Tanner’s Lake Sustainable Management Plan

ESPM 4041W - Problem Solving for Environmental Change

Report #6/7

Craig Behrendt, Group Leader
Mikhail Mack, Group Liaison
Shoichi Nakayama
Nicole Nissen-Hooper

Fall 2013
# Table of Contents

List of Figures ........................................................................................................ ii
List of Tables ........................................................................................................ ii
Acknowledgments ............................................................................................... iii
Executive Summary .............................................................................................. iv
Introduction ............................................................................................................ 1
  Vision Statement ................................................................................................. 3
  Goals and Objectives ......................................................................................... 3
Methods .................................................................................................................... 4
  Site Description .................................................................................................. 4
  Research Techniques ......................................................................................... 4
  Observations ....................................................................................................... 7
  Interviews ......................................................................................................... 8
  Geographic Information Systems (GIS) ............................................................... 8
Findings ..................................................................................................................... 9
  Observations ....................................................................................................... 9
  Demographics ................................................................................................. 9
  Park Infrastructure ............................................................................................ 10
Recommendations .................................................................................................. 13
  Maintenance ....................................................................................................... 13
  Signage .............................................................................................................. 13
  Litter .................................................................................................................. 14
  Accessibility ...................................................................................................... 14
  Recreational Opportunities ............................................................................... 14
  Community Outreach ....................................................................................... 14
Conclusion ............................................................................................................... 17
References .............................................................................................................. 18

Appendices
  Appendix A: Park usage relationships
  Appendix B: Map of recommendations
  Appendix C: Map of current and recommended park access routes and signage
  Appendix D: Resources for recommendations
  Appendix E: Table of recommendations
List of Figures

Figure 1: Map of Oakdale, Minnesota ................................................................. 2
Figure 2: Map of Tanner’s Lake Park and surrounding area ...................... 5
Figure 3: Tanner’s Lake Watershed (subwatershed of Washington Ramsey Metro Watershed District) ......................................................... 6

List of Tables

Table 1: Summary of results ........................................................................ 9
Table 2: Population demographics .............................................................. 9
Table 3: Estimated median household income and median per capita income ................................................................. 9
Table 4: Housing values .............................................................................. 10
Table 5: MnDNR fish survey of Tanner’s Lake (2011) ............................. 11
Table 6: List of schools for possible partnership ................................. 17
Acknowledgments

The ESPM 4041W Tanner’s Lake Sustainable Management Plan Team would like to specially thank all individuals who helped and encouraged us in the completion of this project. From the City of Oakdale: Jeff Koesling, Park and Buildings Superintendent, and from the Washington Ramsey Metro Watershed District, Eric Korte.

Moreover, we would like to thank Professor Kristen Nelson, along with our TA Amanda Meyer. Finally, we would like to thank Clara Schreiber for formatting our final report. Without the support, knowledge and vision of these individuals our report would not have been possible.
Executive Summary

Tanner’s Lake Park lies in the southwest corner of Oakdale, MN. The lake itself is considered one of the healthiest lakes in the metropolitan area. Tanner’s Lake Park offers many recreational opportunities to Oakdale residents. The park includes: a beach, beach shelter, playground, picnic pavilion, tennis court, basketball court, baseball field, and beach volleyball court. With such a wide array of available and accessible activities and resources Oakdale is concerned about the park's low usage and developing a sustainability plan for the lake, park, and community encompassed by Tanner’s Lake Park.

In order to measure park usage, field observations and interviews of park users were conducted. Results suggested that park usage was considerably low and that park users had some concerns about the park. Furthermore, based on observations and interviews, most park use came from residents in the immediate neighborhood surrounding the park. As for the lake, the water quality improvements in the past have maintained high water quality, however, fishing quality in the lake is unknown.

In partnership with the City of Oakdale, the University of Minnesota’s Environmental Science, Policy and Management capstone course has prepared several recommendations for Tanner’s Lake Park, which will increase park participation without compromising the integrity of the lake’s health. Recommendations are organized in three parts: park, lake, and community.

Park
1. Improve maintenance of park infrastructure
2. Invest in beautification of park infrastructure and landscaping
3. Remove litter in the park
4. Improve signage leading visitors to the park
5. Ensure the park is accessible to all Oakdale residents

Lake
1. Monitor fish populations in the lake
2. Continually remove litter from around the fishing pier
3. Investigate dissolved oxygen levels in the lake
4. Install a lifeguard tower and staff a seasonal lifeguard
5. Build recreational water features such as a water slide or swimming float
6. Develop a canoe/kayak rental program

Community
1. Lobby for the installation of a sound wall along I-94
2. Evaluate viability of a running path/boardwalk around lake
3. Plan summer events (picnics, festivals) and winter events (pond hockey, broomball)
4. Collaborate with local schools and plan school environmental field trips
5. Foster and enable community volunteer programs
Minnesotans are known for their love of lakes. All across Minnesota residents flock to these recreational hubs throughout the year. The Twin Cities Metropolitan Area (TCMA) is no exception to this Minnesotan cultural phenomenon. Dotted across the TCMA lay a multitude of urban and suburban lakes. Urban and suburban lakes are typically key recreational hubs in the cities they encompass. Municipal, county, and regional parks have been developed on many of these lakes.

Located in the eastern suburbs of the TCMA in the City of Oakdale, MN, lies Tanner’s Lake Park. The City of Oakdale is the 32nd largest city in Minnesota, in terms of population. In relation to Minneapolis and St. Paul, Oakdale is generally considered a suburb of St. Paul, MN, Minnesota’s capital. Oakdale is a north-south elongated city. In the far southwest corner of Oakdale, rests Tanner’s Lake and Tanner’s Lake Park.

