

**State of Wisconsin
 Department of Natural Resources
 Manual Code (insert number)
 Fish Passage at Dams
 Integrated Evaluation and Decision Process**

Rescinds and Replaces: Not Applicable
 Division: Agency Wide

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I. SCOPE

This manual code sets forth the department wide procedures for decisions related to fish passage at dams in Wisconsin. This manual code is applicable to all department divisions and programs. The manual code outlines the communication pathways, integrated internal evaluation and decision-making procedures for fish passage projects. This manual code applies to fish passage projects in response to a potential regulatory or administrative decision involving the dam owner or principal stakeholders. Fish passage means conventional upstream and downstream passage and includes fish management alternatives such as trap and transfer, habitat enhancement and fish stocking. This manual code does not address fish passage at other natural or manmade obstructions (e.g. beaver dams or perched culverts) and does not apply to dam removal projects. Fish passage technical information is summarized in the Background Section (V) of this manual code.

Before beginning development of this manual code, the department conducted a formal process to complete the 2018 Fish Passage at Dams Strategic Analysis (WDNR, 2018). A Strategic Analysis process provides information for future policy decisions and guidance that incorporates available information with input from experts, stakeholders and decision-makers. The Strategic Analysis compiled relevant scientific information and possible alternative course of actions, while

providing an opportunity for federal agencies, tribes, non-profit organizations, dam owners and operators, and the interested public to have a voice in the scope and content of the analysis. One finding of the Strategic Analysis was that the state lacked a clear and transparent process for considering the issues related to fish passage to make more timely and consistent decisions.

II. POLICY

It is the department's policy to conduct a thorough, site-specific integrated evaluation of the environmental, social and economic advantages and disadvantages of proposed fish passage at dams in Wisconsin, using procedures with a communication pathway that supports a collaborative process resulting in a singular department decision that follows existing laws.

III. DEFINITIONS

This manual code uses, by reference, the definitions from the department's Fish Passage at Dams Strategic Analysis (WDNR, 2018).

IV. PROCEDURES

For a standardized and efficient department approach to evaluating fish passage projects, this manual code establishes the following procedures:

Section A - project communication pathways,

Section B - integrated internal evaluation,

Section C - a decision making process.

Section A. Project Communication Pathways

This manual code sets forth the following fish passage communication pathway. Early and timely communication is especially important for complex projects that involve critical evaluation and input from multiple key programs. The involvement of the regional Secretary's Director and a project manager is crucial to ensuring a collaborative integrated project team capable of successfully working through the complicated issues of fish passage (Figure 1).

Department contact about fish passage projects can vary from simple information requests by the public, to collaboration with other agencies like Fish and Wildlife Service to regulatory actions by the department. Staff across different programs may receive initial fish passage contact and they should reach out immediately to the Secretary's Director in his/her geographic area to begin the process outlined below.

1. Initial Project Contact

The regional Secretary's Director is designated as the initial department contact. The Secretary's Director is positioned to bring together the appropriate department staff, given that the evaluation of many fish passage

projects will be a highly integrated process involving several different department programs.

2. Preliminary Screening

The Secretary's Director, with assistance from appropriate program staff, conducts a basic needs assessment for fish passage and develops a preliminary list of advantages, disadvantages, stakeholders, legal considerations and known controversial issues. Appropriate program staff would include those from dam safety, FERC, fisheries, natural heritage conservation, waterways and wetlands, water quality and legal services. Geographic location may lead to an extended list to include Office of Great Waters or the agency tribal liaison. Information and input from external stakeholders should be considered during the preliminary screening step.

3. Simple or Complex Project Determination

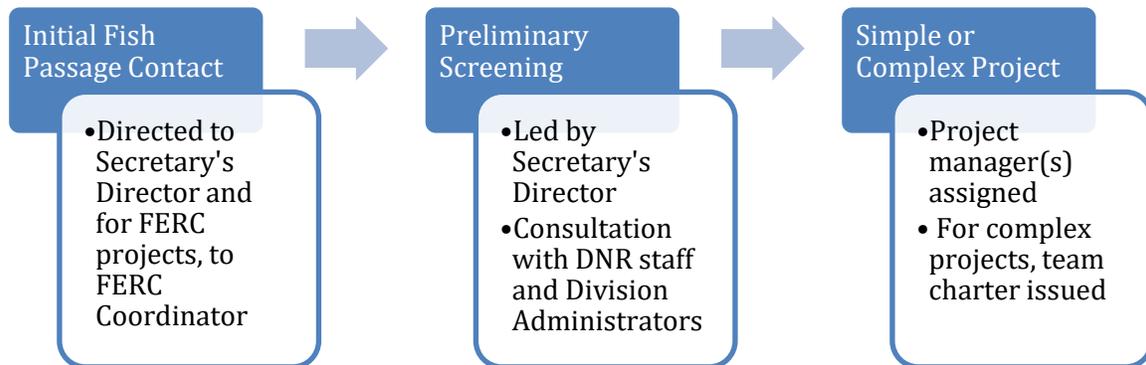
Based upon the preliminary review information, the Secretary's Director, in consultation with the Secretary's Office and Division Administrators, determines if the fish passage project evaluation should go forward and if the project is simple or complex. Simple projects are those that involve one or two programs and involve a relatively straight forward permitting process. (For example: trap and transfer or supplemental fish stocking programs). Simple projects will generally be handled by the lead program under existing regulatory and communication protocols.

