

Notice of Final Rulemaking
Department of Environmental Protection
Environmental Quality Board
(25 Pa. Code, Chapter 102)
(Erosion and Sediment Control and Stormwater Management)

Order

The Environmental Quality Board (Board) by this order amends 25 Pa. Code, Chapter 102 (relating to Erosion and Sediment Control and Stormwater Management). The amendments incorporate the federal Clean Water Act “Phase II” National Pollutant Discharge Elimination System (NPDES) permit requirements for stormwater discharges associated with construction activities, codify post construction stormwater management (PCSM) requirements, including long-term operation and maintenance requirements of PCSM best management practices (BMPs), include specific antidegradation implementation provisions, update agricultural planning and implementation requirements, update erosion and sediment (E&S) control requirements, and establish riparian buffer and riparian forest buffer provisions.

The significant revisions to the final form rulemaking in response to comments include: the removal of the proposed permit-by-rule, which was opposed as drafted by most commentators, including the U.S. Environmental Protection Agency; the addition of exemptions and waivers from the mandatory riparian buffer requirements, as requested by various sectors of the regulated community; and the addition of grandfathering provision for NPDES permit renewals related to post construction stormwater management, as requested by the builders.

This order was adopted by the Board at its meeting of _____.

A. Effective Date

These amendments will go into effect ninety (90) days after publication in the *Pennsylvania Bulletin* as final rulemaking.

B. Contact Persons

For further information contact Kenneth F. Murin, Chief, Division of Waterways, Wetlands, and Stormwater Management, P. O. Box 8775, Rachel Carson State Office Building, Harrisburg, PA 17105-8775, (717) 787-6827, or Margaret O. Murphy, Assistant Counsel, Bureau of Regulatory Counsel, P. O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users). This final-form rulemaking is available electronically through the DEP Web site (<http://www.depweb.state.pa.us>).

C. Statutory Authority

The final-form rulemaking is being made under the authority of Sections 5 and 402 of the Clean Streams Law (35 P. S. §§ 691.5 and 691.402), which authorize the Department of Environmental

Protection (Department) and the Board to formulate, adopt and promulgate rules and regulations that are necessary to implement the provisions of the act; Section 1917-A of The Administrative Code of 1929, 71 P.S. § 510-17, which authorizes the Department to prevent the occurrence of a nuisance and requires the Department to protect the people of the Commonwealth from unsanitary conditions and other nuisances, including any condition declared to be a nuisance by any law administered by the Department; Section 1920-A of the Administrative Code of 1929 (71 P.S. § 510-20), which authorizes the Board to promulgate rules and regulations that may be determined by the Board to be for the proper performance of the work of the Department; and Section 11 of the Conservation District Law (3 P.S. §859(2)). Specifically, under these authorities, the Department and the Board are authorized to adopt regulations that will protect, maintain, reclaim and restore waters of this Commonwealth. Under these authorities, this Chapter regulates accelerated erosion, sedimentation and stormwater runoff related to earth disturbance activities. Specifically, accelerated erosion and sedimentation must be minimized during earth disturbance activities and the associated change in the volume, rate and quality of post construction stormwater runoff must be controlled in order to prevent pollution and protect, maintain, reclaim and restore waters of this Commonwealth.

D. Background and Purpose of the Amendments

The purpose of this final-form rulemaking is to amend the existing E&S control regulations found at Title 25, Chapter 102. Since 1972, earth disturbance activities related to agricultural plowing and tilling, as well as, non-agricultural earth disturbance activities have been regulated under this Chapter by requiring persons to develop, implement, and maintain BMPs. These regulations were last amended in 2000. The major amendments incorporate the federal Clean Water Act “Phase II” NPDES permit requirements for stormwater discharges associated with construction activities, codify post construction stormwater management (PCSM) requirements, including long-term operation and maintenance requirements of PCSM best management practices (BMPs), include specific antidegradation implementation provisions, update agricultural planning and implementation requirements, update erosion and sediment (E&S) control requirements, and establish riparian buffer and riparian forest buffer provisions. Additional revisions were made to clarify requirements and address identified gaps in regulatory authority important to protecting the waters of this Commonwealth.

Public and advisory committee participation played a substantial role in shaping the final form of this rulemaking. During the 90-day public comment period, the Board heard from over 1,300 commentators. This includes citizens (86%), environmental groups, non-governmental groups & academia (3%), industry (8%), government (federal, state agencies municipalities and conservation districts) (3%), state legislators (31 legislators from the House & Senate) and the Independent Regulatory Review Commission (IRRC).

After review of the comments, the Department met with the legislative committees, numerous stakeholder representatives, Pennsylvania Department of Transportation (PennDOT), Pennsylvania Department of Conservation and Natural Resources (DCNR), and various technical experts. The Department met with the Agricultural Advisory Board (AAB) on February 17, 2010 to summarize the revisions being considered for final rulemaking. The Department also met with the Water Resources Advisory Committee (WRAC) on February 19, 2010, and again on March 17, 2010, to present the draft final-form rulemaking. After extensive discussion,

WRAC voted to approve the final-form rulemaking subject to Department clarifying several provisions of the rulemaking.

In response to comments, the input from advisory committees and IRRC, the changes to the final-form rulemaking include revisions to: 1) definitions, 2) agriculture, 3) permit fees, 4) PCSM operation and maintenance (O&M); 5) antidegradation implementation, 6) riparian buffer requirements; and 7) permit-by-rule. Specifically, in § 102.1, several definitions were revised or eliminated; the agricultural provisions in § 102.4(a) were revised and clarified; the permit fee was restructured to include an administrative fee and a fee based on acreage was added to the permit fee section (§ 102.6); the PCSM provisions (§ 102.8) related to long-term operation and maintenance were consolidated into one subsection (§ 102.8(m)) and clarified; the riparian forest buffer section (§ 102.14) was reorganized and refined, an exception subsection was added (§ 102.14(d)), an antidegradation presumption and offset and trading subsection (§ 102.14(e)) were added; and the permit-by-rule section (§ 102.15) was eliminated.

E. Summary of Comments and Responses on the Proposed Rulemaking and Changes to the Proposed Rulemaking

In response to recommendations from commentators, several changes were made in the final-form rulemaking. A summary of the comments received and the changes made are listed by section and described below.

SECTION 102.1. DEFINITIONS:

The following new definitions were added to § 102.1 in the proposed rulemaking and retained in the final-form rulemaking:

“Act 167,” “Agricultural operation,” “Along,” “Intermittent stream,” “Normal pool elevation,” “Oil and gas activities,” “Perennial stream,” “Pollutant,” “Post Construction Stormwater,” “PCSM,” “Stormwater,” “Surface waters” and “Top of streambank.”

The definition of “Riparian Buffer” was not included in the proposed rulemaking, but added to the final-form rulemaking.

The following existing definitions in § 102.1 were revised in the proposed rulemaking and retained in the final-form rulemaking:

“Agricultural plowing or tilling activity,” “BMPs,” “County Conservation District,” “Conservation Plan,” “Earth Disturbance Activity,” “Erosion and Sediment Control Permit” was changed to “E&S Permit,” “Erosion and Sediment Control Plan” was changed to “E&S Plan,” “municipality,” “NOI Notice of Intent,” “NPDES National Pollutant Discharge Elimination System,” “NPDES Permit for Stormwater Discharges Associated With Construction Activities,” “Operator,” “Person,” “Project site,” “Road Maintenance Activities,” “Sediment” and “Stabilization.”

The following existing definitions were added or modified in proposed rulemaking and were further revised in the final-form rulemaking:

“Antidegradation best available combination of technologies (ABACT),” “Animal Heavy Use Area,” “Nondischarge alternative,” “Notice of Termination,” “PCSM Plan,” “PPC Plan,” “Riparian Forest Buffer,” and “Soil loss tolerance (T).”

The following existing definitions in § 102.1 were deleted in the proposed rulemaking and in the final-form rulemaking: “Collector,” “Dewatering zone” and “Diversion.”

IRRC questioned the need, reasonableness, and clarity of the following definitions: Agricultural plowing and tilling activity; animal heavy use area; BMPs; diversion; E&S plan; intermittent stream; licensed professionals; nondischarge alternative; perennial stream; point source; PPC plan; riparian forest buffer; road maintenance activities; and surface waters.

The rationale for changes to definitions, as included in the final form rulemaking is elaborated below.

The definition of ABACT was modified: 1) to include the terms “environmentally sound and cost effective” as used in 25 Pa. Code, Chapter 93, and 2) to more clearly state the comparison of pre to post earth disturbance activities related to differences in the stormwater runoff rate, volume and quality. The changes were made based on comments received during the public comment period. The effect of the changes provides more clarity to the antidegradation requirements that apply under this chapter.

The definition of agricultural plowing or tilling activity was modified to clarify that the term “no-till cropping methods” is the practice of planting crops with minimal mechanical tillage. The changes were made based on comments received during the public comment period. The effect of the change is to provide clarity on no-till cropping methods.

The definition of animal heavy use area was modified to clarify that the term does not include entrances, pathways and walkways where animals are housed. The changes were made based on comments received during the public comment period. The effect of the change is to provide clarity on animal heavy use areas.

The definition of forest stewardship plan is no longer used in the rulemaking due to public comments and has been deleted from Annex A.

The definition of intermittent stream was added to the proposed rulemaking and is consistent with the definition currently used in Chapter 92. The PA Homebuilders were concerned that drainage ditches or swales which transport water during storm events may be interpreted as intermittent streams. It is not the intent of the Department to treat these storm conveyances as intermittent streams. The definition as written applies to those channels with substrate associated with flowing water. The word “substrate” used in the definition means the area of the stream base on which an aquatic organism lives and is a commonly used term. The language in the proposed rulemaking was retained in the final-form rulemaking.

The definition of K factor is no longer used in the rulemaking and has been deleted from Annex A.

A definition of long-term operation and maintenance has been added in response to comments. The inclusion of this term and definition is necessary because it clarifies that long-term operation is the routine inspection, maintenance, repair or replacement of a BMP to ensure proper function for the duration of time that the BMP is needed.

The definition of National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges Associated with Construction Activities has been modified based on public comments. The amount of disturbed acreage has been changed to one (1) acre or more of earth disturbance activities in order to be consistent with federal requirements and the permit requirement section of this Chapter.

The definition of nondischarge alternative has been modified to more clearly state the comparison of pre to post earth disturbance activities related to differences in the stormwater runoff rate, volume and quality, and to be consistent with the ABACT definition. The changes were made in response to public comments. The effect of the changes provides more clarity to the antidegradation requirements that apply under this chapter.

The definition of road maintenance activities has been modified in response to comments to include references to railroad right of way maintenance activities and in response to comments requesting clarity regarding what actions and procedures constitute road maintenance activities.

The definition of riparian buffer has been added and the term is defined as a BMP that includes an area of permanent vegetation along surface waters. The Board added the definition of riparian buffer as it relates to amendments made to Section 102.14 which now provides an alternative to riparian forest buffer implementation in response to public comments.

The definition of riparian forest buffer has been modified to state that it is a type of riparian buffer. This change is in response to amendments made to Section 102.14 which now provides an additional alternative to riparian forest buffer implementation in response to public comments.

SECTION 102.2 SCOPE AND PURPOSE:

The proposed rulemaking expanded this section to reflect the inclusion of PCSM requirements. The language in the proposed rulemaking was retained in the final-form rulemaking. IRRC suggested revisions to this section to clarify the scope of PCSM where the project is restored to preconstruction conditions. Section 102.2 in the final-form rulemaking was not revised, however Section 102.8 related to PCSM was revised in the final-form rulemaking to provide the clarity that IRRC and other commentators suggested.

SECTION 102.4. GENERAL:

§ 102.4(a) Earth disturbance activities related to agricultural activities

In the proposed rulemaking, this section was modified to require written E&S Plans for animal heavy use areas that disturb 5000 square feet (464.5 meters) or more of land, in addition to agricultural plowing or tilling activities of that same size. The final-form rulemaking was modified to clarify that agricultural plowing or tilling activities and animal heavy use areas should be examined as two separate activities in calculating the threshold for the E&S Plan requirement under § 102.4, rather than combining them to determine whether they disturb 5000 square feet (464.5 meters) or more of land. The Board received comments requesting clarification. IRRC asked the Board to explain the need to regulate animal heavy use areas and the reasonableness of this requirement. The final-form rulemaking was modified to clarify that written E&S Plans are required for both agricultural plowing and tilling activities and animal heavy use areas.

The Board included these provisions to address sediment discharges from animal heavy use areas which are not currently regulated by other existing Department regulations. It is important to retain the “animal heavy use area” provisions in order to protect waters of this Commonwealth from continued sediment pollution from these activities. These provisions will also assist the Commonwealth in achieving Chesapeake Bay goals related to sediment reductions through the requirements imposed in § 102.4.

The Department’s 2010 Pennsylvania Integrated Water Quality Monitoring and Assessment Report lists agriculture as the second leading cause of impairment of Pennsylvania’s streams. Agricultural animal heavy use areas are a significant source of this sediment and can negatively affect downstream uses. The agricultural E&S Plan is the most appropriate mechanism to address the control of accelerated erosion from these areas.

Comments were received from the Pennsylvania Farm Bureau concerning possible duplicative provisions in Chapter 102 relating to animal heavy use areas and Chapter 83 relating to animal concentration areas. The Board believes that this final-form Chapter 102 rulemaking is complimentary rather than duplicative to the current Chapter 83 nutrient management regulations in that reducing accelerated erosion (sediment) from animal heavy use areas under this Chapter will also help to reduce nutrients attached to that sediment which is the focus of the Chapter 83 regulations. Also, the Chapter 83 and Chapter 102 regulations are implemented by the same local agency conservation districts (CDs).

In subsection § 102.4(a)(4), language was added to the proposed rulemaking to include cost-effective and reasonable BMPs in the E&S Plan to minimize accelerated erosion and sedimentation from agricultural plowing or tilling or animal heavy use areas. Also, language was added to the proposed rulemaking to state that the E&S Plan must limit soil loss from accelerated erosion to the soil loss tolerance (T) over the planned crop rotation. The Board received comments that supported implementing BMPs that minimize accelerated erosion and sedimentation for agricultural plowing or tilling activities or animal heavy use areas. The language in the proposed rulemaking was retained in the final-form rulemaking.

The proposed rulemaking also stated in § 102.4(a)(4)(i) that additional BMPs are required when located within 100 feet of a river or perennial or intermittent stream on fields with less than 25% cover. Several commentators requested clarification on the type of cover. Therefore, in response to comments, the type of crop cover for fields with less than 25% cover was clarified in the final-form rulemaking as “plant cover or crop residue” cover.

The proposed rulemaking stated in § 102.4(a)(5) that the E&S plan must show the location of surface waters, field and property boundaries, structures, animal heavy use areas, roads and crossroads and BMPs and soil maps. The final rulemaking was revised to clarify that the E&S Plan must address “surface waters of this Commonwealth.” “Waters of this Commonwealth” had been proposed to be deleted; however the Board received comments that supported using this wording. The existing reference to “waters of this Commonwealth” was retained in the final-form rulemaking as modified by the addition of the word “surface” so that it is clear that the E&S Plan must identify all surface waters of this Commonwealth rather than the more narrow list provided in the definition of surface waters. Also, in subsections §§ 102.4(a)(6) and (7) in the proposed rulemaking, an implementation schedule was added as well as the ability to utilize a conservation plan that identifies BMPs that minimize accelerated erosion and sedimentation in the place of an E&S Plan. This language was retained in the final-form rulemaking.

§102.4(b) Earth Disturbance Activities other than agricultural plowing or tilling or animal heavy use areas

Minor revisions to Section 102.4(b)(3) were made from the proposed rulemaking to the final-form rulemaking. The Board received comments stating that many E & S plans are submitted to the Department and conservation districts that are administratively incomplete and that time and expense are wasted while permit review staff wait for additional information. The final-form rulemaking has been revised to add language relating the training and experience of the person preparing the plan to the size and scope of the project being designed.

