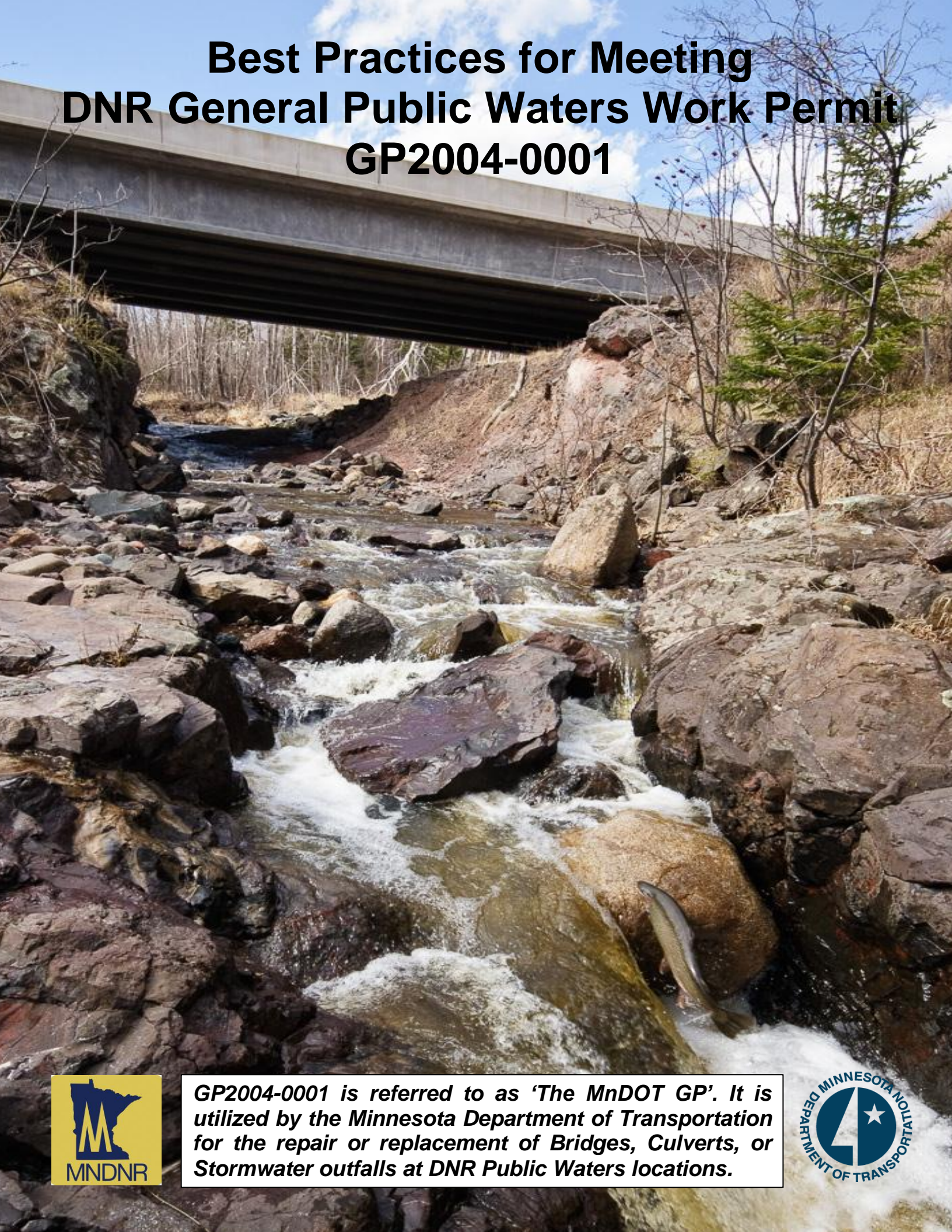
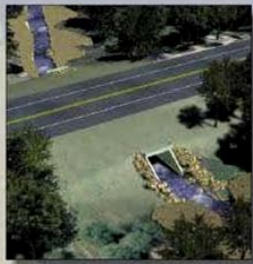


Best Practices for Meeting DNR General Public Waters Work Permit GP2004-0001



GP2004-0001 is referred to as 'The MnDOT GP'. It is utilized by the Minnesota Department of Transportation for the repair or replacement of Bridges, Culverts, or Stormwater outfalls at DNR Public Waters locations.





