Problem Solving for Environmental Change

Rice Creek Water Trail
Lower Rice Creek Recreational Plans

Report #3/6 Prepared for:
Anoka County Parks and Recreation, Ramsey County Parks and Recreation,
Rice Creek Watershed District, and the National Park Service

Prepared by:
Joe Anderson – Group Leader
Gabriel Benson
Carla Inderrieden
Jennifer Nguyen

University of Minnesota
College of Food Agricultural and Natural Resource Sciences
ESPM 4041w: Problem Solving for Environmental Change

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Executive Summary

Rice Creek is an urban water trail, managed under multiple jurisdictions in Anoka and Ramsey counties. This creek provides a multitude of experiences for outdoor recreation particularly for paddling and hiking enthusiasts. Anoka and Ramsey counties, the National Park Service, the Mississippi National River and Recreation Area, and the Rice Creek Watershed District partnered with students in ESPM 4041 Problem Solving for Environmental Change at the University of Minnesota to develop and enhance recreational opportunities for an expanded water trail. The vision statement for this project is: To develop a public water trail on Rice Creek offering multiple recreational opportunities for a diverse range of users while fostering connectivity amongst neighboring communities and promoting environmental stewardship. This report emphasizes recommendations specifically for the lower portion of Rice Creek which extends from Interstate 35-W to the Mississippi River.

To develop recommendations, we conducted client interviews, surveys of recreational users and environmental education/recreational program managers, and a visual assessment of the lower creek area. We found that Rice Creek water levels fluctuate frequently causing navigation problems. The recreational survey yielded information supporting the demand and need for an expanded water trail. Respondents supported an expanded water trail but asked for more amenities and opportunities for recreational experiences such as creek paddling and walking/hiking. The environmental education and recreational programming interviews revealed the lack of programs established for the creek. The main constraints to programming on the creek were funding, time, and lack of collaboration among K-12 schools, and local county officials.

Based on our findings and academic papers, we were able to identify appropriate recommendations for the creek. These recommendations reflect inadequate services and activities available on the creek.

Recommendations determined by the lower creek group include:

1. Maintaining opportunities for unique recreational typologies
2. Improve recreational experiences through water quality management
3. Support recreation with necessary amenities: rest areas, equipment and transportation services
4. Implement informational services to support the recreational typologies of Rice Creek
5. Market Rice Creek to potential users.
Rice Creek has the potential to become a premier recreational area. There are many opportunities to experience a variety of recreational activities including enjoying the natural area. Rice Creek will be able to attract more recreational users by improving creek quality, providing facilities, amenities and services for users and by expanding marketing of the creek.
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The Lower Rice Creek is an urban oasis with the potential to become one of the premier outdoor recreation opportunities in the metro area. It meanders from Interstate 35-W, flowing through Ramsey and Anoka counties and joining the Mississippi River at Manomin County Park in Fridley (Figure 1 and Figure 2). This portion of the waterway offers an array of opportunities for the more advanced water trail user, providing a moderate level of difficulty in a natural and historic setting, coupled with adjoining parkland and a convenient location.
Figure 2. Rice Creek area map, Minnesota, 2007.
In fall 2007, Anoka and Ramsey County Parks and Recreation Divisions expressed a desire for a water trail on the Rice Creek. They established a partnership with the National Park Service and the Rice Creek Watershed District in order to make this a reality. Together, they solicited the help of the University of Minnesota, College of Food, Agricultural and Natural Resource Sciences, 2007 ESPM 4041W course’s students (ESPM 4041W, 2006). Taking on this project, we focused on the lower portion of Rice Creek, beginning where it passes under Interstate 35-W and ending at the Mississippi River (Figure 3). We conducted a use analysis, visual assessments, and ownership concerns. This report presents recommendations for the enhancement of the Rice Creek recreational experience.