According to the US Census Bureau, Oakdale has a total area of 11.29 square miles; approximately 3% of the city’s area is water. Oakdale is bound between Minnesota State Highway 120 on its west, Washington County Road 13 on its east, Minnesota State Highway 36 on its north, and Interstate 94 on its south. Other main routes in the community include Interstate 694 and Minnesota State Highway 5.

The City of Oakdale designates Hadley Avenue North as its “signature street” since it is the primary street running the length of the city and serves as a replacement for what the city lacks in a downtown or main street.

The City of Oakdale lies entirely within the North St. Paul-Maplewood-Oakdale school district, two high schools serve the bulk of Oakdale’s student population. Tartan High School is located within the city's boundaries, and serves the southern half of Oakdale. The city’s northern residents are served by North High School in North St. Paul.

There are 28 parks covering 473 acres of area in the city of Oakdale. They are classified into seven different categories as follows: active-community parks, active-neighborhood parks, active-trails, passive-preservation parks, passive-open space, passive-wildlife corridors, and passive-trails. The parks system in Oakdale provides many recreational opportunities, such as archery, basketball, ice skating, volleyball, and tennis. Tanner’s Lake Park is the only park that has a lake that includes a fishing pier and swimming opportunities.

Tanner’s Lake Park is located on Tanner’s Lake (Figure 1). The park is unique in Oakdale as it is the city’s only park with a beach. As such, the city is greatly interested in promoting high park usage in Tanner’s Lake Park. Based on observed trends and surveys of park users, park usage is lower than where the City of Oakdale
Figure 1. Map of Oakdale, MN.
prefers. The City of Oakdale is keen to develop a Sustainable Management Plan for Tanner’s Lake Park. Included in this plan are the methods, findings, and recommendations for enhancing Tanner’s Lake Park.

As part of the University of Minnesota’s College of Food, Agricultural, and Natural Resource Sciences, the 2013 fall semester course, ESPM 4041W: Problem Solving for Environmental Change, joined the City of Oakdale to assist city leaders in seven interests relating to environmental policy, sustainability, natural resources and recreation. As part of the seven interests, Oakdale city officials were interested in creating a sustainable management plan for Tanner’s Lake Park.

**Vision Statement**

**Community of Oakdale**
“The City of Oakdale is committed to serving the continuing community-wide needs of our citizens by enhancing the vitality and quality of life for all.”

**University Partner**
“To create a cohesive, achievable set of recommendations in collaboration with the Oakdale community to enhance the vitality and quality of life, sustainability of the local land and water, and foster greater community engagement now and into the future.”

**Tanner’s Lake Park Task Group**
“We aim to create a cohesive, achievable set of recommendations in collaboration with the Oakdale community to enhance the vitality and quality of life, sustainability of the local land and waters, and foster greater community engagement now and into the future.”

**Goals and Objectives**

The City of Oakdale wants to develop of sustainable management plan for Tanner’s Lake Park. The goal of this report is create a vision of Tanner’s Lake Park where the lake is transformed from a location to a destination. The lake will be a place for families to make memories, for citizens to foster friendships, and for the community as a whole to come together. Tanner’s Lake will be transformed into the vibrant community park and be a representative of Oakdale’s exceptional park system.

To achieve these goals, the following objectives were pursued:
1. Observe park usage and interview park users
2. Generate GIS maps of the park, the lake watershed, and its relationship within the city of Oakdale
3. Investigate past water quality improvements and monitoring programs
4. Analyze park usage data and interpret interview answers
5. Develop recommendations based on our analysis that will ensure a sustainable Tanner’s Lake Park

**Methods**

**Site Description**

Tanner’s Lake Park (Figure 2) is a 16-acre park located in the southwest corner of Oakdale, MN. The park is set adjacent to Tanner’s Lake, a 69-acre lake with exceptional water quality. Though the park is entirely within the city of Oakdale, the city of Landfall sits adjacent to the southeast portion of the lake. US Interstate-94 borders the southern end of the lake as well. The park offers a variety of recreational activities for residents including: a swimming beach, fishing pier, park pavilion, tennis courts, basketball courts, playground, and baseball field. The multiple available and accessible recreation uses in the park culminate in a unique resource for not only the residents of Oakdale, but for the all TCMA residents.

Tanner’s Lake is part of the Ramsey-Washington Metro Watershed District (RWMWD). The district defines Tanner’s Lake as a subwatershed within the larger watershed district (Figure 3). Land use in the lake watershed is primarily low-density residential (45%), parkland and wetlands make up another significant proportion (20%). The city of Landfall is the only high-density development in the area. The watershed district has concluded that little to no land use change is expected in the near future due to the proportion of previously developed area.

The hydrology of Tanner’s Lake is such that most of the lake’s subwatershed is located north of the lake basin in the city of Oakdale. The other cities located completely or partially in the Tanner’s Lake watershed include: Maplewood, Woodbury and Landfall. Flow into the lake first passes through a series of wetlands before flowing out of the lake through an outlet structure under Interstate-94. The lake serves as the headwaters for Battle Creek.

In 1997 RWMWD created water quality goals for Tanner’s Lake to be “fishable and swimmable.” After an initial analysis of the lake water quality the RWMWD planned and implemented several capital improvement projects (CIPs). Improvements to the lake water quality began in 1987 when two permanent weirs were put in place in the wetland north of the lake. Weirs act to disperse water in the wetland allowing sediments to settle.

