

A WATER QUALITY MANAGEMENT PLAN FOR LAC LA BELLE WAUKESHA COUNTY, WISCONSIN

This newsletter contains a summary of the recently completed Water Quality Management Plan for Lac La Belle. Copies of the full plan are available for review from the Lac La Belle Management District, and can be accessed on the website of the Southeastern Wisconsin Regional Planning Commission: www.sewrpc.org/publications/.

This newsletter presents a summary of the recommended management plan for Lac La Belle. The current plan updates and supplements the first edition plan, published by the Southeastern Wisconsin Regional Planning Commission in 1980 as Community Assistance Planning Report No. 47. As in the first edition, this plan is based on analyses of land use, land and water management practices, pollution sources, water quality, recreational uses, population, and alternative management measures. Based on these analyses, both watershed and in-lake management measures are recommended.

WATERSHED MANAGEMENT

A fundamental element of effective lake management is the promotion of a sound land use pattern within the area tributary to the Lake. This will determine the character, magnitude, and distribution of nonpoint sources of pollution; the practicality of, and need for, various land management measures; and, ultimately, the water quality of the Lake. In the case of Lac La Belle, many of the impacts generated from lands within the tributary area are moderated by the upstream lakes that capture and retain significant portions of the contaminant loads generated from the upper watershed. Consequently, local land uses and land use changes within the area directly tributary to the Lake have an important and immediate affect on Lac La Belle.

Development in the Shoreland Zone

The redevelopment of existing lakefront properties, replacing lower-density uses with higher-density or significantly larger dwellings, is a major land use issue facing Lac La Belle. In the absence of mitigation measures, such changes will increase stormwater runoff and pollutant loadings, and reduce groundwater recharge. While these effects can be moderated with stormwater management measures, significant redevelopment in the area tributary to the Lake involving conversion to higher-density land uses is likely to have an adverse impact on the Lake. For this reason, maintenance of the historic low- and medium-density residential character of the shoreline is recommended.

Additionally, it is recommended that shoreland zoning requirements be enforced, and stormwater and urban nonpoint pollution abatement practices be included in shoreland development activities. Provision for shoreland buffers, use of appropriate and environmentally friendly landscaping practices, and inclusion of stormwater management measures that provide water quality benefit are practices to be encouraged.

