



LOW IMPACT HYDROPOWER CERTIFICATION HANDBOOK

2nd Edition

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DEDICATION

This 2nd Edition of the LIHI Certification Handbook is dedicated to Julie Keil, who gave us her inspirational leadership for all too short a time. To learn more about Julie's life and the Julie A. Keil Women in Hydro Scholarship Fund established in her honor, please visit www.juliekeil.com

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ACKNOWLEDGEMENTS

This document was produced by Governing Board members, staff, and consultants to the Low Impact Hydropower Institute. The primary authors are Dr. Michael J. Sale, Executive Director, Ms. Dana Hall, Deputy Director, and Ms. Julie Keil, past LIHI Chair. Julie Keil and John Seebach were major contributors during the development of the revised criteria that are the core of this new Handbook. LIHI's Technical Committee (Kenneth Kimball, Tara Moberg, Glenn Cada, Shawn Seaman, and Elizabeth Ablow) provided critical guidance and review in the production stages of the Handbook. Executive management oversight was provided by a succession of Chairs of the LIHI Governing Board: Richard Roos Collins, Julie Keil, and John Seebach.

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PREFACE

The Low Impact Hydropower Certification Criteria and other Certification Program requirements are determined by the Institute's Governing Board. LIHI, in its sole and reasonable discretion, reserves the right to alter the Certification Criteria and other Certification Program elements as needed with reasonable notice to certificate holders.

This document is a major revision of the Low Impact Hydropower Institute's Certification Handbook, hence we are referring to it as "2nd Edition." The certification processes used by LIHI did not substantially change between 2000 and 2014. Beginning in 2006 significant effort was invested in exploring potential revisions of the LIHI criteria, but no changes in criteria were approved until late in 2014. In October 2014, at the LIHI annual meeting in Seattle, Washington, the LIHI Governing Board approved revised certification criteria. Those revisions are being implemented through this new edition of the handbook.

The reasons for changing the LIHI certification process include the following:

- The LIHI bylaws require the Institute to conduct an annual review of the certification program to ensure that it meets its goals and objectives, striving for continuous improvement in our products.
- With the exception of the current watershed protection criterion and some changes in eligibility that occurred in 2009, LIHI has not substantially changed the certification approach since the Program's inception in 2000.
- As renewable energy markets are evolving significantly in response to climate change and the need for stronger greenhouse gas mitigation actions, the criteria need to stay up-to-date with environmental science, technology, and policy.
- Environmental management concepts and regulatory requirements for hydropower are also evolving, and the criteria need to be responsive to these changes.
- Consumer expectations and standards for eco-labeling have continued to develop and mature in the time since LIHI was first established.

Some elements of the LIHI certification approach have not changed. For example, the structure of criteria, goals, and standards is very similar to previous versions. The new criteria cover essentially the same environmental topics as before are: flows, water quality, fish passage, watershed protection, threatened/endangered species, cultural resources, and recreation. Each criterion is evaluated on a pass/fail basis, and 100% of the criteria must be satisfied. No changes have been made in the eligibility requirements for certification, except that dam removal recommendations are now part of eligibility rather than a criterion.

The most substantive differences in the new 2nd Edition Handbook are in an expanded list of alternative standards by which each criterion can be satisfied, a new emphasis on the scientific basis for agency recommendations and mitigation, and in new opportunities for longer terms of certificates. The list of alternative standards is intended to allow both existing routes to satisfy criterion goals and new routes. These changes are responsive to feedback that has been received from a range of stakeholders.

Other differences in the new approach are in language and in information structure. The questionnaire that was used previously for LIHI certification has been replaced with a series of matrix-type checklists and associated supporting information. There are more ways to satisfy the goal of each criterion, implemented through a set of alternative standards. The first standard for each criterion is always a “no impact,” or non-applicability, standard. There is also a “PLUS” standard for each criterion that rewards applicants by adding extra years to the term of their certification where they are making substantial investments in the environment around their facilities. Extended terms resulting from the PLUS standards are limited to no more than 10 years total, including the original five plus three more years for the first PLUS standard that is satisfied, and two more years for a second PLUS standard satisfied.

In addition to the approval of restructured criteria in October 2014, other improvements have been made in the information required in a LIHI certification application. For example, the original questionnaire is replaced by a three-part application that consists of: (1) the facility description, (2) a “matrix of standards” selected to satisfy the goals for each criterion, and (3) supporting information relevant to each standard selected. There is also a new emphasis on designating specific “zones of effect” around each facility where physical impact mechanisms differ and different standards may apply. This new spatial resolution should make the application of LIHI criteria more effective in evaluating the complete environmental footprint of a facility on the environment.

The LIHI bylaws require that the LIHI certification program be reviewed annually to ensure that the Institute is meeting its goals and objectives. This annual review includes eligibility requirements, as well as criteria, application procedures, certification fees, and all other aspects of the program. In 2014, LIHI distributed a survey to a broad set of stakeholders, asking questions about both criteria revision and program eligibility.

Other than moving the issue of dam removal from being a criterion to being an eligibility requirement, the LIHI Governing Board has not yet approved any changes in eligibility. For example, LIHI still does not accept applications for facilities that are located outside of the United States. Similarly, the current LIHI criteria are not yet considered sufficient to evaluate facilities involving construction of new dams or diversions, pumped-storage facilities, or new facilities using marine and hydrokinetic technologies; therefore, those types of facilities cannot apply for certification. At a future date, the Governing Board may revise the current eligibility provisions to allow hydropower facilities outside of the United States to apply, so that owners of those facilities may participate in renewable energy markets in the U.S. Other changes may also be considered in 2016 or later, after the revised criteria described in this edition of the Certification Handbook have been fully implemented and their performance has been evaluated.

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1. INTRODUCTION

The Low Impact Hydropower Institute (“Institute” or “LIHI”) is a nationally recognized, independent, 501(c)(3) non-profit organization that sets criteria for characterizing hydropower facilities as “low impact” and operates a program to certify dams that meet these criteria. LIHI’s Certification Program (certification program) helps reduce the environmental impacts of hydropower generation by creating a credible and accepted standard for electricity consumers to use in evaluating hydropower.

The Low Impact Hydropower Certificates issued by LIHI help define hydropower’s eligibility in renewable energy markets. They also provide positive recognition and economic reinforcement to hydropower owners who take steps to improve their facilities and invest in the local environment. A LIHI-certified hydropower facility is one that is sited, designed, and operated to be compatible with environmental resources. LIHI has been in operation since 2000, during which time it has certified more than 170 hydropower facilities in 23 states. The founding of LIHI is described by Grimm (2002). A description of the governance of LIHI and other information on the Institute can be found on the LIHI website: www.lowimpacthydro.org.

1.1 Purpose of this Handbook

This 2nd edition handbook is written for the audience of applicants for LIHI certification, recertification applicants, and others who want to understand how the certification program works. The Certification Handbook describes the current process that is used by LIHI to certify hydropower facilities that are “low impact.” It also provides guidance on how to apply for LIHI certification. Through the operation of the certification program, the Institute certifies hydropower facilities that seek to minimize the harmful impacts of their operations as compared to other hydropower facilities based on objective criteria.

To be recognized as “low impact,” a hydropower facility must pass LIHI’s eligibility requirements, and then satisfy eight criteria associated with environmental resources (see Section 3). A hydropower facility that satisfies the certification program criteria will be certified as a Low Impact Hydropower facility, and will be offered a limited-time license to use the LIHI certification mark according to LIHI’s terms and conditions, which will enable the marketing of the facility’s energy output as “LIHI Certified” to consumers and purchasers.

1.2 Organization of the Handbook

This Handbook is organized into five main sections:

Section 2 -- the LIHI Eligibility Requirements,

Section 3 -- the LIHI Certification Criteria,

Section 4 -- the Application Process,

Section 5 -- the Certification Marketing Guidelines and Compliance, and

Section 6 -- Recertification.

Additional technical information is provided in the appendices. The rationale for separating information in the appendices from the main body of the document is that the contents of appendices may be subject to more frequent updates than the main body. Appendix A provides a comprehensive list of the definitions of terms and acronyms, as they are used in this Handbook. Appendix B provides a detailed explanation of necessary application materials, including supporting information that demonstrates compliance with specific standards and criteria (Note: examples of application packages will be added to the LIHI website “How to apply” page as they become available). Appendix C contains the current Fee Schedule for the certification program.

Throughout the text of the Certification Handbook, key terms that require definition and further explanation are highlighted by underlining. Definitions for these key terms are provided in Appendix A. Defined terms that appear in titles are not highlighted.

2. ELIGIBILITY REQUIREMENTS

LIHI certification of low-impact facilities is limited to certain types of hydropower facilities located in the United States. The following sections describe the current eligibility requirements for certification.

2.1 Facilities Eligible for LIHI Certification

In general, conventional hydropower facilities located within the United States are eligible to apply for LIHI certification, as long as it did not involve construction of new dams or diversions after August 1998. Facilities that do not involve a dam or diversion are not subject to the August 1998 construction date limitation.

2.1.1 Existing and New Facilities

“Existing” hydropower facilities, meaning those that have powerhouses located at existing dams or diversions and that were generating electricity as of August 1998, are eligible to apply for LIHI certification. “New” hydropower facilities, meaning those that added a new powerhouse at a previously non-powered dam or one that increased power generation capacity after August 1998, are also eligible for LIHI certification, as long as the dam or diversion structure associated with the facility was in existence in August 1998. New hydropower plants that are eligible at existing dams include those that have added generating equipment, efficiency upgrades to existing equipment, or other means of generation, provided the added or increased capacity:

- was created by modifications or additions to the existing facility (that is, modifications or additions to the existing dam, and/or if applicable, existing powerhouse) and did not require or include any new dam or other diversion structure;
- did not include or require a change in water flow through the facility that worsened conditions for fish, wildlife, or water quality (for example, operations did not change from run-of-river to peaking); and
- did not occur at an existing dam that had been recommended for removal or decommissioning by a resource agency. Exceptions to this rule will be considered but only when it is shown that the changes in the facility resulted in improvements to fish, wildlife, or water quality protection, especially those issues raised in removal recommendations.

Hydropower facilities at dams or diversions that have been reconstructed at the site of previously existing dams may be considered for certification on a case-by-case basis.

2.1.2 Pre-operational Facilities

“New” hydropower facilities that are not generating electricity at the time of their certification application (i.e., pre-operational facilities) may be eligible for consideration, provided that the Federal Energy Regulatory Commission (FERC) license or exemption, or similar authorization addressing environmental impacts, has been issued and that there are no pending appeals or litigation associated with that authorization. In such cases, the applicant must acknowledge that LIHI may suspend or revoke the certification should the impacts of the facility, once operational, cause non-compliance with the certification criteria. For such pre-operational certification, the certification term will begin when the

new power plant begins generation. Applicants will be charged a fee premium for pre-operational certification (see Appendix C, LIHI Fee Schedule).

2.2 Facilities Not Eligible for LIHI Certification

The following types of hydropower facilities are not currently eligible for LIHI certification:

- Facilities associated with dams that have been recommended for removal by a resource agency. If a natural resource agency has concluded that a dam should be removed and has documented their recommendation in an official, publically available report or proceeding, the hydroelectric facilities associated with that dam are not eligible for LIHI certification and owners of those facilities should not apply (see Section 2.1.1 for possible exceptions);
- Hydropower facilities that are located at a dam or diversion that was constructed after August 1998 or that would require construction of a new dam or diversion that does not currently exist.
- Pumped-storage hydropower facilities;
- Hydropower facilities located outside of the United States; and
- Facilities located in marine environments or using hydrokinetic hydropower technologies.

3. CERTIFICATION CRITERIA

Applications for low-impact certification are evaluated using a consistent, hierarchical set of eight criteria, goals, and standards. All criteria and their respective goals must be satisfied by one or more standard, but the standards are designed to be flexible enough to be applicable to the wide range of conditions that can occur in river systems and at hydropower facilities. If any of the criteria are not satisfied, the facility cannot be certified as low impact.

3.1 Structure of Criteria, Goals, and Standards

The key element of the LIHI certification process is a hierarchical set of criteria, goals for each criterion, and alternative standards by which each criterion can be satisfied. Criteria are defined for areas of potential social and environmental impact associated with hydropower facilities. Goal statements are provided for each criterion to define the purpose or objective that must be satisfied. There are eight criteria and supporting goal statements, all of which must be met for a facility to qualify as low impact:

- Ecological Flow Regimes
- Water Quality Protection
- Upstream Fish Passage
- Downstream Fish Passage and Protection
- Watershed and Shoreline Protection
- Threatened and Endangered Species Protection
- Cultural and Historic Resource Protection
- Recreational Resources

For each criterion and supporting goal statement, a set of alternative standards were developed to provide a comprehensive menu of alternatives by which the criterion goal can be met. Each set of alternative standards are prefaced by an introduction that includes a short, generalized statement of how they are to be applied. The introduction also includes any requirements that apply to all of the standards and that are critical to satisfying the goal for that criterion. The introduction is followed by three to four alternative methods of satisfying the criteria. The order of the alternative standards is consistent for all criteria.

The first standard for each criterion is a “Not Applicable or *De Minimis* Effect (NA/DE)” standard that recognizes that some types of facilities either do not have impacts on the respective goal or impacts to that goal would be so minimal that they would be difficult to measure. This first standard is designed to be a streamlined way to satisfy a particular criterion where circumstances justify it. Facilities that satisfy the first standard for all eight criterion will be rewarded in the form of a longer term (10-year) LIHI certificate and reduced certification review and annual fees (see Section 4.4). An example of a project type that might qualify for NA/DME standards would be a conduit facility that does not discharge back into a natural waterway.

For most criteria, the second standard, if applicable, requires meeting the latest and most stringent science-based recommendation of the relevant state or federal resource agencies whose mandates are

to protect the resources the criteria are designed to evaluate. It is the responsibility of the applicant to explain in their application how the requirement of a science-based recommendation is satisfied through references to the methods, procedures, and studies used to develop the recommendations.

For all criteria, to accommodate situations where resource agency recommendations do not exist, other standards can be used to meet the same goals through demonstrated best practices and technologies.

The numbering and order of alternative standards is important. With the exception of the PLUS standards, an applicant should attempt to satisfy lower numbered standards first, before applying higher numbered standards. Applying higher numbered standards implies that lowered numbered standards are not possible or appropriate, which may or may not be the case. Applicants should consult with LIHI staff early in the application process to determine which standards are most appropriate for specific facilities (see Section 4.1 on processing steps).

In addition to the alternative standards available to satisfy a criterion's goal, each criterion also includes a "PLUS" standard, which offers a reward in the form of a longer term of the LIHI certificate for facilities that demonstrate substantial extra efforts in environmental and social mitigation, enhancement, and restoration. Some examples include deploying advanced technologies, science-based adaptive management, basin-scale redevelopment strategies, and supporting a watershed enhancement fund. An applicant will earn an extra three years of term for the first PLUS standard that is applied, and another two years for each additional PLUS standard applied, up to a maximum term of 10 years. The application for PLUS standards should be thoroughly discussed with LIHI staff during the intake review and will have to be approved during the certification review and subsequent decision process (see Section 4.2 for further details on the process).

3.2 Definition of Criteria, Goals, and Standards

The alternative standards available for satisfying the criterion goals differ by criterion, as described below. The applicant is responsible for identifying which standards apply to their facility and for documenting how those standards apply in each case. The specific information required to justify each standard is explained in Appendix B. The goals of each of the criteria must be satisfied everywhere that they are affected by facility operations, even though different standards may apply in different locations (see Section 4.1.1 where zones of effect are defined).

3.2.1 Criterion A - Ecological Flow Regimes

Goal: The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.

Introduction to Standards: The applicant shall define all river reaches where stream flows are altered by the facility (for example, the tailwater below a powerhouse, bypassed reaches between a dam and powerhouse, and river reaches immediately above the Facility where flows are linked to Facility operation). In all locations, appropriate flow management should apply an ecosystem-based approach that supports fish and wildlife resources by considering base flows, seasonal variability, high-flow pulses, short-term rates of change, and year-to-year variability. In addition, to pass the flows criterion, the

applicant shall demonstrate compliance with at least one of the following standards (Standards A-1 through A-4):

- **STANDARD A-1. Not Applicable/De Minimis Effect:** The Facility operates in a true run-of-river operational mode and there are no bypassed reaches or water diversions associated with the Facility; or the facility is located within an existing water conduit that does not discharge into natural waterways; or
- **STANDARD A-2. Agency Recommendation:** The flow regime at the Facility was developed in accord with a site-specific, science-based agency recommendation; or
- **STANDARD A-3. Limited Storage:** In the absence of applicable agency recommendations and for facilities with limited storage capacity, the flow regime complies with a well-documented, regionally accepted instream flow policy (sometimes referred to as a standard-setting or desktop technique); or
- **STANDARD A-4. Site-Specific Studies:** In the absence of an applicable agency recommendation, the flow regime at the facility was developed on a site-specific basis, using a well-documented habitat evaluation technique or a science-based flow-ecology model.
- **STANDARD A-PLUS:** In addition to satisfying one or more of the standards above, the Facility is operating an adaptive management program to regularly evaluate and adjust the operation of the Facility with respect to flows and habitat conditions, or has implemented significant, non-flow habitat enhancements (e.g., structural improvements leading to river restoration) with demonstrated positive net benefits to fish and wildlife resources affected by the facility.

