

**Iowa Department of Natural Resources
Environmental Protection Commission**

ITEM

8

DECISION

TOPIC

**Notice of Intended Action – Chapter 61 – Nutrient Water Quality
Standards for Lakes to Protect Recreational Uses**

The department appointed Mike Burkhart, a professor at Iowa State University, to head a science advisory panel to research nutrients and their effects on streams and lakes. In February 2008 the Nutrient Science Advisors (NSA) completed their recommendations for nutrient criteria for recreational uses in lakes. The report can be found on the department's web site here: <http://www.iowadnr.gov/water/standards/nutrients.html>.

The department has developed draft rules based on the recommendations in the NSA report. The department met with EPA in October to discuss the draft rules before starting the formal rule process and will be meeting with stakeholders both formally and informally throughout the rule process.

Charles C. Corell, Chief
Water Quality Bureau
October 26, 2009

ENVIRONMENTAL PROTECTION COMMISSION[567]

Notice of Intended Action

Pursuant to the authority of Iowa Code sections 455B.105 and 455B.173, the Environmental Protection Commission gives Notice of Intended Action to amend Chapter 61, "Water Quality Standards," Iowa Administrative Code.

Iowa Code (Sections 455B.171 – 455B.183) establishes requirements for the protection and management of surface water quality. The Environmental Protection Commission, through the assistance of the department, promulgates administrative regulations on water quality. Iowa's Water Quality Standards (WQS) are written into regulation at 567 IAC Chapter 61 – Water Quality Standards.

The department appointed Mike Burkhart, a professor at Iowa State University, to head a science advisory panel to research nutrients and their effects on recreational uses of Iowa lakes. In February 2008 the Nutrient Science Advisors (NSA) completed their recommendations for nutrient criteria for recreational uses in lakes. The report can be found on the department's web site here: <http://www.iowadnr.gov/water/standards/nutrients.html>.

The proposed amendments will establish criteria for transparency and chlorophyll-(a) to protect recreational uses in lakes with a mean depth of three meters or greater. The criteria will be used to determine if the water quality in a lake can fully support recreational uses such as swimming, water skiing and boating.

There can be many causes for poor water quality that can not meet the proposed criteria including excess nutrients and sediment from rainwater running off the landscape and discharges from sewage treatment plans and industrial wastewater treatment plants. According to research conducted by the department, 85-90% of the nutrients in a typical Iowa water body come off the watershed rather than point sources that require a discharge permit.

Any person may submit written suggestions or comments on the proposed amendments through January 23, 2010. Such written material should be submitted to Chuck Corell, Iowa Department of Natural Resources, Wallace State Office Building, 502 East 9th Street, Des Moines, Iowa 50319-0034, fax (515)281-8895 or by E-mail to chuck.corell@dnr.iowa.gov.

Persons are invited to present oral or written comments at public hearings which will be held:

January 11, 2010	10:00 AM	Wallace State Office Building Fifth Floor Conference Rooms 502 East 9th Street Des Moines, IA
January 13, 2010	1:00 PM	Clear Lake Public Library 200 North Fourth Street Clear Lake, IA
January 14, 2010	10:00 AM	Atlantic Municipal Utilities Conference Room 15 W 3rd St Atlantic, IA
January 14, 2010	6:00 PM	Iowa Lakeside Laboratory Waitt Building, 1838 Highway 86 Milford, IA
January 21, 2010	10:00 AM	Falcon Civic Center 1305 5th Avenue NE, Independence, IA
January 21, 2010	4:00 PM	Meeting Room B Washington Public Library 115 West Washington St. Washington, IA

These amendments may have an impact upon small businesses.

These amendments are intended to implement Iowa Code chapter 455B, division III, part

1.

The following amendments are proposed.

ITEM 1. Insert the following new Subrule and renumber Subrules 61.3(3) through 61.3(8) accordingly:

61.3(3) Lake criteria. So that the recreational uses listed in 61.3(1)“b”(1) through 61.3(1)“b”(3) can be supported, the following criteria are applicable to all lakes that have a mean depth of three meters or greater.

a. Transparency. The transparency of the lake as measured with a Secchi Disk shall be one meter or more in at least 75% of the measurements taken.

b. Chlorophyll-a. The concentration of chlorophyll-a in 75% of the samples analyzed shall not exceed 25 micrograms per liter (ug/l).

c. Water sampling used to determine whether a lake meets the transparency and chlorophyll-a criteria must meet the following:

(1) A minimum of nine sample results are required

(2) At least three of the samples must be taken from the deepest part of the lake

(3) All samples must be taken during the months of May through September

(4) At least three sampling events must be conducted in any one summer recreation season

(5) Samples must be taken in at least three summer seasons in a five consecutive year period.

d. Nitrogen and phosphorus concentrations are among several variables affecting lake transparency and chlorophyll-a levels; however, individual lake and watershed characteristics determine the precise amount of nutrients that can be tolerated within a lake while still attaining the above recreational use criteria. For this reason, nutrient reduction targets will be determined on a case-by-case basis as a result of lake-specific monitoring and data analysis. Lake nutrient-response models such as those used to establish Total Maximum Daily Loads for lakes impaired for transparency and/or chlorophyll-a impairments or other appropriate scientific methods will be utilized for this purpose.

