HYDROELECTRIC PERMITTING MANUAL FOR PENNSYLVANIA

February 2015

Prepared by

Pennsylvania Environmental Council

Acknowledgements

It is with gratitude that we acknowledge the many hours contributed by the staff of the Pennsylvania Department of Environmental Protection, the Federal Energy Regulatory Commission, the Army Corps of Engineers, the Pennsylvania Fish and Boat Commission, and the Department of Conservation and Natural Resources to help us to understand the current permitting and licensing processes and to discuss potential alternatives. We also thank the several developers, consultants, industry groups, and non-profit organizations who shared feedback on their experiences.

About Pennsylvania Environmental Council

The Pennsylvania Environmental Council (PEC) protects and restores the natural and built environments through innovation, collaboration, education, and advocacy. PEC believes in the value of partnerships with the private sector, government, communities, and individuals to improve the quality of life for all Pennsylvanians.

PEC is redefining environmental stewardship in a model that engages diverse partners around common goals, through smart policy and the following program areas:

- Energy and Climate
- Trails and Outdoor Recreation
- Water Resources

Learn more about our organization and our work at www.pecpa.org.

A Note on Contact Information and Website Addresses

In an effort to help hydropower project developers identify the right contacts and documents, this guide provides contact information and website addresses for various resources. While periodic updates will be made to the document, as indicated by the date on the front cover, PEC and its partners can not guarantee the accuracy of any links and contact information after the date of publication. If a phone number, email address, or web link does not work, please contact the agency directly to inquire about updated information.

Disclaimer

The content herein is the work of PEC and does not represent official guidance from any of the regulatory agencies referenced. It represents a good faith effort to provide guidance on the various permitting and licensing processes for hydropower projects; however, PEC does not guarantee the accuracy or completeness of this information, as the permitting for these types of projects is very complex and highly site specific. This report is for informational purposes only and not for the purpose of providing legal advice.

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1. INTRODUCTION

The abundant water resources and rolling topography of Pennsylvania provide ample opportunity for hydroelectric and hydrokinetic renewable energy development. While experienced professional developers are able to navigate the permitting processes to bring projects to fruition, the complexity of permitting significantly increases the time and cost of a project, posing a particular challenge to projects being developed by non-traditional developers, such as municipalities, water authorities, parks, and farms, rather than professional developers. These projects are also often smaller in size, meaning the owner is less likely to recoup the costs of legal services in the revenue generated.

As the cost of conventional electricity--along with our knowledge of the associated environmental impacts--continues to rise, simultaneous developments in turbine and hydrokinetic technology make smaller and/or dam-less applications more feasible. In addition to the air pollution and climate change benefits of hydroelectricity are the potential co-benefits to the entities that own them and the communities in which they are located.

For example, a municipally-owned water treatment facility that is able to generate power from its flowing water has the potential to reduce its energy costs and/or generate revenue from excess electricity sold to the grid, freeing up funds for community improvements such as road maintenance, park improvements, and street lighting in Pennsylvania's often cash-strapped municipalities.

This manual was created with the following goals in mind:

- Facilitate greater development of economically- and environmentally-feasible projects in PA by outlining the specific steps required for permitting, identifying the appropriate contacts, and clarifying the order of steps.
- Improve the quality and completeness of applications submitted to DEP and other agencies by outlining clear expectations.
- Eliminate projects that are not economically- or environmentally-feasible early in the process, by providing clearer guidance and access to resource agency staff.

Because of the very site-specific nature of hydroelectric projects, the licensing and permitting may differ from project to project. This document is not intended to replace the guidance of an attorney or consultant, but rather to serve as a first step in beginning permitting for a project.

Environmental Impacts of Hydropower Projects

The environmental impacts of hydropower projects are highly site specific. The size classes (large, small, micro, and pico) refer to the amount of power generated, rather than the amount of environmental impact. Properly sited large projects can have very little impact on the environment, while poorly sited micro projects could significantly alter the natural environment. PEC specifically supports "low-impact" hydropower development, which is not limited by size constraints but rather depends on a case-by-case analysis. We do not advocate for new dams and impoundments, but rather for use of existing impoundments, pipes, or natural water features.

Low-impact hydropower presents an opportunity for renewable energy, but the benefits of cleaner energy production do not outweigh potential damage to aquatic ecosystems, as well as recreational resources. Examples of negative impacts can include changes to water temperature and dissolved oxygen, disruption of habitat for plants and wildlife, or changes in water flow that can cause bank erosion. The licensing and permitting processes are designed to not only identify potential problems, but also allow applicants an opportunity to work with agency staff to design alternative solutions.