A water trail, or blueway, is a stretch of river, a shoreline, or an ocean that has been mapped out with the intent to create an educational, scenic, and challenging experience for recreational canoers and kayakers (NPS, 2006). Water trails enhance recreational experiences for all non-motorized water recreation enthusiasts, including canoeists and kayakers (IADNR, 2007). With a projected 2.8% annual growth rate in the US, the demand for canoeing and kayaking trips is estimated to increase to 169 million trips per year by 2040 (Loomis and Walsh, 1997).

In order to develop a water trail that meets the needs of the increasing number of outdoor recreationalists, it is important to identify and highlight experiences that recreationalists are looking for. The development of Rice Creek as a water trail will help facilitate and perpetuate this growth while providing an array of additional benefits to those seeking to escape to nature amidst an urban environment. One of the key motivating factors that encourage people to engage in outdoor recreation activities has to do with the recreationalist’s potential to escape physical and social pressure (Manning, 1999).

For many park, trail, and open space users, enjoying nature is the essence of why they seek these experiences out and return to them over the years. “Research suggests that people engage in recreation to satisfy a variety of motivations, such as appreciating nature…” (Manning and More, 2002) (appendix A). For people who live in a heavily urbanized environment, sometimes nature seems foreign to them. Getting into a natural setting can provide these people with an outlet that they cannot otherwise experience. According to Manning and More, 2002, recreational use and enjoying the aesthetic beauty of nature are the primary values users hold in natural values places. “Parks provide experiences to explore nature and learn about the outdoors.” (Manning and More, 2002) and we must make these available for the public whenever possible.

Another important benefit provided by of outdoor recreation is being with family and friends. According to a recreational roundtable study in 1999, 63% of those surveyed agree “being with family” is the primary motivator for participating in outdoor activities. Also, 45% of the families “engage in outdoor recreation as a family” at least a month as a means of family bonding (Roper Starch, 1999).
Figure 3. Lower Rice Creek land use area: Highway 35W to the Mississippi River, 2007.
Many recreationalists value the time spent preparing campsites, paddling, and enjoying nature while being able to socialize and building a community. A water trail will bring many social benefits as it is a means to connect with nature and family.

In addition to providing bonding with family and friends, togetherness with nature and the ability to escape social pressures though outdoor recreation, the use of including water trails, provide citizens with physical fitness opportunities. This is important since a majority, 79%, of outdoor recreationists say they recreate because of the exercise and physical activity it provides (American Recreation Coalition, 2007). The need for physical activity is at an all time high in the United States with 65% of adult being overweight (TFAH, 2005). Developing a water trail in the heart of the Twin Cities metro area will provide a range of fun, exercise, and convenient outdoor activities for urban citizens.

According to the State of Connecticut, the leading reason for not partaking in physical activity is time constraints (State of Connecticut, 2007). With the creation of an outstanding outdoor recreational opportunity just 20 minutes from downtown Minneapolis, time required to commute to the desired location is greatly reduced, allowing more time for users to experience the creek.

By expanding recreation opportunities on Rice Creek, we hope to support these and other benefits for the community.

**Vision Statement**

To develop a public water trail on Rice Creek offering multiple recreational opportunities for a diverse range of users while fostering connectivity amongst neighboring communities and promoting environmental stewardship.

**Report Goal**

To enhance recreational opportunities for the Lower Rice Creek Water Trail.

**Objectives**

1. Inventory the current infrastructure, with a focus on buildings or areas of historic significance,
2. Review the literature, plans, and options in other creek and waterway projects,
3. Assess Anoka and Ramsey County staff and relevant partners’ interests and needs,
4. Develop a vision statement, identifying issues and making recommendations for recreational opportunities, and
5. Create a map with skill level, access points, bathrooms and parking lots as well as features such as exotic vegetation, historical features, creek features and recreational typologies.
Methods

Site Description

Rice Creek is a tributary of the Mississippi River located in the northern suburbs of the Minneapolis-St. Paul metropolitan area. It is approximately 28 miles (45 km) long and drains a watershed of 201 square miles (521 km²) (Rice Creek Watershed District, 1975) (Figure 1). Rice Creek has its source at Clear Lake in the City of Forest Lake in Washington County and flows generally southwestward through Anoka and Ramsey Counties, through the cities of Columbus, Lino Lakes, Circle Pines, Shoreview, Arden Hills, Mounds View, New Brighton, and Fridley (Figure 2).