Best Practices for Meeting DNR General Public Waters Work Permit

GP 2004-0001

March 2006

Meets Intent of DNR Public Waters Work Permit
Requirements:

Kent Loken Date *4-11-06*
Kent Loken, Director
DNR Division of Waters

Adopted for Mn/DOT Transportation Projects:

Richard Stehr Date *4/11/06*
Richard Stehr, Director
Mn/DOT Engineering Services Division

October 2014

This 4th version replaces all previous versions.

1st Version: dated March 2006.

2nd Version: dated September 2010

3rd Version: dated May 2011

This collection of Best Practices includes revisions to previous versions, plus includes additional ecological protection measures associated within the regulatory framework of the DNR. Practices in this document are to be considered as recommendations for addressing GP2004-0001 permit conditions, as well as many DNR ecological protection regulations. These may be utilized as is or modified for a specific project. The practices in this collection are not the only way to meet DNR requirements, though are presented as 'Best Practices' for meeting the various conditions of GP2004-0001, thus reducing the time and cost of developing customized plans for every project.

All pages (unless noted as such) may be utilized for guidance in design and construction.

Changes to this document may occur at any time. Please check for the most recent version at:

www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

This document is a collection of 'Best Practices' that provide guidance on meeting DNR regulations that are within the regulatory framework of GP2004-0001. These include best available methods for protecting or enhancing the ecological and water resources that our transportation system intersects. Our transportation infrastructure must be responsive to our population's needs. However, as we do so, we must do it with a goal that we create a transportation network that does not undermine the essential ecological infrastructure that also exists here.

A road is a linear transportation system, connecting people with their places of residence, education, work, recreation, as well as being for supply of goods and services. Transportation agencies have multiple criteria for accommodating these needs in the design, construction, and operation of a road system. A river or stream is also a linear transportation system, and includes connecting an animal's place of residence with areas to raise offspring, and supply of 'goods and services' for the animals that live there. Natural resource agencies have multiple criteria for accommodating the needs for protection, enhancement, and enjoyment of the users of a river system.

A bridge or culvert is an intersection of two differing linear transportation systems. One is a human system primarily based on needs for flow of goods and services, the other is an ecological system based on the flow of water. The 'Best Practices' provided in this document have guidance for road authorities on how best to take into account the ecological resources that move through such an intersection. Of the many 'Best Practices' in this document, use of just one may be enough to provide the needed element for an efficient intersection of two differing transportation systems.



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Peter Leete and Western Prairie Fringed Orchid
(selfie – 2007)

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Utilizing this Collection of Best Practices

The DNR anticipates that transportation projects will use practices in this document as a guide to address DNR Public Waters regulations associated with the protection of our water resources for fisheries, wildlife, rare features, invasive species, ecological connectivity, and recreational opportunity as identified in General Permit 2004-0001 (the 'MnDOT GP' for replacement or repair of Bridges, Culverts or stormwater outfalls). Though these practices are also applicable to other transportation projects they may require DNR approval or Public Waters permitting. We recognize that other technical references, standards, and regulations may apply. However, use of these Best Practices provides consistency, reduces uncertainty, and increases the likelihood of environmental compliance for DNR Public Waters jurisdiction during all phases of a road project (scoping, design, construction, and maintenance).

The document is organized into three chapters. It is to be utilized as a comprehensive communication tool and implementation guide for the designer, construction manager, on-site contractor, or maintenance personnel. These pages show steps, procedures and examples of how to address various issues and meeting DNR regulations. Think of it as a sample plan for DNR constraints near a watercourse, lake, wetland or rare feature. During early coordination of a project, through MnDOT's Highway Project Development Process and Early Notification Memo (<http://www.dot.state.mn.us/planning/hpdp/scoping.html>), or other communications, the DNR will identify practices that should be incorporated into project documentation, design, or construction as guidance to meet DNR regulations. The entire document is not expected to be incorporated into every project. In fact, each Best Practice is written to be utilized as a stand-alone document. Within the framework of Preliminary Review and Early Coordination between MnDOT and DNR, appropriate sections will be identified as being applicable to a specific project.

Chapter 1 (Species Protection) provides information about protection of game fish, other aquatic or terrestrial species and sensitive native vegetation. There is also guidance to prevent the spread of invasive species. This chapter contains many options for ecological enhancements and/or protection to include in final design or construction methods. Much of this guidance is required under permit conditions, and if not, may qualify for mitigation measures for a project's impact to resources in the area.