4. Complex Project Evaluation

For complex fish passage projects, a project manager is identified to lead an integrated evaluation of the project (Section B). The project manager is designated by the Secretary's Director in consultation with the Secretary's Office and Division Leadership Team. In most instances, team membership, roles and responsibilities and decision making are set forth in a team charter. The Secretary's Director or project manager should use a public participation process that may involve comment periods, meetings, hearings, workshops, surveys, questionnaires, interagency committees, or other appropriate methods or activities integrated with legal public participation requirements.

As the complex project evaluation proceeds as described in Section B, the project manager is designated as the single point of communication for the project. A project spokesperson should also be identified in consultation with the Secretary's Office and the Office of Communications. The spokesperson is responsible for developing agency external talking points and responding to media and public contacts.

Figure 1. Communication Pathways for Complex Fish Passage Project



Section B. Integrated Internal Project Evaluation

A thorough evaluation of the positive and negative effects of a proposed fish passage can be complex and is a technically specialized discipline (Agency, 2010). The evaluation of fish passage is connected to many different factors including environmental, public safety, economic, legal and social issues. The department's 2018 Strategic Analysis and references contained therein, provides a starting point for background information necessary for evaluation of a fish passage project.

The project manager is responsible for coordinating an integrated evaluation of the proposed fish passage project among assigned staff from the collaborating programs (Figure 2). This will generally include key programs such as Fisheries, Water Quality, Dam Safety, Waterway and Wetlands, Natural Heritage Conservation and Wildlife. Other programs should be involved as necessary and may include programs such as Forestry or Waste Management, etc. Statewide or technical experts should participate on the team as determined by program management and the project manager.

Local project team members are expected to represent programmatic perspectives and knowledge for a specific fish passage project and participate in developing an initial integrated project team recommendation. The integrated evaluation by the programs should focus on the factors described in this policy (Figure 3) following program guidance and applying science-based, technical knowledge.