The proposed rulemaking in § 102.4(b)(4) included general guidelines for the planning and implementation of E&S control measures. IRRC and several commentators expressed concern about the “protect, maintain, reclaim and restore” language and recommended amending § 102.4(b)(4)(v). In response to comments, the Board has removed this subsection from the final-form rulemaking. Amending this section does not relieve a person’s responsibility to utilize BMPs that will “protect, maintain, reclaim and restore” as this provision is also found in the existing definition of “BMP” in §102.1, §102.2(b) and §102.11(a)(1).

In § 102.4(b)(5)(x), the Board revised the requirement from the current regulation to the proposed in response to industry concerns of the term “measurable rainfall.” The revision was made to replace “measurable rainfall event” with “stormwater event.” IRRC and other commentators stated that “measurable rainfall” is more easily understood and requested an explanation for the amendment. The Board utilized the term “stormwater event” because it provides clarity for situations where there is minimal precipitation or rainfall that does not result in runoff. The key word in the definition of “stormwater” is runoff. The intent of the Board is to capture any event that generates runoff. The term “measurable rainfall” failed to include situations where there was no immediate or recent precipitation, but warmer temperatures caused melting of snow which results in a runoff condition.

Identification of potential thermal impacts that may be created or result from earth disturbance activity was added to § 102.4(b)(5)(xiii) in the proposed rulemaking. IRRC recommended that the regulation clearly state what type of evaluation of thermal impacts would be acceptable. Commentators requested additional guidance regarding this evaluation. In response to comments, this subsection has been revised and clarified in the final-form rulemaking. The Department will also provide additional guidance through outreach, trainings and the Erosion and Sediment Control Manual Document Number 363-2134-008. Because each site is different, the design professional needs to have some flexibility to develop an appropriate response to thermal impact concerns. In addition to identifying the potential for thermal impacts, appropriate BMPs should be designed to avoid, minimize, or mitigate those impacts.

A requirement for the E&S Plan to be consistent with a PCSM Plan was added to §102.4(b)(5)(xiv) in the proposed rulemaking. The language in the proposed rulemaking was retained in the final-form rulemaking. The intent of this requirement is for the BMPs implemented as part of the E&S Plan during the temporary construction phase to easily transition with minimal disturbance into the BMPs that will be part of the PCSM Plan. Likewise, the E&S Plan should reflect consideration of the PCSM Plan. For example, areas to be utilized for infiltration should be protected from compaction during construction, which should be noted in the E&S Plan.

A provision for identifying existing and proposed riparian forest buffers in the E&S Plan was added to §102.4(b)(5)(xv) in the proposed rulemaking. The Board has made minor modifications in response to comments.

Section 102.4(b)(6) of the proposed rulemaking included antidegradation implementation provisions. This rulemaking specifically incorporates antidegradation implementation requirements as a result of several EHB cases. The antidegradation provisions are found primarily in revised Sections 102.4(b)(6) and 102.8(h), and in the definitions of “ABACT” and “nondischarge alternatives” in Section 102.1.

By way of background regarding inclusion of antidegradation implementation requirements, the federal Clean Water Act requires states to develop and implement “antidegradation” requirements, which in Pennsylvania are found in 25 Pa. Code Chapter 93. In the Environmental Hearing Board (EHB) decisions in *Zlomsowitch v. DEP*, 2004 EHB 756, *Blue Mountain Preservation Association v. DEP and Alpine Rose Resorts*, 2006 EHB 589, and *Crum Creek Neighbors v. DEP and Pulte Homes of PA, LP*, EHB Docket No. 2007-287-L, October 22, 2009 Adjudication, the EHB overturned the Department’s current implementation of antidegradation requirements in the NPDES permits issued under this chapter. The cases confirm that Chapter 102 did not currently provide an adequate regulatory framework for the compliance with Chapter 93.

Under the current regulations, the Department and regulated community have unsuccessfully tried to reconcile the Chapter 102 regulatory program with antidegradation implementation requirements and specifically the alternatives analysis process found in Section 93.4c(b). Section 93.4c(b) utilizes language and approaches based upon NPDES programs that regulate continuous flow such as traditional industrial discharges flowing out of pipes, whereas the discharges regulated under Chapter 102 involve wet weather driven, primarily overland diffuse

runoff that is controlled with BMPs rather than numeric effluent limitations. Further, the Section 93.4c(b) stated preference for “nondischarge” alternatives is confusing and when applied literally in the stormwater context is problematic. A literal read of this section could require no discharge from a site which would in fact be inimical to the health of waters of this Commonwealth. Simply put, there are existing stormwater discharges that occur at sites before any earth disturbance activity occurs that are the basis of the hydrologic cycle on which stream baseflow and quality is dependent. To protect and maintain waters of this Commonwealth, this pre-existing stormwater discharge must be maintained. The cornerstone of antidegradation then in this program is the preservation of that existing stormwater regime. The Department has therefore included specific antidegradation implementation provisions in the proposed rulemaking to provide the missing regulatory framework that is needed for appropriate evaluation of compliance with the antidegradation requirements for this program.

A number of members of the regulated community specifically requested that the Board clarify the antidegradation implementation provisions in the final-form rulemaking to more definitively link the antidegradation implementation requirements included in this rule with Chapter 93 and to provide a framework that can be relied upon to demonstrate compliance with antidegradation requirements therein. The revisions in the final-form rulemaking to these sections have provided this additional clarification.

An important aspect of the antidegradation provisions included in this rulemaking and related to Section 102.4(b)(6) are the definitions of ABACT and nondischarge alternative. These terms were defined in response to suggestions of the members of WRAC during the development of the regulation prior to proposal. These terms are defined specifically for the purposes of this Chapter and articulate the performance standards to be used for purposes of the comparison of pre-construction stormwater discharges to post construction stormwater discharges. Importantly, the nondischarge alternative in this program does not equal no discharge, but rather, equals no net change from preconstruction discharge volume, rate and water quality, and recognizes the need to preserve the pre-existing stormwater discharges in order to protect and maintain waters of this Commonwealth. The 2-year/24-hour storm event is the storm event to be utilized to demonstrate antidegradation compliance. Please see the discussion relating to this storm event in 102.8 below.

The new federal effluent limitation guidelines (ELG) also references the 2-year/24-hour event as the design storm. In addition, the key components of EPA's ELG are non-numeric effluent limitations in the form of BMPs that require persons engaged in construction activities to minimize discharges of pollutants in stormwater discharges using appropriate E&S controls and stormwater control measures that reflect best engineering practices.

A requirement was added in § 102.4(b)(8) in the proposed rulemaking that stated that the E&S Plan, inspection reports and monitoring reports should be available for review at the project site. IRRC asked for an explanation of why records are needed onsite and to consider allowing electronic records offsite. The language in the proposed rulemaking was retained in the final-form rulemaking. Further clarification has been provided in the comment and response document that inspection reports and monitoring records may be maintained electronically as long as a copy can be produced when requested by the Department or the conservation district.

Records are needed onsite to implement federal requirements of routine monitoring and reporting. Also, the Department must be able to determine that the permittee is in compliance.

SECTION 102.5. PERMIT REQUIREMENTS:

§ 102.5(a) The proposed rulemaking included language in subsection (1) requiring an NPDES Permit for Stormwater Discharges Associated with Construction Activities for certain earth disturbance activities between one acre and five acres with a point source discharge to a surface water of this Commonwealth. Subsection (2) of the proposed rulemaking included language that retained the requirement for an NPDES Permit for Stormwater Discharges Associated with Construction Activities for certain earth disturbance activities five acres or greater. EPA Region 3 required, and several commentators requested, that this subsection be revised to require an NPDES permit for any earth disturbance activity that disturbs one acre or greater, regardless of whether the activity resulted in a point source discharge to a surface water.

In subsection 102.5(a)(3) of the proposed rulemaking, the Board added language related to compliance with the antidegradation requirements in Chapter 93 for projects that require NPDES permit coverage where the earth disturbance activity is proposed to be located in a special protection watershed. In response to public comments and comments from IRRC regarding confusion by the building industry over whether a permit is required and if so what type of permit is required, the Board revised the final rulemaking by identifying that the specified earth disturbance activities disturbing one acre or greater require an NPDES Permit for Stormwater Discharges Associated with Construction Activities, and clarifying that the antidegradation requirements relating to NPDES Permits for Stormwater Discharges Associated with Construction Activities are established in Sections 102.4(b)(6) and 102.8(h). IRRC also questioned why the exemptions at the beginning of paragraphs (a)(1) and (2) and subsection (d) in the proposed rule do not include the oil and gas related earth disturbance activities. In the comment and response document, the Department noted that oil and gas activities are exempt from NPDES permitting requirements but still must meet state water quality requirements. Section 102.5(c) states that “A person proposing oil and gas activities that involve 5 acres (2 hectares) or more of earth disturbance over the life of the project shall obtain an E&S Permit under this chapter prior to commencing the earth disturbance activity.”

In Section 102.5(b) of the proposed rulemaking, the Board maintained existing language except for a minor editorial revision. The Board received comments recommending that the permit acreage threshold be reduced to five acres for timber harvesting and road maintenance activities, and other comments requesting that the Board retain the existing threshold of 25 acres for the same activities. The Board evaluated the comments and determined that the proposed language including the acreage threshold for requiring a permit would be retained.

Section 102.5(c) of the proposed rulemaking maintained existing language but restructured the location of this requirement to 102.5(g). The proposed language for subsection (c) established the E&S permit requirement for persons proposing an earth disturbance activity related to oil and gas development that involves five acres or greater of earth disturbance activity. This regulatory requirement is a codification of existing practices and permit requirements in response to the federal Energy Act of 2005 and the subsequent federal rule promulgated by EPA exempting oil

and gas activities from NPDES permits for Stormwater Discharges Associated with Construction Activities. The Board has retained the proposed language in the final rulemaking.

Section 102.5(d) of the proposed rulemaking clarified that earth disturbance activities, other than earth disturbances related to agricultural plowing and tilling, animal heavy use areas, timber harvesting, or road maintenance activities, and activities requiring permit coverage under previous Sections of 102.5(a) through (c), would require an E&S Permit when there is an earth disturbances of five acres or more. The Board has retained the proposed language in the final rulemaking.

Section 102.5(e) of the proposed rulemaking added new language for this new subsection requiring a preconstruction meeting for activities authorized by a permit under this chapter, unless it is determined by the Department or conservation district that a preconstruction meeting is not necessary and the permittee is notified in writing. The proposed rule also identified specific entities that are required to attend the meeting. Comments from IRRC and other commentators on this subsection recommended clarifications related to the entities required, time period for the notice, whether Department or conservation district staff attendance is mandatory, and whether this requirement may overload DEP staff and delay projects. The Board clarified the final-form rulemaking by adding language that attendance at the preconstruction meeting is required by specific entities that have a role in the design or implementation of the E&S or PCSM Plans. Additional clarification was provided by requiring the permittee to invite the Department or conservation district to attend the preconstruction meeting and requiring at least seven days notice of the preconstruction meeting to all invited attendees. The proposed language was retained requiring the Department or conservation district to provide written notice to the permittee that a preconstruction meeting will not be required.

Section 102.5(f) of the proposed rulemaking added new language for this new subsection providing that a person conducting earth disturbance activities that requires a permit under this Chapter shall ensure implementation and long-term operation and maintenance of a PCSM Plan. The majority of comments received regarding this subsection requested clarification on the responsibility of the permittee for long-term operation and maintenance. IRRC also questioned who specifically is "a person proposing earth disturbance activity." The Board believes that Section 102.1 clearly states the definitions of "person" and "earth disturbance activity." In addition, the permittee designates who is responsible for the PCSM BMPs under Sections 102.7 and 102.8(f)(11) "Identification of the persons responsible for long-term operation and maintenance of the PCSM BMPs." IRRC also commented that this provision is vague and potentially unreasonable and cost prohibitive. The Board has revised the final rulemaking by deleting the reference to the long term operation and maintenance requirement in this subsection. Additional clarifying language related to these issues has been consolidated in section 102.8(m) of the revised final rulemaking.

Section 102.5(g) of the proposed rulemaking maintained existing language formerly found in subsection 102.5(c) which was moved to 102.5(g). The majority of comments received regarding this subsection requested clarification on the applicability in relationship with other permits under Chapter 92, and the authorizations needed. The Board has not revised this subsection in the final rulemaking. A comprehensive list of Department permits can be provided in guidance. The requirements in this rulemaking are intended to reference both Chapters 92 and 102 when these requirements are included in other Department regulations and permit

requirements that are reviewed during the other Department permit application process. As a result, these other Department permits provide sufficient authorization, so a separate authorization under permits identified in this Chapter would be duplicative.

Section 102.5(h) of the proposed rulemaking added a new subsection specifying that when a person other than the permittee is an operator, that other operator is required to become a co-permittee under this Chapter. A few commentators made some minor requests for clarification regarding application of this requirement. No revisions have been made in the final-form rulemaking as a result of the comments, but clarification has been provided in the comment and response document.

Section 102.5(i) of the proposed rulemaking added a new subsection providing that a separate NPDES Permit for Stormwater Discharges Associated with Construction Activities is not required for activities covered by a Clean Water Act §404 dredge and fill permit. IRRC and other commentators supported this provision but requested further clarification on the applicability in context of various scenarios that may occur. EPA Region 3 also requested clarification. As a result the Department has provided clarifying responses to the comments in the comment and response document included as part of this rulemaking. When an activity is authorized under Chapter 404 of the Clean Water Act for example, that activity does not require a separate E&S or NPDES permit for the activity covered by the 404 permit so long as the project is a single and complete project, includes an E&S Plan meeting the requirements of this Chapter and the earth disturbance work does not exceed the footprint of the activities authorized by the 404 permit. In addition, the E&S plan would also be approved as part of the 401 water quality certification. Any other activities would need E&S or NPDES permit coverage. No revisions to this subsection in the final-form rulemaking were necessary.

Section 102.5(j) of the proposed rulemaking maintained existing language formerly located in subsection 102.5(d) of the current rule. The Board received a few comments questioning the permit exemption for agricultural plowing and tilling activities or animal heavy use areas. The Board retained this language in the final-form rulemaking.

Section 102.5(k) of the proposed rulemaking maintained existing language formerly found in subsection 102.5(e) of the current rule. No revision was made to the final rulemaking.

Section 102.5(l) of the final-form rulemaking established a new section identifying requirements for Preparedness, Prevention, and Contingency (PPC) Plan, moved from subsection 102.6(a)(3) of the proposed rulemaking. The Board received comments from IRRC and the public that the PPC Plan requirement was more appropriate to have in this section (as a requirement of the permit) rather than Section 102.6, permit application and fees section.

Section 102.5(m) of this rulemaking was not included in the proposed rule, but was added in response to recommendations of commentators. This subsection authorizes the Department to issue general permits for activities not subject to NPDES requirements and sets forth the process for issuance under this Chapter.

