load allocations assigned to areas not covered in the MS4 permit can be converted to load allocations (see Section 5.2).
Pennsylvania DEP	709-07	The TMDL indicates that instream reductions will occur as the result of MS4 requirements. This is not the case. Even if the MS4 could meet its required sediment reduction, the instream bank erosion sediment contribution would still overwhelm the decrease and the impairment would not be noticably improved.	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. Urban areas with high percent impervious ground cover are often difficult places to incorporate many of the BMPs listed. Protecting water quality in these areas is difficult for many reasons including, diverse pollutant loads, large runoff volumes, limited areas suitable for surface water treatment systems, high implementation costs, and destruction of natural buffer zones adjacent to water bodies. There are however, numerous case studies and a growing amount of research that exists on this subject that indicates using a combination of BMPs to fit the constraints of urban areas can be successful in restoring water quality and recharging the groundwater. The streambank restoration approach when combined with proper geofluvialmorphological and natural channel stream design techniques are definitley important for reducing the impact of storm water.

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Pennsylvania DEP	709-08	The last sentence of this section reads "For each municipality, the sediment loads from stormwater collection systems are considered "not unlike" point source contributions, which require specific wasteload allocations for each MS4 permit". Does the term "not unlike" mean "like"? Are these sediment loads from the stormwater collection system being treated just like a point source discharge? The problem with this application is that municipalities (political boundaries) do not currently have definable discharge points. How can the political boundary be interpreted as a point source consistent with the definitions in the Federal Regulations at 40 CFR º 122.2?	EPA regulations require that a TMDL include WLAs, which identify the portion of the laoding capacity allocated to indeividual existing and future point sources(s) under 40 C.F.R. 130.2 (h) and 40 C.F.R. 130.2(i). In addition, a TMDL is a planning tool and should be used in this case as a target for reductions through the establishment of Best Management Practices. Decisions about allocations of pollutant loads within a TMDL are driven by the quantityand quality of existing and readily available water quality data. The amount of storm water data available for a TMDL varies from location to location. Nevertheless, EP A expects TMDL authorities will make separate aggregate allocations to NPDES-regulated storm water discharges 3 (in the form ofWLAs) and unregulated storm water (in the form of LAs). It may be reasonable to quantify the allocations through estimates or extrapolations, based either on knowledge of land use patterns and associated literature values for pollutant loadings or on actual, albeit limited, loading information. EP A recognizes that these allocations might be fairly rudimentary because of data limitations. EP A also recognizes that the available data and information usually are not detailed enough to determine waste load allocations for NPDES-regulated storm water discharges on an outfall-specific basis. In this situation, EP A recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, ~, municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (~, for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial stormwater sources or dischargers).

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Pennsylvania DEP	709-09	There appears to be discretion for EPA to interpret the terms "load allocation" and "wasteload allocation" since these terms are not defined by the CWA. We believe it is more appropriate to provide for a load allocation for the aggregate of MS4 sources discharging under a general permit where the number and identity of sources is unknown.	In 1987 Congress amend the Clean Water Act (CWA) to require implementation, in tow phases, a comprehensive national program for addressing storm water dishcarges. Phase "I" was promulgated on November 16, 1990 and Phase "II" was finalized on December 8, 1999. Phase "II" NDPES regulations apply to all the Municipalities in this watershed and are considerd point sources and are permitted. Storm water discharges that are regulated under Phase I or Phase II of the NPDES storm water program are point sources that must be included in the WLA portion of a TMDL. ~ 40 C.F .R. º 130.2(h). Storm water discharges that are not currently subject to Phase I or Phase II of the NPDES storm water program are not required to obtain NPDES permits. 33 U .S.C. º1342(P)(1) & (P)(6). Therefore, for regulatory purposes, they are analogous to nonpoint sources and may be included in the LA portion of a TMDL. ~ 40 C.F .R. º 130.2(g).

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Pennsylvania DEP	709-10	The location of particular discrete outfalls within a defined MS4 area have not been identified, and so, there is no basis to assign discrete WLAs to each municipality. Further, although suggested by the TMDL, there is no requirement in the MS4 permit process for municipalities to delineate the drainage areas of each storm sewer so that the distributions of land use can be determined and appropriate reductions per outfall can be calculated to meet the TMDL. The MS4 program requires municipalities to work towards identifying their outfall locations only so they can pursue an Illicit Discharge Detection and Elimination program. These facts support our perspective that the only rational way to address MS4s is by treating their contribution to water quality as a load allocation.	Decisions about allocations of pollutant loads within a TMDL are driven by the quantityand quality of existing and readily available water quality data. The amount of storm water data available for a TMDL varies from location to location. Nevertheless, EP A expects TMDL authorities will make separate aggregate allocations to NPDES-regulated storm water discharges 3 (in the form ofWLAs) and unregulated storm water (in the form of LAs). It may be reasonable to quantify the allocations through estimates or extrapolations, based either on knowledge of land use patterns and associated literature values for pollutant loadings or on actual, albeit limited, loading information. EP A recognizes that these allocations might be fairly rudimentary because of data limitations. EP A also recognizes that the available data and information usually are not detailed enough to determine waste load allocations for NPDES-regulated storm water discharges on an outfall-specific basis. In this situation, EP A recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, ~, municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (~, for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial stormwater sources or dischargers).

COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-15	Section 4.2.3 The following text raises numerous concerns and questions: "Stormwater permits typically do not have numeric limits on sediment. EPA's stormwater permitting regulations require municipalities to obtain permit coverage for all stormwater discharges from separate storm sewer systems (MS4s). For these discharges, WLAs were determined using land-use-specific, unit area loads determined in modeling analysis for specific regions of the Wissahickon Creek basin." There is no provision in federal regulations concerning water quality based effluent limitations in MS4 permits.	Where a TMDL has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. ~ 40 CFR º 122.44(d)(1)(vii)(B). Effluent limitations to control the discharge of pollutants generally are expressed in numerical form. However, in light of33 V.S.C. º I 342(p)(3)(B)(iii), EP A recommends that for NPDES-regulated municipal and small construction storm water discharges effluent limits should be expressed as best management practices (BMPs) or other similar requirements, rather than as numeric effluent limits. ~ Interim Permitting Approach for Water Quality-Based EfjluentLimitations in Storm Water Permits, 61 ER 43761 (Aug. 26, 1996). The Interim Permitting Approach Policy recognizes the need for an iterative'approach to control pollutants in storm water discharges. Specifically, the policy anticipates that a suite of BMPs will be used in the initial rounds of permits and that these BMPs will be tailored in subsequent rounds. EP A's policy recognizes that because storm water discharges are due to storm events that are highly variable in frequency and duration and are not easily characterized, only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small constructionstorm water discharges. The variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. Therefore, EP A believes that in these situations, permit limits typically can be expressed as BMPs, and that numeric limits will be used only in rare instances. Under certain circumstances, BMPs are an appropriate foml of effluent limits to control pollutants in stOml water. ~ 40 CFR º 122.44(k)(2) & (3). If it is detemlined that a BMP approach (including an iterative BMP approach) is appropriate to meet the storm water component of the TMDL, EPA recommends that the TMDL reflect this. EP A expects that the NPDES permitting authority will review the information provided by the TMDL, ~ 40 C.F.R. º 122.44(d)(1)(vii)(B), and determine whether the effluent limit is appropriately expressed using a BMP approach (including an

iterative BMP approach) or a numeric limit. Where BMPs are used, EP A recommends that the permit provide a mechanism to require use of expanded or better-tailored BMPs when monitoring demonstrates they are necessary to implement the WLA and protect water quality.

Where the NPDES permitting authority allows for a choice ofBMPs, a discussion of the BMP selection and assumptions needs to be included in the permit's administrative record, including the fact sheet when one is required. 40 C.F.R.ºº 124.8, 124.9 & 124.18. For general permits, this may be included in the storm water pollution prevention plan required by the permit. ~ 40 C.F.R. º 122.28. Permitting authorities may require the permittee to provide supporting information, such as how the permittee designed its management plan to address the WLA(s). ~ 40 C.F.R. º 122.28. The NPDES permit must require the monitoring necessary to assure compliance with permit limitations, although the permitting authority has the discretion under EP A's regulations to decide the frequency of such monitoring. ~ 40 CFR º 122.44(i). EPA recommends that such permits require collecting data on the actual performance of the BMPs. These additional data may provide a basis for revised management measures. The monitoring data are likely to have other uses as well. For example, the monitoring data might indicate if it is necessary to adjust the BMPs. Any monitoring for storm water required as part of the permit should be consistent with the state's overall assessment and monitoring strategy.