The largest, most expensive CIP was implemented back in 1997. The goal of each improvement was to reduce the amount of phosphorus carrying sediment entering the lake. First, WRMWD reconfigured an existing pond (Boat Ramp Pond), located in
Figure 2: Map of Tanner's Lake Park and surrounding area.
the southeast corner of the lake. The pond was enlarged, regraded, and included a storm sewer construction. Together the improvements to the pond were meant to capture runoff from the lake’s watershed.

Second, the 5th Street Basins were constructed as a multicelled wetland treatment pond and a detention pond. Third, a weir and infiltration trench were constructed near the southeast corner of the lake.

Figure 3: Tanner’s Lake Watershed (subwatershed of Washington Ramsey Metro Watershed District).
Finally, the construction of the Tanner’s Lake Alum Treatment Facility. The facility pretreats stormwater by injecting alum (AlK(SO4)2 12H2O) into the stormwater, which then precipitates phosphorus and floculate and settles in a retention pond. The project was highly successful and resulted in removing 88% of all phosphorus entering the facility in a typical hydrologic year.

As a result of CIPs, Tanner’s Lake no longer is on the Minnesota Pollution Control Agency (MPCA) Impaired Waters List for excess nutrients, however, it still remains on the list for mercury. An overall 44% reduction in phosphorus loading resulted from all the CIPs implementations. The littoral (near shore) macrophyte (large aquatic plant) community in Tanner’s Lake is dominated by coontail (Ceratophyllum demersum) at 77.4% (percent coverage) and white waterlily (Nymphaea odorata) consisting of 22.6%. Macrophytes are critical to fish and other aquatic species habitat and act as sediment stabilizers with their root systems. In a survey of aquatic plants 15 plants were cataloged. As of 2005, no aquatic invasive species were found in the lake. The relatively diverse macrophyte community and lack of invasive species give Tanner’s Lake a high rate in quality based on the Minnesota Routine Assessment Method Version 3.0 (MnRAM 3.0).

Observations

Onsite observations were conducted on four separate occasions. Observations were primarily visual—observers documented the environmental conditions and the quantified park use. Environmental conditions included: temperature, cloud cover, precipitation, wind speed, and wind direction. Environmental data was assessed using a location-based weather application on smartphone. Park use was quantified by observing: the gender, age, and ethnic makeup of park visitors. Observations were conducted by walking the park trails and noting the count of park users. The age, ethnicity, and gender of park users were subjectively defined.

Observations were spread out throughout the week and time of day in order to capture park use at different periods throughout the week. Observation 1 occurred on 10/8/13, a Tuesday evening between 5:00 pm to 6:00 pm and served as a representation of weekday evening park use. Observation 2 captured earlier morning park use on 10/9/13, a Wednesday morning between 7:45 am and 8:45 am. Observation 3 (10/12/13) and Observation 4 (10/19/13) represented weekend park use in the midday. In all, in just four observations, park use was quantified for three important temporal periods: weekday morning, weekday evening, and midday on a weekend.

After observations were complete, some basic statistics were quantified (arithmetic mean) in order to note trends. Temperature and wind speed were compared to the number of park visitors. Male to female ratios were analyzed for each park visit. Furthermore, all the observations were summarized by calculating the total...
male:female, mean number of park visitors, mean temperature, mean wind speed, and mean observation time.

Interviews

In addition, informal interviews of some park users were conducted. Questions asked in these interviews included the following:

- How often do you use the park?
- What activities do you enjoy while using the park?
- Why do you think more people do not use the park?
- What do you think could be changed about the park to encourage more usage?

The goal of conducting informal interviews was to assess the perceptions of park users concerning park use and safety. Moreover, interviews provided park user recommendations to improve park use. Interviewees were selected based on their willingness to express their personal observations. Due in part to the low park usage in the Tanner’s Lake Park the majority of park users present in the park during an interview observation period were interviewed. A total of four interviews were conducted.

Geographic Information Systems (GIS)

As part of the essential elements of this report, four GIS maps were published. The first map of Oakdale, MN, with Tanner’s Lake Park featured in the southwestern corner of the city (Figure 1). The second map zoomed in on Tanner’s Lake Park with Tanner’s Lake, Landfall, and the Oakdale area neighborhood encompassing the park (Figure 2). Map 3 showed Tanner’s Lake watershed, a subwatershed of the RWMWD (Little Canada, MN) (Figure 3). Map 4 is located in the appendices and depicts the alternative driving route and the recommended signage placement that directs drivers from Century Avenue North (MN 101). The final map summarizes the placement of recommended infrastructure improvements. Each of the maps were created using data from the Minnesota Department of Natural Resources (MnDNR) Data Deli. The MnDNR Data Deli provided shapefiles consisting of Minnesota lake areas, lake bathymetries, lake littoral zones, HU8 watershed districts, county boundaries, and municipal boundaries layers. Using these layers Esri ArcGIS 10.1 software was used to combine and edit the raw shapefiles into each of the maps generated for this report.
Findings

Observations

The four “park use observations” provided limited knowledge of park use, however, with four observations, each representing specific time periods during the week, some trends appeared. On average there were 12 users in the park at one time (Table 1). Park use was greatest on weekends and least on weekday mornings. The male to female ratio is approximately 1:6 (Appendix A: Figure 4). Males tended to use the park more than females in the evening and weekend, whereas females were more present in the morning. Walking and dog walking were the most common activities occurring in the park. In general, decreasing temperature corresponded with fewer park visitors and vice versa (Appendix A: Figure 5). Wind speed, on the other hand, was not a factor in park use (Appendix D: Figure 6). Furthermore, the lack of beach, tennis court, basketball court, and beach volleyball court use was not surprising given that all observations were conducted in October 2013.