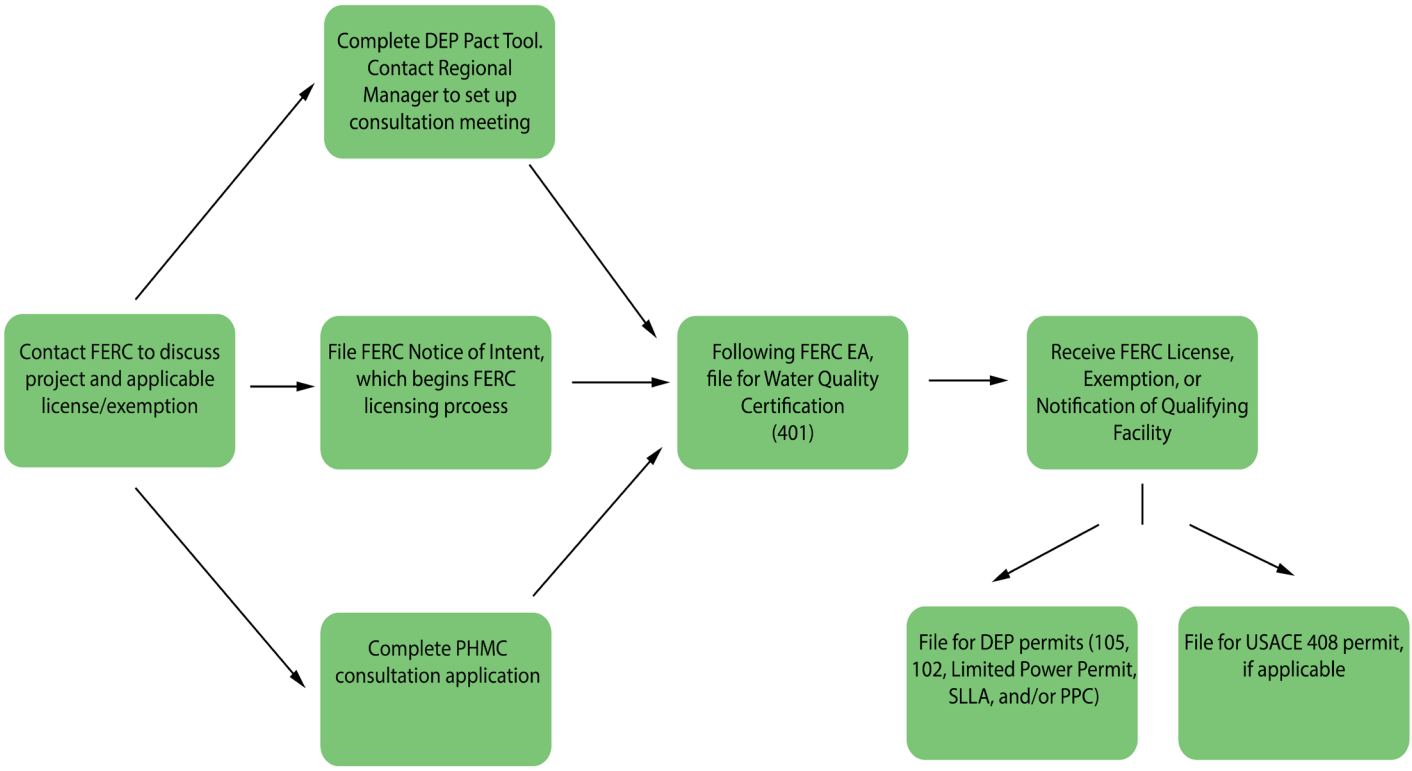
Table 1: Important Terms and Acronyms

BHP	Bureau for Historical Preservation
Cultural Resources	Physical evidence or place of past human activity, which include, but are not limited to, historic buildings and structures, landscapes, historic objects, archaeological sites, and properties of significance to specific cultural groups.
DEP	Pennsylvania Department of Environmental Protection, a state agency tasked with protecting Pennsylvania's air, land, and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.
Developer	We use this term to describe the entity developing a hydropower project that is using this handbook. While the term is often used to describe a professional development company, it could also be a municipality, university, rural landowner, water authority, or any other entity that is implementing a project.
FERC	Federal Energy Regulatory Commission, an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also inspects and licenses hydropower projects.
ILP	Integrated Licensing Process
LIHI	Low Impact Hydropower Institute, a non-profit organization dedicated to reducing the impacts of hydropower generation by developing criteria for avoided and reduced environmental impacts, and certifying facilities that meet those criteria.
Navigable Waterway	Any waterway, including lakes, rivers, and streams, in the United States used for commercial or recreational travel, or from which fish or shellfish are taken and sold for interstate commerce. In addition, tributaries to these waterways are defined as navigable waterways and subject to the same protections.
PHMC	Pennsylvania Historical and Museum Commission, the state agency responsible for the collection, conservation and interpretation of PA's historic heritage.
Resource Agencies	Blanket term to include all of the state, federal, and local agencies that have a role in protecting natural, ecological, cultural, and community resources from potential negative impacts.
SHPO	State Historic Preservation Office. In PA, this is the PHMC.
TLP	Traditional Licensing Process
USACE	Army Corps of Engineers, a branch of the Federal Government through the Department of Defense, that provides engineering services for all federal infrastructure projects.

2. OVERVIEW OF PERMITTING/LICENSING STEPS

Depending on site-specific details, the permitting for hydropower in Pennsylvania varies from project to project. It may include the Federal Energy Regulatory Commission, the Army Corps of Engineers, the Pennsylvania Department of Environmental Projection, and/or the Pennsylvania Historical and Museum Commission. There may also be consultations required with additional agencies and organizations, including Pennsylvania Fish and Boat Commission, the National Park Service, U.S. Fish and Wildlife Service, and several others. The appendix of this document provides a listing of these agencies, including regional contact information.

The sections of this manual are laid out, not by order of importance, but rather in the sequential order most commonly used by applicants for hydropower licenses and permits. The figure below illustrates this order.



This is an overview and perhaps oversimplification of the basic steps for completing all necessary permitting and licensing for a hydropower project in Pennsylvania. Please note that it is not sequential, and many of these steps can be completed simultaneously. It is important to talk to the regulatory agencies early to ensure you complete all steps in the most time- and cost-efficient manner.

3. PERMITTING DETAIL BY AGENCY

3.1 FEDERAL ENERGY REGULATORY COMMISSION (FERC)

3.1 FEDERAL ENERGY REGULATORY COMMISSION (FERC)

FERC is authorized under the Federal Power Act to regulate hydropower developments on navigable waterways, federal lands, or those connected to the interstate electric grid. It is strongly encouraged that all potential projects consult with FERC and not assume they are exempt from licensing requirements.

NOTE: WHILE A PROJECT MAY QUALIFY FOR A FERC "EXEMPTION," THIS DOES NOT MEAN IT CAN SKIP FERC REVIEW. TRY TO THINK OF THE EXEMPTION AS A DIFFERENT TYPE OF LICENSE THAT, ALTHOUGH SIMPLER TO OBTAIN, STILL REQUIRES FERC REVIEW.

