

Lower Mud Lake
Lake Planning Grant LPL-244
Dane County, Wisconsin



Dane County Parks Department
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TABLE OF CONTENTS

INTRODUCTION.....1
REVIEW AND ANALYSIS OF APPLIED ECOLOGICAL SERVICES, INC.
REPORT.....1
 ANALYSIS OF DISTRIBUTION OF PRIORITY SITES.....2
 EVALUATION OF RESTORATION POTENTIAL OF PRIORITY SITES.....2
 EVALUATION OF DEVELOPMENT PRESSURES IN THE MUD LAKE AREA.....5
 TOWN OF DUNN LAND USE PLAN.....5
 VILLAGE OF MCFARLAND MASTER PLAN.....5
 ANALYSIS OF DEVELOPMENT PRESSURES ON LOWER MUD LAKE PROJECT AREA.....7
 COMPOSITE ANALYSIS OF LANDS UNDER DEVELOPMENT PRESSURE AND RESTORATION
 POTENTIAL.....7
CONCLUSION.....8

TABLE OF MAPS

MAP 1 LOWER MUD LAKE PRIORITY AREAS AND PUBLIC LANDS.....3
MAP 2 LOWER MUD LAKE PRIVATELY OWNED, RANKED AREAS AND PUBLIC LANDS.....6

INTRODUCTION

The intent of this report is to complete the Department of Natural Resources request for further information regarding a review and analysis of data provided by Applied Ecological Services and the development of a project boundary map showing acquisition program recommendations and priorities for the Lower Mud Lake Planning Grant LPL-244. The following report will attempt to fulfill those requested tasks, allowing the Department to reimburse Dane County for work undertaken as part of the Lake Planning Grant LPL-244.

REVIEW AND ANALYSIS OF APPLIED ECOLOGICAL SERVICES, INC. REPORT

The Applied Ecological Services, Inc. (AES) report *Vegetation and Ecological Conditions of the Lower Mud Lake System: Opportunities for Restoration and Management*, lists as its three goals:

1. Document and rank existing ecological conditions in selected public and private lands around Lower Mud Lake
2. Identify ecological management and restoration needs to reduce ecological system deterioration
3. Provide a basis for beginning this restoration and management programming.

The report inventoried and quantified the approximate acreage of vegetation/land cover types for the Mud Lake Project Area. A synopsis of the table is as follows:

Developed Land	28 acres (2%)
Agricultural Land	415 acres (23%)
Woodlands	453 acres (25%)
Wetlands	886 acres (50%)
Other Open Water (Not including Lower Mud Lake or Yahara River)	2 acres (<1%)

Source: AES, Inc. 1997.

In order to evaluate and provide a broad overview of the current condition of the natural resources in the Mud Lake project area, AES used site descriptions, species lists and Timed Meander Search (TMS) process as described in *Vegetation and Ecological Conditions of the Mud Lake System: Opportunities for Restoration and Management*.

In evaluating the ecological value and restoration potential of the Mud Lake area, AES, Inc. found that, "Because the study sites that were scored are representative of the vegetation types present in Lower Mud Lake, this scoring process suggests that the majority of the vegetation cover types present (as represented in 40 of 52 study sites) are in serious decline, losing ecological values and restoration potential." AES, Inc. also found that, "The highest scoring (in terms of current ecological condition) areas were degraded wet prairies, sedge meadows, and oak savannas that have high restoration potential and still retain significant biological diversity."

In order to restore the degraded nature of the ecological systems in the Lower Mud Lake system, the report establishes the goal of "...creating and restoring ecological systems

with minimum effort.” The report lists the following steps in attempting to achieve this goal:

1. Structure of a Management and Restoration Program and Implementation
 - Remedial Phase
 - Maintenance Phase
2. Scheduling Monitoring and Management for Ecological Restoration Projects (AES, Inc. provides an example restoration, management and monitoring schedule within their report)
3. Specialized Training for Restoration and Management
4. Ecological Monitoring
5. Reporting

Analysis of Distribution of Priority Sites

Based upon AES Inc.’s research into the existing ecological conditions at 52 various sites in the Mud Lake Area, AES, Inc. was able to rank the sites based on the site’s capacity to be restored. A further analysis of the data revealed that of the 12 sites receiving a “high” priority, seven are directly adjacent to or within either Lower Mud Lake or the Yahara River. Of the remaining five high priority sites, one is within the Village of McFarland and the other four sites are located no more than approximately 2,800 feet from the shores of the Yahara River.