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Pennsylvania DEP	709-16	MS4 permits are focused on six primary minimum control measures: 1) Education, 2) Public participation, 3) Illicit discharge detection & elimination, 4) Construction site runoff management, 5) Post-construction runoff management, and 6) Municipal operations and maintenance. None of these minimum control measures specifically targets stormwater controls in developed areas. Because the Wissahickon watershed is already largely developed, MS4 permits will provide only minimal regulatory control over sediment pollution in the watershed. Excluding redevelopment areas (potential long-term positive impact), existing stormwater problems will not be regulated by MS4 permits; therefore, the MS4 permit is a poor regulatory mechanism for achieving sediment reductions in the Wissahickon watershed. Because of the limitations of the MS4 program regarding existing development and the lack of funding for point source stormwater programs, the sediment reductions in the Wissahickon TMDL should be load allocations, not waste load allocations.	EPA disaggrees that with this comment. Out of the six primary controls measures required, four (4) apply to everyone coverd under the Phase"II" regulations. Speficially the provisions that apply are: Education, Public participation, Illicet discharge detection and elimination and most important Municipal operation and maintenance. The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process. Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of

			2002, HR 1070, S 2544) The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state.
Pennsylvania DEP	709-25	The allocation of sediment loads being attributed to each municipality based on a unit area loading has many easily recognized flaws. This TMDL is making allocations to municipalities without evidence of their contribution to the impairment. How can there be any certainty given to allocations made arbitrarily to individual small parcels of land in headwaters areas of watersheds? An example of this is the small portions of land in Worcester TWP that is given the allocations shown below. The urbanized land use coverage provided in this TMDL uses a 30 square meter resolution and that resolution is insufficient to make fine scale allocations. What calibration has been performed to allow the allocation to these very small parcels of land? What certainty is there that the WLA is accurate to the level of detail shown in the above figure and detailed in Table G53 of Appendix G?	Until better information is available that provides additional detail regarding the contributions of each municipality to the impairment, unit area loadings based on landuse were assumed the best method for allocating sediment loads. This methodology does not claim certainty, but rather a fair and unbiased approach at allocation of loads dependent on landuse practices. The use of the 30 square meter resolution is considered sufficient for allocations as it is considered sufficient in the AVGWLF model interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. The empirical formulation of the AVGWLF model used for TMDL analysis does not necessitate detailed calibration. However, where data is available, limited calibration can be performed. With a brief calibration of the model to Wissahickon Creek data (Appendix E of the draft Nutrient and Siltation TMDL Development for Wissahickon Creek, Pennsylvania), the model was shown to represent conditions in the region with reasonable assurance. For Ironworks Creek, no water quality data was available for model calibration. However, in the absence of data, site-specific values of model input parameters were used. These site specific values were provided by the AVGWLF GIS interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. This formulation was determined sufficient in estimating sediment loads to Ironworks Creek in the absence of data for calibration.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-27	The MS4 program is not designed to rectify current impaired conditions. There is no mechanism in place to require retrofits to previously urbanized areas. The use of WLAs for highly urbanized municipalities with currently impaired stream segments implies that retrofits will be implemented. There is no funding source currently in place to handle this expensive situation, giving the TMDL no reasonable likelihood of implementation. Under the TMDL, affected municipalities could be held responsible for something that either they cannot control, or it would be too costly to control.	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. EPA believes that PA Act 167 should be utlized. In Pennsylvania, Pennsylvania's Stormwater Management Act of 1978 (Act 167) requires each county to develop plans for each of its watersheds within its boundaries. This would be an excellent mechanism to properly plan watershed improvement projects in the Wissahickon. The watershed covered by an Act 167 Plan may cover a number of municipalities and could also cross county boundaries. Act 167 Plans must include provisions for improved water quality, groundwater recharge, post-construction storm water control standards, and stream bank protection strategies in addition to other storm water controls. In addition, a community must enact, administer, and enforce storm water ordinances within six months of PADEP's approval of the Act 167 Plans. An Act 167 Plan has not yet been prepared for the Wissahickon Watershed.

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Pennsylvania DEP	709-28	The location of particular discrete outfalls within a defined MS4 area have not been identified, so how can discreet WLAs be assigned to each municipality. There is not enough information contained in the TMDL or elsewhere to assure that the land uses within the municipality have the ability to meet the expected siltation reductions required by the WLAs.	Decisions about allocations of pollutant loads within a TMDL are driven by the quantityand quality of existing and readily available water quality data. The amount of storm water data available for a TMDL varies from location to location. Nevertheless, EP A expects TMDL authorities will make separate aggregate allocations to NPDES-regulated storm water discharges 3 (in the form ofWLAs) and unregulated storm water (in the form of LAs). It may be reasonable to quantify the allocations through estimates or extrapolations, based either on knowledge of land use patterns and associated literature values for pollutant loadings or on actual, albeit limited, loading information. EP A recognizes that these allocations might be fairly rudimentary because of data limitations. EP A also recognizes that the available data and information usually are not detailed enough to determine waste load allocations for NPDES-regulated storm water discharges on an outfall-specific basis. In this situation, EP A recommends expressing the wasteload allocation in the TMDL as either a single number for all NPDES-regulated storm water discharges, or when information allows, as different WLAs for different identifiable categories, ~, municipal storm water as distinguished from storm water discharges from construction sites or municipal storm water discharges from City A as distinguished from City B. These categories should be defined as narrowly as available information allows (~, for municipalities, separate WLAs for each municipality and for industrial sources, separate WLAs for different types of industrial stormwater sources or dischargers).

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Pennsylvania DEP	709-29	Riparian Buffer Enhancement - By interception of sunlight, canopy cover associated with riparian buffers has been shown to be very important in limiting algal biomass in streams. PA DEP funded a Heritage Conservancy project entitled, "Riparian Buffers of Southeastern Pennsylvania." The project's purpose was to identify stream banks within Southeastern Pennsylvania that lack riparian forest buffers. The Wissahickon watershed was included in this project. This data should be included in the TMDL document to provide baseline conditions. Potential buffer enhancement sites and riparian buffer goals should be discussed in the document.	Data used in the 1998 periphyton survey conducted by PA DEP and ANSP were used to set baseline conditions for canopy cover and associated impacts of solar radiation on instream algal biomass in the water quality model. The Heritage Conservancy project data has not been provided by PA DEP for inclusion in this TMDL analysis, nor was EPA made aware of its presence by PA DEP. Potential buffer enhancement sites and riparian buffer goals are discussed in Section 5.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-30	Section 5-1 The funding mechanisms available to implement planting of riparian zones and farming BMPs, as suggested in this section, are available only to remediate nonpoint source pollution. Classifying the MS4 designated areas as point source discharges would disqualify them for 319 and possibly PA Growing Greener funds. This means that the municipalities would have to fund all of the necessary pollution control measures. Have any cost estimates be done for retrofitting built out areas with storm water controls? How does EPA consider that communities that are already built out would be able to implement WLAs, as required by this TMDL?	There are other funding mechanisms for Municipalities. Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of 2002, HR 1070, S 2544) The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state. An Internet Guide to Financing Storm water Management This guide addresses the complex series of questions that managers must answer when developing plans to pay for storm water programs. For example: û How much revenue will we need? û What are the alternative ways to generate revenue? û How can we match sources to needs? û How much are people willing to pay? This guide is a compilation of effective funding tools that has evolved during the past 25 years as public managers have developed interesting, innovative approaches to paying for runoff programs. http://stormwaterfinance.urbancenter.iupui.edu/ Important Note #1: The Center for Urban Policy and the Environment as well as the American Waterworks Association are also excellent reference points of contact for information on funding. They have extensive lists of contacts and papers

			explaining how other cities and towns have worked through the Storm Water Phase II implementation. Important Note #2 : Studies show that municipal storm water management can cost residents on average between $6.00 to $22.00 a year in increased fees.
Pennsylvania DEP	709-31	Best management practices (BMPs) are measures or practices selected to meet nonpoint source control needs. The total allocation for sediment reaching the stream is presented as a wasteload allocation, attributed to MS4s as point sources. Since there is no loading reduction goal presented in the TMDL for sediment reaching the stream as a load allocation, there is no apparent need for these BMPs. Funding sources in Pennsylvania require the TMDL to explicitly state that there are load allocations made to nonpoint runoff sources (hay/pasture, crop land) in order to receive priority for funding. Unfortunately, the TMDL as written will not provide the priority because it does not specify load reductions for nonpoint runoff sources.	EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process. Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of 2002, HR 1070, S 2544) The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state.

