Yahara Chain of Lakes
Lake Management Quarterly Update

December 5, 2019

Current Water Levels

Lake	Date	Lake Level	Winter Min	100-year
Mendota	12/4/2019	849.71	848.20	852.8
Monona	12/5/2019	846.05	842.20	847.7
Waubesa	12/5/2019	845.63	842.00	847.0
Kegonsa	12/5/2019	844.04	841.85	845.2

https://lwrd.countyofdane.com/Lake-Levels

Number of Days within Summer Minimum and Maximum Levels

March 1 – October 31 (245 days)

Lake	Average (2008-2018)	2019
Mendota	99	22
Monona	52	11
Waubesa	76	13
Kegonsa	145	23
Stoughton Dam	-	243

Aquatic Plant Harvesting

2019 Aquatic Plant Management Harvest Report

Annual Mechanical Harvest Summary (2/28/2019 to 9/26/2019)

	Hours	(%)	Loads*	(%)	Wet Weight (t)**	Dry Weight (t)**	Phosphorus(lbs)**
InterLake							
6 Daily Logs	36.0	0.9%	10.0	0.5%	46	5	26
Kegonsa							
36 Daily Logs	198.5	4.7%	145.0	6.9%	667	67	381
Mendota							
98 Daily Logs	588.0	14.0%	380.5	18.2%	1,750	175	999
Monona							
166 Daily Logs	992.0	23.6%	465.0	22.2%	2,139	214	1,221
Waubesa							
27 Daily Logs	156.5	3.7%	81.0	3.9%	373	37	213
Wingra							
5 Daily Logs	30.0	0.7%	20.0	1.0%	92	9	53
Yahara River							
242 Daily Logs	1,414.0	33.6%	666.0	31.8%	3,064	306	1,749
Yahara River Lower							
133 Daily Logs	796.0	18.9%	324.0	15.5%	1,490	149	851
Total	**4,211**		**2,092**		**9,621**	**962**	**5,494**

Private Deposit Site Loads		**Public Deposit Site Loads**			
All	22	**Other**	2,070	**Park Site**	0
		Westport	0	**Highway 12**	0

** Loads are harvester loads, estimated by staff to the nearest half load. All other reported quantities are derived from loads.*

*** Weight is expressed in US tons or pounds as noted; Each harvester load is assumed to yield 9200lbs of bulk vegetation at 90% water content (10% plant solids). Phosphorus content of the plant solids is assumed to be ~2900 ppm, (i.e. ~1lb of P for every 350 lb of plant solids).*

Slow No Wake Status

Lake	Issued	Rescinded
Mendota	10/3/19	10/30/19
Monona	9/23/19	11/12/19
Waubesa	9/23/19	11/12/19
Kegonsa	10/3/19	11/15/19

Slow-no-wake Restriction Map

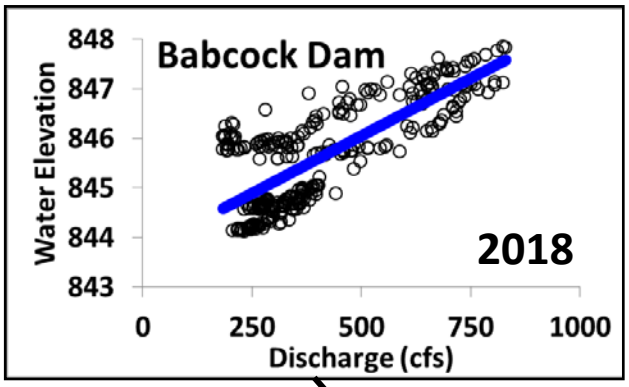
Green Lake = Normal Slow-no-wake Restrictions

Yellow Lake = Emergency Order: slow-no-wake within 500 feet of shore

Red Lake = Emergency Order: slow-no-wake entire surface area

https://lwrd.countyofdane.com/slownowake#

Winter Operations



Tenney Dam

849.6

848.2

844.7

842.2

(843.4 in 2003)