Figure 2. Integrated Project Evaluation Framework

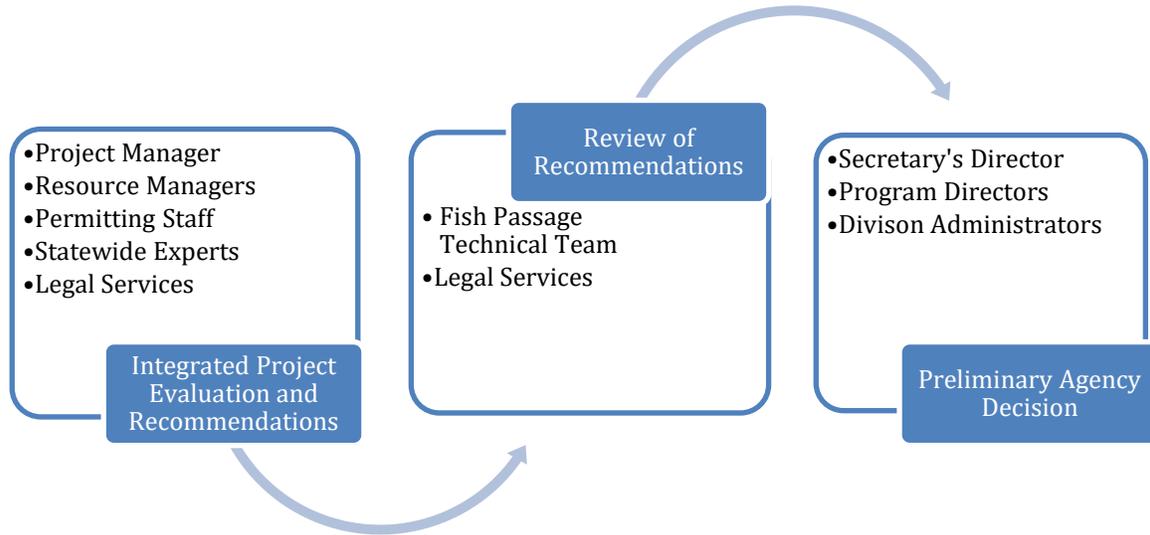


Figure 3. Key Program Evaluation Factors

<p>Fisheries</p> <ul style="list-style-type: none"> •Target game fish species •Non-target game fish species •Fish health & pathogens •Fisheries habitat •Fishing regulations 	<p>Dam Safety</p> <ul style="list-style-type: none"> •Structural integrity •Flow capacity •Flood risk and floodplain impact assessment •Operation, water level and minimum flow impacts •Public safety 	<p>Water Quality</p> <ul style="list-style-type: none"> •Aquatic invasive species •Aquatic habitat •Water quality •Non-target species (non-game fish, etc.) 	<p>Wildlife</p> <ul style="list-style-type: none"> •Terrestrial invasive species •Habitat •Non-target species (amphibians, bird, etc.)
<p>Waterway and Wetlands</p> <ul style="list-style-type: none"> •Navigation •Wetland impacts •Natural scenery •Recreational uses 	<p>Environmental & Economic Analysis</p> <ul style="list-style-type: none"> •Economic cost-benefits •Power generation •Water user and societal influences •WEPA compliance questions 	<p>Natural Heritage Conservation</p> <ul style="list-style-type: none"> •Non-target species (mussels, etc.) •E&T species •Invasive species 	<p>"As Needed" Programs</p> <ul style="list-style-type: none"> •Forestry •Waste Material Management •Remediation and Redevelopment •Legal •Tribal

Section C. Decision-Making Process

Through internal deliberation, the local project team will strive to reach consensus regarding a recommendation that all team members can support. Input from stakeholders should also be an important consideration during the deliberations. After each of the programs has compiled and analyzed data and information for their applicable evaluation factors, the project manager and local project team are responsible for synthesis of the information to develop an initial recommendation. All team members are responsible for explaining their views and seeking to understand the views of others on the team. Discussions will be based on assessing how the department can best accomplish its policy of "One DNR", and not narrowly on what is best for a singular program or Division. Team members agree to articulate what can be done to allow them to reach consensus.

The project team is responsible for recording the type of documentation and rationale used during the evaluation process to arrive at the recommendation. The documentation should include the factors considered, how each factor was evaluated, and how the factors were weighed in comparison with each other. Different alternatives may be evaluated and presented in the recommendations along with a preferred option. Documentation should include an evaluation of applicable statutes and code and permitting authorities. Documentation should remain labeled "draft recommendations" until finalized for public process.

If consensus on a recommendation is not readily achieved, the issue will be referred with explanation of unresolved issues to the Secretary's Director for further instructions. Once an initial recommendation is advanced, whether or not with the concurrence of all members, it shall become the official position of the local project team.

Consistency Review

The project team then forwards the recommendation and documentation to the statewide fish passage technical team for their review. The statewide fish passage technical team is responsible for reviewing the project team's recommendations for consistency with department policies, laws and previous decisions. The statewide fish passage technical team should consider and document how the recommendation is consistent with previous department decisions. The statewide fish passage technical team may remit the decision back to the project team with specific recommendations for additional work and analysis.

Preliminary Agency Position

Following the review and consultation with the statewide fish passage technical team with the project team's recommendation, the project manager will brief the department leadership (Secretary's Director, Program Directors, Division Administrators, Secretary office, etc.) on the recommendations of the local and statewide fish passage teams. Department leadership is ultimately responsible for generating the preliminary department position as a starting point for public input.

