Environmental Permitting Handbook

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DEPARTMENT OF TRANSPORTATION
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PREFACE

This guidance document is a reference for understanding, completing, and executing earth disturbance and waterway permit submissions as dictated by the requirements of the state and federal regulations. Each transportation project will vary; therefore, each permit should be considered on a case-by-case basis.

The procedures described in this handbook are provided for guidance only, and are not a legal interpretation or regulations. This document establishes the framework within which the Pennsylvania Department of Transportation (PennDOT) will exercise its administrative discretion in the future. PennDOT reserves the discretion to deviate from this guidance if circumstances warrant. This guidance is for informational purposes only; it is not regulatory.

SECTION I - Introduction

PennDOT has developed this permitting handbook to provide a background, overview, and overall understanding of earth disturbance and waterway permits. This handbook focuses on PennDOT transportation projects and is presented from that perspective. While this handbook may be a useful tool for some private sector projects that require permits, the primary intent of this handbook is to cover transportation-related projects. Additionally, this handbook does not supersede permit regulations or application instructions established by the Pennsylvania Department of Environmental Protection (PADEP) or other regulatory agencies.

The goals of this manual are to:

- Improve comprehension of the laws, regulations, policies, and procedures related to earth disturbance and waterway permits;
- Unify the PennDOT Connects system and the permitting process;
- Provide guidelines for preparing earth disturbance and waterway permits in a consistent manner;
- Streamline the PennDOT permitting processes; and
- Provide a framework for the coordination of information between agencies, PennDOT, consultants, and others on environmental permits.

A glossary of relevant terms is provided in **Appendix A**. A list of acronyms used in the manual can be found in **Appendix B**. **Appendix C** contains contact information for the various regulatory agencies mentioned in this manual.

Please Note: The use of "waterway permits" in this manual refers to permits required to affect surface waters of the U.S. and of the Commonwealth of Pennsylvania. It does not include permits relating to waste water, underground tank removal, illicit discharges, spill containment, or spill response.

CHAPTER 1: Regulations

In Pennsylvania wetlands, rivers, streams, and lakes, collectively referred to as waterbodies, and activities affecting waterbodies are regulated by the state and usually also the federal government. The following laws, regulations, executive orders, policies, and agreements are applicable to PennDOT highway operations.

Federal Regulations

Under the U.S. Constitution, the federal government is charged with protecting and promoting interstate commerce. The federal government has established regulatory programs to restore and maintain the physical, chemical, and biological integrity of navigable waters, their tributaries, and other waters that support interstate commerce. Federal regulations protect essentially all surface waters with a direct connection to navigable waters, including their tributaries and wetlands. Certain wetlands and waters may also be regulated if they significantly affect the water quality of navigable waters. Collectively these aquatic resources are referred to as Waters of the United States (WOTUS). The primary federal statutes that establish this regulatory program include:

Federal regulations protect essentially all surface waters with a direct connection to navigable waters, including their tributaries and wetlands.

- **Rivers and Harbors Appropriation Act of 1899 (RHA) –** Gives the United States Army Corps of Engineers (USACE) and the U.S. Coast Guard (USCG) the authority to regulate navigable waters.
  - ❖ **Section 9 of the RHA –** Requires USCG authorization for the construction of a bridge, dam, dike, or causeway over or in navigable waters in order to ensure that interstate and foreign commerce on navigable waters remains unimpeded.
  - ❖ **Section 10 of the RHA –** Requires USACE authorization for the placement of any structure or fill into navigable waters. Consequently, federally-designated navigable waters are often called Section 10 Waters. A map of the Section 10 Waters within Pennsylvania is provided in Appendix D.
  - ❖ **Section 14 of the RHA –** Allows for other entities beyond the USACE to alter, occupy, or use USACE civil works projects so long as the proposed alterations are not injurious to the public interest or affect the civil works project's ability to meet its authorized purpose. This means that the USACE has the authority to review, evaluate, and approve all alterations to federally authorized civil works projects to make sure they are not harmful to the public and still meet the project's intended purposes mandated by congressional authorization. This regulation is also referred to as Section 408 of the United States code.
- **Clean Water Act (CWA) –** Gives the USACE permitting authority over WOTUS.
  - ❖ **Section 401 of the CWA –** Authorizes federal agencies to issue permits to discharge into WOTUS only where the state certifies that the discharge will comply with the state's water quality standards. In Pennsylvania, a Section 401 Water Quality Certification (401 WQC) is included with the PA Chapter 105 permit (see State Regulations below for an explanation of Chapter 105) issued by the PADEP. Section 404 permits from the USACE for activities that are not also covered by a Chapter 105 permit are not valid until PADEP issues a separate Section 401 WQC.
  - ❖ **Section 402 of the CWA –** Section 402 of the Clean Water Act requires that all construction sites with a disturbance of an acre or greater of land discharging stormwater directly from a point source (a pipe, ditch or channel) into a surface water of the United States (a lake, river, and/or ocean) must obtain permission under the National Pollutant Discharge Elimination System (NPDES) permit.

- ❖ **Section 404 of the CWA –** Regulates the discharge of dredged or fill material into all WOTUS, including jurisdictional wetlands, by establishing a permit program administered by the USACE. Guidelines authorized in Section 404(b)(1) establish a process for evaluating permit applications that aims to avoid and minimize impacts to waterbodies to the extent practicable. These guidelines can be found in 40 CFR § 230. Placement of fill into WOTUS requires USACE authorization. Permanent impacts to WOTUS must be offset with compensatory mitigation.
- ❖ **Section 404(f) of the CWA –** Exempts several categories of projects from federal permitting requirements, including maintenance and repair activities on currently serviceable transportation facilities (bridges, culverts, approaches, etc.). The USACE will determine when a project qualifies for a Section 404(f) exemption on a case-by-case basis.

- **National Environmental Policy Act of 1969 (NEPA) –** Requires all federal agencies to fully consider the environmental impact of projects that they sponsor or fund. Compliance with NEPA is required prior to issuing a federal permit. Common steps to ensure NEPA compliance include documentation of the extent of environmental resources in the project area, avoidance and minimization of impacts, analysis of the effects of unavoidable impacts, and details about potential compensatory mitigation.
- **Executive Order 11990 –** Requires all federal agencies to develop rules to ensure that their projects (including projects they fund) minimize impacts to wetlands.
- **Section 106 of the National Historic Preservation Act –** Requires federal agencies to consider the effects of projects on historic properties and provides the Pennsylvania Historical and Museum Commission (PHMC)/ State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation, consulting parties, and the public an opportunity to comment on the proposed project. Its regulations are located at 36 CFR Part 800. This act is triggered if a Section 404 or other federal permit is required.
- **Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 66 et seq) –** Protects fish and wildlife when federal actions result in the control or modification of a natural stream or body of water. It authorizes the involvement of the U.S. Fish and Wildlife Service (USFWS) in evaluating impacts to fish and wildlife from activities proposed in waterbodies.
- **Executive Order 13175 –** Establishes regular consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the "government-to-government relationship between the U.S. and Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes."
- **USACE Permit Regulations (33 CFR 320-332) –** Specifies the procedures and criteria for the issuance of Section 404 permits.
- **U.S. Environmental Protection Agency (EPA) Regulations (40 CFR Part 122) –** Specifies the procedures and criteria for the issuance of NPDES permits.
- **USCG Regulations (23 CFR 650A) –** Subpart H, Sections 805 through 807 outline USCG coordination for bridges over navigable waterways.
- **Wild and Scenic Rivers Act -** Preserves certain rivers of the nation that possess outstandingly remarkable scenic, recreational, geological, fish and wildlife, historic, cultural, or other similar values in free-flowing condition. Furthermore, their immediate environments shall be protected for the benefit and enjoyment of present and future generations.

Additionally, there have been several United States Supreme Court decisions regarding the limits of federal jurisdiction over waterbodies. Refer to the Wetland Resources Handbook (PUB 325) for further details regarding current case law and a discussion of jurisdictional limits.

State Regulations

State laws protecting waters and wetlands are broader in scope than the federal laws. The state government is charged with protecting public safety, personal property, and natural resources. State regulations protect Waters of the Commonwealth (WOC), which include essentially all watercourses, floodways, and bodies of water within Pennsylvania. Regulated watercourses in Pennsylvania include rivers and streams, and any channel with perennial or intermittent flow, whether natural or artificial. Regulated bodies of water include natural or artificial lakes, ponds, reservoirs, swamps, marshes, and wetlands. The primary statutes that established this regulatory program include:

State regulations protect Waters of the Commonwealth (WOC), which include essentially all watercourses, floodways, ponds, lakes, wetlands, and vernal pools within PA.

- **Pennsylvania Clean Streams Law –** Establishes the state's authority to regulate any activity that creates a danger of pollution or that must be regulated to avoid pollution. The law provides PADEP with additional regulatory and enforcement authority for its Chapter 105 permitting program.
- **25 PA Code Chapter 92a –** Provides the baseline regulatory requirements for PADEP's implementation of the federal NPDES program. This includes NPDES permit conditions, implementation, monitoring, and compliance requirements.
- **25 PA Code Chapter 102 –** Sets forth the requirements for construction activities which includes the development of erosion and sediment (E&S) pollution control and post-construction stormwater management plans. Specifically, Chapter 102 "requires persons proposing or conducting earth disturbance activities to develop, implement and maintain best management practices (BMPs) to minimize the potential for accelerated erosion and sedimentation and to manage post construction stormwater. The BMPs shall be undertaken to protect, maintain, reclaim and restore water quality and the existing and designated uses of waters of this Commonwealth."
- **25 PA Code Chapter 105 –** These regulations grew out of the Pennsylvania Dam Safety and Encroachments Act of 1978 and establishes the state's authority to regulate dams, water obstructions, and encroachments located in watercourses, waterbodies (including wetlands), and floodways. Any activity that affects the course, current, or cross section of a watercourse, floodway, or body of water and any structure located in, along, across, or projecting into a watercourse, floodway, or body of water requires a PA Chapter 105 permit from the PADEP.
- **Pennsylvania Act 120 of 1970 –** Establishes PennDOT and requires the agency to fully consider the environmental impact of projects that are considered transportation routes or programs and require the acquisition of new or expanded rights-of-way (ROWs). Stream and wetland resources are included.
- **Pennsylvania Floodplain Management Act of 1978 (Act 166) –** Establishes state floodplain management regulations affecting development in Pennsylvania, including permitting requirements for highway obstructions and other state-owned obstructions located within floodplains. These requirements are typically addressed as part of the PA Chapter 105 permitting process.
- **Storm Water Management Act –** Known as Act 167, this law requires counties to develop stormwater management plans (SMP) for each watershed within their county. The purpose of this Act is to manage stormwater runoff in order to preserve and restore the flood carrying capacity of streams (thereby reducing flooding), preserve the hydrologic balance of the watershed, and protect and conserve groundwater resources and groundwater recharge areas. Any project funded by the Commonwealth must be conducted in a manner consistent with the Act 167 plan that has been approved by PADEP.

- **PA Scenic Rivers Act –** Protects certain rivers that possess outstanding aesthetic and recreational values in relation to their designation. Designations include wild, scenic, pastoral, recreational, and modified recreational.
- **Act 162 – Riparian Buffers –** Amends the Pennsylvania Clean Streams Law to address buffer requirements in Pennsylvania regulations found in 25 Pa Code Chapter 102. The amendment pertains to individual NPDES permit applications for Stormwater Discharges Associated with Construction Activities.

CHAPTER 2: Agencies

Permitting Agencies

Section 10 of the RHA and Section 404 of the CWA are administered by the USACE. The USACE has permitting authority for projects that propose encroachments into WOTUS. The EPA is involved in developing policy for the Section 404 program and has concurrent jurisdiction with the USACE to enforce it.

PA Chapter 105 permits and Section 401 WQCs are administered by PADEP. WQC by the state is required by Section 401 of the CWA for any project requiring a federal permit for a discharge into WOTUS. 401 WQC is integrated into the permitting process in Pennsylvania; separate 401 WQC is not required for transportation projects that require a Chapter 105 permit unless using the integrated NEPA/404 process. The integrated NEPA/404 Process is discussed in PUB 10, Design Manual Part 1, Chapter 10.

In Pennsylvania, the Pennsylvania State Programmatic General Permit-5 (PASPGP-5) is a delegation agreement between PADEP and the USACE that allows PADEP to attach federal authorization for projects falling below set impact thresholds. This limits duplication of effort when permitting structures and activities in WOC. PASPGP-5 provides a way to include state and federal authorizations in one permit for qualifying projects.

In some counties, PADEP has delegated authority under the Chapter 105 program to County Conservation Districts (CCDs). In these counties, the conservation districts are responsible for reviewing and authorizing certain Chapter 105 permits.

A USCG permit may be needed for certain projects involving bridges over federally-designated navigable waters. The Federal Highway Administration (FHWA) is responsible for determining when a USCG permit is required. A USCG permit is required for bridges on (1) tidal waters that pass vessels larger than 21 feet and (2) waters used for interstate or foreign commerce. For state-designated navigable waters, PADEP is the lead agency.

The NPDES program is administered either by the EPA or by the state that has been delegated the authority to administer the program. PADEP administers the NPDES program in Pennsylvania, and PADEP works in conjunction with most of the CCDs to manage the NPDES program. PADEP and the CCDs jointly regulate construction activities utilizing existing state regulations concerning erosion control and NPDES permits to implement the federal requirements.

Note that PennDOT has a Memorandum of Understanding (MOU) in place with PADEP and an Interagency Agreement with USACE regarding permit reviews. Within PADEP and USACE, there are several staff positions that are dedicated to the priority review of PennDOT projects. These dedicated positions are funded under Section 1307 of the Moving Ahead for Progress in the 21st Century Act (MAP-21) in the case of PADEP and Section 1312 of the Fixing America's Surface Transportation (FAST) Act for USACE, both of which allow the use of Title 23 reimbursement funding.

Project location and type of activity will determine which agencies will be involved in the permit review. In addition, there are multiple offices for each agency. For instance, there are three USACE districts, six PADEP regions, and 66 CCDs within Pennsylvania. Refer to **Appendix C** for maps showing the regional boundaries and contact information for the permitting agencies discussed above. **Appendix C** also contains a summary table of the CCDs with delegated authority.

In some counties, PADEP has delegated authority under the Chapters 102 and 105 programs to County Conservation Districts (CCDs). In these counties, it is important to consult with the local conservation district to determine their level of involvement.

Commenting Agencies

Several agencies are regularly involved in the permitting process in a consultation role. They do not have permitting authority but provide comments and recommendations to the PADEP and USACE. Their comments may confirm that a proposed project is unlikely to adversely affect resources under their jurisdiction, or they may recommend changes to a project to avoid adverse impacts. The recommendations provided by commenting agencies are independently evaluated by PADEP and USACE. These recommendations may require additional information from the applicant or may become a condition of the permit upon concurrence from PADEP and/or USACE. The commenting agencies and their roles in the permitting process are described briefly below.

The Pennsylvania Department of Conservation and Natural Resources (DCNR) provides input on proposed projects that involve threatened or endangered plants and terrestrial invertebrates and ecologically significant habitats. They are also involved in projects proposed in or along scenic rivers.

The Pennsylvania Fish and Boat Commission (PFBC) is responsible for the protection of aquatic organisms (e.g., fish and freshwater mussels), reptiles and amphibians. The Chapter 105 regulations specifically provide that the project must be consistent with the laws administered by the PFBC. Therefore, PFBC comments may relate to threatened, endangered, or candidate species for projects proposed within their range, or they may be more general and concerned with unobstructed movement of aquatic organisms in streams and rivers. The PFBC may also recommend seasonal work restrictions in streams and rivers that serve as spawning or nursery areas for migratory fish species.

The Pennsylvania Game Commission (PGC) is responsible for the protection of bird and mammal species. PGC comments will generally focus on impacts to threatened, endangered, and candidate species.

The U.S. Fish and Wildlife Service (USFWS) is responsible for the protection of federally listed threatened and endangered (T&E) species and their habitat under the Endangered Species Act. The USFWS also ensures compliance with the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, Fish and Wildlife Coordination Act, and Wild and Scenic Rivers Act.

The PHMC oversees protection of cultural resources in the state having roles in Section 106 of the National Historic Preservation Act and the State History Code. Cultural resources include historically significant structures or sites, as well as archaeologically significant sites. The SHPO is consulted with under the Section 106 process when a federal permit is required for a project or federal funds are used for a project in Pennsylvania. In Pennsylvania, the SHPO is a bureau within the PHMC.

Refer to **Appendix C** for the contact information for the commenting agencies discussed above.

Agency Coordination Meetings

PennDOT Central Office has monthly agency coordination meetings. These meetings include Central Office staff, all PennDOT Districts, the permitting agencies, the commenting agencies, and metropolitan/rural planning organizations. One office day and two field days are reserved each month for the agency coordination meetings. Projects are discussed in the planning and preliminary design phases through final design and permitting in order to identify and address potential concerns collaboratively.

CHAPTER 3: Activities and Project Development

Activities Subject to Permitting

Any activity that involves the placement of fill (soil, stone, concrete, steel, etc.) in WOTUS requires a Section 404 permit (see Figure 1 below). Isolated wetlands only require PA Chapter 105 authorization, but only the USACE and EPA can determine whether a wetland is isolated and not jurisdictional from a federal perspective. See Section I, Chapter 1 and/or the glossary in **Appendix A** for a definition of WOTUS.

Any activity that involves the placement of fill in a navigable WOTUS requires a Section 10 permit as well (see Figure 1 below). Refer to **Appendix D** for a map of the navigable WOTUS in Pennsylvania.

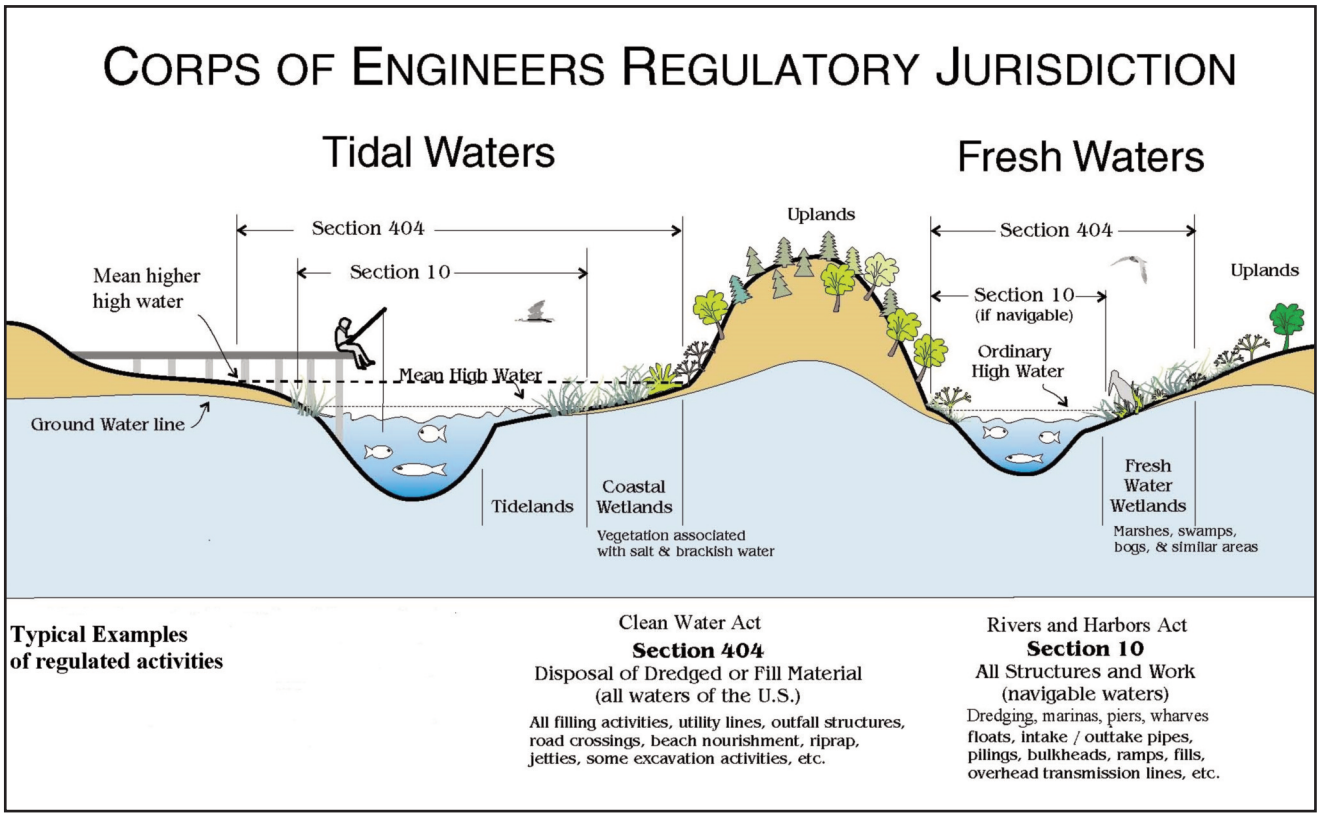

Figure 1: USACE Regulatory Jurisdiction

Per Chapter 105, a permit is required to "construct, operate, maintain, modify, enlarge or abandon a dam, water obstruction or encroachment." Chapter 106 defines the permitting requirements for the Commonwealth (including PennDOT), political subdivisions, and public utilities for activities proposed in floodplains. Per 25 Pa. Code Chapter 106, a permit is required to "construct, modify, remove, destroy or abandon a highway obstruction or an obstruction in a floodplain." Under Chapters 105 and 106, essentially all PennDOT projects that require work within a watercourse, body of water, floodway, or floodplain will require a permit. Figure 2 illustrates the difference between a floodway and floodplain.

An NPDES Permit is required for a project in which the total project earth disturbance area is greater than or equal to one acre, or an earth disturbance on any portion, part, or during any stage of, a larger common plan of development or sale that involves equal to or greater than one acre of earth disturbance. PA Chapter 102 exempts road maintenance activities from NPDES permit requirements; however, an Erosion and Sediment Control Permit is required for a project proposing 25 acres (10 hectares) or more of road maintenance activities. Refer to Chapter 6, Earth Disturbance Permits for more details on calculating disturbance areas.

Chapter 105 Definitions

Water Obstruction

i) A dike, bridge, culvert, wall, wingwall, fill, pier, wharf, embankment, abutment or other structure located in, along or across or projecting into a watercourse, floodway or body of water.

ii) In the case of ponds, lakes and reservoirs, a water obstruction is considered to be in or along the body of water if, at normal pool elevation, the water obstruction is either in the water or adjacent to or abutting the water's edge.

Encroachment

A structure or activity which changes, expands or diminishes the course, current or cross section of a watercourse, floodway or body of water.

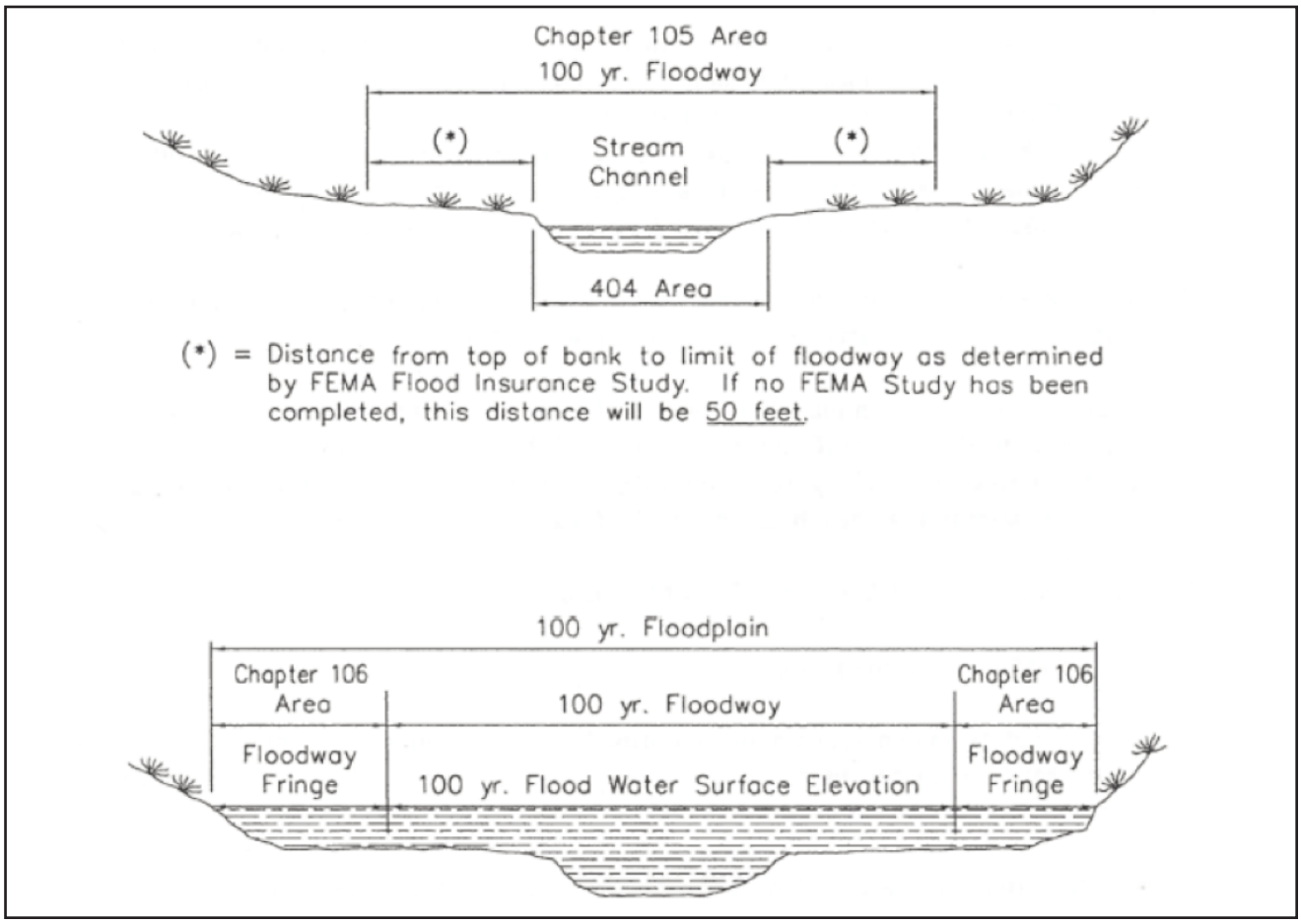

Figure 1: Floodway and Floodplain Sketch

PennDOT Project Development Process and Permitting

PennDOT Connects is a PennDOT system that has been established to improve the transportation program development and project delivery process and link it to environmental processes and procedures. PennDOT Connects identifies the most urgent infrastructure needs and provides the opportunity for details unique to communities, including potential environmental resource impacts, to be identified and discussed for each project in the planning phase. Identifying those elements in the planning phase provides a better understanding of the issues that may affect the project delivery schedule and budget. As a project moves from the planning and programming phases to preliminary engineering, the scope of work is established. During

preliminary engineering, documentation must be prepared to ensure that the proposed project complies with NEPA. This documentation is usually in the form of a Categorical Exclusion Evaluation (CEE) or Bridge and Roadway Programmatic Agreement (BRPA) programmatic. As part of the NEPA documentation, potential impacts to waterbodies, the area of earth disturbance, other environmental impacts, and the necessary permit types are identified. Likewise, mitigation commitments identified during the NEPA process are entered into the Environmental Commitments and Mitigation Tracking System (ECMTS). Once the project enters the final design phase, the NEPA document and ECMTS matrix should be reviewed and taken into consideration when preparing the requisite permits. If additional mitigation commitments are identified during the permitting process, then they should be added to the ECMTS matrix.

Design-Build Permitting

Regulatory permitting for water obstructions and encroachments does not depend on whether construction contracting uses the traditional Design-Bid-Build procedures or the Design-Build procedures. In a Design-Build project, permits can be obtained early in the project development stage, or later in the design phase by either PennDOT or the Design-Build Team. In either case, the permitting process is the same as described in Chapter 7, and the applicant must ensure that they submit a complete application package which includes final plans. Design changes subsequent to permitting must follow the process for permit amendments described in Chapter 11.

SECTION II - Waivers and Permit Types

PADEP issues PA Chapter 105 and Chapter 106 authorizations and Section 401 WQCs through waivers and the following types of permits: Maintenance (EXX-9999), General Permit, Small Project Permit, or Standard Permit.

Section 404 and Section 10 authorizations in Pennsylvania are generally issued through one of the following types of permits: Pennsylvania State Programmatic General Permits (PASPGP), Individual Permits, or Nationwide Permits (NWPs) (note: some NWPs are suspended in Pennsylvania and are covered under the PASPGP).

The USCG administers Section 9 Bridge Permits and notice to navigations for projects involving navigable WOTUS.

Earth disturbance permit types include General NPDES Permit, Individual NPDES Permit, and Erosion and Sediment Control Permit. For projects that don't require any of these permits, an E&S plan would still be required under the Chapter 102 and/or Chapter 105 regulations.

CHAPTER 4: Waterway Waivers, Permits, and Authorizations

Waivers

Waiver 2:
A water obstruction in a stream or floodway with a drainage area of 100 acres or aless. This waiver does not apply for projects with impacts to wetlands located in the floodway.

Per Chapter 105.12, permitting requirements are waived for activities that meet certain requirements and do not have a significant effect upon the safety or the protection of life, health, property, or the environment. There is a total of 23 waivers: 16 waivers that may apply to current projects and seven additional waivers that were issued for projects that were constructed prior to July 1, 1979. A list of waivers is provided below; those that are regularly applied to PennDOT projects are highlighted below. Requirements and applicability of other current and historic waivers are included in Chapter 105.12. Most projects that qualify for waivers do not require submission of any documentation to PADEP. Waivers 11 and 16 require submission of an Environmental Assessment (EA) to PADEP and must be published in the PA Bulletin for public review. EAs are required for these waivers because they cover a wide range of activities and potential resource impacts. Refer to Section IV, Chapter 7 for further details about preparing an EA. An EA in the Chapter 105 permitting context, as discussed in this handbook, should not be confused with an EA under NEPA.

- **Waiver 1 -** A dam not exceeding three feet in height in a stream not exceeding 50 feet in width, except wild trout streams designated by the Fish and Boat Commission.
- **Waiver 2 -** A water obstruction in a stream or floodway with a drainage area of 100 acres or less. This waiver does not apply for projects with impacts to wetlands located in the floodway.
- **Waiver 3 -** An aerial crossing of a non-navigable stream or wetland by electric, telephone or communications lines which are not located in a Federal wilderness area or watercourse or body of water designated as a wild or scenic river under the Wild and Scenic Rivers Act. This waiver applies to one or more wires attached aboveground to single poles. This does not apply to the maintenance and construction of towers, roads, or other water obstructions and encroachments.
- **Waiver 4 -** A dam subject to the requirements of the Mine Safety and Health Administration, 30 CFR 77.216-1 and 77.216-2 (relating to water, sediment or slurry impoundments and impounding structures; identification; and water, sediment, or slurry impoundments or impounding structures; minimum plan requirements; changes or modifications; certification), if PADEP determines on the basis of preliminary data submitted by the applicant that the dam is of Size Classification C and Hazard Potential Classification 3 as defined in § 105.91 (relating to classification of dams and reservoirs) and is not located in a watercourse or body of water designated as a wild and scenic river under the Wild and Scenic Rivers Act of 1968 or the Pennsylvania Scenic Rivers Act.
- **Waiver 5 -** A water obstruction or encroachment located in, along, across or projecting into a wetland or impoundment, constructed and maintained for the purpose of treating acid mine drainage, sewage or other waste, if the wetland or impoundment is a treatment facility constructed under a valid permit issued by PADEP under the Surface Mining Conservation and Reclamation Act (52 P. S. § § 1396.1—1396.31), The Clean Streams Law (35 P. S. § § 691.1—691.1001), the Noncoal Surface Mining Conservation and Reclamation Act (52 P. S. § § 3301—3326), the Solid Waste Management Act (35 P. S. § § 6018.101—6018.1003), the Oil and Gas Act (58 P. S. § § 601.101—601.605) and the Pennsylvania Sewage Facilities Act (35 P. S. § § 750.1—750.20).
- **Waiver 6 -** A water obstruction or encroachment located in, along, across or projecting into a stormwater management facility or an erosion and sedimentation pollution control facility which meets the requirements in Chapter 102 (relating to erosion and sediment control), if the facility was constructed and continues to be maintained for the designated purpose.

- **Waiver 7 -** Maintenance of field drainage systems that were constructed and continue to be used for crop production. Crop production includes: (i) Plowing, cultivating, seeding, grazing or harvesting. (ii) Crop rotation. (iii) Government set aside programs.
- **Waiver 8 -** Plowing, cultivating, seeding or harvesting for crop production.
- **Waiver 9 -** Construction and maintenance of ford crossings of streams for individual private personal use which require only grading of banks for approach roads and the placement of not more than 12 inches of gravel for roadway stability. Fords may not be used for commercial purposes and shall cross the regulated waters of this Commonwealth in the most direct manner. This waiver does not apply in exceptional value streams as listed under Chapter 93 (relating to water quality standards) or in wild trout streams.
- **Waiver 10 -** A navigational aid or marker, buoy, float, ramp or other device or structure for which a permit has been issued by the Fish and Boat Commission under 30 PA Code Section 5123(a)(7).
- **Waiver 11 -** The removal of abandoned dams, water obstructions and encroachments, if PADEP determines in writing on the basis of data, information or plans submitted by the applicant that the removal of the abandoned dam, water obstruction or encroachment cannot imperil life or property, have significant effect on coastal resources or have an adverse impact on the environment and the plans provide for restoration and stabilization of the project area.
- **Waiver 12 - T**he construction, operation or removal of staff gages, water recording devices, water quality testing devices, including, but not limited to, sensors, intake tubes, weirs and small buildings which contain required instruments and similar scientific structures.
- **Waiver 13 -** bridge or culvert purchased from an operating railroad company subsequent to the abandonment of the railroad line, track, spur or branch pursuant to the approval of the Interstate Commerce Commission. Major maintenance or reconstruction, or stream dredging may not be undertaken until the new owner obtains a permit under this chapter.
- **Waiver 14 -** The maintenance of an artificial pond or reservoir to its original storage capacity where:
  - ❖ The contributory drainage area is ≤ 100 acres.
  - ❖ The greatest depth of water at maximum storage elevation is ≤ 15 feet.
  - ❖ The impounding capacity at maximum storage elevation is ≤ 50 acre-feet.
- **Waiver 15 -** The construction and maintenance of an encroachment or water obstruction on an abandoned mining site, where PADEP has issued a notice of intent to forfeit the bond for a mining activity permitted after July 1982.
- **Waiver 16 -** Restoration activities undertaken and conducted pursuant to a restoration plan which has been approved, in writing, by PADEP.

Waiver of the Chapter 105 permitting requirements does not waive Federal permitting requirements; projects qualifying for a waiver under Chapter 105 may still need to be authorized by the USACE.

Programmatic (General Maintenance) Permit EXX-9999

Permit (EXX-9999) Standards for Bridge Cleaning pertains to general maintenance of older bridges for which there is no permit of record. Permit applications for newer bridges typically include certain maintenance activities in the permit conditions. If maintenance activities are included in the permit conditions, maintenance can be performed without a new permit authorization. Although the original intent of this permit authorization was to allow PennDOT personnel to conduct maintenance activities, it has also been successfully used for maintenance projects bid out to contractors. Each PennDOT District has its own permit number, as described in Table 1 below. Note EXX-9999 permits cannot be used for locally sponsored projects unless there is a maintenance agreement between PennDOT and the municipality.

District	*Permit Number*
1	*E61-9999*
2	*E17-9999*
3	*E41-9999*
4	*E35-9999*
5	*E39-9999*
6	*E23-9999*
8	*E22-9999*
9	*E07-9999*
10	*E32-9999*
11	*E02-9999*
12	*E26-9999*

Table 1: PennDOT Maintenance-Force Permit Numbers

Generally, activities permitted by EXX-9999 permits are limited to channel cleaning, minor pier and abutment repairs, and superstructure maintenance that does not alter the hydraulic opening.

Generally, activities permitted by EXX-9999 permits are limited to channel cleaning, minor pier and abutment repairs, superstructure maintenance, and superstructure replacement that does not alter the hydraulic opening. Detailed EXX-9999 permit requirements and application documentation requirements are listed in the Standards for Bridge Clearance, Channel Improvement, and Bridge Rehabilitation Projects, which can be found in **Appendix E**. An EXX-9999 permit application typically requires less documentation than a General Permit Registration or a Standard Joint Permit Application (JPA). EXX-9999 permits are limited to projects with insignificant impacts. PADEP considers impacts to wetlands significant; therefore, EXX-9999 permits cannot be used if the project will result in any wetland impacts.

General Permits

PADEP has issued General Permits (GP) to streamline several common activities that do not pose a significant threat to the environment. A project may be authorized by a GP if the proposed activity meets the conditions of the GP. A table summarizing some of the conditions that limit the applicability of GPs is provided in **Appendix F**. The process involves registering to use the appropriate GP with the PADEP or delegated CCD and receiving an acknowledgement letter from the reviewing agency. There are 12 GPs available to satisfy the permitting requirements in PA Code, Title 25, Chapters 105. The six GPs in bold type below are regularly encountered on PennDOT projects and are described in further detail. The following paragraphs do not include a full description of all conditions associated with each permit; specific permit requirements and application documents for all General Permits can be found on PADEP's eLibrary website and links for each GP are provided below. It is recommended that permit preparers review the GP instructions and conditions to verify that the project meets all applicable criteria for the chosen permit type prior to submitting an

application to PADEP. A table identifying the components required for a GP registration is provided in Table 3 in Chapter 7.

- GP-1: Fish Habitat Enhancement Structures
- GP-2: Small Docks and Boat Launching Ramps
- **GP-3: Bank Rehabilitation, Bank Protection, and Gravel Bar Removal**
- **GP-4: Intake and Outfall Structures**
- **GP-5: Utility Line Stream Crossings**
- GP-6: Agricultural Crossings and Ramps
- **GP-7: Minor Road Crossings**
- **GP-8: Temporary Road Crossings**
- GP-9: Agricultural Activities
- GP-10: Abandoned Mine Reclamation
- **GP-11: Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments**
- GP-15: Private Residential Construction in Wetlands

Generally, because these permits are intended for low-risk projects, GPs are not applicable for projects that include impacts to any of the following: historical, cultural or archeological sites; National Registry or Natural Landmarks; stocked or wild trout streams during the in-stream construction restriction dates set by the PFBC; and -T&E species. Additionally, channel relocation or realignment and some wetland impacts, depending on the GP, are not authorized.

GP-3: Bank Rehabilitation, Bank Protection and Gravel Bar Removal

On PennDOT projects, this permit is typically used for repair of eroding stream banks and removal of gravel bars near bridges and culverts. This permit is limited to activities that constitute a single, complete project in and along a continuous reach of stream channel not exceeding 500 feet. Removal of vegetated gravel bars is not authorized, nor are projects within 100 feet of watercourses designated as "Wild" within the National or State Scenic Rivers system. The normal channel width and shoreline configuration should remain substantially unchanged. Construction should be performed during periods of low flow and use of equipment in the stream channel or body of water should be minimized. Placement of fill higher than the existing stream banks, construction of levees, and dredging and excavation below the existing water level are not authorized. No more than one cubic yard per running foot of rock protection may be placed below the ordinary high water mark or high tide line. An additional one cubic yard per running foot is authorized above the ordinary high water mark or high tide line. Grouting of slope protection or rock is not authorized and slope protection is limited to a maximum slope of 1.5:1. Gravel bars may be removed only to a depth of six inches above the water level at the time of the project and gravel bar removal is not permitted in exceptional value waters.

GP-4: Intake and Outfall Structures

This permit is typically used by PennDOT for construction or modification of small stormwater outfall structures. This permit does not include approval of discharges that may require certification under 401(a) of the Federal Water Pollution Control Act or other relevant state statutes. It is not applicable for outfalls in the following locations: within 100 feet of a national or state Wild or Scenic River, wetlands, or high quality and exceptional value streams. The GP-4 also cannot be used to authorize projects located within easement lands of USACE or Commonwealth of Pennsylvania constructed local flood protection projects. The project is not authorized to interfere with navigation, fish passage, or passage of flood flows. Outfall structures include any pipe or culvert discharging into a body of water (or floodway) and includes end treatments such as endwalls, splash pads, riprap, and ditches. GP-4 authorizes the construction only of outfall structures having a pipe outfall diameter of 36 inches or less.

GP-5: Utility Line Stream Crossings

While PennDOT does not submit GP-5 applications, PennDOT does occasionally prepare GP-5 applications for affected activities and the GP-5 activities are sometimes carried out by PennDOT's contractor. GP-5 permits are used to authorize the installation, operation, and maintenance of utility line stream crossings. It is not applicable for projects within 100 feet of a national or state Wild or Scenic River. It also cannot be used to authorize impacts to exceptional value wetlands, wetlands greater than ten acres in size, reservoirs, or exceptional value waters. Permitted utility lines must be 36" in diameter or smaller, shall have a minimum of three feet of cover under streambeds (one foot if the utility line is in rock), shall cross the stream at a right angle to the stream where possible, and shall be installed "in the dry" where possible.

GP-7: Minor Road Crossings

Construction, operation, or maintenance of minor road crossings that disturb less than 0.1 acre of wetlands or cross streams with a drainage area of 1.0 square mile or less can be authorized under a GP-7, as can the removal of a minor road crossing over a stream with a drainage area of 1.0 square mile or less. Additionally, PADEP's definition of operation allows the GP-7 to be used for culvert and bridge replacements. Stream

Chapter 105 Definitions

Stream Enclosure
a bridge, culvert, or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated WOC.

enclosures are specifically excluded from this authorization, as are exceptional value waters, and areas within 100 feet of a National or State Wild or Scenic River. Areas within a Federal Emergency Management Agency (FEMA) -delineated floodway are also excluded.

GP-8: Temporary Road Crossings

The GP-8 is commonly used on PennDOT projects to build construction access measures such as fords and causeways in streams and wetlands. Fords are prohibited at high quality and exceptional value streams. Culverts through temporary crossings must pass the normal flow and extend beyond the toe of the temporary crossing. Causeways shall not extend further than one half the width of the stream channel. No more than six inches of rock or gravel may be placed above the original grade for the approaches. Wetland crossings are limited to 200 feet in length.

GP-11: Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments

The GP-11 authorization is one of the most commonly encountered permit types used on PennDOT projects and is used to authorize replacement or rehabilitation of structures with a similarly-sized proposed waterway opening. New stream enclosures, stream relocations, and stream realignments are not authorized by this GP. Permanent wetland impacts are limited to 0.05 acres. Significant reductions in waterway opening, significant changes to roadway approaches, and increases in the 100-year water surface elevation pose a higher risk for environmental and safety impacts and are therefore not authorized. Increases in bridge width or culvert length are limited to 12 feet on each side, but appurtenant structures such as wingwalls, bank stabilization, and scour protection can extend up to 50 feet from the existing structure. The GP-11 authorization can also be used to permit temporary public access roads (for diversion of traffic during construction). Temporary access permitted under a GP-11 permit can have greater than six inches of fill in the roadway approaches if an appropriate Hydrologic and Hydraulic (H&H) Report is provided and sealed by a licensed Professional Engineer (PE). Furthermore, outfall structures can be replaced, repaired, or rehabilitated using a GP-11 if the project does not qualify for a GP-4.

Water Obstruction and Encroachment Permit Through a Small Projects Joint Permit Application

A Water Obstruction and Encroachment Permit through a Small Projects JPA (referred to as a Small Projects JPA throughout this handbook) is not commonly used for PennDOT projects, as most projects that qualify for Small Projects JPA authorization also qualify for authorization under GP-11. A Small Projects JPA may be made for projects in streams and floodplains where insignificant impacts on safety and protection of life, health, property, and the environment can be demonstrated without detailed studies or engineering calculations. Insignificant impacts are defined as no increase in local flood heights because the activity is small compared to the overall channel and/or floodplain size or localized increases will be across open or unimproved land or will be placed under flowage easement by the applicant.

Projects that involve impacts to wetlands, federal wilderness areas, national historic sites, or T&E species, or significant impacts to high quality and exceptional value streams, scenic rivers, and wild and stocked trout streams, are ineligible for the Small Projects JPA authorization. Other specific limitations of the Small Projects JPA are included in the JPA Instructions, section II.B. Documentation requirements for Small Projects JPAs are listed in Chapter 105.13(f). A table identifying the components required for a Small Projects JPA is provided in Table 3 in Chapter 7.

Water Obstruction and Encroachment Permit Through a Standard Joint Permit Application

Water obstruction and encroachment projects that do not qualify for a waiver, an EXX-9999 permit, or a General Permit can be authorized using a Water Obstruction and Encroachment Permit through a Standard JPA (Standard JPA). This application type requires the most documentation, but is also the most flexible and can be used for a variety of project types. Due to the additional documentation requirements and greater complexity of Standard JPAs, this permit type typically requires the longest application preparation and review time. A detailed list of documentation required for Standard JPAs is included in Chapter 105.13(e)-(l). A table identifying the components required for a Standard JPA is provided in Table 2 in Chapter 7.

The Standard JPA is used for projects that cannot meet the conditions of a GP. Such projects typically require special conditions to protect cultural resources, T&E species, and special protection waters. It is also required for projects involving stream relocations, stream realignments, stream enclosures, or significant changes to the waterway opening. Although these types of impacts can be permitted, the project still must comply with all applicable laws and regulations, including FEMA floodplain regulations, and environmental impact mitigation requirements. The project should also comply with PennDOT's design standards.

Project Categories with special permitting requirements per Chapter 105 (Bold items will be addressed in this section):

- Dams and Reservoirs
- **Culverts and Bridges**
- **Stream Enclosures**
- **Channel Changes and Dredging for Facility Construction and Maintenance**
- **Fills, Levees, Floodwalls, and Streambank Retaining Devices**
- **Stream Crossings, Outfalls and Headwalls**
- Docks, Wharves, and Bulkheads
- Commercial Dredging
- **Discharges of Dredged or Fill Material**

Additional Requirements

Bridge and culvert projects are subject to several special requirements per Chapter 105, Subchapter C. These special requirements include:

- Hydraulic capacity of the crossing must be maintained; the proposed structure must pass flood flows without loss of stability, may not create or constitute a hazard to life or property, may not materially alter the natural regimen of the stream, may not cause the erosion of stream beds or banks due to changes in velocity or flow direction, may not significantly increase water surface elevations, and must comply with local flood plain management programs.
- Piers and multiple culvert openings should be avoided where possible to avoid collection of debris and ice at the obstruction.
- Piers subject to supercritical or unstable flow shall be designed to prevent excessive backwater and downstream waves.
- Abutments and culverts should be aligned with flow, should minimize narrowing of the stream channel, and should have an adequate height to allow the use of the waterway in its customary manner.
- The upstream side of culverts should be protected by wingwalls.

The following special requirements apply to projects that propose modification or construction of a stream enclosure:

- The stream enclosure must be designed and constructed to pass the flow from a flood of 100-year frequency with no more than a 1.0-foot increase in the 100-year water surface elevation over the water surface elevation of the natural unimpeded 100-year flow, except where the stream enclosure would be in a FEMA floodway, in which case no increase in the 100 year water surface elevation will be permitted.

- If the project does not meet the first criteria, a risk assessment demonstrating that the structure will not significantly increase the flooding threat to life, property, or the environment should be prepared. If applicable, the risk assessment should also show that the project is consistent with municipal floodplain management programs.
- Stream enclosures shall include provisions for adequate access for maintenance of the entire length of the enclosure. The access points shall be protected, to the maximum extent possible, to prevent the entrance of unauthorized persons.

For projects that involve channel changes (realignment or relocation of the channel), according to Chapter 105, Subchapter E:

- Flooding potential greater than the natural conditions of the existing channel must not be created.
- Abrupt bends and significant changes from the existing streambed slope should be avoided.
- If the stream width will be changed, proper depth and velocity of normal flows should be maintained and pool-riffle ratios should be maintained for streams with substantial fisheries value.
- Shading of the proposed channel should be provided if necessary to avoid temperature changes from the existing conditions.

Construction or modification of fills, levees, floodwalls, and streambank retaining devices must meet the following conditions, according to Chapter 105, Subchapter F:

- Does not increase flood heights, unless appropriate flood easements or flood protection is provided
- Does not create erosive velocities in the stream unless appropriate protection has been provided
- Does not increase downstream flood damage due to loss of floodplain storage
- Is consistent with local floodplain management programs
- Slopes are not steeper than two horizontal to one vertical unless special circumstances are demonstrated and the slope is properly stabilized.
- Levee top width is less than ten feet, adequate drainage has been provided for the area behind the levee or floodwall, and freeboard has been provided above the design flood of the structure. Levees and floodwalls must be inspected annually and vegetation should be properly controlled.

Discharge of dredged or fill material also must not impact spawning areas during spawning season, impact waters that are breeding, feeding, or nesting areas for migratory birds, restrict or impede movement of indigenous aquatic species or the passage or normal or expected high flows, or cause the relocation of waters.

Chapter 106

Chapter 106 authorization is required for projects that involve a highway obstruction or obstruction constructed, owned, or maintained by the Commonwealth (including PennDOT), a political subdivision of the Commonwealth, or a public utility. Chapter 106 authorizations are typically obtained in conjunction with the Chapter 105 permits listed above; projects that require a Chapter 105 authorization do not need an additional application for a Chapter 106 permit, but it is important to consult with PADEP because this is not always the case. Projects that are located entirely outside of watercourses, floodways, and bodies of water, but are located within a floodplain may need a separate Chapter 106 authorization.

Chapter 106 Definitions

Floodplain

The 100-year floodway and that maximum area of land that is likely to be flooded by a 100-year flood as shown on the floodplain maps approved or promulgated by FEMA.

Aids to Navigation Plans

Aids to Navigation (ATON) are needed on PennDOT projects near recreational boating waterways and navigational channels to warn waterway users and help guide them through the project area. Recreational waterways are navigable waterways where motorized boating, kayaking, and canoeing are possible during suitable flow conditions. Full-width obstructions, such as causeways and temporary bridges, may need to provide safe portage through the construction site. Projects that will not obstruct the full width of the stream typically require warning signs or buoys. The width of the waterway, not the type of obstruction, determines which type of ATON should be used. Waterways over 200 feet generally require buoys, while those under 200 feet generally require shore-based signs. This is subject to change depending on the specifics of the project and location; therefore, coordination with PFBC should be conducted when a project involves navigable waterways. Further, waterways with motorized boat traffic may require floating buoy structures, which must be permitted by the PFBC. For projects that require floating buoys, PFBC Form 277 should be completed and submitted to the PFBC office in Harrisburg for review by the Waterways Conservation Officer Manager.

Refer to PUB 13M, Chapter 10.5.C.6 for detailed ATON plan preparation and approval procedures. ATON plan submissions typically include a project description, location map, photos of the project site, a color-coded plan view of the project, and example sign templates and specifications. Special requirements for signage at waterways that have been designated as Water Trails are included in PUB 13M, Chapter 10.5.C.7. Full width obstructions on Water Trails are discouraged and would require considerable justification and coordination.

PASPGP-5

PASPGP-5 is the most recent version of the PASPGP and was issued by the USACE July 1, 2016.

For PennDOT projects, Section 404 authorizations are usually obtained via the Pennsylvania State Programmatic General Permit in conjunction with the Chapter 105 permits issued by PADEP. In many cases, the PASPGP can be issued by PADEP or a County Conservation District with the approved Chapter 105 water obstruction and encroachment permits. PASPGP 5 is the most recent version of the PASPGP, was issued by the USACE July 1, 2016, and expires on June 30, 2021. The PASPGP is typically reauthorized every five years; thus, this may affect a project's construction schedule.