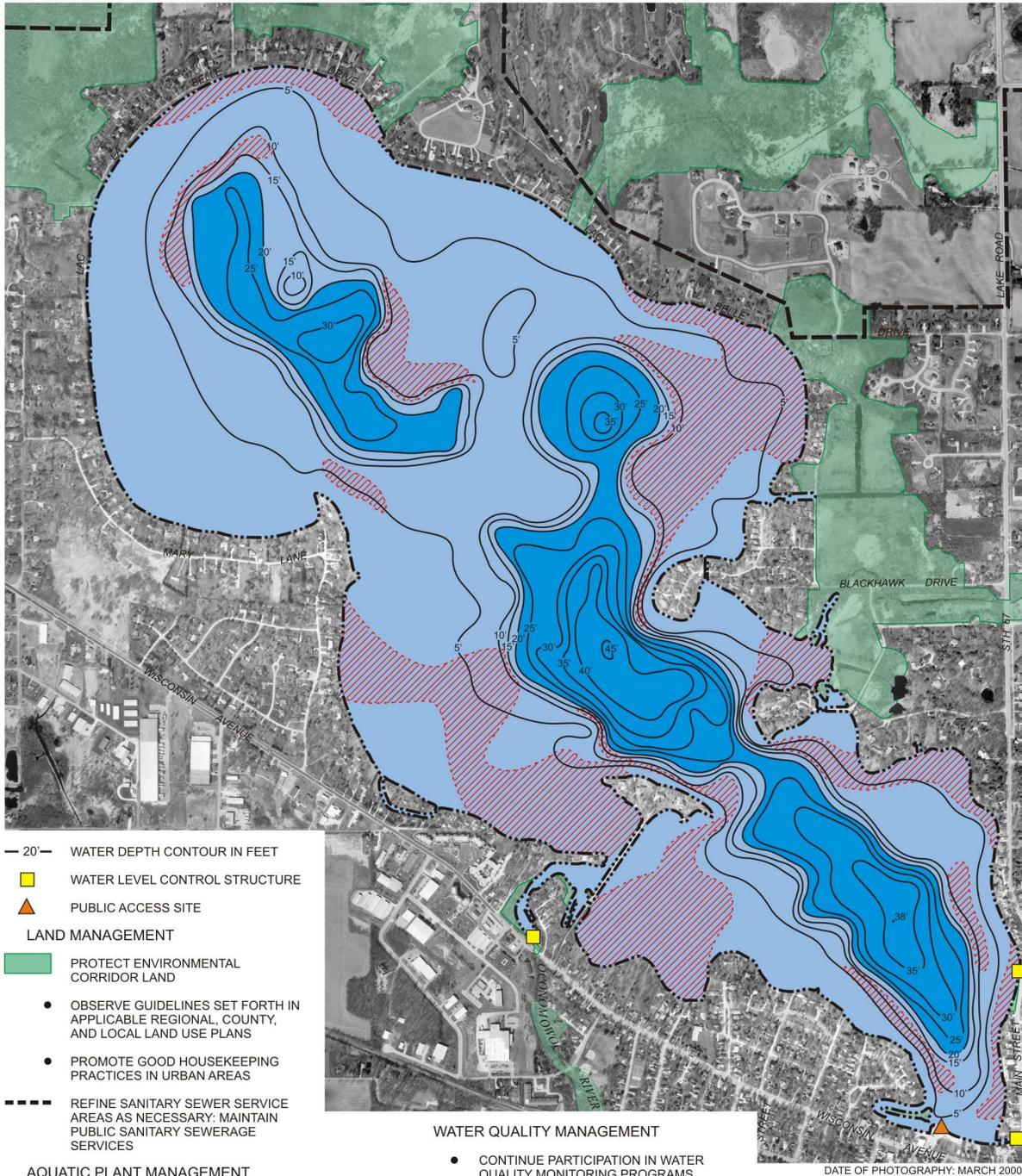
Development in the Watershed

The recommended land use plan for the Lac La Belle drainage area envisions that urban land use development will occur primarily at low densities and only in areas that are covered by soils suitable for the intended use, not subject to hazards such as flooding, and not environmentally sensitive. The conversion of agricultural and other open space lands, which meet these criteria, if continued, will replace much of the open space with large-lot urban development. This may significantly increase the pollutant loadings to the Lake and increase the pressures for recreational use of the Lake. A significant portion of the undeveloped lands could be developed for low-density urban uses. It is recommended that the impacts of such development be minimized through review and modification of the applicable zoning ordinance regulations and zoning district maps to minimize the areal extent of development, and provide specific provisions and incentives for clustering of residential development on smaller lots within conservation subdivisions.

Stormwater Management

It is recommended that the City of Oconomowoc, Village of Lac La Belle, and Town of Oconomowoc take an active role in promoting urban nonpoint source pollution abatement. Actions to promote urban nonpoint source pollution abatement would include specific stormwater management planning, a review of the stormwater management ordinances, use of state-of-the-art management measures, and harmonization of ordinances between municipalities. Adoption by all riparian municipalities of common stormwater management ordinance provisions is strongly recommended.