There are 23 sites ranked as “medium priority” for ecological restoration. These sites are primarily scattered around the fringes of the study area, with a few exceptions including one site on the shore of Lower Mud Lake and two sites on the shore of the Yahara River.

The remaining 15 sites categorized as “low priority” are spatially distributed very similar to the medium priority sites and are generally scattered around the fringes of the study area. The categorized sites and their spatial relationship to existing publicly owned lands are depicted on Map 1.

Evaluation of Restoration Potential for Priority Sites

As a means to determine the restoration potential of 52 sites evaluated by AES Inc., an analysis of the ownership of the parcels where the sites are located was performed. Due to a limitation of the parcel information, land areas in the Village of McFarland are noted as “Village of McFarland”. In a few instances, sites cross property boundaries and are noted with a slash between the two ownership types. Following is a listing of the sites ranked by their score and the ownership of those land areas:

Site Number	Score	Restoration Potential	Ownership
24	21	High	Private/WDNR
40	21	High	Dane County
26	20	High	Dane County
30	20	High	WDNR
25	19	High	Private
31	19	High	Private
32	19	High	Private/WDNR
39	19	High	Private

21	18	High	Village of McFarland
10	17	High	Dane County/Village of McFarland
29	17	High	Private
1	16	High	Village of McFarland
28	16	Medium	Dane County
33	16	Medium	Private
5	15	Medium	Village of McFarland
43	15	Medium	WDNR
44	15	Medium	WDNR
49	15	Medium	Private
4	14	Medium	Village of McFarland
7	14	Medium	Village of McFarland
8	14	Medium	Village of McFarland
23	14	Medium	Private
35	14	Medium	Private
36	14	Medium	Private
41	14	Medium	WDNR
42	14	Medium	Private
34	13	Medium	Private
9	12	Medium	Dane County
12	12	Medium	Private
13	12	Medium	Private
17	12	Medium	Private
18	12	Medium	Private
22	12	Medium	Village of McFarland
27	12	Medium	Dane County
52	12	Medium	Private
16	11	Low	Dane County
2	10	Low	Village of McFarland
3	10	Low	Village of McFarland
6	10	Low	Village of McFarland
19	10	Low	Private
48	10	Low	Private
14	9	Low	Private
15	9	Low	Private
45	9	Low	Private
46	9	Low	Private
47	9	Low	Private
50	9	Low	Private
51	9	Low	Private
11	8	Low	Private
20	8	Low	Private
37	7	Low	WDNR
38	7	Low	Private

In order to further refine those sites that may need to be protected through public ownership, the sites that are not currently in public ownership were prioritized based upon their restoration potential score. Based off of AES Inc.'s prioritization criteria for evaluating ecological condition analysis there are six areas, categorized as high in restoration potential that are not currently in public ownership as displayed on Map 2.

Evaluation of Development Pressures within the Mud Lake Resource Protection Area

Town of Dunn Land Use Plan

The Town of Dunn Land Use Plan, amended September 22, 1998 envisions the area within the Mud Lake Resource Protection Area as almost entirely Environmental and Cultural Resource Protection Areas. This district contains the following policies as described in the Town's Land Use Plan that may be directly relevant to the Lower Mud Lake Resource Protection Project Plan:

- Encourage the preservation of areas needed to support local wildlife
- Identify disturbed or degraded lakeshore and wetland areas that are important to water quality and to support all levels of government in efforts to restore and improve such areas.
- Preserve the natural landscape features such as woodlands, wetlands, floodplains, streams, lakes, steep slopes and prairies.
- Request rezoning of important wetlands and appropriate buffer areas for conservation and protection.
- Request rezoning of important wetlands and appropriate buffer areas for conservation and protection.
- Discourage filling or developing of floodplains and areas within 300 feet of them.
- Encourage that the Town support all other levels of government in acquiring natural features, especially those within the identified environmental corridors, for public use and protection consistent with the objectives and policies of the Town.

In discussions with the Town of Dunn, it was noted that there is not much development pressure within the Town that may impact the Lower Mud Lake Project Area.