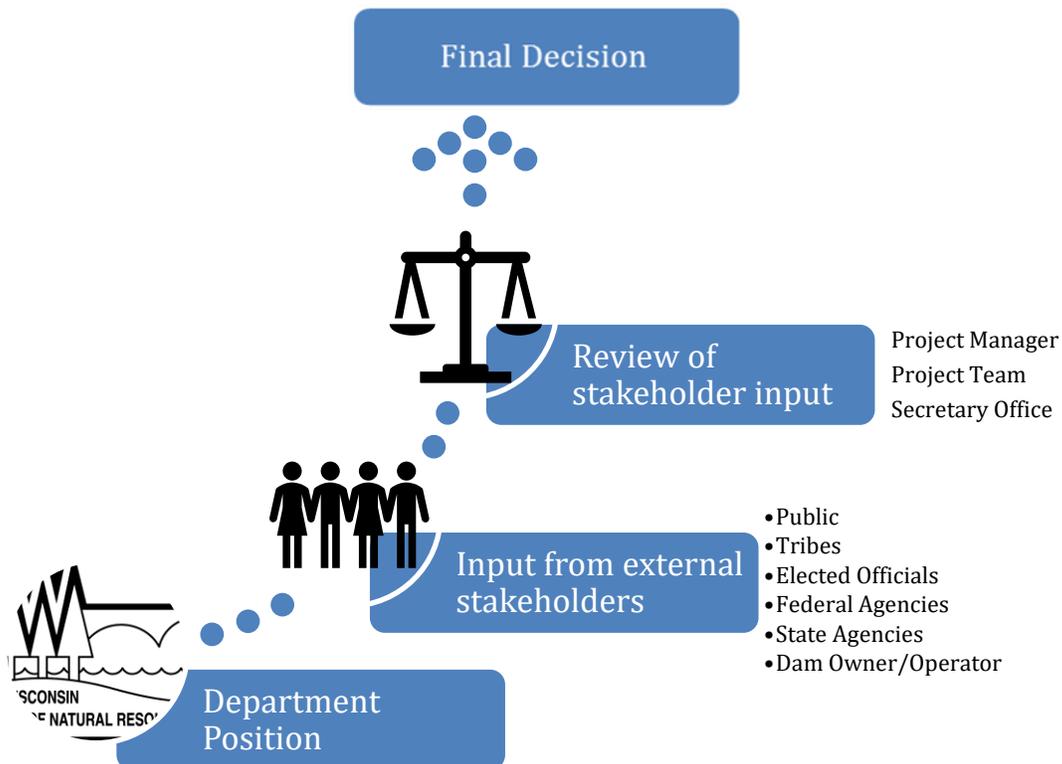
Informal input and cooperative work with external stakeholders may occur during the formulation of the initial project team’s recommendations.

Final Agency Position

Once the department leadership develops the preliminary agency position, public involvement begins based upon legal requirements and procedures. Direct input should be requested from local and tribal governments and partner state and federal agencies. Public input is an important consideration for the development of the department’s final decision.

The project manager and local project team will consider all comments and develop recommended modifications to the preliminary agency position for department leadership to consider, if needed. The department leadership reviews and approves modifications to the preliminary agency position, which then becomes the department’s final decision, challengeable under appropriate legal standards.

If the department leadership determines the factors on which the final decision was based changes in the future, the department will follow existing legal requirements and this policy to reevaluate the decision.



V. BACKGROUND

Fish passage refers to the ability of fish to move through or around a dam, in one or both directions. Many fish populations depend on the ability of individuals to migrate to fulfill critical life-stage requirements. Many different technologies exist to pass fish around or through a dam. Fish passage can be upstream or downstream, active or passive, or any combination of these. Active passage occurs through mechanized structures such as fish elevators and locks, with electrical power sometimes used to facilitate operation. Passive passage occurs through static structures such as fish ladders and natural bypass river channels. The goal of upstream fish passage is to attract migrating fish species to a specified point in the river downstream of the structure and to induce them to move upstream through a waterway or by collecting and transporting them upstream. Effective downstream passage minimizes stress and physical injury to the fish at a dam including water flow conduits or protection features (i.e. trash racks, etc.) (WDNR, 2018).

In recent years, fish passage projects have become increasingly complex, involving multiple programs within the department, other state and federal agencies, tribal governments, and non-governmental organizations and stakeholders. From conception through implementation, projects can take several years, cost millions of dollars, and may have mixed or inconclusive results (WDNR, 2018). The benefits and costs of fish passage projects can vary from one dam location to another, making fish passage decisions site-specific and frustrating to dam owners and external stakeholders unfamiliar with the uncertainties surrounding decisions to provide fish passage (McLaughlin, et al., 2013).

Effective fish passage is dependent on the presence of specific ecological characteristics and habitats needed to support all life stages of the target fish species. The ability to assess habitat suitability is critical to estimating the carrying capacity of streams and flowages and to evaluating the importance of fish passage at a given dam. Physical, chemical, and biological characteristics are examples of parameters used by biologists to evaluate habitat suitability. Upstream and downstream assessments may be limited by the amount of data available and by biologists' knowledge of the habitat needs for all life stages of targeted fish species (WDNR, 2018).