The Commission assesses the impact the project will have on environmental resources, including, but not limited to, fish and wildlife, including spawning grounds and habitat; visual resources; cultural resources; and recreational opportunities. The Commission gives equal weight to the developmental value of the power generation, irrigation, flood control, and water supply.

In August 2013, the Federal Hydropower Regulatory Efficiency Act was passed into law, making some significant changes to the Federal licensing process for low-impact hydropower projects, including the following:

- Increasing the capacity of the existing Small Hydropower Exemption from 5 MW to 10 MW.
- Allowing eligible conduit projects less than or equal to 5 MW to become qualified facilities, rather than receiving a license or exemption.
- Increasing the maximum capacity for the conduit exemption to 40 MW.

A project will qualify under one of four review programs:
- License
- 10 MW Exemption
- Conduit Exemption
- <5MW Conduit Qualifying Facility

A basic overview of the steps in each process follows.

License

The process for achieving a FERC license can take anywhere from 2-5 years, depending on the complexity and site specific issues of the project. The licensing process identifies potential environmental, community, and recreational impacts associated with the project. The applicant will be required to perform studies to determine the extent of those impacts. The results of these studies will comprise the application to FERC. Upon receipt of application, FERC will also perform studies and assessments, as part of its "Environmental Assessment." The Commission will use the information obtained through all of these assessments to grant or withhold a license.

Early and open communication with neighbors and the community can be crucial to a project's success. FERC gives serious consideration to the impact the project may have on neighboring landowners and the community as a whole, in addition to the comments submitted by these parties. It behooves any developer to start conversations early, and to identify and address any potential concerns, in order to save time and money in the licensing phase.

There are two potential tracts an applicant can pursue—the Traditional or the Integrated Licensing Processes. Some developers prefer the Integrated Licensing Process (ILP) because it involves more intensive stakeholder engagement early on, allowing any potential problems to be identified and addressed early. However, the Traditional Licensing Process (TLP) may be more efficient for smaller projects or those with fewer environmental concerns because it has fewer pre-filing steps and deadlines, along with a more informal study development process. The decision to use the ILP or TLP is highly dependent on individual site characteristics and should be discussed with your FERC contact to decide which is best for your project.

3.1.1 Traditional Licensing Process

As mentioned above, the TLP can be more efficient and less costly for projects that are located at sites without major environmental or community concerns.

1. Filing of NOI, PAD, and Public Notice

An initial difference between the TLP and the ILP is that an applicant must request authorization from FERC to use the TLP. To request authorization, the applicant will file the Notice of Intent (NOI), using the sample template available at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/noi-template.doc

The NOI, which can be written as a letter, must include the following: the applicant's intention to file for a license, applicant's name and address, type of project and planned capacity, location, and names and addresses of each of the following:

a. The county or counties in which the project is located
b. Every city, town, or similar local political subdivision in which any part of the project is located or those within 15 miles of the project with a population of 5,000 or more
c. Any affected Indian tribes

The applicant will include information in the NOI to justify use of the TLP, which may include the relatively low complexity of environmental concerns at the site, lack of anticipated controversy, and the amount of information available about the site.

The Pre-Application Document (PAD) identifies the potential issues the project may encounter that will require additional studies. Under the traditional process, the PAD will be filed at the same time as the NOI and will be used by FERC to determine whether the TLP is the appropriate process. A PAD template is available online at
www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/pad-template.doc

Prior to or on the same day as filing the NOI, PAD, and request to use TLP, the applicant must also post a Public Notice in the weekly or daily paper of the County affected by the project.

A template of the Public Notice is available at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/public-notice-template.doc

The public notice must request that comments on use of the TLP be submitted to FERC within 30 days.

The notice must also be shared with relevant stakeholders, including but not limited to the following:

a. National Marine Fisheries Service (NOAA Fisheries)
b. U.S. Fish & Wildlife Service
c. National Park Service
d. U.S. EPA
e. PA Fish & Boat Commission
f. PA DEP
g. PA Historical and Museum Commission
h. Army Corps of Engineers
i. Municipality(ies)
j. County(ies)
k. Any potentially effected landowners
l. Any Indian tribes

2. Joint Meeting

Between 30-60 days of receiving permission from FERC to use the TLP, the applicant will schedule a joint meeting with the relevant resource agencies, Indian tribes, and members of the public. The meeting will include time for a site visit. The purpose of this meeting is to develop a common understanding of the proposed project; discuss current and future plans and resource needs in the project area; determine what information is needed in the study phase; and agree on a time frame for gathering this information.

Important: Prior to the meeting, there are two important notification requirements:

- At least 15 days prior to the meeting, the applicant must notify the Commission in writing of the meeting date, time, location, and agenda.
- At least 14 days prior to the meeting, the applicant must publish the date, time, and location of the meeting in the daily or weekly newspaper in the county or counties where the project is located.

The applicant must bring two copies of the NOI and PAD to the meeting and must arrange for the meeting to be recorded, either by use of an audio recording device or a written transcript.

Resource agencies, Indian tribes, and the general public will be allowed up to 60 days to submit comments, either directly to the applicant or to FERC, informing what studies are necessary.

3. Study Phase and Draft Application Development

Once study plans have been finalized, the applicant can begin all necessary studies.

Helpful tip: Remember, if you or your contractors must cross another landowner's property (for example, to assess water conditions downstream of proposed site), you must contact all landowners and request permission first.

Examples of studies that may be required include:

- Water quality monitoring/modeling
- Project hydraulics study
- Terrestrial habitat and RTE Species study
- Wetland Delineation Study
- Phase 1 Archaeological and Historic Resources Study
- Recreation Resources Management Plan
- Aquatic Habitat Assessment
- Sediment Quality Survey
- Mussel Survey
- Fish Entrainment and Passage Study

Helpful tip: In Pennsylvania, threatened and endangered species of plants and wildlife are catalogued in the Pennsylvania Natural Diversity Index, or PNDI for short. This database can be accessed at http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx. It is important that you accurately define the boundaries of your project before you run the PNDI search. You may want to consult with your contacts at DEP and FERC to ensure the entire area required is included, so that you do not have to re-do any studies later in the process.