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Pennsylvania DEP	709-33	MS4 permits have no requirements for structural remediation of existing stormwater impairments. Additionaly, MS4s with WLAs cannot qualify for state NPS funding. In evaluating Pennsylvania TMDLs, EPA has repeatedly insisted on including some statement of reasonable expectation that the TMDL is achievable. With no funding, and no regulatory requirement, there is no likelihood that the TMDL can be implemented. Before EPA can establish regulatory requirements that may significantly affect small governments, it must develop a small government EPA plan, under section 203 of the Unfunded Mandates Reform Act (UMRA). That plan should be made available.	EPA disaggrees that with this comment. Out of the six primary controls measures required, four (4) apply to everyone coverd under the Phase"II" regulations. Speficially the provisions that apply are: Education, Public participation, Illicet discharge detection and elimination and most important Municipal operation and maintenance. The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process. Funding Mechanisms Federal Grants (CWA Section 104(b)3, CWA Section106, CWA Section 319) State Grants (Act 167 grant, Growing Greener, PENNVEST) Local storm water utility fees One of the best and most readily available funding sources of those listed above is Pennsylvania's Stormwater Management Act, Act 167. Since 1985, Pennsylvania has been authorized to provide grants to counties up to 75% of costs of preparing the plans. Municipalities are provided similar grants for implementation. Another excellent source of funding is the CWA Section 319 grants, which is funding for nonpoint source pollution control but as of November 27, 2002, was made available for activities relating to the implementation of the NPDES Storm Water Phase II program for FY 2003. At the time of writing of this TMDL, these Section 319 funds were being made available for FY 2004. (President Bush signed into law on November 27, 2002 the Great Lakes Legacy Act of

2002, HR 1070, S 2544)

The table in section 5.0 of the TMDL report is a useful guide for funding sources available nationally and through the state.

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Pennsylvania DEP	709-34	Page 5-2 includes the following text: "Due to the variability of storm events and discharges from storm sewer system discharges, it is difficult to establish numeric limits on stormwater discharges that accurately address projected loadings. As a result, EPA regulations and guidance recommend expressing NPDES permit limits for MS4s as BMPs, and only using numeric limits in unique instances. Such BMP plans should accompany monitoring plans that test the performance of BMPs and provide a basis for revised management techniques." (emphasis added) We know of no regulation requiring the underlined section. Please provide the regulatory citation.	Where a TMDL has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. ~ 40 CFR º 122.44(d)(1)(vii)(B). Effluent limitations to control the discharge of pollutants generally are expressed in numerical form. However, in light of33 V.S.C. º I 342(p)(3)(B)(iii), EP A recommends that for NPDES-regulated municipal and small construction storm water discharges effluent limits should be expressed as best management practices (BMPs) or other similar requirements, rather than as numeric effluent limits. ~ Interim Permitting Approach for Water Quality-Based EfjluentLimitations in Storm Water Permits, 61 ER 43761 (Aug. 26, 1996). The Interim Permitting Approach Policy recognizes the need for an iterative'approach to control pollutants in storm water discharges. Specifically, the policy anticipates that a suite of BMPs will be used in the initial rounds of permits and that these BMPs will be tailored in subsequent rounds. EP A's policy recognizes that because storm water discharges are due to storm events that are highly variable in frequency and duration and are not easily characterized, only in rare cases will it be feasible or appropriate to establish numeric limits for municipal and small constructionstorm water discharges. The variability in the system and minimal data generally available make it difficult to determine with precision or certainty actual and projected loadings for individual dischargers or groups of dischargers. Therefore, EP A believes that in these situations, permit limits typically can be expressed as BMPs, and that numeric limits will be used only in rare instances. Under certain circumstances, BMPs are an appropriate foml of effluent limits to control pollutants in stOml water. ~ 40 CFR º 122.44(k)(2) & (3). If it is detemlined that a BMP approach (including an iterative BMP approach) is appropriate to meet the storm water component of the TMDL, EPA recommends that the TMDL reflect this. EP A expects that the NPDES permitting authority will review the information provided by the TMDL, ~ 40 C.F.R. º 122.44(d)(1)(vii)(B), and determine whether the effluent limit is appropriately expressed using a BMP approach (including an

iterative BMP approach) or a numeric limit. Where BMPs are used, EP A recommends that the permit provide a mechanism to require use of expanded or better-tailored BMPs when monitoring demonstrates they are necessary to implement the WLA and protect water quality.