<table>
<thead>
<tr>
<th>Male:Female</th>
<th>Mean number of park visitors</th>
<th>Mean temperature</th>
<th>Mean wind speed</th>
<th>Mean observation period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:6</td>
<td>12</td>
<td>55.5°F</td>
<td>11 mph</td>
<td>59 minutes</td>
</tr>
</tbody>
</table>

Compared to park use observations, interviews of park visitors were slightly more revealing. The people that were interviewed enjoyed the park for activities such as dog walking, fishing, and swimming. However, when asked about ways to change the park to encourage more usage, interviewees did not have a clear answer.

Demographics

<table>
<thead>
<tr>
<th>2012 population</th>
<th>Male</th>
<th>Female</th>
<th>Median resident</th>
<th>MN median age</th>
<th>Population change since 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>27,726</td>
<td>13,293 (47.9%)</td>
<td>14,433 (52.1%)</td>
<td>37.9</td>
<td>43.1</td>
<td>0.04</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oakdale household</th>
<th>Minnesota household</th>
<th>Oakdale per capita</th>
<th>Minnesota per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>$64,379</td>
<td>$56,954</td>
<td>$28,868</td>
<td>$42,847</td>
</tr>
</tbody>
</table>

Table 1. Summary of results.

Table 2. Population demographics.

Table 3. Estimated median household income and median per capita income.
Table 4. Housing values.

<table>
<thead>
<tr>
<th></th>
<th>Oakdale median house value</th>
<th>Minnesota median house value</th>
<th>All housing mean price</th>
<th>Median gross rent price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$185,087</td>
<td>$183,500</td>
<td>$232,406</td>
<td>$845</td>
</tr>
</tbody>
</table>

Park Infrastructure

Maintenance
Tanner’s Lake amenities have been mentioned many times throughout this report. Unfortunately, most of these facilities are not currently open to the public. The public bathrooms are locked, and the concession stand is closed. The shelter area has graffiti on the picnic tables and shelter supports.

Litter
In the main areas of the park litter amounts are low, however, a large amount of litter is consistently accumulating in and around the fishing pier. Plastic bags, bottles, styrofoam, and aluminum cans are found in significant quantities around the pier. The litter is a detriment to the unique beauty and water quality found in Tanner’s Lake. In addition to litter accumulating around the pier, Tanner’s Lake Park is lacking separate recycling and trash receptacles. Currently, only small trash receptacles and one large orange trash collection bin are spread throughout the park.

Signage
Tanner’s Lake has wonderful amenities and yet little signage to allow visitors a fair chance to find the lake and use the great resource. Signs leading to the park currently (see Figure 9 in appendices) direct traffic from 7th Street North and only within two city blocks of the park’s parking lot. Within Oakdale, 7th Street North runs east to west between Century Avenue North (MN 101) and Hadley Avenue North. Currently, drivers on Century Avenue North drive within 1,000 feet of Tanner’s Lake Park without even noticing Tanner’s Lake or the park.

Beyond signs directing users to the park, signage within the park is limited. There are surveillance cameras at the park, but no signs alerting the public to their existence. Tanner’s Lake also has undergone shoreline restoration and has a buffer zone around the lake that is meant to mitigate surface runoff by using native plants, yet no signs explain to park visitors the significance of these improvements. In general, the signs currently posted in the park do not fully foster a safe environment. The simple lifeguard sign exemplifies the safety issues apparent in the park.

Accessibility
Given the multitude of infrastructure and recreation opportunities offered in Tanner’s Lake Park, accessibility to all demographics is critical to establishing high park usage. Bicycle access and parental infrastructure are limiting the overall park
accessibility. As a city, Oakdale is pursuing the idea of becoming multimodal. This means having access to public amenities not only by car but by bike as well. However, there are few places for bikers to securely leave their bikes at Tanner’s Lake. Moreover, there are no bike trails leading to the lake and very limited bike parking options available to park patrons. In addition to bike accessibility, Tanner’s Lake has a spectacular playground; it is new, clean and fun. Children visiting the park love to climb on the structure and whisk down the slide. Unfortunately, parents of these excited children do not have a place to sit and watch their kids near the playground area.

Lake

_Fishing._ The quality of fishing on Tanner’s Lake is unknown. Based on the remarks of the few fishing park users, the quality of fishing is neither good nor bad. While Tanner’s Lake continues to have excellent water quality, it is unknown if the lake is providing the proper habitat for fish communities to grow and thrive.

The MnDNR has sampled Tanner’s Lake and found ten different fish species in the lake (Table 5). Beyond conducting fish sampling on the lake, the MnDNR has been stocking Tanner’s Lake with Channel Catfish, Walleye, and Yellow Perch. In the last 10 years stocking has occurred annually from 2003 to 2010 and then most recently in 2012.