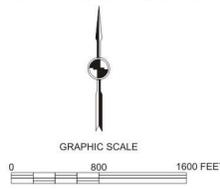
RECOMMENDED MANAGEMENT PLAN ELEMENTS FOR LAC LA BELLE



- 20' — WATER DEPTH CONTOUR IN FEET
- WATER LEVEL CONTROL STRUCTURE
- ▲ PUBLIC ACCESS SITE
- LAND MANAGEMENT
- PROTECT ENVIRONMENTAL CORRIDOR LAND
- OBSERVE GUIDELINES SET FORTH IN APPLICABLE REGIONAL, COUNTY, AND LOCAL LAND USE PLANS
- PROMOTE GOOD HOUSEKEEPING PRACTICES IN URBAN AREAS
- REFINE SANITARY SEWER SERVICE AREAS AS NECESSARY. MAINTAIN PUBLIC SANITARY SEWERAGE SERVICES
- AQUATIC PLANT MANAGEMENT
- OPEN WATER: DEPTH GREATER THAN 20 FEET - NO MANAGEMENT MEASURES REQUIRED
- EURASIAN WATER MILFOIL: WATCH AND CONTROL AREA
- CONTINUE TO MONITOR AQUATIC PLANT COMMUNITIES

- WATER QUALITY MANAGEMENT
- CONTINUE PARTICIPATION IN WATER QUALITY MONITORING PROGRAMS
- FISHERIES MANAGEMENT
- CONTINUE TO MONITOR FISH POPULATIONS. MODIFY STOCKING/HARVESTING PROGRAM AS NECESSARY
- PUBLIC INFORMATIONAL PROGRAM
- CONTINUE PUBLIC AWARENESS PROGRAM

DATE OF PHOTOGRAPHY: MARCH 2000



Source: SEWRPC.

PRELIMINARY DRAFT

Management of Environmentally Sensitive Lands

Wetland, woodland, and groundwater recharge area protection can be accomplished through land use regulation and public land acquisition of critical lands. Both measures are recommended for the total drainage area tributary to Lac La Belle. Specific areas within the tributary area have been identified in the regional natural areas and critical species habitat protection and management plan for acquisition by state, county, or local governmental bodies and private conservation organizations. The recommendations relevant to the Lac La Belle tributary area are incorporated by reference

Point and Nonpoint Source Pollution Control

The recommended land management measures aimed at reducing the water quality impacts of point and nonpoint pollutants on Lac La Belle include those set forth in the regional water quality management plan, the Waukesha County land and water resource management plan, and the Oconomowoc River nonpoint source pollution abatement plan.

With respect to point sources of pollution, periodic review of the facilities plans for the Oconomowoc wastewater treatment facility, among others, is recommended to ensure adequate capacity and appropriate levels of treatment. This facility discharges treated sewage effluent to the Oconomowoc River downstream of Lac La Belle. In those portions of the drainage area served by onsite sewage disposal systems, enforcement of current County ordinances requiring regular inspection and maintenance of systems is recommended. The Counties should assume the lead in informing affected property owners of the need for inspections and appropriate remedial measures.

With respect to nonpoint source pollution abatement, measures to reduce nonpoint source pollutant loads to Lac La Belle by about 25 percent in urban and rural areas are recommended. The most readily controllable loadings are associated primarily with runoff from urban lands directly tributary to the Lake and from urbanizing lands throughout the watershed that are linked to the Lake by way of streams and stormwater drainage systems. Enforcement of stormwater, turf management, and construction site erosion control ordinances, and adoption of such ordinances where they do not currently exist, is recommended.

Rural Nonpoint Source Controls

While agricultural land uses are anticipated to be a declining form of land use in the Lac La Belle watershed, about 3,055 pounds of phosphorus, and 847,800 pounds of sediment, per year, are estimated to be contributed currently from agricultural lands. Under forecast future conditions, the agricultural operations that remain within the tributary area will continue to contribute about 80 percent of the sediment and phosphorus loads to the waterbody. Consequently, preparation of detailed farm conservation plans is recommended.

Urban Nonpoint Source Controls

Urban land uses comprised about 20 percent of the drainage area of Lac La Belle during 1995, and are expected to remain relatively constant under buildout conditions. About 1,000 pounds of phosphorus per year are estimated to be contributed from these lands, although a shift in urban lawn care practices could result in an increasing amount of phosphorus being delivered to the Lake from this source.