SECTION 102.6 PERMIT APPLICATION AND FEES:

Section 102.6(a) of the proposed rulemaking added new language for this subsection identifying the appropriate permit references, PCSM references, change in subsection (2) to the program name from the Pennsylvania Natural Diversity Inventory (PNDI) to Pennsylvania Natural Heritage Program (PHNP), and the addition of a new subsection (3) referencing requirements to Preparedness, Prevention, and Contingency (PPC) Plans. IRRC and members of the public commented that the Board should explain why this amendment included the reference to (PHNP) and why the PHNP is the best resource for this information, and questioning whether the inclusion of the PPC Plan requirement is not appropriate as an application requirement. The inclusion of the PNDI, now PHNP, is an existing requirement to which the Board only proposed minor modifications including updating the program name. The Department utilizes PHNP because it is a comprehensive database of resource information that both the public and resource agencies can access for threatened and endangered species and critical habitat for those species. It is the only known database of this type for use in Pennsylvania and is the one recognized by the resource agencies. This is particularly useful for the regulated community in that they can identify potential species or habitat conflicts that must be minimized or avoided prior to final plan development and permit application. There were no revisions to subsection 102.6(a) in the final-form rulemaking, and minor revisions were made to the remainder of the subsection in response to comments. 102.6(a)(1) in the final-form rulemaking was revised to remove the reference to the permit-by-rule registration of coverage (ROC), to reflect removal of that section of the regulations in the final form. A minor grammatical revision was made to 102.6(a)(2). In response to comments regarding 102.6(a)(3), the proposed rule was revised in the final rulemaking by moving the location of this requirement to Permit Requirements in Section 102.5(l).

In Section 102.6(b) of the proposed rule, new language was added that identified specific permit fees for the various general and individual permits required under this Chapter. Also, language was added that would require the Department to review the adequacy of the fees established at least once every three years and report their findings to the Board. Additionally, a reference to the authority of conservation districts under the Conservation District Law to charge additional fees was added in this subsection. Some of the public comments received by the Board supported the fee increases, where other commentators and IRRC indicated that the fees were excessive and recommended that an explanation should be provided on how the fees were calculated, and that a tiered approach based on the size of the earth disturbance be established.

In response to the comments received, the Board revised the proposed permit fees in the final-form rulemaking to establish an administrative filing or “base” fee dependent on the type of permit needed (\$500 for a general permit and \$1,500 for an individual permit) and a tiered fee approach based on acreage (\$100 for each disturbed acre). The acreage fee is to be added to the base fee for any projects of one acre or greater of earth disturbance activity that requires permit coverage. This approach would allow smaller projects to pay a lower fee than larger projects, which can also correspond to the complexity and time investment needed to review the permit application. This fee structure is based upon a cost analysis using estimated program costs for the Department and conservation districts to implement the program, based upon a review of past permits issued between 2006 and 2008. Revisions to Chapter 92 in 1999 and Chapter 102 in 2000 included modifications to permit fees, but these were administrative filing fees and did not

cover cost of program operations. The proposed and final-form rulemaking were the first effort by the Department to cover the Chapter 102 program costs through permit fees. The Department has completed an evaluation of program costs and estimated revenue as part of this rulemaking package.

In Section 102.6(b)(2) of the proposed rulemaking, language was added that would require the Department to review the adequacy of the fees established at least once every three years and report the findings to the Board. Comments received on the draft Section 102.6(b)(2) questioned what criteria would be used for the evaluation of the fees and requested clarification how the Department will use the criteria to determine the adequacy of the fees. No revisions were made to the final rulemaking, however clarification is provided in the comment and response document developed for this rulemaking.

Section 102.6(b)(2) was also revised in response to comments from conservation districts to clarify that the fees in this section are all “administrative” fees. How the fees will be dispersed between the Department and conservation districts will be outlined in guidance or through the delegation agreements.

In Section 102.6(b)(3) of the proposed rule, new language was added that identified that conservation districts may charge additional fees in accordance with the Conservation District Law. A few public comments were received that requested clarification from the Board on whether the fees are in addition to the fees established in 102.(b)(1). The Board confirms that the fees are additional to the fees of the referenced section. The amount of these conservation district fees may vary between conservation districts and is based upon the additional costs to the district to implement the program requirements above and beyond the fee established by the Board. Conservation district authority to charge additional fees under the Conservation District Law is referenced to support this requirement. No revision has been made to the final rulemaking however the Board has provided clarification in the comment and response document.

Section 102.6(b)(4) was added to the final-form rulemaking in response to recommendations of commentators. This subsection provides a fee exemption for federal or state agencies, or independent state commissions that must enter into agreements with the Department and where the agreement identifies that the agency will provide funding to the Department for program support.

Section 102.6(c)(2) of the proposed rule added new language identifying the expectations for a complete application or NOI, and what actions the Department or conservation district would take regarding incomplete submissions. IRRRC recommended that a timeframe be included for the Department to determine that an application is complete. IRRRC also recommend that the regulation should specify what happens if the Department does not meet that timeframe. Additionally, in the proposed rulemaking, paragraph 102.6(c)(2) only authorized the Department to make the completeness determination. In their comments, IRRRC asked whether this function may also be performed by a conservation district. The Board has amended this section to clarify that conservation districts do perform this function as well. The Board does not agree that specific timeframes for completeness determinations by the Department or conservation district need to be added to this subsection. In the comment and response document, the Department refers to the money-back guarantee policy and the policy with conservation districts as part of a delegation agreement. Both of these documents establish timeframes for various items during

the application review process including administrative completeness, technical and decision reviews. The Board added 102.6(c) to address an ongoing problem with applicants not responding to requests for additional information and extending the time it takes to make a timely decision on the application. This lack of response has led to applications being open or under review for extensive periods of time. Adding this requirement to the regulation authorizes the Department or conservation district to close a permit application after 60 days of non-response by the applicant. The Board understands that there may be some instances where an applicant may need additional time to provide the requested information. In response, the rulemaking allows for a request of extension. The Board has clarified in the final-form rulemaking that the conservation districts are also authorized to perform this function.

Section 102.6(c)(3) of the proposed rule included new language identifying that the fees associated with returned or withdrawn applications would not be refunded. In response to public comment, the Board revised the final-form rulemaking to clarify that this requirement refers to a withdrawn application determination under 102.6(c)(2)

SECTION 102.7. PERMIT TERMINATION:

The proposed rulemaking added new language requiring the identification of the person responsible for operation and maintenance of the PCSM BMPs and PCSM Plans, and clarified the obligation of the permittee to operate and maintain the PCSM BMPs and PCSM Plan until the Notice of Termination is acknowledged. Commentators requested clarification with regard to the permittees and co-permittees responsibility for long-term operation and maintenance of PCSM BMPs. In addition, IRRC and several commentators recommended that a time limit be added for the Department or conservation district to respond to the submission of a Notice of Termination. In response to these comments, in the final-form rulemaking, the Board has revised this section to clarify that upon permanent site stabilization and installation of BMPs in accordance with E&S and PCSM plan requirements, the permittee or co-permittee must submit a notice of termination that identifies the person who has agreed to be responsible for the long-term operation and maintenance, and has added a time limit of 30-days for the Department or conservation district to conduct a final inspection and approve or deny the request for termination of the permit.

SECTION 102.8. POST CONSTRUCTION STORMWATER MANAGEMENT:

One of the major substantive additions to this Chapter in the proposed rulemaking was the inclusion of post construction stormwater discharge requirements that are detailed in Section 102.8. The proposed rulemaking established the requirements for PCSM planning utilizing a structure that parallels the E&S planning requirements found in Section 102.4(b). The provisions in the proposed rulemaking are a codification and refinement of the existing PCSM requirements that the Department has implemented since 2002.

Based upon public comments received, this section has been revised and clarified in the final-form rulemaking. In the final-form rulemaking, the Board added headers for each subsection and clarified requirements for roadways or rail lines, and PCSM implementation for special protection waters. Additionally, in the final-form rulemaking, the Board also consolidated the long term operation and maintenance requirements into one subsection.

The inclusion of the PCSM requirements in this rulemaking codifies the PCSM requirements which the Department has been implementing since 2002 to address EHB decisions discussed below and to facilitate implementation of the federal stormwater construction and Municipal Separate Storm Sewer System (MS4) NPDES requirements related to PCSM.

Since 2002, the Department has required applicants for NPDES Permits for Discharges Associated with Construction Activities to address post construction stormwater discharges, and in addition to E&S Plans, to develop and implement a PCSM plan. Since 2002, a PCSM Plan must include information to demonstrate compliance with the antidegradation requirements in Chapter 93, including a comparison of preconstruction stormwater runoff to post construction stormwater runoff of the 2-year/24-hour storm event, and a description of the PCSM BMPs that will be utilized to prevent pollution. *See* Comprehensive Stormwater Management Policy (DEP No. 392-0300-002). In 2006, the Department finalized the Pennsylvania Stormwater BMP Manual, (DEP No. 363-0300-002), which provided technical guidance and standardized methodologies. The provisions in 102.8 codify the existing specifications and performance standards that have been relied on and proven in the development of PCSM Plans in Pennsylvania since that time. These standards satisfy state law that has evolved through decisions of the EHB and also facilitate compliance with the related federal NPDES Municipal Separate Storm Sewer System (MS4) programs.

This inclusion of PCSM requirements, is in part a response to EHB decisions. In 1999, the EHB ruled that "post construction" stormwater was potential pollution which the Department should evaluate along with the stormwater discharges that occur during construction activities. *Valley Creek Coalition v. DEP*, 1999 EHB 935. This holding has been confirmed in subsequent decisions including *Blue Mountain Preservation Association v. DEP and Alpine Rose Resorts*, 2006 EHB 589 and *Crum Creek Neighbors v. DEP and Pulte Homes of PA, LP*, EHB Docket No. 2007-287-L, October 22, 2009 Adjudication. Today, PCSM requirements are an established counterpart to the activities already expressly regulated under this Chapter. The amendments related to PCSM will provide needed regulatory framework and clarity for the administration of, compliance with and the legal evaluation of the PCSM requirements.

Section 102.8(a) in the proposed rulemaking established who is required to develop, implement, operate and maintain a written PCSM Plan. IRRC and other commentators expressed concern that the wording was too broad. The Board did not amend this section in the final-form rulemaking but did amend Section 102.8(n). This revision provides that for minor projects where there is little or no change in the runoff characteristics from the site, the PCSM plan can be brief, only be a sentence or two, and still meet the requirements of § 102.8(a). Also, the term "NPDES" has been removed from the final-form rulemaking to allow inclusion of a PCSM Plan for permits other than NPDES.

A number of commentators, notably the builders and the House legislative committee members, requested that the final-form rulemaking include a grandfathering provision for NPDES permit renewals. The builders are particularly concerned about having to revise the PCSM plans for permitted projects that require renewal. In response to these comments, section 102.8(a) has been amended in the final regulation to provide that: "a person conducting earth disturbance activities pursuant to a permit issued before the effective date of this chapter and renewed prior to January 1, 2013, shall implement, operate and maintain the PCSM requirements in accordance

with the terms and conditions of the existing permit. After January 1, 2013, the renewal of any permit issued before the effective date of this chapter, shall comply with the requirements of this section.”

General requirements for planning and design of PCSM were included in § 102.8(b)(1)-(8) of the proposed rulemaking. Commentators and IRRC expressed concern about the vagueness of terms “minimize” and “maximize” as they relate to planning and design. The final-form rulemaking retained the language from the proposed rulemaking, and additional minor edits were made for clarification. These terms have been historically utilized in 25 Pa. Code Chapter 102 to guide the design of projects that vary in size, scope and other details. The Board utilized these words to provide flexibility to the applicant when designing the BMPs for their projects.

IRRC and several commentators expressed concern about the “protect, maintain, reclaim and restore” language and recommended amending § 102.8(b)(9). In response to comments, the Board has removed this subsection from the final-form rulemaking. Amending this section does not negate a person’s responsibility to utilize BMPs that will “protect, maintain, reclaim and restore” as this provision is also found in the existing definition of “BMP” in §102.1, §102.2(b) and §102.11(a)(1).

The proposed rulemaking included subsections 102.8(c) and (d) to ensure consistency with the E&S Plan, and to specify that the PCSM plan shall be a separate plan unless otherwise approved by the Department. The language in the proposed rulemaking was retained in the final-form rulemaking. The intent of this requirement is for the BMPs implemented as part of the E&S Plan during the temporary construction phase to easily transition with minimal disturbance into the BMPs that will be part of the PCSM Plan. Likewise, the E&S Plan should reflect consideration of the PCSM Plan. For example, areas to be utilized for post construction infiltration should be protected from compaction during construction, which should be noted in the E&S Plan.

In the proposed rulemaking, subsection 102.8(e) listed the requirements of the individual tasked with preparing the PCSM Plan. IRRC commented that this section imposed no definable level of expertise and that the Board should delete the subsection or replace it with specific credentials. The language in § 102.8(e) is similar to the E & S portion of the regulation in § 102.4(b)(3) and has been in use for many years. More specific credentials may exclude designers who are not licensed by the Commonwealth and potentially increase development costs. The language was retained in the final-form rulemaking, but the Board did include additional language to qualify that the level of expertise needed is relative to the size and scope of the project being designed.

Section 102.8(f) listed PCSM plan requirements in the proposed rulemaking. IRRC and several commentators expressed concern about “other supporting documentation” language, and requested that the Board provide more detail. That language has been removed from the final-form rulemaking and minor edits were made to provide clarity.

IRRC and commentators requested additional clarity and guidance on the requirements in subsections § 102.8(f)(1)-(10). Many of the requirements found in these subsections are currently required including the listing of soil types/limitations and plan calculations. The PCSM plan must identify the BMPs used and the appropriate calculations that demonstrate that the BMPs will perform under those conditions. The language from the proposed rulemaking was retained in the final-form rulemaking with minor edits made for clarification.

In the proposed rulemaking, section 102.8(g)(1) and (2) listed the stormwater analysis required in the PCSM Plan. IRRRC, PennDOT and several commentators expressed concern with the costs for this analysis and asked the Board to consider amendments to decrease costs and assist in compliance. The Board revised these sections in the final-form rulemaking in response to comments. Allowance for an alternative approach to PCSM methodologies was added in the final-form rulemaking for use when there are public health and safety limitations or existing site conditions. Specifically, in the final-form rulemaking, additional language has been added in subsections 102.8(g)(2)(iii) and (iv) and 102.8(g)(3)(iii) to allow other approaches that may be more protective or that will maintain and protect existing water quality. Also, references to pipelines or other utilities that restore or reclaim a site back to natural conditions have been added to the final-form rulemaking. Subsections 102.8(g)(2)(ii) and (iii) have been revised in the final-form rulemaking to provide more clarity and to provide more flexibility. The intent in these subsections is to require stormwater controls on property that was previously developed with little or no stormwater management. Also in response to comments, § 102.8(g)(2)(i) (ii) and (iii) were modified in the final-form rulemaking to exclude repair or reconstruction of roadways or rail lines, and to consider public health, safety and environmental limitations.

Regardless of the type of earth disturbance activity that occurs, the impervious surfaces, the changes in vegetation, and the soil compaction associated with that activity will result in increases in runoff volume and rate. When the site is cleared of existing vegetation, graded, and re-compacted, it produces an increase in stormwater volume and rate. If the original vegetation were replaced with natural vegetation, the stormwater runoff characteristics would be considered to be equivalent to the original natural vegetation. The volume control, water quality, and rate requirements focus on providing stream channel protection and protection from the frequent rainfalls that comprise a major portion of stormwater runoff events in any part of this Commonwealth. On the basis of these factors, the 2-year/24-hour storm event has been chosen as the stormwater management design storm for volume control.

A volume control requirement is essential to mitigate the consequences of increased stormwater runoff. To accomplish this, the volume reduction BMP must:

1. Protect stream channel morphology;
2. Maintain groundwater recharge;
3. Prevent downstream increases in flooding; and
4. Replicate the natural hydrology on site before development to the greatest extent possible.

The volume control and water quality requirements included in the proposed rulemaking and retained in the final-form rulemaking are necessary to maintain and protect natural hydrology including velocity, current, cross-section, runoff volume, infiltration volume, and aquifer recharge volume. These requirements will sustain stream base flow and prevent increased frequency of damaging bank full flows. The requirements will also help prevent increases in peak runoff rates for larger events (2-year through 100-year) on both a site-by-site and watershed basis. A volume control requirement is protective of water quality and also provides the benefits listed below.