<table>
<thead>
<tr>
<th>Species</th>
<th>Gear used</th>
<th>Number of fish caught (per net)</th>
<th>Normal range (per net)</th>
<th>Average weight (lbs)</th>
<th>Normal weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Crappie</td>
<td>Trap Net</td>
<td>3.00</td>
<td>1.8-18.1</td>
<td>0.14</td>
<td>0.2-0.3</td>
</tr>
<tr>
<td>Blue Gill</td>
<td>Trap Net</td>
<td>13.75</td>
<td>6.5-59.6</td>
<td>0.12</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td></td>
<td>Gill Net</td>
<td>2.00</td>
<td>N/A</td>
<td>0.20</td>
<td>N/A</td>
</tr>
<tr>
<td>Green Sunfish</td>
<td>Trap Net</td>
<td>0.50</td>
<td>0.3-2.0</td>
<td>0.03</td>
<td>0.1-0.1</td>
</tr>
<tr>
<td>Hybrid Sunfish</td>
<td>Trap Net</td>
<td>1.62</td>
<td>N/A</td>
<td>0.08</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Gill Net</td>
<td>0.50</td>
<td>N/A</td>
<td>0.15</td>
<td>N/A</td>
</tr>
<tr>
<td>Largemouth Bass</td>
<td>Trap Net</td>
<td>0.12</td>
<td>0.3-0.8</td>
<td>0.28</td>
<td>0.2-1.1</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>Trap Net</td>
<td>0.5</td>
<td>N/A</td>
<td>2.11</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Gill Net</td>
<td>5.50</td>
<td>2.5-7.9</td>
<td>2.92</td>
<td>1.8-3.3</td>
</tr>
<tr>
<td>Pumpkinseed</td>
<td>Trap Net</td>
<td>4.25</td>
<td>0.8-5.3</td>
<td>0.05</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td>Walleye</td>
<td>Trap Net</td>
<td>0.25</td>
<td>0.3-1.2</td>
<td>0.27</td>
<td>0.8-3.2</td>
</tr>
<tr>
<td>Yellow Bullhead</td>
<td>Trap Net</td>
<td>2.38</td>
<td>0.8-5.0</td>
<td>0.73</td>
<td>0.4-0.7</td>
</tr>
<tr>
<td>Yellow Perch</td>
<td>Trap Net</td>
<td>0.12</td>
<td>0.3-1.5</td>
<td>0.10</td>
<td>0.1-0.2</td>
</tr>
<tr>
<td></td>
<td>Gill Net</td>
<td>5.50</td>
<td>1.5-12.8</td>
<td>0.11</td>
<td>0.1-0.2</td>
</tr>
</tbody>
</table>
**Community**

*Soundbarrier.* When visiting Tanner’s Lake Park the constant hum of Interstate 94 is present throughout the park. Freeway traffic creates on average 70 to 80 decibels (Colorado DOT). This noise can radiate out from the source and impact noise levels across a large area. The noise impact from I-94 is certainly present in all of Tanner’s Lake Park, however, the effects are greatest for canoers, kayakers, and boaters who paddle and boat near the south end of Tanner’s Lake. As a result of high noise pollution from the freeway, the recreational value and serenity of Tanner’s Lake is diminished.

*Boardwalk.* One of the great features of urban and suburban lakes in the TCMA are the bike and walking paths that surround many. Examples of walking paths include lakes such as Lake Calhoun, Lake Harriet, and Lake of the Isles in Minneapolis and Como Lake in St. Paul. For these lakes and the parks encompassing them, walking, running, biking, and rollerblading are all common recreational activities occurring daily. Unfortunately, the current path system in Tanner’s Lake Park measures around only a small portion on the entire lake shore.

*Lack of Seasonal Events.* Tanner’s Lake is the largest publicly accessible water body in Oakdale. Large community sponsored events such as ice fishing tournaments, pond hockey tournaments, kayak racing, and Fourth of July fireworks bring a community together around a natural resource and help to sustain the vitality of both the community and natural resource. Tanner’s Lake is presently missing these types community sponsored events.

*Missing Park and School Partnerships.* Surrounding Tanner’s Lake Park are several schools. In communities across the United States there are parks that partner with schools to increase park usage and educate environmentally conscious students. Rockford Park District and Rockford Public Schools in Illinois have partnered up to better serve their community. They collaborate to set up events such as sports competitions. The partnership allows any school to reserve the parks through their website. Students can also serve as volunteers, while simultaneously increase their awareness of environmental issues. Educational education at a young age is very crucial and provides a significant impact on how students consider environmental issues later in their life, community and school collaborations may prove to help the park gain more people and help the student learn about environmental issue.

*Accessing Website Information.* Information about Tanner’s Lake Park is difficult to ascertain from the City of Oakdale’s website. From the city’s home page (http://www.ci.oakdale.mn.us/) navigating to find the page which provides information concerning Tanner’s Lake Park is difficult. Park information can be found by navigating to the recreation department's main page. Then to find a list of parks, a website user must find the Parks hyperlink in the list of all the recreation
departments hyperlinks labeled, “In Recreation.” Once on the Parks page, a list of Oakdale community parks and the recreational activities/infrastructure are provided for each park. Furthermore, each park is hyperlinked to a .pdf map. In summary, the navigation of Oakdale’s website can be unclear and the information provided is missing critical information crucial to Tanner’s Lake Park’s potential users.

**Recommendations**

**Maintenance**

The charcoal grill stations should have “hot coal dumps” located nearby, eliminating the piles of ash located in front of each grill. Waste receptacles should also be more conveniently located (Appendix B: Figure 7). Beyond improving grilling stations, repainting court lines at both the tennis court and the basketball court, is a simple solution to increasing park users. Repainting will make the area look cleaner and provide a more inviting atmosphere for citizens to partake in the court activities. Moreover, a climbing structure or swings should be added to the playground (Appendix B: Figure 7). The shelter near the playground could use some attention. The shelter and the tops of the picnic tables need repainting which should help to create a more welcoming environment for shelter users.