PASPGP-5 divides projects into two types of activities: Ineligible and Eligible. Eligible activities are further broken down into Reporting, and Non-Reporting categories. Project impact thresholds are calculated for single and complete projects. Single and complete linear projects are defined in the PASPGP-5 as follows:

> *"That portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States at a specific location. A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waters of the United States, including jurisdictional wetlands, at separate and distant locations. A linear project may involve multiple crossings of streams, wetlands, or other types of waters from the point of origin to the terminal point. Roads and pipelines are examples of linear projects. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of PASPGP-5 verification. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. Each single and complete linear project need not have independent utility within the overall project. However separate linear projects may have independent utility."*

Non-reporting activities can be authorized by PADEP or their designee without review from the USACE.

For non-reporting activities, federal authorization in the form of PASPGP may be attached by PADEP or their designee without additional prior review from the USACE. Reporting activities that require a waterway permit are still submitted to PADEP, but PADEP forwards a copy to the USACE for separate review and approval. Ineligible activities cannot be permitted using the PASPGP-5, instead they would be permitted under a Nationwide Permit (NWP) or Individual Permit (see below).

For projects that are part of a larger single and complete project (e.g., a waterway crossing that is part of a larger corridor improvement project), information describing the locations of the overall linear project's point of origin, terminal point, all proposed crossings and impacts to other aquatic resources must be provided. The USACE has developed a PASPGP-5 -Review Checklist and an Aquatic Resource Impacts Table that should be prepared and submitted with the Chapter 105 permit application for all projects requiring Section 404 authorization; these forms can be found on PADEP's eLibrary at the following links:

- Aquatic Resource Impact Table
- PASPGP-5 Review Checklist

For projects that are part of a larger single and complete project, impacts from previously completed work and estimated impacts from future work should be reported to the USACE.

Ineligible Activities: The following activities that could be encountered on PennDOT projects are not eligible for PASPGP-5 authorization:

- Proposed work that individually or cumulatively impacts more than 1.0 acre of waters and/or wetlands, or results in the loss of greater than 1,000 linear feet of stream channel(s)
- Proposed work is located waterward of the Ordinary High Water Mark or the Mean High Water Line of the following waterbodies: Delaware River (downstream of the US Route 202 bridge in New Hope, PA), Schuylkill River (downstream of Fairmount Dam in Philadelphia, PA), Ohio River, Beaver River, Little Beaver Creek, Mahoning River, Monongahela River, Youghiogheny River (from mouth to river mile 31.2 at West Newton, PA), Allegheny River (from mouth to river mile 197.4 at Kinzua Dam north of Warren, PA), Kiskiminetas River (from mouth to river mil 26.8 at Saltsburg, PA), Tenmile Creek (from mouth to river mile 2.7), and Lake Erie activities that require a PADEP Chapter 105 JPA or EA.

USACE may also disqualify a project from PASPGP-5 if it does not comply with the PASPGP-5 general conditions (Part VI.A of the PASPGP-5) or by discretionary authority.

Reporting Activities: Projects that are considered reporting activities are forwarded by PADEP to the USACE for review. The PASPGP-5 for these activities cannot be issued without a project-specific review from the USACE. Single and complete projects that exceed the following thresholds are considered reporting activities:

- Greater than 0.5 acres of direct and/or indirect impacts to WOTUS, including jurisdictional wetlands (except activities qualifying for waiver 16)
- Greater than 0.1 acre of permanent forested and/or scrub-shrub wetland conversion
- Utility line crossings of WOTUS, including jurisdictional wetlands, that exceed 500 linear feet
- More than 250 linear feet of permanent direct and/or indirect impacts to streams or rivers (except projects involving stream bank stabilization, rehabilitation, protection, and/or enhancement and projects qualifying for GP-1 or Waiver 16, where other limits apply)

In addition to projects that exceed these thresholds, additional specific activities that are considered reporting activities are listed in Part IV.B of the PASPGP-5. Reporting activities that may be encountered on PennDOT projects include:

- Activities that may affect T&E species and/or their critical habitat as listed in Section IV.B.5 of the PASPGP-5
- Activities potentially affecting historic properties
- Activities in Wild and Scenic rivers
- Activities requiring an Environmental Impact Statement
- Activities located waterward of the Ordinary High Water Mark of the Delaware River upstream of the US Route 202 bridge

- Activities across state boundaries
- Construction of Mitigation Banks and In Lieu Fee Sites
- Projects that require a Section 408 permit, such as those affecting USACE civil works projects or USACE owned or managed property. USACE Civil Works projects include flood risk management, navigation, recreation, and infrastructure and environmental stewardship; and many projects support life safety.
- Activities located in the Delaware River (upstream of US 202 bridge in New Hope, PA) or the Lehigh River (between the mouth and the Francis E. Walter Dam) that will occur between March 15 and June 30
- Temporary impact duration greater than one year

For most permits that involve reporting activities, PADEP will forward a copy of the application to the USACE for review. If the project is eligible for the PASPGP-5, the applicant will either receive the PASPGP-5 verification in conjunction with the PADEP permit authorization or will receive the PASPGP-5 verification and any special conditions directly from the USACE. If the project is not eligible for the PASPGP-5, the USACE will notify both the applicant and PADEP.

Non-Reporting Activities: Permit applications for non reporting activities are not forwarded to the USACE for review and can normally be processed by the appropriate PADEP regional office or delegated CCD without the need for additional federal review. PADEP makes the determination whether an activity is reporting or non-reporting. All PADEP Chapter 105 Waivers (except Waiver 4), Programmatic (EXX-9999) Permits, General Permits, Small Projects and Standard JPAs are considered non-reporting activities if they do not exceed the reporting activity thresholds, do not involve any of the reporting activities listed in Part IV.B of the PASPGP-5, and meet the additional specific requirements listed in Part IV.A of the PASPGP-5.

The specific limitations for some non-reporting activities are listed in the PASPGP-5 by the Chapter 105 permitting mechanism used. Limitations for some activities commonly encountered on PennDOT projects are listed below; additional limitations on other Chapter 105 waivers and permit types are included in the PASPGP 5, Part IV.A.

- Waiver 11, Small Projects, and Standard Joint Permits: Activities qualifying for these authorizations require notification in the Pennsylvania Bulletin. These activities may be authorized by PASPGP-5 after an opportunity for review and comment by the USACE, all other Federal and State resource agencies, and the general public, through publication in the Pennsylvania Bulletin at least 30 days prior to the effective date of the PADEP authorization.
- GP-3: Bank rehabilitation and protection is limited to a maximum of 500 linear feet and gravel bar removal is limited to a maximum of 250 linear feet within WOTUS.
- GP-7: Minor road crossings over wetlands are individually limited to impacts of 0.1 acres or less and all other road crossings associated with a project are limited to a cumulative wetland impact of 0.25 acres.
- GP-11: Any work associated with: 1) a USACE Civil Works Project; 2) work on USACE Property; or 3) areas which are a part of USACE Rehabilitation and Inspection Program shall be forwarded to the USACE as a Reporting Activity.

Non-reporting activities that do not need to be published in the Pennsylvania Bulletin will be reviewed by PADEP in accordance with their review procedures and the PASPGP-5 procedures. PADEP will attach verification of the applicability of the PASPGP-5 to the State authorization and will provide a copy of the permit documents to the applicable USACE district. Non-reporting activities that require public notice in the Pennsylvania Bulletin (typically those permitted under Waiver 11, Waiver 16, or as a Standard or Small Projects Joint Permit), will be published in the Pennsylvania Bulletin and the USACE will review the Pennsylvania Bulletin to determine the need for review. If the USACE requests that the project be reviewed as a reporting activity, PADEP will forward the application to the appropriate USACE district for review.

Non-reporting activities that are waived from Chapter 105 permitting requirements in 25 Pa. Code §105.12 and are non-reporting activities under PASPGP-5 can be considered authorized by PASPGP-5. A separate submission to the USACE is required only if the project does not meet the criteria for non-reporting activities.

Emergency Permits

An emergency condition exists when the safety of the structure is threatened and action is necessary to protect life, property, or the environment from that structure's failure or if a structure on a necessary route for emergency vehicles must be closed. For emergency conditions, the Bridge Maintenance Coordinator or District Permits Coordinator should verbally contact PADEP immediately to request an Emergency Permit.

An emergency condition exists when the safety of the structure is threatened and action is necessary to protect life, property, or the environment from that structure's failure.

Pennsylvania Natural Diversity Inventory (PNDI) search results are not needed to request an emergency permit from PADEP; however, a PNDI search and clearances must be obtained as soon as practical after the emergency permit is approved. In-stream work restrictions, such as in trout streams, do not apply when working under an Emergency Permit. Erosion & Sediment (E&S) BMPs must be used at all times and if the earth disturbance area is greater than or equal to 5,000 square feet, a written E&S plan must be kept on-site. Emergency permits may contain a special condition requiring that the appropriate after-the-fact permit be applied for within a certain timeframe.

PADEP will typically attach the USACE approval along with the Emergency Permit through the use of PASPGP-5. If PADEP does not issue the USACE approval, coordination with the USACE will be required before emergency work can begin. For natural disasters and extreme flooding events, such as devastating hurricanes, the USACE may issue a Public Notice which provides a streamlined approval process for emergency work related to that storm. If such a Public Notice is issued, the procedures described in the Public Notice should be followed to obtain USACE approval.

Maintenance activities involving channel cleaning that are consistent with a previously issued PADEP permit (typically those issued after July 1, 1979) and the PADEP Standards for Channel Cleaning at Bridges and Culverts (Appendix E) or involve maintenance of an existing bridge, culvert, or stream enclosure with a drainage area less than five square miles qualify for a Waiver Letter of Maintenance and are considered a non-reporting activity under PASPGP-5. In those cases, a permit from PADEP or the USACE is not required.

Nationwide Permits (NWP)

The NWP program, authorized under Section 404(e) of the CWA, gives the USACE a mechanism to issue federal authorization to projects based on the proposed activity. Most activities can be authorized through the PASPGP process. The NWP program is used when the PASPGP process is not applicable and provides a process to authorize activities with minimal environmental impact.

Two categories of activities exist within the NWP program: those that require a Pre-Construction Notification (PCN) and those that do not. Some activities meet the criteria of an authorized NWP and do not require the submittal of a PCN to the USACE. If a project does require a PCN, then coordination should be conducted with USACE. A PCN submittal typically includes the same documentation that would be submitted with a GP or JPA and any other supplemental information as required by USACE.

Activities that require a PCN would be those that do not meet the criteria established for the specific NWP without a review of the proposed project by the USACE. For this category of activity, a PCN would need to be submitted to the appropriate USACE district office. In addition to the PCN coordination with the USACE, the following commenting agencies need to be contacted regarding their area of jurisdiction.

1. The USFWS, PFBC, PGC, DCNR, and the National Marine Fisheries Service in Coastal Zone Management areas regarding the presence of rare, threatened, or endangered species or habitat near

the project. A search of the Pennsylvania Natural Heritage Program's Conservation Explorer database will determine if habitat or species of concern are near the project area.

2. The PHMC/SHPO regarding the presence of cultural resources potentially affected by the project.

There are 52 NWPs authorized for use in Pennsylvania. Only a small portion of these are applicable to transportation projects across the state. Below is a list of the most commonly used permits and a brief description for each:

1. NWP-3 – Authorizes the repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure and the removal of accumulated sediment and debris near the existing structure.
2. NWP-13 – Authorizes streambank stabilization for erosion prevention.
3. NWP-14 – Authorizes activities for the construction, expansion, modification, or improvement of transportation projects in WOTUS.
4. NWP-15 – Authorizes the discharge of dredged or fill material incidental to the construction of a bridge across navigable WOTUS that has been authorized by the USCG under Section 9 of the RHA.
5. NWP-25 – Authorizes discharges of material such as concrete, sand, rock, etc., into tightly sealed forms or cells where the material will be used as a structural support member for standard pile supported structures.
6. NWP-33 – Authorizes temporary structures, work, and discharges, including cofferdams, in WOTUS necessary for construction activities, provided that the primary activity has been authorized by the USACE or the USCG.

For a full list of NWPs and additional information on each permit, please refer to the USACE website at: http://www. usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Nationwide-Permits/ or 33 CFR Part 330.

In addition, certain NWPs are suspended in Pennsylvania or only applicable in specific situations, and there are regional conditions associated with each NWP that are specific to Pennsylvania. For further details regarding the regional conditions and suspensions, refer to the USACE website at: http://www.nab.usace.army.mil/Missions/Regulatory/Public-Notices/Public-Notice-View/Article/1124623/spn17-14-final-regional-conditions-and-suspensions-for-the-2017-nationwide-perm/.

Individual USACE Permits

Individual Permits are required when an activity does not qualify for authorization under a PASPGP or NWP. Examples of projects that would require an Individual Permit would be those with more than what is considered a minimal environmental impact, those with the potential to impact -T&E species, or a project that would potentially impact a cultural resource.

The Individual Permit process includes three steps: pre-application consultation (for larger projects), permit submittal, and decision making. The pre-application consultation is primarily reserved for larger projects but is available to all activities applying for coverage under a USACE permit. The consultation is designed to discuss the potential impacts and explore alternatives to minimize the environmental impact. The discussions would include USACE personnel, the applicant, resource agencies, and, in certain cases, the public.

The permit submittal step includes the formal submission of the permit application to the USACE. During this step, the package is reviewed for administrative and technical completeness and accuracy. Also, if necessary, public notices are issued followed by a 15 to 30-day public comment period. A copy of the permit drawings and project description are sent to the adjacent property owners, the applicant, and their consultant.

The third, and final step, includes the USACE decision to authorize or deny the permit application. The Corps strives to issue its permit within 120 days from the date the application is complete, but processing time depends on the complexity and scope of the project. Larger, more complex, or controversial projects will extend the processing timeframe.

RHA Section 10

Section 10 of the RHA requires authorization for construction of any structure in or over a navigable WOTUS. Furthermore, any activity adjacent to a navigable WOTUS that has the potential to affect the current, location, or condition of the waterbody must receive authorization for the activity prior to commencing work. Navigable WOTUS are those that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or waters that are presently used, have been used in the past, or may be used to transport interstate or foreign commerce. Navigable WOTUS are not necessarily the same as state navigable waters.

The Section 10 permit program is managed by the same USACE Districts as the Section 404 permits. Section 10 and Section 404 permits are typically issued concurrently. The USACE coordinates Section 10 permits with the USCG. A map and list of the navigable waters that would require a Section 10 permit can be found in Appendix D.

RHA Section 9 Bridge Permit (USCG)

Section 9 of the RHA and the General Bridge Act of 1946 requires any bridge or causeway across a navigable WOTUS to be authorized by a Section 9 Bridge Permit. This includes any temporary bridges for construction access or vehicle detours. Section 9 Bridge Permits are administered by the USCG. Coordination with the USCG will be required to determine if a WOTUS is navigable under Section 9.

Notice to Navigation

When a Section 9 Bridge Permit or Section 10 Permit is issued, the USCG issues a notice to navigation. A notice to navigation gives information regarding the project such as location and clearances to vessels using the waterway for navigational purposes.

Submerged Lands License Agreements

PADEP is charged with administering the Submerged Lands License Agreement (SLLA) program. This program sets out a system for obtaining licenses to occupy submerged lands of the Commonwealth; a yearly fee is associated with the license. Streambeds of navigable waterways are publicly owned by the Commonwealth and are thus considered submerged lands of the Commonwealth. PennDOT projects that cross or affect submerged lands of the Commonwealth do not need an SLLA. Locally-sponsored projects would need an SLLA, but the fee would not be required. Privately-owned utilities associated with PennDOT projects (e.g. a utility line attached to a state-owned bridge) would need an SLLA, and the utility company would pay the yearly fee.

PADEP uses three lists in administering the SLLA program **(Appendix G).** One is the list of Public Highway Declaration Acts prepared by Frederick J. Geiger. This list is simplified from the original and lists the streams by county. Caution is given that the locations provided in the laws may be vague and municipal boundaries may have changed since enactment. The second is a list of streams declared navigable by the USACE. The third list is entitled "Stream Beds Owned by the Commonwealth." It is commonly referred to as the Oberdorfer list because it was compiled by Wilson Oberdorfer, former Bureau Director for the then-Department of Environmental Resource's Legal Services.

CHAPTER 5: Earth Disturbance Permits

Permit for Stormwater Discharges Associated with Construction

An NPDES Permit is required for a project in which the total project earth disturbance area is greater than or equal to one acre.

An NPDES Permit is required for a project in which the total project earth disturbance area is greater than or equal to one acre, either alone or as part of a larger phased project. In Pennsylvania, the NPDES permit program is delegated to and administered by PADEP. PADEP works in conjunction with most of the CCDs to manage the NPDES program. PADEP and CCDs jointly regulate construction activities utilizing existing state regulations concerning erosion control and NPDES permits to implement the federal requirements. Chapter 92a provides the baseline regulatory requirements for PADEP's implementation of the federal NPDES program. Chapter 102 are the regulations specific to NPDES permits for construction activities. The major components of an NPDES Permit Application include an E&S Pollution Control Plan, PNDI search, Post Construction Stormwater Management (PCSM) Plan, Thermal Impact Analysis, and an Antidegradation Analysis.

PADEP issues two types of NPDES permits for Stormwater Discharges Associated with Construction Activities: a General Permit (PAG-02) and an Individual Permit. Copies of the NPDES permit application forms, instructions, and other related documents are available through PADEP's eLibrary website.

- **General Permit –** The General NPDES Permit for Stormwater Discharges Associated with Construction Activities (PAG-02) provides a simplified process to meet both the federal and state requirements. Construction activities that are not eligible for coverage under PAG-02 include, but are not limited to, earth disturbance activities located in special protection watersheds (i.e., high quality and exceptional value streams and exceptional value wetlands), or earth disturbance that may affect existing water quality standards or T&E species and their habitat, or have the potential for hazardous or toxic discharges.
- **Individual Permit -** Construction activities which are not eligible for coverage under PAG-02 must use the Individual NPDES Permit Application for Stormwater Discharges Associated with Construction Activities.

Chapter 102 exempts road maintenance activities (RMAs) from NPDES permit requirements. A project, or portions of a project, that meet the criteria for road maintenance are not counted towards the earth disturbance threshold for an NPDES permit. Refer to Pub 584, Chapter 12, Appendix E for further guidance on Chapter 102 requirements for road maintenance activities. In addition, disturbances within the 100-year floodplain do not count towards the threshold when a USACE Section 404 permit is required. Runoff from disturbed areas within the 100-year floodplain must drain towards the stream that is the subject of the Section 404 permit. When a Section 404 permit is not required, non-RMA earth disturbances located within the 100-year floodplain should be counted toward the NPDES permit threshold. Additional guidance for determining the amount of earth disturbance that counts toward the earth disturbance permit threshold is included in Section III - Permit Determination Process.

Erosion and Sediment Control Permit

A project proposing 25 acres (10 hectares) or more of RMA earth disturbance is required to obtain an E&S Pollution Control Permit for Discharges Associated with Earth Disturbance Activities.

A project proposing 25 acres (10 hectares) or more of RMA earth disturbance is required to obtain an E&S Pollution Control Permit for Discharges Associated with Earth Disturbance Activities. The permitting process and requirements are similar to the NPDES Permit. The major components of an E&S Permit Application include an E&S Plan, PNDI Search, PCSM Plan, Thermal Impact Analysis, and an Antidegradation Analysis. A project requiring an NPDES Permit with 25 acres or more of road maintenance activities is not required to get a separate E&S Permit.

PennDOT has developed guidance on Chapter 102 RMAs with PADEP's cooperation that details which activities are considered road maintenance for permitting purposes. This guidance is included in Appendix E of Chapter 12 of PUB 584 (Drainage Manual). Copies of the E&S Permit Application forms, instructions, and other related documents are available through PADEP's website.

Act 167 – Stormwater Management Plans

PennDOT projects must be designed consistent with Act 167 of 1978 Stormwater Management Plans that have been approved by PADEP. The Pennsylvania Stormwater Act (Act 167) instituted a comprehensive program of stormwater planning and management on a watershed level. The Act requires PA counties to prepare and adopt Stormwater Management Plans (SMPs) for each watershed located in the county, as designated by PADEP. SMPs were developed strictly on a watershed basis until around 2010, when PADEP promoted efforts to develop countywide SMPs, which also incorporate existing watershed-based plans.

The plans are to be prepared in consultation with municipalities located in the county, working through a Plan Advisory Committee. The plans are intended to provide stormwater standards and criteria throughout the county for the control of stormwater runoff. PADEP also stresses the opportunity for municipalities to retrofit existing sites to improve existing water quality impairments or existing problem area flooding sources. The plan's goals and objectives are developed and implemented to be consistent with the antidegradation criteria of the Pennsylvania Clean Streams Law and the federal NPDES Phase II requirements.

While PennDOT must design its projects to be consistent with the stormwater standards in Act 167 Plans approved by PADEP and implemented under the Storm Water Management Act, PennDOT is not required to comply with individual local ordinances, including ordinances adopted under an Act 167 plan. PennDOT does, however, strive to maintain good relations with local municipalities and, at PennDOT's discretion, may design the project to be consistent with local ordinances when feasible and practicable. Municipal stormwater ordinances should not be used to design stormwater facilities on a project unless specifically directed by the PennDOT project manager. Moreover, PennDOT should not apply for any stormwater permit approvals included in local ordinances.

The approved Act 167 SMP should be obtained early in design to determine the specific discharge standards that apply to the project. Consistency with an Act 167 SMP does not necessarily mean that the antidegradation requirements for an NPDES permit have been satisfied. From 1980 to 2003, Act 167 SMPs focused on controlling the peak rate of discharge to protect downstream persons and property. Act 167 SMPs developed since 2003 have targeted a broader range of stormwater runoff issues related to development including: minimizing increases in runoff volume, controlling peak discharge rates, maintaining groundwater recharge, and protecting water quality. The former addresses one component of antidegradation and PCSM, while the latter addresses most of the issues. Volume control and water quality requirements of PennDOT's Antidegradation and Post-Construction Stormwater Management Policy will usually govern because the majority of existing plans do not include volume and water quality standards. On the other hand, the peak discharge standards in an Act 167 SMP may be more restrictive and would thereby dictate the PCSM requirements. In any case, the more restrictive requirements between PennDOT's Antidegradation and Post-Construction Stormwater Management Policy and the PADEP-approved Act 167 SMP should govern the design of PCSM for PennDOT projects.

Some of the Act 167 Plans that were developed after May of 2010 include specific language regarding the applicability of the SMP to public roadway projects. The language, which is summarized below, was mutually agreed upon by PennDOT, the Pennsylvania Turnpike Commission (PTC), and PADEP. When this language is included in an approved Act 167 SMP, consistency with the approved plan is achieved by adhering to PennDOT's Antidegradation and Post-Construction Stormwater Management Policy.

> *For purposes of Act 167 Stormwater Management Plans, design policy pertaining to stormwater management facilities for PennDOT and PTC roadways and associated facilities are provided in Sections 13.7 (Antidegradation and Post Construction Stormwater Management Policy) of PennDOT Publication No. 13M, Design Manual Part 2 (August 2009), as developed, updated, and amended in consultation with PADEP. As stated in DM-2.13.7.D (Act 167 and Municipal Ordinances), PennDOT and PTC roadways and associated facilities shall be consistent with Act 167 Plans. DM-2.13.7.B (Policy on Antidegradation and Post Construction Stormwater Management)*

was developed as a cooperative effort between PennDOT and PADEP. DM-2.13.7.C (Project Categories) discusses the anticipated impact on the quality, volume, and rate of stormwater runoff.

Where standards in Act 167 Plans are impracticable, PennDOT or PTC may request assistance from PADEP, in consultation with the county, to develop an alternative strategy for meeting state water quality requirements and the goals and objectives of the Act 167 Plans.

For purposes of this Act 167 Plan, road maintenance activities are regulated under 25 Pa Code Chapter 102.

Small Municipal Separate Storm Sewer System (MS4)

PennDOT is required to obtain an NPDES permit as a state entity that designs, builds and maintains stormwater conveyance systems in support of transportation systems. The focus of the permit is Municipal Separate Storm Sewer Systems (MS4s) within urbanized areas that discharge to WOTUS. An MS4 is not a combined sewer (sewage and stormwater) or part of a publicly owned treatment works (sewage treatment plant).

PennDOT's MS4 covers "conveyance systems owned and/or operated by PennDOT which are designated or used for collecting or conveying stormwater associated with PennDOT roads, highways, bridges and related structures." This includes stormwater control measures which are legally considered appurtenances to PennDOT's conveyance or drainage systems and vehicle maintenance and operation facilities (e.g. stockpiles, county maintenance facilities, etc.).

The permit is administered by PennDOT's Bureau of Maintenance and Operations. PennDOT's MS4 Permit does not require additional permits or approvals for individual projects located in urbanized areas. Requirements of the permit are incorporated into PennDOT's policies and standards and addressed at a program level.

PennDOT's MS4 Permit includes six minimum control measures (MCMs) that require policies and practices to be implemented in order to satisfy them.

- MCM #1: Public education and outreach on stormwater Impacts
- MCM #2: Public involvement/participation
- MCM #3: Illicit discharge detection and elimination
- MCM #4: Construction site stormwater runoff control
- MCM #5: PCSM in new and re-development activities
- MCM #6: Pollution prevention/good housekeeping for municipal operations

Act 162 – Riparian Buffers

Act 162 amended the Pennsylvania Clean Streams Law to establish methods that can be used to meet riparian buffer requirements for NPDES Permits for Stormwater Discharges Associated with Construction Activities. The Act was signed into law on October 22, 2014 and was effective for implementation on December 21, 2014. Chapter 102 also includes regulatory requirements for riparian buffers. When read together, Chapter 102 and Act 162 provide the regulatory framework for riparian buffer requirements associated with NPDES construction stormwater permits. It is important to note that Act 162 allows for alternatives to demonstrate regulatory compliance related to riparian buffer impacts, but it does not modify the requirements of Chapter 102 for riparian buffers.

A riparian buffer is an area of permanent vegetation along a surface water. A forested riparian buffer is a specialized type of riparian buffer consisting of permanent vegetation that is predominately native trees and shrubs that provide at least 60 percent uniform canopy cover. For the purposes of this manual, the term riparian buffer is used in a general context to describe any type of riparian buffer.

PennDOT projects frequently involve stream crossings that result in earth disturbance within riparian buffers; however, the scope of projects subject to the riparian buffer regulatory requirements of Act 162 and Chapter 102 is relatively limited. The underlying Chapter 102 requirements related to riparian buffers are mandatory only for projects that discharge to surface waters with a special protection (i.e., high quality or exceptional value) designated use. All NDPES permitted projects that discharge to special protection waters must obtain an individual NPDES construction stormwater permit. Therefore, riparian buffer requirements only apply to projects requiring an individual NPDES construction stormwater permit with earth disturbance activities within 150 feet of a river, stream, creek, lake, pond, or reservoir with a special protection designated use. General NPDES stormwater construction permits and E&S control permits for road maintenance activities and timber harvesting are not covered by Act 162. Additionally, stream crossings that are subject to Section 404 permits would be excluded from the Act 162 buffer requirements because that area would be included in the NPDES disturbance area.

When a project is subject to riparian buffer requirements, Act 162 ensures that consistency with regulatory requirements can be achieved through an equivalency demonstration and/or offsetting. An equivalency demonstration can be achieved by implementing proposed BMPs that are functionally equivalent to a riparian buffer. Offsetting requires the construction of a replacement riparian buffer. Equivalency and offsetting requirements are based on the proximity of the earth disturbance to the receiving surface water. If the limits of the earth disturbance will occur between 100 and 150 feet from the top of bank of the receiving surface water, then only the demonstration of equivalency must be completed as part of the NPDES permit application. If the disturbance will occur within 100 feet, both the demonstration of equivalency and offsetting must be completed as part of the NPDES permit application.

PADEP has published guidance that outlines procedures for meeting the requirements of Act 162. The primary resources for this guidance are PADEP Document 310-2135-002: Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration and Document 310-2135-003: Riparian Buffer or Riparian Forest Buffer Offsetting. These documents include specific guidance, procedures, and standard worksheets that can be used to demonstrate compliance with riparian buffer regulatory requirements.

Phased Projects

Larger projects may have several phases over the course of several years and are generally planned and programmed in this fashion. When this situation occurs, it is important to consider the overall level of earth disturbance and impacts and identify the appropriate type of earth disturbance permit for each phase as well as the overall project. PADEP's Permit Guidelines For Phased NPDES Stormwater Discharges Associated with Construction Activity Permits, Chapter 102 Erosion and Sediment Control Permits, and Chapter 105 Waterway Restoration Project Permits document offers guidance regarding phased projects.

SECTION III - Permit Determination Process

The permit determination process outlined in this section provides information needed to determine which specific waterway and/or earth disturbance permit(s) may be required for an activity. Familiarizing yourself with the permitting examples is a good place to start. The included flowcharts are also helpful tools to organize the layers of detail that must be considered.

CHAPTER 6: Which Permits Do I Need?

Chapter 105/106 Waterway Permits

The first step in determining the waterways permitting requirements for any project is to verify that a waterways permit is required. Chapter 3, Activities Subject to Permitting describes activities that are subject to environmental permitting requirements.

The Waterways Permitting Flowchart (below) and permit scenario sketches (Appendix H) have been developed to assist personnel in determining the permitting level required for various regulated activities involving waterways. The flowchart includes paths for both state and federal waterway permit levels. It should be noted that the reviewing agencies have the discretion to require a different permit type on a case-by-case basis if it is determined that the project poses a substantial risk to life, property, or the environment or would not be adequately regulated by an otherwise applicable permit type. Therefore, early coordination in the form of a pre-application meeting with the reviewing agencies is highly encouraged.

Early coordination in the form of a pre-application meeting with the reviewing agencies is highly encouraged.

For projects that could be authorized by PADEP and qualify as non-reporting activities under the PASPGP-5, all application or registration documents should be submitted to PADEP. Submissions typically occur through the Keystone Environmental ePermitting System (KEES). For further details regarding the submission process, refer to Chapter 10: Permit Submittal Process. PADEP can issue both the state and federal authorization. If the project requires a PADEP permit and is a reporting activity or does not qualify for the PASPGP-5, all application documents should still be submitted to PADEP. PADEP will forward the documents to the USACE for review and the USACE will issue the federal authorization.

If the project qualifies for a waiver of Chapter 105 requirements, separate federal authorization from the USACE may be required. Projects that qualify for a waiver of Chapter 105 permitting requirements, but require approval of an EA can be submitted to PADEP. PADEP will issue the PASPGP-5 authorization or forward documentation to the USACE if the project is a reporting PASPGP-5 activity. Activities that qualify for a PADEP waiver and are considered non-reporting activities under PASPGP-5 can be considered authorized under PASPGP-5 and do not require an application to PADEP or the USACE. If a project does not need a Chapter 105 permit, but is reporting or ineligible under PASPGP-5, an application for federal authorization should be submitted to the USACE.

Large projects that will be permitted in stages or phases can be submitted in phases with detailed drawings and plans for the current phase and more general information for subsequent planned phases of the project. Detailed design information and drawings can then be submitted for subsequent phases of the project. Note that each phase should be a single and complete project as described in Section II, Chapter 4, PASPGP-5. Again, a pre-application meeting is highly encouraged for phased projects to ensure the reviewing agencies understand and agree with the phased permitting approach.

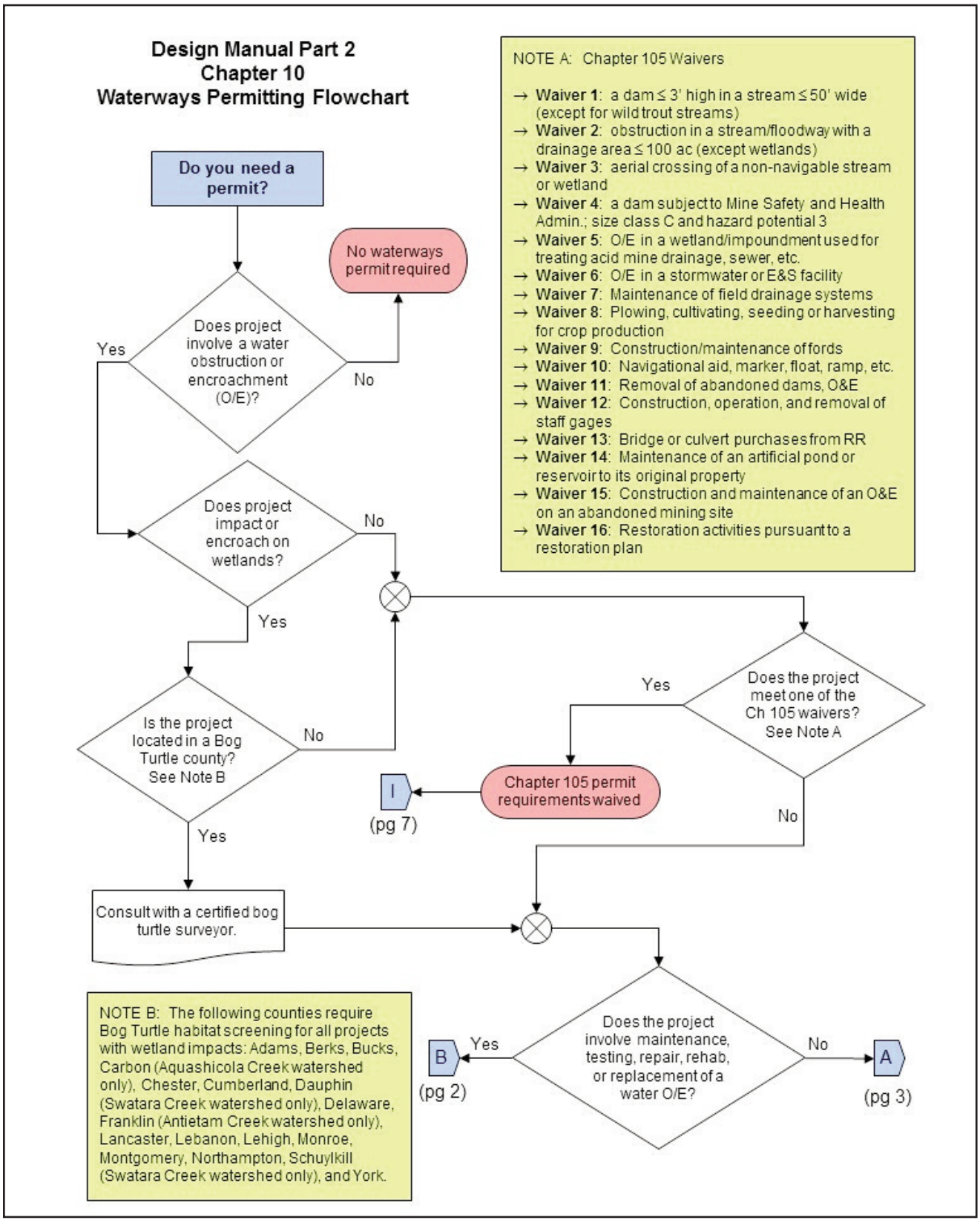

Figure 3: Waterways Permitting Flowchart

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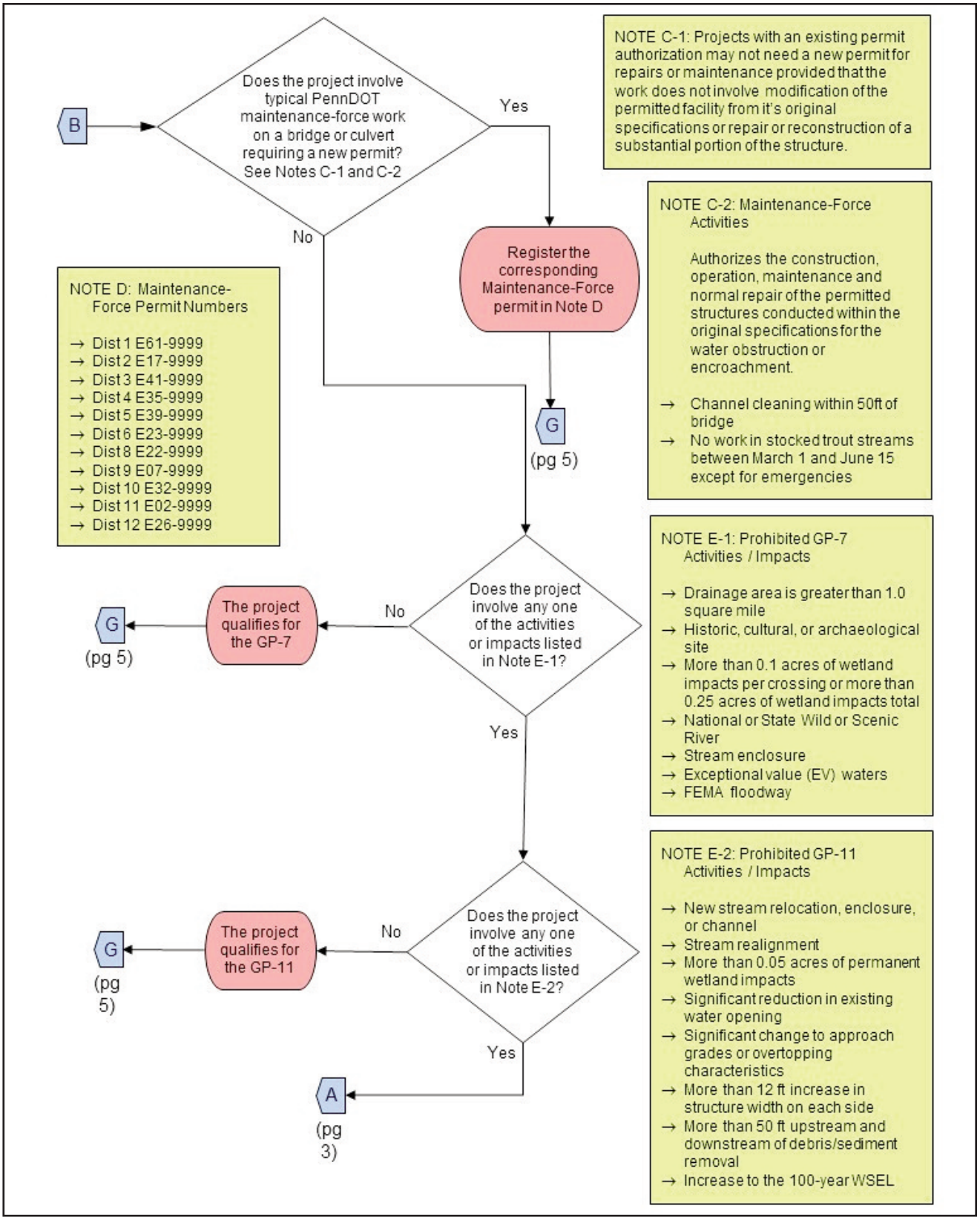

Figure 3: Waterways Permitting Flowchart

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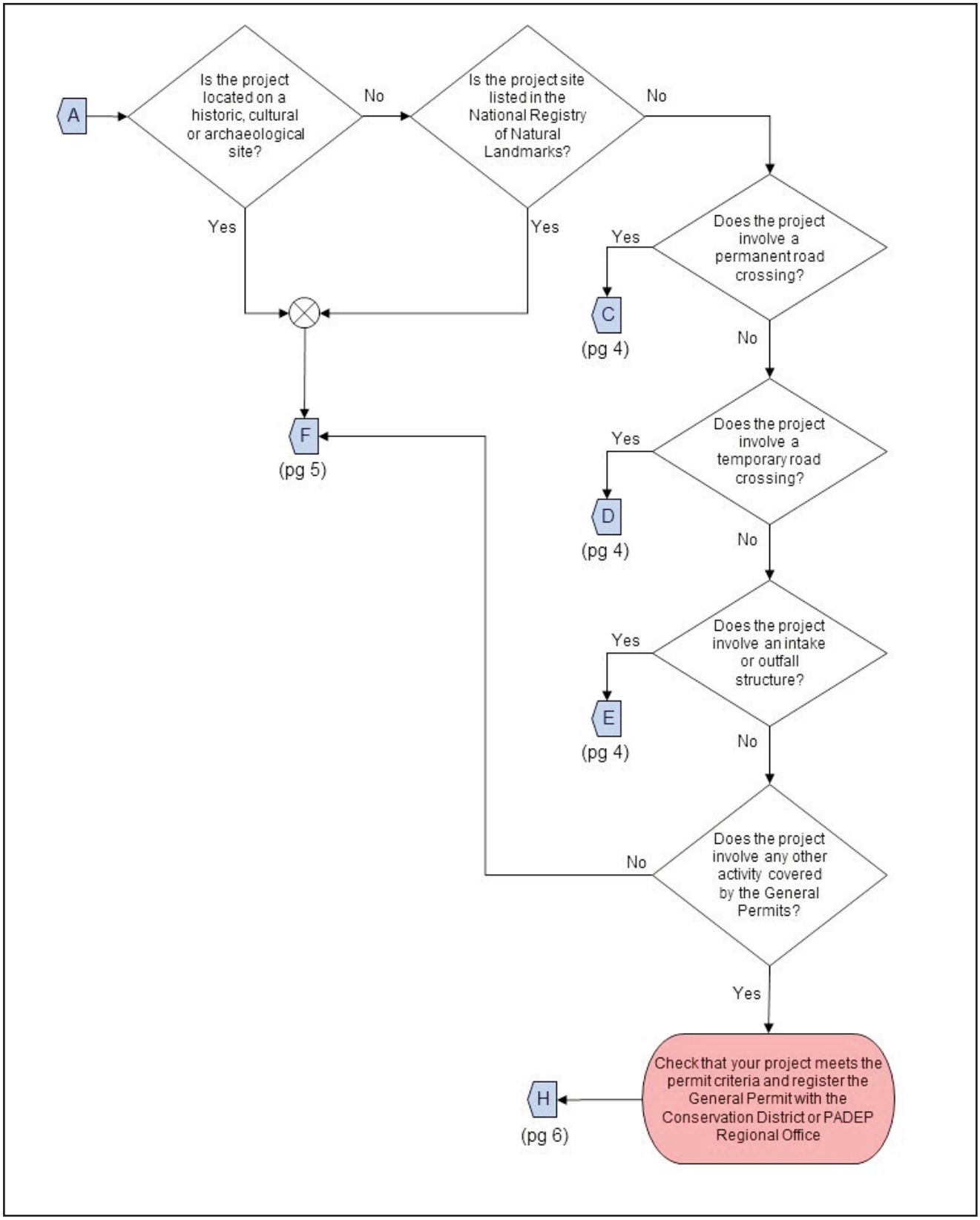

Figure 3: Waterways Permitting Flowchart

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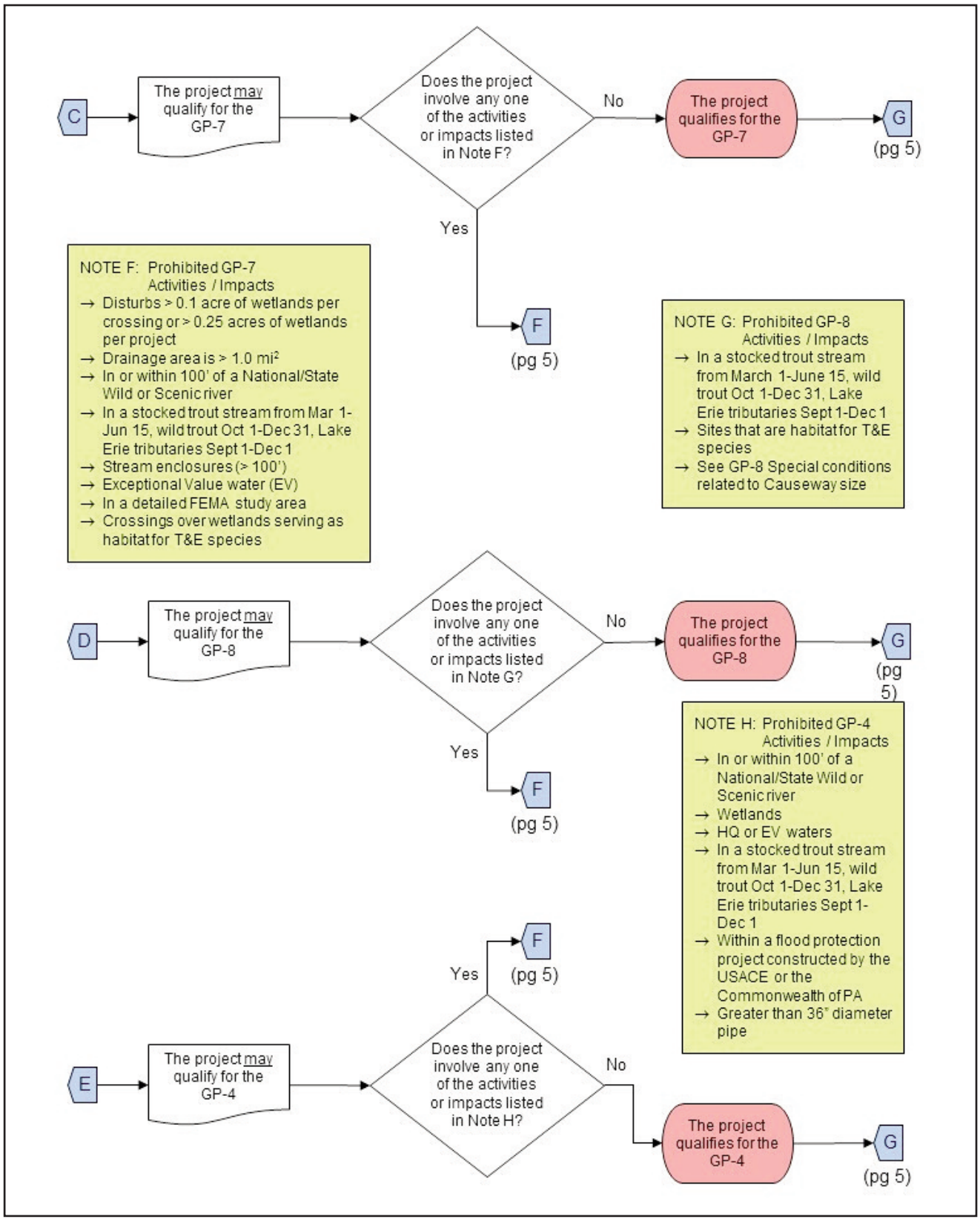

Figure 3: Waterways Permitting Flowchart

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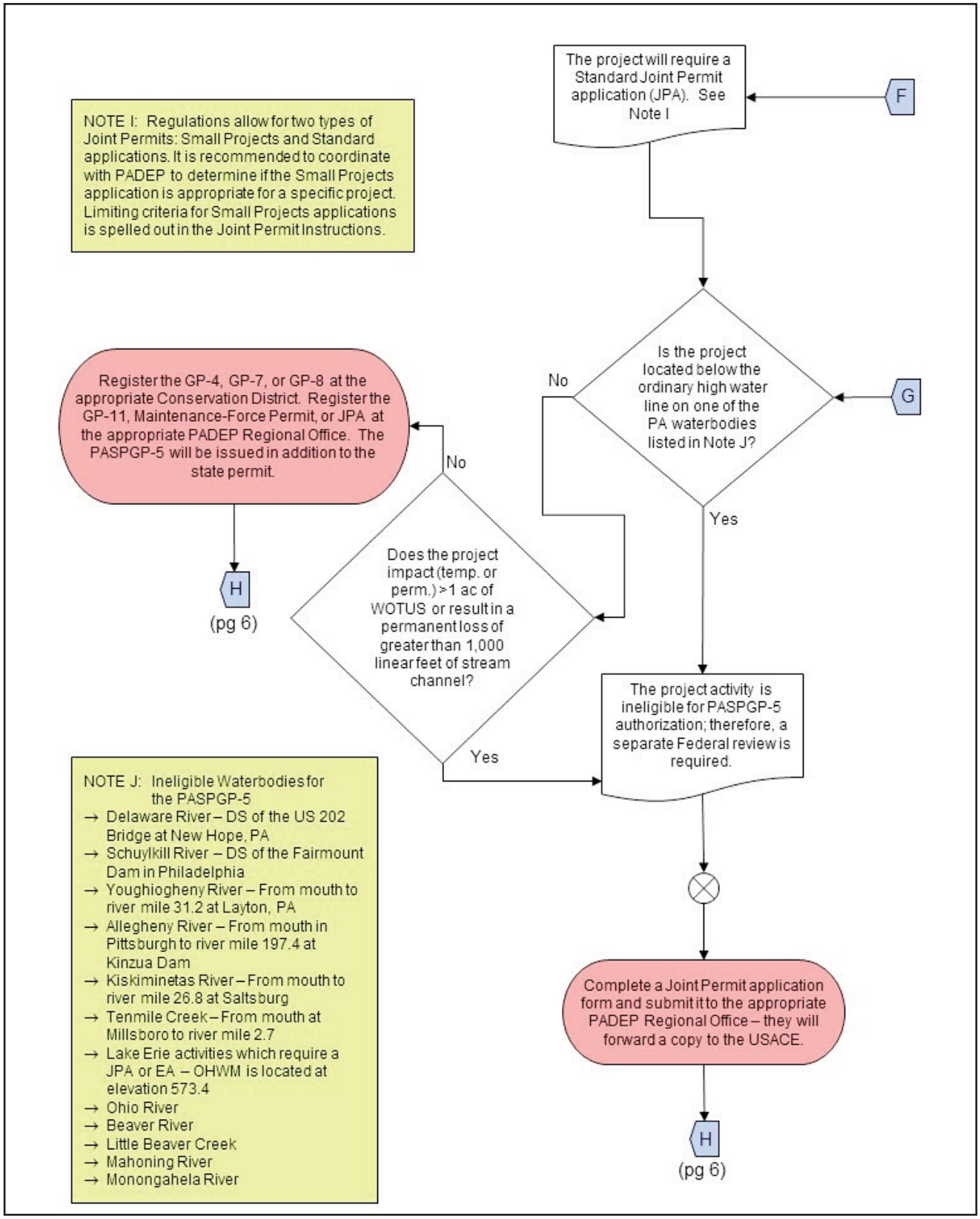

Figure 3: Waterways Permitting Flowchart

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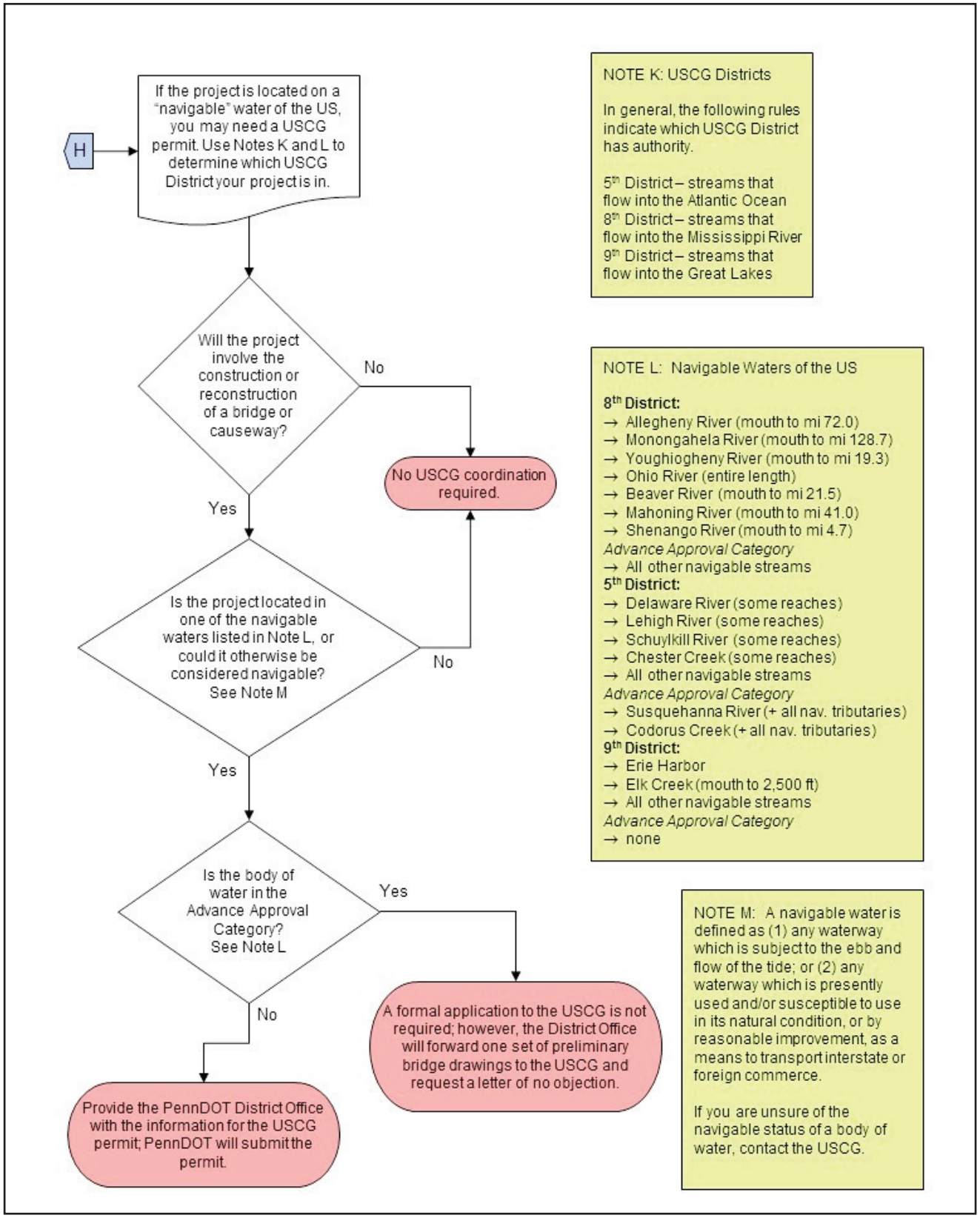

Figure 3: Waterways Permitting Flowchart

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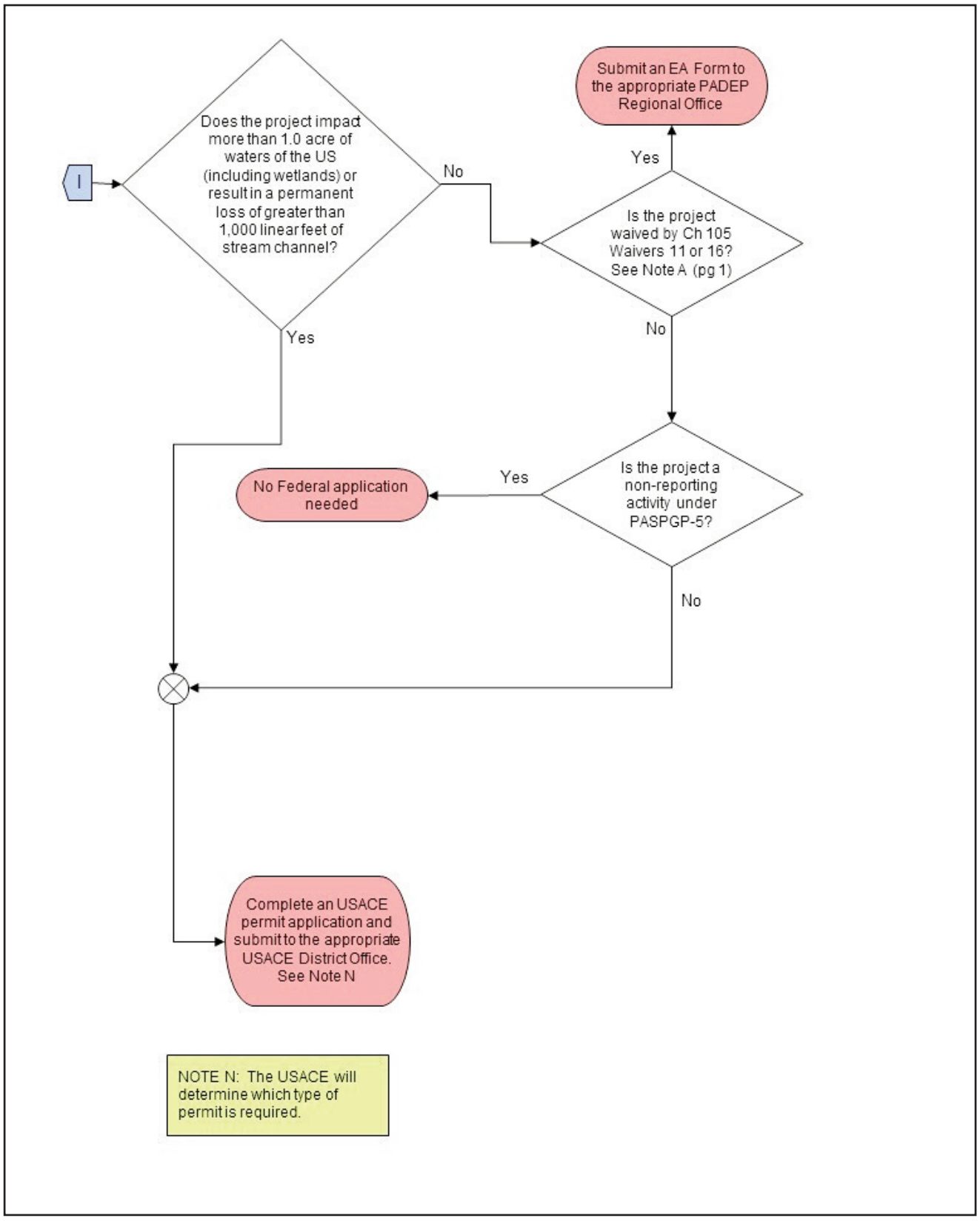

Figure 3: Waterways Permitting Flowchart

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Waterway Permitting Examples

Example 1: Minor maintenance activities have been proposed for the structurally deficient stone arch bridge over Saucon Creek in Lehigh County, PA, shown in Figure 4. Minimal approach roadway work is expected and an adjacent stormwater outfall will be relocated from upstream of the bridge to downstream of the bridge. There are no wetlands or other environmentally sensitive areas in the project site. The project is adjacent to the Coopersburg historic district, but the bridge itself is not historic and therefore is not individually eligible and not a contributing element to the historic district. The drainage area to the site is 1.2 square miles.