3.2.2 Criterion B - Water Quality

Goal: Water Quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions.

Introduction to Standards: The applicant shall define all waterbodies where water quality is directly affected by the facility, including those affected areas outside the facility boundary. The applicant shall demonstrate compliance for each of these waterbodies with the appropriate state/provincial or federal water quality standards. In all cases, if any waterbody directly affected by the facility has been defined as being water quality limited (for example, on a list of waters with quality that does not fully support designated uses), the applicant must demonstrate that the facility has not contributed to the substandard water quality in that waterbody. In addition, to pass the water quality criterion, the applicant shall demonstrate compliance with at least one of the following standards (B-1 through B-3):

- **STANDARD B-1. Not Applicable/De Minimis Effect:** The facility does not alter the physical, chemical, or biotic water characteristics necessary to support fish and wildlife resources or human water uses (e.g., water supply or recreation); or
- **STANDARD B-2. Agency Recommendation:** The facility is in compliance with all water quality conditions contained in a science-based agency recommendation providing reasonable assurance that water quality standards will be met for all waterbodies that are directly affected by the facility (for example, a recent Water Quality Certification issued pursuant Section 401 of the Clean Water Act). Such recommendations, whether based on a generally applicable water

quality standard or one that was developed on a site-specific basis, must include consideration of all water quality components necessary to preserve healthy fish and wildlife populations, human uses and recreation; or

- **STANDARD B-3. Site-Specific Studies:** In the absence of an applicable agency recommendation specific to the facility, the facility owner demonstrates that it is in compliance with the quantitative water quality standards established by the state or other regulatory authority that support designated uses pursuant to the federal Clean Water Act or other applicable statute in the facility area and in the downstream reach.
- **STANDARD B-PLUS:** In addition to satisfying one or more of the standards above, the facility has deployed advanced technology to enhance ambient water quality or is operating an adaptive management program to regularly evaluate the operation of the project with respect to enhancing water quality.

3.2.3 Criterion C - Upstream Fish Passage

Goal: The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy, sustainable fish and wildlife resources in areas affected by the facility.

Introduction to Standards: The applicant shall list all migratory fish species (for example, anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the Facility. Maintenance of upstream passage sufficient to support sustainable populations of these migratory species will be demonstrated by compliance with one of the fish passage standards. To pass the upstream fish passage criterion for LIHI certification, the applicant shall demonstrate compliance with at least one of the following standards (C-1 through C-4):

- **STANDARD C-1. Not Applicable/De Minimis Effect:** The facility does not create a barrier to upstream passage, or there are no migratory fish in the vicinity of the facility and the facility is not the cause of extirpation of such species if they had been present historically; or
- **STANDARD C-2. Agency Recommendation:** The facility is in compliance with science-based fish passage recommendations from appropriate resource agency(ies) which have been issued for the facility and which include provision for appropriate monitoring and effectiveness determinations; or
- **STANDARD C-3. Best Practice/Best Available Technology:** In the absence of applicable resource agency fish passage recommendations, the facility includes well-designed, well-operated upstream fish passage technologies that are appropriate for all migratory fish species that occur in the area affected by the facility. These technologies should enable safe, timely and effective fish passage at all of the barriers associated with the facility and include provisions for appropriate monitoring and effectiveness determinations; or
- **STANDARD C-4. Acceptable Mitigation:** In the absence of science-based fish passage recommendations from a resource agency and in lieu of upstream fishways at the facility, the applicant employs approved, alternative mitigation measures that will support all migratory fish populations affected by the facility. These measures could be in-kind mitigation or out-of-kind mitigation. In all cases, resource agencies must approve the mitigation measures and must have

determined that the total benefits provided by such mitigation measures equal or exceed the benefits of providing upstream passage at the facility, measured in terms of reproductive success (for example, numbers of fish produced) or area of suitable fish habitat provided (compared to that lost upstream of the facility barrier).

- **STANDARD C-PLUS:** In addition to satisfying one or more of the standards above, the facility has deployed an advanced technology, the primary purpose of which is to increase upstream fish passage, or is part of a basin-scale redevelopment strategy, and is operating an adaptive management program to regularly evaluate the performance of new technology. The adaptive management program should include monitoring of the overall fish passage effectiveness and correction of deficiencies in effectiveness.

3.2.4 Criterion D - Downstream Fish Passage and Protection

Goal: The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by Facility operations. All migratory species are able to successfully complete their life cycles and to maintain healthy, sustainable fish and wildlife resources in the areas affected by the Facility.

Introduction to Standards: The applicant shall list all fish species (for example, riverine, anadromous, catadromous, and potamodromous) that occur now or have occurred historically in the area affected by the Facility. To pass the downstream fish passage and protection criterion for LIHI certification, the applicant shall demonstrate compliance with at least one of the following standards (STANDARD D-1 through STANDARD D-4):

- **STANDARD D-1. Not Applicable/De Minimis Effect:** The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility; if migratory fish had been present historically, the Facility is not responsible for extirpation of such species; the Facility does not contribute adversely to the sustainability of riverine fish populations or to their access to habitat necessary for the completion of their life cycles, or
- **STANDARD D-2. Agency Recommendation:** The Facility is in compliance with a science-based resource agency downstream fish passage or fish protection recommendations, which may include provisions for ongoing monitoring and effectiveness determinations, that have been issued for the Facility; or
- **STANDARD D-3. Best Practice/Best Available Technology:** In the absence of science-based downstream fish passage or protection recommendations from a resource agency, the Facility includes well-designed, well-operated downstream fish passage technologies that are appropriate for the migratory species that occur in the area affected by the Facility, and technologies that minimize loss of riverine species. Operating plans for such fish passage technologies must include provisions for ongoing monitoring and effectiveness determinations; or
- **STANDARD D-4. Acceptable Mitigation:** In the absence of science-based downstream fish passage recommendations from a resource agency and in lieu of downstream fish passage and protection technologies at the Facility, the applicant employs approved mitigation measures that will support all populations of migratory and native non-migratory fish affected by the

Facility operations. These measures might include in-kind mitigation or out-of-kind mitigation. In all cases, resource agencies must approve the alternative mitigation measures and must have determined that the total benefits provided by such mitigation measures are likely to equal or exceed the benefits of installing and operating downstream passage and protection technologies, measured in terms of reproductive success (for example numbers of fish produced) or areas of suitable fish habitat provided. In addition, such mitigation measures must include continued monitoring.

- **STANDARD D-PLUS:** In addition to satisfying one of the standards above, the Facility has deployed an advanced technology, the primary purpose of which is to improve downstream fish passage or reduce the losses of riverine fish, or is part of a basin-scale redevelopment strategy and is evaluating the technology in the context of an adaptive management program.

3.2.5 Criterion E – Shoreline and Watershed Protection

Goal: The Facility has demonstrated that sufficient action has been taken to protect, mitigate and enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.

Introduction to Standards: To pass the watershed protection criterion for LIHI certification, the applicant shall demonstrate compliance with at least one of the following standards (E-1 through E-3):

- **STANDARD E-1. Not Applicable/De Minimis Effect:** There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the facility; or the facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities; or
- **STANDARD E-2. Agency Recommendations:** The facility is in compliance with all government agency recommendations in a license or certificate, such as an approved shoreline management plan or equivalent regarding protection, mitigation or enhancement of shoreline surrounding the project; or
- **STANDARD E-3. Enforceable Protection:** The facility demonstrates that, on lands abutting project waters under its direct or indirect ownership, there is an approved and legally enforceable shoreline buffer or equivalent watershed land protection plan for conservation purposes (to protect water quality, aesthetics and low-impact recreation). In the absence of an existing protection plan, the Facility formally commits as a condition of its LIHI certification to protect and not develop such properties under their direct or indirect ownership for the term of its LIHI certification.
- **STANDARD E-PLUS:** To the extent the Facility owner directly or indirectly owns lands surrounding the facility and its riverine zones, the Facility has an approved and legally enforceable shoreline buffer or equivalent watershed land protection plan for ecological land protection of water quality, aesthetics, and low-impact recreation values. The buffer zone must be dedicated for conservation purposes, and must also be vegetated similarly to adjacent natural lands. In addition, the buffer zone must include at least 50% of the undeveloped

shoreline around the reservoir, or a reservoir shoreline equivalent along its riverine zones. Alternatively, the Facility has established a watershed enhancement fund for land management within the Facility's watershed that is designed to achieve the ecological and recreational equivalent of land protection that would have been achieved by dedicating an ecologically effective buffer zone around more than 50% the reservoir

3.2.6 Criterion F - Threatened and Endangered Species Protection

Goal: The Facility does not negatively impact listed species.

Introduction to Standards: To pass the Threatened and Endangered Species criterion for LIHI Certification, the applicant shall demonstrate compliance with at least one of the following standards. Facilities shall not have caused or contributed in a demonstrable way to the extirpation of a listed species. However, a facility that is making significant efforts to reintroduce an extirpated species may pass this criterion.

- **STANDARD F-1. Not Applicable/De Minimis Effect:** There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there; or
- **STANDARD F-2. Finding of No Negative Effect:** There are listed species in the area, but the facility has been found by an appropriate resource management agency to have no negative effect on them, either recently or in the past; or
- **STANDARD F-3. Recovery Planning and Action.** The facility is in compliance with relevant conditions in the species recovery plan, with relevant conditions in an incidental take permit or statement, biological opinion, habitat conservation plan, or similar government document and the incidental take document and/or biological opinion issued relevant to the facility was designed to be a long-term solution for protection of the listed species; or
- **STANDARD F-4. Acceptable Mitigation:** If a listed species has been determined to be present by an appropriate resource agency after the establishment of environmental requirements at the Facility, and no incidental take permit or statement, biological opinion, habitat conservation plan, or similar government document relevant to the facility exists, and the facility is implementing significant, agency-approved measures to avoid or minimize the impact of the Facility on that newly listed species.
- **STANDARD F- PLUS:** The facility has established an enforceable agreement with resource agencies to operate the facility in support of rare and endemic species, is implementing proactive measures to substantively minimize impacts on species which are at risk of becoming listed species in the vicinity of the facility in the future, or the facility is a significant participant in a species recovery effort.

3.2.7 Criterion G - Cultural and Historic Resource Protection

Goal: The Facility does not inappropriately impact cultural or historic resources that are associated with the Facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.

Introduction to Standards: To pass the Cultural Resources criterion for LIHI Certification, the applicant shall demonstrate compliance with either the G-1 or G-2 standards:

- **STANDARD G-1. Not Applicable/De Minimis Effect:** There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past; or
- **STANDARD G-2. Approved Plan:** The facility is in compliance with approved state, provincial, federal, and recognized tribal plans for protection, enhancement, or mitigation of impacts to cultural or historic resources affected by the facility.
- **STANDARD G-PLUS:** The applicant has made a substantial commitment to restoring one or more significant cultural or historical resource in the vicinity beyond what is required in existing plans, such as a Historic Resources Management Plan; or the Facility has created a significant new educational opportunity about cultural or historical resources in the area, and has contractual obligations that guarantee that this opportunity will exist for the duration of the LIHI certification.

3.2.8 Criterion H - Recreational Resources

Goal: The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.

Introduction to Standards: To pass the recreation criterion for LIHI certification, the applicant shall demonstrate compliance with at least one of the following standards. In all cases, the applicant shall demonstrate that flow-related recreational impacts are mitigated to a reasonable extent in all zones where there is flow-related recreation. Where there is recognized, flow-related recreational use, the facility shall provide the public with relevant and up-to-date information on reservoir levels and river flows, preferably real-time updates. It is understood that recreational activities must be consistent with the assurance of reasonable safety of employees and the public, and with critical infrastructure protection dictated by state or federal authorities.

- **STANDARD H-1. Not Applicable/De Minimis Effect:** The facility does not occupy lands or waters to which the public can be granted access and does not otherwise impact recreational opportunities in the vicinity of the facility; or
- **STANDARD H-2. Agency Recommendations:** If there are comprehensive resource agency recommendations for recreational access or accommodation (including recreational flow releases) on record, or there is an enforceable recreation plan in place, the Facility demonstrates that it is in compliance with those; or
- **STANDARD H-3. Assured Accessibility and Use:** If agency recommendations and an enforceable recreation plan are not in effect, the facility demonstrates that it has been and will continue to be responsive to reasonable public interest group requests for adequate public access to land associated with the facility, to the reservoir and downstream reaches, and to appropriate recreational water flows and levels, without fees or charges.
- **STANDARD H-PLUS:** The Facility has created significant new public recreational opportunities in

the area of the Facility beyond any otherwise required by agencies, such as campgrounds, whitewater parks, boating access facilities and trails, which opportunities do not create unmitigated impacts to other resources, beyond those required as a part of the Facility's license.

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4. APPLICATION PROCESS

The LIHI certification application process is designed to evaluate the impacts of hydropower facilities in a manner that is as fair and efficient as possible. The application process usually takes several months to complete from initial consultation through final certification decision. LIHI uses external, independent application reviewers in the evaluation of applications. The process is intended to be consistent in approach, despite the great variety in characteristics that are unique to each applying facility. The process is also intended to be flexible enough to scale the information requirements to the relative risks of environmental effects from a facility. The Institute is committed to broad stakeholder involvement and public participation, and though complexities and participation from entities external to LIHI can slow the process down, LIHI remains committed to processing applications in as prompt a fashion as possible.

The application process for LIHI certification involves the following basic steps:

- Pre-application consultation between applicant and LIHI staff (optional and no cost)
- Preparation and submittal of a draft application
- Intake review of draft application
- Preparation and submittal of a final application
- Certification review
- Preliminary certification decision
- Certificate issuance

The relations among the processing steps and the actors responsible for each are shown in Figure 4-1. An application is not complete until it is accepted by LIHI staff at the beginning of the Certification Review step and payment of the application review fee has been received. Each of the above steps of the application process is described more fully in the sections below. A recommended table of contents for a certification Application Package, illustrating the organization of an application, is provided in Appendix B.

4.1 Contents of an Application Package

An application package for LIHI certification must contain the following components (Intake reviews do not require some components, as noted):

- Facility Description
- Standards Matrices
- Supporting Documentation for Standards
- Sworn Statement and Waiver of Liability (not required for Intake Reviews)
- Contacts Form, including contacts for compliance and billing
- Payment of Applicable Fees

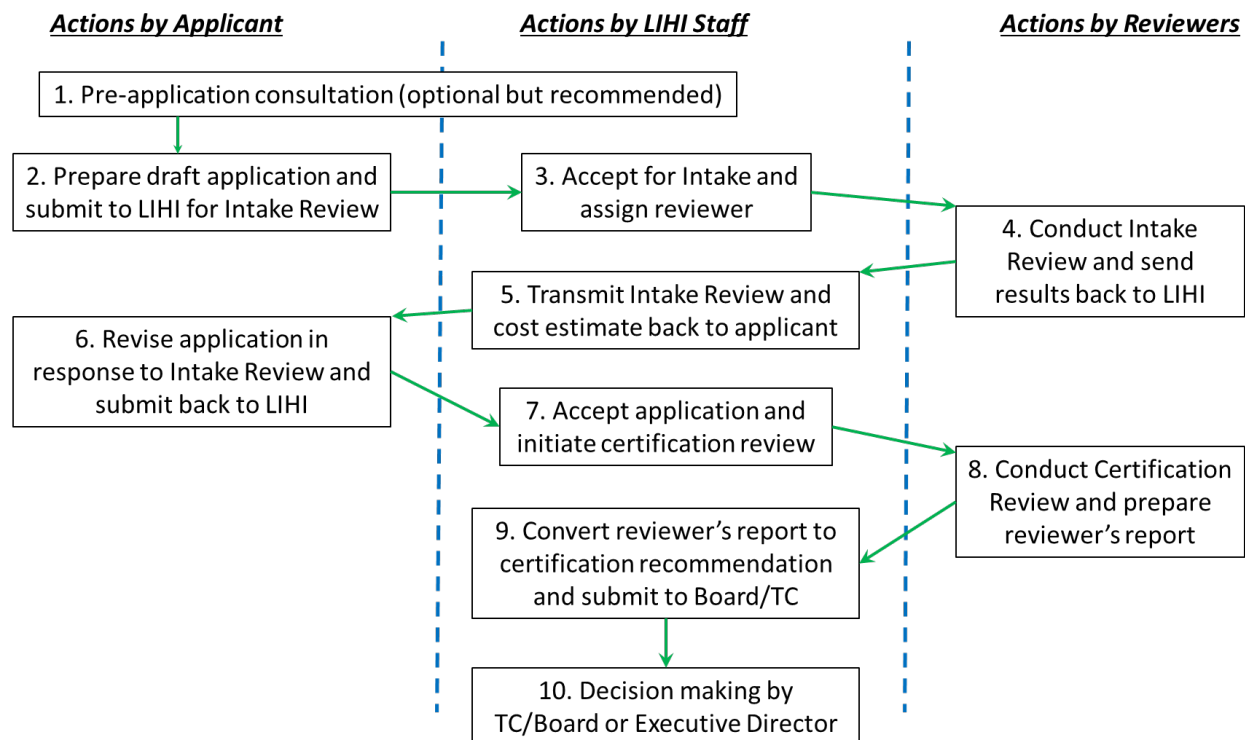


Figure 4-1. Flow Chart of the Primary Steps in the LIHI Certification Process

***NOTE:** Materials provided to LIHI as part of a pre-application consultation with the Executive Director or during the Intake Review phase will be kept confidential, unless and until a complete certification application is submitted and public notice is made. Except in rare circumstances, all information submitted to LIHI and pertaining to a certification application provided to LIHI or its Executive Director will be available for public review and public access.