The results of the studies should be compiled into a draft application that addresses all discussion from the initial consultation period.

4. Second Consultation

The applicant will share the draft application with all relevant stakeholders, including the agencies, Indian tribes, and members of the general public who participated in the initial joint meeting. These stakeholders have 90 days to provide written comments to the applicant.

If any stakeholders have substantive disagreements with the draft application, the applicant must schedule a joint meeting within 60 days of receiving comment. The applicant must notify FERC in writing at least 15 days prior to the meeting with date, time, location, and agenda.

Once all disagreements have been resolved, the applicant is ready to prepare the application for filing. The final application must include evidence of all consultation efforts, any letters or comments from the public, all resource agency letters and comments, the consultation summary outlining any remaining disagreements, and explanation of the project's compliance or lack of compliance with any relevant comprehensive plans.

5. File Final FERC License Application

The exact contents of the license application may depend on the size and nature of the project. Your contact at FERC should be able to provide further guidance. FERC will review the application and notify the applicant of whether it is accepted or whether additional information must be added.

Concurrent to filing eight copies of the application with FERC, the applicant should share a copy of the application with all relevant agencies, Indian tribes, and other stakeholders.

Within 14 days of receiving the application, FERC will notify the applicant of acceptance of the application or of any deficiencies.

Once the application is accepted, or at the point in which all identified deficiencies have been corrected, FERC will issue the applicant a project number and the date the project was accepted for filing.

Helpful tip: If an application is patently deficient, FERC can choose to dismiss it. Therefore, it behooves you as the applicant to work closely with your contact at FERC to ensure you have included all required information.

6. Environmental Analysis

Once FERC accepts the application as complete, it will typically develop a Scoping Document (SD), which will be available for public comment and/or scoping meetings. Based on comments received, FERC may ask the applicant for additional information or studies. When adequate information has been received, FERC will issue a Ready for Environmental Analysis (REA) notice. Public comments on the REA will be accepted for 60 days. FERC will respond to all comments received within 45 days.

Within 60 days of receiving the REA, the applicant must file one of the following:

- Copy of the state water quality certification
- Copy of the request for certification, including the date on which the PA DEP received the request
- Evidence of a waiver of water quality certification.

Finally, FERC will complete its environmental and engineering review, in accordance with the National Environmental Policy Act (NEPA). Usually this takes the form of an environmental assessment (called an "EA" for short), but depending on the complexity of the project and site specific details, an environmental impact statement (EIS), may be issued. Pending the results of the environmental assessment, FERC will issue a license to the applicant.

Helpful tip: Once FERC's Environmental Assessment (EA) is complete, the regional office of DEP will have adequate information to be able to review a Water Quality Certification (sometimes called a 401 certification). DEP can issue this Certification in advance of reviewing the state 102 and 105 permits, which require final engineering plans to meet the regulatory requirements and permit conditions.

3.1.2 Integrated Licensing Process

1. File Notice of Intent (NOI)

The NOI, which can be written as a letter, must include the following: the applicant's intention to file for a license, applicant's name and address, type of project and planned capacity, location, and names and addresses of each of the following:

a. The county or counties in which the project is located
b. Every city, town, or similar local political subdivision in which any part of the project is located or those within 15 miles of the project with a population of 5,000 or more
c. Any affected Indian tribes

A template is available at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/noi-template.doc. Prior to or on the same day as filing the NOI, the applicant must post a Public Notice in the weekly or daily paper of the County affected by the project. A template of the Public Notice is available at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/public-notice-template.doc

2. File Pre-Application Document (PAD)

The PAD identifies the potential issues the project may encounter that will require additional studies. It will set forth the proposed schedule for completing the required studies and application and will also inform the Commission's environmental assessment. A PAD template is available online at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/pad-template.doc

3. Receive Notice of Commencement and Scoping

Within 60 days of receiving the NOI and PAD, FERC will issue a notice of commencement, which among other things, sets the date for the scoping meeting. The purpose of this phase is to identify all present and future resource goals and management objectives. The scoping phase establishes the priorities for the study phase.

The scoping meeting may include representatives of the following agencies:

a. National Marine Fisheries Service (NOAA Fisheries)
b. U.S. Fish & Wildlife Service
c. National Park Service
d. U.S. EPA
e. PA Fish & Boat Commission
f. PA DEP
g. PA Historical and Museum Commission
h. Army Corps of Engineers
i. Municipality(ies)
j. County(ies)
k. Any potentially effected landowners
l. Any Indian tribes

These agencies may also submit written comments to FERC.

4. Commence Study Phase

The applicant will submit a Study Plan to FERC, which will be available for 90 days for public comment. This comment period allows resource agencies, community leaders, and the general public an opportunity to express any concerns that may influence what studies are performed and how. It is intended to make the licensing process more efficient for all parties, so that any studies completed result in the necessary information needed to make a licensing decision. The applicant will have 30 days to submit a revised study plan to FERC following the close of comments.

Helpful tip: If your studies require you to cross other landowner's property (for example, to assess water conditions downstream of proposed site), you must contact all landowners and request permission to cross their land. If you use contractors to perform studies, make sure they follow this rule of thumb.