Figure 4: Stone Arch Bridge over Saucon Creek

This project involves placement of a water obstruction and will, therefore, need a Chapter 105 permit. The drainage area exceeds the 100-acre limit for Waiver 2 and the project does not qualify for any other PADEP waivers. Because the proposed work at the bridge is limited to maintenance activities and will not involve any sensitive environmental resources, an E39-9999 permit is appropriate for the bridge work. A GP-4 permit application will also be required for the relocation of the stormwater outfall. The potential for impacts to historic areas makes this project a reporting activity under PASPGP-5. The E39-9999 and GP-4 permits for this project would be submitted to PADEP and the relevant information would be forwarded to the USACE for their review. In this situation, a pre-application meeting would be strongly recommended to ensure that the permit application includes all information needed for the three permit types. If this project had included potential impacts to sensitive environmental resources, such as T&E species or cultural or historic resources, the permit could have been elevated to a higher level permit type to allow PADEP to apply special conditions to the permit authorization.

Figure 5: Millfair Road

Example 2: Improvements are proposed along Millfair Road in Erie County, PA to address traffic and safety needs. This project involves widening and construction of a new bridge as indicated in Figure 5 to eliminate the at-grade railroad crossings. The area surrounding the railroads is largely composed of a 75-acre, interconnected wetland system. Impacts to the adjacent wetland areas are unavoidable and the project will permanently impact 0.91 acres of the wetland system. The wetland impacts will be mitigated off-site in the Lake Erie Basin. There are no hits on the PNDI search and no other sensitive environmental areas are in the project site. Because the project will involve significant wetland impacts requiring mitigation, a pre-application meeting with the reviewing agencies is recommended.

The project involves an encroachment on wetlands and will, therefore, need a Chapter 105 permit. The project involves construction of a new water obstruction, and wetland impacts at this project are too large to be authorized under a waiver, maintenance, or GP. A Standard JP would be required for this project. The project involves less than one acre of wetland impacts and does not meet any of the other criteria for ineligible activities in the PASPGP-5; therefore, the project is eligible for a PASPGP 5 authorization. The project does, however, exceed the 0.5-acre threshold for impacts to wetlands and waters and will be considered a reporting activity. The permit application documents will be submitted to PADEP and will be forwarded by PADEP to the USACE for a separate review. The Standard JP authorization will be issued by PADEP, and the PASPGP-5 authorization will be issued by the USACE.

Figure 6: Marsh Creek Bridge

Example 3: The bridge over Marsh Creek is structurally deficient and will be replaced with a single span concrete tee-beam bridge in the same location. The waterway opening will be slightly increased from the existing condition. A temporary roadway will be constructed to carry traffic around the project site. There are no environmentally sensitive areas at the project site. The proposed project will result in 0.007 acres of permanent wetland impacts and less than one-acre of total impacts to waters. The stream is not listed as stocked, Class A, or as a wild trout stream.

This project will involve the full replacement of the structure, so it will not qualify for any waivers or the EXX-9999 authorization. Because the proposed structure will be in the same location and permanent wetland impacts are small, the project can be permitted under a GP-11 with the temporary roadway considered as an appurtenant structure to the GP-11. A GP-8 was not required for pier removal because access to the pier was proposed under the span over land. If the project involved bridge widening greater than 12 feet on either side, significant changes in the roadway profile, or increases to the 100-year water surface elevations, a GP-11 permit may not have been acceptable and a Standard JPA would have been required.

Earth Disturbance Permits

The type of earth disturbance permit required for a construction activity is determined primarily by the size and nature of the proposed earth disturbance activities. Chapter 102 defines an earth disturbance activity as a construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials. Determining the type

Determining the type and size of the earth disturbance activity is critical to the permit determination process.

and size of the earth disturbance activity is critical to the permit determination process. Certain earth disturbance activities are exempt from certain types of permits, and different size thresholds may apply for certain earth disturbance activities and permit types. The Earth Disturbance Determination Flowchart provided in Figure 9 can be used to help determine the appropriate permitting mechanism for the proposed earth disturbance activity. Typically, the E&S plan is submitted to the CCD for approval, then the E&S plan and CCD approval letter are submitted with the NPDES permit or a waterway permit to the appropriate agency. In some cases, the E&S plan is submitted in conjunction with the NPDES or waterway permit for concurrent review. Reviews are performed by the CCD and/or PADEP depending on the delegation agreement with that District. However, if an NPDES permit is not triggered by the proposed construction activities and the project does not require a Chapter 105 waterway permit, an E&S plan is still required under Chapter 102, but PennDOT is not required to submit the E&S plan to an outside agency for approval. Even in these cases, a PennDOT district office may choose to submit the E&S plan for review, if desired.

Chapter 102 exempts road maintenance activities from NPDES permit requirements. A project, or portions of a project, that meet the criteria for road maintenance are not counted towards the earth disturbance threshold for an NPDES permit. The road maintenance activity must occur within the existing road cross section for the area to be excluded from the calculation. As depicted in Figure 7, the existing road cross-section consists of the original graded area between the existing toes of fill slopes and tops of cut slopes on either side of the road and any associated drainage features.

PennDOT has developed guidance on road maintenance activities as they relate to the NPDES permit program with PADEP's cooperation. The guidance explains the various types of maintenance activities that PennDOT performs, defines existing road cross section for different highway configurations, and provides examples of calculations of disturbed area (for NPDES purposes). This guidance is included in Appendix E of Chapter 12 of PUB 584 (Drainage Manual).

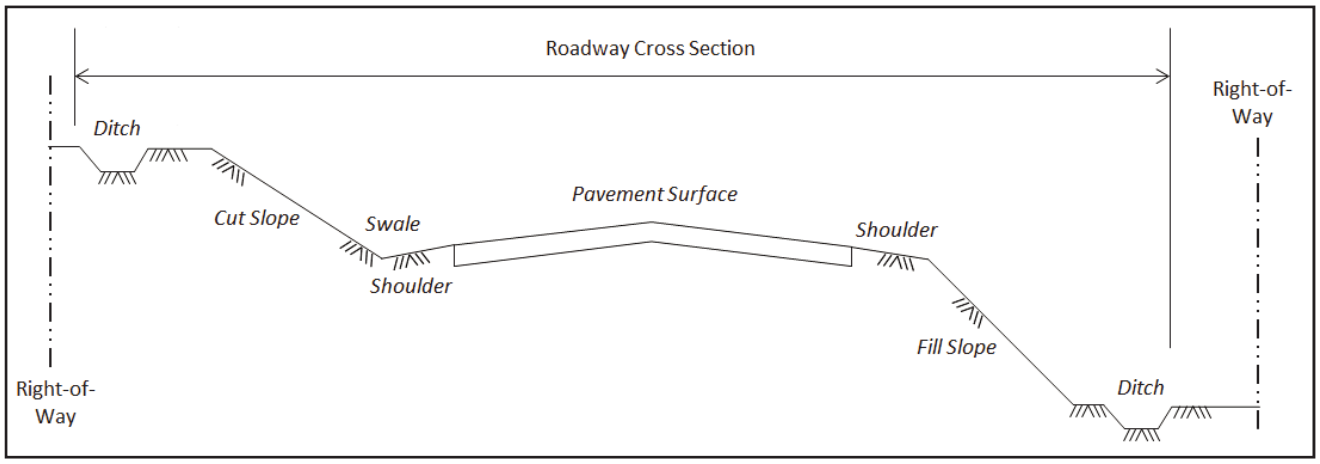


Figure 7: Existing Roadway Cross Section Limits for RMA Determination

Earth disturbances within the 100-year floodplain do not count towards the NPDES permit earth disturbance threshold when a USACE Section 404 permit is required. PennDOT is regulated by both Chapter 105 (floodways) and Chapter 106 (floodplains), which are issued with the Section 404 authorization. Runoff from disturbed areas within the 100-year floodplain must drain towards the stream that is the subject of the waterway permit. It is important to note that when a Section 404 permit is not required, non-RMA earth disturbances located within the 100-year floodplain count toward the NPDES permit earth disturbance threshold.

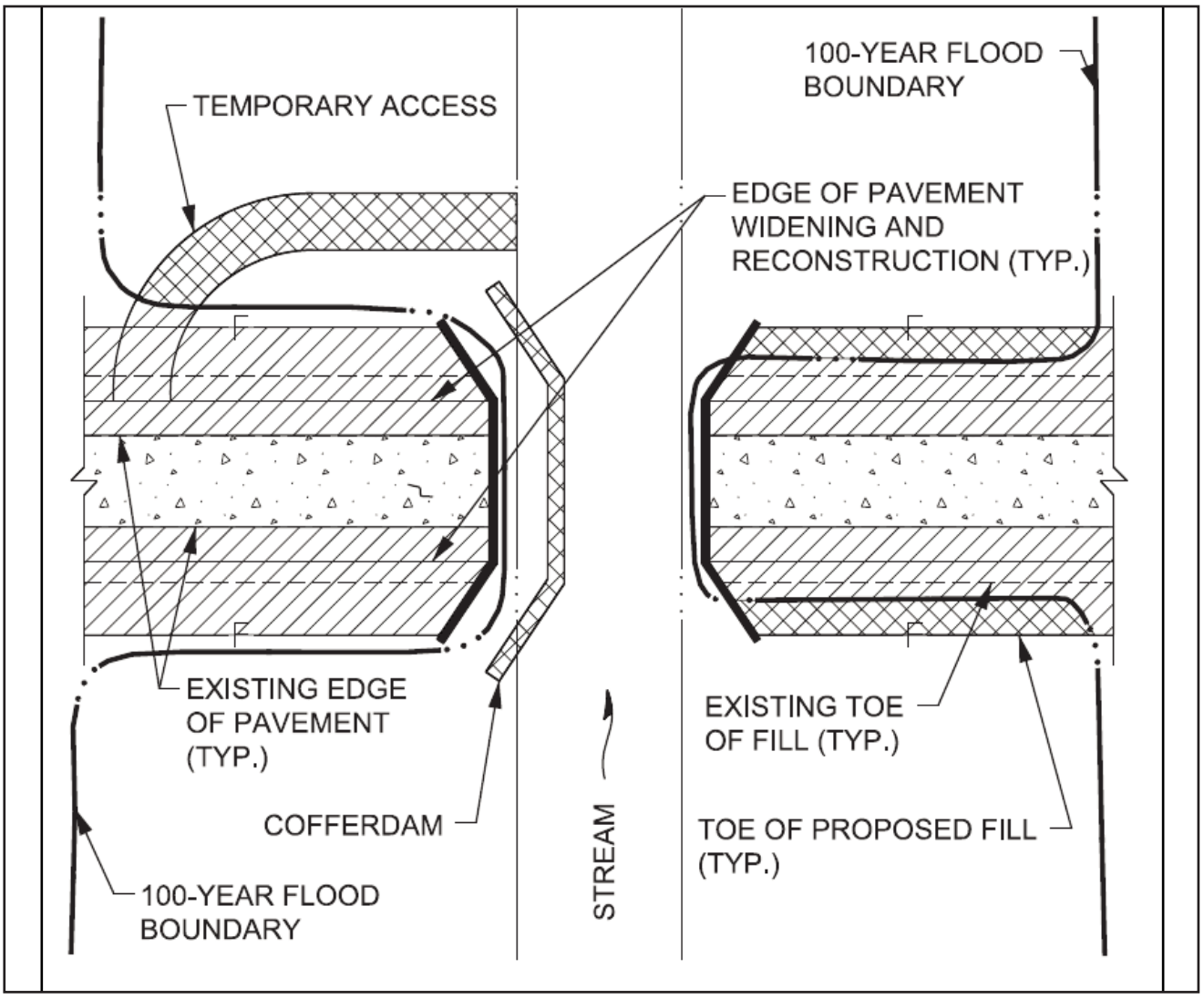


Figure 8: Earth Disturbance Activities within the 100-Year Floodplain

For PennDOT Projects, the area of disturbance that counts toward the NPDES permit threshold should be calculated using the equation below.

NPDES Disturbed Area = Total Area of Earth Disturbance - RMA Areas Outside of 100-Year Floodplain – Earth Disturbance Activity Areas within the 100-Year Floodplain covered by a Chapter 105/106 Permit.

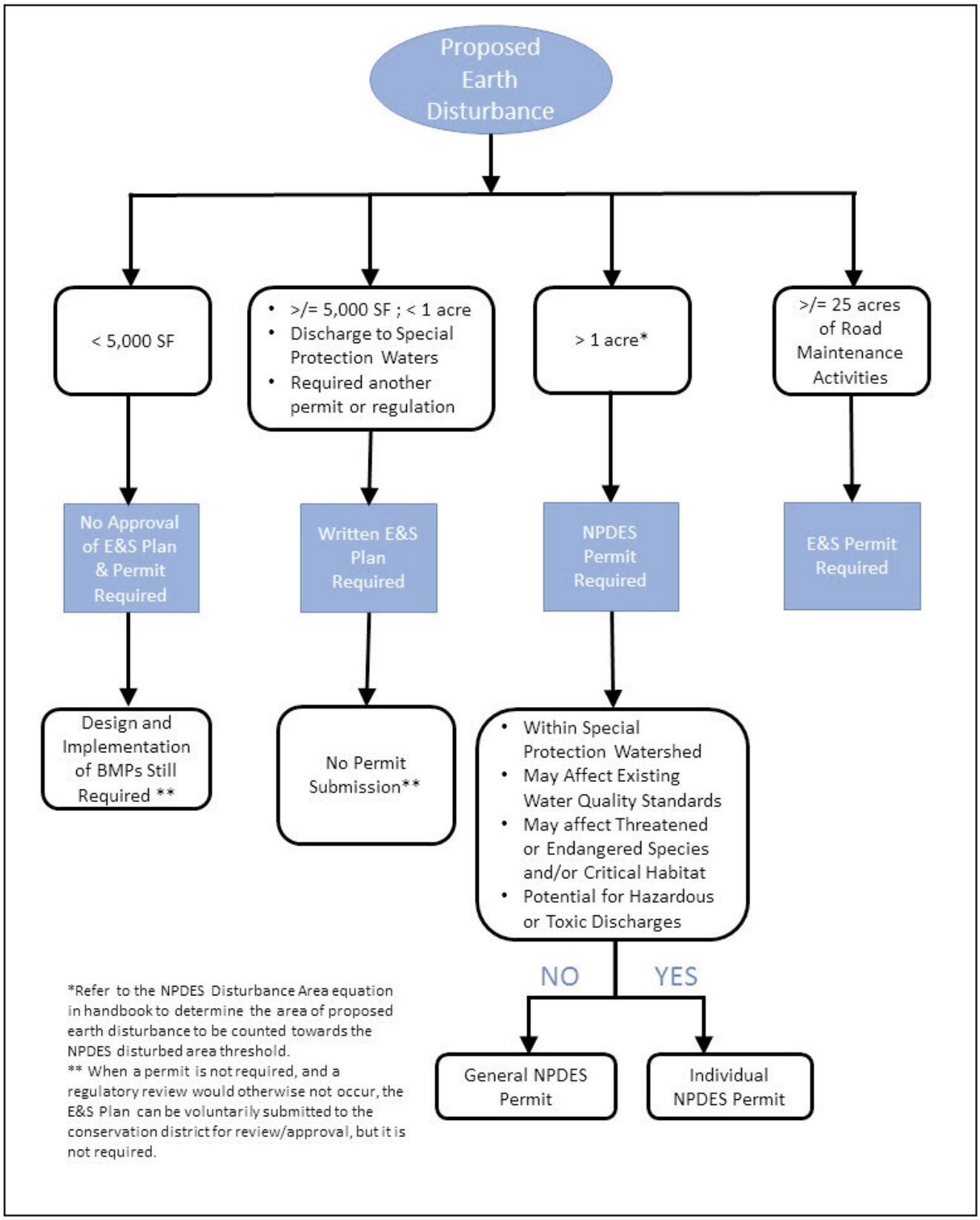


Figure 9: Earth Disturbance Permit Determination Flowchart

Coordination of Permit Submissions

Many PennDOT projects require both waterway and earth disturbance permits and approvals. Although these are two separate application processes, there are some instances where one may affect the other, especially with respect to the submission and review process. Although Chapter 105 states that Standard JPAs must be accompanied by proof of an application for an Earth Disturbance Permit or an E&S plan, per the agency coordination documented in DM-2, Chapter 10, Appendix A, PADEP has waived that requirement for the completeness review, allowing waterway and earth disturbance permits to be reviewed concurrently by PADEP and the CCDs. However, PADEP will not issue the waterway permit acknowledgement until PennDOT has received E&S or NPDES approval and has forwarded a copy of the CCD E&S approval letter or NPDES General Permit approved by the CCD to the PADEP Regional Office. Typical Earth Disturbance Approval Requirements for Chapter 105 permit types commonly encountered on PennDOT projects are included in Table 2.

Chapter 105 Waterway Permit Type	Typical Earth Disturbance Approval Requirements
Waivers	None – Comply with Chapter 102, implement E&S controls
Maintenance Permits/Small Projects	None – Comply with Chapter 102 (sketch plan and list of E&S BMPs is required for Maintenance Permit applications)
GP-3, 4, 5, 7, 8	E&S plan must be approved by the CCD prior to or concurrent with GP Registration
GP-11	E&S Plan must be submitted with GP Registration to PADEP Regional Office for review. If NPDES permit is required, E&S plan must be approved by CCD prior to or concurrent with GP-11 Registration.
Standard Joint Permit (JP)	E&S plan must be approved by CCD prior to or concurrent with JP Registration

Table 2: Earth Disturbance Approval Requirements

PADEP recommends coordination with the Region and/or a pre-application meeting for complex and technically difficult projects. The goal of these meetings is to discuss the project impacts, the proposed approach to the project, to coordinate with state/federal agencies on the permitting level required for the project, and to discuss any sensitive issues that should be considered and documented in the permit application. Pre-application meetings are not required; however, these meetings are often mutually beneficial as the quality of PennDOT's permit submission is improved and the reviewing agency staff can become familiar with the project prior to the permit submission. The meeting should be initiated by PennDOT or PennDOT's consultant; generally, the USACE, CCD, PFBC, PGC, DCNR, USFWS, and/or other resource agencies as needed are invited to attend as well. The PennDOT Drainage Manual (PUB 584) Chapter 10, Appendix A, includes a Field Checklist for Preliminary Design Permit Coordination that was developed jointly between PennDOT and PADEP; the use of this checklist is encouraged on PennDOT projects.

In addition to coordination of permit applications to avoid project delays, there is some overlap in the permit application documents for both types of submissions. Some examples include:

- PNDI: A PNDI receipt is required for both the NPDES permit and nearly all waterway permit applications. A single receipt can be used for both the waterway and NPDES permit applications.
- Municipal and County Notification: NPDES, GPs, and Standard JPAs require the applicant to notify the municipality and county in which the project is located that a permit application or registration is being submitted and inviting the local governments to comment on any land use planning or zoning aspects of the project. The NPDES and waterway permit letters can be combined into a single notification.

- Stormwater Consistency Letters: for projects that require both an NPDES and Standard JP in an Act 167 study area, stormwater consistency letters must be requested from the municipality and county for both permit applications. For the NPDES permit application, attached to the NPDES permit application, it is important to direct the county and municipality to return the letter to the permit preparer rather than the PADEP regional office. Refer to the PennDOT Drainage Manual (PUB 584), Chapter 4, Appendix C for an example consistency letter.

SECTION IV - Building a Permit

To assemble a complete and technically sufficient permit, the information presented must be consistent with the regulations and include the necessary level of detail. The information should be organized as directed in the instructions to make the permit submission easy to review, and presented in a logical sequence to justify the project.

CHAPTER 7: Permit Components

Waterway Permits

The table below summarizes all the typical components of a complete waterway permit for PADEP waterway permitting types. Further descriptions of each component are included in the sections below following the table. Additional information may be required by the permitting agencies when needed to ensure that the project meets all applicable state and federal permitting requirements.

Table 3: Waterway Permit Requirements

Permit Components	Permit Type				
	Maintenance	GP-11	Other GPs	JP Small Projects	JP Standard
Registration/Application Form		GP Reg Form	GP Reg Form	Standard App Form	Standard App Form
GIF				✓	✓
Notification Letters		✓	✓	Act 14 Notifications	Act 14 Notifications
PASPGP-5 Checklist		✓		✓	✓
Cultural Resources Coordination		Due diligence check	Due diligence check	Section 106 completed	Section 106 completed
Location Map	✓	✓	✓	✓	✓
Color Photographs	✓	✓	Recommended	✓	✓
Project Description	✓	✓	✓	✓	✓
Aquatic Resource Impact Table		✓	✓	✓	✓
Plans/Drawings	✓	✓	✓	✓	✓
E&S Plan	✓	✓	✓	✓	✓
PNDI Receipt/T&E Species Coordination	✓	✓	✓	✓	✓
EA Form				Modules S1, S2, & S3 only	✓
Wetland Report	✓	✓	✓	✓	✓
H&H Analysis		If applicable	If applicable		If applicable
Work Schedule	✓				
Stormwater Mgmt Analysis					If applicable
Floodplain Mgmt Analysis					If applicable
Risk Assessment					If applicable
PE's seal and certification		✓	GP-7		✓
Alternative Analysis		If applicable		If applicable	✓
Mitigation Plan		If applicable	If applicable		If applicable

Note: Follow the KEES process for electronic submissions. The below descriptions are for general information.

Registration/Application Form: Complete the appropriate permit registration or application form. Refer to the applicable instructions for clarification if needed

- GP Registration Form Instructions: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4052
- JP Application Form Instructions: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4088

GIF: Complete the General Information Form (GIF) with all required information and sign and date the last page. The purpose of the GIF is to identify basic project information, such as contact information, project location, facility data, project description, land use information, and the type of activity, in a clear, concise format. This helps PADEP identify all the appropriate permits needed for a project. The form and instructions can be downloaded from PADEP's website at: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4088.

Notification Letters: Notification letters to the municipality and county where the project site is located should include the permit application type, applicant contact information, project location, and brief project description. A copy of the GP Registration Form or GIF must be sent with the letters, and the topographic location map is recommended. A sample letter can be found in Appendix V of the JP Application Instructions: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4088.

PASPGP-5 Checklist: Complete the PASPGP-5 Checklist with all required information. The checklist can be found at: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4057. The checklist is no longer required by PADEP, but it is strongly recommended. Therefore, it is still required for permit submittals in KEES.

Cultural Resources Coordination: For GPs, ensure the project meets permitting requirements regarding cultural and historic resources. For JPs, a Cultural Resource Notice is typically submitted to the PHMC/SHPO; however, this requirement is often met with letters obtained as part of NEPA clearance. PHMC/SHPO consultation is required for JPs.

Location Map: Prepare a topographic map showing the United States Geological Survey quadrangle with the project location depicted and labeled, including coordinates.

Color Photographs: Color photographs of the project site with dates and descriptions are required for GP-3, GP-11, JPs, and are recommended for all permits. Include photographs of all stream and wetland impact locations.

Project Description: Prepare a clear, concise, and complete project description. This should include a description of the proposed work, including proposed impacts to waters and wetlands. Summarize any applicable agency coordination; if the PNDI receipt includes avoidance measures, include those in the description.

Plans/Drawings: Prepare drawings or plans of proposed activities. Show all impacts to streams, floodways, and wetlands. Use a unique identifier for each impact that matches the aquatic resource impact table. Calculate impacts and list all impacts on the aquatic resource impact table supplied by PADEP. For JPAs, plans must conform to the requirements in the JP Application Form Instructions, Section III.h.

Aquatic Resource Impact Table: Complete the table with impact length and width measurements. Project impacts should be reported accurately to make the source, type, and extent of a proposed impact clear to the permit reviewer. The Aquatic Resource Impact Table that is included with all permit submissions provides a way to standardize the impact reporting format. Impacts must be reported by activity (e.g., bridge and temporary road crossing), affected resource (e.g., wetland, watercourse, or floodway), size (e.g., length and width), and type (permanent or temporary). The Aquatic Resource Impact Table is organized to report information to meet both PADEP (Chapter 105) and USACE (Section 404) requirements. These two agencies differ in whether an impact is considered temporary or permanent, primarily in relation to utility lines. A subsurface utility line under a stream or wetland is considered a temporary impact by the USACE because there is no permanent structure above ground. PADEP, however, regulates structures that cross over, under, or through a resource and considers the footprint of a buried utility line to be a permanent impact.

The Aquatic Resource Impact Table is a convenient way for the agency reviewers to have all the information in one document, but it is important to make sure proposed impacts are reported correctly. Multiple rows may be required to report the various types of impacts to a single resource. For example, a bridge replacement project involving cofferdams and a temporary road crossing would require three separate rows to report impacts for the replacement bridge, the cofferdams, and the temporary road crossing. Similarly, separate rows

in the table would be required to report different activities that may be associated with a wetland crossing, such as permanent fill placement and temporary road crossings. Well-organized information in the Aquatic Resource Impact Table provides a clear summary of project impacts to agency reviewers, and minimizes delays in the permit review process. Refer to the applicable instructions for further clarification if needed: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4061. For additional instructions, examples, and diagrams regarding calculating the linear footage of stream impacts, refer to the PASPGP-5 (http://www.nap.USACE.army.mil/Portals/39/docs/regulatory/spgp/Final_PASPGP_5-19-Apr-2016.pdf).

E&S Plan: Make sure notes and drawings are consistent with information in the project plans. Include the approval letter from the appropriate CCD for Maintenance Permits, other GPs, and standard JPs. E&S pollution control plans are reviewed and approved by PADEP for GP-11s. Per the agency coordination included in DM-2, Chapter 10, Appendix A, PADEP has waived the E&S approval requirement for completeness review, which allows waterway and earth disturbance permits to be reviewed concurrently. PADEP will not issue the waterway permit until E&S or NPDES (when applicable) approval has been received.

PNDI Receipt/T&E Species Coordination: Perform a PNDI online environmental review on the Pennsylvania Natural Heritage Program's Conservation Explorer website (https://conservationexplorer.dcnr.pa.gov/). Ensure the project contact information and certification sections of the PNDI receipt are completed, which includes the applicant/project proponent signature. If potential impacts are indicated on the receipt, coordination must be conducted with the appropriate agency(ies) and clearance must be obtained before a permit would be approved. A list of required documents that should be sent to the applicable agency(ies) will be on the PNDI receipt. If avoidance measures are listed, the applicant must agree to those measures. PNDI receipts or agency clearances are valid for two years from the date of issuance. Make sure this clearance window is appropriate for the project timeframe.

If there are wetlands within 300 feet of the proposed project's limit of disturbance and the disturbance extends beyond the existing roadway in the listed counties/watersheds, a Phase 1 bog turtle survey should be conducted

Additional bog turtle coordination may be required for projects which may impact wetlands in the following counties: Adams, Berks, Bucks, Carbon (only Aquashicola Creek Watershed), Chester, Cumberland, Dauphin (only Swatara Creek Watershed), Delaware, Franklin (only Antietam Creek Watershed), Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill (only Swatara Creek Watershed) and York. If bog turtle coordination is required, a qualified bog turtle surveyor should conduct a Phase 1 survey and review the project area plus a 300-foot buffer for bog turtle habitat. Generally, if there are wetlands within 300 feet of the proposed project's limit of disturbance and the disturbance extends beyond the existing roadway in the above-listed counties/watersheds, a Phase 1 bog turtle survey should be conducted. The Phase 1 bog turtle habitat survey report should be submitted to USFWS for concurrence. Additionally, if bog turtle clearance has already been obtained for the proposed project, the USFWS clearance letter should be included.

EA Form: Complete the EA Form for JPs. Only module S1 and portions of modules S2 and S3 are required for a Small Projects JP. Modules S1, S2, S3, and S4 are required for a Standard JPA. Module S1 includes a project summary and is intended to present an overall summary of the project scope, certain key information requirements, and when applicable, a comprehensive view of the overall project and related projects. Module S2 covers resource identification and characterization and is intended to organize information related to the identification of the resources present on the project site and to characterize those resources that may be affected by the proposed project. Module S3 is the identification and description of potential project impacts. This module is intended to organize and present information concerning the potential impacts or effects of the proposed project. Module S4 includes a mitigation plan and is intended to organize and present information concerning actions undertaken to avoid, minimize, and restore the potential impacts or effects of the proposed project. The EA Form and instructions for completing the form can be found here: http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4048.

Wetland Report: An aquatic resource investigation including wetland delineation should be performed by qualified wetland scientists. A wetland delineation report should be prepared, and all features should be mapped. Refer to the Wetland Resources Handbook (Pub 325) for further details regarding wetland resource identification, delineation, and documentation.

H&H Analysis: An H&H analysis should be performed in accordance with Chapter 10 of DM-2 – Highway Design (PUB 13M). A separate report should be prepared and include the seal and certification statement of the licensed PE who prepared the report, when applicable.

In general, design hydraulic studies are required for waterway obstructions and encroachments associated with new highway (roadway and structure) construction and highway reconstruction, rehabilitation, or improvement where the hydraulic performance may be affected. Hydraulic studies may not be required for projects that do not affect the waterway or waterway opening. Per DM-2, Chapter 10.3.H, hydraulic computations are also required for all pipes greater than 18-inches in diameter. Per DM-2, Chapter 10.1.A.20, if the drainage area of the proposed project is 0.5 mi2 or more, the Department requires an H&H Report be prepared. The general criteria for design flows are provided in PA Code 105.161(c) and are as follows:

- Rural area—25-year frequency flood flow.
- Suburban area—50-year frequency flood flow.
- Urban area—100-year frequency flood flow.

For complex projects, there may be several phases; requirements for commonly encountered phases are included in Figure 10.

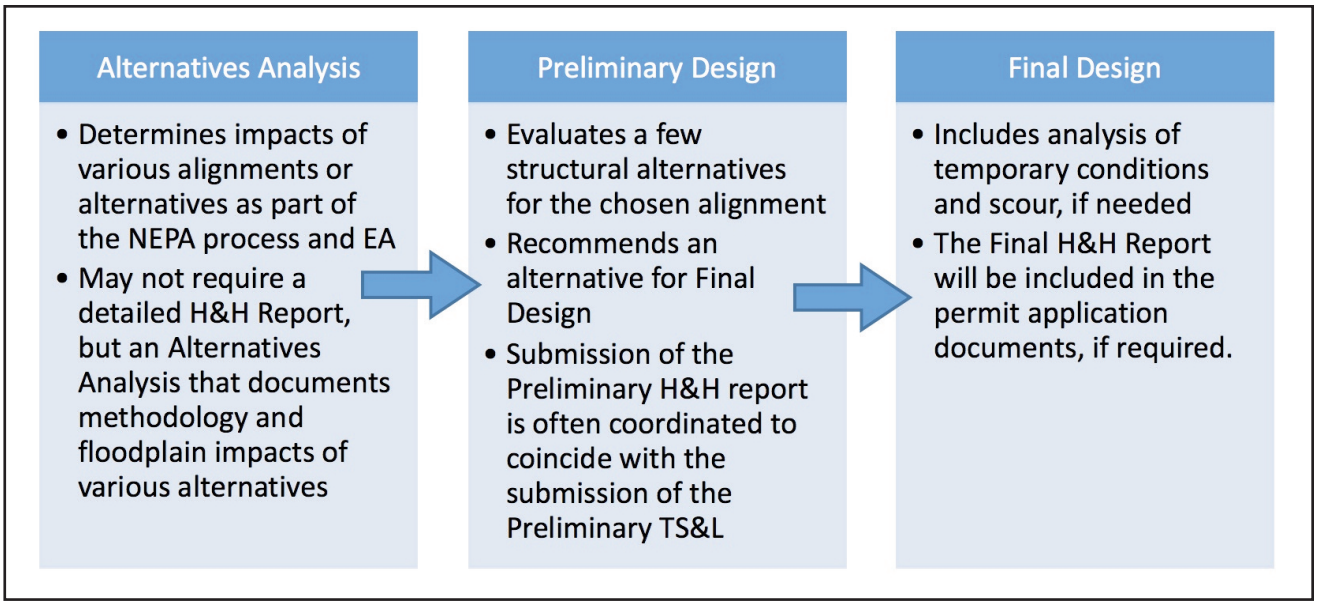


Figure 10: H&H Analysis Requirements for Commonly Encountered Project Phases

Work Schedule: The work schedule is required for Maintenance Permits and should include the roadway name/route and segment number, the stream name, Chapter 93 designation, any in stream restrictions due to wild or stocked trout or migratory fish, and the date work is to begin and end.

Stormwater Management Analysis and Consistency Letter: If the project is located in a watershed or a county with a PADEP approved Act 167 SMP, an analysis of the proposed project's compliance with the standards in the SMP must be undertaken and reviewed by the local municipality. For most transportation projects, this requirement is fulfilled by sending a request for SMP consistency concurrence to the county and municipality. A sample stormwater consistency letter template (for the county and municipality to fill out and return to the applicant) is included in Appendix 4C of PUB 584.

Floodplain Management Analysis and Consistency Letter: If the proposed water obstruction or encroachment is located within a floodway delineated on a FEMA map, an analysis of the project's impact on the floodway delineation and water surface profiles may be required. For most transportation projects, this requirement is fulfilled by sending a request for floodplain management consistency concurrence to the municipality. A sample floodplain consistency letter template (for the municipality to fill out and return to the applicant) is included in Appendix 4C of PUB 584.

Risk Assessment: If the stormwater and/or the floodplain management analysis was conducted and indicates increases in peak runoff rates or flood elevations, include as a separate document a description of property and land uses which may be affected and an analysis of the degree of increased risk to life, property and the environment.

PE's Seal and Certification: If the proposed water obstruction or encroachment poses a threat to human life or substantial potential risk to property, the plans, specifications and reports accompanying such applications shall be affixed with the seal of a registered PE and a certification, signed by the registered PE, which shall read as follows:

"I (name) do hereby certify pursuant to the penalties of 18 Pa. C.S.A., Section 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection."

Generally, documents associated with GP-7s, GP-11s, and JPs should be signed and sealed by a PE because these permit types typically involve water obstructions, such as bridges, or encroachments, such as stream realignments, that may be potential threats to human life or risks to property.

Alternative Analysis: Discuss alternatives to the proposed activities that were investigated to avoid or minimize adverse environmental impacts, including a "no-build" alternative. Explain why the selected alternative is preferred. Projects that will replace a bridge or culvert with a box culvert should conform to the joint agency guidance provided in DM-2, Chapter 10, Appendix G.

Mitigation Plan: If the project meets the mitigation threshold, include a separate document which describes how project planning employed mitigation concepts as defined in PADEP's Chapter 105 Rules and Regulations. If these impacts cannot be eliminated, then the mitigation plan must include details and plans for replacing the affected resource. The specific replacement resources or environments must be itemized and construction, operation, and maintenance activities must be detailed in the plan. In addition, the mitigation plan must be consistent with the 2008 Mitigation Rule (33 CFR Part 332 Compensatory Mitigation For Losses of Aquatic Resources). Refer to Appendix I for a list of general mitigation plan components that comply with the 2008 Mitigation Rule.

Before a permit package is submitted to PADEP, a quality review of the package should be completed. Refer to the QA/QC section (Chapter 8) below for further details regarding quality reviews. It is imperative to ensure impact calculations and structure dimensions are consistent throughout all components of the permit application, including maps and plans. Additionally, be sure the municipal and county notifications have been sent and applicable agency clearances have been obtained.

Ensure impact calculations and structure dimensions are consistent throughout all components of the permit application, including maps and plans.

If a project is located in more than one county and requires a JP, PADEP requires additional documentation, including a comprehensive project EA and county specific alternatives analysis, impact analysis, and mitigation measures for the proposed project impacts in each county. For further details regarding the required documentation, refer to PADEP's Comprehensive Environmental Assessment of Proposed Project

Impacts for Chapter 105 Water Obstruction and Encroachment Permit Applications.

Lastly, the aquatic resource impacts associated with the waterway permit should be verified with the impacts reported in the approved NEPA document. If the impacts are not similar, then a NEPA re-evaluation may be necessary. Refer to PUB 10B, Design Manual Part 1B Post-TIP NEPA Procedures for further discussion on determining when a re-evaluation is needed.

Earth Disturbance Permits

The purpose of the E&S Plan is to identify potential erosion problems and to define effective and economic measures to be used in conjunction with construction activities to minimize erosion and sediment pollution. Chapter 102 requires 15 factors to be considered when developing an E&S Plan. Additional information regarding the specific plan requirements for each factor can be found in Chapter 1 of the 2012 PADEP E&S Manual.

- Existing Topographic Features
- Type, Depth, Slope, Location, and Limitations of Soils
- Characteristics of Earth Disturbance
- Volume and Rate of Runoff
- Location and Chapter 93 Designation of Receiving Surface Waters
- Narrative Description of the Location and Type of BMPs Used
- Sequence of BMP Installation and Removal
- Supporting Calculations and Measurements
- Plan Drawings
- Maintenance Program for BMPs
- Procedures for Recycling and Disposal of Waste Materials
- Identification and Management of Naturally Occurring Geologic Formations or Soils Conditions That Have the Potential to Cause Pollution
- Identification and Management of Potential Thermal Impacts
- Consistency with PCSM Plan
- Identification of Existing and Proposed Riparian Forest Buffers

The E&S Plan includes the plan drawings and a narrative. Often the terms plan, drawing, and map are used interchangeably. For the purposes of this handbook, the term E&S Plan refers to the overall plan, and the term E&S Plan Drawings refers to the E&S Construction Plan Drawings.

The E&S Plan Drawings are used by a contractor to construct the proposed E&S measures. The drawings should include topographic mapping that shows the proposed earthmoving and the BMPs that are to be used to minimize erosion and sedimentation during construction. They should also include construction details, sequencing, maintenance information, seeding and mulching specifications, and any other information needed by the contractor to construct and maintain the proposed E&S control measures during construction.

The E&S narrative, which is commonly referred to as the E&S Report, includes all backup documentation needed to substantiate the E&S Plan Drawings. It typically consists of written narrative that is accompanied by appendices containing supporting design calculations and figures that can be used to validate the proposed E&S measures. It helps the plan reviewer determine whether the proposed erosion and sediment controls have been designed properly. It does not provide the contractor with information critical to implementing the plan.

It is important to coordinate the E&S design with other design disciplines to avoid conflicts and incorporate additional design considerations.

It is important to coordinate the E&S design with other design disciplines early on to avoid conflicts and incorporate additional design considerations. The E&S design is most closely tied to the drainage and PCSM designs. Early,

frequent, and thorough coordination is required throughout the design process to ensure the E&S, PCSM, and drainage designs function together.

In addition to the PCSM and drainage designs, it is equally important to coordinate the E&S design with other aspects of the project. This includes, but is not limited to, roadway, traffic control, ROW, structures, construction phasing/scheduling, and utilities. The designer needs to ensure that BMPs will be placed to avoid potential disturbance to their integrity and function. It is also important to place BMPs as to avoid potential construction and traffic disturbances. For example, E&S BMPs need to be coordinated with Maintenance and Protection of Traffic (MPT) plans to ensure that earth disturbance is being adequately treated during all phases of the project and that good traffic patterns can be maintained throughout construction. Design coordination with ROW is needed throughout the process of the E&S design and plan development to ensure that adequate ROW or easements are purchased to implement and maintain the proposed E&S BMPs. For additional information related to the coordination of the E&S Plan with other aspects of the project, refer to Pub 584 (Drainage Manual), Chapter 12.3 E – Ongoing Coordination.

The successful development of an E&S Plan is based on a strong understanding of the regulations, standards, specifications, and policies that govern the development of an E&S Plan for PennDOT projects. A list of pertinent E&S Plan design regulations, standards, policies, specifications, and checklists is included in **Appendix J**. The E&S Plan Checklists in Appendix A of the 2012 E&S Manual should be referenced throughout the development of the E&S Plan. These checklists were developed from the plan requirements in Chapter 102. The checklists detail the information that should be included in the plan and specify whether the information should be in the E&S Plan Drawings or the E&S Narrative. The checklists are also a good resource for performing internal plan reviews, prior to submitting to the review agency.

Furthermore, if a project has multiple phases, it is important to identify this upfront in the permit documents so that it does not cause future problems when another earth disturbance permit is then submitted for the next phase of the project.

Finally, the contractor is normally responsible for locating waste, borrow, and staging areas and obtaining the appropriate permits and approvals. Pub 408 Section 105.14 contains the contractor specifications for borrow and waste areas.

Post Construction Stormwater Management (PCSM) Plan

A PCSM Plan is used to identify stormwater control measures (SCMs) to be installed during construction, which manage and treat the stormwater discharges to protect water quality after construction. The goal of the PCSM plan is to implement PCSM measures that maximize replication of the natural hydrologic cycle, to protect the structural integrity of the stream, and to protect and maintain existing and designated uses of receiving surface waters. A PCSM Plan is required for all NPDES permits. If an application is submitted without a PCSM Plan, it will be deemed incomplete. Chapter 102 requires 15 factors to be considered when developing a PCSM Plan. Additional information regarding the specific plan requirements for each factor can be found in the NPDES Permit.

- Existing Topographic Features
- Type, Depth, Slope, Location, and Limitations of Soils
- Characteristics of Project Site
- Net Change in the Volume and Rate Stormwater
- Location and Chapter 93 Designation of Receiving Surface Waters
- Narrative Description of the Location and Type of SCMs Used
- Sequence of SCM Implementation or Installation
- Supporting Calculations
- Plan Drawings
- Long-Term Maintenance Program
- Procedures for Recycling and Disposal of Waste Materials Associated with or from SCMs
- Identification and Management of Naturally Occurring Geologic Formations or Soils Conditions That Have the Potential to Cause Pollution

- Identification and Management of Potential Thermal Impacts
- A Riparian Buffer Forest Management Plan, when Required
- Additional Information Requested by PADEP, as Necessary

A complete PCSM Plan consists of a set of plan drawings and a written narrative. The PCSM Plan Drawings depict post-project site conditions, or those conditions that will persist long after the contractor completes final site stabilization. Most importantly, the plan drawings highlight the SCMs that are to be implemented on the site. The plan is essential for the contractor to construct the SCMs.

Most SCMs require periodic maintenance, and the PCSM Plan must address long-term operation and maintenance of the proposed SCMs. PennDOT's policies and guidelines related to stormwater BMP maintenance are found in Pub 888. As explained in PUB 14M Chapter 6, the PCSM Plan Drawings need only include a note that references Pub 888. Specific information for each proposed BMP regarding inspections, routine and corrective maintenance should be summarized in the PCSM Plan Narrative.

The long-term operation and maintenance of permanent stormwater controls in a PCSM Plan should not be confused with the requirements to inspect and maintain temporary E&S controls in an E&S Plan.

In the past, the PCSM Plan Drawings may or may not have been used as an "Also Plan" in the construction plan set. In some cases it was treated similar to an E&S Plan – a bid document with quantities (for tab sheets) taken from it. If the PCSM Plan Drawings were not included as a separate plan within the construction plan set, all information necessary for bidding and construction of SCMs was included in the Construction Plan and/or the E&S Plan Drawings. Per revisions to PUB 14M in the summer of 2018, all future PCSM Plan Drawings must be an official "Also Plan."

The PCSM Narrative, which is commonly referred to as the PSCM Report, provides the agency reviewing the NPDES permit with a summary of the stormwater management design. Additionally, the supporting design information for the SCMs described in the NPDES permit and depicted on the PCSM Plan Drawings are located in the report. The report typically consists of written narrative that is accompanied by appendices containing supporting design calculations and figures that can be used to substantiate the proposed PCSM design.

It is important to coordinate the PCSM design with other design disciplines to avoid conflicts and incorporate additional design considerations. Coordination should start early in preliminary engineering and continue through construction. The PCSM design is most closely tied to the drainage and E&S design, and frequent coordination is required throughout the design process to ensure the designs are consistent and function together. In addition, it is equally important to coordinate the PCSM design with other aspects of the project. This includes, but is not limited to, roadway, ROW, structures, construction phasing/scheduling, and utilities. Coordination with ROW is especially important throughout the process of the PCSM design and plan development to ensure that adequate ROW or easements are purchased to construct and perform long-term maintenance on the proposed BMPs. Any alterations to the proposed design have the potential to impact the PCSM design. For example, changes to the proposed roadway design need to be closely coordinated with the PCSM design, because altering pavement widths and/or cut and fill slopes could affect the rate and volume of stormwater runoff that will need to be managed by the proposed SCMs.

PennDOT projects should be designed in accordance with PennDOT's Antidegradation and Post-Construction Stormwater Management Policy. The policy was developed with PADEP's cooperation to ensure that PennDOT projects are consistent with Pennsylvania's antidegradation laws and federal NPDES requirements. In addition to PennDOT's Stormwater Management Policy, the successful development of a PCSM Plan requires a strong understanding of the various regulations, standards, specifications, and policies that govern the development of PCSM Plans for PennDOT projects. A list of pertinent PCSM regulations, standards, policies, specifications, and checklists is included in **Appendix J**.

Preparedness, Prevention, and Contingency (PPC) Plan

A PPC Plan is required for any NPDES Application for Stormwater Discharge General Permits or Water Management Permits. For projects where the potential exists for causing accidental pollution of air, land, or water, or for causing endangerment of public health and safety through accidental release of toxic, hazardous, or other polluting materials, the NPDES permittee or co-permittee will need to develop a PPC Plan.

