



**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

Jim Doyle, Governor  
Scott Hassett, Secretary  
Ruthe E. Badger, Regional Director

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June 6, 2003

William P. O'Connor  
Wheeler, Van Sickle & Anderson, S.C.  
25 West Main St. Suite 801  
Madison, WI 53703

Subject: Request to Raise Lake Koshkonong Water Levels, Indianford Dam

Dear Mr. O'Connor:

The Rock-Koshkonong Lake District's request to raise Lake Koshkonong water levels was hand delivered to Secretary Hassett on April 21, 2003. Subsequently, on May 12, 2003, the department wrote you explaining the process that would be followed to evaluate your request and need for the Environmental Impact Report (EIR) to acquire the necessary information. The EIR outline of needed information is attached.

It is my understanding that you no longer wish to pursue an expedited permit for this project. Accordingly, the agency will process a refund check of \$2000 and observe the normal turn around time during this project.

Raising the water levels on Lake Koshkonong requires the department to complete an environmental assessment in accordance with Administrative Code, NR150. NR150.25 allows the department to require an EIR to gain further information about the proposal, alternatives and the potential affects on the environment. The EIR outline follows the environmental assessment needs. The EIR outline is quite extensive due to the vast area and diverse potential impacts that raising lake levels could cause. The more thorough, complete and well documented your EIR is, the easier and faster the department can move to the environmental assessment process. Your experts should attach, footnote or otherwise list information that may need to be referenced by our experts. Please provide the EIR in Microsoft WORD 97 on a compact disk and five paper copies to aid in our distribution to staff for their review. After department review, you and your experts may be asked to address questions or comments from department staff.

If you have questions concerning the EIR needs or our authority to request this information please call me at 608-275-3467 or e-mail me a [russell.anderson@dnr.state.wi.us](mailto:russell.anderson@dnr.state.wi.us).

Sincerely,

Russell Anderson  
Environmental Analysis & Review Program Supervisor

Enclosed - EIR outline

cc: Scott Hassett - AD/5  
Ken Johnson - SCR  
Don Bush/Mike Halsted - Janesville  
Mary Ellen Vollbrecht - FH/3  
Susan Josheff - SCR  
Ruthe Badger - SCR  
Jim Folk - RKL D

## **Environmental Impact Report Outline Indianford Dam Water Level Order**

The following is a list of needed information to assist with the completion of an Environmental Assessment. The report is to be submitted in Microsoft WORD 97 electronically on compact disk as well as in hard copy.

Maps and location information is to be submitted in GIS shape format in WI Transverse Mercator NAD 83/91.

Please provide references, attachment and footnotes where appropriate.

### **Description of Proposal**

1. Please provide a general description of the existing water level order and the proposed changes.
2. What is the purpose and need for this change? Please provide history and background as appropriate. Please describe the support and opposition for this action within the Lake District, and the towns and counties adjacent to the affected area. Please summarize citizen and district involvement activities to educate the district members on the effects of the water level change on recreation, lake ecology and riparian properties.
3. Other than WDNR authorities and/or approvals, are other permits, approvals, or legal arrangements from federal, county or local governments or from individual property owners needed to enact this action? If so, explain.
4. What are the estimated cost associated with the action and what are the funding sources? Please include any necessary modifications to the Indianford Dam that would be required to implement the water level change.
5. Please describe the commonly used watercraft on Lake Koshkonong by craft type, length, draft, horsepower rating, etc. Approximately what is the distribution of watercraft type that use Lake Koshkonong? What is the frequency of use on a daily, weekly and monthly basis?

### **Affected Environment & Proposed Physical Changes**

6. Please provide a map of the additional area that will be inundated at elevation 777.0, including the upstream extent on the Rock River as well the tributaries, and describe additional acreage by ownership, land use and land eco-type (i.e. wetland, forested wetland, drained wetland, prairie, upland forest, etc.).
7. Please provide a map showing the entire flowage area at the currently target water level of 776.20 and delineate the 1, 2 and 3-foot water depth contours for the entire flowage.
8. Please provide a map of the in-lake submerged, floating and emergent aquatic plant beds and summary of water depths at inner and outer margins and species composition. This includes the work completed as part of the two years of Lake Planning Grants cost-shared by the department.
9. Please provide a map showing the entire flowage area at the proposed water level of 776.8 and delineate the 1, 2, and 3-foot water depth contours for the entire flowage.

10. Please provide a vegetation cover map of existing riparian wetlands which identifies wetland type and a complete vegetation analysis identifying all species and species dominance using accepted scientific methods. Provide a table of the wetland size and type. Aerial photographs with stereoscopic coverage for 2000 are available through Real Estate Description Department, 320 South Main St., Jefferson, WI 53549. See <http://feature.geography.wisc.edu/sco/apcat/apcat.php>
11. Please map areas where invasive species are present, the level of dominance and ability to affect other areas.
12. Please provide a vegetative cover map of the riparian wetlands that existed in 1940 and 1978. Provide a table of the size and the wetland type. Describe the water level regime that was followed at the time of the photography. Aerial photographs with stereoscopic coverage for 1978 are available through the Department of Transportation, Surveying and Mapping, 4802 Sheboygan Ave. - Rm 5B, Madison, WI 53707. Aerial photographs with stereoscopic coverage for 1940 are available through National Archives & Records Administration, 8601 Adelphi Road - Rm 3320, College Park, MD 20740.
13. Please provide the location on a map, a photograph, the size and invert elevation of culverts, drains and other similar structures that inlet or outlet to the lake or have flow lines below 777.0.
14. Please provide a terrestrial and aquatic plant and animal species listing and associated habitats.