Protect Stream Channel Morphology: Increased volume of stormwater runoff results in an increase in the frequency of bank full or near bank full flow conditions in stream channels. The

increased presence of high flow conditions in riparian sections has a detrimental effect on stream shaping, including stream channel and overall stream morphology. Stream bank erosion is greatly accelerated. As banks are eroded and undercut and as stream channels are gouged and straightened; meanders, pools, riffles, and other essential elements of habitat are lost or greatly diminished. Increases in impervious surfaces can cause the natural bankfull stream flows to occur more often. The rulemaking includes a combination of volume reduction, water quality, and peak rate controls to reduce the bankfull flow occurrences.

Maintain Groundwater Recharge: Over 80 percent of the annual precipitation infiltrates into the soil mantle in Pennsylvania's watersheds under natural conditions. More than half of this is taken up by vegetation and transpired. Part of this infiltrated water moves down gradient to emerge as springs and seeps, feeding local wetlands and surface streams. The rest enters deep groundwater aquifers that supply drinking water wells. Without groundwater recharge, surface stream flows and supplies of groundwater for wells will diminish or disappear during drought periods. Certain land areas recharge more groundwater than others; therefore, protecting the critical recharge areas is important in maintaining the water cycle's balance.

Prevent Downstream Increases in Runoff Volume and Flooding: Although site-based rate control measures may help protect the area immediately downstream from a development site, the increased volume of stormwater runoff and the prolonged duration of runoff from multiple development sites can increase peak flow rates and duration of flooding from stormwater runoff caused by relatively small rain events. Replicating pre-development stormwater runoff volumes for small storms, up to and including the 2-year/24-hour storm event, will substantially reduce the problem of frequent flooding that plague many communities. Although control of runoff volumes from small storms almost always helps to reduce flooding during large storms, additional measures are necessary to provide adequate relief from the serious flooding that occurs during such events.

Replicate the Surface Water Hydrology On-site Before Development: The objective for stormwater management is to develop a program that replicates the natural hydrologic conditions of watersheds to the maximum extent practicable. However, the very process of clearing the existing vegetation from the site removes the single largest component of the natural hydrologic regime, evapotranspiration (ET). Unless the ET component is replaced, the runoff increase will be substantial. Several BMPs such as riparian buffers, riparian forest buffers, tree planting, infiltration, vegetated roof systems and rain gardens, are critical to adequate stormwater management because they serve to replace a portion of the ET and other functions.

The scientific basis for using a 2-year/24-hour storm event is as follows:

- The 2-year/24-hour event provides stream channel protection and water quality protection for the relatively frequent runoff events across the state;
- Volume reduction BMPs based on this standard will provide a storage capacity to help reduce the increase in peak flow rates for larger runoff events;
- In a natural stream system in Mid-Atlantic States, the bank full stream flow occurs with a period of approximately 1.5 years. If the stormwater runoff volume from storms less than the 2-year/24-hour event are not increased, the fluvial impacts on streams will be reduced;
- The 2-year/24-hour storm is well defined and data are readily accessible for use in stormwater management calculations.

Research has demonstrated that bank-full stream flow typically occurs between the 1-year and the 2-year storm event (approximately the 1.5-year storm). Use of the 2-year/24-hour storm for purposes of comparing the pre to post stormwater runoff provides a margin of safety with flows in an out of bank condition. The 2-year/24-hour storm can also be determined from data that is readily available. The final-form rulemaking retained the 2-year/24-hour storm as the storm event to be used for the pre to post comparison. The 2-year/24-hour storm is the event that should be utilized in order to meet antidegradation requirements (see definitions for nondischarge alternative & ABACT). In addition, the new federal ELG also supports the 2-year/24-hour event as the design storm. Additional discussion is provided in the comment and response document.

On the other hand, it is considered unreasonable to design any PCSM BMP for volume or water quality for storm events greater than a 2-year/24-hour event. The stormwater runoff volume from the 100-year rainfall naturally is so large and insignificantly different when compared to developed areas that it is impractical to require management for volume or water quality. During such extreme events, the runoff simply overwhelms the natural systems as well as human-made conveyance elements of pipes and stream channels. This however does not mean that these large storm events do not need to be managed. These large events need to be evaluated for peak rate control and implementation of flood control and retention BMPs.

Peak rate control for large storms, up to the 100-year event, is essential to protect against immediate downstream erosion and flooding. Most designs achieve peak rate control through the use of detention structures. Peak rate control can also be integrated into volume control BMPs in ways that eliminate the need for additional peak rate control detention systems.

Section 102.8(h) of the proposed rulemaking, which provides for the antidegradation implementation process for permit applications for projects in Special Protection Waters, is related to provisions found in section 102.4(b)(6) and also relies on the definitions of “ABACT” and “nondischarge alternatives” in Section 102.1.

The proposed rulemaking in Section 102.8(i) listed requirements for a complaint or site inspection and Section 102.8(j) listed requirements for PCSM reporting and recordkeeping. IRRC commented that 102.8(i) was redundant with 102.8(j) and recommended deleting the subsection. Subsection (i) and subsection (j) cover two different situations. Subsection (i) requires that upon inspection the PCSM plan may need to be submitted for review and approval. This is to ensure the activity is not causing stream degradation. Subsection (j) requires that the PCSM plan and reports or records be available for review and inspection by the Department or conservation districts regardless of the existence of a complaint. The language from the proposed rulemaking was retained in the final-form rulemaking, headers for each subsection were added to the final-form rulemaking.

Requirements for a licensed professional or designee to be present onsite during critical stages of construction were included in Section 102.8(k) and (l) of the proposed rulemaking. IRRC and several commentators expressed concern about the cost of this requirement. The Board revised this subsection in the final-form rulemaking to provide clarity regarding what constitutes a critical stage of implementation. Subsection (k) lists several items considered critical stages, and the licensed professional may determine whether additional activities are also critical such that

the licensed professional should be onsite. The Board also amended this subsection to clarify that a conservation district as well as the Department can identify a critical stage of construction. This duty may only be performed by a conservation district with delegated authority for the PCSM portion of the program.

The Board made clarifying revisions to these subsections in the final-form rulemaking to reflect the intent of the provision to ensure that the plan is implemented properly, and the Department be able to confirm proper implementation. IRRC requested clarification regarding when certification of the PCSM plan and record drawings are required. Certification and record drawings are required for all permitted projects, depicting what was actually constructed onsite.

§ 102.8(m) of the proposed rulemaking included a brief paragraph regarding the responsibility for long term operation and maintenance (O&M). Several commentators requested better organization and clarification to the O&M requirements. In response to comments, Section 102.8(m) has been revised in the final-form rulemaking to consolidate the requirements for O&M.

IRRC commented that the Board should explain the need to regulate PCSM activity to such a degree as to require deed amendments and covenants and how this is a viable way to protect the environment given the inherent presumption that all landowners can afford to maintain and rectify any failure of a BMP for perpetuity. Subsection (m) requires the applicant to designate a responsible party for operation and maintenance. Under existing provisions in the Clean Streams Law, absent such a designation, the landowner could have sole responsibility if the permittee disappears or ceases to exist. The operation and maintenance requirement is for the PCSM BMPs that are installed as part of the PCSM management plan. In order for these BMPs to function efficiently, they must be maintained in perpetuity or until the land use changes. This maintenance responsibility would remain if the property transfers, therefore justifying the need for a covenant that runs with the land.

In response to comments, the Board clarified the requirements in subsection 102.8(n) related to regulated activities that require a site restoration or reclamation plan. Where a site is fully restored or reclaimed, or the permitted activity involves earth disturbance of less than one acre, the obligation of long term PCSM operation and management may not be necessary. The revisions to the final-form rulemaking were included for this reason. The obligation for long term O&M has been met if the site is restored and there are no permanent structures or impervious surfaces.

SECTION 102.11. GENERAL REQUIREMENTS:

This section was revised in the proposed rulemaking to include several new provisions related to the PCSM and riparian forest buffer BMP and design standards.

Section 102.11(a)(2) was added to the proposed rulemaking to provide reference to the Pennsylvania Stormwater Best Management Practices Manual (Document No. 363-0300-002) for assistance in complying with Section 102.8 PCSM Requirements and other references to PCSM.

Section 102.11(a)(3) was added to the proposed rulemaking to provide reference to the Riparian Forest Buffer Guidance (Document No. 394-5600-001) for assistance in complying with Section 102.14 Riparian Buffer Requirements.

Section 102.11(a)(4) was added in the final-form rulemaking to provide reference to the Guidelines for the Development and Implementation of Environmental Emergency Response Plans (Document No. 400-2200-001) in response to public comments requesting clarification and a reference to guidelines and requirements related to PPC plans.

Section 102.11(c) was added to the final-form rulemaking to incorporate by reference the federal ELG and standards related to NPDES permits for construction activities recently passed by EPA. IRRC requested that specific language be used to cite this incorporation and the language in the final-form rulemaking reflects their comments.

Section 102.11(d) was added to the final-form rulemaking to provide that the effective date of this final rulemaking is 90 days after the publication of this final rulemaking in the *Pa Bulletin*.

SECTION 102.14. RIPARIAN BUFFER REQUIREMENTS:

As a threshold matter, IRRC questioned why riparian forest buffers were included in this regulation. Staff of the Department have evaluated extensive research and investigations regarding riparian buffers. This information is included in this section, as well as Section F “Benefits, Costs and Compliance.”

Land development activities change natural features and alter stormwater runoff characteristics. The resulting alterations of stormwater runoff volume, rate and water quality can cause stream bank scour, stream destabilization, sedimentation, reductions in groundwater recharge and base flow, localized flooding, habitat modification and water quality and quantity impairment, which constitute pollution as that term is defined in the Pennsylvania Clean Streams Law, 35 P.S. Section 691.1. Riparian buffers play a vital role in mitigating the effects of stormwater runoff from land development activities.

Riparian buffers are useful in mitigating or controlling point and nonpoint source pollution by both keeping the pollutants out of the waterbody and increasing the level of instream pollution processing. Used as a component of an integrated management system including nutrient management along with E&S control practices, riparian buffers can produce a number of beneficial effects on the quality of water resources. Riparian buffers can be

effective in removing excess nutrients and sediment from surface runoff and shallow groundwater, stabilizing streambanks, and shading streams and rivers to optimize light and temperature conditions for aquatic plants and animals. Riparian buffers provide significant flood attenuation and storage functions within the watershed. They prevent pollution both during and after earth disturbance activities, and provide natural, long-term sustainability for aquatic resource protection and water quality enhancement.

A riparian forest buffer is a specialized type of riparian buffer. Scientific literature supports the riparian forest buffer (with stormwater entering the buffer as sheet flow or shallow concentrated flow) as the only best management practice that can do all of the following: Capture and hold stormwater runoff from the majority of Pennsylvania storms in a given year; Infiltrate most of that water and/or transport it as shallow flow through the forest buffer soils where contaminate uptake and processing occurs; release excess storm flow evenly further processing dissolved and particulate substances associated with it; sequester carbon at significant levels; improve the health of the stream and increase its capacity to process organic matter and nutrients generated on the site or upstream of the site.

The PCSM provisions, to a large extent, are a codification of the existing program in Pennsylvania mandated by federal requirements as well as adverse case law. In administering this program, the Department has observed that the riparian forest buffers are one of the most cost effective stormwater management BMPs. Therefore, pursuant to the Department's authority under Section 402 of the Clean Streams Law, DEP has determined that riparian forest buffers are necessary to protect exceptional value and high quality waters of this Commonwealth from land development activities.

In addition to Department observation, numerous studies demonstrate that riparian forest buffers are particularly effective in mitigating adverse impacts, due to their proximity immediately adjacent to the surface water and their function as a physical buffer to that surface water. Specifically, riparian forest buffers protect surface waters from the effects of runoff by providing filtration of pollutants, bank stability, groundwater recharge, rate attenuation and volume reduction. Riparian forest buffers reduce soil loss and sedimentation/nutrient and other pollution from adjacent upslope flow. (Dosskey et al. 2002). Riparian forest buffers also remove, transform, and store nutrients, sediments, and other pollutants from sheet flow and shallow sub-surface flow and have the potential to remove substantial quantities of excess nutrients through root-zone uptake. (Desbonnet et al, 1994, Lowrance et al 1997, Mayer et al, 2007, and Newbold et al, 2010). Nitrates can be significantly elevated when adjacent land uses are urban/suburban. Further, the buffer's tree canopy shades and cools water temperature, which is especially critical to support high quality species/cold water species – a function not as effectively provided by any other BMP. (Jones, 2006).

Other neighboring states have also recognized the value of riparian buffers. For example New Jersey requires buffers along all trout streams and special protection waters; Virginia requires riparian buffers to implement the Chesapeake Bay Preservation Act; and Maryland has buffer regulations to protect tidal waters, tidal wetlands and streams tributary to the Chesapeake Bay. Riparian forest buffers provide other economic benefits and intrinsic value to land.

There are many existing provisions in the regulations found in Title 25 that limit the extent of activities that can occur along streams and wetlands as a means of protecting water quality. A number of these types of controls are in the form of “setbacks”. Although riparian forest buffers also have additional BMP functions, riparian forest buffers are like other regulatory setbacks in that they are a project or facility siting limitation that is included in the regulations as an environmental control. This type of environmental control mechanism is found in numerous other environmental regulations, including but not limited to: Surface and Underground Coal Mining: General, 25 PA Code § 86.102(12), [mining prohibited within 100 feet of a perennial or intermittent stream]; Noncoal mining, 25 PA Code § 77.504, [mining prohibited within 100 feet of a perennial or intermittent stream]; Water Resources: General Provisions, 25 Pa. Code §§ 91.36, 92.5a(e)(1)(i), [stream setbacks and or buffers required for land application of animal manure]; Nutrient Management, 25 Pa. Code § 83.351(a)(1)(v), [surface water and wetland setbacks for manure storage facilities]; Municipal Waste Landfills, 25 Pa. Code § 273.202 [100 foot surface water and 300 foot exceptional value wetland setbacks for municipal waste landfills]; Municipal Waste: Land application of sewage sludge, 25 Pa. Code § 275.202 [land application of sewage sludge prohibited within 100 feet of a perennial or intermittent stream or exceptional value wetland]; Municipal Waste: Construction/demolition waste landfills, 25 Pa. Code § 277.202, [flood plain and wetland setbacks]; Municipal Waste: Resource recovery facilities, 25 Pa. Code § 283.202 [flood plain and wetland setbacks]; Oil and Gas Wells, 25 Pa. Code § 78.63 [100 foot setbacks for land application of residual waste from oil and gas well development]; and Hazardous Waste Management: Siting, 25 Pa. Code § 269a.29, [hazardous waste treatment and disposal facilities may not be sited in watersheds of exceptional value waters].

This is a new section that was added in the proposed rulemaking with the intent of establishing criteria for riparian buffers and establishing mandatory provisions for the use of riparian buffers as a stormwater BMP. Extensive public comments were received on this proposed section. The Board made a number of substantive revisions to this section in response to comments in the final-form rulemaking, including the addition of subsections related to exceptions, and a presumption of antidegradation compliance, and provisions related to trading or offsetting credits. In addition, the final-form rulemaking also clarifies the requirements for composition and width of mandatory riparian forest buffers and management plans, and guidance on voluntarily establishing riparian forest buffers.