A LIHI application may also, at the choice of the applicant, include other optional materials which may serve to strengthen the applicant's case for certification. Optional materials may include: ISO 14000 certification or documentation of any Environmental Management System in place for the facility; current letters of support from resource agencies or other stakeholders; documentation of other environmental certifications pertinent to the facility; or information about, or summaries of, any relevant resource management plans, habitat conservation plans, biological operating plans, memoranda of understanding or other third party agreements pertinent to LIHI criteria.

4.1.1 Facility Description

The types of information required to describe a prospective hydropower facility, its operation, and its environmental setting are:

- Name of the Facility
- Location
- Facility Owner
- Regulatory Status
- Characteristics of the Power Plant
- Characteristics of the Dam or Diversion
- Characteristics of Reservoir and Watershed
- Hydrologic Setting
- Designated Zones of Effect
- Additional Contact Information
- Photographs of the Facility

More details on each of these information categories are provided in the table in Appendix B.2. These needs may be customized during the intake review process based on the site-specific characteristics of the facility and its environmental effects.

Most hydropower facilities are comprised of multiple parts or areas with different physical characteristics, such as impoundments, bypassed reaches, downstream regulated river segments, and sometimes upstream riverine segments where flows are regulated by agreement with upstream facilities. Examples of some types of facility designs are shown in Figures 4-3 and 4-4. The environmental effects of hydropower facilities can vary among these different parts of a facility. All of the LIHI criteria must be satisfied in all parts of the facility, but different standards may apply in different areas.

To evaluate the complete environmental footprint of a facility, LIHI strongly recommends that applications be organized around Zones of Effect (ZoEs). The concept of ZoEs accounts for the fact that the environmental effects of hydropower operate differently in different parts of a river system, such as a reservoir upstream of a dam, a bypassed reach between a dam and a powerhouse, or the tailwater of a powerhouse. Different standards may be more appropriate to different types of zones.

Applicants for certification should distinguish between ZoEs where possible and organize their applications accordingly. For instance, free-flowing, riverine reaches and impounded reservoirs where water levels and releases are controlled by a dam should be different ZoEs. Diversion structures and bypass conveyance structures create other types of zones that should be differentiated in the application process. If a facility owner has an enforceable agreement in place that regulates water inflows to their facility, then a specific ZoE for the riverine area upstream of the facility's impoundment should be designated and used solely to evaluate potential environmental effects of regulated flows above the facility.

If a facility owner has an enforceable agreement in place that regulates water inflows to their facility, then a specific ZoE for the riverine area upstream of the facility's impoundment should be designated and evaluated. Such upstream ZoEs are intended solely to evaluate potential environmental effects of regulated flows above the facility. Table 4-1 provides additional examples of how the ZoE concept may be applied for different criteria.

It is recognized that there are some facilities with complex designs and/or comprehensive settlement agreements for the entire facility that will be difficult or impractical to subdivide into ZoEs. Therefore, LIHI staff will work with applicants during the pre-application consultation and Intake review stages to find the best spatial approach for each application.

4.1.2 Matrix of alternative standards

The "Standards Matrix" is a summary of which of the alternative standards are to be used to satisfy each criterion (See Figure 4-2 for an example of a completed matrix). This matrix is a "check box" where an applicant records an 'x' or check mark (✓) inside each cell that applies. Unless the PLUS standard is chosen for a criterion, there should be only one standard checked off in each row of the matrix, but at least one standard must be selected to satisfy each criterion. An application must contain one such matrix for each of the zones of effect that are designated in the facility description.

Applicants must complete a Standards Matrix for each designated zone of effect; shaded cells indicate no such standard is available for that criterion. The alphabetic and numeric values at the left of the rows and top of the columns are to be used in referencing the supplemental information (Section 4.1.3). With the exception of the PLUS standard, alternative standards are referred to by number in the standards matrix because the names of the standards may differ from one criterion to another. The first standard will always be the "not applicable or *De Minimis* Effect" standard. In most cases, where that first box is checked in a row, there is no need

Facility Name: _____

Zone of Effect: _____

Criterion		Alternative Standards Applied				
		1	2	3	4	Plus
A	Ecological Flow Regimes		X			X
B	Water Quality			X		
C	Upstream Fish Passage			X		
D	Downstream Fish Passage				X	X
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection	X				
G	Cultural and Historic Resources Protection		X			
H	Recreational Resources			X		

Figure 4-2. Example of a Completed Standards Matrix

to consider other standards for that criterion. The last column in each row will always be for the PLUS

standard. There may be more standards for some criteria; where there are fewer options, the matrix cells are shaded to indicate no choice is available. Supporting information is to be referred to by the zone, criterion, and standard to which it relates. For example, information ‘1.A.2’ would refer to the justification for the check mark in the first zone of effect, Ecological Flow Regimes, and the agency recommendation applicable to that first zone.

All criteria must be evaluated for each designated ZoE (see Section 4 for applications), even when the Not Applicable/De Minimis standard applies (e.g., upstream passage out of an impoundment zone). This new approach ensures that a comprehensive examination of the complete footprint of a facility is conducted (e.g., water quality evaluated separately in riverine and impoundment zones or recreational access examined in all zones individually). The preferred method to summarize the standards selected for each ZoE is in a table or matrix of with rows for criteria and columns for standards (see Figure 4-2). , Figure 4-3 illustrates the use of ZoE for a typical hydropower facility, and Figure 4-4, for a typical diversion project. Table 4-1 explains more about how criteria and standards apply within ZoEs.

Table 4-1. Examples of How the Zones of Effect Concept May Be Applied, by Criterion.

<i>Criterion</i>	<i>Applicability</i>	<i>Comments</i>
<i>Flows</i>	Throughout designated zone	For impoundment zones, select the NA/DME standard, but describe reservoir management practices
<i>Water Quality</i>	Throughout designated zone	Note that water quality criteria may differ between riverine and reservoir zones
<i>Upstream Fish Passage</i>	At upstream end of zone and at other locations in the zone if there are other migratory barriers	Designated zones should be defined so that migratory barriers occur at the upstream end; select NA/DME for zones that do not contain barriers to upstream movement (e.g., impoundments and some tailwaters)
<i>Downstream Fish Passage</i>	Usually only at downstream end of zones that impede fish movement	Designated zones should be defined so that migratory barriers occur at the downstream end; select NA/DME for zones that do not contain barriers to downstream movement (e.g., most tailwaters)
<i>Watershed Protection</i>	Mostly for shoreline management and buffers around impoundments, but may also apply differently to buffer zones along river corridors	Note that with more complex, multi-dam applications, there may be different SMPs and different effects in each impoundment
<i>Threatened/Endangered Species</i>	Describe sensitive species and conservation actions as they vary in different zones	Use NA/DME standard in zones where there are no species requiring special protection
<i>Cultural Resources</i>	Associate sensitive resources, potential effects, and mitigation actions by zone	Use NA/DME standard in zones where there are no significant resources
<i>Recreation</i>	Associate recreation uses, accommodation, and accessibility by zone	Use NA/DME standard in zones where there are no significant resources

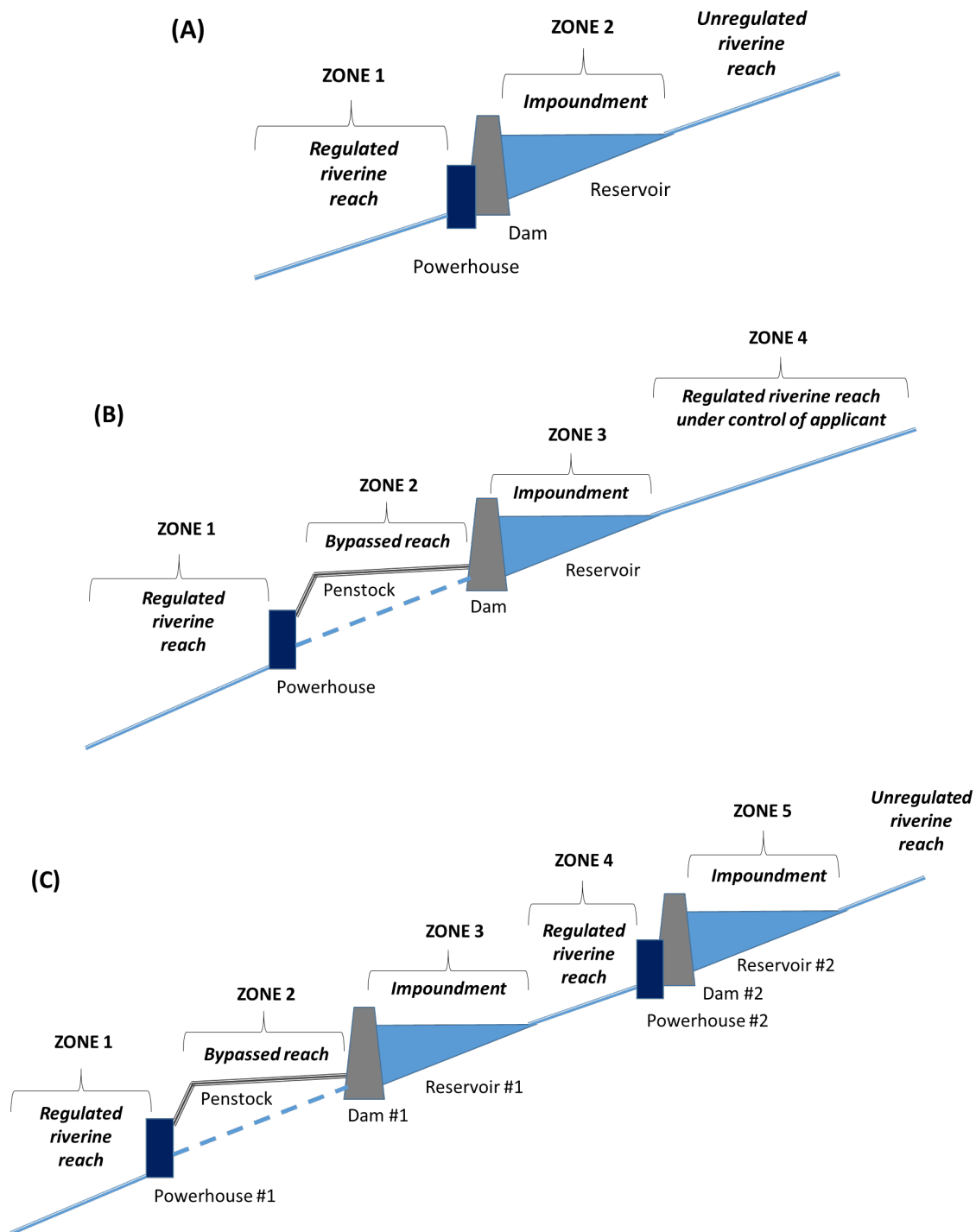


Figure 4-3. Conceptual Examples of Different Configurations of Zones of Effect for a Typical Hydropower Facility

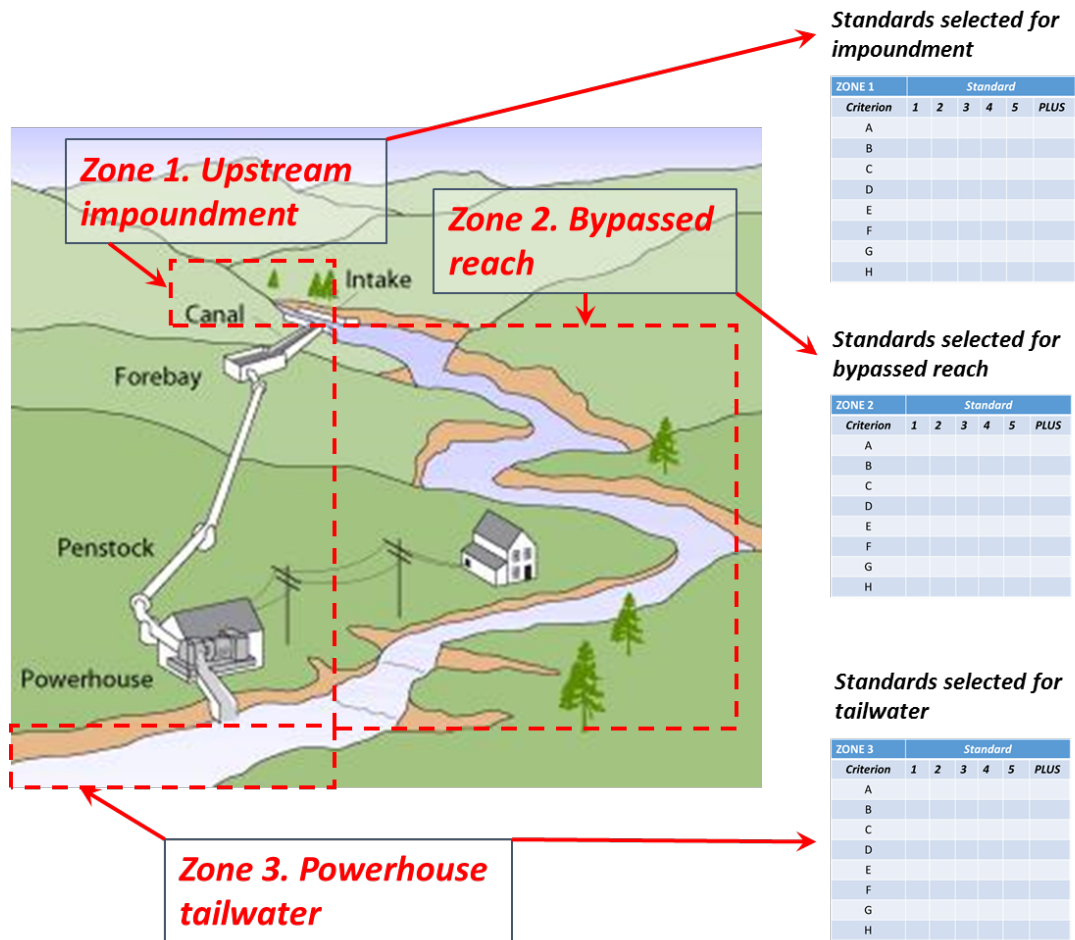


Figure 4-4. Conceptual Example of Zones of Effect for a Typical Diversion Project

4.1.3 Supporting information

The supporting information provided in an application explains the justification for selection of alternative standards and documents the specific methods or technology used. Appendix B-2 contains an extensive table that lists the types of information required for each of the 35 possible standards that may be selected. Note that by completing the Standards Matrix (Figure 4-2), the actual number of standards that must be explained will usually be between eight and ten.

4.1.4 Sworn Statement and Waiver of Liability

All certification applications must include a sworn statement from an officer or authorized representative of the facility owner attesting that the material presented in the application is true and complete. All certification applications must also include a waiver of liability signed by an officer of the applicant stating the following:

“The primary goal of the Low Impact Hydropower Institute’s Certification Program is public benefit. The Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions. The undersigned Applicant understands that if Certification of the applying facility is issued, the LIHI Certification Mark License Agreement (CMLA) must be signed prior to marketing the electricity product as LIHI Certified. The undersigned Applicant agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute’s Certification Program.”