Where the NPDES permitting authority allows for a choice ofBMPs, a discussion of the BMP selection and assumptions needs to be included in the permit's administrative record, including the fact sheet when one is required. 40 C.F.R.ºº 124.8, 124.9 & 124.18. For general permits, this may be included in the storm water pollution prevention plan required by the permit. ~ 40 C.F.R. º 122.28. Permitting authorities may require the permittee to provide supporting information, such as how the permittee designed its management plan to address the WLA(s). ~ 40 C.F.R. º 122.28. The NPDES permit must require the monitoring necessary to assure compliance with permit limitations, although the permitting authority has the discretion under EP A's regulations to decide the frequency of such monitoring. ~ 40 CFR º 122.44(i). EPA recommends that such permits require collecting data on the actual performance of the BMPs. These additional data may provide a basis for revised management measures. The monitoring data are likely to have other uses as well. For example, the monitoring data might indicate if it is necessary to adjust the BMPs. Any monitoring for storm water required as part of the permit should be consistent with the state's overall assessment and monitoring strategy.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-38	Last minute changes in procedure are clearly evident in two sections of the draft TMDL. Section 4.2.5 states that "none of the sediment point sources in the watershed require reductions." Although it is not clear, it appears that this refers to the currently permitted sewage and industrial NPDES point sources. Another example in Appendix E says that there are 14 point sources in the Wissahickon Creek watershed. Again, this reference appears to be for the sewage and industrial NPDES permitted point sources. This language clearly indicates that including MS4s as point sources was a late change in the development of the TMDL. The TMDL shows that sufficient time was not available to make adequate corrections to these sections of the TMDL. This inconsistency within the TMDL creates a great deal of confusion.	The discussion has been modified. We hope that the language is now more easily followed.
Pennsylvania DEP	709-40	While it is true that multiple meetings were held throughout all stages of the project, these were "stakeholder" meetings. Those who would be directly affected by the results of the TMDL as implied in the original TMDL methodology, i.e., the point source municipal sewage and industrial wastewater dischargers, were specifically invited to attend. The whole focus of the stakeholder meetings was the low flow nutrient portion of the TMDL. There was very limited discussion regarding the siltation portion of the TMDL, and no discussion regarding WLAs for MS4s. The public was not encouraged to participate in data collection efforts, as represented in this section. The stakeholders were given only an outline of the specific information that could be collected, to enhance the nutrient portion of the TMDL.	This comment reflects a lack of understanding and participation by the commenter in the development of this TMDL. Note that Pennsylvania was the lead in the developement of this TMDL until early 2003. Until that time it was the state that was organizing the stakeholders meetings and directing the data collection, development of the TMDL and public input and participation. Any failure to properly involve the public (which EPA does not believe there was a failure) was squarely on the shoulders of the state until very late in the finalization of the report. Since that time EPA has made an enormous effort to assure that all of the stakeholders were properly informed of the TMDL.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-41	For all these reasons (especially the major, last-minute changes to the methodology of the TMDL regarding MS4s), and to highlight changes that will hopefully be made to the draft TMDL based on the comments EPA receives, EPA should provide another minimum 60 day public comment period on the Wissahickon Creek TMDL.	EPA has considered all comments recevied. An additional 30 day comment period is now underway.
Pennsylvania DEP	709-02	GLWF is a lumped parameter model; thus, it calculates area weighted average parameter values to be used as input in calculating erosion from a given land use. Assigning sediment loads to individual parcels of land based on the area weighted loading rate for that land use is beyond stretching the capabilities of the model - it is WRONG. Sediment allocations cannot be made to individual parcels using this model.	The allocation of sediment loads to individual municipal jurisdictions is not unlike allocations that would otherwise be assigned to the entire watershed on a landuse basis. As mentioned in the comment, GWLF is a lumped parameter model. Therefore, assuming that loading rates are uniform for each landuse throughout the watershed is not beyond the assumptions made within the model. However, to account for spatial variability, the Wissahickon Creek watershed was divided into 5 separate subwatersheds with varying landuse-specific loading characteristics.
Pennsylvania DEP	709-03	Section 2.2.2 Page 2-7, 2nd paragraph: Please qualify what is meant by "significant loads of sediment" that runs off urban areas. Urban areas are usually typified by a high percentage of impervious surfaces (pavements, roofs, sidewalks, etc) and it is not likely that there would be a high sediment loss from this type of surface. What literature supports the conclusion that the urban /residential land uses in the Wissahickon Creek basin are considered to be major contributors to sediment loads?	Relative to other landuses in the watershed, low- and high-intensity residential areas were determined to be significant sources of sediment to the streams. Calculation of sediment loads were determined through empirical equations and input parameters provided by the AVGWLF GIS interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania.
Pennsylvania DEP	709-04	While the urbanized land uses make up half the watershed, the unit load per acre would not be as high as, for example, the hay/pasture or row crop land uses.	Correct, unit area loads of urbanized land are not as high as hay/pasture or row crop landuses. However, load reductions are based on comparisons to reference watershed conditions, not comparisons of relative contributions of each landuse within the Wissahickon Creek watershed.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-05	Through this illustration and from information contained in the draft TMDL, the sources of sediment in order of the significance of their contribution are: instream bank erosion, agriculture, residential use, and forested areas. While instream bank erosion contributes approximately 80% of the sediment load, the urban area contribution comprises less than 10%. The TMDL must be revised to emphasize the implementation of programs that will assist in reducing the instream bank erosion and will have far better effects on stream quality than the overstated emphasis on urban lands.	It is not the intent of the TMDL report to overstate the contribution of sediment loads to any responsible source. However, to address the recommended load reductions specified for streambank reductions, additional studies are recommended. This point was stated in Section 5.2 of the report: "Reductions in instream loads resulting from bank erosion can be made through two plans: (1) stream restoration plans that seek to stabilize stream banks and provide better transport of high stormflows associated with urban areas, and (2) implementation of urban BMPs that reduce peak stormflows through retention or increased infiltration. Such management practices will also address those stream segments listed as impaired due to water/flow variability. Further "ground truthing" should be performed in order to assess both the extent of existing BMPs, and to determine the most cost-effective and environmentally protective combination of BMPs required for meeting the sediment reductions outlined in this report."
Pennsylvania DEP	709-06	It is logical to conclude that efforts to remediate the instream bank erosion will secondarily lead to reductions in the urban sediment contribution, since the solution to instream bank erosion is hydraulically linked to urban runoff. If the urban runoff is slowed or reduced, the associated sediment contribution from the runoff will be lessened. However, any attempt to suggest that this process works the other way around is misplaced, at best. To illustrate, the reductions in sediment from the MS4s could be accomplished with the installation of inlet filters. Because there is very little land available in urban areas of this watershed, municipalities could not consider any retention/hydraulic options. However, inlet filters do nothing to provide volume/velocity controls that would cause reductions of in-stream bank erosion.	Additional studies can validate this point and provide information regarding the needed measures to reduce streambank erosion.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-11	Section 3.2.2 page 3-1 first paragraph It is unclear if the reference watershed was selected based on the comparison of the land use data prepackaged with GWLF (MRLC), or if it was determined using the revised NLCD GIS information detailed on page 2-5. The current land use data must be used for this analysis.	The landuse data used for identification of the reference watershed was based on 1993 MRLC data. It was not determined neccesary to use current landuse since the the reference watershed was unimpaired at the time of the 1998 biological assessment performed by PA DEP, hence the watershed was likely unimpaired in 1993.
Pennsylvania DEP	709-12	Section E.1: We have serious concerns about the adaptation of the reference watershed approach used to develop the sediment TMDLs. First, Pennsylvania's belief in the efficacy of the Reference Watershed approach is that there is an actual watershed, loading at a given rate, that has been surveyed and was found to be supporting its uses. We could actually show any person the "reference" condition. The methodology applied in this TMDL, where the size of the watershed is adjusted by proportionally increasing/ decreasing the area of each land use, creates a "virtual" reference watershed that can never be shown to be attaining its uses. Further, the discussion on page E-4 provides no information on whether other compensatory adjustments were made. Specifically, the sediment delivery ratio (SDR) in the GWLF model is a function of one variable - watershed size. If the size of the reference watershed was adjusted to match the impaired watershed, was the model re-run to account for the resulting change in the SDR and subsequent change in the reference watershed loading rate? We do not believe that this adapted process represents a stream with a given loading rate that can be shown to be supporting its uses. Even if no changes were made to the SDR, the same question remains.	The lack of a candidate reference watershed similar in size to Wissahickon Creek required adaptation of the reference watershed approach to accommodate Ironworks Creek. Therefore, the Wisshickon Creek watershed was divided into 5 subwatersheds of similar size to Ironworks Creek. The sediment delivery ratio (SDR) is based solely on watershed size, therefore, the reference watershed size was adjusted for comparison to each Wissahickon Creek subwatershed so that SDR values would be consistent. This approach has been used and approved in previous EPA Region 3 TMDLs in Virgina (Cooks Creek, Blacks Run, Holmans Creek, Mill Creek, Muddy Creek, and Pleasant Run).