By repainting the shelter there is an opportunity to create a color scheme that represents the park. The color scheme should be integrated in coordination with the bike racks and other park infrastructure. These colors should also be the primary colors noted on the new Tanner’s Lake signs. Furthermore, the permanent restrooms could be reopened and replace the temporary restrooms in the park. Finally, the city and the park would greatly benefit if the concession stand reopened on a trial basis to determine the optimal hours and season(s) for operation.

**Signage**

In order to attract park users from a larger geographic area, new signage directing traffic to Tanner’s Lake Park from Century Avenue North (MN 101) should be added (Appendix C: Figure 8). These signs should not boast parking but should boast about the lake itself and boat access (Appendix D: Figure 9). Additionally, signage within the park should be increased. The surveillance cameras spread throughout the park should be labeled to provide park users with a greater sense of security (Appendix C: Figure 7). People feel safer when there are video cameras and they know where they are, especially at night. Additionally, video cameras with properly labeled signs may decrease the level of graffiti in the park. The camera signs should also have a welcoming feeling to them such as: Smile! You are on camera.
Additional signage should be implemented to explain the shoreline restoration on Tanner’s Lake (Appendix D: Figure 10). By placing signs explaining why shoreline restoration is impactful in terms of ecosystem services and the habitat specific plants provide to local fauna, park users will be more informed and possibly more willing to keep the park clean.

Another signage and infrastructure improvement would be adding a lifeguard chair on the beach and attach a “Swim at own risk” sign clearly visible on the chair. The chair and sign should not scare away possible patrons, but should serve a tool for parents to watch their children swim and as warning to swimmers.

Finally, the signs for cleaning up pet waste are separate from pet waste disposal bags. These two should be merged into one post for the convenience of patrons that also give a small reminder to take care of their pets.

**Litter**

In an effort to reduce litter and the landfill footprint of the park it is recommended that the park increase the number of trash receptacles to seven and add recycling receptacles in concert with each trash receptacle (Appendix B: Figure 7). The trash/recycling bins may be two separate infrastructure pieces or the city may pursue single unit trash/recycling receptacles (Appendix D: Figure 11).

The second litter issue in Tanner’s Lake Park occurs around the fishing pier, where litter debris accumulates. Litter may be curbed by implementing a sound wall and through episodic volunteer collection programs. For instance, an option available to the city would be to implement the Adopt-A-Park program. Similar to Adopt-A-Highway the program allows citizens to take care of an area with the blessing and recognition from the city. This program could be presented to local businesses, charities and school districts as a community service opportunity.

**Accessibility**

Accessibility to the park can be easily improved by making the park bike, parent, and sport friendly. Bike friendliness can be accomplished by installing four new full-sized bike racks at the park (Appendix B: Figure 7) and conducting feasibility studies on a bike path from city hall, past the high school to the park. It is also recommended that the bike racks be designed by a local artist to create a more cultural vibe to the park. For parents, installation of benches around the side playground of the play equipment should allow parents to both watch their children and relax (Appendix B: Figure 7). Finally, for park patrons using the basketball, volleyball, and tennis courts strategically placed benches would serve as a restful place for players and supporters alike.
Even with the current low participation rate at Tanner’s Lake, many people are out on a jog or walking the park’s trails. Therefore it is recommended that an elevated boardwalk be implemented around the park (Appendix D: Figure 12). This will not only provide an accessible route to enjoy the park but by having a track that is elevated will help to protect the natural environment of the area.

Recreational Opportunities

In an effort to improving recreational fishing on Tanner’s Lake, it is recommended that Oakdale research a partnership with the MnDNR to developing a sustainable urban fishery. The partnership should focus on establishing sustainable fishery that thrives and provides high quality fishing for all visitors to Tanner’s Lake. Beyond a consultation with the MnDNR, seasonal monitoring of Tanner’s Lake should include fish sampling.

Utilization of the lake in multiple capacities is of the utmost importance if the rejuvenation of the park will be stable and sustainable. Therefore it is recommended that a canoe and kayak storage rack for private owners be located near the beach (Appendix D: Figure 13). This can be a place for members of the community to store their personal watercraft for easy access to the water during the warm summer months.

The Parks and Recreation department should investigate offering canoe/kayak or paddle boat rentals as well (Appendix D, weblink). Similar lakes in the TCMA offer these types of rentals for $20 per hour. Based on a four-month summer season, these investments could be recouped in less than one season if there are enough renters. These types of rentals would be a perfect way to utilize the existing facilities onsite, and the concession stand could be reopened in conjunction with this service.

Tanner’s Lake Park could increase visibility to a wider range of potential users by hosting a signature community event in either the summer or winter months. A summer festival could feature a cook-out, ball games, and swimming. Furthermore, a "Tri-Loppett" event could draw an even more diverse number of park users. A Tri-Loppett competition features three events: kayaking, mountain biking, and running. In the cold winter months, an ice fishing competition could be held in conjunction with a winter festival. Other options to consider could be pond hockey, ice skating, or broomball.

Community Outreach

School involvement

School-age children are an important demographic of park users. By fostering partnerships between local schools, Tanner’s Lake Park could increase overall park usage and the proportion of park users of school-age. The City of Oakdale should
offer local schools opportunities for environmental field trips and greater access to the park's infrastructure. Through this partnership, Tanner's Lake Park and the local schools would both benefit. With more students in the park, usership of the park will increase, while at the same time be able to learn and play at the park. Finally, the partnership could also encompass a volunteer program, which would be created in an effort for students to improve their local community and learn about the value of volunteering.