For all applications for pre-operational certification of a “new” facility (see Section 4.5.3), the applicant must also acknowledge that the Institute may suspend or revoke the certification should the impacts of the project, once it is operational, fail to comply with the certification criteria. An example form for this requirement is provided in Appendix B.4.

4.1.5 Contacts Form

All applicant packages must provide contact information for authorized representatives of the facility owner, any consultant firms that are assisting the owner with the LIHI application process, facility operations contacts designated to handle annual compliance obligations and billing/accounts payable contacts. A form to provide this information is available in Appendix B of this Handbook.

The Application Contacts Form must be provided at the Intake Application phase, and must be updated any time a contact changes. If a facility is sold or transferred to a new owner entity, the new owner must assume all program obligations or the certification will be revoked. (See Assignment and Assumption form in Appendix B).

4.2 Processing Steps

All applicants should become familiar with the LIHI certification process and terminology described in this Handbook before starting the application process. Interested applicants should also familiarize themselves with the Certification Mark License Agreement (CMLA), the execution of which is a requirement before a certified facility may market the facility as LIHI Certified. (See www.lowimpacthydro.org/how-to-apply).

It is the responsibility of the applicant to produce a complete application package that addresses all of the information that explains how a facility satisfies all of the LIHI eligibility requirements and criteria. Usually, this preparation happens in two steps: a draft application that is used in an Intake Review, and a revised, or final, application that responds to reviewer comments resulting from the Intake Review.

While it is possible that an experienced applicant could produce a successful application by skipping the pre-application consultation and the Intake Review, LIHI has found that those two early steps are very useful in eliminating possible misunderstanding. LIHI staff and the reviewers are dedicated to helping applicants prepare successful applications and to keep the overall time for processing an application to a minimum; so it is recommended that applicants consult with them as much as possible.

4.2.1 Pre-Application Consultation

After a potential applicant has developed a general understanding of the LIHI certification process, including the requirements in the CMLA, they are encouraged to contact LIHI staff for an informal discussion of the specifics of their facility and how the LIHI process may apply to it. This brief pre-application consultation is confidential, and optional, and will be provided without charge. The purpose of the pre-application consultation is to help the potential applicant understand the certification program and how it applies to the specific facility, and to help the potential applicant provide the most complete and focused application possible. It also provides an early opportunity to identify potential conflicts between LIHI criteria and a prospective facility and to determine whether there are alternative ways to resolve such conflicts.

Any challenging policy or interpretation questions that are identified in this early consultation may be raised to the Governing Board for clarification, if necessary. The Board, if it so chooses, may decline to address such questions prior to being presented with a complete reviewer's report after the certification review. After pre-application consultation, the potential applicant may elect to proceed with the Intake Review step of the application process explained below, or they may decide not to proceed any further.

4.2.2 Intake Review

The Intake Review is a required first step in the development of a successful certification application. It is an informal and confidential opportunity to obtain guidance from LIHI staff on how to best organize an application and provide all of the information required to satisfy the LIHI criteria. For example, this guidance may include ideas on what appropriate ZoEs would be for a specific facility or which standards are appropriate for use. An Intake Review begins when an Applicant submits a draft application package and pays the intake review fee (see Section 4.4 and Appendix C). The contents of the draft Application Package are identified in Section 4.3. The end products of an Intake Review are: recommendations on how, and in rare cases whether, to proceed; comments and advice on revising the Application Package to enable successful certification; and a cost estimate for the processing fee required to complete the formal certification application.

Upon receipt of a draft application and payment of the intake review fee, the applicant will be notified by LIHI staff that an Intake Review process has begun. An independent application reviewer (LIHI Reviewer) will be assigned; this reviewer will examine the draft application to assess whether information is missing, and record initial substantive issues presented by the submittal. These issues may be discussed with the Executive Director and the applicant at any point during the intake review process. When the Intake Review is complete, the LIHI reviewer drafts a summary of the Intake Review findings and submits that to the Executive Director for approval, along with a list of missing information, a recommendation on how to proceed and an estimate for the fee required to complete the certification

application review. This notice from the Executive Director to the applicant is referred to as the Intake transmittal letter. LIHI staff makes every attempt to complete intake reviews within 60 days of the receipt of a draft application and intake review fee.

After the intake transmittal letter is sent, the applicant is responsible for revising and updating their application and making the decision on whether to proceed on to a full certification review. LIHI staff and reviewers will be available for further consultation during the application finalization – such continued interactions are advised to promote mutual understanding of the LIHI process and the particular application.

4.2.3 Certification Review

The next phase of the LIHI certification process after the intake review is the certification review. This is a public process, initiated upon receipt of a complete application package (See Section 4.3), and payment of the certification application review fee (See Appendix C). All application materials, including the Facility Description, the Standards Matrices, the Supporting Documentation for Standards and the Sworn Statement and Waiver of Liability (See Appendix B) are required for an application to be deemed complete and will be posted on the LIHI website for public review.

Materials provided to LIHI on a confidential basis as part of a pre-application consultation with the Executive Director or during the Intake Review phase will be kept confidential, unless and until a complete certification application is submitted and public notice is made. Except in rare circumstances, all information pertaining to a certification application provided to the Executive Director will be available for public review. The Executive Director has the discretion to keep information confidential, but this will only be done in rare and justified circumstances.

The certification application should be responsive to all of the missing information and clarification guidance from the intake review if application process is completed without delay. Once LIHI has received a revised application and payment of the certification review fee, the application package is deemed complete. The date that a package is designated as complete by LIHI staff is the date that will become the certificate Effective date, once a decision to certify has been made.

During the certification review phase, an independent application reviewer is assigned to the application by LIHI staff (if possible, this is the same reviewer who performed the intake review). The application reviewer examines the application package, conducts a search of public records associated with the facility, and makes any necessary inquiries (e.g., to resource agencies and local non-governmental organizations to resolve factual disputes, evaluate the veracity of claims, or make other inquiries as needed. The application reviewer also reviews and summarizes all public comments received (see Section 4.2.4).

Once the assigned reviewer has completed their review, the reviewer submits a written reviewer's report to the Executive Director, with a recommendation on whether the facility should be certified as Low Impact Hydropower or not, and an explanation outlining the basis for that decision. If the reviewer believes that facility-specific conditions (Conditions) are necessary in order to satisfy any criterion (see below), these Conditions are presented as recommendations in the reviewer's report.

The duration of this review period varies, depending on the availability of information, the revelation of unforeseen complexities and the cooperation of the Applicant and other stakeholders. LIHI's goal is to complete the formal application review within 120 days of receipt of a complete application package. When additional information is required beyond what is provided in the certification application, or additional time is needed to obtain recommendations from resource agencies, the 120-day goal for completing the certification review may have to be extended.

4.2.4 Public Comment Period

As a component of certification review, all applications are posted for public review and comment for a sixty (60) day period. The application materials, which include all components necessary to apply are posted on the Institute's website and LIHI staff issue an e-mail notification that the application is available for review. The distribution lists for LIHI email notices are organized by state, and typically include governmental and other stakeholder contacts, including those identified in the application. The email notice lists are open to any interested party who wishes to receive notice in a particular state by opting in at www.lowimpacthydro.org. LIHI makes no commitment to consider public comments that are received after the 60-day comment period closes. Governmental agency stakeholders can comment directly to LIHI on a certification application or active certificate at any time and will be given due consideration. The applicant will be given a reasonable period to respond to all comments. All comments and responses will also be posted on the Institute's website.

4.2.5 Certification Decision and Announcement

Certification decisions are to be made either by the full LIHI Governing Board, or where decision-making has been delegated by the Governing Board, by the LIHI Technical Committee. In certain circumstances, such as applications from small, non-controversial facilities that require no conditions and have received no public comments, decision-making authority may be delegated to the Executive Director by the LIHI Governing Board. In those less-complex cases, after a review of the reviewer's report and recommendation, the Executive Director will issue the certification decision, sometimes in consultation with the Technical Committee of the Governing Board and sometimes without. The Technical Committee of the Governing Board provides expertise and support to the decision making process. All Board members are offered a chance to participate with the Technical Committee for specific applications, when they so choose. Decisions are announced publicly and applicants and commenters are afforded an opportunity to appeal decisions, as described below.

Certification decisions are first announced in a preliminary form. The preliminary decision is announced publicly at the LIHI website, www.lowimpacthydro.org, along with the application reviewer's report and (if prepared) the report of the Executive Director. If the decision is to reject the certification application, the Executive Director will notify the applicant in writing of the decision and reasons for rejection. An announcement of the preliminary decision will be sent to all stakeholders in the regional notice list, as well as to all individuals or organizations that commented on the initial application package ("Commenter"). For a 30-day period after the preliminary decision announcement is circulated publicly, all Commenters and Applicants have the opportunity to request an appeal. Only those who submitted comments during the initial 60-day public comment period may appeal. Once the 30-day appeal period has passed, if there are no appeals requested, the Certification decision becomes final.

In the certification decision process, from time to time LIHI may find that facility-specific conditions are necessary in order to satisfy a criterion, and before a facility can be certified as low impact. Conditions may have a special annual fee associated with them, see Section 4.4.2 and Appendix C for more information. Applicants are provided with the language of any conditions in draft form using an informal process before the decision is announced publicly, and are offered the opportunity to provide input and request modifications to the condition language. LIHI will give due consideration of this informal input, however the final condition language is decided by the Executive Director.

If the application is approved for certification, no appeals (See Section 4.3 below) are filed within 30 days of the announcement decision, and the LIHI CMLA is executed, a LIHI certificate will be issued for a defined term and with any necessary facility-specific conditions.

4.3 Appeals of Certification Decisions

Preliminary certification decisions are subject to appeal by either an applicant or by a commenter who provided comments to LIHI during the 60-day public review period for the application. Appeals of facility-specific conditions that are placed on a certificate are also possible.

4.3.1 Appeal of Decision Granting Certification

If desired, any commenter who participated in the 60-day public review period may submit a letter to the Executive Director requesting an appeal, as long as that letter of request is received within 30 days of the public announcement of the certification decision. If an individual or organization did not comment on the initial application package within the 60-day public comment period, they may not file an appeal. An appeal request must include specific reasons why the appellant believes the hydropower facility does not meet one or more criteria. Requests for appeals may be submitted by email or by mail. The Executive Director will evaluate the request to determine if the party requesting the appeal has previously filed comments during the public comment period and if the letter adequately describes the basis for the appeal. If one of these two criteria is not met, the Executive Director will reject the appeals request. If both these criteria are met and the Executive Director determines that the appeal may proceed, the Executive Director will communicate this decision to the appellant and will provide the appellant with a detailed description of the appeals process. Before an appeal proceeds, the party requesting the appeal must pay a \$500 appeals fee.

4.3.2 Appeal of Decision Denying Certification

In the case of the rejection of a certification application, the applicant has 30 days after being so notified to request an appeal of that certification decision. To be considered, an appeal from an applicant must either: (a) propose measures or changes to the facility which, if implemented, would address the reasons for rejection; or (b) set forth specific reasons why the facility should have passed the criteria. Requests for appeals may be submitted by email or by mail. The Executive Director will evaluate the request to determine if the appeal adequately demonstrates the basis for the appeal. If it does not, the Executive Director will reject the appeals request. If the Executive Director determines that there is a basis for an appeal, he/she will convene an Appeals Panel (See 4.3.4). In communicating the decision to convene an Appeals Panel, the Executive Director will provide the appellant with a detailed description

of the appeals process. In addition, before an appeal proceeds, the applicant must pay a \$500 appeals fee.

4.3.3 *Appeal of Conditions Placed on a Certificate*

If after a decision is announced, a certified facility owner is not willing to comply with the condition language as worded (see Sect. 4.2.5), the applicant may appeal the conditions within 30 days of the decision announcement by submitting a letter to the Executive Director explaining why the conditions, as worded, are a hardship to the certified facility owner. A commenter may also submit a letter to the Executive Director appealing the condition language, explaining why they believe the condition as written is insufficient to bring the facility into compliance with LIHI criteria. The Executive Director will review the request and convene the Technical Committee to determine if modifications to the condition language, as worded, are appropriate.

4.3.4 *Appeals Panel*

If a timely appeal of a certification decision is submitted, and the Executive Director determines that the request is from an individual eligible to appeal and contains the necessary reasoning to be considered, the Executive Director will convene an Appeals Panel and forward the full certification application file to the Panel members. The selection of Appeals Panel members will be based on prospective candidates' expertise with hydropower and its impacts on natural resources, and on their ability to objectively evaluate cases concerning the LIHI certification program.

4.3.5 *Appeal Review*

Once the Appeals Panel has been selected, they will meet once with the Executive Director to receive their instructions and materials, then convene and organize themselves so as to independently consider the appeal. They will review all materials and hold a meeting to discuss and adjudicate the appeal. The Appeals Panel may make any additional inquiries it deems necessary. Under no circumstances is either the appellant or the appellee permitted to communicate in any form directly with any member of the Appeals Panel. If additional materials are necessary or Appeals Panel has questions for either party, all communications must occur through the LIHI Executive Director or LIHI designee.

If the Appeals Panel decides they require additional assistance, an Appeal Reviewer will be appointed from LIHI's existing roster of application reviewers, to acquire any additional information from the parties and to draft a report to the Executive Director and the Appeals Panel that analyzes the merits of the appeal. The Appeal Reviewer will not be the same Application Reviewer that conducted the review of the application in question. However, the Appeal Reviewer may consult with the application reviewer. Subject to the direction of the Appeals Panel, the appeal reviewer will compile the written report and any other relevant information including subsequent comments and reports pertinent to the appeal and submit it to the Appeals Panel.

Decisions by the Appeals Panel will be made by majority vote. The Appeals Panel will function independently of the Governing Board and make an independent decision about whether a facility should be certified. Appeals Panel decisions will be rendered in writing to the Executive Director and the Governing Board and will include identification of both the issues of fact and the interpretations of

the LIHI criteria and other policy matters that the Appeals Panel decided in order to render its decision. This process is expected to take 60 days.

The Governing Board will review Appeals Panel decisions only to ensure that the decisions are consistent with Institute criteria and policy. The decision of the Appeals Panel will stand unless the Governing Board finds that the decision is inconsistent with Institute criteria and/or policy. The Governing Board determination at this stage is final.

If the Governing Board accepts an Appeals Panel decision to certify a facility, the Executive Director will then issue a LIHI certificate for the facility and post notice of the certification on the Institute's website. The Executive Director will also send notice of the certification both to the email notice distribution to the state where the facility is located. For rejected applications, the Executive Director will notify the applicant and other parties to the appeal in writing of the decision and provide the reasons for rejection. For an appeal of a decision to grant certification, the status of the facility in question remains certified, and the facility owner may market the facility during the Appeal Review period as LIHI certified, unless the outcome of the appeal is a reversal of the decision. Upon such a reversal, the facility will no longer be certified, effective on the date of the announcement of the reversal. For an appeal of a decision to deny certification, the status of the facility in question remains not certified, and the facility owner may not market the facility as LIHI certified unless the appeal result reverses the denial. Upon such a reversal, the owner of the facility may market the facility as LIHI certified retroactive to the original decision date.

4.4 Program Fees

The LIHI certification program fees are designed to cover the cost of processing applications and maintaining active certifications. There are two types of fees associated with LIHI certification: fees that occur during the application phase, prior to issuance of a certificate, and certification maintenance fees that apply annually during the term of a certificate. The subsections below provide a brief summary of LIHI program fees. The complete fee policy is described fully in the Fee Schedule in Appendix C of this Handbook. LIHI, in its sole and reasonable discretion, reserves the right to alter the program fee policy as needed with reasonable notice to certificate holders.

4.4.1 Application Review Fees

LIHI Application Review Fees include intake review fees, certification review fees, and recertification review fees. All of these fees are designed to cover LIHI's cost associated with reviewing applications for certification at all stages in the process. The intake review fee is a fixed fee charged to all potential projects, regardless of installed capacity or circumstances. Before submitting payment of this fee to LIHI, it is strongly recommended that interested applicants contact LIHI for free pre-application consulting.

Certification review fees are individually tailored based on the information gathered in the intake review phase. They include the cost of hiring an independent reviewer, which is estimated as part of the intake process, and overhead costs covering LIHI staff's time. Certification review fees vary based on the

Table 4-2. Program Fee Schedule Summary.