The lower portion of Rice Creek is defined by the area of the creek that flows southwestward from Interstate 35W to its confluence with the Mississippi River (Figure 3). This portion is characterized by moments of flat-water as well as areas of flowing creek. The creek meanders through numerous public lands, passing through Long Lake Regional Park, Long Lake, the Rice Creek West Trail Corridor, Creekview Park, Rice Creek Trail West Park, Locke Park, Locke Lake, Plaza Park, and Fridley/Manomin Park where it meets the Mississippi River.

Lower Rice Creek passes through Anoka and Ramsey counties. Anoka County, organized on May 23, 1857, almost a year before Minnesota became a state, is located in the eastern part of the state (Anoka County Historical Society, 2007). Anoka is made up of 446 square miles, with a population of 320,803 people (US Census Bureau, 2005).

Ramsey County was recognized in an act creating the first nine counties of Minnesota, on October 27, 1849. The original Ramsey County boundary included all of the present-day counties of Ramsey, Anoka, Isanti, Kanabec, and parts of Washington, Pine, Carlton, Aitkin, Mille Lacs, and Hennepin. In 1849, Ramsey County had 2,197 residents, 834 dwellings and 458 “improved acres.” As of 2000, with 170 square miles, Ramsey County has a population of 511,035 people and 201,236 households (Ramsey County, 2007).

Research Techniques

We used several methods to provide recommendations on the potential recreational typologies for Rice Creek. First, since our project has several different partners, we used interviews to pinpoint their objectives for a recreation typology. Second, after clarifying the partner’s interests, we devised a visual assessment for the Creek in order to inventory the Creek’s recreational potential. Finally, we developed a survey for potential users as well as interview questions for educational institutions and youth organizations from the area to prioritize the range of potential benefits of Rice Creek as a recreational area.
Client Interviews
Since our project has four distinct partners, we conducted individual interviews with each partner in order to pinpoint their objectives for the Rice Creek Water Trail. From October 2-16, 2007, we held meetings with the partners and asked them what they were looking for in terms of recreational typologies as well as what they wanted a trail map to highlight. In addition, we reviewed user surveys to insure that we were addressing what the clients wanted to know about possible Water Trail users. We took notes during the interviews and then organized the notes from each interview to summarize the partner’s overall objectives.

Recreational User Survey
The purpose for developing a recreational user survey was to gain an understanding of the current and potential recreational uses of Rice Creek Park. Our survey explored awareness of Rice Creek Park, as well as different user purposes, service requirements and recreational experience preferences.

Our research was designed as “purposeful survey” where the respondents were not randomly selected; rather they were individuals and organizations that were explicitly identified. Our target audience selection included a web search for relevant organizations and institutions located near the lower Rice Creek area. We were interested in finding institutions that currently use or could use Rice Creek for recreational purposes. The Minnesota Canoe Association agreed to send the survey to their members via e-mail. Approximately 200 people were contacted via the organization’s web mailing lists. The survey administration was provided by the online survey host Survey Monkey (Survey Monkey, 2007).

The survey for the recreational users had a consistent format with the same questions for each recreational organization. Items in the survey include: demographic indicators, awareness of Rice Creek, questions of current and desired recreational uses, desired services, and types of experiences one would enjoy while on a water trail (Appendix B).

There were about 62 respondents to the survey which provided a qualitative sample of public opinion on the Creek. These survey results were instrumental in helping us developing our recommendations for Rice Creek Water Trail. The survey responses were tabulated.