Village of McFarland Master Plan

The Village of McFarland Master Plan projects only a small amount of development within the Lower Mud Lake Resource Protection Project Area. The projected development is currently within the village boundaries and is east of Hidden Farm Road and south of Elvehjem Road and will be developed around the year 2012. The remaining Resource Protection Area follows the existing southern boundaries of the Village of McFarland and the existing boundaries are not projected to change in this area over the course of the plan. The only areas proposed to be annexed to the Village of McFarland over the course of the plan, are three small parcels along Hidden Farm Road, south of Elvehjem Road. The remainder of the area around Lower Mud Lake is within the Parks and Conservancy District, as a result of the large wetland areas along the shoreline of

Lower Mud Lake. Areas south of the Yahara River, along USH 51 are not projected to be developed by the Village of McFarland over the course of the plan.

In discussions with the Village of McFarland, the only current development near the Yahara River or Mud Lake is the Second Addition to Meredith Heights Subdivision taking place along the north side of the Yahara River, from Exchange Street to Sleepy Hollow Road. Additionally, Town of Dunn residents living in this area recently petitioned for annexation to the Village of McFarland. Although there is a small amount of development occurring near the Mud Lake Project Area, the primary growth area for the Village is to the east of the current Village boundaries. It was noted that as development occurs, runoff to Mud Lake will increase, and various stormwater management techniques will be needed to help alleviate the runoff.

Analysis of Development Pressures on the Lower Mud Lake Project Area

After reviewing the local land use plans and discussing development pressures in the area with local officials, the areas that may be receiving development pressures will not directly occur within the Lower Mud Lake Project Area. The majority of the development pressures in the Lower Mud Lake Area will be from the Village of McFarland, although the areas envisioned to be developed by the Village are not within the adopted Lower Mud Lake Resource Protection Area boundaries. However, secondary impacts from these developments may impact the water quality of Lower Mud Lake through increased stormwater runoff. As these areas are developed, care should be taken to minimize the cumulative impact stormwater runoff will have upon Lower Mud Lake.

The Town of Dunn does not propose any development near Lower Mud Lake in the land use plan or through discussions with the Town Clerk. However, if development pressures occur along the southern Yahara River, care again should be taken to minimize the impact of increased stormwater runoff into the Yahara River and eventually into Lake Kegonsa.

Composite Analysis of Lands under Development Pressure and Restoration Potential

In reviewing and comparing the areas under development pressure and those areas that have a high potential for restoration, it was found that the two sets of information do not necessarily correlate. This may be a result of both the Town of Dunn and Village of McFarland including the Lower Mud Lake Resource Protection Area within their land use plans and directing development away from this unique natural area. Although there is some development on the periphery edges of the Resource Protection Area, the Village of McFarland is intending to grow to the east of the current Village boundaries. The two sets of information not conflicting with each other may also be a result of the best sites for restoration being located within wetlands, and being somewhat protected from development.

The Town of Dunn is receiving development pressure primarily on a case-by-case basis. In situations where there is a landowner looking to sell land within the Resource Protection Area, the County should review and evaluate whether the particular parcel

would help to attain the objectives listed in the Lower Mud Lake Resource Protection Plan.

CONCLUSION

The prioritization of areas 1) that have high restoration potential and 2) that are threatened by development will help the Dane County Parks Department and Commission to determine what parcels, when available, may be valuable for preservation. However, this prioritization should not be viewed as a rigid ordered list, but rather as another tool to assist the Dane County Parks Department and Commission in evaluating the costs and benefits of purchasing individual parcels of property within the Lower Mud Lake Resource Protection Area.