<i>Type</i>	<i>Amount/Method*</i>	<i>Frequency</i>
Application Fees		
Intake Review	\$950	Once – due with submittal of intake draft application
Certification Review	May range from \$3000 - \$10,000 or more.	Once – due with submittal of certification application
Recertification Review	Phase 1: \$2,000 Phase 2: \$0 - \$8,000+	Phase 1 due with submittal of recertification application. Phase 2 after recertification intake is completed
Certificate Maintenance Fees		
Annual Certificate Fee	Product of average generation and applicable market category rate. \$1000 minimum and \$30,000 maximum	Once each year, due on the anniversary month of the certificate effective date
Condition Fee	By number and nature of conditions, ranges from \$0 to \$1000 per condition.	Once each year, due on anniversary month of certificate effective date. Condition status is reviewed each year as a component of compliance review.

***Note:** some types of facilities that qualify for the NA/DME standard on all criteria will have substantially reduced fees – consult with LIHI staff to see if you qualify.

circumstances and available information for each facility. LIHI reserves the right to charge additional fees in circumstances where a review is more complex than initially estimated.

Some types of facilities, such as conduit projects that do not discharge water back into natural river systems, may have very low environmental impacts and may qualify for the NA/DME standard on all criteria. These types of applications will be rewarded with substantially lower application fees compared to Table 4-2. Applicants with these types of facilities should consult with LIHI staff to determine whether they qualify for reduced fees. The results of the Intake Review will be used to determine whether reduced certification application fees apply for these types of facilities.

4.4.2 Certification Maintenance Fees

LIHI certification maintenance fees include annual certificate fees, condition fees, and any other supplemental fees LIHI may impose to maintain an active certificate. The annual certificate fee is calculated using a \$/MWh rate structure that includes a base rate and variable regional market rates. There is a tiered minimum annual fee, or floor, for projects with low installed capacity (less than or greater than 5 MW; see Appendix C). There is also a maximum annual fee, or cap, for large facilities.

Condition fees are fees charged on an annual basis to certificate holders with active site-specific conditions that require LIHI staff time to process. Not all conditions will incur a fee, and the fee amounts may vary from year-to-year during the term of a certificate, as conditions are satisfied,

modified or added to certifications. Condition fee amounts are established in proportion to the time required by LIHI staff to monitor compliance.

Very low-impact facilities, such as conduit projects that qualify for the NA/DME standard on all criteria, may also qualify for reduced certification maintenance fees. Applicants for these types of facilities should consult with LIHI staff and refer to the results of the certification review to determine what the applicable maintenance fees will be.

4.4.3 Refund Policy

All LIHI Fees, including both application review fees and certification maintenance fees are non-refundable. Should an applicant choose to withdraw or place an application on hold at any point during the review process, LIHI is under no obligation to return or refund fee amounts already collected. Should a certificate holder decide to withdraw a certified facility from the program (see Section 4.5.4), LIHI will discontinue all annual maintenance billing for the years after the year of withdrawal. Additional fees may apply if and when an applicant chooses to revive a project application that was submitted previously but was not certified and was withdrawn or placed on hold by the applicant.

4.5 Special Situations

Although LIHI much prefers applications that involve operating facilities with only one dam or diversion and one powerhouse, it is possible to configure an application other ways, as described in this section. In such cases, it is strongly advised that pre-application consultation take place with the LIHI Executive Director. The intake review step is intended to provide guidance on how to structure applications in special circumstances, as well as how to handle other unique circumstances. See Section 4.2.2 for more information on intake reviews.

4.5.1 Facilities undergoing FERC Licensing

If an original application for certification is received for a hydropower facility that is in or approaching a FERC licensing time window (original or new FERC licenses), LIHI will advise the applicant to delay their LIHI application until they have completed that proceeding. If a facility has been previously certified by LIHI but enters a new FERC licensing proceeding, then for LIHI purposes, the facility will be treated as it was under the previous FERC license until such time that that new FERC licensing is completed. In this latter case, the LIHI certificate will be conditioned to require updating and potential modification as soon as a new license is obtained, so as to be consistent with any new science-based agency recommendations that may have arisen.

4.5.2 Multi-Dam Applications

If an applicant owns or operates multiple facilities in a watershed that are operationally or hydrologically connected and there is a comprehensive Settlement Agreement that pertains to the facilities, the applicant may request to submit a consolidated application to LIHI for those facilities. The exact strategy for how to do this will be determined in consultations with LIHI staff during the pre-application consultation and intake review steps of the certification process. See Appendix C, Certification Program Fee Schedule, for more details on applicable certification fees.

4.5.3 Pre-operational Applications

New hydropower facilities built on existing dams, diversions, or conduits that are not yet generating electricity at the time of application for certification are eligible for consideration, provided that:

- the FERC license or exemption, or similar authorization addressing environmental impacts has been issued;
- there are no pending appeals or litigation from that authorization; and
- the applicant specifically acknowledges that LIHI may suspend or revoke the certification should the impacts of the project cause non-compliance with the certification criteria once the facility begins operation.

For such pre-operations certification, the certification term will begin on the date that the facility begins generation and comes on line. Applicants will also be charged a fee premium for pre-operations certification (see fee schedule in Appendix C of this Handbook).

4.5.4 Withdrawal of an Application

At any time within the application or appeal process – or during a certification term, an applicant/certificate holder may withdraw its application from consideration or withdraw a certified project from the LIHI program. If a withdrawal of an application occurs, the final status of the application in public Institute documents shall be described as withdrawn and shall be without prejudice. The applicant may resubmit an application package at any time. An applicant may also suspend or place their application on hold at any time. Application review fees are not refundable, even in the instance of withdrawal. Renewed applications are subject to additional review fees.

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5. MARKETING GUIDELINES AND COMPLIANCE

LIHI certification provides consumers with assurance that an independent review has determined that the facility has been constructed and is operated in accordance with objective and scientific low impact environmental criteria. Certification also results in a legally binding contract that grants the Certificate Holder a limited license to use the LIHI Certification Mark and to market the facility as LIHI Certified®.

5.1 Certification Mark and Marketing Guidelines

After a preliminary decision to certify is made, and the 30-day appeal window has passed with no appeals filed, the Certification decision becomes final and a LIHI certificate will be issued to the applicant; but only after the applicant has agreed to all terms and conditions contained within the LIHI Certification Mark License Agreement (Agreement or CMLA). The CMLA standard form is available for review at: <http://lowimpacthydro.org/how-to-apply>.



Figure 5-1. LIHI Certification Mark Design Sample

The CMLA entitles the certificate holder to use the LIHI Certification Mark to market power and the associated green attributes from the facility as certified “Low Impact” or “LIHI Certified®.” The Agreement requires strict adherence by Certificate Holders to all program rules provided for in this Handbook, as well as the LIHI Marketing Guidelines, and the program compliance requirements in Section 5.2. The LIHI Marketing Guidelines provide rules for the observance of Federal Trade Commission Principles as well as acceptable language for the use of the Low Impact Certification Mark. The Marketing Guidelines are available at <http://lowimpacthydro.org/marketing-guidelines>, and will be updated from time to time at the discretion of LIHI. All Certificate Holders will be notified of changes to the Marketing Guidelines at least 60 days before they go into effect.

5.2 Compliance Requirements

During the term of their LIHI certificates, all certified facilities are required to operate their hydroelectric facilities in a manner that satisfies the LIHI criteria and all rules provided for in this Handbook. LIHI maintains the integrity of the process and the credibility of low impact certification by verifying annual compliance with the criteria and with project-specific conditions. Changes in conditions do not always translate into a violation of the criteria, nonetheless LIHI verifies compliance in order to maintain a complete record and have an accurate account of the conditions at each certified facility.

5.2.1 Notification of Potential Non-Compliance or Changes in the Facility

The owners of LIHI certified facilities must notify the Executive Director or LIHI staff as soon as possible if

at any time one or more of the following occurs: (1) a violation of the Low Impact Hydropower criteria or associated site-specific conditions; (2) a violation of the LIHI marketing guidelines; (3) a change in conditions relevant to the certification; or (4) the receipt of a notice of violation or non-compliance relevant to the facility's certification from any government agency. Any other party may also notify the Executive Director of the occurrence of one or more of these events. The notification may include an explanation as to why the violation or change in conditions does not amount to a significant violation warranting penalties, or in the case of a change, that the change will not result in an adverse effect under the criteria.

5.2.2 Review of Potential Non-Compliance or Changes in the Facility

The Executive Director will review the alleged violation or change in conditions, make any necessary inquiries, decide whether to refer the allegations to an application reviewer and may, if necessary, request additional information from the certified facility. This request for additional information may include a facility inspection by the Executive Director and/or application reviewer. If an application reviewer is utilized, the application reviewer will submit a written report to the Executive Director regarding whether a compliance violation has occurred or whether the change in conditions result in non-compliance with the criteria. Based on this report, the Executive Director will make a recommendation regarding compliance and penalties to the Governing Board. The Governing Board will determine what compliance action is appropriate. The use of the services of an independent reviewer may involve fees charged to the certificate holder.

5.2.3 Annual Compliance Statement

To maintain compliance with LIHI certification, all certificate holders must submit a sworn statement to LIHI at each anniversary of the certificate effective date confirming that during the preceding year, there has been: (1) no violation of the Low Impact Hydropower criteria or facility-specific situations; (2) no violation of the LIHI marketing guidelines; (3) no change in conditions relevant to the certification; and (4) no receipt of notice of violation or non-compliance relevant to the facility's certification from any government agency. The filing will also include an update on the status of any facility-specific conditions that are active.

LIHI will provide the certificate holder with a form to use to submit this statement. LIHI may ask for additional information in the annual compliance statement, such as annual generation (GWh) during the previous year; whether any financial benefits were received from LIHI certification during the past year; and about any specific environmental benefits were achieved. The statement must be submitted annually within 30 days of the anniversary of the effective date of the certification. Failure to file an annual statement, or a material misrepresentation contained in the statement may result in revocation of the certification.

5.2.4 Consequences of Non-Compliance

If LIHI finds that a certified facility has committed a significant violation of the Low Impact Hydropower criteria, the rules in this Handbook or the LIHI marketing guidelines, or if LIHI finds that a material misrepresentation of fact was made in any submission from an applicant, and such violation or material misrepresentation is not corrected within thirty (30) days after the facility receives written notice, the

Governing Board may:

- Revoke or modify the Low Impact Hydropower certification;
- Bar the holder of the Low Impact Hydropower certification from re-applying to certify the same facility for five years;
- Require the holder of the Low Impact Hydropower certification to notify immediately its current customers that its certification has been revoked, and, if its customer does not deliver power to the ultimate retail customer, to notify immediately the retail marketer; and/or

Require any entity marketing power from the facility to immediately stop employing the LIHI certification in its marketing unless it can find other supply that is certified Low Impact Hydropower.

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6. RENEWAL OF CERTIFICATION

All LIHI certificates are issued for a finite period of time of between five and ten years. At the end of the term, the facility owner can choose to apply for recertification, or renewal of the certification term. Approximately six months prior to the expiration of the term of a previously-issued LIHI certification, LIHI will notify the certificate holder that its certification is due to expire, and will provide the holder the necessary instructions to apply to LIHI for recertification. To renew a certification, the certificate holder submits a renewal application (“recertification”) package to the Executive Director and pays a recertification review fee per instructions received. A recertification review then begins, as described in this section.

6.1 Recertification Process

The recertification of previously certified facilities occurs in two stages, both of which involve independent application reviewers and an opportunity for public review and comment. Stage I is relatively simple and quick process that is similar to the original intake review. Stage II is a more comprehensive evaluation similar to the review of first-time certification applications (Section 4.2.3). A Stage I application is an updated version of the application package that was used in original certification (Section 4.2).

The Stage I recertification review focuses on three primary questions:

- Is there any missing information in the application for recertification?
- Have there been any material changes in the LIHI criteria or certification process since the facility was originally certified?
- Have there been any material changes (defined below) at the facility during the term of the previous certification?

If the application reviewer determines that the answers to each question is ‘no,’ then the recertification review is complete and a recertification decision can be made relatively quickly (Section 6.2).

If there is missing information, LIHI will provide the applicant with an Intake Review that explains what information is missing. The applicant will have the opportunity to provide the missing information, and this may or may not trigger a Stage II review. If there have been material changes in the LIHI criteria or certification process since the facility was originally certified, then a Stage II review is triggered. If it is found that there have been material changes at a facility, then a Stage II review is also triggered. The second stage review is very similar to the original certification review described above in Section 4.2.3.

The Stage II recertification review involves a complete review of the application package, a search of public records associated with the facility, and all other necessary inquiries (e.g., to resource agencies and local non-governmental organizations) to resolve factual disputes, evaluate the veracity of claims, or make other inquiries as needed. The application reviewer also reviews and summarizes all public comments received.

Once the assigned reviewer has completed their review, the reviewer submits a written reviewer’s

report to the Executive Director, with a recommendation on whether the facility should be certified as Low Impact Hydropower or not, and an explanation outlining the basis for that decision. If the reviewer believes that facility-specific conditions (Conditions) are necessary in order to satisfy any criterion (see below), these Conditions are presented as recommendations in the reviewer's report.

6.1.1 Determination of Material Changes

There has been a material change relative to a LIHI certificate if either the LIHI certification criteria have changed since the previous certification decision or one or more of the change events described here have occurred. If the LIHI criteria change during the term of a certification, those changes will not be applied to the active certificate until recertification.

The change events that may trigger a Stage II Recertification Review are:

- **Non-compliance:** Since receiving its last certification from LIHI, the certificate holder/applicant has not implemented, has delayed implementing, or has otherwise not adequately met obligations in the area of the facility that are of relevance to LIHI's criteria. These obligations could be in the form of terms and conditions of license(s), settlement agreements, resource agency recommendations or agreements, LIHI conditions of certification including annual notifications, agreements with local municipalities or other third parties or similar relevant obligations; or
- **Operational Changes:** Since receiving its last certification from LIHI, changes in the facility have occurred that are relevant to LIHI criteria, such as installation of a facility feature that serves to improve water quality compliance, adherence to flow requirements, installation of fish passage; or
- **New/Renewed Issues of Concern:** Since receiving its last certification from LIHI, either new issues of concern and relevance to LIHI's criteria have emerged that did not exist or were not made known to LIHI at the time of certification, or there continues to be ongoing problems with previously known issues that appeared to LIHI to be resolved or on the road to resolution at the time of certification but in fact are not resolved, and are ongoing at the time of the recertification application. If a new license, settlement agreement, prescription, biological opinion or other similar regulatory decision has been made since the original recertification, these documents will be evaluated to determine if new or renewed issues have been raised.

6.1.2 Recertification Review Processing Steps

The application package that is required to begin recertification is an updated version of original certification package. It has the same contents as an intake review (Section 4.2.2), but must also describe any and all changes that have occurred at the facility during the term of the previous LIHI certificate. The applicant submits this package, along with the recertification application fee (see Appendix C), to the Executive Director, following the instructions received from LIHI staff prior to expiration. The Executive Director then contracts with a reviewer, who prepares a Stage I recertification report evaluating the two primary questions. If no information is missing from the recertification application or missing information is limited and expected to be received soon, the Executive Director will post the package on the Institute's Web page for public review and comment.

Once posted, any individual or organization may, within 60 days, submit comments to LIHI. The application reviewer will examine all submitted application materials, the LIHI file containing the past certification decision(s), any public comments received during the application process, and any limited reviewer-initiated questioning by LIHI of the applicant and/or third parties. If the review can definitively determine that the answer to both primary recertification questions is “no” and that the application package materials demonstrate continued compliance with the LIHI criteria, the application reviewer will recommend recertification approval to LIHI’s Executive Director via a letter report, and no further application review is required.

If the reviewer determines that material changes have occurred or that the recertification application package is inadequate, a more extensive investigation is required by LIHI staff. The reviewer will submit a report on unresolved issues plus recommendations to resolve them, and the Executive Director will share these conclusions with the applicant and will follow the procedures set forth above for the processing of a new application subsequent to completion of intake review. The recertification fee may also be increased if additional effort is required by LIHI staff or its reviewers to process a Stage II recertification review, including a more detailed and thorough investigation that will be required to answer one or both of the primary recertification questions.

At the conclusion of the full, Stage II review, the application reviewer will produce a detailed reviewer’s report similar to that issued for an initial certification and make a recommendation to the Executive Director as to whether LIHI’s criteria are still met by the facility, in light of the material change and/or the change in LIHI’s criteria or interpretation. The Executive Director will consider the reviewer’s report and use it in making a recommendation to the Technical Committee for decision-making, in the same manner as an original certification review would be handled.