Recommended control measures include stormwater management and good urban “housekeeping” practices. The application of such low-cost urban practices may be expected to reduce nonpoint source loadings from urban lands by about 25 percent. Associated informational programs to encourage good urban housekeeping practices also are recommended. Continued street sweeping, catch basin cleaning, stream protection, leaf litter and vegetation debris collection, and stormwater storage and infiltration measures can reduce urban nonpoint source pollution loads by up to about 50 percent.

IN-LAKE MANAGEMENT

The major recommendations include water quality monitoring, fisheries management and habitat protection, shoreland protection, aquatic plant management, recreational use management, and informational and educational programming.

Surface Water Management

Continued water quality monitoring of Lac Le Belle is recommended through enrollment of one or more lake residents as WDNR Self-Help Monitoring Program volunteers. With respect to lake levels, it is recommended that the outlet weir be inspected and maintained, as necessary, at regular intervals. Lake levels should be recorded. This monitoring could be

conducted by a nearby resident volunteer or by City of Oconomowoc Engineer's Department staff.

In addition to volunteer monitoring, the Lac La Belle Management District should consider periodic monitoring of the Lake by the U.S. Geological Survey or another similar program. These detailed data provide additional information on the behavior of the waterbody and its responses to environmental stressors, such as nutrient loadings. Such periodic monitoring programs should extend over a minimum period of three years. Given that a number of lake organizations along the Oconomowoc River use the services of the U.S. Geological Survey, consideration of a coordinated sampling program on the Oconomowoc River is recommended. The benefits of such a sampling program include knowledge of how materials move through the chain-of-lakes, which will assist in the prioritization and application of remedial efforts so as to maximize their effectivity within the chain.

Fisheries Management

Three specific actions are recommended with respect to the management of the species composition in the fisheries: 1) the conduct of a fishery survey and the formulation of refined stocking and size and bag limitations; 2) the assessment of angling pressures; and, 3) the analysis of potential contamination of fishes in the Lake.

Recommended measures for the management of fish species composition include the following:

- Continued monitoring of trends in water quality, fish community characteristics, and aquatic life in Lac La Belle;
- Monitoring of the littoral zone/shallow water fish assemblage characteristics in the summer;
- Continued monitoring of fish assemblage characteristics during the fall;
- Continued enforcement of the minimum length limit for walleye at 20 inches with a daily bag limit of one;
- Discontinuation of walleye and possibly northern pike stocking, and consideration of stocking of other gamefish species such as large and smallmouth bass;

- Continued enforcement of the combined total bag limit of 15 for bluegill, crappie, pumpkinseed, and yellow perch;
- Consideration of protecting panfish through more restrictive harvest limits, size restrictions, or creation of refuge areas, among others;
- Opening a fishing season on the stocked flathead catfish that currently remains closed;
- Continued annual spring assessments of carp; and
- Continued carp control.

Recommended habitat protection measures are, in part, provided by the recommended aquatic plant management program. In addition, adoption of the vegetated buffer strip method of shoreland protection is recommended to be used in lakeshore areas and on tributary waterways wherever practical in order to maintain habitat value and the natural ambience of the lakeshore. Continued maintenance of existing revetments and other protection structures is also recommended. Conversion of bulkheads to revetments or natural vegetated shorelines is recommended at such time as major repairs are found necessary. Maintenance of a vegetated buffer strip immediately adjacent to the Lake is a simple, cost effective, and natural method of reducing shoreline erosion. Recommended management measures include the following:

- Protection and improvement of submergent and emergent plant beds in Lac La Belle;
- Protection, improvement and enhancement of riparian, shallow and deep-water habitat, which includes woody debris and aquatic plants; and,
- Promotion of watershed management practices to improve water quality and enhance fisheries.

In addition, restoration of vegetated streambank buffers, including maintenance of the buffer zones along Golf Course Creek, and restoration of the natural patterns of meanders, runs, riffles, and pools along channelized streamcourses is recommended.