The PPC Plan is most often developed by the contractor after the project is let. In these cases, a special provision must be included in the construction bid documents and a statement needs to be provided in the E&S Plan general notes that the contractor is responsible for providing a PPC Plan. In rare cases, Districts may determine that for certain environmentally sensitive projects, the design consultant may prepare the PPC Plan for the project, prior to letting for inclusion in the bid documents.

Development of the PPC Plan is to be done in accordance with Chapter 91, Sections 91.33 and 91.34. No formal PPC Plan submission to a regulatory agency is required, nor is formal approval from an agency required. However, a copy of the PPC Plan is to be filed in the District Project Files as well as be made available at the job site. If it is believed an emergency or accidental spill during construction is possible, then the PPC Plan box in PennDOT's NPDES submission should be checked. In addition, BMPs must be located on the PPC Plan for each identified area. PADEP has published additional information to aid in development of the PPC Plan and can be found in PADEP's Guidelines for the Development and Implementation of Environmental Emergency Response Plans – Document ID: 400-2200-001.

CHAPTER 8: Quality Assurance/Quality Control

A consistent quality assurance/quality control (QA/QC) process for creating Chapters 102 and 105 permit submissions will reduce review times and deficiencies issued by the reviewing agency(ies), including the USACE, the PADEP, and CCDs. Chapter 102 and 105 permits may be prepared by PennDOT or by consultants. In either case, a quality permit submission is essential for keeping projects on schedule and avoiding unnecessary delays.

A quality permit submission is essential for keeping projects on schedule and avoiding unnecessary delays.

PennDOT's MOU with PADEP identifies certain measures of success to ensure the performance of PennDOT and PADEP under the MOU is as efficient as possible. Two specific goals include having at least 90 percent of submitted permit applications be complete and at least 90 percent of submitted permit applications be technically adequate. This QA/QC procedure is to be applied to reduce the number of deficiencies and meet the target metrics. It is ultimately PennDOT's responsibility to ensure quality permit submissions. The end goal is to have a complete and technically adequate permit on the first submission.

In cases where a permit is not deemed complete or technically adequate by the reviewing agency(ies), a deficiency will be issued. Deficiencies cannot realistically be avoided entirely, hence the target metric is set at 90 percent. Regional and reviewer differences in interpretation are factors that contribute to deficiencies. For example, a Conservation District reviewer may request a specific stormwater BMP because the reviewer is familiar with the area and knows which BMPs will work best given the characteristics of their district. Furthermore, there may also be differences in interpretation between federal and state agencies. PADEP may not have any comments, while USACE may issue a deficiency because of a difference in federal requirements. In addition, regional discrepancies sometimes occur within PennDOT. For example, PADEP reviewers may receive permit submissions from multiple PennDOT Districts, each with its own preferences for assembling and organizing a permit registration or application. This can cause problems for the PADEP reviewer because the reviewer cannot readily find specific information in each permit submission, which can ultimately lead to deficiencies. The important thing to note is that Chapter 102 and Chapter 105 are subject to different interpretations for a variety of reasons. To avoid deficiencies caused by differing interpretations, the reviewing agency(ies) should be included throughout the design and permitting process, and pre-application meetings should be scheduled prior to permit submission.

Checklists

Checklists for each aspect of Chapter 102 and Chapter 105 permits were developed. The checklists are designed to focus on key components of a quality permit submission, rather than covering every minute detail.

The Chapter 105, Chapter 102, and Chapter 102 BMPs checklists are available in **Appendices J, K,** and **L**. The H&H checklists are located in PUB 13M (Design Manual, Part 2, Chapter 10) and can be accessed by clicking the link in the table below. The relevant checklists must be completed and attached to a permit application prepared in KEES. This is required prior to submitting the permit application to PADEP.

Table 4: QAQC Checklists

Chapter 105 Waterway Permit Type	H&H	Chapter 102	Chapter 102 BMPs
EXX-9999*	Summary	Erosion & Sediment Control	Site Access
GP-11	Abbreviated H&H Report	General NPDES	Sediment Barriers
Other GPs	Full H&H Report	Individual NPDES	Channels
Joint Permit	Hydrology		Sediment Basins
	HEC-RAS		Sediment Traps
	HY-8		Outlet Protection
	Scour		Other
Permit Submission Comment Summary			
Comment Summary Form			

Abbreviations: GP: General Permit, H&H: Hydrologic and Hydraulic, HECRAS: Hydrologic Engineering Centers River Analysis System, NPDES: National Pollutant Discharge Elimination System, BMP: best management practices

* Maintenance Permit Conditions can be found in **Appendix E**

Roles

The preparer refers to the person who prepares the permit submission. The preparer could be a consultant or a PennDOT staff member. For example, Consulting Firm X is tasked with completing a GP-11 for a bridge replacement project. The preparer would be an environmental/engineer staff member at Consulting Firm X. Alternatively, the PennDOT District has decided to complete another GP-11 internally. In this case, the preparer would be a PennDOT project manager, a member of the PennDOT environmental unit, or other person designated to prepare and assemble a permit submission.

The reviewer refers to the person who reviews the permit package prior to submission. The reviewer is a separate person from the preparer and should be someone with more experience with the subject matter than the preparer or someone with the appropriate expertise. The reviewer could be a consultant and/or a PennDOT staff member. Continuing the example provided above with Consulting Firm X, the reviewer would be a senior environmental/engineer staff member at Consulting Firm X. Similarly, the reviewer in the second example would be the PennDOT permit coordinator, PennDOT environmental manager, or other person designated by PennDOT to review a permit package prior to submission.

The PennDOT Maintenance reviewer should be someone from the District Maintenance Unit who can maintain and inspect the proposed project after construction is completed.

Process

The preparer should select and complete the applicable QA/QC checklist(s) identified above when assembling a permit package to ensure that all required components are included. The preparer should then submit the completed checklist(s) and the permit package(s) to the reviewer via the delivery method that is most convenient (hard copy or electronic). It is the preparer's responsibility to ensure a quality permit is completed. Consultants are expected to perform their own internal QA/QC check prior to submitting the permit package(s) to PennDOT. Furthermore, District personnel are expected to perform a quality review of the permit package(s) prior to submission, regardless of whether the preparer was a consulting firm or PennDOT. The reviewer (PennDOT or consultant) is responsible for reviewing the permit package(s) and ensuring that the checklist(s) completed by the preparer has been properly utilized and all necessary items are included.

The PennDOT reviewer should use the Permit Submission Comment Summary Form, found in Appendix N, to record deficiencies. The permit package should be returned to the preparer with the Permit Submission Comment Summary Form, and a copy of this form should be sent to the Environmental Policy and Development Section (EPDS). If the reviewer's comments are significant, it may be helpful for the reviewer to discuss the comments with the preparer either over the phone or in person.

The preparer should correct the deficiencies and indicate how and where the comments have been addressed, then initial by each check mark on the checklist to indicate that the necessary action has been taken to resolve the comment. The QA/QC process continues until the PennDOT reviewer has no comments on the final permit package. The final checklist(s) documenting the absence of deficiencies should be kept in the project file. The QA/QC process is summarized in Figure 11 below.

In addition to the above-mentioned review, it is imperative that the Maintenance Unit be involved in reviewing the permit submission(s) to ensure that long-term maintenance and accessibility needs are met. This is particularly important for the review of proposed stormwater BMPs. The PennDOT Maintenance reviewer should sign the line provided in the checklist header (or type their name followed by /s/ if the District elects to use electronic transmission only) to indicate that the permit includes the necessary maintenance provisions. If not, the permit package should be returned to the preparer for revision.

The H&H review process and checklists outlined in PUB 13M, Chapter 10 should be followed. The PennDOT H&H Coordinator should review and approve the H&H report prior to its inclusion with the Chapter 105 permit package. During the Chapter 105 permit package QA/QC review, the permit preparer and reviewer should ensure that the appropriate H&H checklists are present and complete and that the information provided in the H&H report is consistent with the information provided in the remainder of the permit package.

In summary, it is the consultant's responsibility to review their own permit submissions and to address any comments from PennDOT. It is PennDOT's responsibility to review and, if necessary, comment on each permit document prior to submission for agency review. It is the Maintenance Unit's responsibility to review and, if necessary, comment on permit submissions to ensure that the proposed project is maintainable. It is everyone's responsibility to work together to prepare a complete and technically adequate permit submission.

It is everyone's responsibility to work together to prepare a complete and technically adequate permit submission.

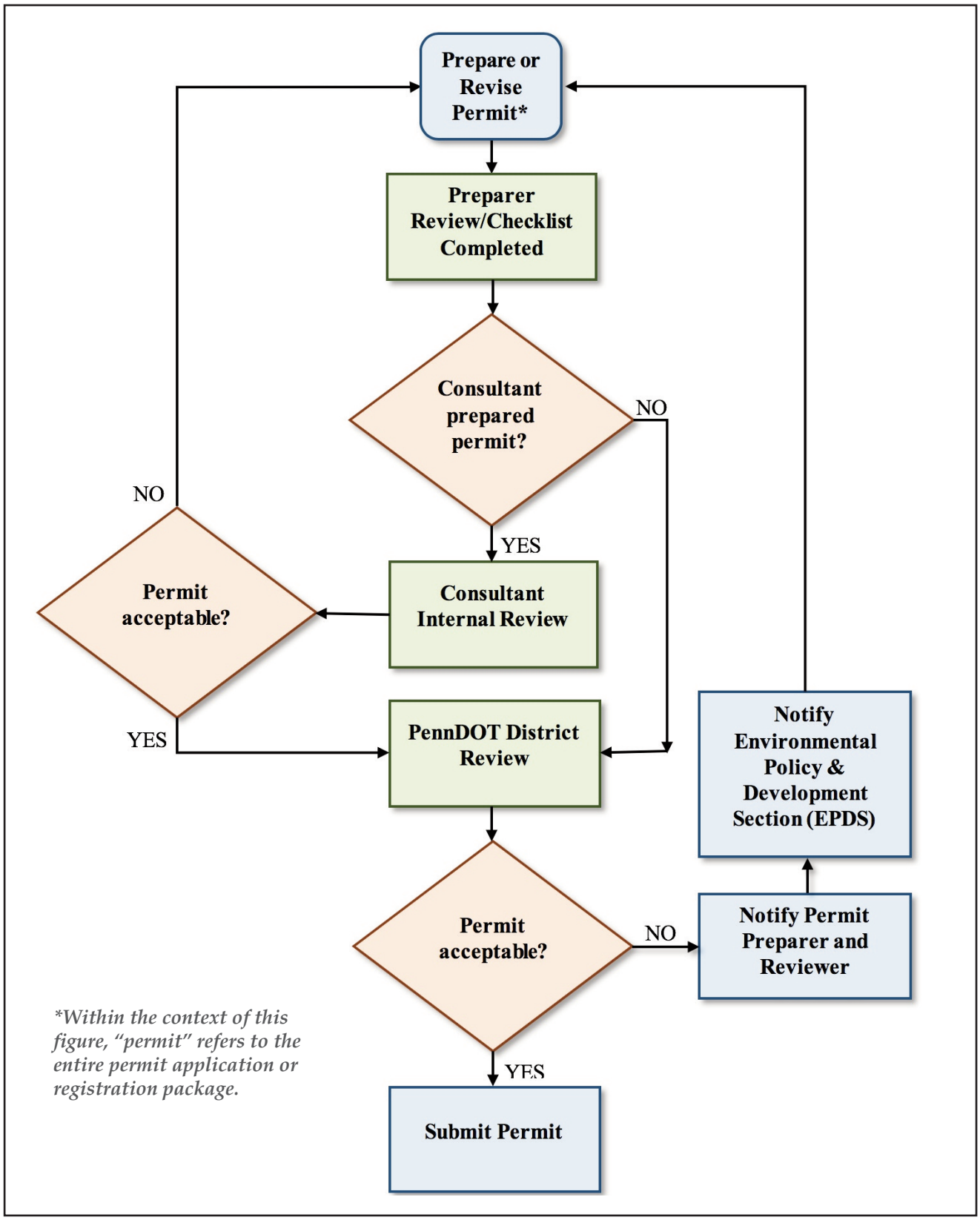


Figure 11: Permit Review Process Flow Chart*

CHAPTER 9: Best Practices

The following items are examples of best practices regarding areas of concern that are frequently identified as deficiencies by PennDOT, PADEP, USACE, and CCDs. It is important to consider these best practices when preparing permit submissions.

Consistency

A. Ensure that all impact calculations and structure dimensions are consistent throughout all sections of the permit application, including maps/plans.

Pre-Application Meetings

A. Consider having a pre-application meeting with the reviewing agency(ies). If it is a complex project, the meeting should take place early in the design phase of the project. Conversely, if a project is straightforward, a pre-application meeting may not be needed.

B. During a pre-application meeting, issues can be resolved immediately or the permitting effort may be downgraded.

C. Actions discussed in a pre-application meeting with the reviewing agency(ies) should be incorporated into the submission, or an explanation should be provided as to why they were not.

D. If a pre-application meeting occurs, meeting minutes should be prepared and included with the permit submission.

Forms

A. Check the PADEP's eLibrary to ensure the most recent version of the appropriate form is being used.

B. Submissions to CCDs usually require additional forms. Make sure any county-specific forms are up to date and are included.

Aquatic Resource Identification

A. Stream designations should be confirmed in the Pennsylvania Code Chapter 93 and in PADEP's Existing Use Classification list, not just eMapPA.

B. If wetlands are exceptional value, make sure this is noted throughout the permit package.

Temporary Conditions

A. Temporary conditions should be evaluated for the two-year event so that PennDOT can determine if property easements are necessary as described in Appendix G of Design Manual, Part 2, Chapter 10 (Pub 13M).

Plans

A. Plans should always have dates to easily identify if they are the most current version.

B. Plans should not be "preliminary", "draft", or "conceptual", nor labelled as such.

C. Resources should be consistently labelled across all plan sets. For example, if a channel is identified as a stream on one plan and a ditch on another, the agency reviewer does not know whether the channel is jurisdictional or not.

D. Symbols should be correctly identified in the legend.

E. Do not include redundant notes or notes that do not apply to the project.

F. List the correct instream work restrictions and stream designations.

G. Plans should be site specific.

H. Existing and proposed contours should be included on plan drawings.

I. Plans should be legible and text should not overlap.

1. Chapter 105

   a. Mitigation plans should include an assessment of function and values that offsets the proposed impacts.

   b. If needed, prepare a separate stream relocation plan. The stream relocation is often obscured when it is shown with all other linework.

   c. Cross-sections of all affected streams need to be included with flood elevations shown. Cross-sections of affected wetlands are helpful but not required.

2. Chapter 102

   a. Provide temporary and permanent seeding, liming, fertilizing, and mulching information on the plan drawings. Information should include seed, lime, fertilizer, and mulch types and rates.

   b. Pumped water filter bag and concrete washout facility locations should be shown.

   c. Riparian buffers should be shown.

   d. Infiltration/Geotech study information should be included (e.g. location of test pits).

   e. For plans submitted as part of an Individual NPDES submission, the Section 404 permit area should be shown. This is important for the calculation of riparian buffer offsets.

H&H

A. The H&H report should be signed and sealed by a PE and approved by PennDOT.

B. H&H models should include anecdotal flooding history where possible, especially if different from the typical model.

E&S BMPs

A. Sequence the installation of all proposed BMPs. The construction sequence should be specific, as well as inclusive of BMP installation and removal in relation to the construction activities.

B. Dimensions for outlet protection should be shown.

C. Provide details and locations for concrete washout facilities. They should not be located within 50 feet of waters or drainage structures and should be underlain by an impervious geomembrane.

D. Pump intakes should be floating and screened. Pumped water filter bags should be placed in well-vegetated grassy areas and not across contours, and should have compost filter sock placed around them. The pumping rate should be no greater than 750 gallons per minute (GPM) or half the maximum specified by the manufacturer, whichever is less.

E. BMP trains should be sufficient to provide the reduction in stormwater volume and rate claimed on the worksheet.

F. Sediment barriers, such as silt fence, should not have gaps and should not be installed in areas of concentrated flow to avoid blow-outs and flooding.

G. Inlet protection should be used cautiously because it can lead to flooding.

H. Any area proposed for an infiltration BMP should be protected from compaction throughout the life of the construction project.

Chapter 105

A. Project Description

1. Specifically describe demolition procedures, including how materials will be removed from the aquatic resources.
2. Impacts to aquatic resources should always be minimized as much as possible for any project. Provide a brief discussion of how this was done for the specific proposed project.

B. PASPGP-5 Reporting Activities

1. If a permit is known to be a Reporting Activity under PASPGP-5, this should be identified when the permit registration or application is submitted. Early identification of Reporting submissions by the PADEP will start the USACE review process earlier. Conversely, when PADEP does not identify a Reporting Activity early in their review, it delays the USACE review.
2. These items may be required by the USACE for a Reporting Activity review depending on the permit type and associated impacts:
   a. Section 106 clearance;
   b. Supporting wetland data (i.e. representative maps, descriptions, conclusions, and data sheets);
   c. Mitigation plans that comply with the 2008 Rule;
   d. A PennDOT-USACE approved template for deed restrictions and easements;
   e. An original cover letter from the United States Fish and Wildlife Service (USFWS) for T&E species issues; and
   f. Wild and Scenic River clearance, if applicable.
3. USACE reviewers prefer to see a full clearance letter from the USFWS. In some cases, the USFWS will stamp a clearance statement on the first page of the project review request (cover letter) sent by PennDOT or a consultant. When you receive a sticker response such as this, you should include the page with the sticker response and the rest of the cover letter in your permit submission.

C. Joint Permits

1. The risk assessment should be evaluated in relation to aquatic encroachments. Also consider whether the proposed encroachment will cause flooding or otherwise affect the environment, public safety, or property.
2. Compliance with local requirements (standards in approved Act 167 plans and floodplain ordinances) should be evaluated, and proof should be provided. Stormwater and floodplain management consistency letters should be included, if possible. If consistency letters are not obtained, then include evidence of attempts to gain the consistency letters. Refer to the Consistency Letter Requirement Memos in **Appendix O** for further guidance.

Chapter 102

A. Provide all pertinent information for soils, including a discussion of soil type limitations and resolutions, along with identification of any hydric soils. Do not just attach the chart from the PADEP E&S BMP manual.

B. If discharging onto an adjacent property, an off-site discharge analysis should be performed to ensure there is no erosion.

C. Use the standard worksheets from the PADEP E&S program manual to ensure that all the required information is included.

D. Receiving Waters

1. List all receiving waters on the NOI (Section C, 5 and 5a).
2. If a receiving water is listed as impaired on the 303(d) list, then ensure that the additional restrictions are being followed.
3. Show receiving waters even if they are outside of the ROW. A map and/or description of how drainage is getting to surface waters should be included.

Projects That Will Replace an Existing Bridge or Culvert with a Box Culvert

PennDOT, PADEP, and the PFBC have agreed to the guidelines provided in Pub 584, Chapter 9, Appendix A – Joint Agency Guidance for the Analysis of Environmental Impacts and Other Issues for Short Span Structures. This document provides guidance for projects that propose placement of a single-span box culvert with a normal clear span of 24 feet or less that is depressed with fish baffles in accordance with DM-2, Chapter 10 and BD-632M. It does not apply to projects with a significant reduction in waterway opening or that will affect state or federal species of special concern. Additional agency coordination is needed to determine if a box culvert is an acceptable alternative for culverts longer than 100 feet, areas with exposed continuous bedrock under the proposed structure, and for stream gradients greater than four percent. Specific documentation recommendations are provided in that document for both General Permit applications and other types of permit applications.

SECTION V - Permit Authorization

Where do I submit my permit? How long will it take to review? What happens if I need to change my project area after I receive approval? Do I have to submit anything after the work is done? This section provides an overview of what to expect during the permit review process and considerations once a permit has been authorized.

CHAPTER 10: Permit Submittal Process

All PennDOT permit application submittals for supported application types should be made electronically through KEES (https://www.kees.pa.gov). Electronic development and submission of permit applications streamlines the development and review process, allows for concurrent review by multiple organizations (including PADEP and the USACE), allows for end-to-end permit lifecycle tracking and reporting, and eliminates the need to submit and retain multiple copies of paper permits. At present the following application/registration types are supported in KEES: GP-8, GP-11, GP-8 and GP-11 combination, Small Projects JPA, Standard JPA, and PASPGP-5 for non-reporting activities. Planned future releases of KEES will allow the development and submission of other PADEP Chapter 105 and Chapter 102 permit types as well as USACE permits. A user account and login is required to access KEES. Approved permits, as well as permits in preparation and under review, will be visible to anyone with access to KEES.

Permit applications in KEES are associated to a KEES project, which provides a framework for creating and developing multiple permit applications for a single real-world project. Basic information about the project, such as applicant contact information and location data, is stored in the KEES project and used to populate the corresponding fields in associated permit applications. The KEES project can also be associated to one or more MPMS or SAP project IDs for project tracking purposes.

Each KEES project can be associated to multiple permit applications. In the application, additional details and attachments are added to the application package. The information required to complete the permit application in KEES is dependent on the type of application generated. Once the application information is complete, the permit application documents can be validated and the final applicant review can be initiated. During the final applicant review, PennDOT staff will review the application for completeness and technical accuracy and upload the final QA/QC document, which is included in **Appendix K**. Once the QA/QC document has been validated, PennDOT staff will submit the permit application to PADEP for review.

Once the permit is submitted electronically to PADEP, the application documents are locked and cannot be edited. PADEP staff will review the permit application for completeness and technical accuracy. Other commenting agencies, such as the USACE, DCNR, EPA, PFBC, PGC, PHMC/SHPO, and USFWS may also view and comment on the permit application. If the application is deemed to be incomplete or technically deficient, the application will be returned to the applicant through KEES with an incompleteness letter or technical deficiency letter that includes comments for the resolution of the deficiencies. When a permit is returned to the applicant as incomplete or technically deficient, the permit application documents are unlocked and editable for the application preparer. The permit documents can then be revised as needed to address the deficiencies, and the revised application can be resubmitted to PADEP by PennDOT staff.

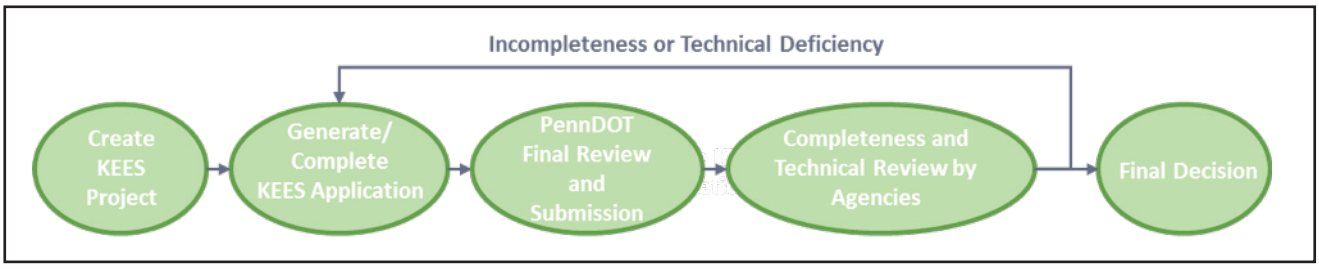


Figure 12: KEES General Workflow

When a GP registration is approved by PADEP, the GP acknowledgement letter will be returned to the applicant through KEES. Approved Standard and Small Projects JPAs will be returned with a Water Obstruction and Encroachment Permit Letter, which includes the general and special conditions of the permit. The applicant can then return the Acknowledgement of Apprisal of Permit Conditions document to PADEP through the KEES system to accept the permit conditions. The permit is not effective until the permit conditions have been accepted by the applicant. If the project is a non-reporting activity under PASPGP-5, the letter will include acknowledgement of both the GP registration and the PASPGP-5 registration. PASPGP-5 authorizations for reporting activities and other USACE permit types are not currently supported by KEES.

For PADEP and USACE permit types that are not supported by KEES, paper submittals are required. For those projects, the permit package must include all the components identified in the permit checklist. The essential components of a paper permit submission are the same as those in an electronic submission, but the paper version requires the use of specific forms for some of the components. The items required for paper submissions are identified in the permit forms available in PADEP's eLibrary (http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4044). Additionally, paper submissions to PADEP should have a green cover sheet identifying it as a PennDOT sponsored project. This aids PADEP in routing the permit submission to the dedicated PennDOT reviewers. An example of the cover sheet can be found in **Appendix P**. It may also be helpful to coordinate with the reviewing agency to ensure the correct number of paper copies are prepared and the appropriate submittal process is followed. Generally, JPA, E&S Control Permit, General NPDES Permit, and Individual NPDES Permit submissions require three paper copies (one original and two copies; GP and EXX-9999 permit submissions require two paper copies (one original and one copy).

Once submitted, a paper registration or application is processed the same way as an electronic submission. The permit reviewer will first do a completeness review to confirm that the required components have been included and contain the information necessary to complete the review. Minor deficiencies that can be corrected quickly may be resolved by email or a phone call from the reviewer. Complete submissions will move on to the technical review phase of the permit review process. Review timelines will follow those outlined in the MOU with PADEP and are described in Table 5. It is recommended that submissions allow adequate time for the permit review process and avoid last minute submissions with unreasonable timeframes. Permits will be authorized via an acknowledgment letter from either PADEP or the CCD. Further, JPs will receive conditional authorization pending receipt of signed copies of the JP and the Acknowledgment of Permit Conditions form.

Table 5: MOU Permit Review Timeframes

Permit Type	Completeness Review Period (Business Days)	Technical Review and Public Notice Period (Business Days)	Total Review Period (Business Days)
Standard or Small Projects JPA	10	55	65
GP-11	10	35	45
Other GPs	10	45	55
Joint Permit	10	65	75

Notes:

1) Final permit action may be delayed by factors such as natural disasters or emergency responses that may require immediate use of resources or render PADEP resources unavailable.

2) The review periods will be suspended for any application found to be deficient during the completeness or the technical review. If a technical deficiency is received on a permit application, the technical review timeframe set forth will reset, providing PADEP with the entire technical review timeframe to review the revised permit application after the technical deficiency is addressed.

3) Review times exclude days when applications are incomplete or technically deficient.

CHAPTER 11: Now That I Have a Permit

Approval/Authorization

When an application or registration is deemed to comply with the requirements for permit authorization, the reviewing agency will issue a written notification that the application has been approved. The type of written authorization (and originating agency) is shown in Table 6 below. This letter includes a statement of the permit type that has been authorized, a description of the permitted activities and any special conditions of the authorization. If the application is for a waterway permit and the project qualifies for PASPGP-5 as a non-reporting activity, it will also include the PASPGP-5 authorization for the project.

Table 6: Approval Notification Types

Permit Type	Approval Notificaiton
Standard or Small Projects JPA	Water Obstruction and Encroachment Permit Issuance Letter (PADEP)
General Permit (waterways)	GP Acknowledgement Letter (PADEP or CCD)
EXX-9999 Maintenance Permits	EXX-9999 Acknowledgement Letter (PADEP)
PASPGP-5	PASPGP-5 Authorization (PADEP or USACE)
Individual Chapter 404 Permits	Permit Issuance Letter (USACE)
Nationwide Permits	Letter of Verification (USACE)
Chapter 105 Waivers	None – no permit submission is required.
NPDES (Individual or General)	Permit Issuance Letter (PADEP or CCD)
E&S Permit	Permit Issuance Letter (PADEP or CCD)

For the authorization to remain valid, work conducted as part of the project must comply with the documents provided to the permitting agency as part of the permit application. It is important to note that the authorization applies to the activities included in the permit documents only. Other related activities that require a permit authorization must be authorized separately or be included in the authorized permit through a permit amendment. For example, a waterway permit authorization for a bridge replacement project does not include authorization for related activities, such as placement of nearby stormwater outfalls, relocation of adjacent stream segments, streambank restoration activities, or gravel bar removal unless explicitly included in the permit applications and acknowledgements of use. Related activities that do not require a permit authorization, such as pavement mill and overlay or in-kind replacement of guide rail, can still be done if they do not impact any environmental resources that would require a permit.

In addition to the NPDES permit authorization, the permittee and any subsequent co-permittee have additional responsibilities related to this authorization. NPDES permit requirements and federal regulations state, "when a facility or activity is owned by one person but is operated by another person, it is the operator's duty to obtain a permit." In practicality, this means once an operator/contractor has been selected for the project, the NPDES permit must either be transferred to the operator/contractor or the operator/contractor must be made a co-permittee. This is accomplished through the Transferee/Co-Permittee Application Form (http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4087). This form must be returned to PADEP at least 30 days prior to the start of construction.

Conditions

For small project permits and standard Chapter 105 permit authorizations, PADEP can include special conditions in the permit authorization letter.

Each GP has a set of conditions that cannot be modified, and a project must meet the conditions to be eligible for authorization under that GP. However, for small project permits and standard Chapter 105 permit authorizations, PADEP can include special conditions with the permit authorization. These special conditions are a legally binding part of the permit, and the permit is not authorized until PennDOT signs the Acknowledgement of Apprisal of Permit Conditions form accepting the special conditions. Strict adherence to these conditions is critical, as non-compliance with permit conditions voids the permit authorization and can result in a Notice of Violation (NOV). Some common permit conditions are listed in Pub. 325, Chapter 12, Part 3. In addition to the commonly used special conditions, site-specific conditions in sensitive environmental, archaeological, or historic areas give detailed avoidance or mitigation measures and procedures to follow if the project unexpectedly encounters an endangered species or archeological artifacts.

A pre-construction conference is one of the conditions of the NPDES permit. The purpose of the conference is to review all aspects of the permit with the permittee, co-permittee, operators, consultants, PADEP inspectors, and licensed professionals or their designees who will be responsible for the implementation of the critical stages for the approved PCSM plan.

A copy of all permit documents, including authorization letters with special conditions, any applicable approvals, and any permit amendment documents must be kept on-site at all times. E&S plans and PPC plans must also be maintained on-site and made available for review at all times. As noted in Pub. 325, the on-site foreman or site supervisor is responsible for permit compliance. As the person responsible for permit compliance, the on-site foreman or site supervisor should ensure that he or she has read and understands all of the permit documents.

Violations

Inspections are typically included as a condition of all PADEP and USACE permit authorizations. The applicant is required to allow employees or agents of PADEP or the USACE (or delegated agencies such as the CCDs) to conduct inspections to verify that projects are being constructed and maintained in accordance with the terms and conditions of the permit authorization. PADEP and the USACE have no obligation to provide notice prior to inspections, and inspectors should be allowed access without delay upon presentation of appropriate credentials. Inspections may include taking samples, photographs, or measurements; inspection of any area of the permitted site; examination of any records and any other actions necessary to ensure that the project complies with the permit conditions.

Common permit violations include:

- Failure to have the E&S control plan (and other required documentation) on-site
- Failure to implement and maintain BMPs and follow sequencing
- Failure to use special protection BMPs for discharges to high quality or exceptional value waters
- Failure to demonstrate that alternative BMPs achieve regulatory standards
- Failure to permanently stabilize earth disturbance
- Failure of earth disturbance activities to comply with permit conditions
- Failure to prevent sediment or other pollutant discharge into waters
- Failure to comply with instream work restrictions
- Failure to obtain approval for deviations from the approved permit activities

Violations from major permanent project components should not occur if the construction drawings agree with the approved permit documents; the construction drawings should be carefully compared with those included in the approved permit. Violations of permit conditions can have far-reaching impacts; including project delays, fines and remediation costs and litigation. An unresolved NOV on any PennDOT project could delay or prevent the approval of other permits that PennDOT has submitted to PADEP until the violation is resolved. Typically, PennDOT begins the coordination process with PADEP immediately, so that other permit submissions are not affected.

PennDOT is responsible for ensuring that the contractor is aware of permit conditions and complies with the permit. If the permitted activity is found to be non-compliant with the permit conditions; PennDOT will document the non-compliant conditions and notify both the contractor and the appropriate permitting agency. The PennDOT project manager may issue a stop work notice to the contractor for improper waste disposal operations, work that is not compliant with the E&S plan or permit conditions, or when failed BMPs have not been replaced or repaired within 48 hours of notification. PADEP staff can also issue a Compliance Order to PennDOT requiring the contractor to cease earthwork on a project if the project is not in compliance with the permit conditions.

Major violations or refusal to make immediate corrections may lead to a NOV against PennDOT. The NOV documents the non-compliant conditions and typically gives instructions for remediation. When a NOV is issued, the responsible District must submit a copy of the NOV to the Chief of the Environmental Policy and Development Section (EPDS) in the Bureau of Project Delivery within 48 hours. If PennDOT personnel are approached by employees of PADEP or the USACE and are ordered to cease and desist a maintenance activity, PennDOT personnel should immediately contact their supervisor regarding appropriate steps and procedures. PennDOT resolves most NOVs through voluntary compliance, which is a process of working with the enforcement officer (from PADEP, PFBC, or the USACE) to develop a mutually agreeable strategy to correct or mitigate the NOV.

Project Completion Forms

Once the project has been constructed and the permitted activity has been completed, specific forms need to be completed and returned to the permitting agencies. In the case of a waterway permit, the PASPGP-5 Permit Compliance, Self-Certification Form must be completed and returned to the appropriate USACE office (http://www.lrp.usace.army.mil/Portals/72/docs/PASPGP-5%20Self-Cert.pdf?ver=2016-07-01-115616-937). For JPAs, an additional completion form is also required by PADEP. A Water Obstruction and Encroachment Permit Completion Report must be signed by the applicant and supervising engineer indicating that the work has been completed as approved. The Completion Report should then be submitted to PADEP. This Completion Report Form is a provided by PADEP with the permit authorization documents. Generally, these completion forms should be submitted within 30 days of completion of the approved project.

For earth disturbance permits, a Notice of Termination (NOT) Form must be completed and filed with the appropriate PADEP office or CCD when construction activities have ceased and final stabilization has been achieved.

Amendments

Any changes to the permitted conditions require an amendment of the permit.

For waterway permits and earth disturbance permits, any change to the permitted conditions requires preparation of a permit amendment. The amendment must be submitted to and approved by the permitting agency. The procedures for pursuing an amendment vary slightly depending on the permit type and the extent of the changes, but it is strongly recommended to contact the permitting agency early in the amendment process. Early informal meetings with the reviewing agencies can often provide useful information regarding documentation requirements and can provide agency concurrence on the proposed changes. Minor changes to the permit documents (as discussed further in the next few paragraphs) can typically be quickly approved by the permitting agency after

submission of revised drawings. More significant revisions may require submission of a new permit application, which may or may not have a reduced agency review time. It is important to remember that once a change is approved, the approved drawings become the new permit documents and must be kept on the project site if required in the permit conditions.

For waterway permits, revision of the permit documents requires an amendment of the permit or permit authorization that is approved by the reviewing agency (PADEP or the CCD). Minor amendments include changes to the project that do not substantially alter the permit conditions. Per Chapter 105, this includes changes that do not:

- Increase the amount of surface water impacts;
- Increase the size of the operation; or
- Reduce the capacity of the facility to protect human health, safety, or the environment.

Minor amendments also include requests for time extensions and transfers of aquatic resource mitigation credits from an approved mitigation bank. Minor amendments require submission of the revised documents to the permitting agency with the changes clearly marked. The permitting agency will review the revised documents. If the revisions are acceptable, the permitting agency will issue a letter of approval for the amendment and add the revised documents to the project record for the permit. Major amendments require submission of a new permit application to the reviewing agency.

Modifications to permits granted by the USACE that result in a change in the verified impact to, or use of WOTUS, including jurisdictional wetlands, must be approved by the reviewing agency that issued the permit (PADEP or USACE). PADEP approval is required if the project was and will remain a non-reporting activity under PASPGP-5. USACE approval is required if the single and complete project had been previously reviewed by the USACE, or if the proposed modification is a reporting activity under PASPGP 5. Project modifications that cause a single and complete project to exceed 1.0 acre of impacts to the WOTUS or 1,000 linear feet of permanent stream loss will not be eligible for PASPGP-5 and will be forwarded to the USACE for review.

Revision of earth disturbance permits also requires approval of the permit amendment from the reviewing agency. Minor amendments can include modification, addition, or removal of BMPs if the total disturbed area is unchanged. New earth disturbance that expands or increases the total disturbed area may also be considered a minor amendment if the additional disturbed area is within the original project boundaries and existing planned and implemented BMPs are adequate to minimize accelerated erosion and sedimentation from the proposed earth disturbance. Minor amendments require submission of the modified permit documents to the permitting agency. Major permit amendments are needed for changes to the project that involve a change in project scope, new discharges, any new direct or indirect impacts to wetlands or streams, increase in disturbed area that requires expansion of the project limits or new BMPs, or any other change to the project beyond those activities identified in the initially approved permit. Similar to the amendment process for waterway permits, major amendments to earth disturbance permits require submission of a new permit application.

Minor permit amendments for earth disturbance permits can often be approved at an agency coordination meeting with the CCD. PADEP should also be invited to the meeting if the amendment is for an Individual NPDES or an E&S permit. At the meeting, the agencies will review the changes to ensure that they are minor revisions and to ensure that the changes are consistent with the technical standards and specifications. If there are technical deficiencies in the minor amendment document, the permittee will typically have 60 calendar days to submit the information needed to make the plan technically adequate. If the agency agrees with the revisions, the PADEP or CCD representative may initial the revised drawings to approve the minor amendment.

Chapter 105 and Section 404 permits are typically valid for three to five years. Time extensions can be requested, but should be requested at least 30 days prior to the expiration of the permit. Time extensions are typically considered a minor amendment.

Mitigation and Monitoring

Mitigation is a process for reducing project impacts. Mitigation takes three forms and begins in the planning stage. The first step in mitigation is resource avoidance. If a stream or wetland can be avoided, there are no direct impacts from the project. If avoidance is not possible, impact minimization is the next step to mitigation of environmental impacts. The final option is resource replacement, or compensatory mitigation, for unavoidable impacts.

The first step in mitigation is resource avoidance.

Compensatory mitigation for unavoidable wetland impacts is required for permanent impacts exceeding 0.05 acres. Permanent impacts include wetland loss due to fill or conversion from one type of wetland to one with a lower function and value. (e.g., palustrine forested to palustrine emergent). The replacement ratio for compensatory wetland mitigation depends on the function and value of the original resource. The higher the resource value, the higher the replacement ratio required by the agencies. Permanent emergent wetland impacts are usually offset at a 1:1 replacement ration, while forested wetlands will be replaced at a 2:1 ratio at a minimum. Wetland banking is the preferred mitigation option. PennDOT has approved banking sites across the state for qualifying projects. A map of PennDOT's wetland banks is provided in Appendix Q. If a wetland bank is not available, on-site wetland replacement near the affected resource may be used if feasible. For a more detailed description of the wetland mitigation process refer to the Wetland Resources Handbook (Pub 325).

Stream impacts may also require compensatory mitigation, depending on the type of impact. Channel realignment or relocation are the most common triggers for stream impact mitigation. Mitigation typically takes the form of channel and riparian zone reconstruction adjacent to the project area. In the case of stream enclosures, though, mitigation would likely involve off-site enhancement of impaired stream and riparian zone habitat.

Any project that might require mitigation should be discussed at a pre-application meeting with the regulatory agencies. Potential mitigation options should be presented to the reviewing agencies for their input prior to submitting a permit application.

Note: Rapid assessment protocols for wetlands, streams and lakes were finalized by PADEP in February 2017. These protocols were developed to provide a relatively objective assessment of resource condition for use in impact evaluation and compensatory mitigation. The condition scores determined by the rapid assessment protocols will be used to determine the amount and type of mitigation required. These protocols are a required part of all permit submittals as of July 1, 2017.

Monitoring will be required for any project that has compensatory mitigation. Wetland monitoring is normally required for five years or until monitoring demonstrates that the wetland has met the design objectives. Wetland monitoring reports must be submitted to the regulatory agencies at the beginning and end of the growing season for the first two years, and at the end of the growing season for the following three years. Deficiencies in wetland development noted during the monitoring events must be corrected via remedial measures to achieve design objectives.

Stream mitigation monitoring is normally required for two years or until the stream channel is stable. Corrective measures are necessary when monitoring indicates unstable conditions in the banks or channel. Riparian zone enhancement associated with stream mitigation may require a longer monitoring commitment, depending on the type of plant community. Monitoring to demonstrate effective establishment of a woody riparian community will typically be required for a longer period than for an herbaceous plant community.

APPENDIX A

GLOSSARY

Glossary

Definitions noted as **(PASPGP-5)** are excerpted from the PASPGP-5:
(http://www.nap.usace.army.mil/Portals/39/docs/regulatory/spgp/Final_PASPGP_5-19-Apr-2016.pdf).

Definitions noted as **(102)** are excerpted from Chapter 102 of the Pennsylvania Code:
(http://www.pacode.com/secure/data/025/chapter102/s102.1.html).

Definitions noted as **(105)** are excerpted from Chapter 105 of the Pennsylvania Code:
(http://www.pacode.com/secure/data/025/chapter105/s105.1.html).

Definitions noted as **(93)** are excerpted from Chapter 93 of the Pennsylvania Code:
(http://www.pacode.com/secure/data/025/chapter93/chap93toc.html).

Accelerated Erosion (102) – The removal of the surface of the land through the combined action of human activities and the natural processes, at a rate greater than would occur because of the natural process alone.

Best Management Practices (BMPs) (102) – Activities, facilities, measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during, and after earth disturbance activities.

Bridge (105) – A structure and its appurtenant works erected over the regulated waters of this Commonwealth.

Culvert (105) – A structure with appurtenant works which carries a stream under or through an embankment or fill.

Discharge of Dredged Material (PASPGP-5) – Any addition of dredged material into, including redeposit of dredged material other than incidental fallback within, the waters of the United States, including jurisdictional wetlands. The term does not include activities that involve only the cutting or removing of vegetation above the ground (e.g., mowing, rotary cutting, and chain sawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material.

Discharge of Dredged Material (105) – An addition, deposit, disposal or discharge of dredged material into the regulated waters of this Commonwealth including, but not limited to, the addition of dredged material to a specific disposal site located in the regulated waters of this Commonwealth and the runoff or overflow of dredged material from a contained land or water disposal area. The term does not include plowing, cultivating, seeding and harvesting for the production of food, fiber and forest products.

Discharge of Fill Material (PASPGP-5) – The addition of fill material into the waters of the United States. The term generally includes, without limitation, the following activities: placement of fill that is necessary for the construction of any structure or infrastructure in a water of the United States; the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction; site development fills for recreation, industrial, commercial, residential, or other uses; causeways or road fills; dams and dikes; artificial islands; property protection and/or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants and subaqueous utility lines; placement of fill material for construction or maintenance of any liner, berm, or other infrastructure associated with solid waste landfills; placement of overburden, slurry, or tailings or similar mining-related materials; and artificial reefs. The term does not include plowing, cultivating, seeding and harvesting for the production of food, fiber, and forest products.

Discharge of Fill Material (105) – An addition, deposit, disposal or discharge of fill into the regulated waters of this Commonwealth. The term does not include plowing, cultivating, seeding and harvesting for the production of food, fiber and forest products.

Disturbed Area (102) – Unstabilized land area where an earth disturbance activity is occurring or has occurred.

Dredge (105) – To remove sand, gravel, mud or other materials from the beds of regulated waters of this Commonwealth.

Dredged Material (PASPGP-5) – Material that is excavated or dredged from the waters of the United States, including jurisdictional wetlands.

Dredged Material (105) – A material that is excavated or dredged from the regulated waters of this Commonwealth.

Earth Disturbance Activity (102) – A construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Encroachment (105) – A structure or activity which changes, expands or diminishes the course, current or cross section of a watercourse, floodway or body of water.

Erosion (102) – The natural process by which the surface of the land is worn away by water, wind or chemical action.

Erosion and Sediment Control Permit (E&S Permit) (102) – permit required for earth disturbance activities where the earth disturbance is associated with timber harvesting, road maintenance activities, or oil and gas activities.

Erosion and Sediment Control Plan (E&S Plan) (102) – A site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activities.

Fill Material (PASPGP-5) – Material placed in waters of the United States where the material has the effect of: (i) Replacing any portion of water of the United States with dry land; or (ii) Changing the bottom elevation of any portion of a water of the United States. Examples of such fill material include, but are not limited to: rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structures or infrastructure in the waters of the United States. The term fill material does not include trash or garbage.

Fill (105) – Sand, gravel, earth or other material placed or deposited to form an embankment or raise the elevation of the land surface. The term includes material used to replace an area with aquatic life with dry land or to change the bottom elevation of a regulated water of this Commonwealth.

Floodplain (105) – The lands adjoining a river or stream that have been or may be expected to be inundated by flood waters in a 100-year frequency flood.

Floodway (105) – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

National Pollutant Discharge Elimination System (NPDES) (102) – The national system for the issuance of permits under section 402 of the Federal Clean Water Act (33 U.S.C.A. § 1342).

NPDES Permit for Stormwater Discharges Associated With Construction Activities (102) – A permit required for the discharge or potential discharge of stormwater into waters of this Commonwealth from construction activities, including clearing and grubbing, grading and excavation activities involving one acre

or more of earth disturbance activity or an earth disturbance activity on any portion, part, or during any stage of, a larger common plan of development or sale that involves one acre or more of earth disturbance activity over the life of the project.

Notice of Intent (NOI) (102) – A request, on a form provided by the Department, for coverage under a General NPDES Permit for Stormwater Discharges Associated With Construction Activities or an E&S Permit.

Notice of Termination (NOT) (102) – A request, on a form provided by the Department, to terminate coverage under a General or Individual NPDES Permit for Stormwater Discharges Associated with Construction Activities or other permits under this chapter.

Ordinary High Water Mark (OHWM) (PASPGP-5) – The line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

Post Construction Stormwater (102) – Stormwater associated with a project site after the earth disturbance activity has been completed and the project site is permanently stabilized.

Post Construction Stormwater Management (PCSM) Plan (102) – A site-specific plan consisting of both drawings and a narrative that identifies BMPs to manage changes in stormwater runoff volume, rate and water quality after earth disturbance activities have ended and the project site is permanently stabilized.

Preparedness, Prevention, and Contingency (PPC) Plan (102) – A written plan that identifies an emergency response program, material and waste inventory, spill and leak prevention and response, inspection program, housekeeping program, security and external factors, and that is developed and implemented at the construction site to control potential discharges of pollutants other than sediment into waters of this Commonwealth.

Riparian Buffer (102) – A BMP that is an area of permanent vegetation along surface waters.

Riparian Forest Buffer (102) – A type of riparian buffer that consists of permanent vegetation that is predominantly native trees, shrubs and forbs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

Road Maintenance Activities (RMAs) (102) – Earth disturbance activities within the existing road cross-section or railroad ROW. The existing road cross-section consists of the original graded area between the existing toes of fill slopes and tops of cut slopes on either side of the road and any associated drainage features.

Sediment (102) – Soils or other erodible materials transported by stormwater as a product of erosion.

Sedimentation (102) – The action or process of forming or depositing sediment in waters of this Commonwealth.

Special Protection Waters (93) – High quality waters (HQ) and exceptional value (EV) waters.

Stormwater Management Facilities (102) – Manmade measures designed and constructed to convey stormwater runoff away from structures or improved land uses, or to control, detain or manage stormwater runoff to avoid or reduce downstream damages. The term includes, but is not limited to, transportation and related facility drainage systems and manmade stormwater detention basins. The term does not include replacement wetlands or major dams and reservoirs constructed for water supply, recreation, river basin flood control or other regional or basin-wide purposes.

Stormwater (102) – Runoff from precipitation, snowmelt, surface runoff and drainage.

Stream (105) – A watercourse.

Stream Crossings (105) – A pipeline, aerial cable or similar structure which is placed in, along, under, across or over the regulated waters of this Commonwealth.

Stream Enclosure (105) – A bridge, culvert or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated water of this Commonwealth.

Structure (PASPGP-5) – Any pier, boat, dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling aid to navigation, or any other obstacle or obstruction.

Submerged Lands of this Commonwealth (105) – Waters and permanently or periodically inundated lands owned by the Commonwealth, including lands in the beds of navigable lakes and rivers and beds of streams declared public highways which are owned and held in trust by the Commonwealth.

Surface Waters (93) – Perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds and constructed wetlands used as part of a wastewater treatment process.

Waterbody (PASPGP-5) – A lake, pond, reservoir, swamp, marsh, wetland, spring, stream, river, or watercourse. A waterbody is a jurisdictional water of the United States that, during a year with normal patterns of precipitation, has water flowing or standing above ground to the extent that an OHWM or other indicators of jurisdiction can be determined, as well as any jurisdictional wetland area.

Watercourse (105) – A channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Water Obstruction (105) – A dike, bridge, culvert, wall, wingwall, fill, pier, wharf, embankment, abutment or other structure located in, along or across or projecting into a watercourse, floodway or body of water. In the case of ponds, lakes and reservoirs, a water obstruction is considered to be in or along the body of water if, at normal pool elevation, the water obstruction is either in the water or adjacent to and abutting the water's edge.

Waters of this Commonwealth (102) – Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Waters of this Commonwealth (105) – Watercourses, streams or bodies of water and their floodways wholly or partly within or forming part of the boundary of this Commonwealth.

Waters of the United States (PASPGP-5) – All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

Wetlands (105) – Areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs and similar areas.