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-13	We further question the technical defensibility of applying the Ironworks Creek loading rate downstream from subwatershed to subwatershed and simply adding upstream contribution. The biggest problem is that there is nothing to document the effect on Ironworks Creek if it were to continue for another 20 miles downstream, as Wissahickon Creek does, and received the same inputs. The scientific basis for extrapolating an acceptable loading rate from a 17 square mile watershed to the 64 square mile Wissahickon Creek watershed is highly questionable. Please provide your explanation for us to consider.	The Wissahickon Creek watershed was divided into 5 smaller subwatersheds so that the 17 square mile Ironworks Creek watershed would not have to be extrapolated to the larger 64 square mile Wissahickon Creek, but instead to 5 smaller subwatersheds similar in size to the reference watershed. By adding the upstream contribution to the reference watershed the upstream loads are essentially cancelled out, thereby allowing the direct comparison of localized sediment loading from land and streambank erosion in each of the Wissahickon Creek subwatersheds and the reference watershed.
Pennsylvania DEP	709-14	Section 4.1.5 WLA's for North Wales Boro under Scenario 2 (minimum discharge DO = 7 mg/l), as shown in Table 4-4, appears to allow higher mass loadings for CBOD5, NH3-N, Ortho PO4, and NO3+NO2-N under design flow conditions than were discharged during the Summer 2002 survey, when violations in minimum dissolved oxygen levels were recorded downstream at North Wales Road. Unless the effluent DO, which is measured as a daily grab and was 6.9 - 7.1 mg/l during the survey, is significantly lower during pre-dawn hours, it is unclear how these allocations, developed for design flow conditions, will result in attainment of the DO standard if they exceed the actual mass loads discharged during critical conditions when violations are occurring instream. Please explain.	The calibrated model as shown in the draft report only partly captured the range of the DO fluctuation downstream of North Wales. Note that the model was setup based on average steady-state conditions, while data were collected on a specific date and subject to varying conditions. In addition, considering that a mathematical model is only an approximation rather than an exact replica of the system, the disparity between the model results and data can be considered reasonable and acceptable once the model is successfully shown to predict the overall trend of the system. Therefore, when the model was used to develop load allocations, it is possible that the load from North Wales could be higher than its current condition and still be in compliance with DO criteria.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-17	Section 4.2.5 The first paragraph of this section is very confusing. Please clarify.	Since the Wissahickon watershed was divided into 5 smaller subwatersheds (see Figure 4-3) to better match the reference watershed size, sediment reductions were made beginning at the top of the watershed (subwatershed 1) and continued downstream to the mouth of the watershed (subwatershed 5). After sediment reductions were made to the first subwatershed (subwatershed 1) based on the sediment load in the reference watershed, the resulting reduced sediment load was added to the next downstream subwatershed (subwatershed 2) to represent the in-stream sediment load coming from upstream. The same upstream load was also added to the reference watershed to account for hypothetical in-stream loading from upstream. Adding the upstream load to both the reference and target subwatershed was an accounting measure to ensure that upstream loads were removed from analysis of required load reductions. Once added to both the reference and target watersheds, the upstream loads essentially cancelled eachother out in comparisons, ensuring that only localized sediment loads were considered in the reduction analysis. The total sediment load in the subwatershed was then compared to the reference watershed sediment load so that reductions could be made. This process continued downstream to the mouth of the Wissahickon Creek watershed. As the reduced sediment loads from upstream Wissahickon Creek were added to the downstream subwatersheds, no further reductions were made to the upstream loads since they were already meeting the appropriate reference watershed sediment load.
Pennsylvania DEP	709-18	A great deal of explanation goes into WLA SDR applied and WLA SDR not applied, however, both of these columns match in all of the tables, except Table 4-8. What is the significance? Please explain.	The point source loads have been updated based on the correct permitted or design flow. Tables 4-4 through 4-7 have been updated.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-19	The second paragraph of section 4.2.5 states, "The WLA (SDR not applied) represents the sediment load at the "end of pipe" for each of the point sources and was based on the permitted flow and TSS concentrations (which were converted to lbs/yr). None of the sediment point sources in the watershed require reductions. The lower WLA with the SDR applied accounts for natural losses as the sediment moves through the watershed." Since the only segment for which the SDR was applied was segment 971222-0930-ACE in subwatershed 2, it appears that the SDR was applied to the effluent from Ambler Borough. Please clarify if this is a correct interpretation.	The point source loads have been updated based on the correct permitted or design flow. Tables 4-4 through 4-7 have been updated.
Pennsylvania DEP	709-20	Further, if this is the case, it also is confusing since the SDR is defined on page E-8 as "the percentage of eroded sediment delivered to surface water and is empirically based on watershed size." Please explain if and how the SDR was applied, why it was correctly used, and, if so, why was it applied only to Ambler's effluent and not the effluent from other point sources in other subwatersheds? It seems logical that it would also have been applied in the same way to all other stormwater sources. Is it being applied to the upstream loads that are transferred down to each subwatershed? A more detailed discussion of the SDR and transference of upstream loads to downstream watersheds is needed to better understand the modeling process	The SDR was applied to all point source effluents in the watershed. A detailed description of how the SDR was applied to the point sources was included because the sediment loads from point sources could not be included in the GWLF model and had the be calculated manually outside of the model (see Section E-3). The SDR was also applied to the upstream sediment loads to account for loss downstream. See paragraph 1 under Section 4.2.5.
Pennsylvania DEP	709-21	There are allocations made to particular segments, and further to each municipality, but there is no explanation of the current condition or the percentage reduction of sediment being required by the allocations for different land uses, only total reductions for the MS4s in Appendix G. Please explain why these are not included.	Annual average loads and percent reductions for each impaired stream segment were provided in Appendix G. To present annual average loads and percent reductions by landuse, municipality, and stream segment would result in signficant detail that was determined to produce more confusion than clarity.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-22	Table 4-6 shows unit area loading rates in lbs/acre/yr for each subwatershed. The loadings increase from the upper portion of the watershed (subwatershed 1) to the lower portion (subwatershed 5). Would unit area loading rates be the same for similar land uses? Please provide clarification on the values in this table and how they were derived. Also, the title "Unit Area Loading Rate" implies that these are non-point sources best addressed through a load allocation.	Aediment loading rates were determined through empirical equations and input parameters provided by the AVGWLF model interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. While the unit area loading rates for sediment are partially dependent on landuse/type, there are other variables that play a role, including the soil erobibility factor (K), slope of the land, and land management factors, which can all vary by watershed. The slope of the land in the downstream portion of the Wissahickon watershed is much steeper than the upper portion, which results in the larger unit-area loading rates for the downstream portion of the watershed.
Pennsylvania DEP	709-23	In this table the unit area loading rates for urban land are greater than rates for hay pasture. How can this be true? What is the source of this sediment from impervious surfaces? Section E.3.5 references changes made to C and P values in the GWLF model, but there is no clarification as to which land uses these changes affect. Changes in loading rates reflected in the model result in unrealistically high loads generated from impervious surfaces. Please provide model inputs and outputs as well as detailed explanations and justifications for parameter adjustments by land use.	Calculation of sediment loads were determined through empirical equations and input parameters provided by the AVGWLF model interface developed by the Environmental Resources Research Institute of the Pennsylvania State University and funded by the State of Pennsylvania. Changes to C and P values were based upon the 1997 and 1998 habitat assessments for Ironworks Creek and Wissahickon Creek done by PADEP. The habitat assessments indicate that the Ironwork Creek watershed's riparian habitat tends to be better habitat than the Wissahickon Creek watershed's habitat. C and P factors were adjusted in the Wissahickon Creek watershed to account for the habitat differences. The C and P factors were adjusted during the water quality calibration process in order to match the observed sediment values as closely as possible.
Pennsylvania DEP	709-24	Figure 4-5 is not included in the report. Noted	
Pennsylvania DEP	709-35	Last paragraph: MS4 discharges need to be delineated prior to considering them as a WLA of a TMDL. The amount of error contained in these WLAs is extremely high and municipalities' stormwater may not even be accounted for in the correct watershed. For this reason alone, it is counter-intuitive to require that these sources be included as part of the WLA. See also our previous comments on this subject.	See also our previous responses on this subject.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-36	Appendix G Tables G-7, G-12, G-24, G-28, G-33, and G-37 In the second column under "Flow (cfs)", the flows shown for the NPDES permitted discharges are not accurate. In the fourth column under "Annual Average Load (lbs/yr)", the loads are not accurate. For example, in Table G-7, the permitted flow for North Wales Borough is 1.29 cfs, not 1.29E-06. The permitted annual average load for TSS is 76255 lbs/yr, not 7.63E-02. Please review and revise	All point source flows and loads have been updated using the correct permitted or design flow values. NPDES PA0012904 was originally included in the watershed as the coal mining landuse in subwatershed 4. To be more accurate, the coal mining landuse was removed from subwatershed 4 and replaced as a point source with the permitted TSS limit (35 mg/L) and the average flow of 8 mgd (per request of PA DEP).
Pennsylvania DEP	709-39	It is a disservice of the public participation process to not allow the municipalities ample opportunity to digest and provide comments. The public was not invited to comment on the proposed TMDL methodology concerning requirements for MS4s.	The siltation TMDL was presented throughout the stakeholder meetings in conjunction with the nutrient TMDL. PA DEP provided invitations to stakeholder meetings and were briefed throughout the project regarding the methodology for siltation TMDL development. Discussions in stakeholder meetings regarding the siltation TMDL were not limited, but were only dwarfed by discussions regarding the nutrient TMDL, which from the onset of the project was controversial. Discussions regarding WLAs for MS4s were limited because EPA policy was under development. Low flow sampling was performed to answer specific questions raised regarding sources of nutrient sources. It has been understood and generally accepted from the beginning of the project that sources of siltation were the result of wet weather sources from the watershed and streambank erosion. Using PA DEP's reference watershed approach for siltation TMDL development, no outstanding data gaps were identified.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-42	NO2 & NO3 Reductions - The WASP/EUTRO modeling completed for the low flow nutrient TMDL indicates that NO2-NO3 reductions will be necessary to meet dissolved oxygen water quality criteria. We question the need for NO2 - NO3 reductions. It would seem reasonable from a biological standpoint to address nutrient impairments by reducing one of the primary nutrients responsible for eutrophication (N or P). Reduction of one nutrient should limit the ability of periphyton to utilize the other nutrient provided reasonably low concentrations are restored to the stream. Two pieces of evidence suggest that P should be considered the target nutrient : 1) ecoregion reference streams have N to P ambient ratios (water) indicative of P limitation and 2) N reduction without P reduction could lead to unintended shifts in periphyton community structure (i.e., increasing blue-green algae). Please explain the stoichiometric coefficients used in the model and any assumptions made regarding the relationship of N & P to periphyton biomass. Estimates of in-stream nutrient concentrations expected after discharger upgrades should be included in the document.	The decrease of 0.39 mg/L of DO within 10 meters of the discharge swale is significant, however, it does not imply that this effect will be consistent at increasing distance downstream. For example, if the benthos can reduce 0.39 mg/L of DO per 10 meter of the stream, then DO could drop to anoxic conditions very quickly, which is in contrast to observations. In fact, the sharp drop of DO within that short distance can be considered a localized phenomenon caused by special local conditions which are not representative of the entire watershed. In terms of numerical modeling, the resolution of 10 meters is actually much higher than realistic water quality models can achieve due to computational and data limitations. The model is expected to simulate the general trend of the stream rather than highly localized phenomenon. The Wissahickon Creek model was based on the widely accepted WASP/EUTRO framework, and has considered the major factors impacting DO dynamics, including benthic processes, reareation, algal/periphyton activities, and organic decomposition and nitrification. Model calibration showed reasonably good performance in simulating DO response to these factors, suggesting that the model is capable of capturing the general trend of the instream DO in response to changes of external conditions such as change of DO concentration and other loads associated with discharges.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-44	Sections 4.1.1 and 4.1.2 DEP does not have information to support that the WLAs presented in Tables 4-3 and 4-4 represent the most cost-effective treatment levels for the dischargers. We understand that EPA, at the request of the dischargers, is providing additional modeling scenarios "trading off" among the various parameters in an attempt to determine the most cost effective treatment options. You should be aware that Pennsylvania has numerical standards for parameters such as aluminum and iron, which may require limits depending on the treatment options for phosphorus reduction and limited available dilution. We agree that flexibility is needed to allow the stakeholders to make the most cost effective choice for the needed pollution strategy they need to employ, thereby providing some assurance the TMDL is achievable. However, these are implementation issues and they should not be detailed in the TMDL, but discussed in another arena.	The time frames for implementation of WLAs for point sources have been refined and updated for the second draft of the TMDL report. See Section 5 of the revised TMDL report.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Pennsylvania DEP	709-45	Section 4.1.5- Please provide information on how EPA intends WLAs for point sources to be applied. Specifically, would the limits be expressed seasonally and, if so, during what time frames? Since the DO criteria for a trout stocking fishery changes from a minimum daily average of 6.0 and minimum of 5.0 mg/l for the period from Feb. 15-July 31 to a minimum daily average of 5.0 and minimum of 4.0 mg/l the remainder of the year, would model runs be made to determine the WLAs needed to protect the DO standard during the late summer period, when the standard is different? Are the WLAs intended to be expressed as concentration limits, so that future expansions at wastewater treatment plant can occur without a change to nutrient concentrations? If the dischargers opt to "downrate" their approved discharge flows, would the mass loadings be used to calculate higher concentration limits? Does the model represent that there is a concentration of nutrients, or a ratio of nutrient parameters that could be used in the future to permit new or expanded discharges? The impact of changing the effluent DO on the WLAs is significant. .	WLAs are intended to be expressed as concentrations and are independent of mass loadings. Therefore, reduced discharge flows do not necessarily equate to larger allowed concentrations based on an overall mass balance. The effluent dominated nature of the streams under low-flow conditions limit flexibility in allowing modifcations of effluent concentrations based on adjustments of mass loadings resulting from "downrated" flows. This would be the case if the assimulative capacity of the Wissahickon Creek was greater during low flow, providing more mixing capabilites as a result of mass balance calculations at the point of discharge. However, with instream flows dominated by discharge contributions, and instream water quality controlled by such discharges, allowance of increased effluent concentrations will result in greater impacts to the stream regardless of the reduced flows associated. Moreover, impacts to the streams are a result of the combined impact of the multiple discharges and cannot be assessed independently. Therefore, unless all discharges and impacts to Wissahickon Creek are analyzed under critical conditions, impacts of changes of discharge flows with resulting changes of effluent concentrations cannot be assessed. To remain protective of the stream under all conditions, WLA concentrations should be maintained during all periods specified unless additional studies definitively show that changes in specific conditions or discharges do not result in increased impairment.
Pennsylvania DEP	709-46	Is the effluent DO modeled as a daily average or a instantaneous minimum? DEP appreciates a more detailed discussion on the above issues since, according to Tetratech at the March 4, 2003 public meeting, the nutrient model is complicated (i.e. not user-friendly) and DEP may not have the resources to learn the model and run it in the future.	Effluent DO was modeled as a constant, average concentration that can be interpreted as a daily average for NPDES permitting.
Peter and S. Stern	347-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Peter Gorman	290-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Peter Madden	47-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Petger N. Walsh	484-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Phila./Nutter	712-01	The Wissahickon Creek is only used for fishing, swimming, hiking, biking and other recreational activities by thousands of people, it is also an important source of drinking water for the 300,000 residents of Northwest Philadelphia. Wissahickon Creek flows in to the Schuylkill River immediately upstream of the Queen Lane intake, which provides drinking water for residents of Manayunk, Roxborough, Chestnut Hill, Mt. Airy, Germantown and East Falls. The Philadelphia Water Department has estimated that one third of the water for Queen Lane plant is provided by the Wissahickon Creek. Further, the Wissahickon Creek has been listed as impaired by the PADEP and is in dire need of a real, workable plan to clean up the creek to protect the health of our community.	Thank you for your comment. EPA hopes that this TMDL will serve as the foundation for the development of an implementation plan that will achieve the state's water quality standards for the Wissahickon Creek watershed