Examples of studies to be completed may include:

- Water quality monitoring/modeling
- Project hydraulics study
- Terrestrial habitat and RTE Species study
- Wetland Delineation Study
- Phase 1 Archaeological and Historic Resources Study
- Recreation Resources Management Plan
- Aquatic Habitat Assessment
- Sediment Quality Survey
- Mussel Survey
- Fish Entrainment and Passage Study

Helpful tip: In Pennsylvania, threatened and endangered species of plants and wildlife are catalogued in the Pennsylvania Natural Diversity Index, or PNDI for short. This database can be accessed at http://www.gis.dcnr.state.pa.us/hgis-er/Login.aspx. It is important that you accurately define the boundaries of your project before you run the PNDI search. You may want to consult with your contacts at DEP and FERC to ensure the entire area required is included, so that you do not have to re-do any studies later in the process.

5. File the Preliminary Licensing Proposal

6. File Final FERC License Application

The exact contents of the license application may depend on the size and nature of the project. Your contact at FERC should be able to provide further guidance. FERC will review the application and notify the applicant of whether it is accepted or whether additional information must be added.

Helpful tip: If an application is patently deficient, FERC can choose to dismiss it. Therefore, it behooves the applicant to work closely with your contact at FERC to ensure you have included all required information.

No later than two weeks after filing this document, a notice must be posted twice in the daily or weekly newspaper published in the county or counties in which the project is located.

7. Environmental Analysis

Once FERC accepts the application as complete, it will issue a notice that the project is "ready for environmental analysis" (REA). Within 60 days of receiving the REA, the applicant must file one of the following:

- Copy of the state water quality certification
- Copy of the request for certification, including the date on which the PA DEP received the request
- Evidence of a waiver of water quality certification

Helpful tip: Once the EA is complete, the regional office of DEP will have adequate information to be able to review a Water Quality Certification (sometimes called a 401 certification). DEP can issue this Certification in advance of reviewing the state 102 and 105 permits, which require final engineering plans to meet the regulatory requirements and permit conditions.

Within 120 days of issuing the REA, FERC will complete its environmental and engineering review, in accordance with the National Environmental Policy Act (NEPA). It will issue an environmental assessment (called an "EA" for short) for public comment. Depending on the complexity of the project and site specific details, preparation of a subsequent environmental impact statement (EIS), may be required. Pending the results of the environmental assessment, FERC will issue a license to the applicant.

3.1.3 10 MW EXEMPTION

Projects less than 10 MW in capacity may qualify for this exemption if they are located at a non-federally owned dam or at a natural water feature. A template of the Initial Consultation Document (ICD) is provided by FERC at www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/templates/10-mw-exemp-template.doc

If you believe your project qualifies for an exemption, contact the FERC regional coordinator to discuss potential next steps.

3.1.4 CONDUIT EXEMPTION

Conduit projects between 5 MW and 40 MW installed capacity may qualify for the Conduit Exemption.

A conduit is any pipe, ditch, or other man-made structure that moves water for irrigation, drinking water, or any purpose other than electricity generation. A pipe that is installed for the purpose of conveying water to a turbine to produce electricity does not qualify as a conduit project.

More information on exemptions is available on the FERC website at https://www.ferc.gov/industries/hydropower/gen-info/licensing/exemptions.asp. If you believe your project qualifies for a conduit exemption, contact Robert Bell at 202-502-6062 or robert.bell@ferc.gov to discuss next steps.

3.1.5 <5MW CONDUIT QUALIFYING FACILITY

Some hydropower projects, in accordance with the Hydropower Regulatory Efficiency Act of 2013, are not required to obtain a license or exemption. However, qualifying conduit projects less than 5 MW installed capacity are required to file a notice with FERC. FERC will reply in 15 days with a decision on whether or not the project meets the criteria to be a qualifying facility. If it qualifies, FERC will publish a public notice of the project, which will be open for comment for 45 days. If anyone contests the designation, FERC will promptly review the comment and respond. After 45 days, if there are no outstanding comments, the project can proceed without a FERC License or Exemption. Please note that while this ends FERC's involvement, the project may still require additional approvals or permits from other agencies.

This program is described in more detail on the FERC website at http://www.ferc.gov/industries/hydropower/indus-act/efficiency-act/qua-conduit.asp

A template for the Notice of Intent for qualifying conduit projects is available online at http://www.ferc.gov/industries/hydropower/indus-act/efficiency-act/qua-conduit/noi.doc

Important: Projects must file the Notice of Intent before assuming they qualify. When in doubt, always contact the FERC program manager for clarification and guidance. For conduit projects, contact Robert Bell at robert.bell@ferc.gov or 202-502-6062.

Table 2: Comparison of FERC License and Exemptions

	Qualifying Conduit Hydropower Facility	Conduit Exemption	10-MW Exemption	License
Installed Capacity Limitations	5 MW or less	40 MW or less	10 MW or less	Unlimited
Location Limitations	Must be located on a non-federally owned conduit used for agricultural, municipal, or industrial use Cannot be located at a dam	Must be located on a conduit used for agricultural, municipal, or industrial use Cannot be located at an impoundment	Must be located at an existing dam or natural water feature Cannot be located at a dam owned or operated by the federal government	Not Applicable
Term Limitations	Not Applicable	Issued in perpetuity	Issued in perpetuity	Up to 50 years for license
Preparation of Environmental Document	Categorically exempt from preparing an environmental document	Categorically exempt from preparing an environmental document unless determined necessary	Prepared consistent with National Environmental Policy Act	Prepared consistent with National Environmental Policy Act
Project Boundary	Not Applicable	Includes powerhouse and connection to conduit (excludes the transmission line and the conduit itself)	Includes all associated lands and facilities, such as the powerhouse, dam, impoundment, transmission line, and any lands that fulfill a project purpose (e.g., recreation, resource protection, and access roads)	Includes all associated lands and facilities, such as the powerhouse, dam, impoundment, transmission line, and any lands that fulfill a project purpose (e.g., recreation, resource protection, and access roads)

Adapted from FERC's "Project Comparison Chart" at http://www.ferc.gov/industries/hydropower/gen-info/licensing/small-low-impact/get-started/exemp-licens/project-comparison.asp, Sept. 17, 2013

3.2 PENNSYLVANIA HISTORICAL & MUSEUM COMMISSION (PHMC)

3.2 PENNSYLVANIA HISTORICAL & MUSEUM COMMISSION (PHMC)

Preserving the historical value of our state is a public interest. The Bureau for Historic Preservation (BHP) of the Pennsylvania Historical and Museum Commission (PHMC) is tasked with ensuring infrastructure development projects, including hydropower development, do not adversely affect historic and archeological resources or properties of cultural significance to Indian tribes, even if that tribe is no longer living in the area. This review occurs through the Section 106 consultation process.