#### **Affected Environment, Impacts & Consequences**

15. Please describe likely physical impacts and consequences caused by the proposed water level change. Please include in your discussion likely impacts to: the riparian zone and potential for shoreline and wetland erosion caused by waves; on the regional groundwater; and on fish and wildlife habitat. Please include a comparison of the shoreline and riparian wetland areas and types from 1940, 1978 and 2000. Describe changes in acreage and type. Please provide a summary of the impacts to the existing wetlands identified in 10. if target water level is at 776.8 and the maximum level is 777.0. The analysis should project the potential change in wetland type, vegetation species expected and the potential change in habitat.
16. Please describe the likely biological (dominant aquatic and terrestrial plant and animal species and habitats including threatened/endangered species; wetland amounts, types and hydraulic value) impacts and consequences of this action. Please include impacts to fish, wildlife, herptiles, mussels and plant production.
  - a. Quantify the total area of submergent vegetation extent in Lake Koshkonong. Characterize the nature of these sites (distribution, composition, biomass) including their light characteristics (coefficients of photo extinction). Using photo extinction coefficients and proposed changes in depths of these sites project the vegetation response of the extent macrophyte beds to the proposed order.
  - b. Please describe how the proposed order addresses provisions of the Clean Water Act and the impairments identified (sediments and nutrients) for the Rock River including Lake Koshkonong. The listing of waters under the Clean Water Act(s. 303(d)) must, under current U.S. Environmental Protection Agency(EPA) requirements, occur every 2 years. This list

identifies waters which are not meeting water quality standards, including both water quality criteria for specific substances or the designated uses, and is used as the basis for development of Total Maximum Daily Loads(TMDLs) under the provisions of section 303(d)(1)(C) of the Act.

- c. Please discuss the likely causes for the degradation of Lake Koshkonong, it's current resilience to recovery from the turbid condition. Describe historical changes in the aquatic habitat for Lake Koshkonong related to changes in water levels. Project how the proposed order relates to overcoming this resilience to achieve environmental benefit. Discuss the implications of stable higher water levels for restoring clear water conditions, aquatic plant dominance in many of the traditional bays, and recovering lost biodiversity.
  - d. Please project any changes in fish species composition for Lake Koshkonong as a result of the proposed order.
  - e. Please describe the likely impacts on water quality including turbidity and light penetration.
17. Please describe any cultural impacts and consequences from this action. How will the increase in water levels effect land use? Are there any septic systems, building foundations, agricultural land or other lands, etc. that will be impacted?
- a. Land use (dominant features and uses including zoning if applicable)
  - b. There are known archaeological/historical sites around the lake. How will the increased water level effect the sites?
  - c. What will the State Historical Preservation Officer (SHPO) require be done at these sites? The SHPO contact is Sherman Banker, Division of Historic Preservation, 816 State St., Madison, 53706.
  - d. What will the Tribal Historical Preservation Officer require be done at these sites? The THPO contacts for Dane, Jefferson and Rock Counties are:  
Mr. David Lee Smith, Winnebago Tribe of Nebraska, PO Box 687, Winnebago, NE 68071  
Mr. Rey Kitchkumme, Prairie Band Potawatomi Nation, 16281 Q Road, Mayetta, KS 66509  
Ms. Barbara Kyser-Collier, Wyandotte Nation, PO Box 250, Wyandotte, OK 74370
  - e. Please map and compare the navigable areas in acres by watercraft type between the current flowage area shown in #6 and the proposed area in #9. Map and quantify the total area subject to new/increased boating opportunities. In the areas of new or increased boating activity, discuss the implications of increased boating activity on water clarity (resuspension of bottom sediment, turbidity, nutrients, and algae), aquatic vegetation (changes in physical damage of plants and turbulence related impacts), wildlife (direct disturbance), and fish (habitat related changes).
18. Are there other special resources (e.g., State Natural Areas, prime agricultural lands) that will be impacted and what are the consequences?

19. Please provide a summary of adverse impacts and consequences that cannot be avoided if this change in water level order was made (more fully discussed in 15 through 21).
20. Please provide a literature review of current scientific information analyzing water manipulation on shallow impoundments and ecology of eutrophic, carp (or other benthivorous fish) dominated systems including water quality, aquatic vegetation, riparian wetlands, fish and wildlife habitat. Potential issues include shoreline and wetland erosion, wave action on shorelines, riparian aquatic vegetation and fish and wildlife abundance.

#### **Alternatives**

21. Please identify, describe and discuss feasible alternatives to the proposed action and their impacts and consequences. These alternatives should include:
  - a. No change in water level order
  - b. Eliminating the winter draw down only
  - c. A summer increase of 0.6 tenths of a foot to the target water level with periodic summer drawdown. The purpose of the drawdowns is to repair damage to surrounding riparian areas and the drawdown frequency would be determined by the extent of riparian damage from higher water levels.
  - d. A summer increase of 0.3 tenths of a foot to the target water level with periodic summer drawdown. The purpose of the drawdowns is to repair damage to surrounding riparian areas and the drawdown frequency would be determined by the extent of riparian damage from higher water levels.
  - e. A decrease of 0.5 tenths of a foot to the target water level.

Give particular attention to alternatives, which might avoid some or all adverse environmental effects.

#### **Evaluation of Project's Significance**

22. **Significance of Risk**
  - a. Please explain the significance of any unknowns, which create substantial uncertainty in predicting effects on the quality of the environment. Specifically discuss the RKL D and WDNR study to evaluate the effects of the winter drawdown on riparian wetlands that will not have adequate data to draw environment conclusions. Discuss the physical and biological unknowns that will not be answered through that study.
  - b. Please explain the significance of the lack of OHWM information and hydraulic model comparison in the flowage area between the dam and the lake.
  - c. What additional studies or analyses would eliminate or reduce these unknowns? Explain why these studies were not done.