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Phila./Nutter	712-02	To this end, I believe the final TMDL should require significant reductions in the nutrient discharges of the five major sewage treatment plants upstream from Philadelphia that are identified in the TMDL as the major sources of nutrient pollution in the creek. These plants are permitted to discharge up to 18 million gallons of treated sewage a day into the Wissahickon Creek. The combined effects of these effluent discharges are to increase bacteria, fungi and algae growth which leads to unacceptably low levels of dissolved oxygen in the creek, thereby significantly impairing the health of the creek.	The TMDL has recommended reductions of nutreint loadings from the 5 major point sources.
Phila./Nutter	712-03	The draft TMDL plan to simply add more air to the effluent discharge will not address the problem of excessive nutrients in the creek and will not, therefore, clean□up the creek to acceptable water quality standards. The sewage treatment plants must be required to reduce their levels of nutrient discharges, in order to ensure that□the Wissahickon Creek gets cleaned up. This will adequately protect the health of our environment and the health of the hundreds of thousands of citizens who rely on the Wissahickon for recreation and a source of drinking water.□ □,	In addition to the increase in effluent dissolved oxygen, a reduction in nutrients is recommended. The combination will allow the waters to meet state standards.
Phila./Rizzo	714-01	It is with dismay that I note that the Wissahickon Creek is nutrient impaired, due to the effluent discharges from five sewage treatment plants upstream from Philadelphia. This effectively kills our Creek. The proposed solution of adding oxygen to those discharges is not an acceptable solution to our problem. Since the discharges cause the problem, the preferred solution should be to reduce the levels of effluent discharges.	In addition to the increase in effluent dissolved oxygen, a reduction in nutrients is recommended. The combination will allow the waters to meet state standards