Examples of cultural resources may include:

- Historic buildings, structures, objects, sites, and districts
- Archaeological sites and districts
- Cultural landscapes
- Traditional cultural properties

Helpful Tip: Remember, the term "historic properties" includes not only historic buildings, but also historic sites that are either listed or are eligible for listing in the National Register of Historic Places. Learn more about eligibility at www.nps.gov/nr/.

To begin the 106 review process, the applicant should complete the Request for Project Consultation Form. It is available online at www.portal.state.pa.us/portal/server.pt/document/1266475/er_submission_form_pdf
The potential applicant can complete this form and reach out to BHP once they know how large of an area the project will impact, known as the "area of potential effect."

Helpful Tip: Under "Section C" of the Consultation form, be sure to include all state and federal agencies pertinent to your project. For most hydroelectric projects, this will be FERC, USACE, and DEP, with FERC being the primary Federal agency.

To complete this form, an applicant will need the following:

- 7.5' USGS map of the proposed project location
- Site plans that show any buildings, including those of historic importance, if known
- Digital photos of the site, and any buildings, if applicable
- If available, include a plan of existing conditions and of planned conditions

Helpful Tip: United States Geological Survey (USGS) maps are available for download and purchase online at store.usgs.gov under the "Map Locator" link.

More information on the review process is available on the BHP website at www.portal.state.pa.us/portal/server.pt/community/project_review_under_section_106_and_pa_history_code/3787/consultants_list/415081

3.3 PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

3.3 PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)

DEP operations are divided across six regional offices: Northwest, Southwest, North Central, South Central, Northeast, and Southeast. A map of the regions, as well as contact information for each office, can be found online at: http://www.portal.state.pa.us/portal/server.pt/community/about_dep/13464/office_locations/585263

There are five potential permits or approvals a hydroelectric project may need to secure:

a. Water Quality Certification (401)
b. Water Obstruction and Encroachment Permit (105)
c. Non-Point Discharge Elimination System Permit for Stormwater Discharges Associated with Construction Activities (102)
d. Pennsylvania Limited Power Permit
e. Submerged Lands License Agreement

DEP has created the Permit Application Consultation Tool (PACT) to guide potential applicants to the required permits and certifications required. The tool is available online at www.ahs.dep.pa.gov/PACT. By answering a relatively simple questionnaire, a project developer will be able to determine which permits or certifications are required for the project.

While some of the questions will either clearly apply to your project or not, others may be confusing. As a guide, the following questions are the most likely to apply to your hydropower project:

- Will the project involve a point source discharge to waters of the Commonwealth?
- Will the project involve a construction activity that results in earth disturbance greater than one acre?
- Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?
- Does the project involve construction, modification or removal of a dam or interfere with the flow from or otherwise impact a dam?
- Will the project impact a public drinking water source?
- Is the project expected to substantially modify a permitted public water system?
- Will there be waste concrete and concrete truck wash downs during the project?
- Will the project involve new building construction or significant renovations to existing buildings? (if constructing a power house)
- Does this project require the discharge of acid mine drainage, pumping of mine pools or strip pit impoundments to surface waters? (only applicable to projects using AMD)
- Will the project include any access roads, water lines, gathering lines, or structures involving any of the following: placement of fill, excavation within or placement of a structure, located in, along, across, or projecting into a water course, floodway, or body of water (including wetlands)?

The PACT tool is meant to serve as a guide and does not replace the consultation meeting with the local regional office. A project developer should contact the Assistant Regional Director of the DEP region in which the project is located to request a Pre-Application Consultation Meeting. If you are in doubt about a question on the PACT, write it down and remember to ask your DEP contact at the consultation meeting.

3.3.1 Water Quality Certification

The 401 Water Quality Certification is required, under the federal Clean Water Act, for any project receiving a federal permit or license, including, but not limited to, the construction or operation of facilities which may result in a water discharge. This certification ensures a project will not negatively impact the water quality standards or designated uses of the affected waterway. The 401 Water Quality Certification is administered by the PA DEP.

Note: Because the 401 is required prior to FERC licensing, DEP may review it in advance of the 102 and 105 permits, which require more final designs. Once the environmental assessment (EA) has been completed, as part of FERC licensing, the regional office of DEP will have enough information to assess a 401 application and either grant, condition, deny, or waive the 401 water quality certification.

During your consultation meeting with DEP, be certain to discuss the 401 water quality certification and the appropriate timing for submission of required permit applications.

3.3.2 Water Obstruction and Encroachment Permit (105)

Work in and along streams and wetlands requires a Water Obstruction and Encroachment Permit (often called the "105" permit), issued by the regional DEP office. Examples of work requiring this permit include, but are not limited to, access roads, buildings, penstocks, outfalls, utility lines, pipelines, and staging areas.

Helpful Tip: Any project that is located within wetlands, a stream, the 100-year flood boundaries, or 50-feet from the top of each stream bank, if no Federal Flood Insurance Study exists, will require this permit.