Several schools that Tanner’s Lake Park may consider working with are listed below (Table 6). Schools with an environmental emphasis and/or environmental courses are listed first. All schools in the area could consider integrating coursework related to Tanner’s Lake Park and the unique aquatic ecosystem. Tanner’s Lake Park could demonstrate processes related to water quality, aquatic ecology basic limnology, restoration ecology and urban forestry.

Sound wall barrier

Based on the noise impact from I-94, exploration of a possible sound wall is recommended (Appendix D: Figure 14). Federal funds can be used for noise abatement walls along busy roadways if landscaping or privacy fencing is not a viable option. The area between the southern shore of the lake, Hudson Boulevard, and I-94 is quite narrow. A sound wall constructed along this boundary would serve three purposes. One, it would drastically reduce road noise that comes from the interstate and travels across the water. Two, it would be more aesthetically pleasing for park users to not have to see the constant traffic along the busy roadway. Three, it could possibly help to reduce litter that blows onto the lake, as the winds predominantly come from the south/southwest.

There are seven categories of noise abatement criteria. Tanner’s Lake falls into the third-highest category, activity category “C.” This category applies to active sports areas, parks, picnic areas, and playgrounds. Exterior impact criteria for this category will generally apply for identified exterior areas of frequent human use where noise abatement would provide a significant benefit.
Table 6. List of schools for possible partnership.

<table>
<thead>
<tr>
<th>School Name</th>
<th>Grade</th>
<th>Distance from TLP</th>
<th>Environmental Related Program</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounds Park Academy</td>
<td>pre-K, K-12</td>
<td>12min by car</td>
<td>Environmental Club</td>
<td><a href="http://www.moundsparkacademy.org/">http://www.moundsparkacademy.org/</a></td>
</tr>
<tr>
<td>Battle Creek Elementary School</td>
<td>K-5</td>
<td>10min by car</td>
<td>Bird Feeder Project, Environmental Books of the Month</td>
<td><a href="http://battlecreekel.spps.org">http://battlecreekel.spps.org</a></td>
</tr>
<tr>
<td>River's Edge Academy</td>
<td>9-12</td>
<td>15min by car</td>
<td>Elective Environmental Course</td>
<td><a href="http://riversedgeacademy.org">http://riversedgeacademy.org</a></td>
</tr>
<tr>
<td>Natural Science Academy</td>
<td>K-5</td>
<td>16min by car</td>
<td>Self explanatory</td>
<td><a href="http://www.naturalscienceacademy.org/home/">http://www.naturalscienceacademy.org/home/</a></td>
</tr>
<tr>
<td>School of Environmental Studies</td>
<td>11</td>
<td>26min by car</td>
<td>Self explanatory</td>
<td><a href="http://www.district196.org/ses/">http://www.district196.org/ses/</a></td>
</tr>
</tbody>
</table>

(District 622 Public Elementary Schools)

<table>
<thead>
<tr>
<th>School Name</th>
<th>Grade</th>
<th>Distance from TLP</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakdale Elementary School</td>
<td>K-5</td>
<td>8min by walk</td>
<td><a href="http://www.isd622.org/oakdale">http://www.isd622.org/oakdale</a></td>
</tr>
<tr>
<td>Eagle Point Elementary School</td>
<td>K-5</td>
<td>8 min by car</td>
<td><a href="http://www.isd622.org/eaglepoint">http://www.isd622.org/eaglepoint</a></td>
</tr>
<tr>
<td>Carver Elementary School</td>
<td>K-5</td>
<td>7min by car</td>
<td><a href="http://www.isd622.org/carver">http://www.isd622.org/carver</a></td>
</tr>
<tr>
<td>Castle Elementary School</td>
<td>K-5</td>
<td>13min by car</td>
<td><a href="http://www.isd622.org/castle">http://www.isd622.org/castle</a></td>
</tr>
<tr>
<td>Cowern Elementary School</td>
<td>K-5</td>
<td>10min by car</td>
<td><a href="http://www.isd622.org/cowern">http://www.isd622.org/cowern</a></td>
</tr>
<tr>
<td>Richardson Elementary School</td>
<td>K-5</td>
<td>14min by car</td>
<td><a href="http://www.isd622.org/richardson">http://www.isd622.org/richardson</a></td>
</tr>
<tr>
<td>Skyview Elementary School</td>
<td>K-5</td>
<td>7min by car</td>
<td><a href="http://www.isd622.org/skyviewelementary">http://www.isd622.org/skyviewelementary</a></td>
</tr>
<tr>
<td>Weaver Elementary School</td>
<td>K-5</td>
<td>17min by car</td>
<td><a href="http://www.isd622.org/weaver">http://www.isd622.org/weaver</a></td>
</tr>
<tr>
<td>Webster Elementary School</td>
<td>K-5</td>
<td>13min by car</td>
<td><a href="http://www.isd622.org/webster">http://www.isd622.org/webster</a></td>
</tr>
</tbody>
</table>

Conclusion

The recommendations in this report are designed to create a viable lake and park resource that is able to accommodate an appropriate palette of recreational opportunities and users, yet not at the expense of the future health of Tanner’s Lake. A full list and multistage implementation plan can be found in Appendix E: Table 7. These recommendations were developed from interviews with city officials, assessments/observations of the park and the surrounding area, and from comparison studies with other successful city parks. Although these recommendations were
specifically tailored for Tanner’s Lake Park, it is encouraged that Oakdale city officials utilize the experience of park developers in neighboring municipalities. Tanner’s Lake Park has the potential to be a valuable community asset for many years to come.