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Phila./Rizzo	714-02	I strongly urge you to change the draft "Total Maximum Daily Load for Nutrients and Siltation for the Wissahickon Creek" report to include a recommendation that the nutrient impairment of the Creek be addressed through the required reduction of effluent discharges, thus improving it as both a major source of drinking water, as well as a major recreational resource. This will improve the health and pleasure of Philadelphia residents.	In addition to the increase in effluent dissolved oxygen, a reduction in nutrients is recommended. The combination will allow the waters to meet state standards. Also EPA to consider the impacts of the discharge of NO2-NO3 from the municiapl facilities on the City's water intake.
Philip F. Bucolo	55-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Philip H. McLean	681-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Phillip F. DeCurtisl	678-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Phoeb e McClair	445-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Priscilla Thornton	51-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
R. & K. Walker	152-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
R. & A. Moore	417-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rachael Williams	422-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rachel Miller	60-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rachel Newman	232-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Ralph M.	545-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Raymond J. Colombano	146-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rebecca Ichord	41-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rebecca Mott	641-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Regina Fakchi	312-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Regina Gismondi	28-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Renardo Mill	570-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Renee Cregan	703-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rev. Donna Day	668-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rev. Dr. P. White	547-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rich Butler	207-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Richard J. Griffith	149-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Richard Pastor	45-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Richard Weiner	170-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rishi R. Gupta	234-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rita Chesterton	360-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robert	720-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robert Anu	482-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Robert B. Shore	130-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robert E. Lane	577-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robert Hirshorn	187-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Roberta E. Brasey	120-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robin Aronson	78-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Robin Holmes	171-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Rodney Brailsford	534-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Roger M. Fey	267-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ronni H. Rothman	580-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rosalind Williams	555-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rose M. Connelley	18-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rose Rudi	320-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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Roy Westerfer	287-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Rulla D.	439-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Russell Eisenhouer	181-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Russell Robinson	21-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ruth Webb	333-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ryan Milligan	90-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Ryan Petrick	644-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S & D McClinton	252-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. & A. Banks	536-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. & W. Winick	218-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. Annis	669-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. J. Winter	510-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
S. Llanso	123-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. M. de Jony	594-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
S. Norris	557-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sabra McDunn	664-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Salwa Azucy	206-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Samuel Lovitz	524-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Samy Badawy, MD	315-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sandra Burnerdino	390-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sandra Karlsson	59-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sara Cancellaro	183-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sara Halik	173-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sara Whittington	656-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Sarah Alleger	241-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sarah Crawford	258-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sarah Donnelly	106-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sarah Gentry	496-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sarah Kupperberg	376-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Scott P. Towers	126-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Sean Heron	514-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sean Ruhren	49-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Seumas Quinn	162-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sewell	601-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shamash & Rosenthal	539-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shannon Dononva	625-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Shannon Jones	178-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shari Hersh	632-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sharon Parris	09-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sharon Stern	381-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sharon W. Cohen	03-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shaun Kennedy	257-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Shawn Graham	268-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shawn Kilgallon	517-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sheila M. Fitzgerald	191-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sheila Ryan	224-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shelean Roylalnce	164-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sherry Paris	456-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Sheryl Luvey	153-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shirley B. Dean	491-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Shirley Melvin	449-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Skylar Daly	04-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sonja Seawright	606-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sonnia S. Gennore	592-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Stan Osborne	571-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stanley Bostick	81-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stephanie Besaw	603-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stephanie Mix	653-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stephen Ballerini	476-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stephen M. Gulick	222-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Stephen P. Simone	701-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Steve Azzio	67-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Steve Ledwis	74-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Steven D. Graham	361-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Steven Pulitzer	462-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Stoner - Bank Family	578-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Sue Manuel	623-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Sue Netzer	75-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Susan Corcoran	198-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Susan & Thomas Welsh	654-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Susan L. Wienand	147-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Susan Landau	615-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Suzane Morrison	581-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Suzanne Climan	591-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Suzanne D. Stumm	266-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Ta mmie Blunt	163-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tammy Taylor	590-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tara L. McGough	551-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

Wissahickon Responsiveness Summary for March 2003 Draft

COMMENTOR	Ltr #	COMMENT	RESPONSE
Taua Morris	305-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Teresa Duffy	159-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tess Culp	384-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
The Meadows Family	145-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
The White Family	598-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Theresa Westerfer	288-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Thomas Danilak	507-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Thomas Gartsid	68-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Thomas J. Mollen	231-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Thomas M. McShane	698-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Thomas Schindler	328-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tim and Rose Ryan	184-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Timothy Regan	613-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Toby Buckley	58-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Toby Shawe, MD	295-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Todd Zimmerman	289-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tony Sackstgeder	460-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tracy Darch	645-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Trevor J. Day	455-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Tricia Greason	535-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Unsigned letter	236-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Upper Gwynedd	710-01	Comments made in this l;etter were identical to those comments from letter number 693	The comments presented inthis letter were the same as those from letter number 693. Please refer to respones to comments from letter number 693.
Uppper Gwynedd	716-01	E - mail from Interrante to T. Henry. (We received this already from Lenard Perrone - it is the same)	See responses to Upper Gwynedd Townships comments

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-05	The table on page 4-17 indicates a very high loading rate for sediment from the "Transitional" land use in Subwatershed 5. This seems like an obvious target for load reductions. Yet, the draft TMDL does not mention corrective measures directed at this sediment source. Perhaps this source constitutes a small land area, relative to the entire watershed. Even so, this seems like a good land use to target for sediment reductions. J. Kent Craford	This detail of targeting is the next step which begins in the development of an implementation plan. EPA is committed to help support the implementation of this Wissahickon TMDL. The development of an interim implementation process could be wrapped into an existing framework such as the ACT 167 process and utilize the existing Wissahickon Partnership. This may be an efficient way to get implementation planning started. EPA is recommending and would support Philadelphia and Montgomery Counties in starting the process. The first step to effectively address the complex and varied nature of this part urban, part suburban, and rural watershed, is to develop a Watershed Management Plan which contains a plan of action for flow and pollutant load reduction and groundwater recharge. The Plan should address three major facets of watershed rehabilitation including 1) flow and pollutant reduction mechanisms (structural and nonstructural BMPs); 2) political mechanisms (Memorandum Of Agreements between municipalities and revised municipal ordinances); and 3) funding mechanisms (state and federal grants, local utility fees etc.)
US Dept. of Interior	699-07	On page 4-8, the draft document is inconsistent about the number of permitted dischargers. First, the statement is made that there are 19 NPDES discharges permitted. This number corresponds to the number of dischargers listed in Table 2-1, page 2-2. Then, on page 4-8, 15 and 5 dischargers are mentioned, for a total of 20. Is the correct number 19 or 20? J. Kent Craford	These inconsistentcies have been corrected in the final TMDL report

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-09	Similarly, on page 4-9, rationale is given for using a higher volume of flow from the permitted ischarges than is reality. Paragraph 2 states that discharges of 50 to 60 percent of design flow are to be expected during low-flow periods. Yet, the model assumes 100 percent of design flows, allowing a higher assimilative capacity than actually exists. Again, the implication is that the modeling under these unrealistic conditions will allow for a larger TMDL than is actually warranted. J. Kent Craford	For TMDL calculation, design flows must be incorporated into the critical condition so that accurate WLAs can be determined for each permitted flow. Although NPDES permit holders may not normally discharge at design flows, WLAs must be calculated for those flows that are allowable under the permits.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-10	Page 5-1 speaks of using BMPs to achieve the needed load reductions. Yet, the Executive Summary does not imply that BMPs will be needed. Rather, the reader is left with the impression that adjustments to effluents from five permitted dischargers will take care of the situation. Clarification is needed with regard to the need for implementing BMPs. Further, the draft document gives no indication about the extent of BMPs that may be needed or target sub watersheds for their implementation. J. Kent Craford	The banks and surrounding land around the Wissahickon Creek vary as the Creek travels through each township and borough. The specific methods used to address high pollutant load reductions will vary with the land use along the particular segment of Creek. The methods used will also vary depending on the particular source of the pollutant load whether it be stream bank erosion from high flow conditions or overland flow which carries the pollutants from surrounding land. Flow and Pollutant Reduction Mechanisms - Storm Water BMPS The major categories of BMPs that exist to reduce overland flow, promote groundwater recharge and reduce pollutant loads to streams include the following. Nonstructural BMPs □Public Education and Involvement □Mapping of storm water utility □Illicit discharge detection and elimination □Good house keeping practices Structural BMPs□ □Detention Ponds □Infiltration Facilities □Vegetative Filter Strips □Wetlands and Bioretention □Porous Pavement □On-site runoff mechanism□ Urban areas with high percent impervious ground cover are often difficult places to incorporate many of the BMPs listed. Protecting water quality in these areas is difficult for many reasons including, diverse pollutant loads, large runoff volumes, limited areas suitable for surface water treatment systems, high implementation costs, and destruction of natural buffer zones adjacent to water bodies. There are however, numerous case studies and a growing amount of research that exists on this subject that indicates using a combination of BMPs to fit the constraints of urban areas can be successful in restoring water quality and recharging the groundwater. A detailed article about an urban retrofit in Seattle, WA may be found at http://seattlepi.nwsource.com/local/95881_model20.shtml A detailed description of storm water treatment practices to