Babcock Dam

844.5

842.0

Lafollette Dam

843.0

Summer Min

Winter Min

841.9

Lake Mendota

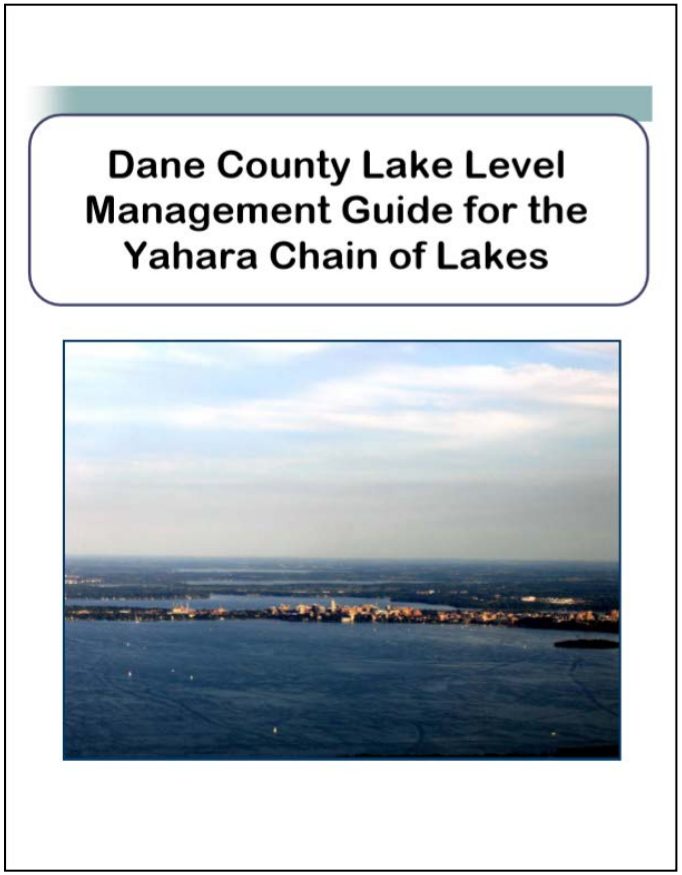
Lake Monona

Lake Waubesa

Lake Kegonsa

Not To Scale

Task Force Recommendation: Lake Management Guide Update



2010

+

MEMORANDUM

Peer Review of the Dane County Lake Level Management Guide for the Yahara Chain of Lakes

Submitted to the Dane County Board of Supervisors
7/2/12

Background

In 2010 the staff of the Dane County Land and Water Resources Department (the "Department") prepared the *Dane County Lake Level Management Guide for the Yahara Chain of Lakes* (the "Guide"). The Guide was approved on October 13, 2010 by the Dane County Lakes and Watershed Commission.

The Guide is an attempt to formalize Dane County's process for meeting DNR lake level orders on four lakes in a riverine system. It was initiated as a response to concerns raised after 2007-2008 flooding events in Dane County. The Guide reflects the Land and Water Resources Department's on-the-ground experience with managing the lake levels since 2003.

Because of the uniqueness and complexity of the Yahara Chain of Lakes system (Lakes Mendota, Monona, Waubesa, Kegonsa and Stoughton Pond), the Executive Committee of the County Board of Supervisors requested that an independent peer review be conducted to assess the management goals and operational strategies identified in the Guide.