Chapter 2 (Hydraulic and Hydrologic Recommendations) contains several detail illustrations, notes and guidance of Best Practice options for Hydraulic and Hydrologic design of structures impacting Public Waters. Each site will have to be evaluated to ensure that replacement of an existing structure does not result in an increase of flood potential to upstream or downstream properties. Additional information is also provided to improve or repair stream stability and local habitat.

Chapter 3 (Methods of In-Water Construction) offers illustrations, notes, and guidance on best practices for in-water construction work. These methods have been pre-approved by the DNR for use in the field (EG Site Management Plans); however, not all methods are appropriate for all work sites. Note that in most cases the applicable DNR Hydrologist will have to approve a method prior to construction. For this reason project designers, construction engineers, project managers, or contractors should work in consultation with the DNR for selection and approval of the appropriate method of in-water construction.

The Appendix is a collection of reports, publications, standard plans, or examples that have been utilized in actual projects to meet many of the best practices in this manual. They are included here, as they may prove useful during project development.

Acknowledgements

We thank all that have contributed directly or indirectly to the information provided in this manual. Please recognize there are numerous people (too many to list) from DNR, MPCA and MnDOT, that have contributed to this document. There is also a need to recognize all the consultants and contractors out in the field that have contributed due to their work experience in the field. While regulators identify what to protect, contractors are often the ones to develop efficient methods to do so. Much of this manual is very much due to the interaction and sharing of information between DNR, MPCA, MnDOT, and MnDOT's consultants & contractors. This sharing of information has been essential to the development of new methods to meet the rules and regulations that make up the state's environmental protection policies and regulations. We expect this practice to continue as all parties strive for 'better, cheaper, faster' methods to meet their needs.

About this Document

This collection of best practices was originally developed for meeting specifics of Minnesota Department of Natural Resources (DNR) General Public Waters Work Permit (GP) 2004-0001. This general permit has been issued to MnDOT for the repair or reconstruction of culverts, bridges, or stormwater outfalls impacting Minnesota's Public Waters. This latest version includes a growing number of best practices to protect the ecology of Public Waters, and many terrestrial ecological concerns that DNR oversees. When applicable, these practices are to be used in the same manner as MnDOT manual series for the design and construction of transportation projects. The DNR recommends information contained in these best practices be incorporated into the plans and specifications for a proposed project.

Some Best Practices are for guidance in design, others illustrate recommended construction practices. The information provided is not to be considered the only method for which a project may be designed and constructed. However, each illustration meets requirements set forth in GP 2004-0001, and may be utilized wholly or in part in order for a project to meet Public Waters Work Permit Regulations.

Many requirements of meeting the MPCA General Permit for Authorization to Discharge Stormwater Associated with Construction Activity (MN R100001) and the DNR Temporary Appropriations General Permit (GP 97-0005) are also integrated into Chapter 3. However, use of this document does not release the user from requirements of any rules, regulations, requirements, or standards of any applicable federal or state agencies; including, but not limited to the, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, MN Department of Natural Resources, Board of Water and Soil Resources, Minnesota Wetland Conservation Act, MN Pollution Control Agency, or Watershed Districts.

Scope of this Document

This documents' focus is on DNR regulatory requirements that can be expected of transportation projects regarding Public Waters. Public Waters are designated as the lakes, wetlands, and watercourses over which DNR has regulatory jurisdiction. Public Waters are a subset of Waters of the State. The statutory definition of public waters includes Public Waters, Public Watercourses, and Public Waters Wetlands (Minnesota Statute 103G.005, Subdivision 15).

Public Waters defined:

Public Waters are bounded by the ordinary high water level (OHWL or OHW) on a basin or watercourse. The OHW reference defines the DNR's regulatory authority over projects that may alter the course, current or cross section of public waters and public waters wetlands. For lakes and wetlands, the OHW is the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape. The OHW is commonly that point where the natural vegetation changes from predominately aquatic to predominantly terrestrial. For watercourses, the OHW is the elevation of the top of the bank of the channel. For reservoirs and flowages, the OHW is the operating elevation of the normal summer pool.