6.2 Recertification Decisions and Appeals

Decision-making authority for recertification applications is similar to that used in original LIHI certification applications, except that the Executive Director has more delegated authority for cases where there have been no material changes. In such cases where there have been no material changes, the Executive Director has authority to issue a new LIHI certificate without further analysis if the recertification review concludes that all criteria have been satisfied. If the Executive Director concludes that a new certification should not be issued, the Executive Director will make that recommendation to LIHI’s Board of Directors, who will then make the determination of whether to recertify the facility.

If there have been material changes or the criteria have been revised, then the Executive Director’s recommendation and the reviewer’s report will be submitted to the Technical Committee of the LIHI Board of Directors for a certification decision. If LIHI’s decision is to recertify, the Executive Director will issue a new Low Impact Hydropower certification and post notice of the certification on the Institute’s Web page. Should an applicant or any other stakeholder desire to appeal a decision on an application for recertification, the guidelines in Section 4.3 apply. In the event that circumstances require that the application be posted for a second (or more) opportunity for public comments, the latest posting date constitutes the certification effective date.

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APPENDIX A – DEFINED TERMS AND ACRONYMS USED

The following definitions of terms apply to the revised LIHI certification criteria that were approved by the LIHI Governing Board in November 2014 and then modified in further response to comments in December 2014 by the Technical Committee. They are a combination of definitions used in previous criteria and definitions of new terms unique to the most recent revisions.

Adaptive management: A system of management practices based on clearly identified timeframes and outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are timely met or to re-evaluate the outcomes. Adaptive management recognizes that knowledge about natural resource systems is sometimes uncertain; it is the preferred method of management in these cases.

Advanced technology: A technology or mitigation technique based on new ideas, new technology, or unique, site-specific conditions which has a reasonable possibility of providing effective fish passage, improved water quality, or improved ecological flow regimes.

Alternative fish passage mitigation: Mitigation measures employed *in lieu* of upstream or downstream fish passage measures at the Facility to promote fish populations adversely affected by the Facility. Such measures might include the restoration of degraded habitat in the watershed to enhance natural reproduction of a variety of species. Such alternative mitigation measures should be designed to sustain the abundance and diversity of fish stocks in the river system.

Anadromous fish: Fish begin their life cycle in freshwater, then migrate as juveniles to the ocean, where they grow into adults before migrating back into freshwater to spawn.

Appeals Panel: An appeals panel is comprised of three independent individuals selected by the Executive Director from a pool of qualified candidates. Appeal panel members are to be selected on the basis of their expertise in hydropower and natural resource issues, plus their ability to objectively evaluate cases concerning the LIH certification program.

Applicant: The party applying for Low Impact Hydropower Certification. This will usually be, but need not be, the facility owner or operator. However, compliance with the conditions for use of a certificate are the responsibility of the facility owner and all affiliates.

Basin-scale redevelopment strategy: A watershed-level action plan that examines the dual opportunities for hydropower generation and environmental restoration/enhancement, and defines ways to achieve both. The facility owner must demonstrate a substantial commitment to achieving the goals of the comprehensive plan. An example of a successful basin-scale redevelopment strategy is the Penobscot River Restoration Project (<http://www.penobscotrivers.org>).

Best Practice/Best Available Technology: A method, technique, or technology that has consistently proven to produce superior results within the hydropower industry. To justify such approaches, applicant should reference past successful uses and/or recognition by a resource management authority or an environmental research organization.

Bylaws: The Low Impact Hydropower bylaws are the written rules by which the Low Impact Hydropower Institute is governed. They set forth the structure of the LIHI Governing Board and the organization. They determine the procedures by which the LIHI certification program can be exercised and guide the LIHI Governing Board in conducting business.

Catadromous fish: Fish that begin their life cycle in saltwater, then migrate as juveniles into freshwater, where they grow into adults before migrating back into the ocean to spawn.

Compliance: A facility is in compliance with a requirement or recommendation if it complies at the time the application is filed and has not had any material violations or formal notices of violation issued by a state or federal agency within the prior year. If the facility has been in violation of a requirement or recommendation but the applicant does not believe the violation is material, the violation must be disclosed and its materiality explained in the application.

Cultural Resource: Material remains of past and present human life or activities that are of significant cultural or archaeological interest. Of cultural or archaeological interest means capable of providing scientific or humanistic understandings of past human behaviors, cultural adaptation, and related topics through the application of scientific or scholarly techniques such as controlled observation, contextual measurement controlled collection, analysis, interpretation and explanation. This term includes, but is not limited to, objects made or used by humans, such as pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, or any portion or piece of the foregoing items, and the physical site, location or context in which they are found, or human skeletal materials or graves. Cultural resources are understood to include historic resources.

CMLA: The Certification Mark License Agreement which is required to be executed by the Certified Facility owner (and appropriate affiliates) prior to use of the LIHI Certification Mark. The CMLA authorizes the use of the Certification Mark for the certificate holder to market power and the associated green attributes from the facility as certified "Low Impact" by LIHI or "LIHI Certified®"

Downstream fish passage (also, downstream passage): Safe and efficient movement of fish downstream through the facility's reservoir, dam, powerhouse, and bypassed stream reaches. Effective downstream passage should encompass all migratory fish species and life history stages and should occur with minimal stress, without behavioral avoidance, and without unacceptable physical or physiological injury.

Enforceable (also, enforceable protection): Enforceable protection means a legally enforceable conservation easement, conservation covenant, conservation restriction or conservation servitude that is a power invested in a qualified private land conservation organization (often called a "land trust") or government (municipal, county, state or federal) that constrains the exercise of rights otherwise held by

a landowner so as to achieve ecological land protection for water quality, wildlife, aesthetics, and low-impact recreation values.

Extirpate (also, extirpated and extirpation): To completely remove or locally eliminate a fish population or other species from the facility's area of influence.

Fish protection: Techniques or structures to prevent the loss of resident or migratory fish from the reservoir (for example, screens and other barriers).

Fish passage: The ability, by the weakest native migratory fish species and life history stages, to move with minimal stress, and without physical or physiological injury upstream and downstream of an artificial obstruction or its operation.

Fishway: A fishway is the combination of elements (structures, facilities, devices, project operations, and measures) necessary to ensure the safe, timely, and effective movement of fish past a barrier. Generally, fishways consist of proven technological approaches that comply with agency guidance if such guidance exists.

Flow-ecology model: For the purposes of this handbook, a science-based flow-ecology model is a method that (1) quantitatively or qualitatively defines the relationship between flow, hydrologic alteration and ecological condition and (2) demonstrates that an altered flow regime is within acceptable limits of ecosystem risk. Possible approaches could range from broadly-applicable hydrologic alteration thresholds (Richter et al., 2012) to regional or river-specific ecosystem flow recommendations (Kendy et al., 2012; DePhilip and Moberg, 2013; McManamay et al., 2013; Novak et al., 2015).

Indirect ownership: Indirect ownership is when project riparian lands and the generation facility are owned through separate LLC's or other segmented ownerships that have interconnected business relationships; these may include lands not directly related to power generation and transmission (for example dam, powerhouse, transmission corridor).

In-kind mitigation: A mitigation project in close proximity to the site of impact that is designed to replace lost resources with identical or very similar resources.

Limited storage capacity: A facility with a storage ratio (relationship between reservoir storage and mean annual flow) that poses a low relative risk of altering the flow regime. For the purposes of implementing this handbook, this will include reservoirs with a storage capacity of equal to or less than 5% of estimated unregulated mean annual flow (Dynesius and Nilsson, 1994; UNEP, 2009; Opperman et al., 2015). Load-following or peaking facilities will be reviewed on a case-by-case basis for compliance with the intent of this defined term.

Listed Species: Listed species are those species that have been designated by an appropriate regulatory agency, which may be federal, state or provincial, as either in danger of extinction throughout all or a significant portion of its range or likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

Habitat evaluation technique: A habitat evaluation technique is a quantitative environmental

assessment procedure that describes how habitat quantity and quality change over a range of physical conditions, such as stream flows or reservoir surface elevations. The term refers to a relatively large number of assessment methods that include the Instream Flow Incremental Methodology that dates back to the 1970s, the Habitat Evaluation Procedures developed in the 1980s by the U.S. FWS, and many subsequent methods. For examples, see Annear et al. (2004) and other products from the Instream Flow Council (<http://www.instreamflowcouncil.org/>). The most important aspect of these techniques is that they involve an analytical framework that considers the tradeoffs between multiple ecological processes and resource management objectives, and evaluates a range of flow options over a continuum of hydrologic conditions, both within years and among different types of water years (wet to dry). The resulting management decision supported by this method should be a reservoir management prescription that preserves or recreates key parts of the natural variability of the flow regime to support riverine ecosystems (Stalnaker et al., 1995).

Migratory fish: Fish species that require stream connectivity to travel between different areas on an occasional (daily, seasonal, annual or longer) basis, for purposes such as: spawning, rearing, feeding, growth to maturity, dispersion, and seasonal use of habitat. Migratory fish may include riverine or resident species, if those species must move through a river system to successfully complete their life cycle.

Mitigation: This term is used in the Handbook to generally refer to a hierarchical set of actions, including avoidance, minimization, and compensation, in that order (Clement et al., 2014).

Net benefit: An increase in the overall habitat quality or quantity in the vicinity of the facility that is likely to lead to an increased number of fish or wildlife after technology improvements or mitigation measures have been completed.

Out-of-kind mitigation: Replacement or substitute resources that are related to but of a different quality, species mix, or even species type compared to more direct mitigation. Out-of-kind mitigation must have benefits that are of equal or greater overall value to that of the impacted species. Out-of-kind mitigation may be employed outside the boundary of the facility's affected area. For example, *in lieu* of upstream fish passage measures to make habitat available above the barrier, the facility owner/operator might enhance or make available other spawning habitat in a watershed not affected by the facility.

Potamodromous fish: Fish species whose migrations occur entirely within fresh water. This term includes riverine and resident species.

Recognized tribal plans: A plan for management of cultural resources as adopted by a tribe recognized by a federal, state, or provincial government.

Recreation activities: Uses including swimming, boating, fishing, sightseeing, and wildlife viewing.

Recreational access: The ability to enter waterbodies associated with the facility by the public, for recreational uses such as swimming, boating, or fishing. Safety and security issues may dictate that such access is not feasible in some locations.

Riverine fish: A fish species that spends its entire life cycle in the riverine (fresh water) system and may migrate or move from one area to another for purposes of completing its life cycle. Riverine fish do not migrate to or from the ocean. Riverine fish have been referred to as resident fish. Many riverine fish species are potamodromous.

Run-of-River: For the purposes of this handbook, a facility is operated in a run-of-river mode if the outflow of the facility is within reasonable measurement accuracy (plus or minus 10 percent) of the inflow to the facility, measured on an hourly basis. This level of alteration is estimated to have a low risk to ecosystem flow needs (Richter et al. 2012).

Regionally accepted instream flow policy: A study methodology or standard that is routinely relied upon by regulatory agencies and scientists working in the facility's geographic area. These are often referred to as standard-setting, or desk-top, methods and are often used to define a minimum threshold flow, below which instream conditions are considered unsupportive of sustaining aquatic life. In Standard A-3, this method to protect base flows is coupled with the requirement of a reservoir with limited storage, to limit risk of hydropower operations on seasonal and inter-annual flow variability. For further explanation, see publications from the Instream Flow Council (Annear et al., 2004) and The Nature Conservancy (Mathews and Richter, 2007).

Resource agency recommendations: Recommendations or conditions for operation, maintenance, and construction of structures of the Facility submitted by resource agencies for the facility. Resource agency recommendations considered in Low Impact Hydropower certifications shall be:

- ***Issued pursuant to a proceeding.*** Valid resource agency recommendations are those issued pursuant to a legal or administrative proceeding or other legally enforceable agreements between a resource agency and the dam owner/operator. The proceeding anticipated to apply for most privately owned facilities is a FERC licensing or exemption proceeding. For a FERC-regulated facility, these recommendations would include proposed or mandated license conditions submitted through the FERC licensing or other processes pursuant to Federal Power Act Sections 4(e), 18, 10(a) or 10(j), Clean Water Act Section 401, the Endangered Species Act or other state or federal provisions. For non FERC-regulated facilities, the proceedings anticipated to apply include consultation pursuant to the Endangered Species Act, federal or state Clean Water Act proceedings, Northwest Power Act proceedings and other proceedings resulting in a legally enforceable agreement between the facility owner/operator and a resource agency. Resource agency recommendations that are subsequently overturned by a legal proceeding cease to be valid for the purposes of certification.
- ***Recent.*** If a single resource agency has made multiple recommendations, the most recent recommendation shall apply. This principle also applies when there is a settlement. If a resource agency is party to a settlement, or otherwise formally concurs in a settlement, the settlement terms are considered to be the most recent resource agency recommendation for these purposes. If, however, a resource agency is not party to a settlement and does not formally concur in the settlement, the most recent recommendation of that Resource Agency, and not the settlement terms, apply for purposes of certification.
- ***Environmentally Stringent.*** The most environmentally stringent recent resource agency

recommendation shall apply where different resource agencies have made differing recommendations. If a condition in the Facility's FERC license or exemption (or other operating requirement, if not FERC licensed) is less environmentally stringent than a resource agency recommendation, the facility must meet the resource agency recommendation to be certified as Low Impact Hydropower. For example, if the U.S. Fish and Wildlife Service originally recommended a 100 cfs minimum flow, and the State Department of Fish and Game recommended 50 cfs, then the U.S. Fish and Wildlife Service revised its recommendation to 80 cfs, and FERC issued a license with a 40 cfs minimum flow, to qualify as Low Impact Hydropower the facility must release 80 cfs.

- ***Consistent with and supportive of Agency Management Goals and Objectives.*** Resource agency recommendations shall include discussion of relevant Agency management goals and objectives. The resource agency recommendation shall also discuss how the recommendation supports the achievement of the relevant management goals and objectives.
- ***Resolution of Conflicting Resource Agency Recommendations.*** Where there are conflicting resource agency recommendations and the conflict is not resolved by applying the most recent and most environmentally stringent recommendations, the conflict shall be resolved by applying the recommendations based upon the health of threatened or endangered biological organisms first, the health of other biological organisms second, cultural resources third and recreation fourth, unless there is a statutory mandate to resolve the conflict otherwise. For example, recommendations designed to protect threatened or endangered species (a biological opinion, for instance) would prevail over recommendations regarding recreation. If a conflict still exists among resource agency recommendations, the Governing Board will make a determination which recommendation shall apply. For guidance regarding conflicts among resource agency recommendations, consult the Executive Director.

Science-based: Science-based recommendations can be based on relevant peer-reviewed and published studies or on facility specific studies. In either case, the studies must use rigorous, systematic, and objective methodologies to obtain reliable and valid knowledge that demonstrates that the design and operations of a facility would be expected to achieve the criterion goals. Specifically, such research requires:

- development of a logical, evidence-based chain of reasoning;
- use of methods most relevant to the questions posed;
- observational or experimental designs and instruments that provide reliable and generalizable findings;
- data and analysis adequate to support findings;
- clear and detailed explanation of procedures and results, including specification of the population to which the findings can be generalized;
- adherence to professional norms of peer review;
- dissemination of findings to contribute to scientific knowledge; and
- access to data for reanalysis, replication, and the opportunity to build on findings.

Site-specific basis: Measures that are developed on a site-specific basis are those that use the natural background conditions to develop mitigation actions that protect aquatic life and accurately reflect the

aquatic community present in the stream segment. Natural background conditions are those that would exist without anthropogenic sources.

Sustainable fish population (also, sustainable populations): Interbreeding groups of fish living in the same area whose numbers do not decline over the long term in the face of facility operations, commercial and recreational fishing, and other impacts.

Tailwater: The river reach downstream of the powerhouse, including turbine discharges and waters coming out of a bypassed reach, if there is one. A tailwater zone of effect should consider all of the water releases from a facility.

Upstream Fish Passage: The ability of a migratory fish to move upstream past the facility's physical and operating barriers. Effective upstream passage should encompass the weakest native migratory fish species and life history stages and should occur with minimal stress, and without unacceptable physical or physiological injury.

Upstream Fish Passage Structure: Any human-built structure that allows fish passage upstream around an artificial obstruction, including, but not limited to, fish ladders, elevators, nature-like fishways, and trap and haul facilities.

(Recent) Water Quality Certification: A certification that is no older than 10 years and preferably issued with the past five years prior to the LIHI application. A waiver of certification authority does not satisfy the agency-based water quality standard.