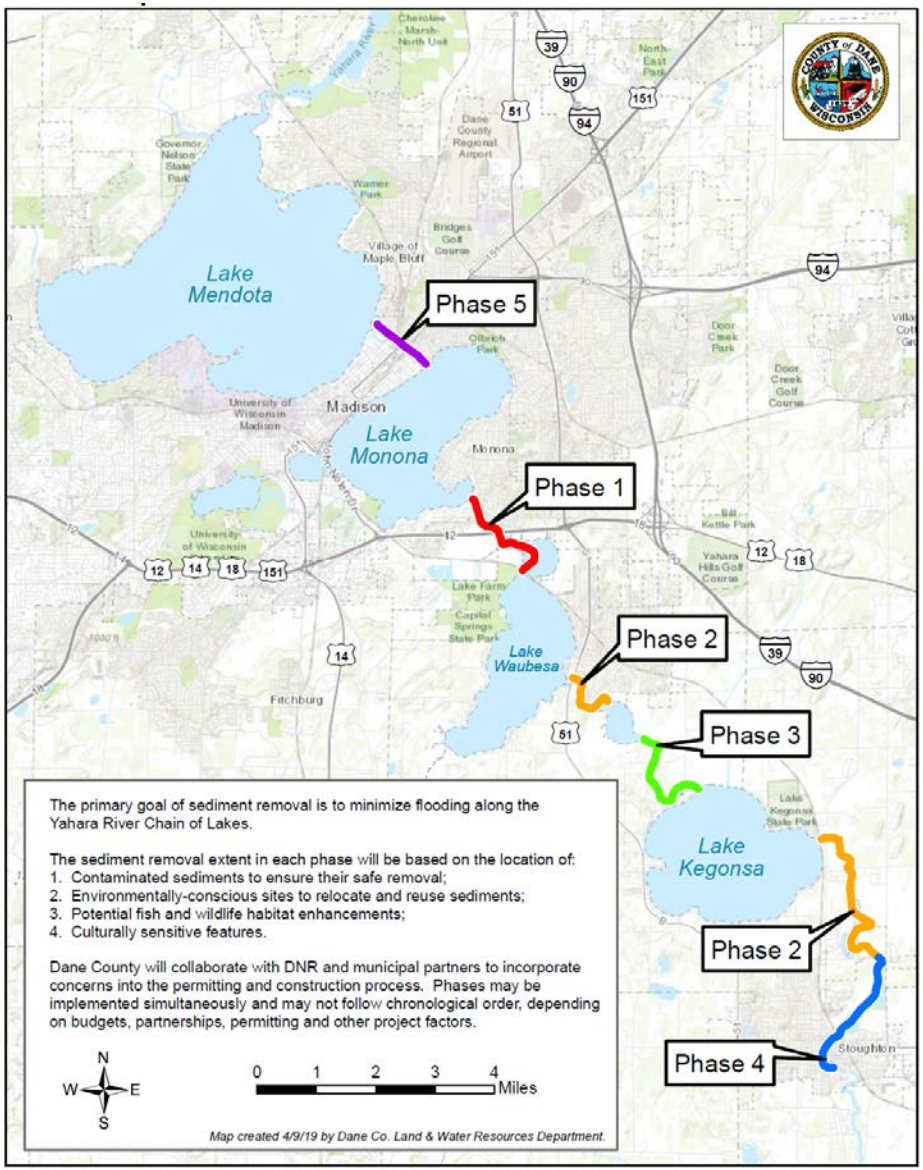
In April 2012 the Office of the County Board convened individual experts, all of whom work outside of Dane County government on issues related to the Yahara Lakes system, to form a peer review group to evaluate the Guide and to make recommendations based on their evaluation. Several of the participants in the peer review group are internationally respected experts and all are intimately familiar with the Yahara Lakes system and its complexities. The participants in the peer review group are listed in Appendix A on page 9 of this memorandum.

In this memorandum the peer review group offers findings and recommendations based on the current state of knowledge of flows and water levels in the Yahara Chain of Lakes. Over the past several years, collaborative efforts by Dane County, the Wisconsin Department of Natural Resources, the City of Madison, the University of Wisconsin, and the U.S. Geological Survey have yielded important new data and insights about the relationships between lake levels and flows into and out of the lakes. Furthermore, a computer model of lake levels and flows has been developed through a collaborative effort between the University of Wisconsin, the City of Madison, and Dane County. When fully developed, this model can be used to predict lake levels and flows based on precipitation data. With further development, the computer model also can be used to quantify the economic and environmental benefits and costs of alternative lake management practices. This new modeling capacity will enable evaluation of new strategies for managing the lakes.

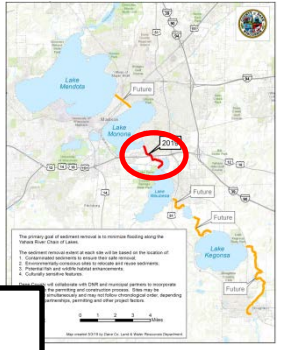
1

2012

Task Force Recommendation: Sediment Removal



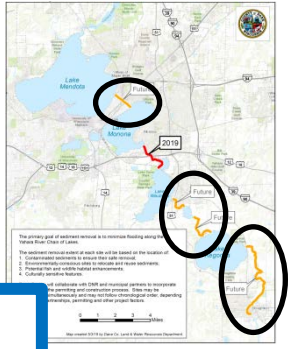
2019 Sediment Removal



(times approximate – Monona to Waubesa)

- Sediment Core Collection (1 week)
- Bathymetry Collection (2 months)
- Laboratory Contaminant Testing (3 months)
- Physical Sediment Testing (1 month)
- Quality Assurance Quality Control (1 week)
- Develop Engineering Plans and Specifications (2 months)
- Final Model Verification of Removal Quantities (2 weeks)
- Permit Applications Preparation (1 week)
- Request For Bids (4 months)
- County Board Approval – Award Contract
- Permit Process (Ch. 30, NOI, EC) (4 months)
- Start Sediment Removal Project

Future Sediment Removal



Sediment Core Collection

Bathymetry Collection

~220 miles

Laboratory Contaminant Testing

Physical Sediment Testing

Quality Assurance Quality Control

Develop Engineering Plans and Specifications

Final Model Verification of Removal Quantities

Permit Applications Preparation

Request For Bids

County Board Approval – Award Contract

Permit Process (Ch. 30, NOI, EC)

Start Sediment Removal Project

Questions?