Section 102.14(a) in the proposed rulemaking listed requirements for incorporating riparian forest buffers. The proposed rulemaking included requirements for mandatory 150 foot wide riparian forest buffers on Exceptional Value (EV) waters and a minimum of 100 foot wide riparian forest buffer on all other waterbodies in § 102.14(a). IRRC and several commentators commented that the wording was vague. Members of the public commented that the requirement for mandatory buffers should be expanded to all waters of this Commonwealth with riparian forest buffers of at least 100 feet on both sides of every stream in our state, with 150 feet on small headwater streams and 300 feet on EV and HQ streams. In contrast, the Board also received comments from IRRC and other commentators that the requirement for mandatory buffers is burdensome and that the section on buffers is confusing. In response to comments from IRRC and other commentators, the Board amended subsection 102.14 to require that a project requiring a permit and located in an EV or HQ watershed which is attaining its designated use, shall not conduct earth disturbance activities within 150 feet of a perennial or intermittent river, stream, creek, lake, pond, or reservoir, and must

protect any existing riparian buffer. Additionally, if the project site requires a permit and is located in an EV or HQ watershed failing to attain one or more of its designated uses the person proposing the project must not conduct earth disturbance activities within 150 feet of a perennial or intermittent river, stream, creek, lake, pond, or reservoir, and protect an existing riparian forest buffer, convert an existing riparian buffer to a forest riparian buffer, or establish a new riparian forest buffer.

The Department notes that only 26,215 miles (roughly 30%) of Commonwealth stream miles are classified as special protection (EV or HQ). Further, only 714 (0.8%) of all stream miles are presently classified as special protection and designated as “impaired”. Pursuant to the final-form rulemaking revisions, for the vast majority of projects – because they will not be located adjacent to impaired special protection waters – riparian forest buffers will not be mandatory, but rather will be an optional BMP that the applicant may choose to manage their post construction stormwater. In addition, the Board recognizes that there may be circumstances under which a riparian buffer may not be feasible. The final-form rulemaking allows for the consideration of alternative BMPs to be considered in accordance with Section 102.14(d)(2)(vi) in such circumstances.

Section 102.14(b) of the proposed rulemaking listed the composition requirements of a riparian forest buffer, and a “zoned” approach to composition was included. Scientific literature supports a “zoned” approach to the composition of newly established riparian forest buffers. Zone 1, being directly adjacent to the waterbody and consisting primarily of native trees, is most critical to the ecological health of the waterbody by providing bank stability, thermal moderation, aquatic and terrestrial habitat, and an energy source to maintain a stable ecological community. Zone 2, consisting of native trees and shrubs, provides opportunity for significant sequestration and trapping of overland and subsurface pollutants as well as maximizing habitat potential for a variety of aquatic and terrestrial species. The Board received comments that requested timber management be allowed within the zones. The language from the proposed rulemaking allowing for timber management has been retained in the final-form rulemaking.

The proposed rulemaking included requirements for mandatory 150 foot wide riparian forest buffers on EV waters and a minimum of 100 foot wide riparian forest buffers on all other waters in § 102.14(d) regarding average minimum widths. The minimum width of 100 feet and the type of vegetation, primarily native trees and shrubs, has been firmly established by scientific studies as providing substantial ecological benefit. Additional riparian forest buffer width in special protection and impaired waters provides added protection and maximizes the benefits to existing water quality. This subsection in the final-form rulemaking has been revised and moved to 102.14(b)(2). Also, in the final-form rulemaking, the width of Zone 1 or, at a minimum, the first 50 feet of a riparian forest buffer, directly adjacent to the waterbody should remain essentially “untouched”. The width of Zone 2 has been enlarged to 100 feet in the final rulemaking. Therefore the area where timber harvesting is permitted (with a riparian forest buffer management plan and 60% of the canopy cover is maintained) has been expanded. Some limited management of forest resources is allowed in Zone 2. Activities within the riparian forest buffer are limited so as to maintain its integrity and functions.

The proposed rulemaking contained requirements for enhancing existing buffers to establish a riparian forest buffer that included additional plantings and removal or control of noxious and invasive species in Section 102.14(a). The Board received comments from IRRC and members of the public requesting clarification on the requirements for enhancement. The final-form rulemaking has been revised and clarified. Section 102.14(a) lists the requirements for when a mandatory buffer is required. Specific requirements regarding converting a buffer are clarified in Section 102.14(b) of the final-form rulemaking regarding criteria, composition, zones and management requirements.

In the proposed rulemaking, noxious weeds and invasive species were required to be removed or controlled to the extent possible in existing and established riparian forest buffers in Section 102.14(a)(4). IRRC and members of the public commented that the section should be amended to clarify these provisions. Minor edits were made and this section was moved to 102.14(b)(1)(i) in the final-form rulemaking to provide clarity. Invasive plants have characteristics that make them extremely threatening to the survival of a new riparian forest buffer. Noxious weeds are not necessarily invasive plants; they are plants that have proved to be a significant threat to agriculture, human health or the environment, thereby earning the designation of noxious weed from the Pennsylvania Department of Agriculture.

Invasive plants and noxious weeds need to be controlled because they pose a threat due to their ability to spread aggressively, reproduce prolifically and are very difficult to control once established. Invasive plants can overrun native vegetation and prevent the long term sustainability of native riparian vegetation. Non-native species can degrade the habitat for wildlife and diminish the pollution prevention capacity of a vegetated riparian forest buffer significantly. Controlling noxious weeds and invasive plants as soon as the plants are noticed (preferably before they bloom and the seeds are released) can be more cost effective than waiting one or more years when the invasive plants and noxious weeds are already established. The Department anticipates issuing further guidance on the control of noxious weeds and invasive species concurrently with the final-form rulemaking.

In the proposed rulemaking, there was a requirement for riparian forest buffers to be established along both sides of the stream in Section 102.14(d)(1)-(3). IRRC and members of the public commented that this would require permittees to purchase adjacent property. The terms “both sides” have been removed from the final-form rulemaking. Section 102.14(b)(2)(iii) of the final-form rulemaking clarifies that a riparian buffer would be required on both sides of the stream if the stream transects a project site controlled by the applicant and would not be required on adjacent property.

Section 102.14(e)(2) of the proposed rulemaking included a requirement for newly established and existing riparian forest buffers to be managed for at least five years. IRRC and members of the public commented that specific standards should be set for management of riparian forest buffers. In the final-form rulemaking, the management of a riparian forest buffer is described in Section 102.14(b)(3). The language states that riparian forest buffers shall be managed for a period of five years, during which time the following are used: a planting plan that identifies the number, density and species of native trees and shrubs that are appropriate to the geographic location and will achieve 60% uniform canopy cover; measures to ensure protection from competing plants and animals including noxious weeds and invasive species; an inspection schedule with measures identified and implemented to ensure

proper functioning of the riparian forest buffer. The five year period begins when planting is complete and ends when 60% uniform canopy cover is achieved which should be within 5 years of establishment. The riparian forest management plan should continue to be implemented until 60% uniform canopy cover is achieved. Sixty percent uniform canopy cover is achieved when an area of ground shaded by a vertical projection of the leafy crown of predominantly native shrubs and trees reaches 60% throughout the riparian forest buffer. A sample Riparian Forest Buffer management plan, agreement and techniques to determine the 60% canopy cover can be found in the Department's Riparian Forest Buffer Guidance (Document No. 394-5600-001). After five years, the riparian forest buffer will be managed as needed according to the riparian forest buffer management plan. Active management is absolutely critical during the first five years of establishing a new riparian forest buffer or enhancing an existing buffer to meet riparian forest buffer standards. Management would be focused on ensuring survivability of the young trees and shrubs. Once the new trees and shrubs are established by the end of the five year period, management activities become less active and focus more on long term operation and maintenance needs as described in the riparian forest buffer management plan. Active management of an existing riparian forest buffer is not required, however subsection 102.14(f)(3)(i) allows activities or practices to maintain the riparian buffer.

In Section 102.14(a)(8) of the proposed rulemaking, applicants were required to submit a plan for riparian forest buffer management that would describe how management requirements would be met. IRRC commented that the regulation should set forth what an acceptable plan must include. In the final-form rulemaking, the requirements for a riparian forest buffer management plan have been added in Section 102.14(b)(4).

Subsection 102.14(a) of the proposed rulemaking listed mandatory requirements for riparian buffers. IRRC commented that while riparian forest buffers may present a very good solution from an environmental perspective, these buffers clearly raise many issues of cost, reasonableness and practicality as proposed. The Board received comments that requested flexibility and asked to delete the mandatory obligation. In addition, the Board received comments that supported a mandatory riparian buffer program, as well as comments that supported mandatory 100 foot stream buffers program on all streams. In response to comments, the final-form rulemaking has been revised. Requirements for management of stormwater into riparian buffers, protection of wetlands located in the riparian buffer and standards for measurement of riparian buffers have been placed into one section (§ 102.14(c)) for clarity. Stormwater must discharge into the buffer with a sheet or shallow concentrated flow. This type of discharge will protect the integrity of the buffer and will maximize the opportunity for the discharge to eventually enter into the groundwater.

Wetlands within the buffer should be protected and maintained consistent with Chapter 105. It is not the intention of the Department to replace any existing functioning wetlands with riparian forest buffers.

IRRC and members of the public commented that there may be circumstances under which a riparian buffer may not be feasible. In the final-form rulemaking, the Board includes exemptions and waivers in Section 102.14(d) titled "Exceptions."

The proposed rulemaking did not include a presumption for antidegradation in the riparian forest buffer section. The Board received comments that requested flexibility in the final rule by relying on riparian forest buffers as a preferred BMP option for meeting the nondischarge or ABACT requirements in a Special Protection watershed. In response to comments, the final-form rulemaking includes an “Antidegradation Presumption” in Section 102.14(e)(1). This subsection provides a presumption of compliance with antidegradation requirements when a permittee includes a riparian forest buffer meeting the requirements of Section 102.14.

The Board received comments that requested an offsetting option. The final-form rulemaking has been revised in Section 102.14(e)(2), to allow a permittee who includes a riparian forest buffer meeting the requirements of Section 102.14 to be eligible for trading or offsetting credits.

The proposed rulemaking did not list specific requirements for crossings through riparian forest buffers. Comments were received that requested clarity regarding crossings through riparian buffers. The final-form rulemaking has been revised to clarify that, in accordance with Section 102.14(f)(2)(ii), crossings over riparian buffers are activities that are allowed when authorized by the Department.

The proposed rulemaking included requirements for the permanent protection of riparian forest buffers. IRRC and members of the public expressed concern about this requirement. In the final-form rulemaking, the requirement is maintained and applies to all riparian buffers. Riparian buffers utilized to manage stormwater provide many physical, chemical and biological protection to the receiving water as well as benefits to the aquatic ecosystem and should be protected in perpetuity. Similar to §102.8(m), riparian buffers are BMPs that require long-term protection and maintenance to ensure their continued functioning as part of PCSM. The Board has added clarification to this section to provide examples of a variety of mechanisms (deed restriction, conservation easement, local ordinance or permit conditions) to ensure the long term functioning and integrity of the riparian buffer.

Section 102.14(g) of the proposed rulemaking listed a requirement for the permittee to complete a data form provided by the Department as part of the PCSM plan. Members of the public expressed doubt that these forms would be utilized. This section has been moved to 102.14(h) in the final-form rulemaking, and minor edits for clarifications were made. This reporting has been required by the Department for years when buffers are established through a Growing Greener grant from the Department. Reporting can be completed on-line through the DEP website (www.depweb.state.pa.us key word “Stream Releaf”).

SECTION 102.15. PERMIT-BY-RULE FOR LOW IMPACT PROJECTS WITH RIPARIAN FOREST BUFFERS:

The final-form rulemaking does not include the permit-by-rule that was included in the proposed rulemaking in this section. In response to recommendations from commentators, this section in its entirety has been removed from the final-form rulemaking..

SECTION 102.22. SITE STABILIZATION:

In the proposed rulemaking Section 102.22 was re-titled “site stabilization” to reflect the addition of temporary stabilization standards in § 102.22(b) that if earth disturbance will cease for a period of three or more days that the site shall be seeded, mulched or otherwise protected. During the public comment period several commentators and IRRC commented that the requirement of three days for temporary stabilization could be impractical and costly and could be problematic because of holiday weekends. In response to these comments the Board revised the final draft of the regulations so that the amount of days of cessation of earth disturbance activities that would require temporary site stabilization was changed from three (3) to four (4) days. This change will address the concerns regarding three day holiday weekends.

SECTION 102.31. APPLICABILITY:

There were no revisions proposed in Section 102.31 from the current regulations.

SECTION 102.32. COMPLIANCE AND ENFORCEMENT PROVISIONS:

In the proposed rulemaking the Board revised this section to add subsection (c) which states that a person aggrieved by an action of the conservation district may request an informal hearing with the department; and (d) which allows the department or conservation district to collect and recover from the responsible party the costs and expenses involved in taking an enforcement action. Several commentators requested additional details regarding the informal hearing process and how it would work. The department revised the regulations between the proposed and final-form rulemaking to replace the word “may” with “shall” and added language that “the department will schedule the informal hearing and make a final determination within 30 days of the request.”

SECTION 102.41. ADMINISTRATION BY CONSERVATION DISTRICTS:

The only revision made from the existing regulation was to delete the word “county” from “county conservation districts” in order to be consistent with the rest of the regulation. There were no changes between the proposed and final-form rulemaking for this section.

SECTIONS 102.42. NOTIFICATION FOR APPLICATIONS OF PERMITS:

In Section 102.42 the only revision made to the proposed rulemaking was to delete five acres and insert one acre. This revision was proposed to be consistent with the change in §102.5. There were no other changes proposed between the proposed and final-form rulemaking for this section.

SECTION 102.43. WITHHOLDING PERMITS:

In Section 102.43 in the proposed rulemaking the Board inserted the phrase at the start of the first sentence “With the exception of local stormwater approvals or authorizations a”. This was added to clarify that a municipality or county may approve and issue stormwater approvals or authorizations but may not issue building permits or final approvals until the appropriate Department permit coverage is obtained. A commentator submitted comments that the use of the word “final” in this section may be problematic as municipalities may issue preliminary approvals. The Board agreed that removing the word “final” would clarify that municipalities must not issue any authorization that would allow for earth disturbance activity to occur prior to the necessary Chapter 102 permit approval. Therefore the word “final” was removed between the proposed and final-form rulemaking for this section.

**Notes/References

References for scientific data, studies regarding Riparian Buffers and Riparian Forest Buffers:

- Abernethy, B. and I. D. Rutherford. 1998. Where along a river's length will vegetation most effectively stabilize stream banks? *Geomorphology*. 23(1):55-75.
- Burby, R. 1988. *Cities Under Water: A Comparative Evaluation of Ten Cities' Efforts to Manage Floodplain Land Use*. Institute of Behavioral Science #6. Boulder, CO. 250 pp.
- Chesapeake Bay Foundation. 1996. *A Dollars and Sense Partnership: Economic Development and Environmental Protection*. Chesapeake Bay Foundation. Annapolis, MD.
- Desbonnet, A., P. Pogue, V. Lee, and N. Wolff. 1994. Vegetated Buffers in the Coastal Zone: A Summary Review and Bibliography. Coastal Resources Center, University of Rhode Island.
- Dosskey, M. G., M. J. Helmers, D. E. Eisenhauer, T. G. Franti, and K. D. Hoagland. 2002. Assessment of concentrated flow through riparian buffers. *Journal of Soil and Water Conservation* 57:336-343
- Fausold, C. and R. Lilliehill. 1996. The Economic Value of Open Space: A Review and Synthesis. Lincoln Institute of Land Policy, Cambridge, MA.
- Jones, K. L., G. C. Poole, J. L. Meyer, W. Bumback, and E. A. Kramer. 2006. Quantifying expected ecological response to natural resource legislation: a case study of riparian buffers, aquatic habitat, and trout populations. *Ecology and Society* 11:15
- Jordan, T. E., D. L. Correll, and D. E. Weller. 1993. Nutrient interception by a riparian forest receiving inputs from adjacent cropland. *Journal of Environmental Quality* 22:467-473.
- Lowrance, R., R. Todd, J. Fail, O. Hendrickson, Jr., R. Leonard, and L. Asmussen. 1984. Riparian forests as nutrient filters in agricultural watersheds. *BioScience* 34:374-377.
- Lowrance, R., L. et. al., 1997. Water quality functions of riparian forest buffer systems in the Chesapeake Bay Watershed. *Environmental Management* 21:687-712
- Mayer, P. M., S. K. Reynolds, Jr., M. D. McCutchen, and T. J. Canfield. 2007. Meta-analysis of nitrogen removal in riparian buffers. *Journal of Environmental Quality* 36:1172-1180.
- Meyer, J.L. et al., *Where Rivers Are Born: The Scientific Imperative for Defending Small Streams and Wetlands*, Washington, DC, American Rivers, Sierra Club, 2003.