APPENDIX B

ACRONYMS

Acronyms

401 WQC. . . . . Water Quality Certification as required under Section 401 of the Clean Water Act

ATON . . . . . Aids to Navigation

BMPs . . . . . Best Management Practices

BRPA . . . . . Bridge and Roadway Programmatic Agreement

CCD . . . . . County Conservation District

CEE . . . . . Categorical Exclusion Evaluation

CWA . . . . . Clean Water Act of 1977, as amended 1987

DCNR . . . . . Pennsylvania Department of Conservation and Natural Resources

DM. . . . . PennDOT Design Manual

EA . . . . . Environmental Assessment

ECMTS . . . . . Environmental Commitments and Mitigation Tracking System

E&S . . . . . Erosion and Sediment

EPA . . . . . United States Environmental Protection Agency

FEMA . . . . . Federal Emergency Management Agency

FHWA . . . . . Federal Highway Administration

GP . . . . . General Permit

H&H . . . . . Hydrologic and Hydraulic

JP . . . . . Joint Permit

JPA. . . . . Joint Permit Application

KEES . . . . . Keystone Environmental ePermitting System

MCM . . . . . Minimum Control Measure

MOU . . . . . Memorandum of Understanding

MPT . . . . . Maintenance and Protection of Traffic

MS4 . . . . . Municipal Separate Storm Sewer System

NEPA. . . . . National Environmental Policy Act of 1969

NOI . . . . . Notice of Intent

NOT. . . . . Notice of Termination

NOV. . . . . Notice of Violation

NPDES. . . . . National Pollutant Discharge Elimination System

NWP . . . . . Nationwide Permit

PADEP . . . . . Pennsylvania Department of Environmental Protection

PASPGP . . . . . Pennsylvania State Programmatic General Permit

PCN . . . . . Pre-Construction Notification

PCSM. . . . . Post Construction Stormwater Management

PE. . . . . Professional Engineer

PennDOT . . . . . Pennsylvania Department of Transportation

PFBC . . . . . Pennsylvania Fish and Boat Commission

PGC . . . . . Pennsylvania Game Commission

PHMC . . . . . Pennsylvania Historical and Museum Commission

PNDI . . . . . Pennsylvania Natural Diversity Inventory

PPC . . . . . Preparedness, Prevention, and Contingency

PTC . . . . . Pennsylvania Turnpike Commission

QA/QC . . . . . Quality Assurance/Quality Control

RHA. . . . . Rivers and Harbors Appropriation Act of 1899

RMA . . . . . Road Maintenance Activity

ROW . . . . . Right-of-Way

SCM . . . . . Stormwater Control Measure

SHPO. . . . . State Historic Preservation Office

SLLA . . . . . Submerged Lands License Agreement

SMP . . . . . Stormwater Management Plan

T&E . . . . . Threatened and Endangered

USACE . . . . . United States Army Corps of Engineers

USCG. . . . . United States Coast Guard

USFWS . . . . . United States Fish and Wildlife Service

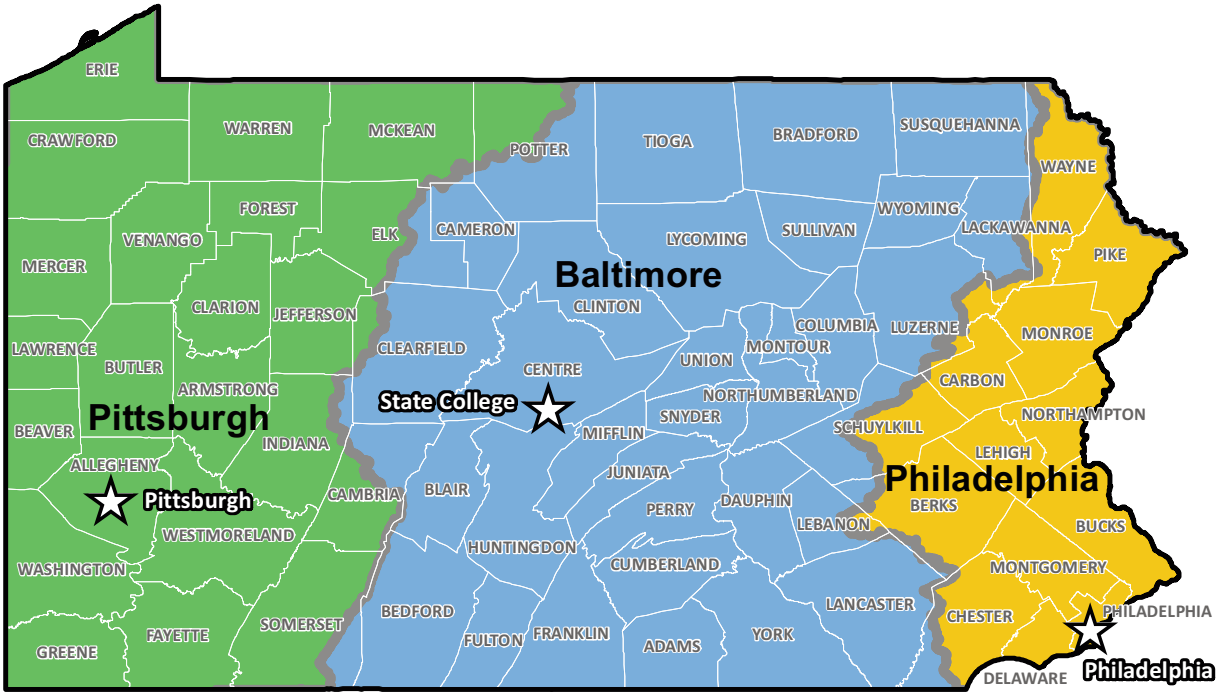
WOC . . . . . Waters of the Commonwealth

WOTUS. . . . . Waters of the United States

APPENDIX C

CONTACT INFORMATION

United States Army Corps of Engineers
Regional Office Locations

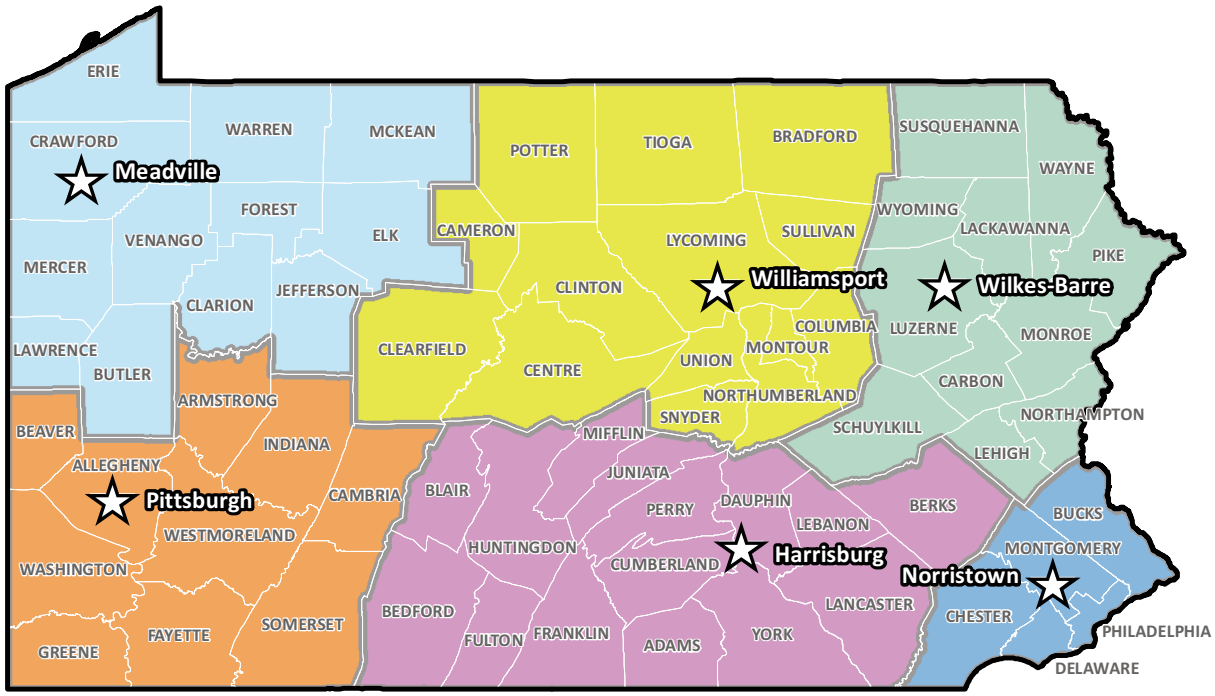


Pittsburgh District
Corps of Engineers
Regulatory Division
Federal Building, 20thFloor
1000 Liberty Avenue
Pittsburgh, PA 15222
Phone: (412) 395-7155

Baltimore District
Corps of Engineers
Pennsylvania Field Office
1631 South Atherton Street, Suite 101
State College, PA 16801
Phone: (814) 235-0571

Philadelphia District
Corps of Engineers
Regulatory Branch
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107
Phone: (215) 656-6725

Pennsylvania
Department of Environmental Protection
Regional Office Locations



Northwest Regional Office
230 Chestnut Street
Meadville, PA 16335
Phone: (814) 332-6984

Northcentral Regional Office
208 W. Third Street, Suite 101
Williamsport, PA 17701
Phone: (570) 327-0529

Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711-0790
Phone: (570) 826-2511

Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA 15222-4745
Phone: (412) 442-4315

Southcentral Regional Office
909 Elmerton Avenue, Second Floor
Harrisburg, PA 17110
Phone: (717) 705-4802

Southeast Regional Office
2 East Main Street
Norristown, PA 19401
Phone: (484) 250-5970

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Delegated Programs

◆**Chapter 105**
- **NPDES and E&S Permits**

EXHIBIT C

CONSERVATION DISTRICTS

- Adams County
  670 Old Harrisburg Rd., Suite 201
  Gettysburg, PA 17325
  717-334-0636

- Allegheny County
  ◆33 Terminal Way, Suite 325B
  Pittsburgh, PA 15219
  412-241-7645

- Armstrong County
  Armsdale Admin. Building
  124 Armsdale Rd., Suite B-2
  Kittanning, PA 16201
  724-548-3425

- Beaver County
  ◆156 Cowpath Rd.
  Aliquippa, PA 15001
  724-378-1701

- Bedford County
  702 W. Pitt St., Suite 4
  Bedford, PA 15522
  814-623-7900 Ext. 4

- Berks County
  ◆1238 County Welfare Rd., Suite 200
  Leesport, PA 19533
  610-372-4657 Ext. 5

- Blair County
  1407 Blair St,
  Hollidaysburg, PA 16648
  814-696-0877 Ext. 5

- Bradford County
  ◆Stoll Natural Resource Center
  RR 5, Box 5030C,
  Towanda, PA 18848
  570-265-5539 Ext. 6

- Bucks County
  1456 Ferry Rd., Suite 704
  Doylestown, PA 18901
  215-345-7577

- Butler County
  ◆122 McCune Dr.
  Butler, PA 16001
  724-284-5270

- Cambria County
  ◆401 Candlelight Dr., Suite 221
  Ebensburg, PA 15931
  814-472-2120

- Cameron County
  ◆20 E. Fifth St., Room 105
  Emporium, PA 15834
  814-486-9353

- Carbon County
  5664 Interchange Rd.
  Lehighton, PA 18235
  610-377-4894 Ext. 4

- Centre County
  ◆414 Holmes Ave., Suite 4
  Bellefonte, PA 16823
  814-355-6817

- Chester County
  Willowdale Town Center
  688 Unionville Rd., Suite 200
  Kennett Square, PA 19348
  610-925-4920

- Clarion County
  214 S. 7th Ave
  Clarion, PA 16214
  814-297-7813

- Clearfield County
  6395 Clearfield Woodland Hwy
  Suite 2
  Clearfield, PA 16830
  814-765-2629

- Clinton County
  ◆45 Cooperation Lane
  Mill Hall, PA 17751
  570-726-3798

- Columbia County
  ◆702 Sawmill Rd., Suite 204
  Bloomsburg, PA 17815
  570-784-1310 Ext. 5

- Crawford County
  ◆Woodcock Creek Nature Center
  21742 German Rd.
  Meadville, PA 16335
  814-763-5269

- Cumberland County
  310 Allen Rd., Suite 301
  Carlisle, PA 17013
  717-240-7812

- Dauphin County
  1451 Peters Mountain Rd.
  Dauphin, PA 17018
  717-921-8100

- Delaware County
  ◆Rose Tree Park Hunt Club
  1521 N. Providence Rd.
  Media, PA 19063
  610-892-9484

- Elk County
  ◆850 Washington St.
  St. Mary's, PA 15857
  814-776-5373

- Erie County
  ◆1927 Wager Rd.
  Erie, PA 16509
  814-825-6403

- Fayette County
  10 Nickman Plaza
  Lemont Furnace, PA 15456
  724-438-4497

  Forest County
  526 Elm St., Box 4
  Tionesta, PA 16353
  814-755-3560

- Franklin County
  185 Franklin Farm Lane
  Chambersburg, PA 17202
  717-264-5499

- Fulton County
  216 N. Second St., Suite 15
  McConnellsburg, PA 17233
  717-485-3547

- Greene County
  ◆22 W. High St., Suite 204
  Waynesburg, PA 15370-1839
  724-852-5273

- Huntingdon County
  10605 Raystown Rd., Suite A
  Huntingdon, PA 16652
  814-627-1627

- Indiana County
  ◆625 Kolter Dr., Suite 8
  Indiana, PA 15701
  724-471-4751

- Jefferson County
  ◆1514 Route 28
  Brookville, PA 15825
  814-849-7463

- Juniata County
  146 Stoney Creek Dr.
  Mifflintown, PA 17059
  717-436-8953 Ext. 5

- Lackawanna County
  1038 Montdale Rd., Suite 109
  Scott, PA 18447
  570-382-3086

- Lancaster County
  ◆1383 Arcadia Rd., Room 200
  Lancaster, PA 17601-3149
  717-299-5361 Ext. 5

- Lawrence County
  430 Court St.
  New Castle, PA 16101
  724-652-4512

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- Lebanon County
  Lebanon Valley Ag. Center
  2120 Cornwall Rd., Suite 5
  Lebanon, PA 17042-9788
  717-272-3908 Ext. 4

- Lehigh County
  Lehigh Ag. Center, Suite 105
  4184 Dorney Park Rd.
  Allentown, PA 18104
  610-391-9583

- Luzerne County
  325 Smiths Pond Rd.
  Shavertown, PA 18708
  570-674-7991

- Lycoming County
  542 County Farm Rd., Suite 202
  Montoursville, PA 17754
  570-433-3003

- McKean County
  ◆17137 Route 6
  Smethport, PA 16749
  814-887-4001

- Mercer County
  ◆24 Avalon Ct., Suite 300
  Mercer, PA 16137-5023
  724-662-2242

- Mifflin County
  20 Windmill Hill #4
  Burnham, PA 17009
  717-248-4695

- Monroe County
  ◆8050 Running Valley Rd.
  Stroudsburg, PA 18360
  570-629-3060

- Montgomery County
  143 Level Rd.
  Collegeville, PA 19426
  610-489-4506

- Montour County
  ◆14 E. Mahoning St.
  Danville, PA 17821
  570-271-1140

- Northampton County
  Greystone Building.
  14 Gracedale Ave.
  Nazareth, PA 18064
  610-829-6276

- Northumberland County
  ◆441 Plum Creek Rd.
  Sunbury, PA 17801
  570-495-4665 Ext. 4

- Perry County
  P.O. Box 36
  31 W. Main St.,
  New Bloomfield, PA 17068
  717-582-8988 Ext. 4

- Pike County
  ◆556 Route 402
  Hawley, PA 18428
  570-226-8220

- Potter County
  ◆107 Market St.
  Coudersport, PA 16915
  814-274-8411 Ext. 4

- Schuylkill County
  1206 AG Center Dr.
  Pottsville, PA 17901
  570-622-3742 Ext. 5

- Snyder County
  10541 Route 522
  Middleburg, PA 17842
  570-837-3000 Ext. 0

- Somerset County
  6024 Glades Pike, Suite 103
  Somerset, PA 15501
  814-445-4652 Ext. 5

- Sullivan County
  9219 Route 487, Suite B
  Dushore, PA 18614
  570-928-7057

- Susquehanna County
  ◆88 Chenango St.
  Montrose, PA 18801
  570-278-2497

- Tioga County
  ◆1867 Shumway Hill Rd.
  Wellsboro, PA 16901
  570-724-1801 Ext. 3

- Union County
  ◆155 N. 15th St.
  Lewisburg, PA 17837
  570-524-3860

- Venango County
  1793 Cherrytree Rd.
  Franklin, PA 16323
  814-676-2832

- Warren County
  ◆4000 Conewango Ave.
  Warren, PA 16365
  814-726-1441

- Washington County
  ◆2800 N. Main St., Suite 105
  Washington, PA 15301
  724-228-6774

- Wayne County
  ◆Wayne Co. Park St. Complex
  648 Park St.
  Honesdale, PA 18431
  570-253-0930

- Westmoreland County
  ◆Center for Conservation Ed.
  218 Donohoe Rd.
  Greensburg, PA 15601
  724-837-5271

- Wyoming County
  21 Hollowcrest Complex
  Tunkhannock, PA 18657
  570-836-2589 Ext. 3

- York County
  118 Pleasant Acres Rd.
  York, PA 17402
  717-840-7430

PADEP Delegated Programs for County Conservation Districts

Participation By County

County	Ch. 102/NPDES Level	PCSM	Ch. 105
Adams	2		
Allegheny	2		Yes
Armstrong	3		
Beaver	2		
Bedford	2		
Berks	3	Yes	Yes
Blair	2		
Bradford	2		Yes
Bucks	3		
Butler	2		Yes
Cambria	2		Yes
Cameron	2		Yes
Carbon	2		
Centre	3		Yes
Chester	2	Yes - E	
Clarion	2		
Clearfield	2		
Clinton	2		Yes
Columbia	2	Yes - E	Yes
Crawford	2		Yes
Cumberland	3	Yes	
Dauphin	2		
Delaware	2		Yes #
Elk	2		Yes
Erie	2		Yes
Fayette	2		
Forest	1		
Franklin	2		
Fulton	2		
Greene	2		Yes
Huntingdon	2		
Indiana	2		Yes
Jefferson	2	Yes	Yes
Juniata	2		
Lackawanna	2		
Lancaster	3		Yes #
Lawrence	2		
Lebanon	2		

PADEP Delegated Programs for County Conservation Districts

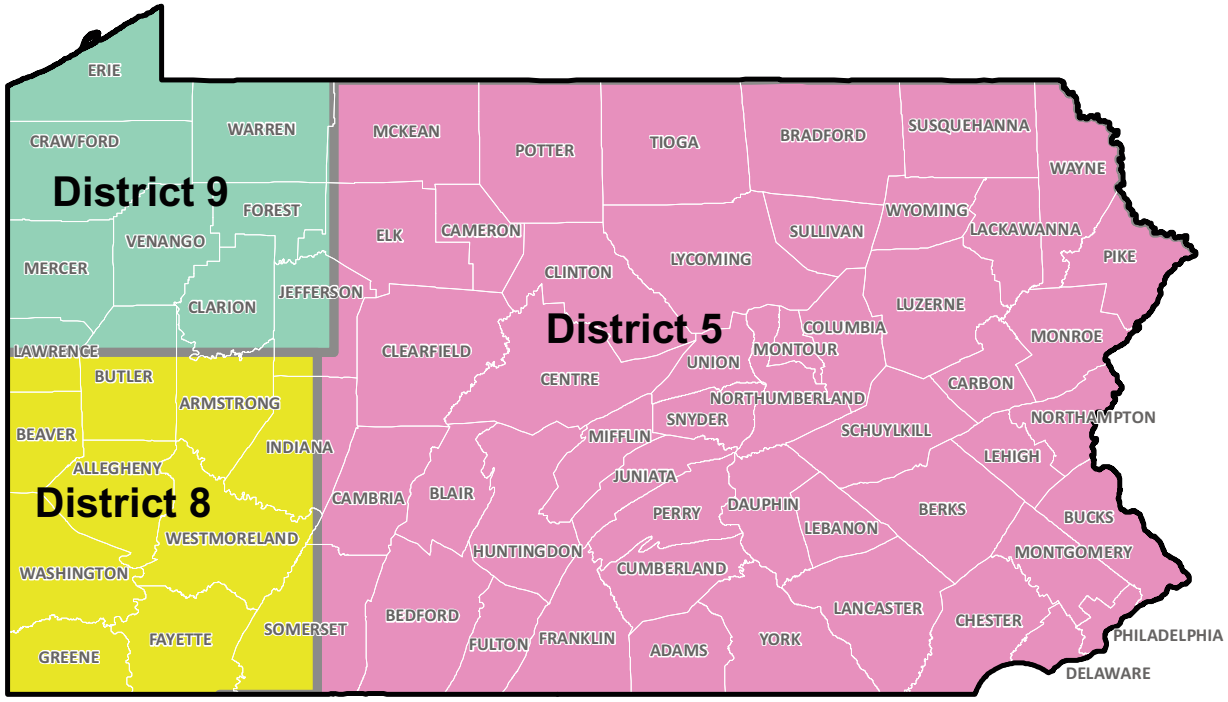
Participation By County

County	Ch. 102/NPDES Level	PCSM	Ch. 105
Lehigh	3	Yes	
Luzerne	2		
Lycoming	2		
McKean	2		Yes
Mercer	2		Yes
Mifflin	2		
Monroe	3	Yes - E w/Pike	Yes
Montgomery	2		
Montour	2		Yes
Northampton	3		
Northumberland	2		
Perry	2		
Philadelphia	Does not have a conservation district		
Pike	3	Yes - E w/Monroe	Yes
Potter	2		Yes
Schuylkill	2		
Snyder	2		
Somerset	2		
Sullivan	2		
Susquehanna	2		Yes
Tioga	2		Yes
Union	2		Yes
Venango	2		
Warren	2		Yes
Washington	2	Yes	Yes*
Wayne	2		Yes
Westmoreland	3	Yes - E	Yes
Wyoming	2		
York	3		
TOTALS	**66**	**9**	**30**
Level 1	**1**		
Level 2	**53**		
Level 3	**12**		
Find Your District: https://pacd.org/?page_id=59			

Level 1 - E&S plan review only
Level 2 - E&S plan review and site inspection
Level 3 - E&S plan review, site inspection, and enforcement

* Partial Delegation GP-6 / 9
# No Complaint Response
E = Engineering Level Reviews

United States Coast Guard Jurisdictional Districts



Ninth Coast Guard District
1240 East 9th Street
Cleveland, OH 44199-2060
Phone: (216) 902-6085

Eighth Coast Guard District
1222 Spruce Street
St. Louis, MO 63103-2398
Phone: (314) 539-3900, ext. 378

Fifth Coast Guard District
Federal Building
431 Crawford Street
Portsmouth, VA 23704-5004
Phone: (757) 398-6222

Commenting Agency Contact Information

Pennsylvania Department of Conservation and Natural Resources (DCNR)
Bureau of Forestry
Ecological Services Section
400 Market Street
P.O. Box 8552
Harrisburg, PA 17105-8552
(717) 787-3444

Pennsylvania Fish and Boat Commission (PFBC)
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823
(814) 359-5180

Pennsylvania Game Commission (PGC)
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
(717) 787-4250

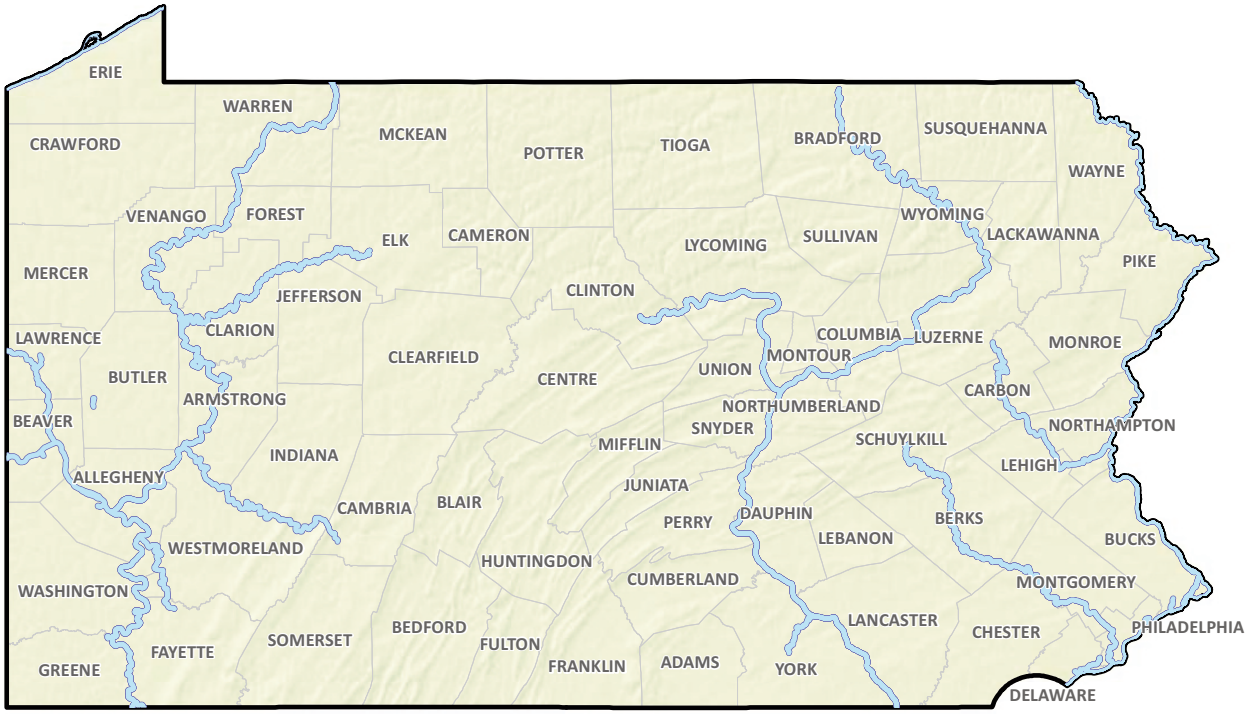
Pennsylvania Historic and Museum Commission (PHMC)
Bureau for Historic Preservation
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120-0093
(717) 783-8946

United States Fish and Wildlife Service (USFWS)
Pennsylvania Field Office
Endangered Species Section
110 Radnor Road, Suite 101
State College, PA 16801-7987
(814) 234-4090

APPENDIX D

USACE NAVIGABLE WATERS OF THE UNITED STATES (SECTION 10 WATERS)

United States Army Corps of Engineers Navigable Waters of the United States (Section 10 Waters)



Allegheny River
Beaver River
Chartiers Creek
Cheat River
Chester Creek
Clarion River
Codorus Creek
Conemaugh River
Crooked Creek
Crum Creek
Darby Creek
Delaware Canal
Delaware River
Elk Creek Harbor, Lake Erie
Kiskimentas River
Lake Erie, Erie Harbor
Lehigh Canal
Lehigh River
Little Beaver Creek
Little Yellow Creek
Mahoning Creek
Mahoning River
Monongahela River
Neshaminy Creek
Ohio River
Pennypack Creek
Raccoon Creek
Redbank Creek
Ridley Creek
Schuylkill Navigation Channel (Manayunk Canal)
Schuylkill River
Shenango River
Susquehanna River
Tenmile Creek
Tionesta Creek
West Branch Susquehanna River
Yellow Creek
Youghiogheny River

APPENDIX E

MAINTENANCE PERMIT CONDITIONS

1-8-2010

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED MANAGEMENT
DIVISION OF WATERWAYS, WETLANDS AND STORMWATER MANAGEMENT

STANDARDS FOR BRIDGE CLEARANCE, CHANNEL IMPROVEMENT AND BRIDGE REHABILITATION PROJECTS (PennDOT)

1. The following information shall be submitted concurrently to the Department of Environmental Protection Regional Office listed on Exhibit B, the Pennsylvania Fish and Boat Commission "Division of Environmental Services" listed on Exhibit A, and the Conservation District of the county in which the project is located not less than 30 days in advance of initiating work.

    a. A work schedule which includes: the roadway name/route and segment number, the stream name, Chapter 93 designation, any in stream restrictions due to wild or stocked trout or migratory fish, and the date work is to begin and end.
    b. A location map showing each project location
    c. A written description for each project including: dimensions of each structure, a complete narrative of all of the proposed activities including measurements and quantities of materials to be removed or placed.
    d. A sketch plan for each site which includes/shows: all staging areas, access points/roadways to the work area, all of the areas where work is to be done (including tree and brush removal), the upstream and downstream limits of the proposed activities, a complete listing of the in-stream E&S BMPs to be used and their locations.
    e. A valid PNDI search receipt for each site including clearance letters from the appropriate agencies indicating that the work will not adversely impact any species of concern.

    Unless otherwise extended in writing work authorized in accordance with the procedures outlined above must be completed within one year of the date of authorization.

    Addresses for County Conservation Districts may be obtained from the Department of Environmental Protection or may be found in local telephone directories.

2. The owner or permittee shall notify the appropriate Regional Office of DEP (Exhibit B), the Pennsylvania Fish and Boat Commission's Regional Headquarters (Exhibit A) and the appropriate County Conservation District at least 10 days in advance of starting work at each location identified in the proposed work schedule.

3. The work schedule, project narrative and sketch plan shall be on site and in possession of the person in charge whenever work is being performed. The, access points, limits of work and in-stream E&S BMPS that are to be used must be clearly indicated on the sketch plan for each site and all activities must be completely described within the project narrative.

4. All in-stream work is prohibited for the following except in emergencies. Emergency work must be approved by the Department of Environmental Protection in consultation with the Pennsylvania Fish and Boat Commission.

    a. migratory fish (MF) during periods of fish migration or spawning
    b. stocked trout streams between March 1 and June 15
    c. wild trout streams between October 1 and December 31
    d. as a part of any avoidance measures required within the PNDI clearance from 1.e.

    A listing of stocked and wild trout streams can be found on the Pennsylvania Fish and Boat Commission web page.

1-8-2010

5. Where appropriate, instream rock structures may be installed to encourage stream cleaning and prevent annual maintenance. These structures must be identified on the work schedule and sketch plan along with supporting data being submitted under item No. 1 (above) for DEP approval.

6. Authorized work within the stream channel shall be limited to 50 feet upstream and 50 feet downstream from the face of the bridge or culvert. Exceptions to this must be specifically identified in the proposed work schedule and shown on the sketch plan along with supporting data being submitted under item No. 1 (above) for DEP approval. In addition, work should be accomplished by working from the stream banks. In those cases where this is not possible, the operation of equipment in the water is to be minimized.

7. When work involves repairs to piers, footers, wing walls, or retaining structures, the construction area should be enclosed wherever possible within a cofferdam of sandbags or other non-erodible, non-polluting material. Dewatering shall be done in such a manner as to prevent sedimentation from re-entering the stream.

8. Channels may be excavated to a width no greater than the natural unaffected width of the normal low flow channel immediately upstream and downstream of the influence of the bridge or culvert. The remainder of the channel width shall be maintained as an elevated flood plain and may **not** be excavated lower than six inches above the water level at the time of work.

9. Material removed from the channel shall be disposed of at a location which precludes re-entry into the stream. If material removed from the channel is needed for backfill or bank restoration, it should be faced to the ordinary high water level with riprap suitably sized according to the anticipated stream velocity. All disturbed areas above the level of the riprap must be stabilized (vegetative stabilization preferred). Excess excavated material shall not be deposited in any wetland, river, lake, water course, floodway, floodplain or other regulated waters of this Commonwealth without first applying for and receiving the written permit of the Department of Environmental Protection.

10. Tree and shrub growth on stream banks shall not be disturbed unless absolutely necessary. Any areas of vegetation to be removed must be described/justified in the project narrative and shown on the sketch plan.

11. If an access road is to be constructed, stormwater diversion shall be provided to assure that water will not flow along the access road directly into the stream or the work area. The location of the access road must be shown on the sketch plan submitted for approval along with the work schedule as outline in No. 1 above. No wetlands may be impacted without first obtaining a permit from the Department. Earth disturbance shall be kept to a minimum.

12. Erosion and sediment pollution control measures must be properly implemented and closely monitored to minimize erosion and prevent sediment from entering the stream channel. The in-stream BMPs that are to be used must be listed and their location shown on the sketch plan for each site. All BMPs shall be designed in accordance with the latest edition of the Department's Erosion and Sedimentation Pollution Control Manual or PennDOT's Publication 464 – Maintenance Field Reference for Erosion and Sedimentation Control. All disturbed areas shall be permanently stabilized.

13. Where it is necessary for construction equipment to cross the stream, a temporary stream crossing shall be provided by the permittee for this purpose unless the stream flow is shallow and the stream bed consists of solid or non-erodible material. The temporary crossing must comply with the conditions of General Permit BDWM-GP-8, Temporary Road Crossings. Any fill material provided for temporary crossings shall be clean granular material and the entire fill area shall be kept to an absolute minimum elevation to avoid obstructing flood flows and/or creating a backwater flooding condition. The Permittee is responsible for any damages resulting from the obstruction of flood flows by this temporary stream crossing. Upon completion of the project, the temporary crossing shall be removed in its entirety and the disturbed area shall be restored to the original contours and stabilized with vegetation or other appropriate method as approved. Copies of, and authorization to use, the BDWM-GP-8 are available from the Department offices listed on Exhibit B.

14. The Department shall have the discretion to require a separate individual permit application to be submitted for any project or portion thereof, which the Department determines to have a potential significant effect on safety or protection of life, health, property, or the environment.

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15. Bridge rehabilitation projects, including bridge superstructure replacements, are subject to the following conditions:

    a. No reduction of horizontal or vertical clearance of the structure will occur.
    b. No widening of a substructure for superstructure replacement will occur.
    c. No roadway grade will be altered, other than that required for normal resurfacing.

16. Paving metal bottom (pipe and arch) culverts are subject to the following additional conditions:

    a. Work can be authorized by the Exx-9999 permit.
    b. Divert upstream flow with a cofferdam and pump water via a conduit through the culvert. This dewatering scheme must be included as a part of the items requested in item No. 1.
    c. Clean out debris and silt as required.
    d. Construct reinforced paving to a depth of 6" to 8", as needed, and place riprap at the outlet end as needed. Do not finish off concrete; leave the surface rough to allow turbulent flows and depositions. Depth of water through the culvert after restoration of flow will approximate the natural stream conditions. (Refer to attached "Curtain Wall and Apron Detail".)
    e. Allow concrete to harden enough to walk on, flush concrete with stream water, and pump rinse water to an upland discharge location until the pH level of the rinse water falls below 9. pH must be measured with a calibrated meter and not with pH paper. Upland discharge will preclude any reentry of the rinse water into the stream and any erosion.
    f. Remove cofferdam and restore stream flow. Seed and mulch as required in the approved E&S Controls.

16. Streambed Paving for Small Structures with an open bottom 20' wide or less are subject to the following additional conditions:

    a. Work must be authorized by either a "Small Projects" permit, a "General Permit No. 11" or a Standard Joint Permit Application as required.
    b. Follow the design criteria for depressed invert and baffle design as indicated on PennDOT BD 632M.
    c. Divert upstream flow with a cofferdam and pump water via a conduit through the culvert. This dewatering scheme must be included as a part of the items requested in item No. 1.
    d. Clean out debris and silt as required.
    e. Allow concrete to harden enough to walk on, flush concrete with stream water, and pump rinse water to an upland discharge location until the pH level of the rinse water falls below 9. pH must be measured with a calibrated meter and not with pH paper. Upland discharge will preclude any reentry of the rinse water into the stream and any erosion.
    f. Remove cofferdam and restore stream flow. Seed and mulch as required in the approved E&S Controls.

17. Bridge cleaning should be done in accordance with the "Guidelines for PennDOT's Bridge Cleaning Operations" dated November 22, 1994 (or latest version) and in accordance with Chapter 2 of PennDOT Publication 55 (as updated); whichever provides the more strict environmental control.

18. Bridge painting should be in accordance with the "Guidelines for Environmental Pollution Controls for Bridge Painting Contracts", Department of Transportation dated November 17, 1986 including revisions (latest version), and in accordance with Chapter 3 of PennDOT Publication 55 (as updated), whichever provides the more strict environmental control.

1-8-2010

EXHIBIT A

FISH AND BOAT COMMISSION'S OFFICES

Headquarters Address	**County Responsibility**
NORTHWEST REGION	
Regional Manager 11528 Highway 98 Meadville, PA 16335-7320 814-337-0444	Butler, Clarion, Crawford, Erie, Forest, Lawrence, Mercer, Venango and Warren
SOUTHWEST REGION	
Regional Manager 236 Lake Road Somerset, PA 15501-1644 814-445-8974	Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland
NORTHCENTRAL REGION	
Regional Manager P.O. Box 5306 Pleasant Gap, PA 16823 814-359-5250	Cameron, Centre, Clearfield, Clinton, Elk, Jefferson, Lycoming, McKean, Montour, Northumberland, Potter, Snyder, Tioga and Union
SOUTHCENTRAL REGION	
Regional Manager 1704 Pine Road Newville, PA 17241 717-486-7087	Adams, Bedford, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lebanon, Mifflin, Northumberland (Mahatango Creek in Jordan and Lower Mahanoy Townships only) Perry and York
SOUTHEAST REGION	
Regional Manager Box 8 Elm, PA 17521 717-626-0228	Berks, Bucks, Chester, Delaware, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia and Schuylkill
NORTHEAST REGION	
Regional Manager P.O. Box 88 Sweet Valley, PA 18656 570-477-5717	Bradford, Carbon, Columbia, Lackawanna, Luzerne, Monroe, Pike, Sullivan, Susquehanna, Wayne and Wyoming

DIVISION OF ENVIRONMENTAL SERVICES
450 Robinson Lane, Bellefonte, PA 16823-9620
814-359-5147

EXHIBIT B

DEPARTMENT OF ENVIRONMENTAL PROTECTION
REGIONAL OFFICES
PERMITTING AND TECHNICAL SERVICES SECTION

Regional Office	County Responsibility
Southcentral Regional Office 909 Elmerton Avenue, Second Floor Harrisburg, PA 17110 (717) 705-4707	Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry and York
Southeast Regional Office 2 East Main Street Norristown, PA 19401 (484) 250-5970	Bucks, Chester, Delaware, Montgomery and Philadelphia
Southwest Regional Office 400 Waterfront Drive Pittsburgh, PA 15222-4745 (412) 442-4000	Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington and Westmoreland
Northwest Regional Office 230 Chestnut Street Meadville, PA 16335 (814) 332-6984	Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango and Warren
Northeast Regional Office 2 Public Square Wilkes-Barre, PA 18711-0790 (570) 826-2511	Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne and Wyoming
Northcentral Regional Office 208 W. Third Street, Suite 101 Williamsport, PA 17701 (570) 327-3574	Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga and Union

Central Office

Bureau of Watershed Management
Division of Waterways, Wetlands and Stormwater Management
P.O. Box 8775
Harrisburg, PA 17105-8775
717-787-6827

APPENDIX F

CHAPTER 105
GENERAL PERMIT QUICK REFERENCE GUIDE

Chapter 105 General Permit Quick Reference Guide

Applicability of GP's Where There Are:

		Historic or Archaeological Resources	Threatened and Endangered Species	Exceptional Value Waters (EV)	High Quality Waters (HQ)	Stocked or Wild Trout Stream-	Wild and Scenic Rivers	Natural Landmarks	Drainage Area > 1 square mile	FEMA Floodway	Wetlands	Streams
GP-1	Fish Habitat and Enhancement Structures	No	No	Yes	Yes	Δ	No	No	Yes	Yes	No	Yes
GP-2	Small Docks & Boat Launching Ramps	No	No	No	Yes	Δ	No	No	Yes	Yes	Δ	Yes
GP-3	Bank Rehabilitation, Bank Protection and Gravel Bar Removal	No	No	Δ	Yes	Δ	No	No	Yes	Yes	No	Δ
GP-4	Intake and Outfall Structures	No	Yes	No	No	Δ	No	No	Yes	Δ	No	Yes
GP-5	Utility Line Stream Crossings	No	No	No	Yes	Δ	No	No	Yes	Yes	Δ	Yes
GP-6	Agricultural Crossings and Ramps	No	Yes	No	Yes	Δ	Yes	No	Yes	Yes	Δ	Yes
GP-7	Minor Road Crossings	No	No	No	Yes	Δ	No	No	No	No	Δ	Δ
GP-8	Temporary Road Crossings	No	No	Yes	Yes	Δ	Yes	No	Yes	Yes	Δ	Δ
GP-9	Agricultural Activities	No	No	Yes	Yes	Yes	Yes	No	No	Yes	Δ	Yes
GP-11	Maintenance, Testing, Repair, Rehabilitation or Replacement of Water Obstructions and Encroachments	No	No	Yes	Yes	Δ	Yes	Yes	Yes	Yes	Δ	Δ

Δ = GP Permit Conditions, see GP for specifics
Yes = GP Can Be Used
No = GP Cannot be used

Note: This guide is for **general reference only**. Read each permit to be sure you meet all the requirements conditions set forth in the permit.

APPENDIX G

SLLA STREAM LIST

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Bureau of Watershed Management
January 23, 2004
717-787-6827

SUBJECT: SLLA Stream Lists

TO: County Conservation District Staff
Soils and Waterways Section Chiefs
Division of Waterways, Wetlands, and Erosion Control
Bureau of Waterways Engineering

FROM: Alissa Myers f.:40\

Division of Waterways, Wetlands and Erosion Control

Attached are the SLLA stream lists entitled "DEP's Lists of Streams Subject to the Submerged Lands License Program." This attachment includes the following three stream lists: The Public Highway List (same list as previously provided to you but in an easier to read format), the **US** Army Corps of Engineers List, and a list based on previous legal analysis, and historical research (Oberdorfer's list) and/or Pennsylvania court decisions. These three lists are the only lists we should be using to determine which Commonwealth waters require a submerged lands license. The cover sheet explains what the lists are used for and contains important legal disclaimer language. These lists with the cover sheet are available to the public upon request. If you are asked for a list of the streams subject to the submerged lands licensing program list, please provide all three lists **with the attached cover sheet.**

Please share this with anyone in your office that should be made aware of it.

If you have any questions or need further assistance feel free to email or call me at 717-772-5966.

Enclosures

cc: Meg Murphy

DEP'S LISTS OF STREAMS SUBJECT TO THE SUBMERGED LANDS LICENSE PROGRAM

September 2003

DRAFT

The Department of Environmental Protection is the agency charged with administering the Submerged Lands License Agreement (SLLA) Program under the Darn Safety and Encroachments Act, 32 P.S. Section 693.15, and Section 514 of The Administrative Code, 71 P.S. 194. The Department utilizes the attached lists in administering the SLLA program. These lists should be treated as a starting point for determining if a stream is subject to the SLLA requirements under the Dam Safety and Encroachments Act and as a listing of those streams for which the Commonwealth may claim ownership of the associated submerged lands. These lists were compiled by the Department over time from various sources and are based upon what the Department considers to be reliable and persuasive evidence of Commonwealth ownership of the submerged lands associated with the streams listed. The lists are not a final determination of the legally navigable streams in Pennsylvania. Moreover, there may be streams not listed herein, which are navigable in fact, and therefore subject to a Commonwealth claim of ownership of the associated submerged lands.

TABLE.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	A.
1798, March 21. Rec'd Law Book No. VI, p. 245. 1807, March 4. Rec'd Law Book No. X, p. 443, P. L. 42.	Allegheny River from the mouth thereof to the boundary of the State. so much of, in the counties of Potter and Mckean as lies southwardly of the north line of the State.
1873, April 2. P. L. 486.	Amis creek, in the township of Taylor, in the county of Centre, from Mount Pleasant, on the Tyrone and Clearfield Railroad, to the sawmill of John Copenhaver, in said township, for the passage of logs.
	Analomink river. See Broadhead's creek.*
1813, March 26. Law Book XIV, p. 1, P. L. 189.	Anderson's creek. See Little Anderson's Creek. **in the county of Clearfield, from the mouth thereof ten miles up the same.
1854, May 5. P. L. 560, ...	Andrew's run, in Pittsfield township, Warren county.
1822, April 1. P. L. 117.	Auchwick creek, in the counties of Huntingdon and Bedford, from the mouth thereof to John Wilde's mill.
	B.
	Babb's creek. See Pine creek, second fork of, in the county of Tioga (acts 4 April, 1844, and 7 February, 1860).
1871, May 4. P. L. 553.	Bailey's run, in Wharton township, Potter county, form its mouth, at the Sinnamahoning, to the county line, a distance of about ten miles.
1771, March 9. Rec'd A Vol. V., p. 401.	Bald Eagle stream, as far up as Spring creek.
1807, March 4. Rec'd Law Book No. X, p. 443, P. L. 42.	Bald Eagle creek, in Centre county, all that part of situate and lying between Milesburg and Joseph William's land, a distance of about eight miles.
1822, April 1. P. L. 117.....	from Joseph Williams' saw-mill to the mouth of Laurel run.
1850, March 25. P. L. 280....	Bear creek, in the county of Elk, from its junction with the Clarion river, for one mile up said creek.
1850, March 25. P. L. 281.....	Beaver creek, in the county of Cambria, from the mouth to Killbuck creek.
1863, April 14 P. L. 419.....	Beaver Dam branch of Moshannon creek, in Decatur township, Clearfield county, from its mouth to where Coal run empties into said Beaver Dam branch. See Beaver Dam run.

*The act of 3d April, 1829, recorded in Law Book No. XXI, p. 515, provides for the erection of a bridge over "Analomink river, also called Broadhead's creek, at or near Stroudsburg."

**The act of 27th March, 1819, repeals the act "passed the 13t[illegible] of March, 1813, declaring Anderson's creek, in Clearfield County, a public high[illegible]" There appears to be no act of 13th March, 1813.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1850, March 25. P. L. 281.....	Beaver Dam creek, in the county of Cambria, from the mouth to the place where the township road crosses it.
1844, April 30. P. L. 541.....	Beaver Dam run, in the county of Clearfield.
1864, March 17. P. L. 54.....	Beaver Dam run, one of the upper tributaries of the Moshannon creek, in the county of Clearfield, from its mouth to the sources thereof.
1863, April 14. P. L. 419.....	Beaver run, in Decatur township, Clearfield county, from its mouth to the mill now owned by John Cuttle.
1829, March 7. Rec'd Law Book No. XXI, p. 479, P. L. 60.	Beaver run, in Lycoming county, from the mouth thereof up to the copper works.
1815, March 4. Rec'd Law Book No. XV, p. 129, P. L. 65.	Beech creek, in the county of Centre, from its mouth up to Eddy Lick.
1845, April 16. P. L. 475.....	Beech creek, from Jacob Gratz's saw-mill, near where the turnpike road from Bellefonte to Karthaus crosses the same, to its mouth.
1860, April 3, P. L. 617.....	Bell's run, in Ceres township, McKean county, from the mouth thereof six miles up said stream.
1818, March 23. Rec'd Law Book, No. XVII, p. 116, P. L. 264.	Bennet's branch of the Sinnamahoning, in the county of Clearfield, from the mouth thereof up to the Beaver Dams, so called.
1792, April 3. Rec'd Law Book No. IV, p. 317. 1793, March 6. Rec'd Law Book No. V, p. 55.	Big or Poco Poco creek, in Northampton county, from the mouth to the falls thereof. from the falls thereof, inclusive, up to Jan Sherbantje's mill dam.
1798, March 21. Rec'd Law Book No. VI, p. 245.	Big Beaver creek, from the mouth to the first fork, in the Seventh district of Donation land.
1827, March 2. Rec'd Law Book No. XX, p. 511, P. L. 57.	Big Brokenstraw creek, from the second forks of said creek, in Warren county, to the New York State Line, a distance of about fifteen miles.
1829. March 30. Rec'd Law Book No. XXI, p. 510, P. L. 109.	Big Bushkill creek, in the county of Pike, from the mouth of said creek to the falls, near the fifteen mile pond.
1813, March 29. Rec'd Law Book No. XIV, p. 74, P. L. 236.	Big Connoquenessing creek, from the town of Butler, in the county of Butler, to its confluence with Big Beaver creek, in the county of Beaver.
1815, March 4. Rec'd Law Book No. XV, p. 129, P. L. 65.	Big Catawissa creek, in the county of Luzerne, from its confluence with Little Catawissa creek, up to Andrew Gilbert's saw-mill.
1846, February 13. P. L. 47....	Big Equinunk creek, in the county of Wayne, from Alexander Lanthin's mill, to the mouth of said creek, where it empties into the Delaware river, for the passing of logs, lumber and rafts.
1804, April 3. Rec'd Law Book No. X, p. 18, P. L. 474.	Big Fishing creek, in the county of Northumberland, from the mouth of Little Fishing creek, up to Jonathan Colly's mill.
1830, January 23. P. L. 30....	Big Hickory creek, from its mouth to the Warren county line.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1808, March 21. Rec'd Law Book No. XI, p. 201, P. L. 92.	Big Mahoning creek, from its confluence with th Allegheny river, in Armstrong county, up sai creek to the mouth of Canoe creek, in Indian county.
1835, April 13. P. L. 212.....	in Jefferson county, from the mouth of Cano creek to the forks of Stump creek, in sai county.
1849, April 10. P. L. 629.....	Big Mill creek, in the county of Elk, from it mouth to a point two miles up said creek.
1860, March 7. P. L. 116.....	Big Mill creek, from the saw-mill of Thomas Hall on said creek, in the county of Jefferson, to th mouth of said creek, in Clarion county.
1855, March 27. P. L. 133.....	Big run, from the residence of William Bests in Young township, Jefferson county, to th mouth of the same, where it empties into the Bi Mahoning creek.
1836, March 26. Rec'd Law Book No. XIII, p. 536.	Big Sandy creek, from its confluence with th Allegheny river up to where the State road leading from the town of Mercer to Meadville crosses the same.
	Big Schuylkill. See Schuylkill.
1831, April 2. P. L. 371.....	Big Sugar creek, in Venango county, from the mouth thereof, and up the said stream, as far as the mouth of Proper's run.
1833, March 30. P. L. 109.....	from Goodwin's mill, in Venango county, to Proper's forks, in Crawford county.
	Birds creek. See Loyalsock creeek and its tributaries.
1813, March 26. Rec'd Law Book No. XIII, p. 537, P. L. 186.	Blacklick (Black Lick) creek, in the county of Indiana, from Charles Campbell's mill to its mouth.
1828, April 14. Rec'd Law Book No. XXI, p. 407.	from Charles Campbell's mill dam up to the mouth of Two Lick creek as far as the mill now occupied by Alexander T. Moorehead, on said creek.
1829, March 7. Rec'd Law Book No. XXI, p. 479, P. L. 60.	Blacklick (Black Lick) creek, in Indiana and Cambria counties, from the mouth thereof to the bridge on the North Branch, where the Ebensburg and Indiana turnpike crosses the same in Cambria county.
1851, April 12. P. L. 479.....	in the county of Indiana, from its mouth or junction with the Conemaugh river up to the mouth of Two Lick creek.
1849, April 10. P. L. 629.....	Blue-Eye run, in the county of Warren, from its mouth to a point one-half mile up said run.
1813, March 26. Rec'd Law Book No. XIV, p. 1, P. L. 186.	Bowman's creek, in Luzerne county, from its mouth to Parishes mills, at the Big Falls.
1815, March 1. Rec'd Law Book No. XV, p. 127, P. L. 62.	Broadhead's creek, from the mill of John Price, in Pike county, to the mouth of said creek, at Delaware river, in Northampton county.
1829, March 30. Rec'd Law Book No. XXI, p. 510, P. L. 109.	in Pike county, from John Price's mill to Eleazer Price's mill.
1832, May 3. P. L. 430.....	from Eleazer Price's mill , in Pike county, to forks.
1832, May 3. P. L. 430.....	the West Branch of, to N as Bush's, to the forks of said Broadhead's creek.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	Brokenstraw. See Big Brokenstraw; Little Brokenstraw.
1798, March 21. Rec'd Law Book No. VI, p. 245. 1835, April 30. P. L. 377.....	Brokenstraw creek, from the mouth to the second fork. in Warren county, from the second fork to the New York. State line.
1807, March 4. Rec'd Law Book No. X, p. 443, P. L. 42.	Brush creek, all, that part of, situate between the mouth thereof and the mouth of Shaver's creek, in the county of Bedford.
1839, April 16. P. L. 583.....	Buffalo(e) run, from its mouth, at the Raystown branch of the Juniata, up the same to the mouth of Sulphur Spring run, in Clearfield county.
1863, April 15. P. L. 485.....	Burned Dam run, from the point where it is now a highway up to the forks of said run, and thence up the South branch of said run as far as Andrew Carle's saw-mill, and up the North Branch of said run as far as the farm of Valentine Krise, Sr.
	Bushkill. See Big Bushkill.
	C.
1848, April 1. P. L. 321.....	Canoe creek, from its mouth to Henry Stoner's sawmill, in Indiana county.
	Cattawissa. See Big Cattawissa.
1804, April 3. Rec'd Law Book No. X, p. 18, P. L. 474.	Cattawissa creek, in the county of Northumberland, up to Cherrington's mill.
1798, March 21. Law Book VI, p. 245.	Cansawago creek, from the mouth up to the main forks.
1813, March 26. Rec'd Law Book No. XIV, p. 1, P. L. 189.	Cowanesque creek, in the county of Tioga, from its mouth to Bethlehem Thompson's mill.
1848, April 11. P. L. 539.....	Cedar run, in the counties of Lycoming and Tioga, from above the mill dam of Harres & Miller, at the mouth, to the mouth of Fahnestock branch of the same, in the county of Tioga.
1867, February 27. P. L. 261..	the creek known as, in the township of Elk, Tioga county, from Billing's steam mill, in said township, to its mouth, (a distance of nine miles), to Pine creek.
	Chapel fork. See Kinzua creek.
1833, April 6. P. L. 196.....	Cheat river, from the mouth thereof and up the said stream as far as the Virginia State line.
1826, April 10. Rec'd Law Book No. XX, p. 412, P. L. 343....	Chest creek, in the county of Clearfield, from its junction with the Susquehanna river to the line of Clearfield and Cambria counties.
1830, April 6. P. L. 308.....	in Clearfield county, from the mouth thereof to the point where the division line between the counties of Clearfield and Cambria crosses the same.
1[illegible], April 1. P. L. 341.....	Chester creek, in the county of Delaware, from the mouth thereof, at the river Delaware, up to Richard Fowler's mills.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	Chichester. See Lower Chichester creek.
1827, March 2. Rec'd Law Book No. XX, p. 511.	Chillisquaque creek, from its confluence with the Susquehanna river as far up as the Limestone Lick farm, in Columbia county.
	Clarion river. See Wilson's fork of.
1848, February 7. P. L. 22....	Clarion river, West branch of, in the county of Elk, from the mouth to Buena Vista, a distance of about six miles up the said West branch.
1861, March 22. P. L. 190.....	West fork of, above Buena Vista, and the several tributaries thereof, in the counties of Elk and McKean, for the passage of rafts and logs.
1828, April 14. Rec'd Law Book No. XXI, p. 407.	Clark's creek, in Dauphin county, from the mouth thereof up to Whittell's mill.
1867, April 8. P. L. 943.....	Clear creek, in the county of Cameron.
1804, February 13. Rec'd Law Book No. IX, p. 346, P. L. 109.	Clearfield creek, in the county of Huntingdon, from the mouth to the forks thereof, at the place called the Driftwood.
1814, March 26. Rec'd Law Book No. XIV, p. 404, P. L. 200.	from the Beaver Dam branch up to Hugh Gallagher's mill dam in Cambria county.
1833, April 6. P. L. 209.....	in the county of Clearfield, commencing at a point where the said creek is declared and known to be a public highway to a point known as the "Narrows."
1863, April 14. P. L. 419.....	Coal run, in Decatur township, Clearfield county, from its mouth (where it empties into Beaver Dam branch of Moshannon creek) to Daniel Albert's sawmill.
1794, February 5. Rec'd Law Book No. V, p. 183.....	Cocalamus creek, in Cumberland and Mifflin counties, from the mouth thereof up to the forks at David Cargil's for the passage of rafts.
1801, February 27. Rec'd Law Book No. VIII, p. 7.	Codorus river, in York county, from the forks to the Susquehanna river.
1836, March 29. P. L. 212.....	Coffee creek, in Warren county, from the east line of Columbus township to its mouth.
1797, February 27. Rec'd Law Book No. VI, p. 147.	Cohocksink creek, from the mouth to the bridge on the road leading from Frankford.
1829, April 16. Rec'd Law Book No. XXI, p. 544, P. L. 163.	or Canal street, in the county of Philadelphia, from the bridge on the road leading to Frankford up to Sixth street, according to the plans and surveys made by Robert Brooke, Esq., and others.
1860, April 2. P. L. 510.....	Collwee creek, Warren county, from its mouth to where the Enterprise and Mulingar road crosses.
1804, March 5. Rec'd Law Book No. IX, p. 409, P. L. 197.	Conodogwinet creek, from the Cove fording to the Franklin county line. See Connodoguinet.
1771, March 9. Rec'd A, Vol. V, p. 401.	Conestogae, as far up as Slough's mill dam.
1870, April 2. P. L. 821, ...	Conestoga creek, in the county of Lancaster, from the mouth up to the intersection of Muddy creek, for the protection of fish.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1798, March 21. Rec'd Law Book No. VI, p. 245.	Conewango creek, from the mouth to the main forks.
1801, February 27. Rec'd Law Book No. VIII, p. 7. 1846, March 20. P. L. 150.....	Conewago river, from the mouth of Bermudian creek to the Susquehanna river. the portion of, known as Conewago Gut. Said highway shall commence at the mouth of the Conewago, where it empties into the Susquehanna, and terminates at the mill dam of George Ewing, in Dover township, York county, below the point where the Bermudian empties into the Conewago. So much of the act to which this is a supplement (act February 27, 1801) as is hereby altered or supplied, is hereby repealed.
	Coniate. See Little Coniate.
1829, April 23. P. L. 360.....	Conneareittee creek, in the county of Crawford, from the junction thereof with French creek to join John Marvin's mill, a distance of about two miles.
1771, March 9. Rec'd Law Book No. V, p. 401.	Connodoguinet, as far up as the Cove fording. See Conedogwinet.
1807, March 4. Rec'd Law Book No. X, p. 443, P. L. 42.	Conondare, or Six's creek, all that part of which lies between the town of Smethport, in the county of McKean, and the mouth of said creek.
	Conoquinessing. See Big Conoquinessing.
1848, April 1. P. L. 321.....	Cowanesque creek, in the county of Tioga, from its mouth to the junction of said creek and so called North Fork creek.
1816, March 19. Rec'd Law Book No. XV, p. 572, P. L. 182. 1817, February 10. Rec'd Law Book No. XVI, p. 83.	Crooked creek, in the county of Armstrong, from its mouth to Jacob Frantz's mill. in the county of Tioga, from the mouth thereof up the same to the forks.
1864, April 20. P. L. 507.....	Cross Forks creek, in the county of Potter, from its mouth up said creek a distance of ten miles.
1852, April 7. P. L. 272.....	Crush creek, from the mouth of said creek, or where it empties into the Susquehanna river, in Burnside township, Clearfield county, as far up as the forks, where the North and South branches unite in Indiana county.
	D.
1771, March 9. Rec'd A, Vol. V, p. 401.	Delaware river.
1864, April 18. P. L. 460.....	Dent's run, in the county of Elk, from its mouth to the sources thereof.
1867, April 10. P. L. 1073.....	Driftwood creek, from the mouth of North creek, to the east line of warrant number two thousand three hundred and forty-three, in the county of Cameron, for the passage of timber, logs, rafts and shingles.
1799, April 5. Rec'd Law Book No. VI, p. 431.	Dunkard creek, from the mouth to main fork (or the several parts thereof which pass through this Commonwealth).