			achieve Storm Water Phase II Retrofit in Madison, Wisconsin can be found on EPA's web site at www.epa.gov/owow/nps/natlstormwater03.
US Dept. of Interior	699-12	The draft TMDL has not presented a convincing argument to support the management strategy of increasing DO in wastewater effluents as a means for improving water quality. On the one hand, it seems intuitive that increasing DO in the effluents will result in more DO in the stream. Yet, the primary controlling force for DO concentrations in the stream appears to be the periphyton. J. Kent Craford	Increasing the DO and decreasing the nutrients and therefore the impacts of periphyton results in achievment of water quality standards
US Dept. of Interior	699-01	On page 2-5, the draft TMDL indicates that on average, Coorson's Quarry discharges 12.5 cfs to Lorraine Run. This is.a very large volume of water. The draft TMDL does not give a reference for this number. A reference should be added. Is the water pumped from the Quarry? Is there a seasonal variability to the pumped volume? It would seem logical that the quarry would need to pump more water during wet weather conditions than during dry-weather conditions. Clarification is needed. If there is a seasonality to the quarry discharges, then the 12.5 cfs should not be applied to the conditions during dry weather. This is important because dry weather (low-flow) is designated as the critical period for the nutrient TMDL. Assigning this 12.5 cfs value to Lorraine Run during low-flow may assign too much water to that tributary and therefore, provide more assimilative capacity than really exists in the Wissahickon Creek. J. Kent Craford	"According to the PA DEP Bureau of Mining, normal flows from Coorson's Quarry average from 12.4 to 15.5 cfs and vary with precipitation and onsite use of water. PA DEP recommended using 12.5 for determination of Coorson's Quarry WLA. This same flow was used in the critical low-flow for TMDL analysis. In April 2003, the quarry's discharge permit was revised to require a minimum flow of 0.5 cfs. Results of analysis of TMDL wasteload allocations at minimum Coorson's Quarry flow showed that even with the assimilative capacity of Wissahickon Creek reduced downstream of Lorraine Run, load allocations prevented violations of DO criteria. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-02	Wissahickon Creek is protected for trout stocking. The draft TMDL correctly points out (page 3-1) the dissolved oxygen (DO) standards from February 15 through July 31 for this protected use. However, the draft TMDL does not acknowledge that for the remainder of the year, a minimum daily average DO of. 5.0 mg/L is required, with a minimum DO of 4.0 mg/L. The draft TMDL does target the critical period as the low-flow period. This critical period normally falls outside the February through July time frame. I am not sure if the "remainder of the year" standards are used for the model projections and development of loads. J. Kent Craford	This TMDL has addressed the seasonal needs. Please see the discussion in the TMDL report as well as Appendix D to that report.
US Dept. of Interior	699-03	In the Executive Summary, on page viii, the statement is made that "The only LAs for the TMDLs were allocated to streambank erosion." Again on page 4-16, the statement is made that "The only siltation sources (source) that receive(s) LAs in the Wissahickon Creek basin are (is) streambank erosion." Why were no LAs suggested for other non-point sources of sediment like Overland runoff? J. Kent Craford	All overland runoff is included in WLAs for MS4 permits.
US Dept. of Interior	699-04	Additional clarification is needed on page 4-22 Establishing TMDLs for avera*e annual conditions would seem to be less protective of the waterbody than establishing those TMDLs for the critical-flow period. Protection provided for the critical period would also protect the stream during average conditions. J. Kent Craford	"The year 2000 was chosen as the critical period for the Wissahickon Creek sediment TMDL. A longer period of record was used for calibration (1993 through 2001), however, 2000 was chosen as the time period for development of the TMDL because the landuse data was updated to reflect landuses in 2000 based on aerial photographs. The updated landuse is representative of the large areas of urbanized land that have developed in the watershed in recent years. These urban areas have contributed to increased streambank erosion and runoff causing increased sediment loading to the stream. By basing the TMDL on annual average conditions, both high and low flow conditions were taken into account, as well as seasonality. "

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-06	Appendix E, Table E-1 lists Wissahickon Creek as having zero (0) point sources and Ironworks Creek as having fourteen (14) point sources. Are these numbers reversed? Figure E-2 is missing. Figure E-3 is missing. J. Kent Craford	"Correct, these numbers were reversed. There are 0 sediment point sources in the Ironworks Creek watershed and 14 sediment point sources in the Wissahickon creek watershed. Table E-1 has been updated. "
US Dept. of Interior	699-08	On page 4-2 and in Appendix D (page D-24), the draft TMDL explains the rationale for calculating a critical low flow. The calculation results in a critical low flow that is more than 250% of the 7Q10. This calculation does not seem justified. Using a critical low flow that is higher than the 7Q10 allows for more assimilative capacity in the stream than actually exists and therefore, allows for a greater TMDL than is warranted. The 7Q10 is reality. It is based on actual measured stream flows. Using the 7Q10 as the critical low flow makes no assumptions about pumping from the quarry or loss to groundwater or volume of discharge from wastewater treatment plants. Adjusting the critical low flow from 16.26 cfs to 40.8 cfs is mathematical hocus-pocus that is not adequately justified in the draft TMDL. J. Kent Craford	"The TMDL requires calculation of WLAs for each discharger at permitted design flows. However, with all dischargers at design flows, the 7Q10 is exceeded. Therefore, a unique approach was required to estimate the background 7Q10 flow (minus discharges) which was then distributed throughout the watershed. Once the background 7Q10 was determined, contributions from dischargers were added to the model at design flows for TMDL analysis. Therefore, overstatement of the 7Q10 critical streamflow results only from the increase of discharge flows to their permitted maximum; the assimulative capacity was not overestimated."

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-11	Appendix D provides the technical information behind the TMDL development, including the modeling. Overall, the model appears to be calibrated pretty well to the data available. But page D-17, Figure D-10, shows the fit for dissolved oxygen for the Wissahickon Creek. For several locations, the model does not closely simulate the lowest DO values observed during a 24-hour period. These low DO values are the most important for protecting aquatic life. It seems critical that the model perform well for the lowest DO concentrations observed. J. Kent Craford	"As a response to comments, modifications were made to the water quality model to simulate the spatial variability of solar radiation, substrate availability, and temperature. The modified model showed noted improvement in prediction of diurnal DO variability. Documentation of model modifications is provided in the updated Modeling Report for Wissahickon Creek, Pennsylvania Nutrient TMDL Development, and updated calibration results are included in Appendix D of the TMDL report. As a result of model modifications, WLAs were recalculated and updated in the TMDL report."
US Dept. of Interior	699-13	Statements and figures in the draft TMDL lead to this conclusion. For example, the diel fluctuations depicted in Figure D-6 and the 24-hour DO concentrations shown in Figures D-10, D 14, and others support this hypothesis. If the periphyton is responding to nutrients, wouldn't a more straightforward approach be to remove the nutrients? Further, the model used for the simulations was WASP, with the EUTRO component. These models are widely used. But the periphyton routine that was incorporated is not widely used. The draft TMDL does not give a reference for this subroutine, does not point to previous successful applications of this subroutine, does not verify the results from the subroutine, and does not provide a sensitivity analysis. Without this additional information, the reader has little reason for confidence in the output from the periphyton subroutine. J. Kent Craford	D1escription of the periphyton routine and other model modifications are outlined in the revised modeling report. Included in this report are sensitivity analyses and results of calibration to periphyton biomass.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
US Dept. of Interior	699-14	The models used for the TMDL calculation are calibrated for Wissahickon Creek, but not verified. Verification would provide more confidence for their application. J. Kent Craford	A separate dataset was available for summer 1998, but the flow conditions in the watershed were highly questionable regarding representation of low-flow conditions. Also, little data was available regarding daily discharges and instream flow over the sampling period. However, using available data, the model was reconfigured and model results were compared to instream observations of 1998. This limited validation showed promising results, and provided indication that the model could predict system response under variable conditions. However, dischargers repeatedly commented on the validity of the 1998 dataset, so results of model validation were not included in the TMDL report. Furthermore, validation results indicated highly unfavorable impacts resulting from discharger contributions, and with questions raised regarding validity of data used, presentation of such results was determined unwarranted.
V. Dyzo	80-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
V. R.	586-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Vera Faust	565-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Vida Glemser	114-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
W. Braunsberg	338-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
W. H. Clark & Family	303-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
W. M. Darmer	38-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
W. Payne	434-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Walter A. Haley	40-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Weetzie Mulhern	579-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
William Bradley	548-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
William C. Gingrich	57-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
William H. Elfring	552-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
William J. Karwoski	359-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
William McCormick	139-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.
Y. Sivels	473-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintainn the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.

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COMMENTOR	Ltr #	COMMENT	RESPONSE
Zyan P. McCarthy	309-01	Protect the Wissahickon Creek watershed and make it safe for drinking water and fish	Thank you for interest in the Wissahickon Creek watershed TMDL. The TMDL is designed to attain and maintain the Pennsylvania water quality standards for the creek. It is hoped that implementation of this TMDL will allow the waters to meet those standards and goals including protection of aquatic life and protection of water supply.