- Newbold, J. Denis, et.al. 2010. Water Quality Functions of a 15-Year-Old Riparian Forest Buffer System. Journal of the American Water Resources Association (JAWRA) 1-12. DOI: 10.1111/j.1752-1688.2010.00421.x
- Northwest Regional Planning Commission. 2004. The Shoreline Stabilization Handbook <http://nsgd.gso.uri.edu/lcsg/lcsg04001.pdf>
- Palone, R.S. and A.H. Todd (eds.) 1997. Chesapeake Bay riparian handbook: a guide for establishing and maintaining riparian forest buffers. USDA Forest Service Northeastern Area State and Private Forestry NA-TP-02-97. Radnor, PA. www.chesapeakebay.net/pubs/subcommittee/nsc/forest/handbook.htm
- Peterjohn, W. T. and D. L. Correll. 1984. Nutrient dynamics in an agricultural watershed: observations on the role of a riparian forest. Ecology 65:1466-1475.

References for scientific data, studies regarding Riparian Buffers and Riparian Forest Buffers continued:

- Schueler, Thomas, R. 1995. Site Planning for Urban Stream Protection. Center for Watershed Protection, Ellicott City, MD. Prepared for the Metropolitan Washington Council of Governments, Washington, DC.
- Southwick Associates. 2007. Hunting in America: An Economic Engine and Conservation Powerhouse. Produced for the Association of Fish and Wildlife Agencies with funding from Multistate Conservation Grant Program.
- Southwick Associates. 2007. Sportfishing in America: An Economic Engine and Conservation Powerhouse. Produced for the Association of Fish and Wildlife Agencies with funding from Multistate Conservation Grant Program.
- Sweeney, B.W., Streamside Forests and the Physical, Chemical, and Trophic Characteristics of Piedmont Streams in Eastern North America, Water Science Technology Journal, 1993.
- Sweeney, B.W. et al., Riparian Deforestation, Stream Narrowing and Loss of Stream Ecosystem Services, Pennsylvania Natural Academy of Sciences (PNAS), Volume 101, No. 39, 2004, pp. 14132-14137.
- Sweeney, B.W. and Blaine, J.G., Resurrecting the In-Stream Side of Riparian Forests. Journal of Contemporary Water Research & Education, Issue 136, 2007, pp. 17-27.
- Vidon, P. G. F. and A. R. Hill. 2004. Landscape controls on nitrate removal in stream riparian zones. Water Resources Research 40.
- Welsch, D.J., Riparian Forest Buffers, Function and Design for Protection and Enhancement of Water Resources, U.S.D.A. Forest Service, Northeastern Area, Radnor, PA, NA-PR-07-91, 1991, http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/cover.htm.
- Wenger, S., A Review of the Scientific Literature on Riparian Buffer Width, Extent, and Vegetation, Publication of the Office of Public Service and Outreach, Institute of Ecology, University of Georgia, 1999.

References for scientific data, studies regarding E&S Control and PCSM:

- Burton, Allen and Robert Pitt, *Stormwater Effects Handbook: A Toolbox for Watershed Managers, Scientists, and Engineers*. CRC Press 2001. http://rpitt.eng.ua.edu/Publications/BooksandReports/Stormwater%20Effects%20Handbook%20by%20Burton%20and%20Pitt%20book/MainEDFS_Book.html
- Center for Watershed Protection, “The Economics of Watershed Protection”, *Watershed Protection Techniques* Vol. 2 No. 4: 469-481, and, *The Economics of Stormwater*

Treatment: An Update. Technical Note #90, *Watershed Protection Techniques* Vol. 2 No. 4: 395-499.

- Chester County Water Resources Authority, *Reducing Stormwater and Flooding, The Ten Principles of Effective Stormwater Management*, December 2004
<http://www.chesco.org/water>
- Christopher Kloss and Crystal Calarusse, *Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows* June 2006.
- Conservation Research Institute, *Changing Cost Perceptions: An Analysis of Conservation Development*, Illinois Conservation Foundation & Chicago Wilderness, February, 2005.
- Financing Stormwater Management Programs – Choices and Options:
<http://water.nstl.gov.cn/MirrorResources/2537/index.html>
- National Resources Council “Urban Stormwater Management in the United States” (Oct. 2008); <http://www.epa.gov/npdes/stormwater>
- Government of Ontario, Ministry of the Environment *The 2003 Stormwater Management Planning And Design Manual*, http://www.ene.gov.on.ca/gp/4329e_5.htm
- Heaney, James P., Robert Pitt and Richard Field. *Innovative Urban Wet-Weather Flow Management Systems*.
http://rpitt.eng.ua.edu/Publications/BooksandReports/Innovative/MainIUWW_Book.html
- John B. Braden and Douglas M. Johnston, “Downtown Economic Benefits from Stormwater Management”, *Journal of Water Resources Planning and Management* (November/December 2004):498-505.
- Kang, Joo-Hyon, Peter T. Weiss, John S Gulliver, Bruce C. Wilson. Maintenance of Stormwater BMPs Frequency, effort, and cost, *Stormwater The Journal for Surface Water Quality Professionals*, November-December 2008.
<http://www.stormh2o.com/november-december-2008/bmp-maintenance-cost.aspx>
- National Resources Defense Council, *Stormwater Strategies: Community Responses to Runoff Pollution* May 1999.
- PADEP *Erosion and Sediment Control Program Manual* (PADEP # 363-2134-008)
<http://www.depweb.state.pa.us/watershedmgmt/cwp/view.asp?a=1437&q=518836&watershedmgmtNav=|>
- PADEP, *Pennsylvania Stormwater Best Management Practices Manual* (PADEP # 363-0300-002)
<http://www.depweb.state.pa.us/watershedmgmt/cwp/view.asp?a=1437&q=518836&watershedmgmtNav=|>
- PADEP *Water Quality Standards Triennial Review*
<http://www.depweb.state.pa.us/watersupply/cwp/view.asp?a=1261&Q=531653&watersupplyNav=|>
- Philadelphia Stormwater Management Guidance Manual – Philadelphia Water Department;
<http://www.phillyriverinfo.org/Programs/SubprogramMain.aspx?Id=StormwaterManual>
- The Stormwater Manager’s Resource Center, Center for Watershed Protection, Inc.,
<http://www.stormwatercenter.net/>
- United States Environmental Protection Agency, Office of Water, *Economic Analysis of Final Effluent Limitation Guidelines and Standards for the Construction and Development Industry*, November 23, 2009.
<http://www.epa.gov/guide/construction/files/economic.pdf>

- United States Environmental Protection Agency, Phase I and II Rulemaking; (55 FR 47990 and 64 FR 68722 respectively)
- Urban Stormwater Economics: A Comparable Cost Benefit Study of Site Technologies and Strategies for the City of Toronto.
- Villanova Urban Stormwater Partnership; <http://www.villanova.edu/vusp>

References regarding Environmental Hearing Board (EHB) Decisions:

- *Valley Creek Coalition v. DEP*, 1999 EHB 935
<http://ehb.courtapps.com/corpus/12%2D15%2D1999.98228.html>
- *Blue Mountain Preservation Association v. DEP and Alpine Rose Resorts*, 2006 EHB 589
<http://ehb.courtapps.com/corpus/50119072005077.pdf>
- *Crum Creek Neighbors v. DEP and Pulte Homes of PA, LP*, EHB Docket No. 2007-287-L, October 22, 2009 Adjudication
<http://ehb.courtapps.com/corpus/50306392007287.pdf>

F. Benefits, Costs and Compliance

The final-form rulemaking provides benefits to the health and safety of the citizens of the Commonwealth. The provisions will improve water quality and mitigate flooding potential by controlling increases in sediment and other pollutant discharges during and after earth disturbance activities. Controlling such discharges through this rulemaking will limit the risk for increased pollutant levels to waters of this Commonwealth, and protect against adverse impacts on aquatic ecosystems. To ensure protection against adverse impacts from stormwater runoff, the rulemaking includes provisions for long-term operation and maintenance of PCSM facilities. In support of the federal NPDES Stormwater Construction rulemakings, EPA cited benefits including: the benefits to navigational operations regarding the reduced sediment loads requiring dredging; the benefits of water storage in reservoirs with regained water capacity from reduced sediment build-up, and the benefits to drinking water treatment with reduced costs for treatment of sediment in turbidity.

The revisions will also provide benefits through the restructuring and clarification of planning and permit application requirements, as well as the codification of the existing PCSM requirements. This rulemaking reflects a continuing commitment to integrate regulatory obligations for stormwater management including requirements pursuant to Act 167, the NPDES Municipal Separate Storm Sewer Systems (MS4) program and permitting of earth disturbance activities. Local governments with state Act 167 or NPDES MS4 regulatory obligations may rely on the regulatory structure provided by this rulemaking. This reliance on existing state stormwater programs represents a significant cost savings to local governments.

Benefits of Permit Fee Structure § 102.6

The citizens of the Commonwealth, the regulated community, and state and local governments will benefit from the recommended changes in this rulemaking because surface waters will be protected, maintained and improved through requirements that minimize accelerated erosion and sedimentation and strengthen PCSM.

The Commonwealth will benefit from increased permit fees that are based on the estimated cost of administering the program. Revisions to Chapter 92 in 1999 and Chapter 102 in 2000 included modifications to permit fees, but these were administrative filing fees and did not cover cost of program operations. This proposed rulemaking is the first effort by the Department to cover the Chapter 102 program costs through permit fees.

Benefactor	Benefit	Annual Approx Value	Source
DEP	Revenue to operate the 102 program	\$7,573,200	Permits and other associated review fees

Finally, these regulatory revisions are beneficial because they continue to support the delegation of the E&S control and stormwater management programs to local county conservation districts. Conservation districts and the Department have had a successful and effective partnership that allows the Commonwealth to meet the federal requirements of the NPDES program. Additionally, the Delegation to the local government provides more accessibility to the community and regulated parties and ensures local involvement in oversight of the program.

Benefits of Post Construction Stormwater Management § 102.8

Economic Impacts of PCSM Design and Implementation

The costs associated with contemporary stormwater strategies cannot be judged without the context of benefits, particularly the benefits of low impact development, better site design and environmental site design approaches, collectively referred to as LID. It is more cost-effective to prevent the pollutants from entering the stormwater or into waters of this Commonwealth than it is to remove the pollutants once they are in the system or in the waters.

A partial list of the additional benefits for developers, communities and municipalities:

- Downstream economic benefits (reduced flooding damages, reduced treatment costs, increased property values, etc.).
- Reduced needs for infrastructure.
- Higher property values (increased sales, higher sale/resale prices, shorter on-market time).
- Increased tax revenue.
- Increased tourism and recreation.
- Reduced performance bonding for infrastructure (local/municipal requirements).

A comparative cost-benefit study of different technologies used in the management of urban stormwater consistently raised examples of how LID methods save money in both construction and long-term operation and maintenance, from the broad metropolitan scale down to the site level, and further down to a comparison of specific stormwater technologies (Urban Stormwater Economics, Appendix D.)

The summary of conclusions include:

- At the site level, significant cost savings can be achieved from cluster development, including costs for clearing and grading, stormwater and transportation infrastructure, and utilities.
- Installation costs can be between \$4,400 and \$8,850 cheaper per acre for natural, native landscaping than for turf grass approaches.
- Better site design can reduce paving costs.
- While conventional paving materials are less expensive than conservation alternatives, porous materials can help total development costs go down, sometimes as much as 30%, by reducing stormwater conveyance and detention needs.
- Swale conveyance and naturalized BMPs are less costly than pipe systems, as much as 80%.
- Costs of stormwater retention or detention cannot be examined in isolation, but must instead be analyzed in combination with conveyance costs (pipe, inlets, curb), at which point low impact methods have a cost advantage, by eliminating these facilities. The cost saving is two-fold. One from the cost of design and implementation and second from the reduction of impervious surface that these conveyances cause.
- Infiltration strategies and water conservation measures, in combination with landscape planning methods, usually require less space, when fully accounted for, than traditional end-of-pipe infrastructure.
- Public infrastructure costs are higher when a development is built within the context of urban sprawl, as compared to compact growth patterns that conserve land.

In addition to preserving agricultural land, open space is now expected to serve important ecological roles by providing natural habitat, reducing runoff volumes, limiting landscaping and lawn maintenance, and providing natural cooling. These ecological benefits in turn translate into higher levels of residential satisfaction. (Urban Stormwater Economics, Appendix D).

A study by EPA of 17 case studies of developments across the country that used LID practices (infiltration, evapotranspiration and reuse of rainwater) found that these practices could save money for developers, property owners and communities. Most of the cost reductions were in the 25 to 35 percent range. In addition, there are many amenities and associated economic benefits that go beyond actual cost saving, such as, enhanced property values, improved habitat, aesthetic amenities and improved quality of life. In all cases, LID provided other benefits that were not monetized and factored into the project bottom line. These benefits include improved aesthetics, expanded recreational opportunities, increased property values due to the desirability of the lots and their proximity to open space, increased total number of units developed, increased marketing potential, and faster sales. The case studies also provided environmental benefits such as reduced runoff volumes and pollutant loadings to downstream waters, and reduced incidences of combined sewer overflows.

Failure to enact these changes to the proposed rulemaking will allow increases in stormwater runoff to occur. Increases in stormwater causes degradation of lakes, streams and wetlands and reduces property values, raises our public water utility bills and reduces tourism and related business income. These negative impacts will cause an increase in costs for local municipalities and this Commonwealth. Comments from the Philadelphia Water Department

indicated that the proposed changes will improve water quality and reduce illnesses from drinking water and reduce their treatment costs.

Preventing contamination of raw drinking water supplies is more efficient than trying to identify and remove that contamination from the water stream at the treatment plant. By dedicating funds to restore and protect source water areas, communities are saving tremendous amounts of money over the long term. The following survey in Table 1 regarding water treatment and chemical costs based on percent of watershed that is forested indicates that operating treatment costs decreases as forest cover in a source area increases (Urban Stormwater Economics, Appendix D). For every 10 percent increase in forest cover in the source area (up to 60 percent forest cover), treatment and chemical costs decreased approximately 20 percent. Approximately 50 to 55 percent of the variation in operating treatment costs can be explained by the percent of forest cover in the source area. Not enough data were obtained on suppliers that had more than 65 percent forest cover in their watersheds to draw conclusions; however, the researchers believe that treatment costs level off when forest cover is between 70 and 100 percent. The remaining 45 to 50 percent variation in treatment costs that cannot be explained by the percent forest cover in the watershed is likely due to varying treatment practices, economies of scale, the location and intensity of development and/or row crops in the watershed, and the prevalence of agricultural, urban, and forestry best management practices.

Table 1. Water treatment and chemical costs based on percent of watershed that is forested.