Date

Richard Leopold, Director

Administrative Rule Fiscal Impact Statement

Date:

10/27/2009

Agency: Department of Natural Resources

IAC Citation: 567 IAC 61.3

Agency Contact: Chuck Corell, 1-4582

Summary of the Rule: Water quality standards to protect recreational uses in certain lakes.

Fill in this box if the impact meets these criteria:

No Fiscal Impact to the State.

Fiscal Impact of less than \$100,000 annually or \$500,000 over 5 years.

Fiscal Impact cannot be determined.

Brief Explanation:

Fill in the form below if the impact does not fit the criteria above:

Fiscal Impact of \$100,000 annually or \$500,000 over 5 years.

* Fill in the rest of the Fiscal Impact Statement form.

Assumptions:

These criteria only apply to lakes with a mean depth of 3 meters (about 10 feet) or greater. Discharges of pollutants to state-owned lakes that require a permit are prohibited but there are a few permits for discharges to creeks above lakes and some for discharges to lakes that are not state-owned. The mean depth has not been calculated for all lakes in the state.

The criteria relate to the clarity of the water in the lake. The relationship between pollutants discharged by a sewage treatment system and lake clarity is not strong enough for discharge permits to have numeric limits of pollutants to prevent the lake from exceeding the clarity criteria. Therefore, the department cannot write more stringent permit limits for a wastewater treatment plant based on these criteria. These criteria will be used to determine if the lake supports recreational uses such as swimming, water skiing and boating. If the lake does not meet the criteria then it is considered "impaired" and a Total Maximum Daily Load (TMDL) must be calculated for each source that contributes to the impaired condition. There can be many causes for impairments including excess nutrients and sediment from rainwater running off the landscape and discharges from sewage treatment plants and industrial wastewater treatment plants. According to research conducted by the department, most (85-90%) of the nutrients in a typical Iowa water body come off the watershed rather than point sources that require a discharge permit. In light of this fact, the TMDLs that

have been written for nitrate pollution in the Cedar, Des Moines and Raccoon Rivers have assigned a maximum load to city wastewater treatment plants equal to what the plants currently discharge. This means that these plants will not have to add treatment or remove nutrients to meet the goals of the TMDL unless they plan to increase the amount of nitrates discharged sometime in the future. So if a lake does not meet the proposed criteria, there is a small chance that additional treatment may be necessary.

If/when monitoring data is collected for some lakes in Iowa, the data will show that the lake does not meet the criteria and a TMDL will be required. This will add to the Department of Natural Resources workload of calculating TMDLs. More typically, when a state-owned lake is in need of water quality improvements, the DNR uses lake restoration funds already appropriated. Lake restoration is not dependent on the impaired status of the lake nor does lake restoration necessarily correct all the causes to the point that it will meet both of the proposed criteria. The cost to develop a TMDL varies greatly with the size of the water body and the number of parameters that must be sampled for to determine causes but total costs for a large complicated TMDL could exceed \$100,000. How soon data are available to make an impairment decision and the relative priority of a lake impaired for the proposed criteria compared to another water body is impossible to predict. Therefore, it is difficult to estimate the fiscal impact to the state by fiscal year.

Describe how estimates were derived:

Estimated Impact to the State by Fiscal Year

	<u>Year 1 (FY)</u>	<u>Year 2 (FY)</u>
Revenue by Each Source:		
GENERAL FUND		
FEDERAL FUNDS		
Other (specify)		
TOTAL REVENUE	_____ \$0	_____ \$0
Expenditures:		
GENERAL FUND		
FEDERAL FUNDS		
Other (specify)		
TOTAL EXPENDITURES	_____ \$0	_____ \$0
NET IMPACT	\$0	\$0

_____ This rule is required by State law or Federal mandate.

Please identify the state or federal law:

_____ Funding has been provided for the rule change.

Please identify the amount provided and the funding source:

Funding has not been provided for the rule.

Please explain how the agency will pay for the rule change:

Fiscal impact to persons affected by the rule:

See above

Fiscal impact to Counties or other Local Governments (required by Iowa Code 25B.6):

See above

* If additional explanation is needed, please attach extra pages.

Agency Representative preparing estimate: Chuck Corell

Telephone Number: 1-4582