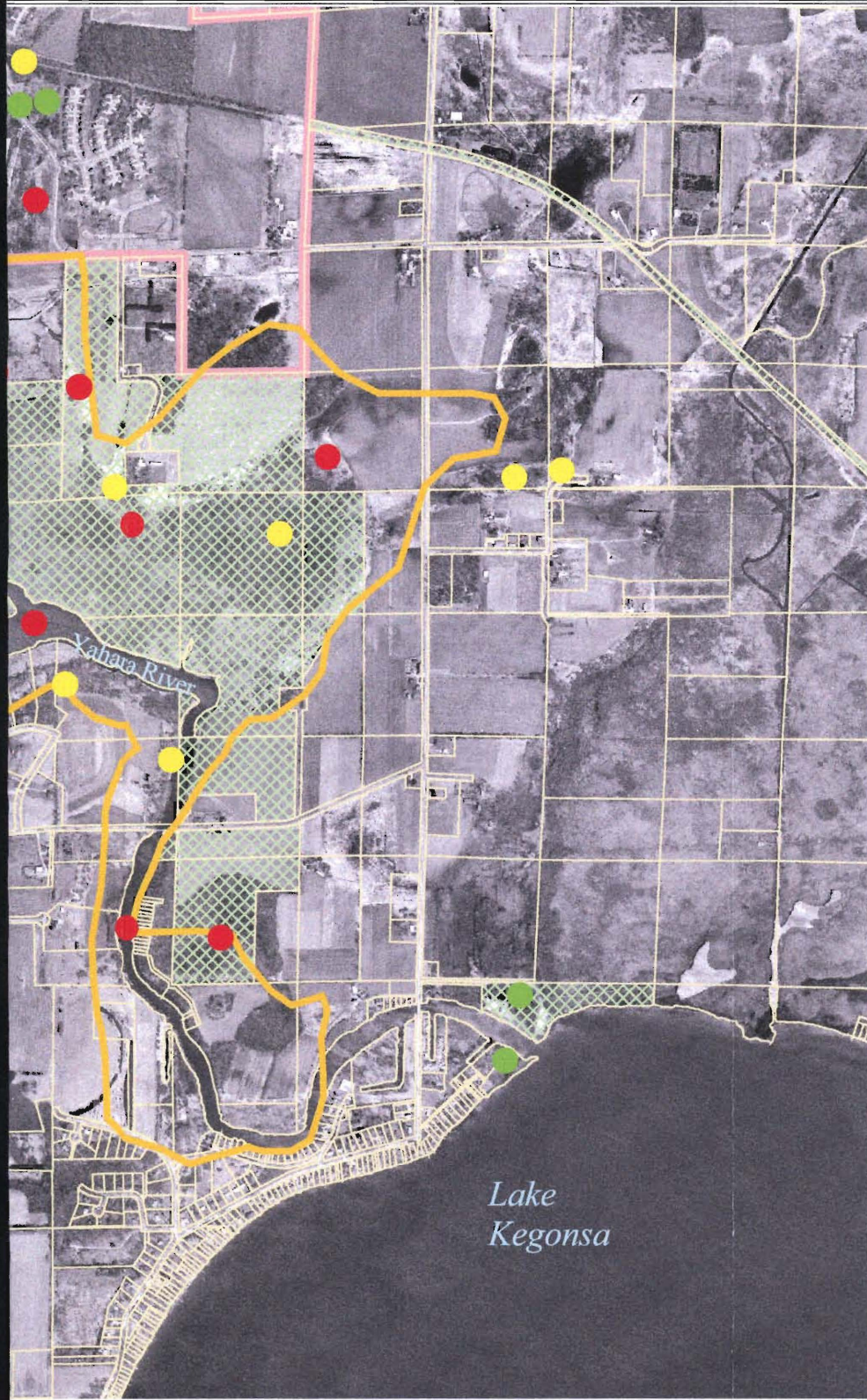
Lower Mud Lake Priority A

Village of McFarland and Town of Du



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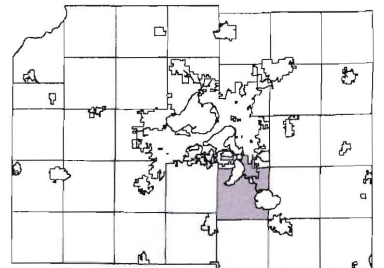
of Dunn, Dane County, Wisconsin



- High Priority
- Medium Priority
- Low Priority
- Resource Protection Area
- Town of Dunn Parcels
- Public Lands
- Village of McFarland



750 0 750 1500 Feet



Dane County, Wisconsin

Source: Applied Ecological Services, Inc. 1997
Dane County Planning and Development 1999.