% of Watershed Forested	Treatment and Chemical Costs per million gallons	% Change in Costs	Average Treatment Costs (at 22 mgd)	
			Per Day	Per Year
10%	\$115	19%	\$2,530	\$923,450
20%	\$93	20%	\$2,046	\$746,790
30%	\$73	21%	\$1,606	\$586,190
40%	\$58	21%	\$1,276	\$465,740
50%	\$46	21%	\$1,012	\$369,380
60%	\$37	19%	\$814	\$297,110

Economic Impacts of PCSM Operation and Maintenance

- Delaware Natural Resources identified that routine stormwater maintenance range from \$100-500 per acre of drainage area (low to highly intensive maintenance).
- Maintenance cost savings range between \$3,950 and \$4,583 per acre per year over ten years for native landscaping approaches over turf grass approaches (Urban Stormwater Economics, Appendix D).
- A study by North Carolina State University estimated annual maintenance costs for a 10 acre project:
 - * Ponds: \$4,000 +
 - * Wetland treatment: \$750
 - * Bioretention: \$600
 - * Other natural systems equated to normal landscaping maintenance costs

Benefits of Riparian Buffers § 102.14

Economic Benefits of Riparian Forest Buffers

Savings to the Commonwealth, its political subdivisions, and the private sector will be realized because of the value of the many services that riparian buffers provide such as:

- **Stormwater treatment:** Stormwater treatment systems that integrate natural areas, like riparian forest buffers, are less expensive to construct than storm drain systems and provide better environmental results. Costs of engineered stormwater best management practices range from \$500 - \$10,000 per acre and will cost that much again in 20 - 30 years when the structures need to be replaced. It is much more cost effective to manage storm water by including the preservation and maintenance of riparian forests in the stormwater management plan. The cost of preserving or replanting riparian forest buffers ranges from \$0 – \$4,723 per acre) and can be relatively cost free once established. (Department’s Draft Riparian Forest Buffer Guidance [Document 394-5600-001, 2009]).
- **Maintenance of optimal water quality:** This would include protection of water quality for activities such as boating, swimming, and wildlife viewing. Riparian forest buffers also protect areas for fishing, hunting and other outdoor recreational activities. Trout require the cold waters enhanced by the shading provided by forest buffers.(Jones et. al. 2006) Fishing contributes over \$2 billion to Pennsylvania’s economy with close to 1 million anglers (Southwick, 2007).
- **Flood control:** Riparian buffers moderate floodwaters and are a tool to protect human land use and investments from localized and flashy events and hazards associated with stream dynamics and shore erosion. Riparian buffers protect investments from hazards associated with stream flooding and erosion by providing a critical “right of way” for streams and rivers during large floods and storms. When riparian forest buffers contain the entire 100-year floodplain, they are extremely cost-effective in flood damage prevention for both communities and individual property owners (Burby, 1988).
- **Passive recreational activities:** Riparian buffers provide natural surroundings for relaxation, observation of wildlife, photography, hunting, fishing, and other activities important to the people of Pennsylvania. Pervious paths that are cut through riparian areas and can be used for hiking, bicycling, jogging, bird watching, and leisurely walks.
- **Intrinsic and aesthetic values:** Mature riparian forest buffers composed of predominantly native vegetation enhances the preservation of natural functioning ecosystems and biological diversity. The aesthetic values associated with greenways, which include riparian forest buffers, have economic benefits and can increase property values as well as contribute to a sense of pride and well being for communities and property owners. These greenways can also have a positive impact on the value of surrounding property nearby. Pennypack Park – a managed greenway along Pennypack Creek in Philadelphia - has been credited with a 33% increase in the value of adjacent property (Chesapeake Bay Foundation, 1996).
- **Ice damage control:** The trees in Zone 1 of a mature riparian forest buffer insulate and warm the waters on the near shoreline/streambank area. This protects human land use and

investments from ice damage on the near shoreline/streambank and from affects of ice jamming and subsequent upstream flooding (Abernathy et al. 1998).

Ecological Benefits of Riparian Buffers

Land development activities change natural features of the land and alter stormwater runoff characteristics. The resulting alterations by stormwater runoff on volume, rate and water quality can cause stream bank scour, stream destabilization, sedimentation, reduction of groundwater recharge and loss of base flow, localized flooding, habitat modification and water quality and quantity impairment, which constitute pollution as that term is defined in the Pennsylvania Clean Streams Law, 35 P.S. Section 691.1.

Riparian buffers, which are areas of permanent vegetation along surface waters, play a vital role in mitigating the effects of stormwater runoff from land development activities. They are useful in mitigating or controlling point and nonpoint source pollution by both keeping the pollutants out and increasing the level of instream pollution processing. Used as a component of an integrated management system including nutrient management along with E&S control practices, riparian buffers can produce a number of beneficial effects on the quality of water resources. Riparian buffers can be effective in removing excess nutrients and sediment from surface runoff and shallow groundwater, stabilizing streambanks, and shading streams and rivers to optimize light and temperature conditions for aquatic plants and animals. Riparian buffers provide significant flood attenuation and storage functions within the watershed. They prevent pollution both during and after earth disturbance activities, and provide natural, long-term sustainability for aquatic resource protection and water quality enhancement.

A riparian forest buffer is a type of riparian buffer that consists of permanent vegetation that is predominantly native trees and shrubs and along surface waters. The riparian forest buffer, when mature will provide a minimum of 60% canopy cover and may have forbs in the understory.

The efficacy of riparian forest buffers in reducing the quantities of nonpoint source pollutants found in stormwater entering streams has been well established by hundreds of reports published in the peer-reviewed scientific literature. (Mayer et. al , 2007 and Wenger et . al., 1999) Scientific literature also supports the riparian forest buffer (with stormwater entering the buffer as sheet flow or shallow concentrated flow) as the only best management practice that can provide all of the following benefits:

- Reduced effects of storm events: Mature riparian forest buffers that are sufficiently wide can slow the speed and reduce the volume of surface runoff from upland areas. The spongy floor of a riparian forest buffer along a pond, lake, or reservoir slows the affect of direct precipitation and runoff from areas adjacent to the riparian forest buffers. This protects stream channel beds and banks from powerful flash flooding that can scour and erode the channel. It also protects lake shorelines from erosive forces during large storms events and flooding.
- Infiltration and maintenance of streamflow: Riparian forest buffers slow overland runoff allowing for infiltration of surface water that helps to maintain base flow in streams and rivers.

- **Filtration and processing of pollutants in runoff:** Runoff containing pollutants such as sediments, nutrients, pathogens, and toxics from rooftops, streets, lawns, farm fields, and parking lots can flow into a riparian forest buffer from the area up grade and be considerably cleaner when it enters the perennial or intermittent stream, lake, pond, or reservoir. (Mayer et al. (2007); Peterjohn and Correll (1984), Lowrance et al. 1984, Jordan et al. (1993), Clement et al. (2003), and Vidon and Hill (2004). The floor of the riparian forest buffer soaks up the water and makes pollutants contained in it available for processing into less harmful forms. Trees in a riparian forest buffer, their fallen leaves and the plants and animals that live on, in, and under the trees form an ecosystem that is capable of processing pollutants such as sediments, nutrients, and toxics in the water that passes through the riparian forest buffer as sheet flow. The tree roots can also remove pollutants from shallow groundwater flowing beneath the forest floor to the waterbody. The leaves of native trees in the riparian forest buffer that wash into the stream serve as a rich food source for benthic macroinvertebrates which are capable of in-stream pollutant processing (Sweeny et. al., 2007).
- **Streambank and shoreline stabilization:** The canopy of a mature riparian forest buffer collects water and protects the ground below in storm events. The rain water also tracks along the trunk of the large trees before reaching the ground. This reduces the force of the water as it reaches the forest floor. The root network of the riparian forest buffer is tightly intertwined and binds soil particles together increasing the strength of the soil matrix, securing against the forces of both direct precipitation and stormwater runoff from areas surrounding the riparian forest buffer. This enhances streambank and lake shoreline stability, which are important for reducing soil and property loss from the bank or shore, reducing sediment input to the waterbody, and maintaining overall channel stability. Mature trees also protect lakeshores from wave action (Wenger et. al. 1999)
- **Light control and water temperature moderation:** A riparian forest buffer lowers light levels in the streambank or shoreline area of a waterbody that inhibits the growth and production of harmful algae and helps maximize stream width by shading out grasses. The shading that a riparian forest buffer provides helps to lower water temperatures in summer and moderates harsh winter temperatures by trapping back-radiation . Both light control and water temperature moderation maximize dissolved oxygen content in lake and stream waters and increase the amount of in-stream pollutant processing (Sweeney at. Al. 1993).
- **Flood attenuation:** Riparian forest buffers provide space for channel meanders, stream movement, and floodwaters to spread out horizontally. This dissipates stream energy and protects channel stability and shoreline integrity in receiving waterbodies. The spongy floor of a riparian forest buffer along a pond, lake, or reservoir slows the affect of direct precipitation and runoff from areas adjacent to the riparian forest buffers and protects shorelines during floods.
- **Ice damage control:** Riparian forest buffers along streams and rivers trap ice slabs during spring breakup, reducing the potential of jamming at downstream constrictions. Jamming can result in backwater and flooding upstream, which can lead to channel instability. Mature riparian forest lakeshore buffer zones are able to absorb the pressures of mid-winter ice push, protecting upland development from ice damage (Northwest Regional Planning Commission, 2004).

Further, a review of scientific literature on the subject emphasizes that many site specific factors influence the efficiency of a riparian forest buffer in providing the benefits outlined above, but there is general agreement that wider buffers are more effective. A minimum width of 150 feet and the type of vegetation, primarily native trees and shrubs, has been firmly established by scientific studies as providing substantial ecological benefit (Mayer et. al , 2007 and Wenger, 1999).

Scientific literature also supports a “zoned” approach to the composition of newly established riparian forest buffers (Palone et al. 1997 and Welsch, 1991). Zone 1, being directly adjacent to the waterbody and consisting primarily of native trees, is most critical to the ecological health of the waterbody by providing bank stability, thermal moderation, aquatic and terrestrial habitat, and an energy source to maintain a stable ecological community. Zone 2, consisting of native trees and shrubs, provides opportunity for significant sequestration and trapping of overland and subsurface pollutants as well as maximizing habitat potential for a variety of aquatic and terrestrial species.

Zone 1 or, at a minimum, the first 50 feet of a riparian forest buffer, directly adjacent to the stream, river lake, pond, reservoir or impoundment should remain essentially “untouched”. Some limited management of forest resources may occur in Zone 2. Activities within the riparian forest buffer must be limited so as to maintain its integrity and functions.

Newly established riparian forest buffers will be managed for a period of at least five years, during which time the following are used: a planting plan that identifies the number, density and species of native trees and shrubs that are appropriate to the geographic location and will achieve 60 % uniform canopy cover; measures to ensure protection from competing plants and animals including noxious weeds and invasive species; an inspection schedule with measures identified and implemented to ensure proper functioning of the riparian forest buffer.

Management involves the maintenance and monitoring of a newly established or existing riparian forest buffer. The most critical period after establishing a riparian forest buffer is the time spent maintaining the trees until their growth gives adequate shade to control weed competition. Ongoing maintenance and monitoring practices are necessary for at least 5 years to ensure establishment of a thriving riparian forest buffer, especially if smaller seedling plant material has been used. Even where large plants are involved, deer browse, invasion by exotic plant species and competition by forbs will be a continuing problem. Maintenance and monitoring plans should be written for the specific site.

Invasive plants have characteristics that make them extremely threatening to the survival of a new riparian forest buffer. Noxious weeds are not necessarily invasive plants; they are plants that have proved to be a significant threat to agriculture, human health or the environment, thereby earning the designation of noxious weed from the Pennsylvania Department of Agriculture.

Invasive plants and noxious weeds need to be controlled because they pose a threat due to their ability to spread aggressively, reproduce prolifically and are very difficult to control once established. Invasive plants can overrun native vegetation and prevent the long-term sustainability of native riparian vegetation. Non-native species can diminish the pollution

prevention capacity of a vegetated riparian forest buffer significantly and also degrade the habitat for wildlife (Sweeney et.al. 1993).

Controlling noxious weeds and invasive plants as soon as the plants are noticed (preferably before they bloom and the seeds are released) can be more cost effective than waiting one or more years when the invasive plants and noxious weeds are already established.

The five year management period begins when planting of a riparian forest buffer is complete and ends when 60% uniform canopy cover is achieved which should be within 5 years of establishment. The riparian forest management plan should continue to be implemented until 60 % uniform canopy cover is achieved. 60% uniform canopy cover is achieved when an area of ground shaded by a vertical projection of the leafy crown of predominantly native shrubs and trees reaches 60% throughout the riparian forest buffer.

A sample riparian forest buffer management plan and methodology for determining percent canopy cover can be found in DEP's Riparian Forest Buffer Guidance (Document No. 394-5600-001).

Compliance Costs

Note: Where possible, the Department has attempted to determine, quantify and calculate the dollar value for the costs, savings and benefits attributable to the rule based on available information on the environmental impacts, social costs, economic impact analysis, and benefit analyses. However, not all of the costs, savings, and benefits can be readily quantified.

Note: In order to estimate the potential cost to the regulated community, local and state governments, the total number of permits processed by the Department over the three year period of 2006 – 2008 was examined and broken into each of the three categories. It was determined that over that three year sample, the regulated community performed 80%, local governments 12% and state government 8% of the permitted earth disturbance activities in the Commonwealth.

These regulatory revisions should not result in significant increased compliance costs for persons proposing or conducting earth disturbance activities. Moderate increased costs may be incurred due to: increased permit application fees for activities requiring permits; PCSM Plan licensed professional oversight and preparation of record drawings; and long-term operation and maintenance of PCSM facilities.

Generally, there will be cost savings as a result of eliminating outdated and unnecessary requirements, while increasing the protection of Pennsylvania's valuable water resources. Additionally, the emphasis in the proposed rulemaking on non-structural "low-impact" stormwater management approaches should result in lower construction costs and long-term operation and management costs.

The regulations will apply to any individuals or entities seeking authorization to perform activities regulated under Chapter 102.

Existing Regulations

It is difficult to assess the ultimate cost of compliance because projects vary greatly in size, scope and purpose. Additionally, land developers have discretion when choosing BMPs to control stormwater both during and after construction. The choices include, fairly high cost traditional BMPs, as well as lower cost “low-impact” BMPs, which are encouraged in this final-form rulemaking. The choice remains with the land developer.

Cost-bearer	Expenditures	Annual Approx Value	Source
Municipalities	Administrative	\$24,720	NPDES IP
		\$79,110	GPs
	Total	\$103,830	
Private	Administrative	\$164,800	NPDES IP
		\$527,400	GPs
	Total	\$692,200	
Commonwealth	Administrative	\$16,480	NPDES IP
		\$52,740	GPs
	Total	\$69,220	
	TOTAL	\$219,375	

The annual approximate value for NPDES Stormwater Construction Permits noted in the above chart is based on a three year (2006 – 2008) average of permit fees collected and reported in eFACTS and by conservation districts.

Proposed Regulations

Cost-bearer	Expenditures	Annual Approx Value	Source
Municipalities	Administrative	\$74,160	NPDES IP
	Administrative	\$158,220	GPs
	Administrative	\$676,400	Disturbance Fee
	Total	\$908,784	
Private	Administrative	\$494,400	NPDES IP
	Administrative	\$1,054,800	GPs
	Administrative	\$4,509,400	Disturbance Fee
	Total	\$6,058,560	
Commonwealth	Administrative	\$49,440	NPDES IP
	Administrative	\$105,480	GPs
	Administrative	\$450,900	Disturbance Fee
	Total	\$605,856	
TOTAL		\$7,573,200	

The additional costs in the proposed revisions to the regulations are for increased permitting fees and the addition of a Disturbance Fee. The annual approximate value noted in the above chart is based on an average of three years (2006 – 2008) of activities performed by the Department and the new fee applied to each activity.