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1873, March 1. P. L. 200.....	Dyberry creek, the East branch of, in the county of Wayne, from the house of Obediah Freeman to the mouth of said creek, for the purpose of floating logs and timber down the same to the main stream.
	E.
1848, April 1. P. L. 321.....	East branch of Mahoning creek, in Clearfield county, to all intents and purposes as other streams that have been declared navigable.
1825, April 11. Rec'd Law Book No. XX, p. 101, P. L. 235.	East Branch of the Sinnemahoning, or the first fork from its mouth, in the county of Lycoming, as far up as the mouth of the South Lick branch of the said stream.
	East Fork. See Sinnemahoning creek, East Fork of.
1830, January 23. P. L. 30.....	East Sandy creek, in Venango county, from the mouth thereof to the point where the Susquehanna and Waterford turnpike road crosses the same.
1834, April 10. P. L. 263.....	Elk creek, in the county of Centre, commencing at the town of Melheim, where the turnpike road crosses the same to the junction of said creek with Pine creek at Dennin's fulling mill.
1851, April 12. P. L. 454.....	that so much of existing laws as makes Elk creek, in Penn township, Centre county, a public highway be and the same is hereby repealed.
1872, April 3. P. L. 878.....	in the township of Miles, in the county of Centre, from Jacob Wolf's mills eastward to Daniel Walker's mills, in said township, for the passage of logs.
1848, February 7. P. L. 22....	Elk creek, in the county of Elk, from its mouth to the first forks, below St. Mary's.
1838, April 16. P. L. 582.....	Elk creek, in the county of Jefferson, from the mouth thereof, up the said stream to the mills of Washburn and Clover.
1876, May 2. P. L. 196.....	Elk creek and its several branches in the county of Sullivan.
1865, March 21. P. L. 516.....	Elk-horn creek, from its mouth in Tioga township, in the county of Tioga, to the land of A. J. McKenney, in Farmington township, in said county.
	Equinunk. See Big Equinunk creek.
	F.
1870, April 16. P. L. 1180.....	Fish creek, Pennsylvania, Fork of, running through Springhill township, in the county of Greene, from the town of New Freeport, in said township, to the State line, during the time of freshets, for all forms of merchantable timber, saw logs, railroad cross-ties, cooper stuff, etc.
1870, March 3. P. L. 329.....	Fish Dam run, in the county of Clinton, for the distance of five miles up from [illegible] mouth.

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TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	Fishing creek. See Big Fishing creek; Huntingdon creek, Act 19 March, 1816; Little Fishing creek.
1824, February 18. Rec'd Law Book No. XIX, p. 369, P. L. 24.	Fishing creek from the mouth of Banks run to the lands of Joseph Anthony, in Logan township, Centre county. (See Fishing creek, Lycoming county).
1868, April 1. P. L. 590.....	so much of the Act of 18 February, 1824, as declares that part of Fishing creek running or passing through the premises and property now in the possession of and owned by Henry L. Diffenbach, in the township of Lamar, county of Clinton, a public highway, repealed.
1816, March 19. Rec'd Law Book No. XV, p. 572, P. L. 182.	Fishing creek, commonly called Huntingdon creek, from the junction of said creek with Pine creek, in the county of Columbia, to the North mountain, in the county of Luzerne.
1797, March 4. Rec'd Law Book No. VI, p. 155.	Fishing creek, in the county of Lycoming, from the mouth, as far up as the mouth of Bank's run. (See Fishing Creek, Centre county.)
1799, April 11. Rec'd Law Book No. VII, p. 2.	Fishing creek in the county of Northumberland, from the mouth to main fork, and that branch commonly called Little Fishing Creek, from the mouth to John Eve's mill.
1858, February 16. P. L. 28....	Five Mile run, in Jefferson county, from the mouth where it enters into Sandy Lick creek, to R. J. Nicholson's Mill in Knox township, Jefferson county.
1863, March 6. P. L. 111.....	Forge run, otherwise called Six Mile run, in Centre county, from the mouth thereof where it enters into Big Moshannon creek up to the fork near the Wolf rocks, for the passage of logs and lumber.
1799, January 16. Rec'd Law Book No. VI, p. 317.	Frankford creek, in the county of Philadelphia, from the mouth thereof up to Joseph I. Miller's land opposite to the race bridge across the Bristol road on main street of Frankford.
1813, March 26. Rec'd Law Book No. XIV, p. 1, P. L. 189.	Frankstown branch of Juniata river, from the forks near Lazarus Lowries mill, up the west branch to the town of Hollidaysburg, in Huntingdon county.
	French creek. See Pleasant Lake, outlet of, into French creek.
1798, March 21. Rec'd Law Book No. VI, p. 245.	French creek to the town of Le Boeuff.
1810, February 12. Rec'd Law Book No. XII, p. 16, P. L. 18.	in Erie county, from its junction with Le-Boeuff creek, to the sawmill now or formerly owned by Leverick Bissell.
1832, May 3. P. L. 400.	French creek, East branch of, commencing at the point of its junction with the West branch of French creek, in the county of Erie, on or near the forty-second degree of north latitude, and thence up said East branch to the west line of the State of New York.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1840, January 6. P. L. 18, ...	East branch of, commonly known as Mile's branch, in the county of Erie, commencing at its junction with the main creek, to the mill of Stockum & Coe, on the said creek.
1867, March 1. P. L. 315, ...	Freeman's run, in Potter county. So much thereof as is situated between the north line of the farm of E. O. Austin and the Sinnemahoning creek.
	G.
1857, March 20. P. L. 115, ...	Gennessee river, in the township of Gennessee and Bingham, in the county of Potter, from the New York State line to the mouth of Turner creek, in said township of Bingham.
1810, February 21. Rec'd Law Book No. XII, p. 33, P. L. 35.	Green creek, in the county of Northumberland, from the mouth up to the main fork thereof, and from thence up the North and Northwest branches thereof into the sawmill now or formerly owned by John Lemon, on the North branch, and unto the sawmill now or formerly owned by Samuel Watt on the Northwest branch thereof.
	H.
1870, March 3. P. L. 329, ...	Hall's run, in the county of Clinton, for the distance of five miles up from its mouth
1837, March 29. P. L. 109, ...	Haneyoy creek, a branch of the Oswago, from the junction of the same with the Oswago creek to the New York State line.
1836, March 29. P. L. 212, ... 1848, April 10. P. L. 470, ...	Hare's creek, within the county of Warren. in Erie county from where the same crosses the line of Warren county to where it crosses the line of the State of New York.
1851, April 14. P. L. 716, Appendix Vol. 39.	Harris' run, in Lycoming county, from its connection with Pine creek, four miles up the said run.
1871, March 2. P. L. 161, ...	Harvey's creek, from its mouth to and including Harvey's Lake, in the county of Luzerne.
	Harvey's Lake. See Harvey's creek.
	Hickory. See Big Hickory creek.
1868, March 24. P. L. 460, ...	Hiner's run, a tributary of the West branch of the Susquehanna river, in the county of Clinton, for the distance of eight miles up from its mouth.
1811, April 2. Rec'd Law Book No. XII, p. 439. 1816, March 19. Law Book XV, p. 572, P. L. 182.	Huntingdon creek, from the mouth thereof, thence up the same to the mouth of Pine creek, thence up Pine creek to Charles Buckalew's sawmill. the East branch of Fishing creek, commonly called Huntingdon creek, from the junction of said creek with Pine creek, in the county of Columbia, to the North Mountain, in the county of Luzerne.
	J.
1869, April 9. P. L. 794, ...	Jerry run, in the county of Cameron, from the north line of warrant numbered five thousand four hundred and seventeen the place where it empties into the Sinnem ing.

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TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1859, April 11. P. L. 500, ...	Johnson's run, in Fox township, Elk county, from the mouth of said run to where the same crosses the west line of warrant number four thousand three hundred and ninety-six.
	Juniata. See Frankstown branch of; Little Juniata; Raystown branch of.
1771, March 9. Rec'd A, Vol. V, p. 412.	Juniata up to Bedford and Frankstown.
	K.
1830, January 29. P. L. 31, ..	Kinzua creek, which empties into the Allegheny river, in Warren county, from the mouth thereof up to the second forks in McKean county.
1853, April 18. P. L. Vol. 41, Appendix p. 827.	Kinzua creek, from the mouth of the South fork of the same to the old Kittanning road, and the South fork of said Kinzua creek from its mouth to the Second fork of said South fork and the Chapel fork to the fork of said creek.
1771, March 9. Rec'd A, Vol. V, p. 401.	Kiskiminetas river.
1815, March 4. Rec'd Law Book No. XV, p. 129, P. L. 65.	Kittle creek, in the county of Lycoming, from its mouth up to the second fork.
1859, March 1. P. L. 87.	Knapp's creek, in the county of McKean, from mouth to the upper dams now erected on the north and south branch of the same.
	L.
1813, March 26. Law Book XIV, p. 1, P. L. 189.	Lackawanna creek, in the county of Luzerne, from the mouth thereof to Ragged Island, at the mouth of Rush creek.
1771, March 9. Rec'd A, Vol. V. p. 404.	Lackawaxen. Lackawaxin stream as far up as the falls thereof.
1808, February 1. Law Book XI, p. 151, P. L. 18.	Lackawaxen river, in the county of Wayne, from the falls thereof to the Dyberry forks, and thence up the Dyberry branch and West branch to the great falls of the respective branches.
1814, March 26. Law Book XIV, p. 404, P. L. 200.	Lackawaxen creek, the Western branch of, from Colonel Seely's mills to Silas Kellog's, in Mount Pleasant township, in the county of Wayne.
1867, April 8. P. L. 899, ...	Lake Pleasant, in the county of Erie, and the Commonwealth of Pennsylvania, and the outlet of said lake to French creek, open and free to all the people of the said Commonwealth, for fishing, navigation and all purposes whatsoever.
1817, March 24. Law Book XVI, p. 232, P. L. 219.	Larry's creek, in the county of Lycoming, from the mouth thereof to where the State road crosses the same.
1852, May 4. P. L. 568, ...	Larrie's creek, in Lycoming county, from where the State road crosses the same, thence up said creek, a distance of five miles.
	Leckawaxin. See Lackawaxin, Leckawaxin stream.
	Lehigh. See Little Lehigh.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLI HIGHWAY.
1771, March 9. Rec'd A, Vol. V, p. 404.	Lehigh, the, declared a public highway.
	Lick creek. See Loyalsock creek and its trib taries.
1820, March 28. Law Book XVIII, p. 105.	Lick creek, from its mouth up to Henry Nueff Jr., sawmill, in the county of Jefferson.
1842, March 17. P. L. 102, ...	Lick run, in the county of Clearfield, from i junction with the Susquehanna river up to Fo Licks, on said run.
1870, March 28. P. L. 610, ...	Little Anderson's creek, in the county of Clearfiel a stream which empties into Anderson's cre near and below Bridgeport, in said county, fro its mouth to the source thereof.
1825, April 11. Law Book XX, p. 101, P. L. 235.	Little Brokenstraw creek, in the county of Wa ren, from the mouth thereof to the place whe the State road, from the New York State li through the said county to the Ohio State lin crosses the same, a distance of about ten mile in Warren county, from Nathan Abbott's sa mill, on said creek, to the New York State lin
1829, April 23. Law Book XXI, p. 633, P. L. 297.	
1854, April 13. P. L. 341, ...	in the county of Warren, from the mouth there to the New York State line.
1838, April 16. P. L. 582, ...	Little Clearfield creek, in the county of Clearfield commencing at its junction with Big Clearfiel creek to the first fork of the said Little Clea field creek, southwest from William Dunlap' and the Raystown Branch of the Juniata, thenc up the same to the mouth of Buffaloe (sic) run thence up the same to the mouth of Sulphu Spring run, in the same county.
1798, March 21. Law Book VI, p. 245.	Little Coniate creek, from the mouth to the inl of Little Coniate lake.
	Little Fishing creek, in the county of Northum berland, Act 11 April, 1799.
1830, April 6. P. L. 307, ...	Little Fishing creek, in Columbia county, fro formerly Eve's now Master's mill, in Greenwoo township, to Cole's mill, in Madison township and the West branch of said Little Fishin creek, from the mouth thereof to Lyon's mill.
1794, February 5. Law Book V, p. 1882.	Little Juniata, in the county of Huntingdon, fro the mouth up to the head of Logan's Nar rows.
1808, March 26. Law Book XI, p. 233, P. L. 141.	Little Juniata river, from Logan's Narrows t the mills of Edward Bell, in Allegheny township Huntingdon county.
1822, April 1. P. L. 117, ...	Little Juniata river, in Antis township, i Huntingdon county, as far up the said rive as the sawmill dam of Alexander and Danie Ale.
1830, January 23. P. L. 28, ...	Little Mahoning creek, in Indiana county, fro the mouth to the North fork.
1867, April 5. P. L. 832, ...	North branch of, in Indiana county, from it confluence with the South branch of said creek up to Tiger's sawmill.
1867, April 5. P. L. 832, ...	Uber branch of, from its m th up to Cessna' sawmill, in Indiana county.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1848, April 1. P. L. 321, ... 1873, March 18, P. L. 308,...	Little Mill creek, in the county of Jefferson. in Warsaw and Pine creek townships, in the county of Jefferson, from the mouth of Laurel run to the mouth thereof at Big Mill creek.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Little Mushannon, in the county of Clearfield, from its connection with the West branch of the Susquehanna river, the distance of ten miles up the said creek.
1852, March 3. P. L. 522, ...	in Snowshoe township, Centre county, from its mouth to the Mushannon mills.
1828, April 14. Law Book XXI, p. 407.	Little Oil creek, in Crawford county, from the mouth thereof to the upper part of said creek.
1837, April 4. P. L. 380, ...	Little Pine creek, from its mouth, in Columbia county, to Columbus, in Luzerne county.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Little Sandy creek, the North branch of, from its junction with Redbank creek, in Armstrong county, up said stream to Alexander McKinstry's sawmill, in Jefferson county.
	South branch of, from its junction with the North branch of, at Geist's mill dam, up said South branch to Campbell's and Mundorff's mill, formerly known as Sprankle's mill, in Jefferson county.
	Little Schuylkill. See Tamaqua.
1799, April 10. Law Book VII, p. 7.	Little Schuylkill, the, from George Roushe's sawmill, up to Jacob Shelley's sawmill.
1869, April 13. P. L. 890, ...	Little Shenango creek, in the county of Mercer, from its mouth, at Greenville, to Salem Mills, near Leech's Corners, in said county.
1814, March 26. Law Book XIV, p. 404, P. L. 200.	Little Swatara creek, in the county of Schuylkill, from its junction with the Big Swatara creek, up the same to John Fidler's sawmill.
1828, April 14. Law Book XXI, p. 407.	Little Toby's creek, in the counties of Clearfield and Jefferson, from the mouth of John Sheaffer's mill run, on the main branch of Toby's creek and from the forks of Brandy Camp (or Kersey creek) to the Clarion river.
1862, March 27. P. L. 218, ...	Little Toby creek, from the point where it is now a highway up to Patrick Whalen's, in the township of Fox, county of Elk.
1864, April 8. P. L. 346, ...	Long run, emptying into Pine creek, in the township of Gaines, in the county of Tioga, for the distance of eight miles up from its mouth.
1817, March 24. Law Book XVI, p. 252, P. L. 219.	Lower Chichester creek, in the county of Delaware, from the mouth thereof up the same to the mill of David Trainer and Gideon Jaques.
1816, March 19. Law Book XV, p. 572, P. L. 182.	Loyalsock creek, in the county of Lycoming, from the mouth thereof up the same to Roger's factory, on said creek.
1881, April 12. P. L. 428, ...	Loyalsock creek and its tributaries, Bird's creek and Lick creek, in the county of Sullivan.
1811, March 20. Law Book XII, p. [illegible] P. L. 74.	Lycoming creek, in the county of Lycoming, from the mouth thereof up the same to where the line of Tioga county crosses the said creek.

No. 20. DEPARTMENT OF FISHERIES.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBI HIGHWAY.
	M.
1870, March 3. P. L. 329, ...	McSherry's run, in the county of Clinton, for distance of five miles up from its mouth.
1806, March 1. Law Book X, p. 253, P. L. 389.	Mahantango creek, forming the division line tween Dauphin and Northumberland counti from the mouth thereof up to the junction Pine and Deep creeks, in Berks county.
1814, March 26. Law Book XIV, p. 404, P. L. 200.	Mahantango creek, in Schuylkill county, from mouth of Pine creek up to Samuel Keim's sa mill.
	Mahoning. See Big Mahoning.
	Mahoning creek. See East branch of. See L tle Mahoning.
1869, April 2. P. L. 594, ...	Mahoning creek, from its mouth to the Mahoni iron works, in the county of Armstrong.
1816, March 19. Law Book XV, p. 572, P. L. 182.	Mahoopany creek, from its mouth to the forks the north and south branches thereof.
1869, April 2. P. L. 607, ...	Maple creek, in the county of Forest, from i mouth up to Cook & Leichner's mill, for t passage of logs.
1813, January 16. Law Book XIII, p. 288, P. L. 31.	Marsh creek, in the county of Centre, from i confluence with the Bald Eagle creek to Jac Boone's sawmill, being about the distance of fi miles.
1842, March 14. P. L. 77, ...	Marsh run, from its junction with Oil creek, the township of Troy, county of Crawford, Ralph Clap's mill, in Athens township, count aforesaid.
1868, February 21. P. L. 192,	Marvin creek, in McKean county, from the cros ing of the Howard Hill road to Potato creek.
1832, February 15. P. L. 70,..	Matthews run, in Warren county, from its mout where it empties into Brokenstraw creek, to th township line between Brokenstraw and Suga Grove townships.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Medock's run, in the county of Elk, from its con nection with Bennett's branch of the Sinnema honing, six miles up said run.
1825, April 11. Law Book XV, p. 101, P. L. 235.	Middle creek, in the county of Union, from th mouth thereof, at the Susquehanna river, up t George Miller's mill dam, in Beaver township.
	Miles branch of the French creek. See Frenel creek.
	Mill creek. See Big Mill creek. see Little Mill creek, in the county of Jefferson. see Oil creek, commonly called Mill creek. see Oil creek, commonly called Mill creek, in the county of Crawford.
1827, March 2. Law Book XX, p. 511, P. L. 57. 1832, April 16. P. L. 582, ...	Mill creek, in the county of Huntingdon, from the mouth thereof, to Mat ; Wilson's mill. in Jefferson county, from t outh thereof, to Burtoff road.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1847, February 16. P. L. 109,..	in the county of Jefferson, from its mouth to Perrin's mill.
1868, April 13. P. L. 935, ...	a tributary of Loyalsock, in Sullivan county, from its mouth up to the north line of the Joseph Lewis tract on the North branch, and to the west line of the Thomas Leiper tract on the West branch.
1865, March 23. P. L. 687, ...	Mill run, in the townships of Browne and McHenry, in the county of Lycoming, a tributary of Pine creek.
1867, April 8. P. L. 899, ...	in the township of McHenry, in the county of Lycoming.
1869, April 13. P. L. 904, ...	in the township of McHenry, and county of Lycoming, for the purpose of floating logs and lumber down the same.
1848, April 11. P. L. 503, ...	Millstown creek, in the county of Jefferson, from its mouth ten miles up the same.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Mix run, in the county of Elk, from its connection with Bennett's branch of the Sinnemahoning, eight miles up said run.
1869, April 9. P. L. 794, ...	in the county of Cameron, from the floating dam of Brown, Early & Co., to the place where it empties into Bennett's branch of the Sinnemahoning.
1782, April 13. Law Book No. 1, p. 522.	Monongahela river, as far up as it can be made navigable.
1867, March 22. P. L. 527, ...	Montgomery creek, a tributary to the West branch of the Susquehanna river, in the county of Clearfield, from the mouth to the sources thereof.
1874, May 21. P. L. 299, ...	Montgomery creek and its several branches, in the county of Clearfield, for the purpose of driving and floating logs, lumber, etc., down said stream or streams.
1863, April 14. P. L. 399, ...	Morgan's run, in Clearfield county, from where it empties into Clearfield creek, up to where the road, leading from McClarren's farm to Clearfield creek, crosses the road at or near Powell's sawmill.
	Moshannon creek. See Beaver Dam branch of. See Mushannon.
1808, February 1. Law Book XI, p. 151, P. L. 17.	Muddy creek, from its junction with Hutcheson's sawmill to its confluence with French creek.
1831, April 2. P. L. 371, ...	Muddy creek, in the county of Crawford, from the mouth of Hutchin's run, up said creek, so far as the east line of donation tract, numbered one hundred and twenty-one, of five hundred acres.
1861, May 1. P. L. 618, ...	Muddy run and the east and west branches thereof, in the county of Clearfield, for the distance of twelve miles above its mouth.
1810, January 30. Law Book XII, p. 5, P. L. 6.	Muncy creek, in the county of Lycoming, and its branches, to wit: from the mouth thereof, up to the mouth of Beaver creek on the east branch, and from the mouth of the north branch up the same as far as Elk Lick.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	Mushannon. See Little Mushannon. See Moshannon.
1804, March 5. Law Book IX, p. 361, P. L. 130.	Mushannon creek (a boundary line between the counties of Centre and Huntingdon), from the mouth thereof to the forks of the same, about five miles above the town of Philipsburg.
	N.
1816, March 19. Law Book XV, p. 572, P. L. 182.	Nescopeck creek, in the counties of Columbia and Luzerne, from its mouth to Mount Yorger.
1771, March 9. Rec'd A, Vol. V, p. 401.	Neshaminy creek, as far up as Barnsley's Fork.
1850, March 25. P. L. 281, ...	North Beaver Dam run, in the county of Cambria, from the mouth of, to Gill's sawmill.
1837, April 4. P. L. 380, ...	North branch of the Tionesta creek, in the county of Warren, from the mouth of said branch, fifteen miles up said stream.
1867, April 10. P. L. 1073, ...	North creek, from its junction with the Driftwood creek, up to where it crosses the public highway, at a place called Harper's Ferry, in the county of Cameron, for the passage of timber, logs, rafts and shingles.
	O.
1798, March 21. Law Book VI, p. 245.	Ohio river, from the western boundary of the State to the Monongahela river.
1798, March 21. Law Book VI, p. 245.	Oil creek. See Little Oil creek.
1810, March 10. Law Book XII, p. 64, P. L. 66.	from the mouth of the second fork. in the counties of Venango and Crawford, from the lower forks in Venango county, to the upper forks at McCreeth's sawmill, in Crawford county.
1810, March 9. Law Book XV, p. 572, P. L. 182.	commonly called Mill creek, in the county of Crawford, from its mouth to the southern boundary of a tract of land belonging to Charles Plumb in the counties of Crawford and Warren.
1830, January 29. P. L. 31, ...	the east branch of, from the dam of the old Holland mill, in Crawford county to the point at which the road leading from Richard Henderson's to the Allegheny river, crosses the said creek in Warren county.
1832, May 3. P. L. 430, ...	the east branch of, from Centreville to the State road, in Sparta township, in the county of Crawford.
1848, April 11. P. L. 502, ...	Oil creek, Thompson's branch of, in the county of Crawford, from its confluence with another branch of said creek, in the township of Oil creek, in the county aforesaid, to a sawmill built by Chancy Goodrick, in the township of Rome and county aforesaid.
1818, March 3. XVI, p. 559, P. L 145	the west branch of, from the upper forks thereof, at M'Crat's, now Winten's mill, up to James Hamilton's mill, in Bloomfield township, in the county of Crawford.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1807, March 4. Law Book X, p. 443, P. L. 43.	Oswayo creek, all that part of, in the counties of Potter and McKean, which lies between the north line of this State and the forks of the said creek, about twenty miles from its mouth.
1850, April 6. P. L. 398, ...	Oswayo creek, in the county of Potter, from the town of Millport, up to the town of Oswayo, a distance of about six miles.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Otter run, in the county of Lycoming, from its connection with the first fork of Pine creek, three miles up the same.
1852, March 27. P. L. 196, ...	in Brown township, in the county of Lycoming, the first fork of, from the main stream, for one-half mile up said branch.
1864, March 18. P. L. 63, ...	Oyster run, in Fox township, Elk county, from its mouth where it empties into Little Toby creek, to its forks, a distance of one and one-fourth miles.
	P.
1826, April 10. Law Book XX, p. 412, P. L.	Panther creek, from its junction with the Little Schuylkill, or Tamaqua, to Martin Yoder's sawmill on said creek.
1816, March 19. Law Book XX, 572, P. L. 182.	Pemmapecha, commonly called Pennepack, in the county of Philadelphia, from its mouth to David Lewis' sawmill race.*
	Pennapack. See Pemmapecha.
1771, March 9. Rec'd A, Vol. V, p. 401.	Penn's creek, twenty miles up the courses thereof.
1792, April 3. Law Book IV, p. 317.	in the county of Northumberland, below the mouth of Sinking creek, not heretofore declared a public highway, from the mouth thereof, to the mouth of Sinking creek.
1827, March 2. XX, p. 511, P. L. 57.	in Centre county, from the mouth of Sinking creek to the source of the said Penn's creek.*
1864, April 8. P. L. 346, ...	Phoenix run, emptying into Pine creek, in the township of Gaines, in the county of Tioga, for the distance of eight miles up from its mouth.
	Pine Bottom run. See Upper Pine Bottom run.
	Pine creek. See Huntingdon creek (Act 2 April, 1811).
	see Little Pine creek.
	see Mill run, in Lycoming county, a tributary of.
1827, March 2. Law Book XX, p. 511, P. L. 57.	see Phoenix run and Long run, emptying into. in Centre county, from the mouth thereof, up to John Neidigh's sawmill.
1868, April 13. P. L. 987, ...	Pine creek, in the township of Haines, in the county of Centre, from the mouth thereof, at Penn's creek, up to six miles above Mortz's.

*The Act of 27 May, 1841, P. L. 404, Provides: So much of the public highway on Penn's creek, in Centre county, as lies between Duncan's mill and the head of said creek is hereby vacated, and so much of the second section of the Act passed 2 Ma[illegible] 1827, as is inconsistent herewith, is hereby repealed.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1811, April 2. Law Book XII, p. 439.	Pine creek, from its mouth at Huntingdon creek, to Amos Buckelew's sawmill.
1814, March 26. Law Book XIV, p. 404, P. L. 200.	from Amos Buckelew's sawmill, in Columbia county, to the main forks above Jonathan Westover's sawmill, in Hunting township, Luzerne county.
1798, March 16. Law Book VI, p. 249.	Pine creek, in the county of Lycoming, from the mouth up to the third fork thereof.
1805, April 4. Law Book X, p. 175, P. L. 237.	Pine creek, the West branch of, from the third fork, in the county of Tioga, to the forks of the Elk Lick, in the county of Potter, and also the said third fork, from its mouth to Morris' marsh in the said county of Tioga.
1810, March 10. P. L. 68, ...	so much of the second fork of, in the county of Lycoming, as lies between its confluence and the point where it is intersected by the State road.
1829, March 30. Law Book XXI, p. 510, P. L. 109.	in Lycoming and Tioga counties, from the mouth thereof to the forks of said creek, above the big meadows in Tioga county.
1832, May 3. P. L. 430, ...	the first fork of, in the county of Lycoming, from the mouth thereof up to the Block House fork.
1844, April 4. P. L. 188, ...	second fork of, commonly called Babb's creek, in the county of Tioga, from its mouth to where William Babb now resides.
1860, February 7. P. L. 33, ...	second fork of, called Babb's creek, in the county of Tioga, from William Babb's sawmill to the mouth of Mickle run.
1833, January 14. P. L. 3, ...	Pine creek, in Potter county, from the first forks above Big Elk Lick, on said creek, to the forks above William Ellsworth's on said creek.
1847, March 16. P. L. 402, ...	west branch of, in the county of Potter, the distance of eight miles from its mouth up the said West branch.
1859, February 25. P. L. 81, ..	Pine creek, in Warren county, from its mouth to Carpenter's mill.
	Pleasant. See Lake Pleasant.
1859, February 10. P. L. 34, ..	Plunket's creek, a tributary of Loyalsock, in Lycoming county, from its mouth up to Feronea Falls, on the West branch, to the Beaver Meadow, on the North branch, and to the north line of the Henry Hill tract on the East Branch.
1792, April 3. Law Book IV, p. 317.	Poco Poco, or Big creek, in Northampton county from the mouth to the falls thereof.
1793, March 6. Law Book V, p. 55.	or Big creek, in Northampton county, from the falls thereof inclusive, up to Jan Sherbantje's mill dam.
1859, April 13. P. L. 558, ...	Portage branch of the Sinnemahoning creek, from its mouth in Shippen township, McKean county, up to Cooley's branch, in Portage township, in the county of Potter.
	Portage creek. See Susquehanna Portage creek.
1855, April 18. P L. 250, ...	Potato creek, in the county of McKean, from the mouth thereof to the point [illegible]re the same crosses the road leading fr[illegible]inethport to Shippen.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1859, March 30. P. L. 313, ...	Potts run, in Clearfield county, from the mouth thereof, where it empties into Clearfield creek, up to Kelly's mill.
1818, February 7. P. L. 85, ...	Powell's creek, in the county of Dauphin, from the mouth thereof to the forks of said creek.
	Pymatuning creek. See Shenango creek.
	R.
1846, March 30. P. L. 207, ...	Raccoon creek in the county of Clarion, from its mouth to the mouth of Little Raccoon creek, to all intents and purposes as are other streams that have been declared navigable.
1857, May 12. P. L. 458, ...	Rattlesnake creek, which enters into Little Toby's creek, in the township of Snyder, Jefferson county.
1838, April 16. P. L. 583, ...	Raystown branch of the Juniata, from Morrison's mills, in Clearfield county, up the same to the mouth of Buffalo run, thence up the same to the mouth of Sulphur Spring run, in the same county.
	Red Bank creek. See Sandy Lick creek.
1831, April 1. P. L. 341, ...	Ridley creek, in the county of Delaware, from the mouth thereof at the river Delaware, up to Pierce Crosby's mills.
1860, March 12. P. L. 147, ...	Roaring run, a tributary of Clearfield creek, in Bradford township, Clearfield county, from the mouth thereof to its sources.
	S.
1861, May 1. P. L. 641, ...	Salt run, as far as the forks of said stream, in Cameron county, for the passage of rafts and logs.
	Sandy creek. See East Sandy creek; Little Sandy creek.
1798, March 21. Law Book VI, p. 245.	Sandy Lick, or Red Bank, creek, from the mouth to the second great fork.
1820, March 28. P. L. 188, ...	creek from its mouth up to Henry Nueff's, Jr., mill, in the county of Jefferson.
1826, April 10. Law Book XX, p. 412, P. L. 339.	or Red Bank, creek, from the eastern boundary of Jefferson county to its mouth, only for the passage of boats, rafts, etc., descending.
1833, March 30. P. L. 109, ...	creek, the north fork of, in the county of Jefferson, from the mouth thereof to Ridgway, in said county.
1800, March 1. Law Book VII, p. 111.	Schuylkill, Big, from the mouth of Norwegian creek, where it empties into said river, up to where the Catawissa road crosses the same.
1803, April 1. Law Book IX, p. 186, P. L. 582.	the west branch of, from its junction with the north branch, up the same to Thomas Reed's sawmill, and then five miles higher up said stream, and the westernmost branch from its junction with the last mentioned stream, six miles up the same.
	Schuylkill, Little. See Tamaqua.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1833, April 8. P. L. 349, ...	Shamokin creek, in the county of Northumberland, from Samuel Sober's mill to its confluence with the Susquehanna.
1800, February 19. Law Book VII, p. 94.	Shaver's creek, in the county of Huntingdon, from its mouth up to the line of John and James Crawford's land.
1825, April 11. Law Book XX, p. 101, P. L. 235.	in the county of Huntingdon, from the mouth thereof to the bridge across the same at or near Ennis' fording.
1803, April 4. Law Book IX, p. 249, P. L. 661.	Shenango, or Pymatuning creek, a branch of Beaver creek, from the mouth of the same up to its source.
1822, April 1. P. L. 117, ...	Sidling Hill creek, from its mouth to the mouth of Woodenbridge creek.
1826, December 21. Law Book XX, p. 479, P. L. 3.	Sinking creek, in Centre county, from the mouth thereof to Christian Keller's mill.
	Sinamahoning. See Wikoff's (or Wykoff's) run, a tributary of Sinnamahoning creek.
1804, February 13. P. L. 109,..	Sinnamahoning (or Sinnemahoning) creek.
1818, March 23. Law Book XVII, p. 116, P. L. 264.	Sinnemahoning creek, in the county of Lycoming, from the mouth to the forks thereof, at the place called the Driftwood.
1822, April 1. P. L. 117, ...	Bennett's branch of Sinnamahoning, in the county of Clearfield, from the mouth thereof up to the Beaver dams, so called.
1825, April 11. Law Book XX, p. 101, P. L. 235.	Sinnemahoning creek, the North branch in McKean county, from the Driftwood to the mouth of North creek.
	east branch of the Sinnamahoning, or the first fork from its mouth, in the county of Lycoming, as far up as the mouth of the South Lick branch of the said stream.
1849, April 10. P. L. 629, ...	Sinnemahoning creek, from the point where it is now a highway, up to Stephen Bundy's in Houston township, Clearfield county.
1850, April 2. P. L. 321, ...	east fork of Sinnemahoning creek, from the mouth thereof to the mouth of Jamison branch of said east fork, in Potter county.
1859, April 13. P. L 553, ...	Portage branch of the Sinnamahoning creek, from its mouth in Shippen township, McKean county, up to Cowley's branch, in Portage township, in the county of Potter.
1874, May 21. P. L. 209, ...	the first fork of Sinnemahoning creek, in the county of Potter, from the mouth of the South Lick branch thereof, as far up as the mouth of the Prouty run.
	Six's creek. See Conondau creek.
	Six Mile run. See Forge run in Centre county.
	Slate, or Tomb's run. See Tomb's run.
1850, March 25. P. L. 281, ...	Slate Lick run, in the county of Cambria, from the mouth of, to the Phillipsburg road.
	run in the county of Cambria (one of the branches of Beaver dams) from the Ebensburg and Phillipsburg road, at or near James Gough's saw-mill, to John Adams' saw-mill, [illegible]r St Augustine, in Clearfield township, in said county of Cambria.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1801, May 1, P. L. 658, ...	Soldier run, in the county of Jefferson, from the mill of William H. Reynolds to the Clearfield county line.
1873, April 10. P. L. 722, ...	in the county of Jefferson, from McCreight and Warnock's (formerly William H. Reynold's) mill to the Sandy Lick creek, in Winslow township, in said county.
1846, March 30. P. L. 207, ...	Spring creek, in the county of Elk, from the big forks of said Spring creek to its mouth, to all intents and purposes as are other streams that have been declared navigable.
	see Spring run.
1796, February 26. Law Book VI, p. 58.	Spring creek, in the county of Mifflin, from the mouth of same as far up as the mouth of Logan's creek.
1830, January 23. P. L. 28,....	Spring creek, in Warren county, from its mouth to a point where the road leading from Franklin through Warren county, in a direction to Chautauqua lake, crosses the same.
1846, April 8. P. L. 281, ...	in the county of Warren, the main branch of from the mouth of said stream to where the same crosses the Crawford county line, and also the southern branch of said stream, from the mouth of said southern branch, until where the same crosses the Titusville road, in Warren county.
1863, April 22. P. L. 526, ...	Spring run, from its junction with Trout run, up to the Spring run mills, now owned by W. H. Earley, L. D. Brewster and Charles St. John, in the township of Jay, in the county of Elk, and all dams erected or hereafter to be erected shall have chutes so constructed as to allow the free passage of lumber, timber and logs
1820, March 6. P. L. 48, ...	Stony creek, from its mouth up to Peter Berkey's mills, in the county of Somerset.
1822, April 1. P. L. 117, ...	from and immediately below the mill dam of Peter Berkey, Esq., to the mill dam of George Kimmel, Esq.
1864, April 8. P. L. 335, ...	Stoney Fork creek, in Delmar and Morris townships, in the county of Tioga, from its mouth up to Daniel Osborn's, in Delmar township.
1848, April 11. P. L. 541, ...	Stump creek, in the county of Jefferson, from the forks of Big Mahoning to the Clearfield county line.
1858, February 25. P. L. 56, ..	Susquehanna Portage creek, in the township of Portage, in the county of Potter, from the saw-mill of E. D. Sizer, up to the Salt Works in said township.
1785, March 31. Law Book II, p. 493.	Susquehanna river, from the division line of Maryland, upwards to the town of Northumberland, and thence through the two branches throughout the whole length.
1801, February 21. Law Book VII, p. 249.	down to the Maryland line.
1831, January 17. P. L. 21,..	the West branch of the river Susquehanna, from the Cherry Tree or Canoe Place, up to John Douglass's saw-mill.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1832, May 3. P. L. 431, ...	the West branch of the river Susquehanna, from John Douglass' saw-mill, in Cambria county, up to the fork of said branch, a distance of about three miles.
	Sugar creek. See Big Sugar creek.
1814, March 26. Law Book XIV, p. 404, P. L. 200.	in the county of Bradford, from the mouth thereof, up the main branch to Rich's mills.
1830, April 6. P. L. 309, ...	Sugar Creek lake, the outlet thereof, in Crawford county, from Sugar Creek lake to where it enters Big Sugar creek.
1852, April 14. P. L. 344, ...	and its inlet westerly, as far as the Oil creek road, in the county of Crawford.
	Swatara. See Little Swatara.
1771, March 9. Rec'd A, Vol. V, p. 401.	as far up as P. Kettle's mill dam.
1831, March 29. Law Book XIV, p. 74, P. L. 237.	Swatara creek, from John Weidman's forge dam, in the county of Dauphin, to Good Spring creek, in the county of Schuylkill.
1815, March 4. Law Book XV, p. 129, P. L. 65.	the south branch of, in Schuylkill county, from the mouth thereof, to Jacob Capp's saw-mill.
	T.
1816, March 19. Law Book XV, p. 572, P. L. 182.	Tamaqua, commonly called Little Schuylkill, from its confluence with Big Schuylkill to David Longairre's saw-mill.
1802, February 22. Law Book VIII, p. 52, P. L. 73.	Ten-mile creek, from the mouth thereof at the Monongahela river up to the main fork, and thence up the south branch of said creek, as far as Jacob Adam's saw-mill, near Waynesburg, in the county of Greene.*
	Teonista. See Tionesta.
	Tionesta (or Teonista) creek.
1827, March 2. Law Book XX, p. 511.	Teonista creek, from its mouth where it enters the Allegheny river in Venango county, to the main fork of said creek, in Warren county, about six miles above the north line of Jefferson county.
1837, April 4. P. L. 330, ...	the north branch of Teonista creek, in the county of Warren, from the mouth of said branch fifteen miles up said stream.
1852, May 3. P. L. 526, ...	Tionesta creek, from the forks in Warren county, to the south line of Sergeant township, in McKean county.
1855, March 27. P. L. 133, ...	the west branch of Tionesta creek, in Warren county, as far up said stream as the west line of lot number five hundred and ninety-seven, in Cherry Grove township, in said county.
1857, May 12. P. L. 462, ...	and the branches thereof above Joseph Hall's mill, in Mead township, Warren county.
	Thompson's branch. See Oil creek, Thompson's branch of.
1836, March 29. P. L. 212, ...	Tidyiute creek, in the county of Warren, from its mouth to the second fork of the same.

* The Act 6 March, 1863, P. L. 113, repeals "any act of Assembly now in force, declaring Ten-mile creek a public highway, so far as relates to said creek from its head waters to the borough of Waynesburg, in the county of Greene."

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1815, March 13. Law Book XV, p. 314, P. L. 181.	Tioga river, from the line of the State of New York to Peter's Camp, in the county of Tioga.
1838, April 16. P. L. 591, ...	Tobyhanna creek, in the county of Monroe, from the river Lehigh to the junction of the Tunkhanna.
	Toby's (or Toby) creek. See Little Toby's creek.
1798, March 21. Law Book VI, p. 245.	Toby's creek, from the mouth of the second fork.
	Tomb's run.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Slate or Tomb's run, in the county of Lycoming from its connection with Pine creek, six miles up said run.
1859, April 11. P. L. 506, ...	Tomb's run emptying into Pine creek, in the county of Lycoming, to its sources.
1816, March 19. Law Book XV, p. 572, P. L. 182.	Tombicken creek, a branch of Cattawissa creek, from its mouth to the line of a tract of land patented to Jeremiah Warder, Jeremiah Parker and Richard Parker, called Turn Hick.
1813, March 26. Law Book XIV, p. 1, P. L. 189.	Towanda creek, in the county of Bradford, from the mouth thereof up the main branch to Spalding's mills.
1826, April 10. Law Book XX, p. 412, P. L. 343.	in Bradford county, from the mouth thereof up to the mouth of Roger's creek.
1851, April 8. P. L. 384, ...	south branch of, in Bradford county, from the mouth to David Miller's, in Albany township, in said county.
1863, April 22. P. L. 526, ...	Trout run, from its mouth to the mouth of Spring run. And all dams erected or hereafter to be erected, shall have chutes so constructed as to allow free passage of lumber, timber and logs.
1852, May 4. P. L. 568, ...	in the county of Clearfield, from the mouth of said run, to the saw-mill of Joseph Shaw, upon said run.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	in the county of Elk, from its connection with Bennett's branch of the Sinnemahoning, ten miles up said run.
1849, April 10. P. L. 623, ...	in Brown township, in the county of Lycoming, from its mouth three miles up said stream.
1870, April 16. P. L. 1218, ...	in the county of Lycoming, from its mouth on lands of A. H. McHenry, where it empties into Pine creek, to the head of its main branch, in said county.
1866, February 15. P. L. 48, ..	Tunkhannock creek, from its mouth in Tunkhannock borough, in Wyoming county, to a point where the Delaware, Lackawanna and Western railroad bridge crosses said creek, in Nicholson township, in said county.
	Tuneanquant or Tunnagwant creek.
1828, April 14. Law Book XXI, p. 427, P. L. 478.	Tunnangwant creek, in McKean county, from the New York State line, up the stream to the junction of the south and west branches and to continue up the west branch one mile and up the south branch two miles, from said junction.
1860, April 3. P. L. 618, ...	Tuneanquant creek, in Bradford township, McKean county, from the mouth thereof, six miles up said creek.

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
	Tunnangwant. See Teneanquant.
1838, April 16. P. L. 582, ...	Turtle creek, in Allegheny county, from the mouth thereof, up the said stream as far as Brush creek, in Westmoreland county.
1851, April 12. P. L. 479, ...	Twolick creek, from its mouth (at Blacklick creek in the county of Indiana), up said creek to the junction of the north branch of said creek.
1860, April 2. P. L. 576, ...	east branch of, from its mouth up to the bridge over said creek, on the public road from Greenville to the Cherry Tree, in Indiana county.
1859, April 11. P. L. 494, ...	north branch of, from its mouth, near the line of Greene and Cherryhill townships, in Indiana county, up to John Buttterbaugh's mill, in said township of Greene.
1796, February 26. Law Book VI, p. 61.	Tuscarora creek, in Milford township, in the county of Mifflin, from the mouth thereof, to Thomas Beale's mill-dam.
1805, April 4. Law Book X, p. 196, P. L. 277.	all that part of, situate between the mouth thereof and the forks near to Morrow's mill, which has not been declared a public highway by the act to which this is a supplement, passed the twenty-sixth day of February, one thousand seven hundred and ninety-six.
1854, April 20. P. L. 396, ...	Two-mile run, in Sheffield township Warren county, from its mouth to where it intersects the line of lot known as sub-division number two hundred and thirty-one, McKean county.
	U.
	Uber branch. See Little Mahoning creek.
1851, April 14. P. L. Vol. 39, Appendix p. 716.	Upper Pine Bottom run, in the county of Lycoming, from its connection with Pine creek, three miles up said run.
	W.
1808, February 4. Law Book XI, p. 163, P. L. 34.	Wallenpaupack creek, in the county of Wayne, from the falls thereof at Wilsonville, to the forks of said creek, and thence up the west branch, to where the north and south road crosses, and up the south branch to the upper end of Newfoundland settlement.
1835, April 13. P. L. 212, ...	Wapaseening creek, in Bradford county, from the New York State line up to Joseph Elbree's mill.
1805, April 4. Law Book X, p. 174, P. L. 236.	Wyalusing creek, all that part of, situate between the mouth thereof and Pickett's mill, near the forks of said creek.
	West branch. See Susquehanna river, West Branch of.
1852, May 4. P. L. 568, ...	West creek, in the county of McKean, from the mouth of said creek to the Elk county line.
1867, April 5. P. L. 819, ...	in the counties of Cameron and Elk, from the mouth to the source thereof.
	West fork. See Clarion river, West fork of.

11

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1837, May 12. P. L. 458, ...	Whetstone creek, in Clearfield county, from its mouth three miles up said creek.
1864, May 21. P. L. Vol. 52, Appendix p. 929.	White Deer creek (a tributary of the West branch of the Susquehanna river) and the north and south forks, for ten miles from the mouths of said forks, subject to the further provisions of this act.*
1813, March 26. Law Book XIV, p. 1, P. L. 189.	White Deer hole, in the county of Northumberland, from its confluence with the West Branch of the Susquehanna, up to Samuel Foreman's mill dam.**
1860, April 2. P. L. 578, ...	Whitmore run or creek, in the county of Clearfield, from its mouth to Joseph Patterson's saw-mills, in said county.
	Wicoff's. See Wycoff's run.
	Wiconisco or Wyconisco.
1805, April 1. Law Book X, p. 156, P. L. 200.	Wyconisco creek, in the county of Dauphin, from the mouth thereof to Isaac Ferree's mill-dam.
1867, March 1. P. L. 317, ...	Wiconisco creek, from Oakdale forge, in Dauphin county, to the public road leading from Clark's Valley to Tremont, in Schuylkill county.
1859, April 11. P. L. 467, ...	Willow creek, from its mouth, in Warren county, to its source, in McKean county.
1824, March 29. Law Book XIX, p. 501, P. L. 198.	Will's creek, that part of, in the county of Bedford, between the saw-mill erected by Henry Lyborger and the Maryland line.
1870, April 6. P. L. 1006, ...	Wilson's fork of the Clarion river, from the town of Wilcox, in Elk county, to where the McKean county line crosses said stream, for the passage of rafts, logs, timber and the ordinary purposes of descending navigation as necessary for lumbering purposes.
1865, March 21. P. L. 441, ...	Wilson's run, in the township of Chest, in the county of Clearfield, from its mouth to the first fork of said run, in the Henry Musser survey.
1838, April 16. P. L. 582, ...	Wooden Bridge creek, in the county of Bedford, from the mouth thereof and up the said stream as far as Houston's saw-mill.
1858, April 21. P. L. 404, ...	Wollis' run, in the county of Lycoming.
1869, April 10. P. L. 837, ...	Woodcock creek, in the county of Crawford.
1850, March 25. P. L. 280, ...	Wycoff's or Wicoff's run. Wycoff's run, in the county of Clinton, from its junction with the Sinnemahoning, for six miles up said run.