References


Mn/DOT Noise Policy for Type I Federal-aid Projects as per 23 CFR 772. June 1, 2011.


Soundwall (image). https://www.tcdailyplanet.net/sites/tcdailyplanet.net/files/imagecache/NewArticlePic/13/01/img_1802.jpg


APPENDICES

Appendix A: Park usage relationships

Figure 4: Male to female histogram for each observation date

Figure 5: Graph of temperature and total number of park visitors

Figure 6: Graph of wind speed and total number of park visitors
Appendix B: Map of recommendations

Figure 7: Map of recommendations
Appendix C: Map of current and recommended park access routes and signage

Access to Tanner's Lake Park

Figure 8: Suggested park signage map
Appendix D: Resources for recommendations

Park signage/branding

Figure 9: Examples of park signage
Shoreline restoration signage

Figure 10: Shoreline restoration sign located on west shoreline of Tanner’s Lake

Trash and recycling bins

recycle away Systems & Solutions

Figure 11: Recycling and Recycling Options

http://www.recycleaway.com/recycling-containers-for-parks.html

Recreational watercraft (website)

http://www.sundolphin.com/boats-sup/
Catwalk/ boardwalk around the lake (example)

Figure 12: Boardwalk over shoreline of Mississippi River, Minneapolis, Minnesota, USA

Kayak and canoe rack

Figure 13: Canoe rack located in Monona, Wisconsin, USA
Sound barrier

Figure 14: Mn DOT Soundbarrier
Appendix E: Table of recommendations

There are three levels listed in this table of actions for Tanners Lake. Level One denotes an action that should be taken immediately. The next steps (level 2 and 3) will not work properly without this first level being completed in each grouping separately.

A level Two action is one that has incredible value but builds from a Level One action. This step should be taken to increase park participation.

Level Three denotes an action that should be taken after Level One and Two actions but is equally important for the success of the park and should be acted upon by the date provided.

Table 7: Table of recommendations

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>RECOMMENDATION</th>
<th>Level of Importance</th>
<th>Date to be completed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Litter</td>
<td>Implement seven three-sort recycling bins throughout the park</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td></td>
<td>Adopt-A-Park program implementation</td>
<td>3</td>
<td>May 2014</td>
</tr>
<tr>
<td>Signage</td>
<td>Create and implement Tanner’s Lake Park signs leading the public to the park</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td></td>
<td>Ecological Restoration signs</td>
<td>2</td>
<td>August 2014</td>
</tr>
<tr>
<td></td>
<td>Safety signs that bring attention to security cameras</td>
<td>2</td>
<td>August 2014</td>
</tr>
<tr>
<td></td>
<td>Current signage integration to same area/pole</td>
<td>3</td>
<td>May 2015</td>
</tr>
<tr>
<td>Accessibility</td>
<td>Install three new bike racks</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td></td>
<td>Create bike trail from city center to Tanner’s Lake Park</td>
<td>2</td>
<td>July 2016</td>
</tr>
<tr>
<td></td>
<td>Install benches in various areas of the park</td>
<td>3</td>
<td>May 2015</td>
</tr>
<tr>
<td></td>
<td>Hire lifeguard &amp; concession stand employee</td>
<td>3</td>
<td>May 2016</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Clean main facility</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td></td>
<td>Remove port-a-toilets and unlock</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td>Category</td>
<td>Task Description</td>
<td>Priority</td>
<td>Date</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Bathrooms</td>
<td>Open and staff concession stands</td>
<td>2</td>
<td>May 2016</td>
</tr>
<tr>
<td></td>
<td>Repaint court lines on the basketball and tennis courts</td>
<td>2</td>
<td>May 2015</td>
</tr>
<tr>
<td></td>
<td>Repaint tables in the shelter</td>
<td>2</td>
<td>August 2015</td>
</tr>
<tr>
<td></td>
<td>Add climbing structure or swings to the playground</td>
<td>3</td>
<td>May 2016</td>
</tr>
<tr>
<td>Beautification</td>
<td>Hide large orange dumpster with wooden fence and gate</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td></td>
<td>Implement rain gardens</td>
<td>2</td>
<td>August 2016</td>
</tr>
<tr>
<td></td>
<td>Create ecological barrier on the South West side of the lake</td>
<td>2</td>
<td>August 2015</td>
</tr>
<tr>
<td></td>
<td>Create and place a landmark statue in the center of the lake</td>
<td>3</td>
<td>May 2016</td>
</tr>
<tr>
<td>Recreation</td>
<td>Develop a sustainable urban fisher</td>
<td>3</td>
<td>May 2016</td>
</tr>
<tr>
<td></td>
<td>Install a canoe and kayak rack</td>
<td>2</td>
<td>May 2015</td>
</tr>
<tr>
<td></td>
<td>Signature Winter Event</td>
<td>1</td>
<td>November 2014</td>
</tr>
<tr>
<td></td>
<td>Signature Summer Event</td>
<td>1</td>
<td>May 2014</td>
</tr>
<tr>
<td>Community</td>
<td>School Field Trips</td>
<td>1</td>
<td>August 2014</td>
</tr>
<tr>
<td></td>
<td>Sound Wall</td>
<td>3</td>
<td>May 2017</td>
</tr>
<tr>
<td></td>
<td>Website</td>
<td>2</td>
<td>January 2016</td>
</tr>
</tbody>
</table>