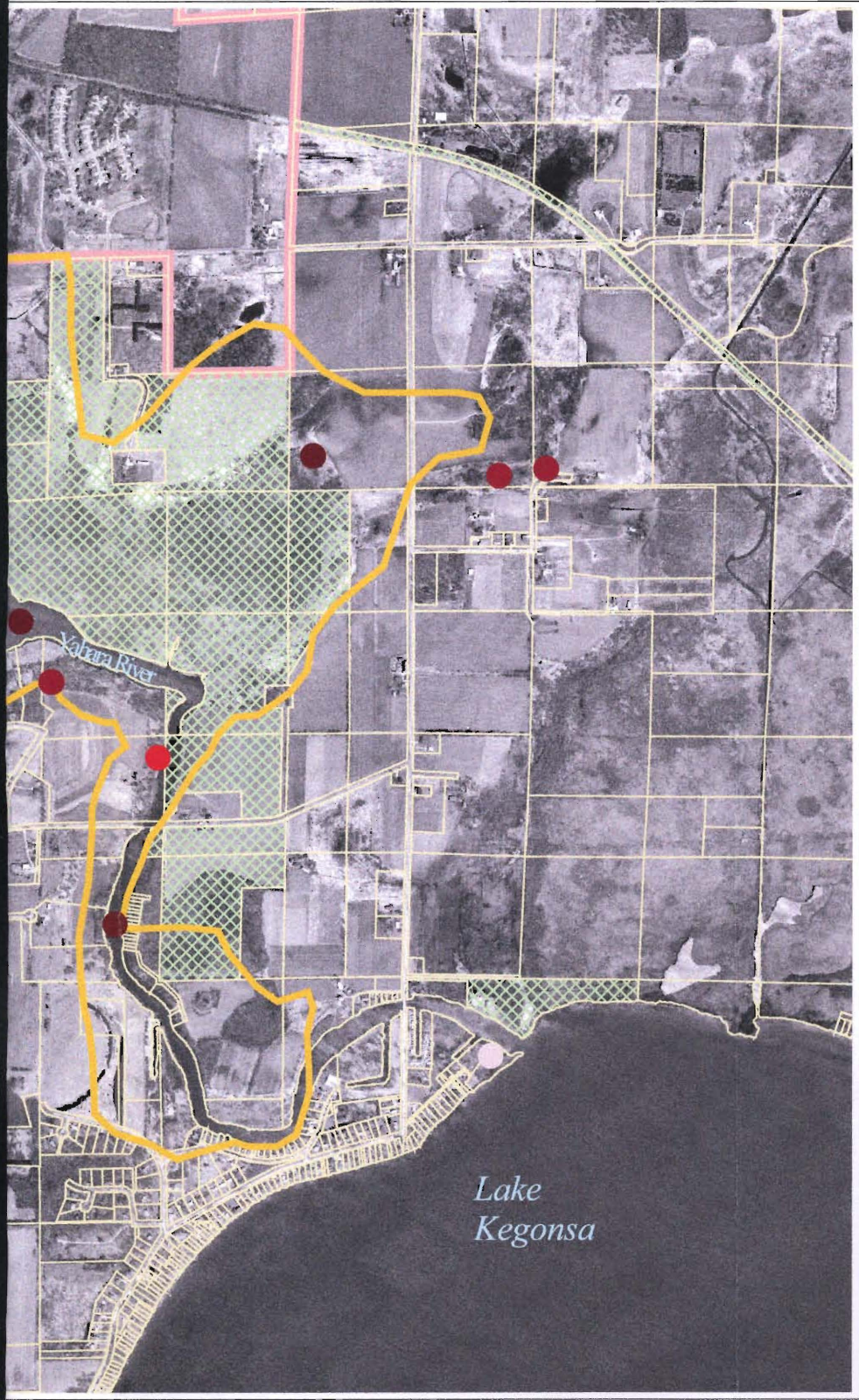
Lower Mud Lake Privately Owned

Village of McFarland and Town of

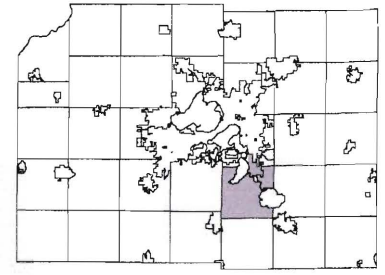
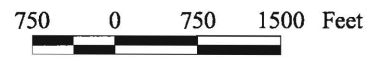


Map of Ranked Areas and Public Lands

of Dunn, Dane County, Wisconsin



- Private Lands Priority Rank
- 1 - 6
 - 7 - 12
 - 13 - 18
 - 19 - 24
 - 25 - 30
- ▭ Resource Protection Area
 - ▭ Town of Dunn Parcels
 - ▭ Public Lands
 - ▭ Village of McFarland



Dane County, Wisconsin

Source: Applied Ecological Services, Inc. 1997
 Dane County Planning and Development 1999.