Fish passage at dams can result in both positive and negative environmental impacts. Fish passage facilities can restore aquatic pathways for native fish, herptiles and freshwater mussels, including endangered species. Fish passage can reduce fragmentation of migratory fish populations. Dams can also provide a barrier to the upstream movement of aquatic invasive species. Potential negative consequences of installing fish passage include undesirable spread of non-native fishes, or other aquatic invasive species or pathogens. The requirement for fish passage potentially increases operation and maintenance costs at the dam (WDNR, 2009). The consequences and trade-offs of fish passage can have dramatic economic and environmental effects on the aquatic system (McLaughlin, et al., 2013)

Across Wisconsin, there are approximately 3,900 dams. Currently, ten of these dams have fish passage facilities. Another eight have plans or proposals to develop fish passage facilities. In 2018, the department published a Strategic Analysis of Fish Passage at Dams which provides an overview of the types of fish passage and information about assessing environmental, social and economic factors with an extensive list of useful references (WDNR, 2018).

Wisconsin has been active in fish passage improvement projects at dam construction and major reconstruction projects. Evaluations of these activities generally show some movement of target species, and improvements in fish species diversity in upstream areas.

Previous Department Policy Efforts

The Strategic Analysis recognized previous department efforts to develop guidance related to fish passage. In 2014, the department approved a Fish Passage Guidance document (WDNR, 2014) that established criteria for department staff use when reviewing regulated activities, including fish passage, that have the potential to increase the distribution of aquatic invasive species or fish pathogens. In 2014, the department created a Fisheries Ad Hoc Fish Passage Policy Task Group to develop policy and procedures for the department to use when evaluating proposed fish passage projects. In 2015, the department determined that the development of a policy would benefit by first conducting a Strategic Analysis of fish passage at dams.

A thorough description of state and federal regulations that apply to fish passage projects is presented in Section 2 of the Strategic Analysis (WDNR, 2018). An important legal consideration for fish passage projects at state regulated dams is s. 31.02(4g), Wis. Stats., which limits the department's authority to require fish passage. The department can only require passage after two things occur. First, rules must be promulgated specifying the rights held by the public in navigable waters with dams. The rules must include provisions on the rights held by the public that affect the placement of fishways or fish ladders in navigable waters. Secondly, a federal or state cost-share program must be implemented for dam owners to equip dams with fishways or fish ladders and such a grant must be available to the owner of the dam where fish passage is required. As of the date of this manual code, neither rules nor cost-share programs have been developed.

At hydro-power dams regulated by the Federal Energy Regulatory Commission (FERC), there are multiple state and federal agencies and stakeholders involved in decision making related to fish passage. For licensing and relicensing, FERC projects must obtain a Water Quality Certification (NR 299.04, Wis. Adm. Code) from the department giving the department legal standing in the discussion of fish passage. The U.S. Fish and Wildlife Service has the authority to mandate fish passage under their federal authority. FERC is required to give equal considerations to the purposes of energy conservation and aspects of environmental quality, including the protection, mitigation of damage to, and enhancement of fish and wildlife (WDNR, 2018).

VI. REFERENCES

- Agency, E. (2010). *Environmental Agency Fish Pass Manual, Document - GEHO0910 BTBP-E-E*. Almondsbury, Bristol UK: Environment Agency.
- McLaughlin, R., Smyth, E., Castro-Santos, T., Jones, M., Koops, M., Pratt, T., & Velez-Espino, a. L. (2013). Unintended consequences and trade-offs of fish passage. *Fish and Fisheries (14):580-604*.
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- WDNR. (2014). *Fish Passage Guidance*. Madison, WI: Bureau of Fisheries Management, Water Quality, Watershed Management, Wisconsin Department of Natural Resources.
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WISCONSIN DEPARTMENT OF NATURAL RESOURCES NOTICE OF FINAL GUIDANCE & CERTIFICATION

Pursuant to ch. 227, Wis. Stats., the Wisconsin Department of Natural Resources has finalized and hereby certifies the following guidance document.

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DOCUMENT TITLE FISH PASSAGE AT DAMS

PROGRAM/BUREAU ENVIRONMENTAL ANALYSIS AND SUSTAINABILITY

STATUTORY AUTHORITY OR LEGAL CITATION NR 299.04, WIS. ADM. CODE

DATE SENT TO LEGISLATIVE REFERENCE BUREAU (FOR PUBLIC COMMENTS) OCTOBER 28, 2019

DATE FINALIZED JANUARY 13, 2020

DNR CERTIFICATION

I have reviewed this guidance document or proposed guidance document and I certify that it complies with sections 227.10 and 227.11 of the Wisconsin Statutes. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is not explicitly required or explicitly permitted by a statute or a rule that has been lawfully promulgated. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is more restrictive than a standard, requirement, or threshold contained in the Wisconsin Statutes.

Signature

Date

1/13/2020