Water Quality Limited: These are waterbodies directly affected by the facility that are currently identified by a regulatory agency as not meeting water quality standards (for example, a listing pursuant to Section 303(d) of the Clean Water Act; this includes numeric standards, narrative standards, and designated uses).

Zone of Effect: A specific waterbody or river segment that is directly affected by the design and operation of a hydropower facility, including reservoirs or impoundments above a dam or diversion, bypassed reaches between a dam and a powerhouse, and rivers downstream of a powerhouse discharge.

APPENDIX B - APPLICATION MATERIALS

This appendix provides comprehensive listings of the contents of an application for LIHI certification. The materials described here are also available for download at www.lowimpacthydro.org/how-to-apply. The recommended approach for preparing an application package is to follow these steps:

- Complete the facility description using Table B-1, replacing the text after the bullets in the right hand column with facility specific information, including the designation of any ZoEs that are appropriate.
- Complete one matrix of alternative standards for each designated ZoE (a blank version of this matrix is provided in Section B.2).
- Using the standards selected, copy the corresponding rows in the tables in Section B.2.1 through Section B.2.8 (Tables B-2 through B-9) into a new document and insert text and references to satisfy each of the bulleted instructions. This should be repeated for each ZoE, recognizing that the standards selected may change from zone to zone.
- Complete the Sworn Statement and Waiver (Section B-3), the Contacts (Section B-4).

Building up the supporting information in the third bullet above is the most detailed part of preparing an application package. LIHI plans to have this process implemented via adaptive forms before the end of 2016, but that automated, digitized approach is not available yet. If there are questions or uncertainty at any point in the application process, LIHI staff should be consulted for advice.

After all the supporting information has been organized, the final three forms should be added to the package.

***NOTE:** Materials provided to LIHI as part of a pre-application consultation with the Executive Director or during the Intake Review phase will be kept confidential, unless and until a complete certification application is submitted and public notice is made. Except in rare circumstances, all information submitted to LIHI and pertaining to a certification application provided to LIHI or its Executive Director will be available for public review and public access.

B.1 Facility Description Information

All information identified in Table B-1 must be provided in an application for LIHI certification.

Table B-1. Information Required for the Project Description.

Information Type	Variable Description	Response (include references to further details, where appropriate)
Name of the Facility	Facility name (use FERC project name if possible)	
Location	River name (USGS proper name)	
	River basin name	
	Nearest town, county, and state	
	River mile of dam above next major river	
	Geographic latitude	
	Geographic longitude	
Facility Owner	Application contact names (IMPORTANT: you must also complete the Facilities Contact Form):	
	- Facility owner (individual and company names)	
	- Operating affiliate (if different from owner)	
	- Representative in LIHI certification	
Regulatory Status	FERC Project Number (e.g., P-xxxxx), issuance and expiration dates	
	FERC license type or special classification (e.g., "qualified conduit")	
	Water Quality Certificate identifier and issuance date, plus source agency name	
	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	
Power Plant	Date of initial operation (past or future for operational applications)	
	Total name-plate capacity (MW)	
	Average annual generation (MWh)	
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	
	Modes of operation (run-of-river, peaking, pulsing, seasonal storage, etc.)	
	Dates and types of major equipment upgrades	

	Dates, purpose, and type of any recent operational changes	
	Plans, authorization, and regulatory activities for any facility upgrades	
<i>Dam, Diversion, or Conduit</i>	Date of construction	
	Dam height	
	Spillway elevation and hydraulic capacity	
	Tailwater elevation	
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	
	Dates and types of major, generation-related infrastructure improvements	
	Designated facility purposes (e.g., power, navigation, flood control, water supply, etc.)	
	Water source	
	Water discharge location or facility	
<i>Reservoir and Watershed</i>	Gross volume and surface area at full pool	
	Maximum water surface elevation (ft. MSL)	
	Maximum and minimum volume and water surface elevations for designated power pool, if available	
	Upstream dam(s) by name, ownership, FERC number (if applicable), and river mile	
	Downstream dam(s) by name, ownership, FERC number (if applicable), and river mile	
	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	
	Area inside FERC project boundary, where appropriate	
<i>Hydrologic Setting</i>	Average annual flow at the dam	
	Average monthly flows	
	Location and name of relevant stream gauging stations above and below the facility	
	Watershed area at the dam	
<i>Designated Zones of Effect</i>	Number of zones of effect	
	Upstream and downstream locations by river miles	
	Type of waterbody (river, impoundment, by-passed reach, etc.)	

	Delimiting structures	
	Designated uses by state water quality agency	
<i>Additional Contact Information</i>	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	(use new Contacts Form and reference that here)
	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	(recommend putting these in a separate document and referencing it here)
<i>Photographs and Maps</i>	Photographs of key features of the facility and each of the designated zones of effect	
	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	

B.2 Supporting Information

The tables in the section below, which correspond to each LIHI Certification Criterion, provide instructions on what supporting information is required to demonstrate that the alternatives standards selected by the applicant for each criterion have been achieved. Providing supporting information is a necessary component of a complete application for LIHI Certification. To use the tables in this section, the applicant first uses the matrix of alternative standards provided in template form below to choose the standard they wish to use to demonstrate a criterion has been met from. Once the choice of a standard has been made, the applicant then provides the information in the corresponding instructions box in the Supporting Information tables below. If a PLUS standard is also selected, the applicant must also provide the information required in the instructions box for the PLUS standard.

Matrix of Alternative Standards Template:

Facility Name: _____

Zone of Effect: _____

Criterion		Alternative Standards				
		1	2	3	4	Plus
A	Ecological Flow Regimes					
B	Water Quality					
C	Upstream Fish Passage					
D	Downstream Fish Passage					
E	Watershed and Shoreline Protection					
F	Threatened and Endangered Species Protection					
G	Cultural and Historic Resources Protection					
H	Recreational Resources					

Applicants must complete a Standards Matrix for each designated zone of effect; shaded cells indicate no such standard is available for that criterion.

Note about using these materials:

Applying for LIHI Certification is a public process, which means that all application materials and supporting information will be published on the LIHI website and announced to stakeholders for review. The method of receiving the information requested in the instructions boxes below is as follows, in order of preference: (1) with a working hyperlink to the document online; (2) through online transfer of electronic files (i.e. dropbox); or (3) with digital files stored on compact disc and mailed to LIHI. LIHI prefers not to receive paper copies of applications. LIHI also prefers links to original sources of documentation online, particularly regulatory documents, rather than duplicating the digital files on the LIHI website. For example, if an applicant chooses Standard B.2 of Criterion B – Water Quality, they would provide a hyperlink to the Water Quality Certificate on the FERC e-library website.

LIHI is in the process of developing an online form to automate the tables below that will route the

applicant to the appropriate instructions depending upon which standards are chosen. Once these tables are automated, an applicant will be prompted with the information needed for only those standards selected. Until the online application form becomes available, all possible standards for each criterion are listed in the tables below for completeness.

The contents of the tables in this appendix may change over time, as LIHI staff gain more experience with the revised criteria in this edition of the certification handbook. Therefore, applicants should make sure they are using the most current version of the Handbook, as posted on the LIHI website. Please check with LIHI staff if you are unsure.

B.2.1 Ecological Flow Standards

The instructions in Table B-2 identify information needed to meet the Ecological Flow Regimes criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-2. Information Required to Support Ecological Flows Standards.

Criterion	Standard	Instructions
A	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> • Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained. • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.
A	2	<u>Agency Recommendation (see Appendix A for definitions):</u> <ul style="list-style-type: none"> • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow

Criterion	Standard	Instructions
		variations).
A	3	<u>Limited Storage:</u> <ul style="list-style-type: none"> • Explain the calculation of active storage capacity and retention time (storage/flow), including data sources. • Provide the name and published reference for the methodology used, including developer of the methodology and several successful, recent applications, and how it has been regionally accepted. • Provide the calculations used to derive the final flow, including data sources and any pre-processing applied.
A	4	<u>Site-Specific Studies:</u> <ul style="list-style-type: none"> • Describe the site-specific, habitat evaluation technique that was used to define the ecological flow regime and how the results satisfy the goal of this criterion. • Describe the resultant flow regime in terms of base flow, seasonal variability, high-flow events, short-term rates of change, and year-to-year variability. • Describe the target fish and wildlife resources that were considered and how the resultant flow regime supports their habitat over their life cycles.
A	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none"> • If an adaptive management program is in place, provide sufficient information to understand. • If non-flow habitat enhancements have been applied, explain what they are, how their benefits are being monitored, and how they are achieving a positive net benefit to fish and wildlife resources.

B.2.2 Water Quality Standards

The instructions in Table B-3 identify information needed to meet the Water Quality criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-3. Information Required to Support Water Quality Standards.

Criterion	Standard	Instructions
B	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.• Explain rationale for why facility does not alter water quality characteristics below, around, and above the facility.
B	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.• Provide a copy of the most recent Water Quality Certificate, including the date of issuance.• Identify any other agency recommendations related to water quality and explain their scientific or technical basis.• Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.
B	3	<u>Site-Specific Monitoring Studies:</u> <ul style="list-style-type: none">• Document consultation with appropriate water quality agency to determine what water quality parameters and sampling methods are required.• Present recent water quality data, explain how it satisfies applicable water quality standards, and provide a letter from the appropriate state of other regulatory agency accepting these results.
B	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Describe any advance technologies that have been deployed at the facility to enhance ambient water quality and how its performance is being monitored.• If adaptive management is being applied, describe the management objectives, the monitoring program pursuant to evaluating performance against those objectives, and the management actions that will be taken in response to monitoring results.

B.2.3 Upstream Fish Passage Standards

The instructions in Table B-4 identify information needed to meet the Upstream Fish Passage criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall list all migratory fish species (for example, anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the Facility.

Table B-4. Information Required to Support Upstream Fish Passage Standards.

Criterion	Standard	Instructions
C	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none"> Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. Document available fish distribution data and the lack of migratory fish species in the vicinity. If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.
C	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none"> Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.
C	3	<u>Best Practice / Best Available Technology:</u> <ul style="list-style-type: none"> Describe the upstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology. Identify all the migratory fish species in the area and explain how the upstream fish passage facilities provide adequate and safe passage for them. Describe the monitoring and effectiveness activities that have been or are being conducted for the upstream passage facilities.
C	4	<u>Acceptable Mitigation:</u> <ul style="list-style-type: none"> Describe the alternative mitigation measures being deployed in lieu of upstream fishways and provide documentation of agency approval of them. Explain how the total benefits of the mitigation provided equals or exceeds the benefits that might accrue from providing upstream passage in terms

		<p>of reproductive success (e.g., numbers of fish produced or area of suitable habitat provided).</p> <ul style="list-style-type: none"> • Explain how the alternative mitigation measures sustain the abundance and diversity of fish stocks in the river system.
C	PLUS	<p><u>Bonus Activities:</u></p> <ul style="list-style-type: none"> • If advanced technology has been or will be deployed, explain how it will increase fish passage success relative to other options. • If a basin-scale redevelopment strategy is being pursued, explain how it will increase the abundance and sustainability of migratory fish species in the river system. • If adaptive management is being applied, describe the management objectives, the monitoring program pursuant to evaluating performance against those objectives, and the management actions that will be taken in response to monitoring results.

B.2.4 Downstream Fish Passage and Protection Standards

The instructions in Table B-4 identify information needed to meet the Downstream Fish Passage and Protection criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall list all fish species (for example, riverine, anadromous, catadromous, and potamodromous) that occur now or have occurred historically in the area affected by the Facility.

Table B-5. Information Required to Support Downstream Fish Passage Standards.

Criterion	Standard	Instructions
D	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).• For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.• Document available fish distribution data and the lack of migratory fish species in the vicinity.• If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.
D	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).• Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is part of a Settlement Agreement or not.• Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.
D	3	<u>Best Practice / Best Available Technology:</u> <ul style="list-style-type: none">• Describe the downstream fish passage technologies that have been deployed and are in operation, and justify why they qualify as best practices or best available technology.• Identify all the migratory fish species in the area and explain how the downstream fish passage facilities provide adequate and safe passage for them.• Describe the monitoring and effectiveness activities that have been or are being conducted for the downstream passage facilities.

Criterion	Standard	Instructions
D	4	<u>Acceptable Mitigation:</u> <ul style="list-style-type: none"> • Describe the alternative mitigation measures being deployed in lieu of downstream fishways and provide documentation of agency approval of them. • Explain how the total benefits of the mitigation provided equals or exceeds the benefits that might accrue from providing downstream passage in terms of reproductive success (e.g., numbers of fish produced or area of suitable habitat provided). • Explain how the alternative mitigation measures sustain the abundance and diversity of fish stocks in the river system.
D	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none"> • If advanced technology has been or will be deployed, explain how it will increase fish passage success relative to other options. • If a basin-scale redevelopment strategy is being pursued, explain how it will increase the abundance and sustainability of migratory fish species in the river system. • If adaptive management is being applied, describe the management objectives, the monitoring program pursuant to evaluating performance against those objectives, and the management actions that will be taken in response to monitoring results.

B.2.5 Shoreline and Watershed Protection Standards

The instructions in Table B-6 identify information needed to meet the Shoreline and Watershed Protection criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-6. Information Required to Support Shoreline and Watershed Protection Standards.

Criterion	Standard	Instructions
E	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• If there are no lands with significant ecological value associated with the facility, document and justify this (e.g., describe the land use and land cover within the project boundary).• Document that there have been no Shoreline Management Plans or similar protection requirements for the facility.
E	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans).• Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.
E	3	<u>Enforceable Protection:</u> <ul style="list-style-type: none">• Demonstrate that there is an approved and enforceable shoreline buffer or equivalent watershed protection plan in place for conservation purposes, including buffered shoreline along river corridors.• In lieu of an existing shore land protection plan, provide documentation that the facility commits to protect and not develop an equivalent land area for conservation purposes as a condition of LIHI certification, with such commitment to be in effect for the duration of LIHI certification.
E	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Provide documentation that the facility has a formal conservation plan protecting a buffer zone of 50% or more of the undeveloped shoreline that the facility owns around its reservoirs and river corridors• In lieu of a formal conservation plan, provide documentation that the facility has established a watershed enhancement fund for ecological land management that will achieve the equivalent land protection value of an ecologically effective buffer zone of 50% or more around undeveloped shoreline.

B.2.6 Threatened and Endangered Species Standards

The instructions in Table B-7 identify information needed to meet the Threatened and Endangered Species criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.

Table B-7. Information Required to Support Threatened and Endangered Species Standards.

Criterion	Standard	Instructions
F	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Document that there are no listed species in the facility area or affected riverine zones downstream of the facility.• If listed species are known to have existed in the facility area in the past but are not currently present, explain why the facility was not the cause of the extirpation of such species.• If the facility is making significant efforts to reintroduce an extirpated species, describe the actions that are being taken.
F	2	<u>Finding of No Negative Effects:</u> <ul style="list-style-type: none">• Identify all listed species in the facility area based on current data from the appropriate state and federal natural resource management agencies.• Provide documentation of a finding of no negative effect of the facility on any listed species in the area from an appropriate natural resource management agency.
F	3	<u>Recovery Planning and Action:</u> <ul style="list-style-type: none">• If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.• Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.
F	4	<u>Acceptable Mitigation:</u> <ul style="list-style-type: none">• If newly listed species are present for which environmental requirements have not been fully determined, describe any significant measures that the facility is implementing to avoid or minimize the impacts on such newly <i>listed species</i>.• Document that the mitigation measures for newly listed species are being implemented to the interim satisfaction of applicable resource agencies.

F	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none"> • Describe any enforceable agreement that the facility has with resource agencies to operate the facility in support of rare and endemic species. • Describe any enforceable agreement that the facility has with resource agencies to take proactive measures in the vicinity of the facility to substantially minimize impacts on species that are at risk of becoming listed species. • Describe any enforceable agreement that the facility has with resource agencies to be a significant participant in a species recovery effort.
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B.2.7 Cultural and Historic Resources Standards

The instructions in Table B-8 identify information needed to meet the Cultural and Historic Resources criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

In all cases, the applicant shall identify all cultural and historic resources that are on facility owned property or that may be affected by facility operations.

Table B-8. Information Required to Support Cultural and Historic Resources Standards.

Criterion	Standard	Instructions
G	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.• Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.
G	2	<u>Approved Plan:</u> <ul style="list-style-type: none">• Provide documentation of all approved state, provincial, federal, and recognized tribal plans for the protection, enhancement, and mitigation of impacts to cultural and historic resources affected by the facility.• Document that the facility is in compliance with all such plans.
G	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Document any substantial commitment that the facility has made to restoring one or more significant cultural or historical resource in the vicinity, beyond what is required in existing plans such as a Historic Resources Management Plan.• Document any significant new educational opportunity about cultural or historical resources in the area that the Facility has created, including contractual obligations that guarantee that this opportunity will exist for the duration of the LIHI certification.