Commonwealth

The proposed revisions to the regulations may add approximately \$605,856 in additional costs but will provide revenue of \$7,573,200 for state government annually associated with the Chapter 102 E&S Control Program. These estimates were calculated utilizing a three year average of activities conducted by the Chapter 102 E&S Control Program and projecting these averages with an associated activity cost due to the proposed regulations.

The proposed rulemaking ensures protection and maintenance of environmental quality and should reduce costs to the state and local governments as a result of savings from reduced sediment loadings, reduced in-stream pollutant concentrations, and reduced pollution associated with changes to stream flow volume, and velocity. The rulemaking will also result in savings from BMPs that reduce flooding potential and associated flood damage.

Municipal

This proposed rulemaking is a codification of existing requirements and therefore only minimal costs associated with increased permit fees are anticipated for local government.

The proposed revisions to the regulation will add approximately \$804,954 in additional costs associated with the Chapter 102 E&S Control Program (the difference between \$103,830 (\$24,720 NPDES IP plus \$79,110 NPDES GP) in existing fees to \$908,784 in proposed new fees (\$74,160 base NPDES Stormwater Construction IP fee plus \$158,220 NPDES GP plus \$676,400 disturbance fee) to local governments annually. The Department does not anticipate that conservation districts delegated the administration of the program will experience any decrease in revenue based from fees under this rulemaking. In addition, conservation districts could supplement these revenues with their own review fees. The Conservation District Fund Allocation Program (CDFAP) also provides revenue to conservation districts to partially cover the cost of technical positions to implement the program.

Local governments may realize reduced water treatment costs (as a result of reduced sediment and in-stream pollutant loadings); reduced infrastructure maintenance costs (due to reduced stormwater volumes); and reduced costs associated with flooding potential (due to stormwater management practices that reduce or eliminate flood potential); however, specific cost savings to be realized as a result of this rulemaking are difficult to establish with any certainty and are therefore not identified in this analysis.

This rulemaking reflects a continuing commitment to integrate regulatory requirements with other stormwater management obligations including requirements pursuant to Act 167-Stormwater Management Act and the NPDES Municipal Separate Storm Sewer Systems (MS4) program. Local governments with state Act 167 or NPDES MS4 regulatory obligations may rely on the regulatory structure for baseline requirements provided by this rulemaking. This reliance on existing state stormwater programs can represent a significant cost savings to local governments in the form of baseline requirements for E&S control, PCSM and riparian buffer implementation.

Private Sector

The cost/benefit to the five largest affected industries with the new Chapter 102 E&S Control regulations cannot be addressed since E&S and NPDES are not reoccurring authorizations, nor are they limited to a certain type of industry or project, and identifying affected corporations is not possible.

This rulemaking is primarily a codification of existing requirements and therefore costs associated with increased permit fees, as-built drawings, and on-site licensed professionals have been considered as potential new costs. Sustainable, natural BMP options that provide lower costs for the regulated community are encouraged. Ultimately the costs and impacts associated with this rule are decided by the person undertaking the activity and their design professional through the design choices they make. The rule requires that a licensed professional regularly inspect the implementation of critical stages of BMP construction and submit a certification that the BMP is properly constructed. This certification will acknowledge that the BMPs have been properly constructed and are in working order and therefore there will be an improved expectation of optimal performance for the long-term operation. As every project varies in size, scope, and design choice, it is difficult for the Department to calculate what a definitive cost will be to the regulated community. The Department is providing the following estimates for time

and costs associated with record drawings (2-16 hours) and licensed professional monitoring of critical stages of construction (0-70 hours). The Department calculated the cost for inspection of critical stages and certification of BMP implementation by simply using an average cost for monitoring and certification of \$80 per hour for routine monitoring by a designee of a licensed professional, and a cost of \$115 per hour for the licensed professional services. Each of these services were multiplied by the average of the estimated number of hours for each of the services provided: 35 hours for oversight and 8 hour for certification. The resulting value of \$2,800 for monitoring and \$920 for certification was then multiplied by the average number of permitted activities (2,463 per year) which was derived from program data. The result for average estimated cost for the regulated community is \$9,162,360. Again, the costs incurred by a permittee for these new requirements are in direct relation to the type of design chosen for the project. While this is a cost to the regulated community, it also provides benefits of increased assurance that the BMPs will perform as designed thereby providing the desired level of environmental protection or improvement.

The proposed revisions to the regulation will add approximately \$5,366,360 in additional costs associated with the Chapter 102 E&S Control and NPDES Stormwater Construction Programs (the difference between \$692,200 (\$164,800 NPDES IP plus \$527,400 NPDES GP) in existing fees to \$6,058,560 in proposed new fees (\$494,400 base NPDES Stormwater Construction IP fee plus \$1,0547,800 NPDES GP plus \$4,509,400 disturbance fee) to the private sector annually. The new fees for the Chapter 102 E&S Control Program will close the cost deficit for the administration of the program. Fee schedules have not been updated since 2000 when there was no per acre of earth disturbance fee for NPDES Stormwater Construction Permits and fees were \$250 per permit for General Permits (GP), and Individual Permit (IP) fees were \$500 per permit. In an effort to reduce the deficit between funds generated and expenditures required to manage the program, this final rulemaking sets permit fees as follows: a base administration fee for General Permits of \$500 per permit or an Individual Permit fee of \$1500 per permit, plus a per acre earth disturbance fee of \$100 for all permit applications. The fees were developed based on the number of permits issued and number of acres disturbed per permit over the last three years. In addition, implementation costs were calculated based upon projected administration, review, and implementation time for the program. A more detailed analysis can be found in the Fee Report Form. It should be noted that even though these increases will affect the regulated community, they still will not cover the total Department expenditures required to implement the program.

Potential Riparian Forest Buffer Costs

Land development activities change natural features of the land and alter stormwater runoff characteristics. The resulting alterations of stormwater volume, rate and water quality which can cause stream bank scour, stream destabilization, sedimentation, loss of groundwater recharge, loss of base flow, localized flooding, habitat modification and water quality and quantity impairment, which constitute pollution as that term is defined in the Pennsylvania Clean Streams Law, 35 P.S. Section 691.1. Riparian buffers, particularly riparian forest buffers play a vital role in mitigating the effects of stormwater runoff from land development activities. The Department proposes to revise the buffer section to expand buffers in all special protection watersheds and to restore water quality in impaired waters. The final rule includes mandatory riparian buffers for activities permitted under Chapter 102 when the project is located along Exceptional Value or High Quality waters. Specifically, protection of existing riparian buffers along Exceptional

Value and High Quality waters where the waters are attaining their designated uses and riparian forest buffers where Exceptional Value or High Quality waters are impaired. The mandatory obligation to maintain and protect a 150 foot riparian buffer will be required when the project site contains, is along or within, 150 feet of a river, stream, creek, lake, pond or reservoir, and located in:

- An EV watershed meeting its designated use at the time of application, or
- A HQ watershed meeting its designated use at the time of application.

In addition, a mandatory obligation to establish and protect a new riparian forest buffer when the project site contains, is along or within, 150 feet of a river, stream, creek, lake, pond or reservoir, where no riparian forest buffer currently exists and is located in:

- An EV watershed that is listed as impaired at the time of the application; or
- An HQ watershed that is listed as impaired at the time of application.

Exceptional Value and High Quality waters are afforded the greatest degree of protection under the Department's existing regulations at Chapter 93 (Water Quality Standards). Based on the scientific data, riparian buffers are one of the most effective stormwater management BMPs for protecting aquatic resources.

The potential costs related to the riparian forest buffer requirements in the rulemaking have been calculated by considering how much it could cost to establish a new buffer where no buffer exists as well as enhancing or maintaining an existing buffer. Recognizing that a number of possibilities need to be considered when quantifying total costs that may be experienced when establishing riparian forest buffers throughout the Commonwealth, dollars per acre of riparian forest acre established can range from \$385 to \$4,723 per acre. The minimum estimate is based on the cost of planting 110 (12 – 18 inch) hardwood trees spaced 20 feet apart at \$3.50 per tree as a minimum to establish a riparian forest buffer. The maximum potential cost is based on planting 435 (12 – 18 inch) hardwood trees ten feet apart at \$3.50 per tree as well as removal of invasive species (\$200 per acre), reinforcement planting (\$175 per acre), seedling protection (\$2,175 per acre), competition control such as herbicides and mowing (\$650 per acre) altogether could cost as much as \$4,723 per acre. However, it is most likely that actual establishment of riparian forest buffers will be less than the maximum estimate due to the variety of conditions in the field. It is also possible that riparian forest buffers already exist where projects may fall within the requirements of this part of the rulemaking. The cost would be \$0 per acre where this is the case. The Department has estimated potential cost to establish riparian forest buffers on a per acre basis. However, it is nearly impossible to determine the number and size of projects that will occur within Impaired HQ and EV watersheds requiring establishment of riparian forest buffers, therefore no estimates of total acres are included.

Potential Riparian Forest Buffer Savings

The potential savings that will result from the development of riparian forest buffers are likely to be experienced through the increase of property values resulting from riparian forest buffers being installed in the Commonwealth along Impaired EV and HQ streams as a result of this rulemaking. Establishing a riparian forest buffer is expected to increase property values at least \$19,104 per acre (adjusted for inflation). This estimate is based on the 1988 Burby study which

examined 10 programs throughout the U.S. that diverted development away from flood-prone areas.

Although the mandatory riparian forest buffer requirement for permitted projects located in exceptional value and high quality watersheds is new, this requirement should not necessarily result in substantial new or increased costs to the regulated community.

Riparian forest buffers may result in a savings when compared to structurally engineered non-discharge BMPs. Additionally, the installation of riparian forest buffers has been shown to increase property values by 5% to 25%, increase and protect water quality and decrease the necessity and cost of restoring impaired waters.

According to EPA estimates, available data regarding Post Construction Stormwater can be found in national studies developed by the EPA and others; however, it would not be accurate to infer potential costs and savings for the Commonwealth based on National Studies due to the extreme variability of conditions, size of projects and state requirements. According to EPA estimates in the *Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations*, estimated post construction **costs** were \$56,122,317 to \$227,040,284 (adjusted for inflation) nationwide annually. This estimate was based on an average costs for PCSM BMPs on project sites of one, three, five and seven acres. Annual **benefits** of the PCSM requirements by EPA in the *Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999/Rules and Regulations*, indicate a potential annual benefit of the Phase II Storm Water Rule to be approximately \$131,000,000 to \$410,200,000 nationally, after Erosion and Sediment Control benefits were removed from the EPA total benefit estimate.

Assumptions

If the average of the estimated activities performed by the Department exceeds the estimated numbers, the Commonwealth could have a significant benefit to the new regulations because the fees collected will be more than the estimated values. If the average of the estimated activities performed by the Department does not exceed the estimated numbers, the Commonwealth could have a significant loss to the new regulations because the fees collected will not be more than the estimated values.

These regulatory revisions will result in moderate compliance costs for persons proposing or conducting earth disturbance activities. Moderate increased costs may be incurred due to: increased permit application fees for activities requiring permits; PCSM Plan licensed professional oversight and preparation of record drawings; and long-term operation and maintenance of PCSM facilities.

Generally, there is an anticipated cost savings as a result of the eliminating outdated and unnecessary requirements, while increasing the protection of Pennsylvania's valuable water resources. Additionally, the emphasis in the proposed rulemaking on non-structural "low-impact" stormwater management approaches should result in lower long-term operation and management costs.

Compliance Assistance Plan

The regulated community will be notified of all fee changes by public notice in the *Pennsylvania Bulletin*.

The Department assists the regulated community in complying with these regulations through technical and educational assistance, largely provided in partnership with county conservation districts. These efforts have resulted in local community based initiatives that stimulate awareness and achieve regulatory compliance. Department staff has worked with conservation districts to develop and enhance their professional abilities for effective administration of the program. The development of compliance strategies that focus on negotiation, total quality management, mediation, and professional development, has greatly enhanced the Department's ability to protect this Commonwealth's water resources. County conservation district staff provide an efficient and effective local source of assistance as well as an efficient mechanism for the protection of valuable resources. Evaluations of district performance have shown that district staff can provide a quick response to process, review, and acknowledge permit applications.

By involving advisory committees in the development of these regulations, and pursuing initiatives with the regulated community and various other stakeholders, the Department's outreach efforts have allowed stakeholders to work together with regulators to work towards the goal of protecting water quality and the aquatic environment through E&S and stormwater management efforts. Involvement of the public and the regulated community in the development of these regulations fosters subsequent compliance with standards and practices developed as a result of these efforts, and are an important form of compliance assistance.

The Department assists the regulated community with compliance by its development of technical guidance documents, standard checklists, worksheets and permit review letters to aid persons responsible for earth disturbance activities and their plan designers in developing sound pollution prevention plans. The Department also assists compliance by assuring that Department and district reviews are timely, effective, and consistent. Finally, the regulations incorporate a performance-based approach, which allows persons conducting earth disturbance broad latitude and flexibility in designing BMPs to achieve compliance.

Finally, the effective date of this final rulemaking will be 90 days after the publication in the *Pa Bulletin* so that the Department may provide the necessary training, compliance assistance, guidance, and other information necessary to comply with the final form rule.

Paperwork Requirements

The majority of the revisions to this proposed rulemaking are codifications of existing requirements, therefore only minor changes to forms, fact sheets, and technical guidance are anticipated.

G. Pollution Prevention

Chapter 102 prevents sediment and stormwater pollution to surface waters of this Commonwealth from earth disturbance activities through a tiered regulatory framework built upon BMP requirements. The Chapter covers both agricultural and non-agricultural earth disturbance activities, with distinct regulatory requirements for these two broad categories. Regardless of the category, all earth disturbance activities must utilize BMPs to minimize

accelerated erosion and sedimentation for the duration of earth disturbance activities. Additionally, some earth disturbance activities require preparation of a written E&S Plan. Finally, earth disturbance activities exceeding specified acreage thresholds may trigger the requirement to obtain permit coverage, which in turn includes the obligation to prepare and implement a written PCSM Plan.

The rulemaking will improve protection from earth disturbance activities not only through the inclusion of PCSM requirements, but also through the addition of the riparian forest buffer provisions, which are one of the most effective and sustainable BMPs for protecting, maintaining, reclaiming and restoring surface waters of this Commonwealth.

Effective pollution prevention also requires robust inspection, oversight, and enforcement authority, which are retained and enhanced in this rulemaking. The proposed rulemaking adds requirements such as: mandatory pre-construction meetings; licensed professional documentation requirements; and a program audit provision to verify the environmental protection and effectiveness of the permit-by-rule.

H. Sunset Review

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

I. Regulatory Review

Under Section 5(a) of the Regulatory Review Act (71 P.S. §745.5(a)), the Department submitted a copy of the proposed rulemaking on _____ to the Independent Regulatory Review Commission (IRRC), and the Chairpersons of the Senate and House Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed regulatory analysis form prepared by the Department. A copy of this material is available to the public upon request. If IRRC has objections to any portion of the proposed amendments, it will notify the Department within 30 days of the close of the public comment period. The notification shall specify the regulatory review criteria, which have not been met by that portion. The Regulatory Review Act specifies detailed procedures for review by the Department, the Governor, and the General Assembly before final publication of the regulation.

J. Findings of the Board

The Board finds that:

(1) Public notice of proposed rulemaking was given under Sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder at 1 Pennsylvania Code §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law, and all comments were considered.

(3) These regulations do not enlarge the purpose of the proposal published at 39 Pa.B. 5131 Pennsylvania Bulletin (Saturday, August 29, 2009).

(4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this order.

K. Order of the Board

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department of Environmental Protection, 25 Pennsylvania Code, Chapter 102, are amended to read as set forth in Annex A.

(b) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this order and Annex A to the Independent Regulatory Review Commission and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.

(e) This order shall take effect immediately.

BY:

JOHN HANGER
Chairperson
Environmental Quality Board