*An act to incorporate the White Deer Improvement Company.

**The Act of 30 March, 1822, repeals "so much of the Act of 26 March, 1813, as declares the White Deer Hole creek a public highway from Stitzel's forge to Samuel Foreman's m[illegible]um, in Northumberland (now Lycoming) county."

TABLE—Continued.

DATE OF THE ACT.	RIVER OR STREAM DECLARED A PUBLIC HIGHWAY.
1873, March 26. P. L. 421, ...	Wicoff's run, a tributary of the Sinnemahoning creek, in the county of Cameron, from its mouth to the sources thereof.
1804, February 6. Law Book IX, p. 311, P. L. 64.	Wyosox or Wysox creek. Wyosox creek, in the town of Claverack, in the county of Luzerne, from the mouth of the same to Jacob Myers's mill dam.
1823, January 21. Law Book XIX, p. 131, P. L. 13.	Wysox creek, in the county of Bradford, from Myers' mill to Barnes' mill, the distance of about four miles.
1827, March 2. Law Book XX, p. 511, P. L. 57,	from Sylvester Barnes' mill up to Lent's saw-mill, in Bradford county.
	Y.
1860, March 27. P. L. 295, ...	Yellow creek, in the county of Indiana, from its mouth to the forks of the said creek, near the line of Brush Valley and Pine townships, in said county.
1782, April 13. Law Book No. 1, p. 522.	Youghiogany river, as far up as it can be made navigable with boats and crafts.
1842, August 2. P. L. 467, ...	Youngwoman's creek, in the county of Clinton, commencing at the mouth of said creek and extending twenty miles up said creek.
1848, April 11. P. L. 539, ...	Youngwomanstown creek, in the county of Clinton, and its four principal branches, from their mouths to the northern part of Clinton county.

OPINIONS OF THE COURTS.

Evidence Necessary to Prove Deleterious Pollution.

Two operators of manufacturing concerns were arrested in Montgomery County for violation of Section 16 of the Act of May 1, 1909, P. L. 353, for allowing dye stuff or poisonous and destructive matter to escape into Gulph Creek. Both defendants were convicted before the Magistrate and fined $100.00 each, and from this decision the defendants took an appeal to the Court of Quarter Sessions of Montgomery County. Associate Judge Weand heard the cases and on February 24, 1914, over-ruled the verdict of the Magistrate and declared the defendants not guilty.

The Commonwealth showed that the operators of the mills used dye stuff in their operations and the waste that escaped from the mills made the whole stream a blue black to such an extent that the owners of the land below the mills complained that they could not use it for domestic purposes, and that their live stock refused to drinking it.

11—20—1915

APPENDIX II

STREAMS DECLARED NAVIGABLE BY

THE U.S. ARMY CORPS OF ENGINEERS

Ohio River and Tributaries*

Stream	Location	Jurisdiction Miles Above Mouth
Ohio River (head to mile 127.2	Beaver, Alleghany Co.	127.2
Chartiers Creek	Alleghany Co.	1.9
Beaver River (entire Length)	Beaver, Lawrence, Mercer Co.	21.5
Mahoning River (Tributary of Beaver River)	Lawrence Co.	41.0
Shenango River (Tributary of Beaver River)	Lawrence Co.	1.8
Raccoon Creek	Beaver, Washington Co.	1.8
Little Beaver Creek	Beaver Co.	1.0
Little Yellow Creek	Butler Co.	0.4
Yellow Creek	Butler Co.	2.5
Island Creek	Beaver Co.	0.2

Monongahela River and Tributaries*

Stream	Location	Jurisdiction Miles Above Mouth
Monogahela River	Entire Length, Mouth to Fairmount, WV	128.7
Youghiogheny River	Allegheny, Westmoreland, Fayette Co.	31.2
Tenmile Creek	Washington, Greene Co	2.7
Cheat River	Fayette Co.	3.4

Alleghany River and Tributaries

Stream	Location	Jurisdiction Miles Above Mouth
Alleghany River	Mouth to Olean, N.Y.	257.6
Kiskminitas River	Armstrong, Westmoreland Co.	26.8
Conemaugh River Tributary of Kiskiminitas River	Indiana, Westmoreland, Cambria, Somerset Co.	51.7
Crooked Creek	Armstrong Co.	1.5
Mahoning Creek	Armstrong Co.	1.4
Redbank Creek	Clarion, Armstrong Co.	1.5
Clarion River	Clarion, Jefferson Co.	90.0
Tionesta Creek	Forest Co.	0.3

Delaware River and Tributaries

Stream	Location	Jurisdiction Miles Above Mouth
Delaware Bay and River	Atlantic Ocean to Hancock, N.Y.	333
Chester River	Chester, Pa.	2
Crum Creek	Eddystone, Pa.	1
Darby Creek	Between Delaware and Phildaelphia Counties, Pa.	5
Neshaminy Creek	Croudon, Bucks Co., Pa.	4
Pennypack Creek	Torresdale Philadelphia Co. Pa.[1]	2
Ridley Creek	Chester, Pa.[2]	1
Schuylkill River	Port Carbon, Pa.	110

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* In addition to the streams or portions listed, the Pittsburgh District of the Army Corps of Engineers currently has under study 102 additional streams or additional reaches of streams already listed, for potential designation as navigable.

1. Downstream side of Frankford Avenue Bridge in Philadelphia is considered the head of navigation

2.` Upstream side of Baltimore & Ohio R.R> Bridge in Chester, Pa., is considered the head of navigation.

Susquehanna River and Tributaries

Waterway	Location and Jurisdiction
Susquehanna River	From mouth to Lock Haven, Pa. on the West Branch and Athens, Pa. on the North Branch
Codorus Creek	York County from the mouth to the forks.

Lake Erie and Tributaries

Waterway	Location and Jurisdiction
Erie Harbor	Erie, Pa., including entrance channel.
Lake Erie	Ohio State boundary to New York State boundary.
Elk Creek Harbor, Lake Erie	Outer end of proposed East Breakwater to Upstream limit of Federal Project, 0.5 Miles.

Source: United States Army Corps of Engineers, Pittsburgh, Philadelphia, Baltimore and Buffalo District Offices

Rachel Carson State Office Building
P.O. Box 8775
Harrisburg, PA 17105-8775
November 25, 2003

Bureau of Watershed Management 717-787-6827

STREAM BEDS OWED BY THE COMMONWEALTH

The beds of the following waterways have been found through legal analysis, historical research and/or in Pennsylvania court decisions to be submerged lands of the Commonwealth.

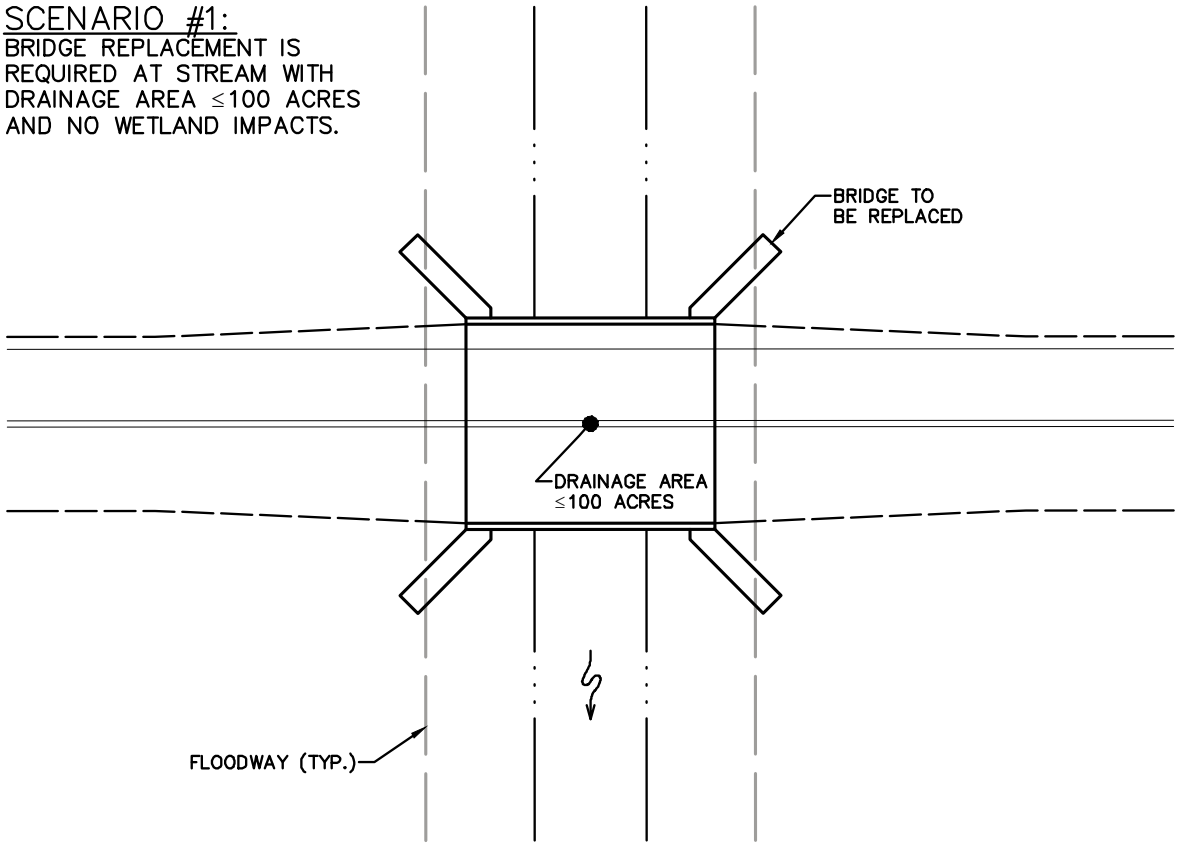
Allegheny River
Bald Eagle Creek
Beaver River and its "principal branches" (Shenango River & Mahoning River)
Big Beaver Creek
Big Mahoning Creek
Big Sandy Creek
Big Schuylkill Branch
Black Lick Creek
Brandywine Creek
Brokenstraw Creek
Cheat River
Chester Creek
Clearfield Creek
Clarion River
Conococheague Creek (aka Conecocheague Creek)
Conodoguinet Creek (aka Conedoguinet Creek)
Conemaugh River
Conneaut lake
Cowanesque River
Delaware River
Dow Creek
Driftwood Branch of Sinnemahoning (aka Driftwood Branch of Sinnamahoning)
Dunning's Creek
Eastern Branch of Schuylkill
Frankstown Branch of Juniata
French Creek
Gallows Run
Juniata River
Kettle Creek
Kinzua Creek
Kiskimimitas River (aka Kiskeminitas River)
Lackawanna River
Lackawaxen River
Lehigh River

Leboeuf Creek (aka LeBeouf Creek)
Little Conemaugh River
Little Juniata River
Little Schuylkill River
Loyalsock Creek
Lycoming Creek
Mahanoy Creek
Mahoning River
Monongahela River
Muncy Creek
North Branch of Sinnemahoning Creek (aka North Branch of Sinnamahoning Creek)
North Branch of Susquehanna River
Ohio River
Oil Creek
Penns Creek (aka Penn's Creek)
Pine Creek
Quittapahilla Creek (aka Quetapahilla Creek)
Raystown Branch of Juniata
Redbank Creek (aka Red Bank Creek)
Schuylkill River
Shawanese Cabin Creek (possibly Shawnee Branch)
Shenango River
Sherman Creek (aka Sherman's Creek)
Sinnemahoning Creek and "it's branches" (aka Sinnamahoning Creek and "it's branches")
Stoneycreek River (aka Stoney Creek River)
Susquehanna River
Swatara Creek
Tioga Creek
Tionesta Creek
Toby's Creek (Clarion River?)
Tuscarora Creek
West Branch of Juniata River
West Branch of Susquehanna River
West Branch of Schuylkill
Youghiogeny River

APPENDIX H

PERMIT SCENARIO SKETCHES

SCENARIO #1:
BRIDGE REPLACEMENT IS REQUIRED AT STREAM WITH DRAINAGE AREA ≤100 ACRES AND NO WETLAND IMPACTS.



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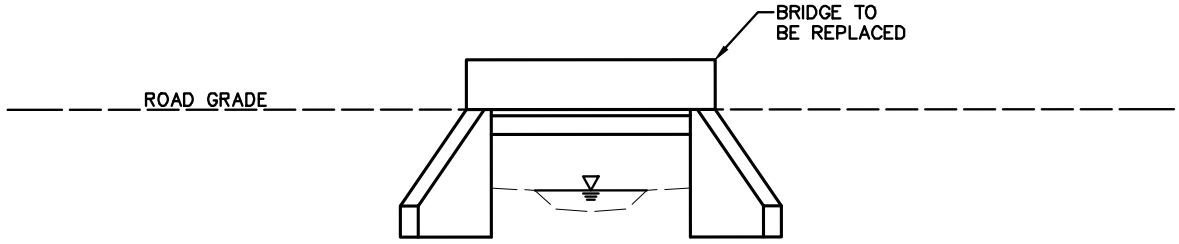
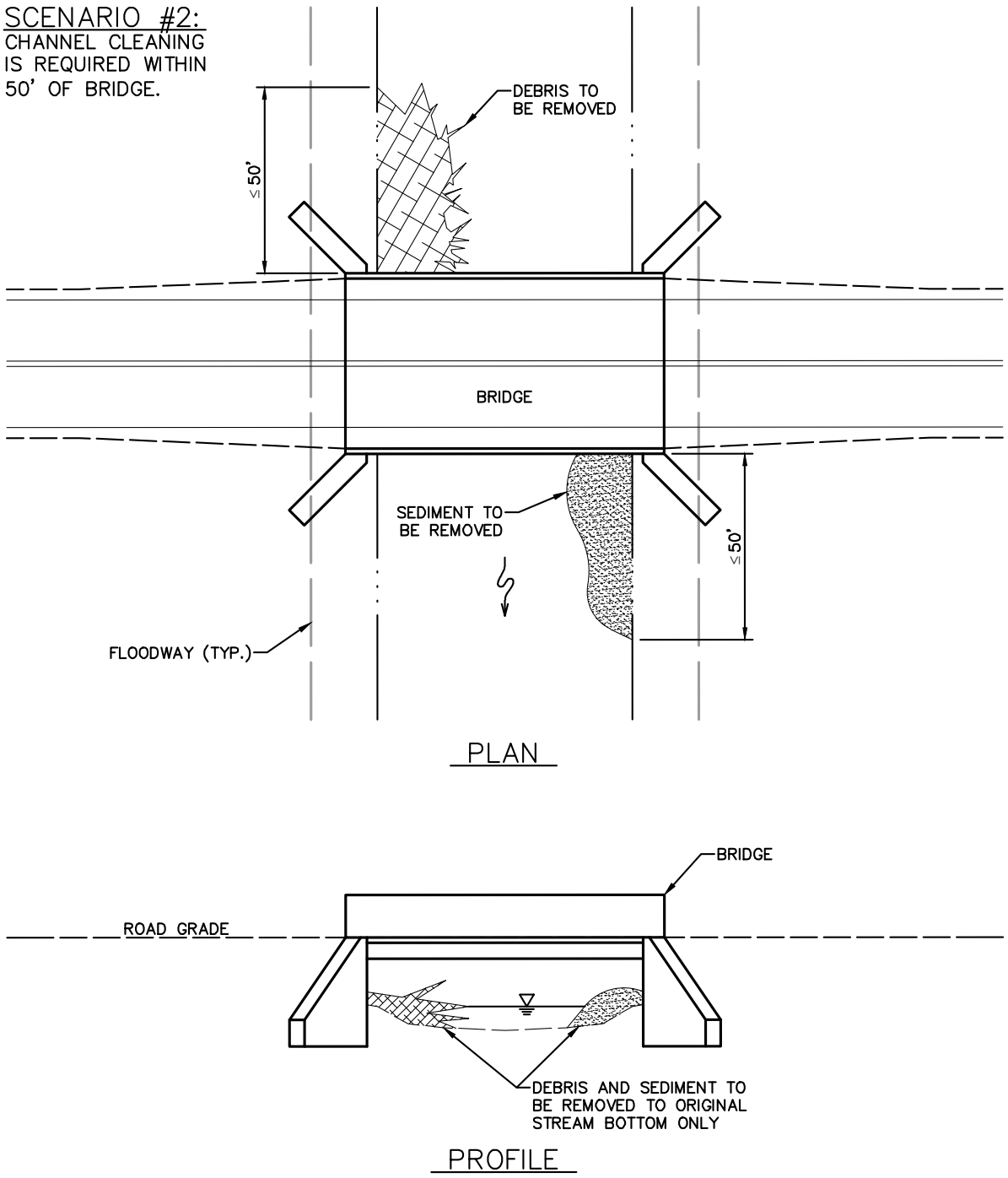
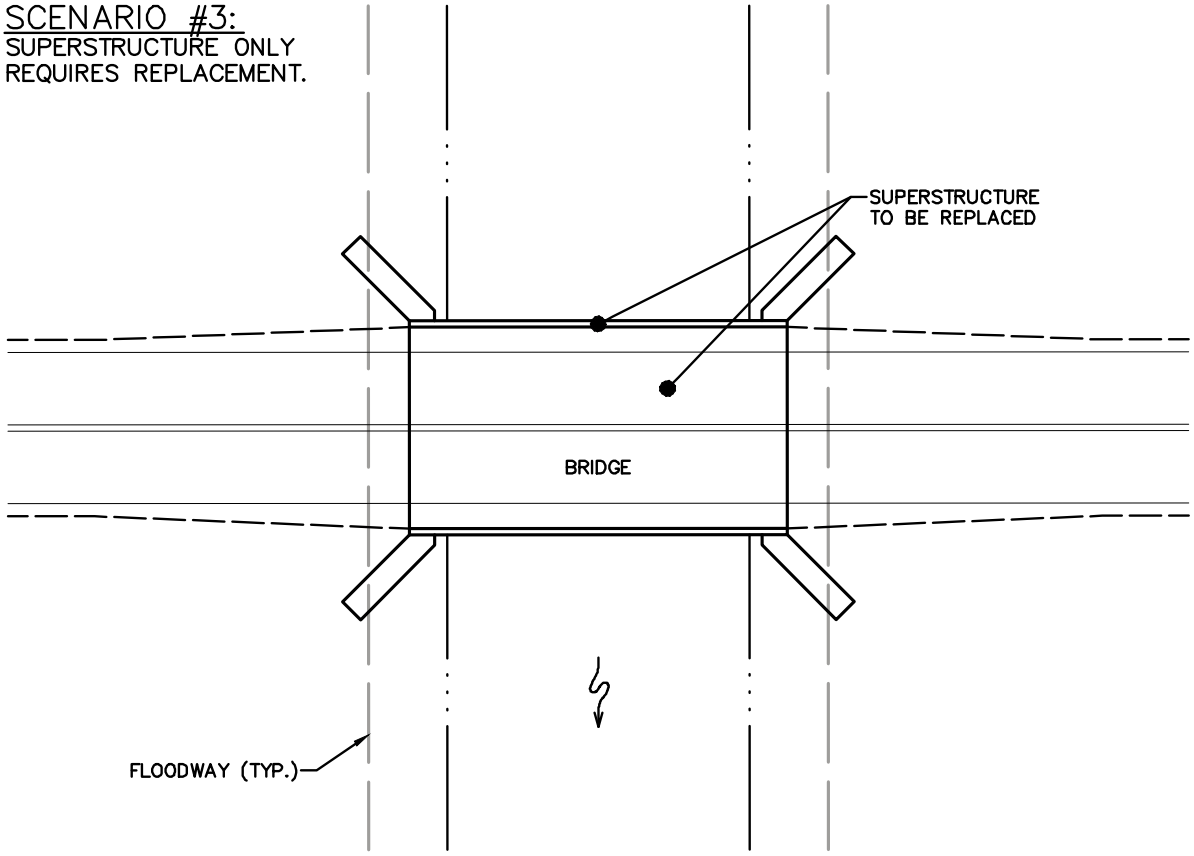


PROFILE

PERMIT REQUIRED: CHAPTER 105 WAIVER 2


SCENARIO #2:
CHANNEL CLEANING IS REQUIRED WITHIN 50' OF BRIDGE.
DEBRIS TO BE REMOVED
≤ 50'
BRIDGE
SEDIMENT TO BE REMOVED
≤ 50'
FLOODWAY (TYP.)
PLAN
BRIDGE
ROAD GRADE
DEBRIS AND SEDIMENT TO BE REMOVED TO ORIGINAL STREAM BOTTOM ONLY
PROFILE
PERMIT REQUIRED: MAINTENANCE–FORCE PERMIT

SCENARIO #3:
SUPERSTRUCTURE ONLY
REQUIRES REPLACEMENT.



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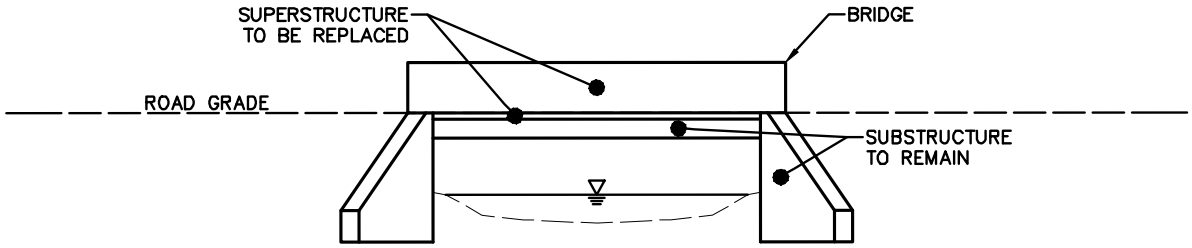
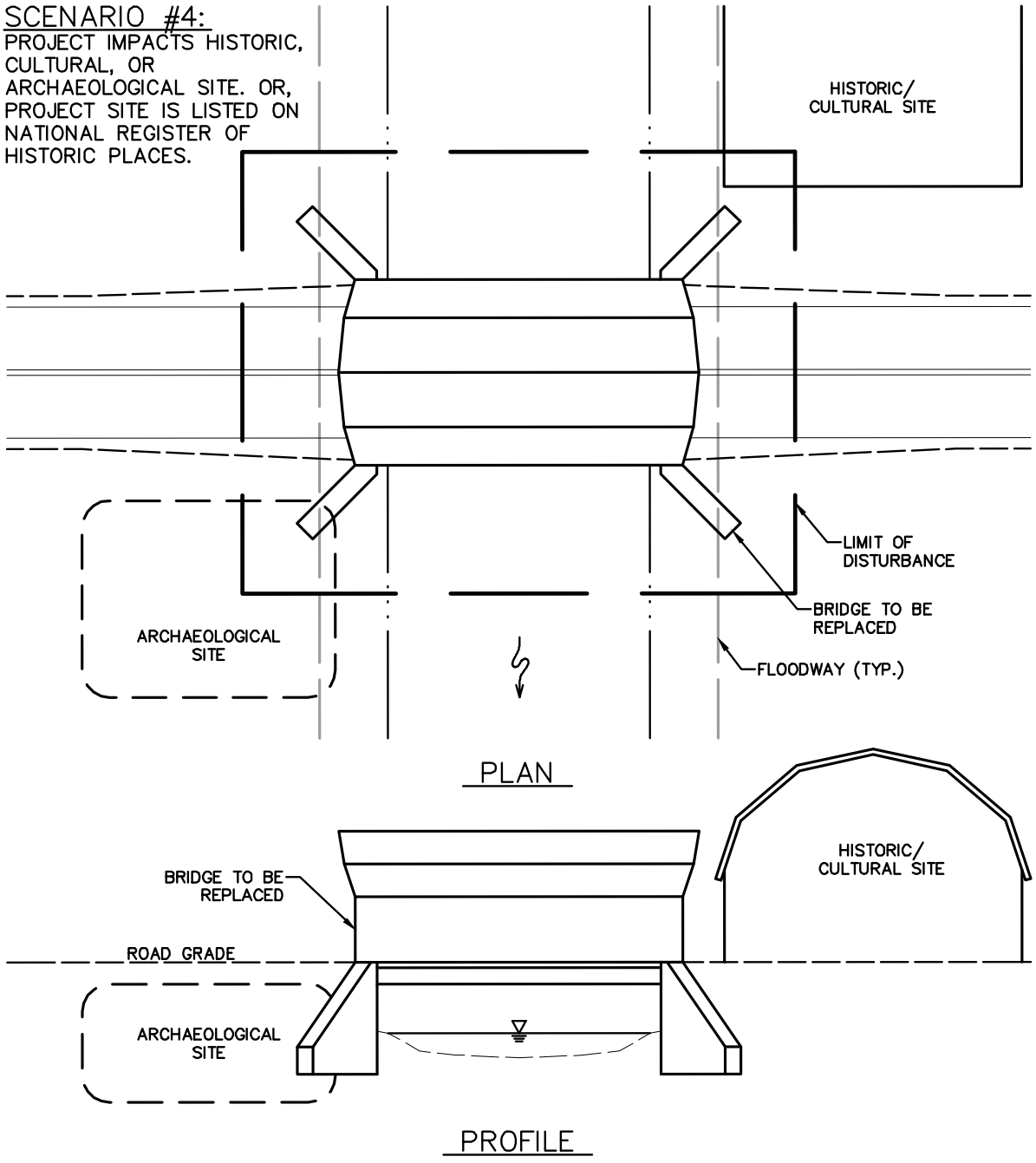


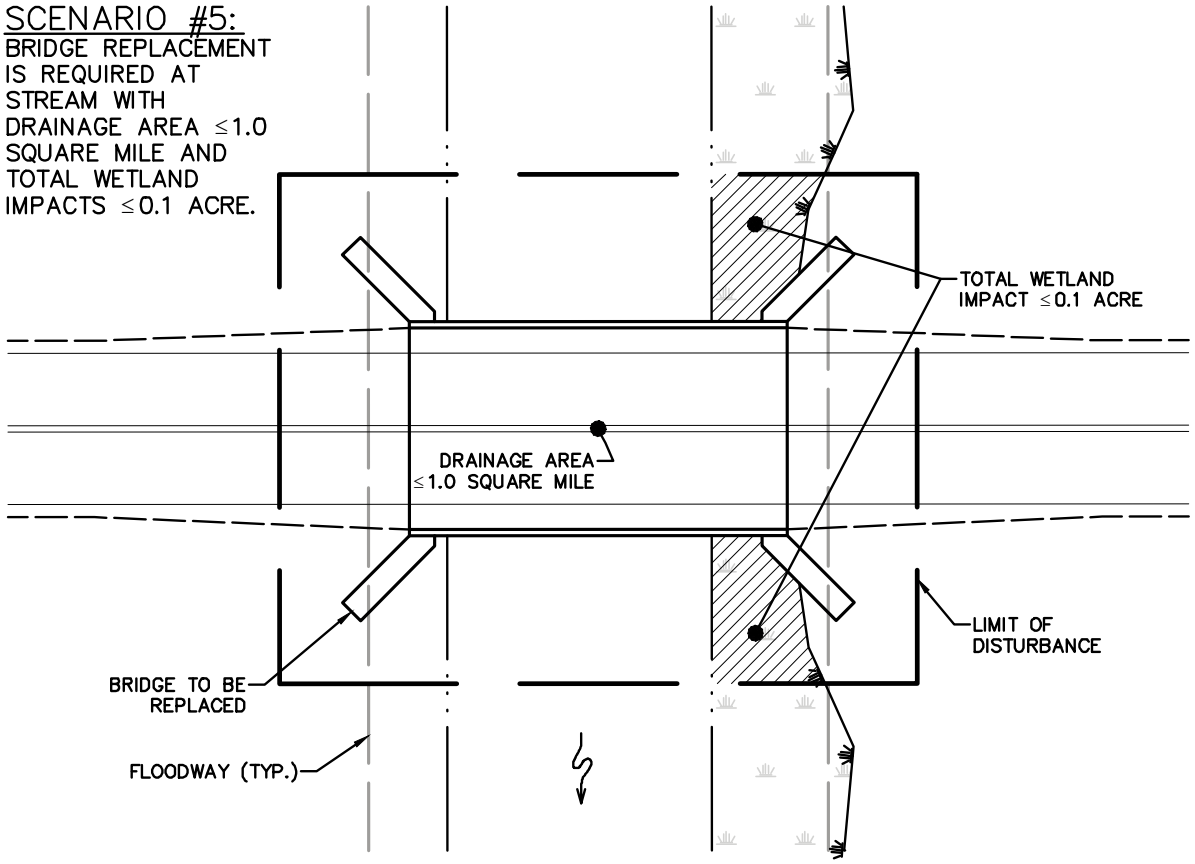
PROFILE

PERMIT REQUIRED: MAINTENANCE–FORCE PERMIT



PERMIT REQUIRED: JOINT PERMIT

SCENARIO #5:
BRIDGE REPLACEMENT IS REQUIRED AT STREAM WITH DRAINAGE AREA ≤1.0 SQUARE MILE AND TOTAL WETLAND IMPACTS ≤0.1 ACRE.



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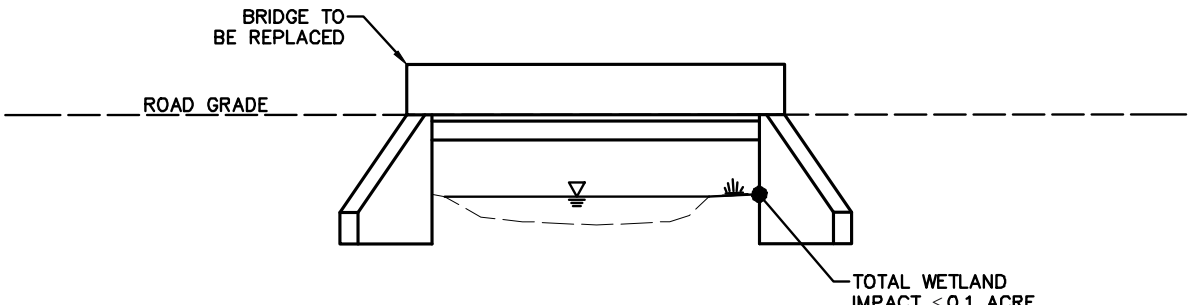
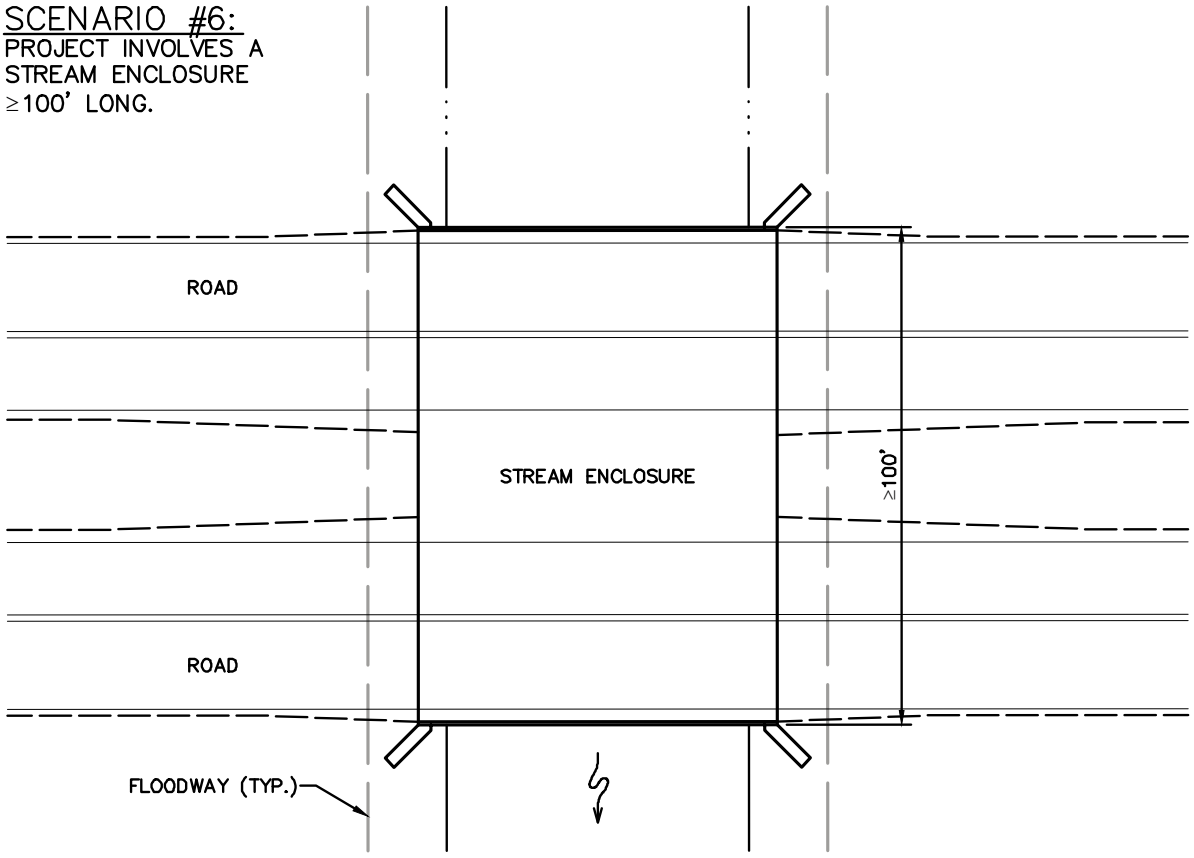


PROFILE

PERMIT REQUIRED: GENERAL PERMIT 7

SCENARIO #6:
PROJECT INVOLVES A STREAM ENCLOSURE ≥100' LONG.



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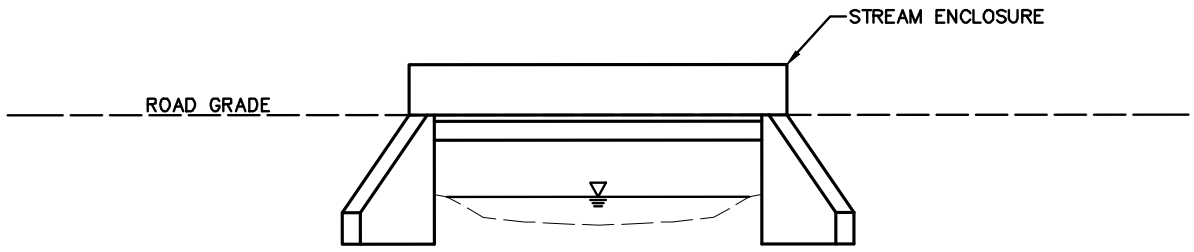
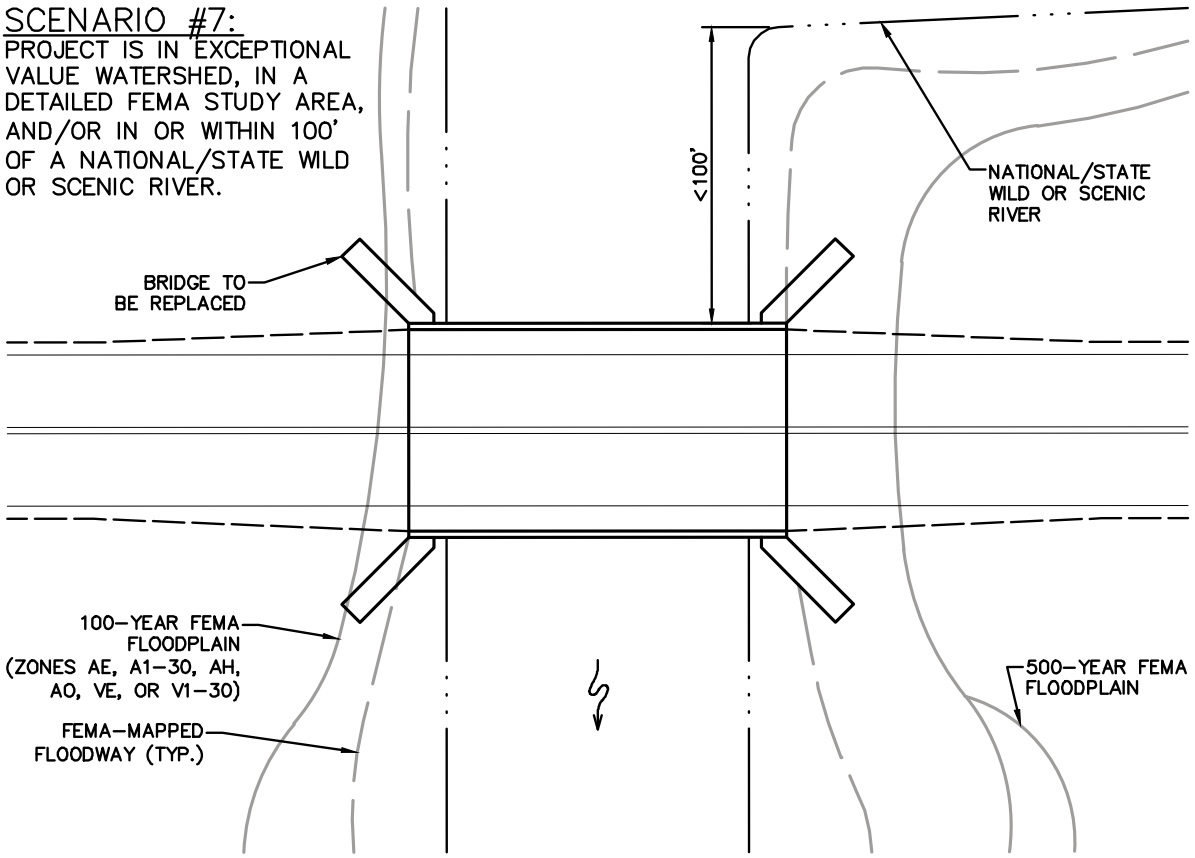


PROFILE

PERMIT REQUIRED: JOINT PERMIT

SCENARIO #7:
PROJECT IS IN EXCEPTIONAL VALUE WATERSHED, IN A DETAILED FEMA STUDY AREA, AND/OR IN OR WITHIN 100' OF A NATIONAL/STATE WILD OR SCENIC RIVER.



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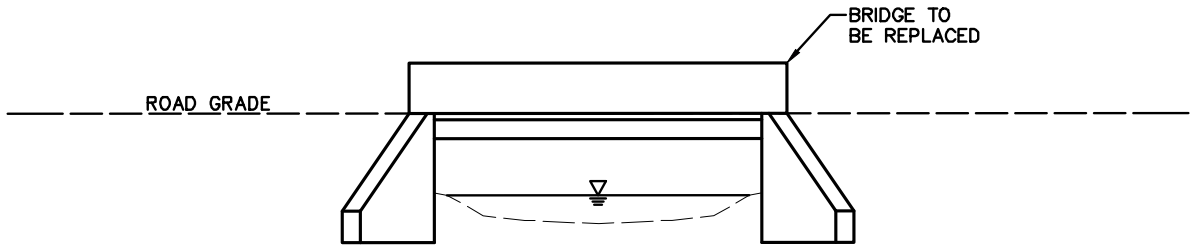
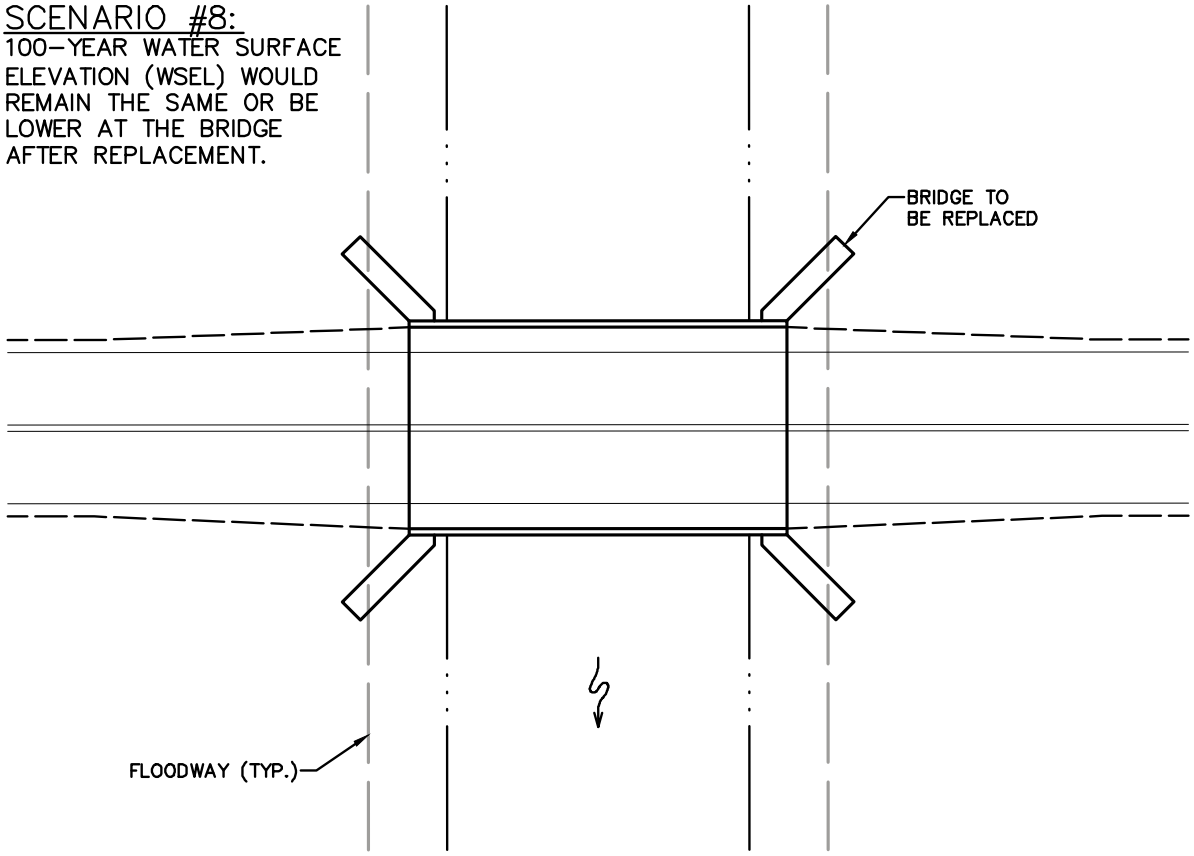


PROFILE

PERMIT REQUIRED: JOINT PERMIT

SCENARIO #8:
100-YEAR WATER SURFACE ELEVATION (WSEL) WOULD REMAIN THE SAME OR BE LOWER AT THE BRIDGE AFTER REPLACEMENT.



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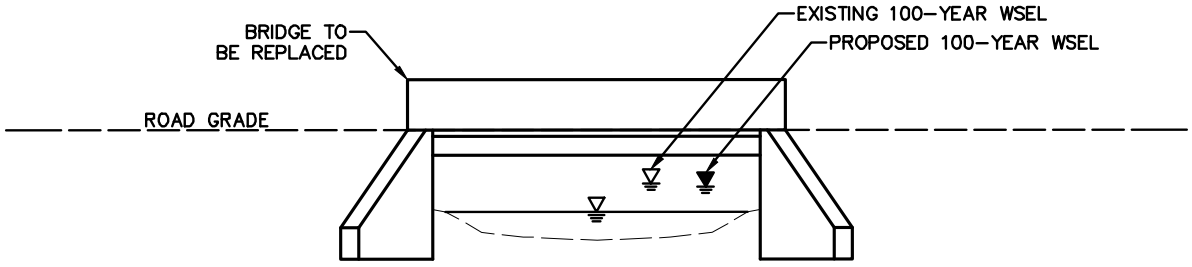
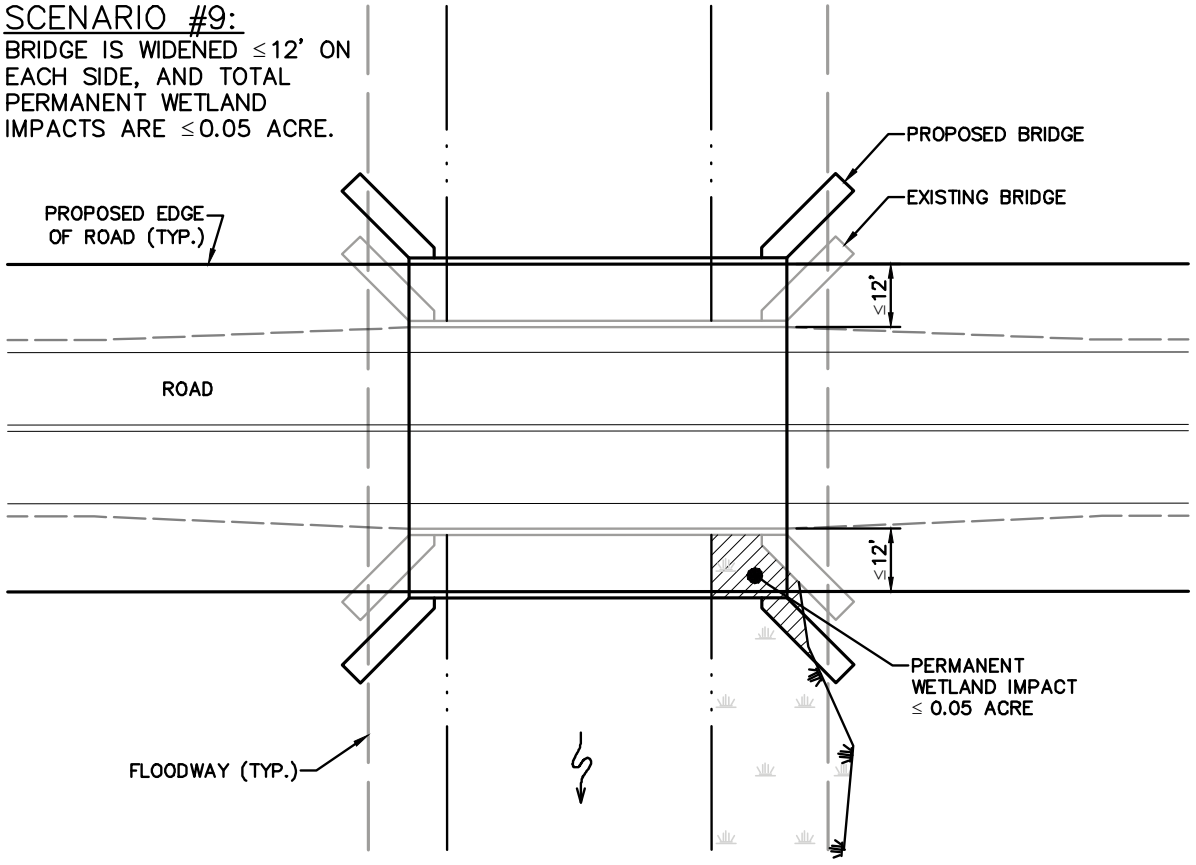


PROFILE

PERMIT REQUIRED: GENERAL PERMIT 11

SCENARIO #9:
BRIDGE IS WIDENED ≤12' ON EACH SIDE, AND TOTAL PERMANENT WETLAND IMPACTS ARE ≤0.05 ACRE.