Aquatic Plant Management

The recommended aquatic plant management strategy represents a refinement of the current program and recognizes the importance of fishing as a recreational use of Lac La Belle. The plan is based on the integrated use of manual harvesting and limited applications of appropriate aquatic herbicides, and is designed to minimize the negative impacts on the ecologically valuable areas of the Lake, while providing a level of control needed to facilitate the desired recreational uses of the Lake. The following actions, subject to WDNR permits, are recommended:

1. Chemical herbicides should be limited to controlling nuisance growths of exotic species in shallow water around docks and piers, or in isolated embayments where plant growth is dominated by invasive nonnative species. Only selective herbicides should be used. Algicides generally are not recommended.
2. Chemical applications, if required, should be made in early spring to maximize their effectiveness on nonnative plant species and minimize their impacts on native plant species.
3. The control of rooted vegetation between adjacent piers is recommended to be left to the riparian owners concerned.
4. The use of biological control agents in the management of the purple loosestrife populations is recommended.
5. Aquatic plant management activities should be restricted in ecologically valuable areas.
6. Native plant communities in the Lake should be protected from disturbance to the extent practicable.
7. Continued monitoring of aquatic and wetland plant communities and nonnative species within the Lake and nearshore environment is recommended.
8. Incorporation of educational and informational programming as part of the aquatic plant management program is recommended.
9. Periodic review of this aquatic plant management plan element should be undertaken at three- to five-year intervals.

Recreational Use Management

Regulatory measures provide a basis for controlling lake use and use of shorelands around a waterbody. On land, shoreland zoning, requiring set backs and shoreland buffers can: 1) protect and preserve views both from the water and from land, 2) control development around a lake to minimize its environmental impacts, and 3) manage public and private access to a waterbody. On water, recreational use zoning can provide for safe and multiple-purpose use of lakes by various groups of lake users and protect environmentally sensitive areas. In this regard, demarcation of WDNR-delineated sensitive areas, Eurasian water milfoil control areas, and similar environmentally valuable or sensitive areas of the Lake is recommended.

Limited sediment removal to aid navigation and the hydrological condition of the Lake may be warranted at three sites, subject to WDNR and U.S. Army Corps of Engineers permits; namely:

- Within the constructed channel bordered by STH 16 and Woodland Lane adjacent to the public recreational boating access site on the southeastern shore of the Lake. Sediment removal should be limited to maintenance of the existing waterway and be predicated upon implementation of appropriate shoreland stabilization measures;
- At the mouth of Rosenow Creek into Lac La Belle to mitigate the in-lake effects of historic sediment deposition from past agricultural erosion within this subwatershed, and to discourage the growth of Eurasian water milfoil; and
- In the outlet channel to maintain the through flow of water and discourage the growth of Eurasian water milfoil in this area.

Informational and Educational Programming

Educational and informational materials, of interest to homeowners and supportive of the plan goals, are available. These brochures could be provided to homeowners through local media, direct distribution, or targeted school or public library displays. In addition, there are a number of school-based programs, some of which are currently being implemented through the efforts of the science faculty at the Oconomowoc High School, among others, that provide youth with an opportunity to

experience “hands on” the aquatic environment and become better informed about current and future lake issues and concerns. Continued participation of the Lac La Belle community in the WDNR Self-Help Monitoring Program is recommended.

CONCLUDING REMARKS

The actions recommended in this plan largely represent an extension of ongoing actions being carried out by the Lac La Belle Management District, the City of Oconomowoc, the Village of Lac La Belle, and the Town of Oconomowoc, in cooperation with neighboring municipalities, and county and state agencies. The recommended plan introduces few new elements, although some of the plan recommendations represent refinements of current programs. This is particularly true in the case

of the fisheries and aquatic plant management programs.

Lac La Belle is a valuable natural resource in the Southeastern Wisconsin Region. Increases in population, urbanization, income, leisure time, and individual mobility forecast for the Region may be expected to result in additional pressure for development in the drainage area tributary to the Lake and for water-based recreation on the Lake. Adoption and administration of an effective lake management program for Lac La Belle, based upon the recommendations set forth herein, will provide the water quality protection needed to maintain conditions in Lac La Belle suitable for recreational use and for fish and other aquatic life.