The 105 permit is reviewed jointly by PA DEP and the Army Corps of Engineers. The permit application should be filed through the DEP regional office, who will coordinate review with the Corps. Instructions for this application can be found at www.elibrary.dep.state.pa.us/dsweb/Get/Document-96036/3150-PM-BWEW0036%20Instructions.pdf

3.3.3 Erosion and Sedimentation Permit (102)

Hydroelectric projects that include any land disturbance must also comply with DEP's Erosion and Sedimentation control and post construction stormwater management by securing a National Pollutant Discharge Elimination System (NPDES) permit for Stormwater Discharges Associated with Construction Activities. This permit (sometimes also called a "102 permit") ensures that the sedimentation caused by the project, both during construction and ongoing operations, does not negatively impact the waterway.

Although issued by the DEP, this permit is prepared and reviewed in consultation with the County Conservation District.

Important: Waste concrete and concrete truck wash down can be harmful to aquatic life. Care should be taken to keep waste concrete and concrete truck wastewater from reaching storm drains, streams, ditches, and catch basins.

3.3.4 Submerged Lands License Agreement (SLLA)

The SLLA is required for projects that place any physical structure over, under, or on submerged lands of the state (in other words, land that is covered by water, including lakes, streams, and rivers). This requirement applies to lands that are under water for all of or only part of the year. The fee for the license is determined by the type of projects. Municipalities, authorities, and other public entities may be exempted from the license requirements.

3.3.5 Limited Power Permit

A Limited Power Permit may be required for any project that uses water, including steam, to produce electrical power in Pennsylvania. The Limited Power Permit is issued by the DEP Bureau of Waterways Engineering. The current fees for the permit are an annual charge of $0.05 per kilowatt of installed capacity, with a minimum charge of $10.00 and a maximum charge of $10,000.00.

The application is available online at www.elibrary.dep.state.pa.us/dsweb/Get/Document-54650/3100-PM-WE0003.pdf. The Limited Power Permit is generally issued after the FERC License or Exemption and after finalization of the Submerged Lands License Agreement.

The Limited Power Permit is administered by the central office of DEP through the Division of Dam Safety. Contact information is noted in Appendix.

3.3.6 Preparedness, Prevention, and Contingency Plan (PPC)

A hydropower project may be required to produce a PPC Plan, putting into place all necessary measures to prevent pollutants from reaching the waters of the Commonwealth. Guidelines on when a plan is required and how to prepare it are available online at www.elibrary.dep.state.pa.us/dsweb/Get/Document-48522/400-2200-001.pdf.

3.4 ARMY CORPS OF ENGINEERS (USACE)

3.4 ARMY CORPS OF ENGINEERS (USACE)

Pennsylvania is divided into three regional divisions of USACE—the Pittsburgh District, the Baltimore District, and the Philadelphia District. Each district has a Hydropower Coordinator. Generally, a project developer would first contact USACE after it has secured a FERC permit (if one is required). However, if you are not certain what requirements apply for your site, it is recommended that you contact the hydropower coordinator for your region, as listed on the table of contacts, early to discuss your project. You can also request a pre-application consultation.

All proposed hydropower projects that modify a Corps-owned facility will require a Section 408 Permission. These projects, as well as those not located on Corps facilities, may also require a Section 10 and/or Section 404 permit.

3.4.1 Section 408 Permission

A section 408 Permission from the Corps is that agency's approval of the proposed modification to existing federally-owned infrastructure, in this case a navigation structure (i.e. a lock and dam) or a single or multi-purpose dam and reservoir. It is not exclusive to hydropower projects. Examples of projects that would require a 408 Permission include installing a turbine to produce electricity at a dam or running a fiber optic cable across a dam for a communications project. If your project is not located at an Army Corps of Engineers Dam, you do not need the 408 Permission.

To learn more about securing 408 Permission, review the guidance available in EC 1165-2-216 (especially paragraph 7.c) available at www.publications.usace.army.mil/USACEPublications/EngineerCirculars.aspx

Helpful Tip: If a 408 Permit is required for a project, it must be secured before the 404 Permit.

3.4.2 Section 404 Permit

Regardless of location, most hydropower projects will require a Section 404 Permit, which regulates the discharge of dredged or fill material into waters of the United States. USACE staff will assess the project in terms of the environmental quality standards established in the federal Clean Water Act. To secure the 404 permit, an applicant will have to demonstrate that steps have been taken to avoid impacts to wetlands, streams, and other aquatic resources, to minimize potential impacts, and to provide compensation for unavoidable impacts.

The 404 permit is often issued jointly with the Section 105 permit, administered by the PA DEP. Applicants should file the 105 permit application with PA DEP. If appropriate, the regional DEP office will coordinate review with USACE, to issue a joint permit for the 105 and 404. If joint review is not appropriate, due to the complexity or environmental sensitivity of a project, DEP will direct the applicant to file for the 404 permit through USACE separately of the state 105.

Helpful Tip: If a 404 permit is processed before a 401 water quality certification (issued by DEP) is secured, USACE can issue a provisional permit, specifying that the permit will become valid pending the provisions of the 401.

3.4.3 Section 10 Authorization

Section 10 of the Rivers and Harbors Act requires authorization from the USACE to build any structure in or over a navigable waterway. Even if the stream or river is not considered a navigable waterway, Section 10 may still apply if the stream flows into a navigable river. Examples of the types of projects to which Section 10 will apply include, but are not limited to, installation of docks, dredging, excavation, boat ramps, navigational aids, bank protection (e.g. riprap, revetment, bulkhead), mooring structures such as pilings, and intake or outfall pipes.

4. ADDITIONAL RESOURCES

4.1 LOW IMPACT HYDROPOWER INSTITUTE

The Low Impact Hydropower Institute (LIHI) is a non-profit certifying organization with a mission of reducing the impacts of hydropower generation through its voluntary Low Impact Certification Program. A LIHI certificate creates a market-based incentive for hydroelectric projects to enhance their environmental stewardship, resulting in more green energy and healthy rivers. Just as organic certification can make a food product more appealing to a consumer, LIHI certification can make hydroelectricity from a certified producer more appealing to energy consumers.