Note:

The ordinary high water level (OHW) jurisdiction is waterward of a vertical line at the reference elevation point or the top of the bank of identified Public Waters basins and watercourses. Work waterward of this point is under DNR Public Waters regulatory authority, regardless of whether there is water present or not. Any construction activity that may alter the course, current or cross section within the boundaries of the OHW may require a Public Waters Work Permit, even if the activity does not directly affect the water at the time. Construction activities on bridges and culverts such as resurfacing, repair of lighting, installing or maintaining safety features such as guardrail, have no potential to change the course, current or cross section of a stream and do not require a permit from the DNR. However, activities that have the potential to temporarily or permanently change the course, current or cross section of a stream require the project be evaluated for a Public Waters Work Permit.

Contact Information

This is the fourth version of this document. Comments and recommendations for future versions are welcome, and should be sent to:

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Should questions arise whether a particular MnDOT project will impact a Public Water, contact Peter Leete or the appropriate DNR Area Hydrologist. For all other projects contact the DNR Area Hydrologist for the county in which the work is proposed. A complete list of Area Hydrologists is provided via the link provided below.

Links

DNR Area Hydrologists contact information:
http://files.dnr.state.mn.us/waters/area_hydros.pdf
or
http://files.dnr.state.mn.us/waters/area_hydros.pdf

A copy of GP 2004-0001 may be found at:
http://files.dnr.state.mn.us/waters/watermgmt_section/pwpermits/General_Permit_2004-0001.pdf

MPCA Stormwater Program for Construction Activity information may be found at:
<http://www.pca.state.mn.us/water/stormwater/>

The DNR Temporary Water Appropriations General Permit 97-0005 may be found at:
<http://files.dnr.state.mn.us/waters/forms/tempprojectsdp.pdf>

All Public Waters have been identified on county maps and are available via the web at:
http://www.dnr.state.mn.us/waters/watermgmt_section/pwi/maps.html

The Minnesota DNR Data Deli provides easy access to a wide variety of spatial data to the Minnesota GIS community at no cost:
<http://deli.dnr.state.mn.us/>

MnDNR Permitting and Reporting System (MPARS)
www.dnr.state.mn.us/mpars

All DNR Field Office locations may be found at:
<http://www.dnr.state.mn.us/contact/locator.html>

Preliminary Review & Early Coordination

We encourage in-office review of publically available information during early scoping and early design phases. Much can be learned about what may be in or near your project area by accessing publically available GIS information located on the DNR's Data Deli website at <http://deli.dnr.state.mn.us/>. If you have questions regarding proposed work near any of the data shown, please contact the local DNR offices or the DNR Transportation Hydrologist. The following files will be a good indicator of the level of DNR concerns that may be encountered within a project area.

- MBS Railroad Rights-of-Way Prairies
- MBS Native Plant Communities
- MBS Sites of Biodiversity Significance
- Public Waters Inventory (PWI) Watercourse Delineations
- Public Waters Inventory (PWI) Basin Delineations
- DNR managed lands such as Wildlife Management Areas, Scientific & Natural Areas, Public Access, State Parks, State Forests, etc
- MN Prairie Conservation Plan
- Trout streams, including PLS sections with trout streams
- FEMA layers for flood impact potential
- Minnesota Trails (water, state, and snowmobile)

Other Federal or State regulatory agencies may also have interests in preliminary review and early coordination. Additional information is also available for reviewing a project for other agencies requirements. These include, but are not limited to:

- National Wetland Inventory (NWI) maps
- Soil Survey
- MPCA Special Waters
- MPCA Impaired Waters
- Historic properties

1. The Minnesota Natural Heritage Information System (NHIS) provides information on Minnesota's rare plants, animals, native plant communities, and other rare features. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. Its purpose is to foster better understanding and conservation of these features. The NHIS is not provided through the Data Deli site. Though it will need to be queried to determine if there are rare species or biologically sensitive areas known to occur within or near a project area. Typically a search is conducted on all areas within a one-mile radius of the project area. For required survey information: <http://www.dnr.state.mn.us/nhnrp/nhis.html>
2. Preliminary review (either on your own or through direct contact with regulatory agencies) can help identify the likelihood of sites to have specific design parameters, mitigating options to include, and/or construction limitations set by the DNR. Examples are:

- Fish passage
- Navigational requirements
- Flood elevation constraints
- Invasive species protocols
- Rare species protection

3. Early coordination or pre-application meetings should take place to discuss general aspects of the project or specific site requirements. These meetings should be conducted regularly (annually) to discuss a road authority's projected work plan (often out a year or two or three). For MnDOT, the Early Notification Memo process is the typical avenue for the exchange of information on avoidance, minimization, and mitigation of a projects potential ecological impact.