

UPDATE: February 2, 2009

Michigan Water Withdrawal Assessment Tool

Testing of the Water Withdrawal Assessment Tool

The Water Withdrawal Assessment Tool (Assessment Tool) is designed to estimate the likely ecological impact of a proposed water withdrawal on nearby streams and rivers. **This is a test version.** It is provided for the public to evaluate the Assessment Tool before its use becomes mandatory on July 9, 2009.

On February 1, 2009 the definition of an “adverse resource impact” changed and withdrawal “zones” are created. These are described below. Water users are encouraged to register their new or increased water withdrawals through the Assessment Tool.

The legislation that authorized implementation of the Assessment Tool was signed into law July 9 2008 (2008 PA185) and limits the amount of water withdrawals that can occur across Michigan. The limit is tied to the type of stream or river affected by a withdrawal and is based on not causing an “adverse resource impact” to streams and rivers. In order to assist in evaluating a withdrawal, the legislation also creates a series of “zones” that describe how much risk a proposed withdrawal poses for creating an adverse resource impact. Withdrawals in Zone A through C can proceed (although some additional steps in the process may be required). A withdrawal in Zone D would create an adverse resource impact and cannot take place.

The zones and adverse resource impact line (marking the beginning of Zone D) established in the 2008 legislation became effective February 1, 2009. Withdrawals established before that date still cannot cause an adverse resource impact, although the determination of what constitutes an adverse resource impact would be made by the Department of Environmental Quality (DEQ) under legislation passed in 2006 (2006 PA33). In making this determination, the DEQ would use many of the same concepts underlying the 2008 legislation, but the specific numerical limits set by the 2008 legislation do not apply.

The Assessment Tool is designed as a screening process. It allows a person to efficiently determine whether a proposed withdrawal could safely occur without creating an adverse resource impact (Zone A and in most cases Zone B) or whether additional review is necessary before the proposed withdrawal can occur (Zones C and D).

This test version of the Assessment Tool incorporates the zones and adverse resource impact lines defined in the 2008 legislation. This allows a user to see

UPDATE: February 2, 2009

both how the Assessment Tool works and how it would evaluate a proposed withdrawal in terms of the zones that became effective on February 1, 2009.

This February 1, 2009 version of the Assessment Tool corrects a number of errors that were present in the October 1, 2008 version, incorporates the complete stream classification system, has updated watershed boundaries, incorporates many new features, and the interface was improved based on suggestions from users.

This is still a test version of the Assessment Tool, its results are not official. Under the 2008 legislation, the Assessment Tool is to be fully implemented and its results become official on July 9, 2009. However, the Assessment Tool provides the user with useful information regarding the new withdrawal zones. Most notably, the Assessment Tool illustrates how a proposed withdrawal would compare to the zone lines that became effective on February 1, and that will be applied by the DEQ in determining whether a withdrawal would cause an adverse resource impact.

Registration of a Proposed Withdrawal

Under Michigan law, a Large Quantity Withdrawal (LQW) with a capacity of 70 gallons per minute or greater must be registered with the Michigan Department of Environmental Quality, or with the Michigan Department of Agriculture if the LQW is for an agricultural purpose, before the withdrawal can begin.

You may use this Assessment Tool test site to register a new or increased large capacity withdrawal. The results page provides a quick link to submitting a registration. A registration is valid for 18 months; the withdrawal capacity must be installed within that 18 months or the registration becomes void.

Please Provide Your Comments

We are very interested in the experience of users and how to improve the Assessment Tool. If you have suggestions for improving the tool, or any comments, please submit them through the "feedback" quick link found on the results page. Responses to the feedback comments will be posted periodically.

Background and How the Assessment Tool Works

Governor Jennifer Granholm signed the Great Lakes Compact on July 9, 2008, that joins Michigan with all other Great Lakes region states and provinces in a commitment to use responsible and science-based management of the region's water resources. At the same time, she signed laws to implement a new conservation-based water management process designed to provide for the wise

UPDATE: February 2, 2009

use of Michigan's abundant water resources, while protecting the waters and water-dependent natural resources for use by current and future generations. The Michigan Water Withdrawal Assessment Tool is an important piece of the new process.

The Assessment Tool provides an initial, screening-level assessment of the impact of a potential water withdrawal on local stream and river ecosystems. It operates within a Geographic Information System and can be used to examine potential withdrawal sites anywhere in the state. It is designed with some safeguards so that when a proposed withdrawal clearly poses little or no risk to nearby stream and river ecosystems, the Assessment Tool can approve, and facilitate immediate on-line state registration, of the withdrawal. But when a proposed withdrawal triggers concerns of risk to the ecosystems, the Assessment Tool instructs the person to request a more detailed review by Department of Environmental Quality (DEQ) staff.

The Assessment Tool considers the geographic variations in Michigan's stream flows and fish community types when making a determination. Using current scientific understanding, scientists created mathematical models of stream flow, groundwater, and fish ecology. The stream flow model uses information on soils, geology, land use, and precipitation to predict how much flow is available in each stream. The groundwater model uses information about geology, well depth, pumping rate, and distance from nearby streams to estimate how much a well will reduce the flow in nearby streams. And the fish ecology model determines how a reduction in stream flow is likely to impact the types and abundance of fish that live there. Fish populations are a surrogate representing health of the overall stream ecosystem.

All streams and rivers of the state are classified by size and water temperature. Each stream type has different characteristic fish populations that respond differently to the loss of water. For each type, a maximum amount of water can be withdrawn before it causes an adverse resource impact. The risk of approaching an adverse resource impact is marked by Zones A through D. Zone A has little risk of causing an adverse resource impact, while Zone D means an adverse resource impact would occur in the stream. Zones B and C lie between these extremes, indicating increasing risk. The Assessment Tool advises the user what zone their proposed withdrawal is in, and provides instruction on what to do.

Michigan's cold rivers and streams are a unique resource in North America. Cold Transitional rivers and streams are the most sensitive to reductions in flow. Relatively small reductions in flow can dramatically alter the ecosystem so that they will no longer support cold water species like trout. Withdrawals from cold rivers and streams will require more detailed review by DEQ staff when the Assessment Tool is fully implemented.