B.2.8 Recreational Resources Standards

The instructions in Table B-9 identify information needed to meet the Recreational Resources criterion and to satisfy its goal. The applicant should provide only the information associated with the standard selected for a designated zone of effect. If the PLUS standard is also selected for this criterion, the information associated with that standard must also be provided. If more than one ZoE is designated for an application, this process should be repeated for other zones.

Table B-9. Information Required to Support Recreational Resources Standards.

Criterion	Standard	Instructions
H	1	<u>Not Applicable / De Minimis Effect:</u> <ul style="list-style-type: none">• Document that the facility does not occupy lands or waters to which public access can be granted and that the facility does not otherwise impact recreational opportunities in the facility area.
H	2	<u>Agency Recommendation:</u> <ul style="list-style-type: none">• Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.• Document that the facility is in compliance with all such recommendations and plans.
H	3	<u>Assured Accessibility:</u> <ul style="list-style-type: none">• In lieu of existing recommendations and plans for recreational uses, document the facility's current and future commitment to accommodate reasonable requests from public interest groups for adequate public access for recreational use of lands and waters of the facility, including appropriate recreational water flows and levels, without fees or charges.
H	PLUS	<u>Bonus Activities:</u> <ul style="list-style-type: none">• Document any new public recreational opportunities that have been created on facility lands or waters beyond those required by agencies (e.g., campgrounds, whitewater parks, boating access facilities and trails).• Document that such new recreational opportunities did not create unmitigated impacts to other resources.

B.3 Sworn Statement and Waiver Form

All applications for LIHI Certification must include the following sworn statement before they can be reviewed by LIHI:

SWORN STATEMENT

As an Authorized Representative of _____, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.

PLEASE INSERT FOR PRE-OPERATIONAL CERTIFICATIONS:

For applications for pre-operational certification of a "new" facility (see Section 4.5.3), the applicant must also acknowledge that the Institute may suspend or revoke the certification should the impacts of the project, once operational, fail to comply with the certification criteria.

B.4 Contacts Form

All applications for LIHI Certification must include complete contact information to be reviewed.

1. Applicant-related contacts

Project Owner:	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Project Operator (if different from Owner):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Consulting Firm / Agent for LIHI Program (if different from above):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	
Party responsible for accounts payable:	
Name and Title	
Company	
Phone	
Email Address	
Mailing Address	

2. Current and relevant state, federal, provincial, and tribal resource agency contacts (copy and repeat the following table as needed).

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

Agency Contact (Check area of responsibility: Flows __, Water Quality __, Fish/Wildlife Resources __, Watersheds __, T/E Spp. __, Cultural/Historic Resources __, Recreation __):	
Agency Name	
Name and Title	
Phone	
Email address	
Mailing Address	

B.5 Assignment and Assumption Form

If certified facility transfers ownership and the purchaser wishes to maintain LIHI certification, the new facility owner must assume all obligations and responsibilities of a LIHI Certificate Holder. This can be demonstrated in one of the following ways: by providing LIHI with a copy of an Assignment and Assumption Agreement between the seller and purchaser of the facility which is subject to the approval of LIHI; by the purchaser executing a separate CMLA with LIHI; or by adding the subject facility as an Exhibit to a CMLA executed by the purchaser and LIHI that is already in effect (if applicable).

The text below is suggested language for interested parties to modify and use, should a purchaser of a Certified Facility wish to maintain LIHI certification of a facility they have purchased. This Assignment and Assumption agreement must be accompanied by evidence of the transfer of ownership, which can include the purchase agreement and/or a FERC Order documenting the transfer.

FACILITY NAME: _____ LIHI CERTIFICATE NUMBER: _____

SELLER OF FACILITY

Company Name: _____

Authorize Representative Name: _____ Title _____

BUYER OF FACILITY:

Company Name: _____

Authorize Representative Name: _____ Title _____

This Assignment and Assumption Agreement (the "Assignment and Assumption Agreement") is made and entered into as of _____ 20_____, by and among _____, a _____ corporation ("Assignor"), and _____, a _____ corporation ("Assignee").

WHEREAS, Assignor and Assignee are parties to that certain Asset Purchase Agreement dated as of _____, _____ (the "Purchase Agreement"), pursuant to which Assignee has purchased the _____ hydroelectric facility (the "Certified Facility") owned by Assignor; and

WHEREAS, pursuant to the Purchase Agreement, Assignor has agreed to assign certain rights and agreements to Assignee as a LIHI Certificate Holder of the _____ hydroelectric facility, and Assignee has agreed to assume certain obligations of Assignor, as set forth herein, and this Assignment and Assumption Agreement is contemplated by Section _____ of the Purchase Agreement;

NOW, THEREFORE, for and in consideration of the premises and the mutual covenants contained herein, and for other good and valuable consideration, the receipt, adequacy and legal sufficiency of which are hereby acknowledged, the parties do hereby agree as follows:

1. Assignment and Assumption. Effective as of _____ on _____, 20____ (the “Effective Date”), Assignor hereby assigns, sells, transfers and sets over (collectively, the “Assignment”) to Assignee all of Assignor’s right, title, benefit, privileges and interest in and to, and all of Assignor’s burdens, obligations and liabilities in connection with, the LIHI Certification of the Certified Facility. Assignee hereby accepts the Assignment and assumes and agrees to observe and perform all of the duties, obligations, terms, provisions and covenants, and to pay and discharge all of the liabilities of Assignor to be observed, performed, paid or discharged from and after the Closing, in connection with the LIHI Certification of the Certified Facility. Assignee assumes no Retained Liabilities, and the parties hereto agree that all such Retained Liabilities shall remain the sole responsibility of Assignor.
2. Terms of the Purchase Agreement. The terms of the Purchase Agreement, including but not limited to Assignor’s representations, warranties, covenants, agreements and indemnities relating to the LIHI Certification of the Certified Facility, are incorporated herein by this reference. Assignor acknowledges and agrees that the representations, warranties, covenants, agreements and indemnities contained in the Purchase Agreement shall not be superseded hereby but shall remain in full force and effect to the full extent provided therein. In the event of any conflict or inconsistency between the terms of the Purchase Agreement and the terms hereof, the terms of the Purchase Agreement shall govern.
3. Further Actions. Each of the parties hereto covenants and agrees, at its own expense, to execute and deliver, at the request of the other party hereto, such further instruments of transfer and assignment and to take such other action as such other party may reasonably request to more effectively consummate the assignments and assumptions contemplated by this Assignment and Assumption Agreement.

[Insert provisions on choice of law, attorneys’ fees, assignment, successors and assigns, counterparts, etc., which should be drafted to track the “boilerplate” language of the Purchase Agreement.]

IN WITNESS WHEREOF, the parties have executed this Assignment and Assumption Agreement as of the date first above written.

ASSIGNOR

ASSIGNEE

a _____ corporation

a _____ corporation

By: _____

By: _____

Its: _____

Its: _____

APPENDIX C - FEE SCHEDULE

The LIHI Certification Program Fees are designed to cover the cost of operating the Low Impact Hydropower Institute, including processing applications and maintaining active certifications. This Fee Schedule explains each component of the LIHI Program Fees in detail. LIHI, in its sole and reasonable discretion, reserves the right to alter the program fee policy as needed with reasonable notice to certificate holders. Adjustments to LIHI Fees may be available under certain circumstances. Please contact the Institute for details.

Table C-10. Program Fee Schedule Summary

<i>Type</i>	<i>Amount/Method*</i>	<i>Frequency</i>
Application Fees		
Intake Review	\$950	Once – due with submittal of intake draft application
Certification Review	May range from \$3000 - \$10,000 or more.	Once – due with submittal of certification application
Recertification Review	Phase 1: \$2,000 Phase 2: \$0 - \$8,000+	Phase 1 due with submittal of recertification application. Phase 2 after recertification intake is completed
Certificate Maintenance Fees		
Annual Certificate Fee	Product of average generation and applicable market category rate. \$1000 minimum and \$30,000 maximum	Once each year, due on the anniversary month of the certificate effective date
Condition Fee	By number and nature of conditions, ranges from \$0 to \$1000 per condition.	Once each year, due on anniversary month of certificate effective date. Condition status is reviewed each year as a component of compliance review.

***Note:** some types of facilities that qualify for the NA/DME standard on all criteria will have substantially reduced fees – consult with LIHI staff to see if you qualify.

C.1 Application Review Fees

LIHI Application Review Fees (ARFs) include Intake Review fees, Certification Review fees, and Recertification Review fees. Program fees are designed to cover LIHI's cost associated with reviewing applications for certification at all stages in the process, and to fund the operations of the Institute.

C.1.1 Intake Review Fee

The Intake Review Fee (IRF) is a fixed fee charged to all potential projects, regardless of installed capacity or circumstances. Before submitting payment of this fee to LIHI, it is strongly recommended that interested applicants contact LIHI for free pre-application consulting (See 4.2.1). An invoice for the IRF will be issued by LIHI staff only when a prospective applicant notifies LIHI that they wish to initiate the intake application.

The Intake Review Fee is a fixed fee of \$950.00, which covers the cost to review the draft application submitted in the intake phase. An applicant must pay a separate IRF for each facility even if multiple facilities (with multiple FERC licenses where applicable) located in the same watershed are operationally or hydrologically connected. A full explanation of the intake review process can be found in Section 4.2.2 of this LIHI Handbook. The IRF must be received before LIHI can begin to review intake application materials.

C.1.2 Certification Application Review Fee

All applicants must pay a Certification Application Review Fee to process a certification application. Certification application review fees are individually tailored based on the information gathered in the Intake Review phase. As stated in Sections 4.2.2 and 4.2.3, all applicants that submit an intake application will be provided with a summary of the intake review findings (via intake review transmittal), which includes a recommendation on how to proceed to the next phase and an estimate for the non-refundable ARF required to process the complete certification application. The fee estimate covers review costs such as the cost of hiring an independent reviewer and LIHI staff time and other overhead costs. LIHI reserves the right to charge additional fees in circumstances where a review is more complex than initially estimated. If, during the course of the application review, LIHI staff determine that unanticipated complexities in the review process impose additional cost to the Institute or the application review takes more than twelve (12) months, a supplementary ARF may be charged prior to the issuance of a certificate at the discretion of the Executive Director and in consultation with the applicant.

Additional Information to Note:

Fee supplement for consolidated application seeking certification for multiple facilities:

At the request of the applicant and at the discretion of the Executive Director, a consolidated, single application may be submitted by an applicant that owns or operates multiple facilities in a watershed that are operationally or hydrologically connected. The fee supplement for a consolidated application will be determined at the sole discretion of the Executive Director.

Application Fee Premium for a “Pre-Operational” facility:

An application for the certification of a facility that is pre-operational shall include a premium comprised of an additional twenty-five percent (25%) of the ARF charged.

Reduced Fee for Not Applicable/ De Minimis Effect facilities:

For facilities including generation installed in conduits or in other situations where a facility can pass all of the Not Applicable / De Minimis Effect standard for each criterion, a reduced fee applies.

C.2 Certification Annual Maintenance Fees

LIHI Certification Maintenance Fees include Annual Certificate Fees, Active Condition Fees, and any other supplemental fees LIHI may impose to maintain an active certificate.

The Annual Certificate Fee is based on a \$/MWh rate structure that varies according to regional

renewable market averages. There is a tiered minimum Annual Fee, or floor, for projects with low installed capacity (less than or greater than 5MW; see Appendix C). There is also a maximum Annual Fee, or cap, for large facilities. Condition Fees are fees charged on an annual basis to certificate holders with active facility-specific conditions that require LIHI staff time to process (see C.2.2).

C.2.1 Annual Certificate Fees

For the full term of the certification, each Certificate Facility shall pay to LIHI on an annual basis an Annual Certificate Fee for each year of certification, subject to the following provisions:

Implementation Schedule: The Annual Certificate Fee term will be defined as beginning on the effective date of the certification for the subsequent twelve (12 months), with the first annual certificate fee due on the first anniversary of the certificate effective date. Each subsequent annual certificate fee will be due on the subsequent anniversaries of the effective date. If the certification decision is issued more than twelve (12) months past the effective date, the annual certificate fee will accrue and will be charged in full at the time the certification decision is issued, to be paid within thirty (30) days of the issuance of the certification documents. Annual certificate fees will be imposed every year, including the year in which a certified project is undergoing an application for re-certification.

Annual Certificate Fee Amount and Rate: The Annual Certificate Fee amount for each certificate shall be the product of the total average annual generation (AAG) of the certified facility as provided by the Applicant in their LIHI Certification Application¹ and the applicable Annual Certificate Fee Rate(s), according to the market-participation of the facility generation output as follows:

Verified Market Participant (VMP): The VMP rate applies to LIHI certified generation that is publicly listed as eligible for a state Renewable Portfolio Standard (RPS) program, a Renewable Energy Standard (RES) program, an Alternative Energy Portfolio Standard (AEPS), a voluntary Green Energy program such as Green-e, or any other policy which utilizes the LIHI certification standard as a requirement and/or option for eligibility. If a certified facility has only a portion of their generation certified in a verified market, only that portion will be charged at the VMP rate, and the balance will be charged at the published Base Fee rate (see below). The VMP \$/MWh rate is published at www.lowimpacthydro.org/fees.

Base Rate: All generation that is not VMG, as defined above, shall be assessed at the base rate as published by the Institute in the LIHI Rate Schedule at www.lowimpacthydro.org/fees.

Publication of LIHI Rate Schedule and Changes to Annual Certificate Fee Rate: The LIHI Rate Schedule will be published at www.lowimpacthydro.org/fees. LIHI reserves the right to alter the definitions and rates for the Verified Market Participant categories with reasonable notice to certificate holders.

Annual Certificate Fee Minimum and Maximum Amounts: Regardless of the calculated Annual Certificate Fee amount using the dollar per MWh rate, no certificate holder shall pay less than \$1,000

¹ The AAG amount may be adjusted according to actual generation documented by a Certificate Holder in Annual Compliance statements that result from newly added generation capacity, efficiency gains, a reduction in generation capacity from equipment brought offline or any other material change that impacts generation output.

per year if the installed generation capacity of the LIHI certified facility is less than 4.99 MW, no less than \$1,500 per year if the installed capacity of the generation facility is between 5 MW and 9.99 MW, and no more than \$30,000 per year for a LIHI certified facility of any size.

C.2.2 Active Condition Fee

On each anniversary of a certificate effective date, a non-refundable fee may be charged relative to each facility-specific conditions that is required for certification. This fee may range from \$0 to \$1,000.00 per condition item depending on the complexity of the condition, and will be determined at the sole discretion of the Institute. Not all conditions will incur a fee, and the fee amounts may vary from year-to-year during the term of a certificate, as conditions are satisfied, modified or added to certifications. Condition fee amounts are established in proportion to the time required by LIHI staff to monitor compliance.

C.3 Recertification Application Review Fee

All applicants must pay a Recertification Review Fee (RRF) to process an application to renew a certification. A certified facility may apply for renewal/recertification by completing and submitting a recertification application package according to the process described in Section 6.

Recertification Review Fee Phases. The RRF is intended to cover the cost of the review of an Applicant's Recertification Application Package for Phase 1 of the recertification review process. The Phase 1 RRF is a fixed amount of \$2,000. If the result of a Phase 1 recertification review results in an escalation to a Phase 2 review then additional review fees will likely be required. If the Phase 1 recertification review results in the issuance of a new certification term, there will be no additional fee charged. The RRF may also be increased in consultation with the Applicant by an amount determined appropriate by the Executive Director if a period of more than twelve months has passed since the recertification application was first posted for public notice and the review is not yet complete.

C.4 Reduced Fees for Very-Low Impact Facilities

Some types of hydropower facilities, such as those constructed on water conduits and that do not discharge back into natural river systems, may qualify for the NA/DME standards for all criteria. In those cases, substantially reduced application and annual maintenance fees may apply. Consult with LIHI staff to determine whether your application qualifies.

C.5 Refund Policy

All LIHI Fees, including both Application Review Fees and Certification Maintenance Fees are non-refundable. Should an applicant choose to withdraw or place an application on hold at any point during the review process, LIHI is under no obligation to return or refund fee amounts already collected. Should a certificate holder decide to withdraw a certified facility from the program (see Section 4.5.4), LIHI will discontinue all annual maintenance billing for the years after the year of withdrawal. Additional fees may apply if and when an applicant chooses to revive a project application that was submitted previously but was not certified and was withdrawn or placed on hold by the applicant.