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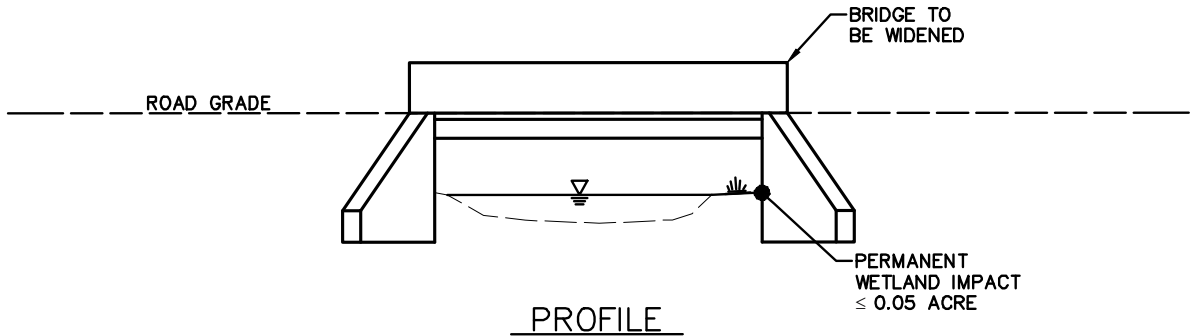
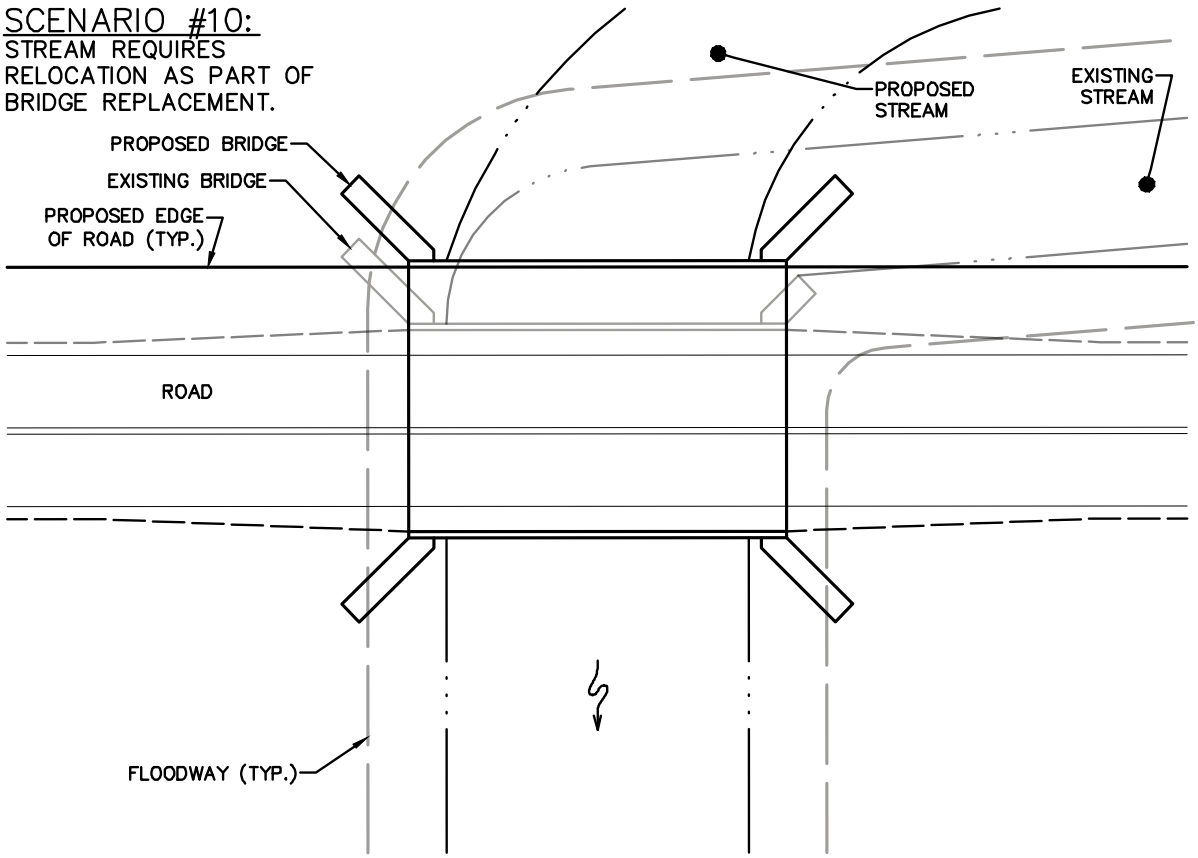
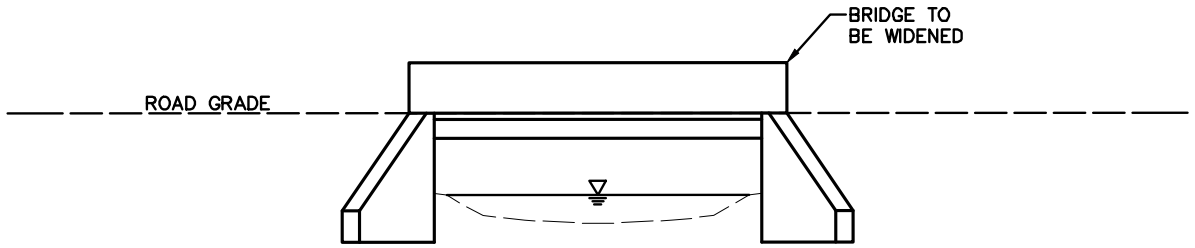


PROFILE

PERMIT REQUIRED: GENERAL PERMIT 11



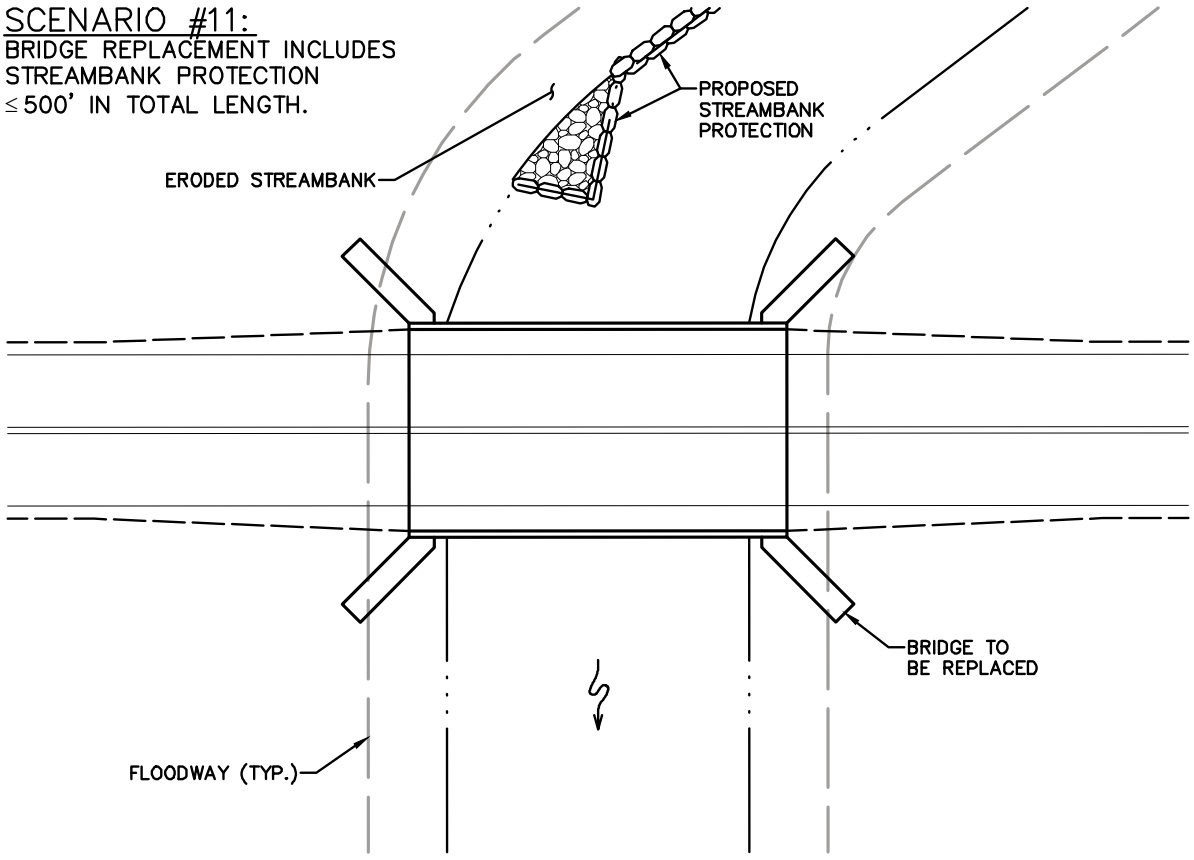
PLAN



PROFILE

PERMIT REQUIRED: JOINT PERMIT

SCENARIO #11:
BRIDGE REPLACEMENT INCLUDES STREAMBANK PROTECTION ≤ 500' IN TOTAL LENGTH.



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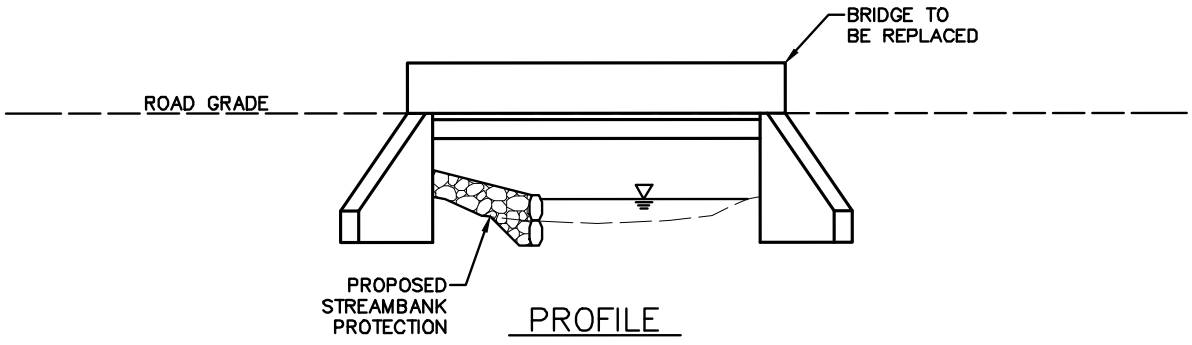
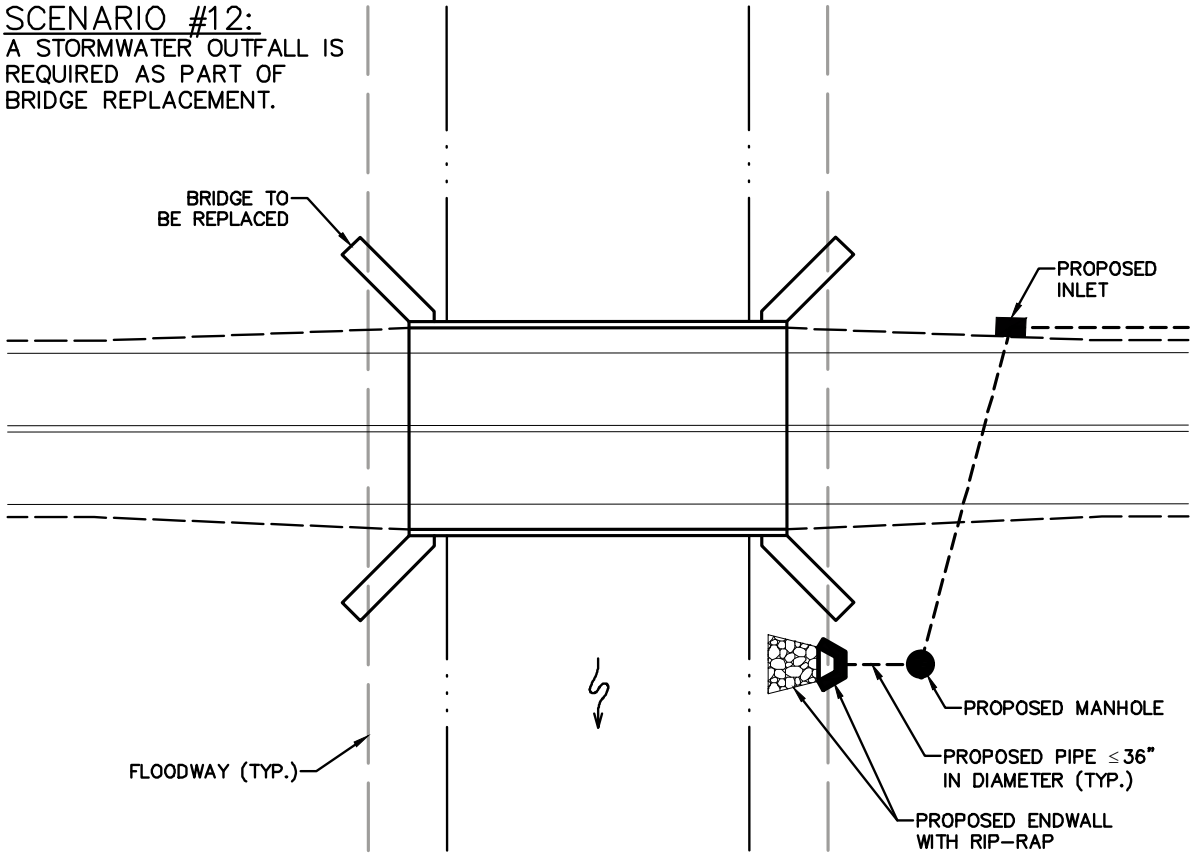
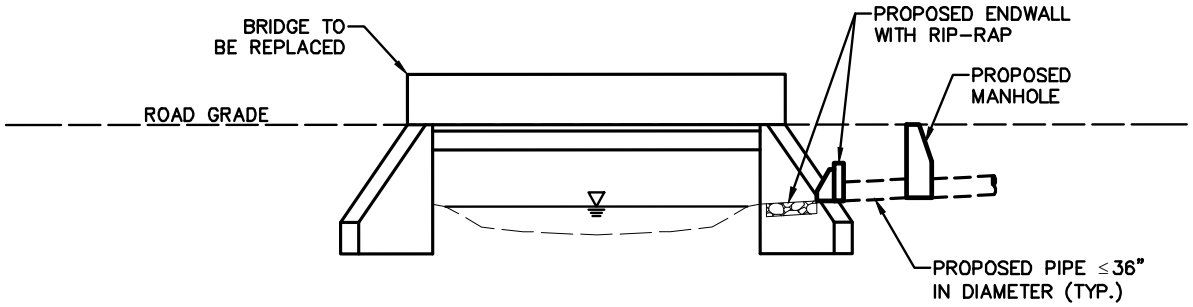


PROFILE

PERMIT REQUIRED: GENERAL PERMIT 3



PLAN



PROFILE

PERMIT REQUIRED: GENERAL PERMIT 4

APPENDIX I

2008 MITIGATION RULE/ GENERAL MITIGATION PLAN COMPONENTS

U.S. ARMY CORPS OF ENGINEERS

2008 MITIGATION RULE/GENERAL MITIGATION PLAN COMPONENTS

1. OBJECTIVES: A statement of what the mitigation is planned to achieve (e.g., to offset and mitigate for _____acres of permanent impacts to forested wetland, associated with the construction of _____).
2. SITE PROTECTION INSTRUMENT: Explain how the mitigation site and the completed work will be protected, including ownership, deed restrictions, restrictive covenants, etc…. For mitigation projects where PennDOT owns the site, there is a template with PennDOT Central Office available.
3. BASELINE INFORMATION: Project location, delineation of existing aquatic resources, soils mapping, site photos and relevant mapping, PNDI search, determination of cultural resources and required clearances, all should be included in the baseline information set.
4. WORK PLAN: This includes mitigation construction plans, E&S plans, construction scheduling, and other information describing how the mitigation area will be constructed/treated.
5. MAINTENANCE PLAN: If there are artificial water control structures or other facilities requiring maintenance, a schedule for maintenance, and the organization responsible for maintenance should be identified here.
6. PERFORMANCE STANDARDS: These include provisions for as-built conditions, and establishes milestones for the mitigation site. Area of wetlands created or restored, vegetational succession benchmarks measured in stem density or aerial coverage are examples of performance standards required in the mitigation plan.
7. MONITORING REQUIREMENTS: This is the proposed schedule for monitoring the mitigation work to ensure that performance standards are being met. Monitoring protocol, schedules, and parties responsible for conducting monitoring would be noted here.
8. FINANCIAL ASSURANCES: The permit applicant would describe how the site will be protected financially and how any remedial or repair work would be financed. Programmatically, the USACE will accept PennDOT ownership as a financial assurance provided the Division responsible for maintaining these sites is identified.
9. SITE SELECTION FACTORS: The mitigation plan should describe how the location was selected as a mitigation site. This discussion would include watershed considerations, suitability of the site for mitigation work, landscape and topographical considerations, and additional information such as hydrology source and water budget.
10. CREDIT DETERMINATION: A suitable credit determination discussion would demonstrate that the planned mitigation effectively mitigates for the reported impacts. A functional assessment of impacts balanced against an assessment of the planned mitigation should indicate at least no net loss of aquatic functions and services.
11. LONG-TERM MANAGEMENT PLAN: This section identifies any long-term management obligations required for operation or maintenance of the mitigation project. If water levels are to be manipulated, a schedule of treatments would be included.
12. ADAPTIVE MANAGEMENT PLAN: If performance standards are not met or if the site fails to attain the project objectives, a plan for performing repairs, replacing failed plantings, or control of invasive plant species should be included.

Provided by John Gibble, USACE

APPENDIX J

E&S POLLUTION CONTROL PLAN AND PCSM PLAN REFERENCES

EROSION AND SEDIMENT POLLUTION CONTROL PLAN REFERENCES

STANDARDS

Plan Drawings and Narrative

Publication 13M, PennDOT Design Manual Part 2 - Chapter 13.6, Preparation and Processing of Erosion and Sediment Pollution Control

Publication 14M, PennDOT Design Manual Part 3 - Chapter 6.2, Erosion and Sediment Pollution Control Plans

Publication 584, PennDOT Drainage Manual - Chapter 12.3C, Erosion and Sediment Pollution Control (E&SPC) Plan

PADEP Erosion and Sediment Pollution Control Manual (2012)

Chapter 1 – Required E&S Plan Content

Appendix C - Standard Plan Notes

Appendix D - Standards for Maps and Drawings (not PennDOT Specific)

Design Standards for BMPs

Publication 13M, PennDOT Design Manual Part 2 - Chapter 13; Sections 13.2 to 13.5

Publication 584, PennDOT Drainage Manual - Chapter 12; Sections 12.3 to 12.6

Publication 464, Maintenance Field Reference for Erosion and Sedimentation Control

PADEP Erosion and Sediment Pollution Control Manual (2012) - Chapters 4 to 9

Riparian Buffer

Standard Worksheets

PADEP Erosion and Sediment Pollution Control Manual (2012) - Appendix B

Construction Details & Specifications

Publication 72M, PennDOT Roadway Construction Standards - RC-70 to RC-78

Publication 408, PennDOT Construction Specifications - Sections 802 to 875

Bulletin 15 (Publication 35), PennDOT Qualified Products List for Construction - Sections 735 to 738, 802 to 868

PADEP Erosion and Sediment Pollution Control Manual (2012)

Chapters 4 to 9

Appendix B – Standard E&S Worksheets

REGULATIONS/POLICIES

Pennsylvania Code

Title 25, Pennsylvania Code - Chapter 102, Erosion and Sediment Control

Title 25, Pennsylvania Code - Chapter 92a, National Pollutant Discharge Elimination System Permitting, Monitoring and Compliance

Riparian Buffers

PADEP Document 310-2135-002: Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration

PADEP Document 310-2135-003: Riparian Buffer or Riparian Forest Buffer Offsetting

Road Maintenance Activities

Publication 584, PennDOT Drainage Manual - Chapter 12, Appendix E

CHECKLISTS

E&S Plan Checklists

PADEP Erosion and Sediment Pollution Control Manual (2012) - Appendix A

- Complete Plan Checklist
- Standard E&SPC Controls Plan Technical Review Checklist
- Expanded E&SPC Control Plan Technical Review Checklist

NPDES Applicant Checklist

NPDES Permit for Stormwater Discharges Associated with Construction Activities (2017)

POST CONSTRUCTION STORMWATER MANAGEMENT PLAN REFERENCES

STANDARDS

Plan Drawings and Narrative

Publication 13M, PennDOT Design Manual Part 2 - Chapter 13.7, Antidegredation and Post Construction Stormwater Management

Publication 584, PennDOT Drainage Manual - Chapter 14, Post-Construction Stormwater Management

Publication 14M, PennDOT Design Manual Part 3

NPDES Permit for Stormwater Discharges Associated with Construction Activities (2017)

Design Standards for BMPs

Pennsylvania Stormwater BMP Manual (2006) - Chapters 5, 6

Publication 13M, PennDOT Design Manual Part 2 - Chapter 13.7, Antidegredation and Post Construction Stormwater Management

Publication 584, PennDOT Drainage Manual - Chapter 14; Sections 14.1 to 14.19

Standard Worksheets

NPDES Permit for Stormwater Discharges Associated with Construction Activities (2017)

Pennsylvania Stormwater BMP Manual (2006) - Chapter 8.8

Construction Details & Specifications

Pennsylvania Stormwater BMP Manual (2006) - Chapter 5 & 6, Design Guidance for Non-Structural and Structural BMPs (not PennDOT specific)

Publication 408, PennDOT Construction Specifications – Construction Specifications

Publication 72M, PennDOT Roadway Construction Standards

REGULATIONS/POLICIES

Pennsylvania Code

Title 25, Pennsylvania Code - Chapter 92a, National Pollutant Discharge Elimination System Permitting, Monitoring and Compliance

Title 25, Pennsylvania Code - Chapter 93, Water Quality Standards

Title 25, Pennsylvania Code - Chapter 102, Erosion and Sediment Control

PennDOT PCSM Policy

Publication 13M, PennDOT Design Manual Part 2 - Chapter 13.7, Antidegradation and Post Construction Stormwater Management

Riparian Buffers

PADEP Document 310-2135-002: Riparian Buffer or Riparian Forest Buffer Equivalency Demonstration

PADEP Document 310-2135-003: Riparian Buffer or Riparian Forest Buffer Offsetting

CHECKLISTS

NPDES Applicant Checklist

NPDES Permit for Stormwater Discharges Associated with Construction Activities (2017)

The Site Design Checklist for Comprehensive Stormwater Management

Pennsylvania Stormwater BMP Manual (2006) - Chapter 4.2

APPENDIX K

CHAPTER 105 QA/QC CHECKLISTS

EP-1 (9-18)

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EXX-9999 PERMIT REGISTRATION CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient

Preparer	Reviewer		N/A	Item
	C	D		
☐	☐	☐		Project meets the conditions of a Maintenance Permit*
☐	☐	☐		Proposed E&S control measures meet Chapter 102 requirements
☐	☐	☐		Project Narrative: dimensions of structure
☐	☐	☐		Project Narrative: description of all proposed activities
☐	☐	☐		Project Narrative: stream name, Chapter 93 Designated Use and Existing Use
☐	☐	☐		Project Narrative: measurements and quantities of materials to be removed or placed
☐	☐	☐		USGS Project Location Map: project site identified
☐	☐	☐		USGS Project Location Map: north arrow and scale bar
☐	☐	☐		Project Photographs
☐	☐	☐	☐	Wetland Delineation Report
☐	☐	☐		Sketch Plan: all staging areas shown
☐	☐	☐		Sketch Plan: access points/roadways to the work area
☐	☐	☐		Sketch Plan: all areas where work will be done (including tree and brush removal)
☐	☐	☐		Sketch Plan: upstream and downstream limits of proposed activities
☐	☐	☐		Work Schedule: roadway name/route and segment number
☐	☐	☐	☐	Work Schedule: no conflicts with in-stream restrictions due to wild or stocked trout or migratory fish
☐	☐	☐		Work Schedule: start and end dates for scheduled work
☐	☐	☐		PNDI Search Receipt: timeframe valid for project construction
☐	☐	☐		PNDI Search Receipt: project area properly defined
☐	☐	☐	☐	PNDI Search Receipt: clearance letters from appropriate agencies indicating no adverse impacts to species of concern
☐	☐	☐	☐	ATON Plan Approval (if applicable)

* Maintenance Permit Conditions can be found in Appendix E of the Environmental Permitting Handbook

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CHAPTER 105 GENERAL PERMIT 11 REGISTRATION CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient

General

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐		Registration checked for consistency and accuracy (resource type, resource name, impact numbers, etc.)
☐	☐	☐	☐	Date of pre-app meeting, if held:
☐	☐	☐		Proposed activity meets the permit conditions
☐	☐	☐	☐	Registration does not include multiple sites that should be authorized separately
☐	☐	☐	☐	Project includes Reporting Activity requiring USACE review (more than 0.5 acre impact to waters/wetlands per single and complete project, more than 0.1 acre permanent conversion of forested and/or scrub shrub wetland per single and complete project, or more than 250 linear feet impact to streams)
☐	☐	☐		Have confirmed that the project will not adversely affect archaeological/cultural/historic resources

PASPGP-5 Reporting Activity (If Applicable)

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐	☐	PHMC correspondence; clearance letter if applicable
☐	☐	☐	☐	Supporting wetland data
☐	☐	☐	☐	Mitigation plans
☐	☐	☐	☐	PennDOT-USACE approved template for deed restrictions and easements

General Information Form

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐		All portions of GIF complete
☐	☐	☐		Reported earth disturbance area agrees with E&S plans
☐	☐	☐		All adjoining property owners listed
☐	☐	☐	☐	Project Inventory Form completed and attached
☐	☐	☐	☐	Bridge and/or Culvert Replacement Projects or Projects That Change The Waterway Opening Form completed and attached

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CHAPTER 105 GENERAL PERMIT REGISTRATION CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient

General

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐		Registration checked for consistency and accuracy (resource type, resource name, impact numbers, etc.)
☐	☐	☐	☐	Date of pre-app meeting, if held:
☐	☐	☐		Proposed activity meets the permit conditions
☐	☐	☐	☐	Current County Conservation District application completed and included if registration will be reviewed by a delegated County Conservation District
☐	☐	☐	☐	Project includes Reporting Activity requiring USACE review (more than 0.5 acre (both temporary and permanent) impact to waters/wetlands per single and complete project, more than 0.1 acre permanent conversion of forested and/or scrub shrub wetland per single and complete project, or more than 250 linear feet impact to streams)
☐	☐	☐		Have confirmed that the project will not adversely affect archaeological/cultural/historic resources

PASPGP-5 Reporting Activity (If Applicable)

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐	☐	NHPA Section 106 clearance required
☐	☐	☐	☐	Supporting wetland data
☐	☐	☐	☐	Mitigation plans
☐	☐	☐	☐	PennDOT-USACE approved template for deed restrictions and easements

General Permit Registration Form (Section/Attachment # _____)

Preparer	Reviewer C	Reviewer D	N/A	Item
☐	☐	☐		Most recent version of General Permit Registration Form used
☐	☐	☐		All portions of General Permit Registration Form complete
☐	☐	☐		Signature included on page 4 (original signature if sending paper copy of permit)
☐	☐	☐		Additional Impacts Associated with Project Work Site form (or equivalent) completed and attached

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EXX-9999 PERMIT REGISTRATION CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient

Preparer	Reviewer		N/A	Item
	C	D		
☐	☐	☐		Project meets the conditions of a Maintenance Permit*
☐	☐	☐		Proposed E&S control measures meet Chapter 102 requirements
☐	☐	☐		Project Narrative: dimensions of structure
☐	☐	☐		Project Narrative: description of all proposed activities
☐	☐	☐		Project Narrative: stream name, Chapter 93 Designated Use and Existing Use
☐	☐	☐		Project Narrative: measurements and quantities of materials to be removed or placed
☐	☐	☐		USGS Project Location Map: project site identified
☐	☐	☐		USGS Project Location Map: north arrow and scale bar
☐	☐	☐		Project Photographs
☐	☐	☐	☐	Wetland Delineation Report
☐	☐	☐		Sketch Plan: all staging areas shown
☐	☐	☐		Sketch Plan: access points/roadways to the work area
☐	☐	☐		Sketch Plan: all areas where work will be done (including tree and brush removal)
☐	☐	☐		Sketch Plan: upstream and downstream limits of proposed activities
☐	☐	☐		Work Schedule: roadway name/route and segment number
☐	☐	☐	☐	Work Schedule: no conflicts with in-stream restrictions due to wild or stocked trout or migratory fish
☐	☐	☐		Work Schedule: start and end dates for scheduled work
☐	☐	☐		PNDI Search Receipt: timeframe valid for project construction
☐	☐	☐		PNDI Search Receipt: project area properly defined
☐	☐	☐	☐	PNDI Search Receipt: clearance letters from appropriate agencies indicating no adverse impacts to species of concern
☐	☐	☐	☐	ATON Plan Approval (if applicable)

* Maintenance Permit Conditions can be found in Appendix E of the Environmental Permitting Handbook

APPENDIX L

CHAPTER 102 QA/QC CHECKLISTS

EP-5 (8-16)

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CHAPTER 102 EROSION & SEDIMENT (E&S) CONTROL PERMIT APPLICATION CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative; include page numbers where applicable

Project Site Topography

Preparer	Reviewer		Item	Location	Comments
	C	D			
☐	☐	☐	Legible mapping		
☐	☐	☐	Existing contours		
☐	☐	☐	Type of cover		
☐	☐	☐	Existing improvement, e.g., roads, buildings, utilities, etc.		
☐	☐	☐	Sufficient surrounding area detail		
☐	☐	☐	Complete mapping symbols: Legend, North Arrow, Graphic Scale		
☐	☐	☐	Location Map, i.e. USGS topographic map		

Erosion and Sediment Pollution Control Plan

Preparer	Reviewer		Item	Location	Comments
	C	D			
☐	☐	☐	Documentation provided that E&S Plan was prepared by person trained and experienced in E&S pollution control methods and techniques applicable to size scope of project		
☐	☐	☐	E&S Plan minimizes extent and duration of earth disturbance		
☐	☐	☐	E&S Plan maximizes protection of existing drainage features and vegetation		
☐	☐	☐	E&S Plan minimizes soil compaction		
☐	☐	☐	E&S Plan utilizes other measures or controls that minimize stormwater runoff		
☐	☐	☐	Areas authorized under Sect. 404 of Clean Water Act excluded from permit boundary		
☐	☐	☐	E&S Plan addresses time of year construction constraints and stabilization requirements		

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CHAPTER 102 NPDES GENERAL PERMIT APPLICATION CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: DE=E&S Drawings, NE=E&S Narratives, DS=PCSM Drawings, NS=PCSM Narrative; include page numbers where applicable.

E&S and PCSM Completeness Review

General

Preparer	Reviewer		Item	Location	Comments
	C	D			
☐	☐	☐	Fully completed, properly signed, and notarized Notice of Intent Form (1 original and 2 copies)		
☐	☐	☐	Proof of receipt of municipal and county Acts 14, 67, 68, and 127 notifications; copies of certified mail receipts or acknowledgment letters from the local municipality and county government		
☐	☐	☐	PNDI Project Environmental Review Receipt signed and included with properly defined project area		
☐	☐	☐	PNDI valid for project timeframe		
☐	☐	☐	Agency coordination and clearance letters included if there are potential impacts (if adverse effect, not eligible for NPDES GP)		
☐	☐	☐	Complete Erosion & Sediment Control Plans		
☐	☐	☐	Complete Post Construction Stormwater Management Plan		
☐	☐	☐	Appendix A land use questions		

Erosion and Sediment Pollution Control Plan

Preparer	Reviewer		Item	Location	Comments
	C	D			
☐	☐	☐	E&S Plan separate from PCSM Plan, labeled E&S or Erosion and Sediment Pollution Control Plan, and final plan for construction		
☐	☐	☐	Documentation provided that E&S Plan was prepared by person trained & experienced in E&S pollution control methods; techniques applicable to size & scope of project		

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CHAPTER 102 NPDES INDIVIDUAL PERMIT APPLICATION CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: DE = E&S Drawings, NE = E&S Narrative, DS = PCSM Drawings, NS = PCSM Narrative; include page numbers where applicable

E&S and PCSM Completeness Review

General

Preparer	Reviewer C	Reviewer D	Item	Location	Comments
☐	☐	☐	Fully completed, properly signed, and notarized Notice of Intent Form (1 original and 2 copies)		
☐	☐	☐	Proof of receipt of municipal and county Acts 14, 67, 68, and 127 notifications; copies of certified mail receipts or acknowledgment letters from the local municipality and county government.		
☐	☐	☐	PNDI Project Environmental Review Receipt signed and included with properly defined project area		
☐	☐	☐	PNDI valid for project timeframe		
☐	☐	☐	Agency coordination and clearance letters included if there are potential impacts		
☐	☐	☐	Complete Erosion & Sediment Control Plans		
☐	☐	☐	Complete Post Construction Stormwater Management Plan		
☐	☐	☐	Complete General Information Form (GIF)		
☐	☐	☐	PHMC coordination letter/clearance (Individual Permits for 10 acres or more of disturbance only)		
☐	☐	☐	Appendix A land use questions		

Erosion and Sediment Pollution Control Plan

Preparer	Reviewer C	Reviewer D	Item	Location	Comments
☐	☐	☐	E&S Plan separate from PCSM Plan, labeled E&S or Erosion and Sediment Pollution Control Plan, and final plan for construction		

APPENDIX M

CHAPTER 102 BMP QA/QC CHECKLISTS

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SITE ACCESS BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative

Site Access (Chapter 3)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	Rock Construction Entrances provided where needed	D
☐		☐	☐	Standard Construction Detail #3-1 and/or 3-2 provided	
☐		☐	☐	Temporary and Permanent Access Roads shown	
☐		☐	☐	Standard Construction Detail #3-3 and/or 3-4 provided	
☐		☐	☐	Broad-based Dips used on active haul roads	
☐		☐	☐	Standard Construction Detail #3-6 and/or 3-7 provided	
☐		☐	☐	Spacing complies with Table 3.2	
☐		☐	☐	Open-top Culverts used on active haul roads	
☐		☐	☐	Standard Construction Detail #3-8 provided	
☐		☐	☐	Water Deflectors used on haul roads	
☐		☐	☐	Standard Construction Detail #3-9 provided	
☐		☐	☐	Ditch Relief Culverts used on haul roads	
☐		☐	☐	Standard Construction Detail #3-10 provided	
☐		☐	☐	Spacing Complies with Table 3.3	
☐		☐	☐	Turnouts provided where needed on haul roads	
☐		☐	☐	Compost Filter Sock Trap provided where needed	
☐		☐	☐	Temporary Stream Crossings provided where needed	
☐		☐	☐	Standard Construction Detail #3-12-14 provided	
☐		☐	☐	Figure 3.4 provided for temporary bridges	

***Refer to Chapter 3 of PADEP's Erosion and Sediment Pollution Control Program Manual (March 2012)**
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf

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SEDIMENT BARRIERS BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative; include page numbers where applicable

Sediment Barriers (Chapter 4)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	All sediment barriers are shown on existing level contour	D
☐		☐	☐	Barrier ends extended upslope or tied into constructed berms	
☐		☐	☐	Sediment barriers avoid concentrated flows	
☐		☐	☐	Slope lengths comply with Figure 4.2, Figure 4.3 or Table 4.4	
☐		☐	☐	Typical details are provided for each type of barrier proposed	
☐		☐	☐	Details comply with standard details in Chapter 4, including notes	
☐		☐	☐	Standard Construction Detail #4-3 and/or 4-4, or 4-5 provided for Weighted Sediment Filter Tubes	
☐		☐	☐	Standard Construction Detail # 4-6 provided	
☐		☐	☐	Standard Construction Detail #4-11 provided for Sediment Filter Log	
☐		☐	☐	Standard Construction Detail # 4-12 provided for Wood Chip Berm	
☐		☐	☐	Vegetative Filter Strip complies with Table 4.5	
☐		☐	☐	Standard E&S Worksheet #1 completed for Compost Filter Socks	N
☐		☐	☐	Standard E&S Worksheet #2 completed for Compost Filter Berms	
☐		☐	☐	Standard E&S Worksheet #3 completed for Standard Silt Fence	
☐		☐	☐	Standard E&S Worksheet #4 completed for Reinforced Silt Fence	
☐		☐	☐	Standard E&S Worksheet #5 completed for Alt. Reinforced SF	
☐		☐	☐	Standard E&S Worksheet #6 completed for Super Silt Fence	
☐		☐	☐	Standard E&S Worksheet #7 completed for Straw Bale Barriers	
☐		☐	☐	Standard E&S Worksheet #8 completed for Rock Filters	

Note: Plan preparer may provide the information on the standard worksheets in another format as long as it is present in the narrative and identified as such.

EP-10 (8-16)

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CHANNELS BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative

Channels (Chapter 6)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	All proposed channels shown and labeled on plan map(s)	
☐		☐	☐	Channel locations are accessible	
☐		☐	☐	Conflicts with utility lines, roadways, buildings, cuts & fills avoided	
☐		☐	☐	Sharp turns and flow obstructions avoided	
☐		☐	☐	Steep slope problems avoided	
☐		☐	☐	Temporary crossings provided where needed	
☐		☐	☐	Diversions located upslope of disturbed areas	
☐		☐	☐	Diversions and outlet channels discharge to waterways or adequately sized storm sewers	
☐		☐	☐	Collectors located below disturbed areas	
☐		☐	☐	Collectors discharge to upslope sides of basins or traps	**D**
☐		☐	☐	Outlet channels protected from adjacent disturbed areas	
☐		☐	☐	Positive grade provided throughout length of channel	
☐		☐	☐	Channel bed slopes consistent with those used in calculations	
☐		☐	☐	Drainage areas are maximums for life of each channel	
☐		☐	☐	Typical detail provided for each channel shape and lining	
☐		☐	☐	Manufacturer's installation & stapling details provided	
☐		☐	☐	All critical dimensions specified	
☐		☐	☐	Dimensions and linings consistent with those in calculations	
☐		☐	☐	Temporary liners provided for vegetated channels	

***Refer to Chapter 6 of PADEP's Erosion and Sediment Pollution Control Program Manual (March 2012)**
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf

EP-11 (8-16)

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SEDIMENT BASINS BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative; include page numbers where applicable

Sediment Basins (Chapter 7)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	All proposed sediment basins shown and labeled on plan map(s)	
☐		☐	☐	Basin locations are accessible	
☐		☐	☐	Conflicts with utility lines, roadways, buildings, cuts & fills avoided	
☐		☐	☐	Steep slope problems avoided	
☐		☐	☐	Basins located below disturbed areas	
☐		☐	☐	Stream channels and wetlands avoided	
☐		☐	☐	Drainage areas are maximums for life of each basin	
☐		☐	☐	Construction Detail provided for each basin	
☐		☐	☐	Interior and exterior contours provided on each detail	
☐		☐	☐	Principal and emergency spillway locations shown	
☐		☐	☐	All proposed baffles, silt curtains, and forebays shown	
☐		☐	☐	Sediment clean-out stake location shown	
☐		☐	☐	Bottom elevation above seasonal high water table, adjacent wetlands, or perennial stream	
☐		☐	☐	Required flow lengths, turbidity barrier or forebay provided	
☐		☐	☐	Typical cross-section provided for each type of principal spillway	**D**
☐		☐	☐	All critical dimensions and elevations shown	
☐		☐	☐	Sediment clean-out elevation > 1 ft above basin bottom	
☐		☐	☐	18” permanent pool provided where needed	
☐		☐	☐	Dimensions and elevations consistent with those in calcs	
☐		☐	☐	Z1 + Z2 ≥ 5	
☐		☐	☐	Z1 and Z2 ≥ 3 for permanent basin	
☐		☐	☐	Embankment top width ≥ 8 feet	
☐		☐	☐	Key trench and anti-seep collars shown	
☐		☐	☐	Impervious core shown	
☐		☐	☐	Typical Detail provided for each type of principal spillway	
☐		☐	☐	All critical dimensions and elevations shown	
☐		☐	☐	Dimensions and elevations consistent with those in calcs	
☐		☐	☐	Standard Construction Detail #7-6 provided	
☐		☐	☐	Typical provided for anti-seep collars	
☐		☐	☐	Typical provided for outlet barrel in concrete bed	
☐		☐	☐	Typical filter diaphragm detail provided where needed	**D**

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SEDIMENT TRAPS BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative

Sediment Traps (Chapter 8)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	All proposed traps shown on plan map(s)	
☐		☐	☐	Spillway locations shown	
☐		☐	☐	Trap locations are accessible	
☐		☐	☐	Conflicts with utility lines, roadways, buildings, cuts & fills avoided	
☐		☐	☐	Steep slope problems avoided	
☐		☐	☐	Traps located below disturbed areas	
☐		☐	☐	Stream channels and wetlands avoided	
☐		☐	☐	Drainage areas are maximums for life of each trap	
☐		☐	☐	Construction Detail provided for each irregular-shaped trap	
☐		☐	☐	Interior and exterior contours provided for such traps	D
☐		☐	☐	Bottom elevation above seasonal high water table, adjacent wetlands, or perennial stream	
☐		☐	☐	Required flow lengths, turbidity barrier or forebay provided	
☐		☐	☐	Compost sock trap details provided and comply with SCD #3-11	
☐		☐	☐	Typical cross-section provided for each type of trap	
☐		☐	☐	All critical dimensions and elevations shown	
☐		☐	☐	Dimensions and elevations consistent with those in calcs	
☐		☐	☐	Sediment clean-out elevation ≥ 1 ft above trap bottom	
☐		☐	☐	Typical Detail provided for each type of spillway	
☐		☐	☐	All critical dimensions and elevations shown	

***Refer to Chapter 8 of PADEP's Erosion and Sediment Pollution Control Program Manual (March 2012)**
http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-88925/363-2134-008.pdf

EP-13 (8-16)

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OUTLET PROTECTION BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative

Outlet Protection (Chapter 9)

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	All temporary and permanent outfalls are shown and labeled	D
☐		☐	☐	Locations are accessible to construction equipment	
☐		☐	☐	Outlet protection provided for all temporary & permanent outfalls	
☐		☐	☐	Sufficient space exists to construct outlet protection	
☐		☐	☐	Discharges are properly oriented	
☐		☐	☐	Outlet areas properly protected from adjacent disturbed areas	
☐		☐	☐	Typical Details are provided for all types of outlet protection	
☐		☐	☐	All critical dimensions and elevations are provided	
☐		☐	☐	Dimensions and elevations are consistent with calculations	
☐		☐	☐	Standard E&S Worksheet #18 completed for all riprap aprons	N
☐		☐	☐	Calculations provided for adjusted discharge velocity	
☐		☐	☐	Apron dimensions conform to Figure 9.3 or 9.4	
☐		☐	☐	Flow transition mat lengths conform to Figure 9.6	
☐		☐	☐	Stilling Basin Dimensions conform to Standard Construction Detail 9-4 and Figure 9.7	
☐		☐	☐	Stilling Well Dimensions conform to Figures 9.8, 9.9, and 9.10	
☐		☐	☐	Supporting calculations are provided for all other types of outlet protection	
☐		☐	☐	Downstream stability analysis provided where needed	

Note: Plan preparer may provide the information on the standard worksheets in another format as long as it is present in the narrative and identified as such.

***Refer to Chapter 9 of PADEP's Erosion and Sediment Pollution Control Program Manual (March 2012)**
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EP-14 (8-16)

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OTHER BMPS
BMP WORKSHEET CHECKLIST

Project Name		
Date	MPMS No.	Township/County
PennDOT District	Permit Preparer	
PennDOT Reviewer		Date
PennDOT Maintenance Reviewer		Date

Reviewer Check Box: C = Compliant, D = Deficient
Item Location: D = E&S Drawings, N = E&S Narrative, or D&N = Drawings and Narrative

OTHER BMPs

Preparer		Reviewer		Item	Item Location
Included	Page #	C	D		
☐		☐	☐	Waterbars specified on utility line ROWs and abandoned roads	
☐		☐	☐	Standard Construction Detail #3-5 provided	
☐		☐	☐	Spacing complies with Table 3.1	
☐		☐	☐	Storm sewer inlet protection provided where needed	
☐		☐	☐	Standard Construction Detail #4-15 and 4-16 provided for inlet filter bags	
☐		☐	☐	Standard Construction Detail #4-17 and 4-18 provided for stone and concrete block inlet protection	
☐		☐	☐	Standard Construction Detail #4-19 and 4-20 provided for stone inlet protection	
☐		☐	☐	Standard Construction Detail #4-21 provided for alternate type M stone inlet protection	
☐		☐	☐	Standard Construction Detail #4-22 provided for type C inlet not at grade	
☐		☐	☐	Standard Construction Detail #4-23 provided for type M inlet not at grade	**D**
☐		☐	☐	Erosion Control Blanketing Locations shown on map(s)	
☐		☐	☐	Complete installation detail(s) provided	
☐		☐	☐	Typicals provided for on-lot BMPs	
☐		☐	☐	Other BMPs (specify):	
☐		☐	☐	Location(s) shown on plan map(s) & labeled	
☐		☐	☐	Typical Detail provided with all pertinent dimensions and elevations	
☐		☐	☐	Other BMPs (specify):	
☐		☐	☐	Location(s) shown on plan map(s) & labeled	
☐		☐	☐	Typical Detail provided with all pertinent dimensions and elevations	
☐		☐	☐	Design calculations	**N**

***Refer to PADEP's Erosion and Sediment Pollution Control Program Manual (March 2012)**
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APPENDIX N

PERMIT SUBMISSION COMMENT SUMMARY FORM

EP-15 (8-16)

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PERMIT SUBMISSION COMMENT SUMMARY

Project Name:			
Submission Type:			
SR/Sec:	MPMS No.:	Township/County:	
PennDOT District:	Permit Preparer:		Date Rec'd:
PennDOT Reviewer:			Date:

This form is to be used to compile comments identified on the QA/QC checklists during PennDOT review of permit submissions. The completed comment summary form should be returned to the preparer and a copy sent to the Environmental Policy and Development Section.

Comment No.	Submission Document	Sheet/Page No.	Comments	Comment Responses

APPENDIX O

CONSISTENCY LETTER REQUIREMENT MEMOS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Regional Watershed Managers
Regional Soil and Waterway Section Chiefs

FROM Ken Murin, Chief, Division of Waterways, Wetlands and Stormwater Management

DATE January 8, 2009

RE Clarification of Consistency Letter Requirements per Chapter 105, Section 105.13(d)(1)(vi) Floodplain Management Analysis

As a part of the Chapter 105 application review process, a letter from the local municipality commenting on floodplain consistency is only required if the proposed dam, water obstruction or encroachment is located within a floodway delineated on a FEMA map. There is no requirement within the Floodplain Management Act (32 P.S. § 679.101 et seq.), compelling a local municipality to provide consistency letters for projects located within the floodway. In the event that and applicant is unable to obtain a consistency letter from the local municipality, the Department will determine whether the proposed project is consistent with the Act or other National Flood Insurance Minimum Standards based upon all other Chapter 105 and Chapter 106 requirements.

To facilitate the Department's review the applicant should provide a copy of the letter (with proof of receipt) sent to the local municipality requesting a review of the project for consistency with floodplain management ordinances and allow the municipality a minimum of (30) days to comment on whether or not a consistency letter will be provided along with the expected time frame for the completion of the review and preparation of the consistency letter.

If the applicant receives correspondence from the municipality indicating that a consistency letter will not be provided for the project, the applicant should include that notification along with the copy of the original letter to the municipality (with proof of receipt) as a part of the application package.

In the event that the applicant receives no response from the local municipality within the specified 30 day period (after proof of receipt) indicating that a review of the project will take place and/or a consistency letter will be provided; the applicant should send a second letter to the municipality indicating that it is the applicant's intent to proceed with the project and that any future comments regarding consistency with the local floodplain management ordinances be directed to the appropriate regional office of DEP, permitting and technical services section (or other section as appropriate).

P.O. Box 2063, Harrisburg, PA 17105 | 717.787.2814 | www.depweb.state.pa.us

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMO

TO Regional Watershed Managers
Regional Soil and Waterway Section Chiefs

FROM Ken Murin, Chief, Division of Waterways, Wetlands and Stormwater Management

DATE January 8, 2009

RE Stormwater Management Analysis - Clarification of Consistency Letter Requirements per Chapter 105, Section 105.13(d)(1)(v)

As a part of the Chapter 105 application review process, consistency letters from counties and municipalities for stormwater plans are required only in those watersheds with a stormwater plan developed in accordance with the Stormwater Management Act (32 P.S. §§ 680.1 – 680.17) commonly referred to as Act 167 that has been approved by the Department and adopted by the County and local municipalities. There is no requirement by the Act that a County or local municipality provide consistency letters for projects covered by their stormwater plans. In the event that an applicant is unable to obtain a consistency letter from the County or local municipality, the Department will determine whether the proposed project is consistent based upon all other Chapter 105 and Chapter 106 requirements.

To facilitate the Department's review the applicant should provide a copy of the letter (with proof of receipt) sent to both the County and local municipality requesting a review of the project for consistency with the approved stormwater plan and allow them a minimum of (30) days to comment on whether or not a consistency letter will be provided along with the expected time frame for the completion of the review and preparation of the consistency letter. One consistency letter provided by **either** the County or local municipality will be sufficient, a response is not required by both.

If the applicant receives correspondence from the municipality indicating that a consistency letter will not be provided with respect to the approved stormwater plan, the applicant should include that notification along with a copy of the original letter to the County and municipality (with proof of receipts) as a part of the application package. The applicant should include a statement from the Project Manager indicating that the project location, design and proposed construction is in accordance with the approved stormwater plan.

In the event that the applicant receives no response from either the County or local municipality within the specified 30 day period (after proof of receipt) indicating that a review of the project will take place and/or a consistency letter will be provided; the applicant should send a second letter to both the County and municipality indicating that it is the applicant's intent to proceed with the project and that any future comments regarding consistency with the approved stormwater plan be directed to the appropriate regional office of DEP, permitting and technical services section (or other section as appropriate). The applicant should include a statement from the Project Manager indicating that the project location, design and proposed construction is in accordance with the approved stormwater plan.

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APPENDIX P

PAPER PERMIT SUBMITTAL COVER SHEEET EXAMPLE

Print on Green Paper ONLY

ATTENTION:

[INSERT NAME OF REVIEWER]&

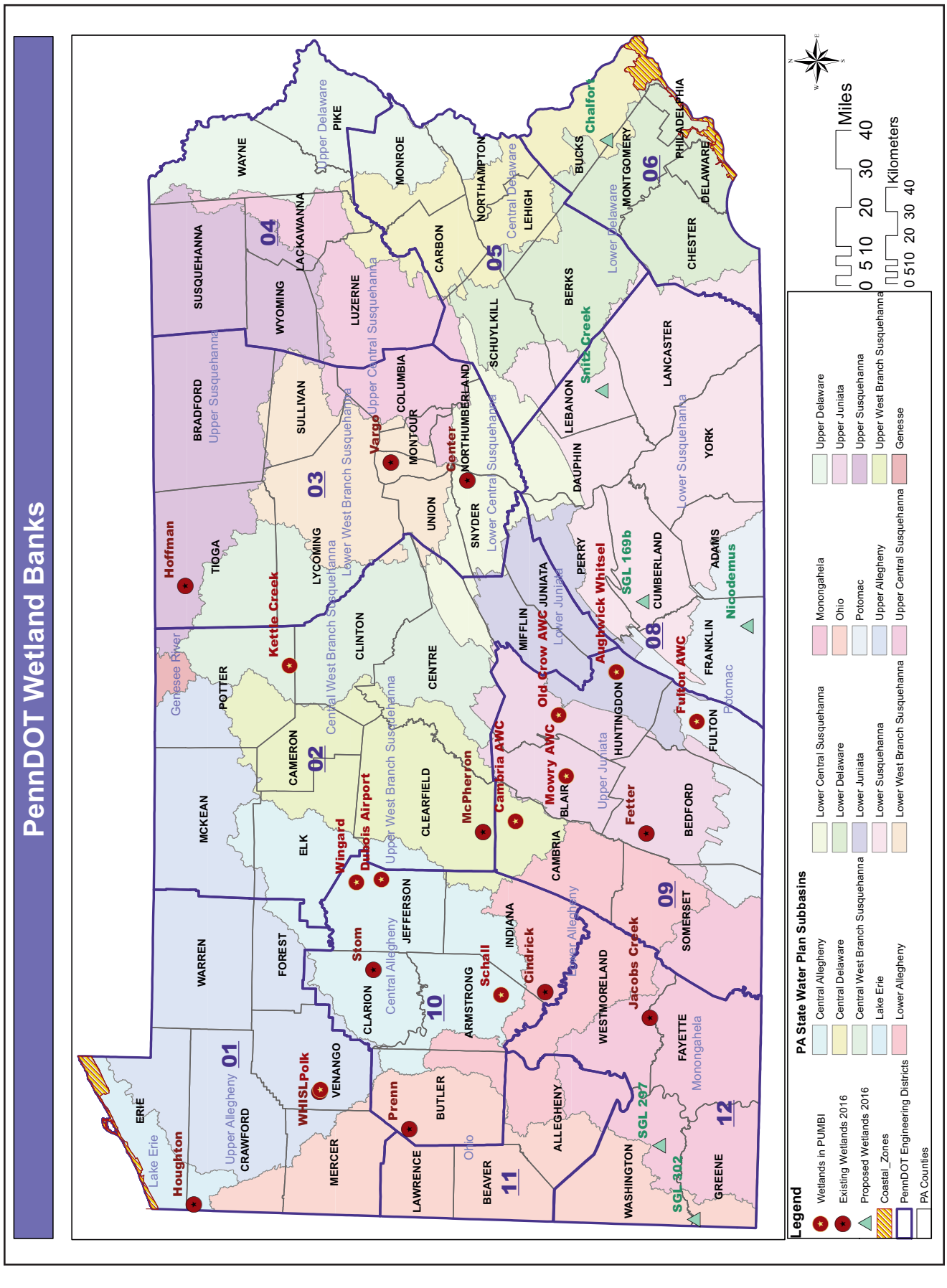
[INSERT NAME OF REVIEWER]

THIS PROJECT INVOLVES FEDERAL TRANSPORTATION FUNDS

Note: this project has federal transportation funding and is eligible for review by the PennDOT T-21 funded engineer and biologist in accordance with the lnteragency Memorandum of Understanding between PennDOT and PADEP

APPENDIX Q

MAP OF PENNDOT WETLAND BANKS


PennDOT Wetland Banks
Legend
Wetlands in PUMBI
Existing Wetlands 2016
Proposed Wetlands 2016
Coastal_Zones
PennDOT Engineering Districts
PA Counties
PA State Water Plan Subbasins
Central Allegheny
Central Delaware
Central West Branch Susquehanna
Lake Erie
Lower Allegheny
Lower Central Susquehanna
Lower Delaware
Lower Juniata
Lower Susquehanna
Lower West Branch Susquehanna
Monongahela
Ohio
Potomac
Upper Allegheny
Upper Delaware
Upper Juniata
Upper Susquehanna
Upper West Branch Susquehanna
Genesse
Upper Central Susquehanna
Houghton
Hoffman
Kettle Creek
Wingard
Dubois Airport
McPherron
Cambria AWC
Old Crow AWC
Mowry AWC
Augwick Whitsel
Fetter
Fulton AWC
Nicodemus
Vargo
Center
Snitz Creek
SGL 169b
Chalfont
WHISLPolk
Prenn
Stom
Schall
Cindrick
Jacobs Creek
SGL 207
SGL 302
01
02
03
04
05
06
08
09
10
11
12
Miles
Kilometers