Unlike the Federal licenses and state permits described in this guide, certification by LIHI is not required for a project to operate in Pennsylvania, however it is necessary for those projects seeking to generate eligible "Low Impact Hydropower" Alternative Energy Credits under the Alternative Energy Portfolio Standards Act of 2004 ("the Act"). Facilities with incremental hydro development that are LIHI certified are allowed to qualify as a Tier I resource under the Act. The LIHI certification program is also required for all facilities that seek to generate green-e certified energy.

To be certified by LIHI, a hydroelectric project cannot have been recommended for dam removal, and must satisfy the LIHI standards for the following Low Impact Certification Program Criteria:

1. River flows
2. Water quality
3. Fish passage and protection
4. Watershed protection
5. Threatened and endangered species protection
6. Cultural resource protection
7. Recreation

LIHI was formed in 1999 by a diverse set of interests, including the Center for Resource Solutions, American Rivers, and private renewable energy developers. The LIHI bylaws require a minimum of 50 percent representation from environmental organizations on its Governing Board. As of December 2014, LIHI has issued 116 Low Impact Certificates to facilities in 28 states with a combined capacity of roughly 5.8 Gigawatts. In 2015, LIHI is expected to announce programmatic changes, including revisions to the Low Impact Certification Criteria. Additional changes in eligibility may be forthcoming. Learn more about LIHI at www.lowimpacthydro.org.

Contacts

Michael J. Sale, Executive Director
865-719-4794
mjsale@lowimpacthydro.org

Dana Hall, Deputy Director
201-906-2189
dhall@lowimpacthydro.org

4.2 NATIONAL HYDROPOWER ASSOCIATION

The National Hydropower Association (NHA) is a nonprofit national association dedicated to promoting the growth of clean, affordable U.S. hydropower. It seeks to secure hydropower's place as a climate-friendly, renewable and reliable energy source that serves national environmental, energy, and economic policy objectives. NHA unites the diverse North American hydropower community, providing a powerful advocacy voice among U.S. decision makers, the general public, and the international community. As a membership organization, NHA represents more than 200 companies in the North American hydropower industry, from Fortune 500 corporations to family-owned small businesses. Members include both public and investor-owned utilities, independent power producers, developers, manufacturers, environmental and engineering consultants, attorneys, and public policy, outreach, and education professionals.

In addition to its member benefits, the NHA also provides education and informational materials to non-members. These include fact sheets and studies, policy priorities, and an annual conference. Learn more at www.hydro.org or by calling 202-682-1700.

5. CONCLUSION

While the permitting for hydropower projects is complex, involving several agencies and layers of review, it is complex for good reason. Improperly sited hydropower can have devastating effects on ecosystems, water quality, recreational resources, and neighboring communities. The permitting process is not intended to be a barrier, but rather, to allow project designs to be adjusted for the best project possible.

A sustainable clean energy economy will require a variety of energy sources. We believe low-impact hydropower will be an important distributed generation source in Pennsylvania. The intent of this document is to make the process a little less intimidating, and to help more low-impact hydro projects make it from idea to completed project, generating clean, renewable power.

APPENDIX

Agency Contacts

The table below identifies the key agencies and contacts with whom any hydroelectric project in the state of Pennsylvania will want to consult. While the names and contact information may change as individuals change roles, project developers will want to speak to each of these agencies and positions.

Table 3: Key Contacts

Agency	Position	Name	Contact
FERC	Small Hydro Contact Mid-Atlantic	John Smith	202-502-8972 john.smith@ferc.gov
	Conduit Project Contact	Robert Bell	202-502-6062 robert.bell@ferc.gov
PA DEP	Assistant Regional Director	Southwest Ron Schwartz Northwest Staci Gustafson North Central James Miller South Central Robert Conrad Northeast Colleen Stutzman Southeast Sachin Shankar	412-442-4181 roschwartz@pa.gov 814-332-6816 stgustafso@pa.gov 570-327-3695 jamesmill@pa.gov 717-705-4704 roconrad@pa.gov 570-826-2511 cstutzman@pa.gov 484-250-5942 sshankar@pa.gov
	Chief, Division of Dam Safety	Roger Adams	717-772-5951 roadams@pa.gov
Army Corps of Engineers	Hydropower Coordinator	Pittsburgh District Jeff Benedict Philadelphia District Christine Lewis-Coker Baltimore District Raymond Smith	412-395-7202 Jeffrey.M.Benedict@usace.army.mil 215-656-6679 Christine.T.Lewis-Coker@usace.army.mil 410-962-4507 Raymond.F.Smith@usace.army.mil
PA Historical Commission	Chief, Division of Archaeology and Protection	Douglas McLearen	717-772-0925 dmclearen@pa.gov

Additional Agencies*

The following agencies play important roles in conserving and protecting our natural resources and outdoor recreation opportunities. While none have direct licensing or permitting roles for hydroelectric projects, each should be included in the distribution list for all notices and filings. Each agency may or may not participate in the licensing proceedings, as appropriate.

Department of Conservation and Natural Resources
Rachel Carson State Office Building
400 Market Street
P.O. Box 8767
Harrisburg, PA 17105-8767

Pennsylvania Fish & Boat Commission
450 Robinson Lane
Bellefonte, PA 16823

National Oceanic and Atmospheric Administration
Fisheries Regional Office
One Blackburn Drive
Gloucester, MA 01930-2298

National Park Service
Kevin R. Mendik
Northeast Region
Hydro Program Manager
15 State Street, 10th Floor
Boston MA 02109

U.S. Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

U.S. Fish & Wildlife Service
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, PA 16801

*Please note, this list may not be exhaustive and, depending on the specific project, additional parties may need to be contacted. PEC offers this list as a starting point.

CONTACT

Pennsylvania Environmental Council
2124 Penn Avenue, 2nd Floor
Pittsburgh, PA 15222
412-481-9400
www.pecpa.org