Environmental Education and Recreational Programming Interviews
To gain more information about Rice Creek recreational and environmental programming options, we conducted phone interviews with staff members of K-12 institutions and outdoor recreation organizations. Faculty and staff specializing in ecology, biology and environmental science were identified through a web search of Anoka County and Mounds View Area schools. We identified fifteen schools; nine elementary, four middle schools, one high school and one Baptist school (K-8). In addition, we identified two outdoor recreation organizations, the Chain of Lakes YMCA and Wilderness Inquiry via a web
search. Organizations were first contacted by e-mail, describing the project and purpose of the interviews. We encouraged multiple data collection methods for the interview; organizations had the option to complete the interview over the phone or to input their responses electronically. One week later, faculty and staff were contacted and phone interviews were conducted.

We asked five questions designed to determine if K-12 institutions and organizations were aware of Rice Creek, if their organization uses Rice Creek as a resource, and how they would use Rice Creek if the water trail was expanded (Appendix C).

The analysis of information was completed with a qualitative summary of relationships between K-12 staff and organizational responses. The information examined how many K-12 programs integrated environmental education programs, why or why not programs were implemented. Conversely, information from organizations was examined regarding their collaboration efforts with the Creek; if any organizations have worked with county officials or other similar organizations.

A total of four interviews with school teachers and two interviews with recreational program managers were completed. The barrier for completing interviews was identifying the correct respondent. Many school teachers were difficult to identify because much of the coursework did not reflect environmental science, chemistry or biology/ecology curriculum. In addition, recreational program managers were difficult to locate since there are not many organizations near the Creek.

**Visual Assessment**

To provide an accurate and consistent assessment of the creek, we established a uniform standard for observations which was adopted by the lower and upper rice creek research teams. These standards were designed to provide a visual analysis of areas of particular aesthetic and/or historical significance, difficulty level, potential and existing access and resting points, and the identification of potential experience opportunities (Appendix D).

Rice Creek is ever changing. In particular, the fluctuating water levels lead to different experiences depending on the time of the assessment. As such, every analysis will be referenced by the CFS (Cubic Feet per Second) flowchart provided by the Rice Creek Watershed District (Biehn, 2007). This collection of reference points, and their corresponding analysis, will help to identify the range of creek conditions and experience opportunities.

Visual assessments were completed independently and the results compared after each site visit. The standardized assessment, coupled with typological and accessibility considerations, was used to delineate zones.
The final component of the visual analysis consisted of a series of recreational experience rankings. We assigned a rating for each of the following experience domains: (1) Achievement/Stimulation, (2) Equipment, (3) Enjoy Nature, (4) Learning, (5) Physical Fitness, and (6) Risk Taking. Each domain was assigned a rating between one and five, with one representing little or no opportunity and five representing an excellent opportunity.

To ensure geographical consistency and continuity, visual assessment sub-zones were established. As a result, each analysis was conducted within geographic segments established prior to site visits. These segments were as follows:

- 35W to Long Lake
- Long Lake to University Ave.
- University Ave. in the East to the west end of Locke Lake
- Locke Lake dam to the Mississippi River

Following the compilation of visual assessments, a qualitative comparative analysis was used to define recreational typologies for the sub zones, as well as refine the location of these zones based upon different recreational typologies and access considerations.

### Findings

After developing our methodologies, we went into the field to gather data to support the development of the Rice Creek Water Trail. We conducted visual analyses on the creek and defined recreational typologies and recreational benefits for Lower Rice Creek. We also researched the water quality and flow history of the creek. Finally we conducted user surveys and environmental education/recreational opportunity interviews. The findings from this research will be used for and built upon in our recommendations.

### Recreational Typologies

Our Typology findings were derived from conducting visual analysis for the entire Creek. By conducting field visits to Rice Creek and filling out our visual analysis we were able to break the Creek up in to three zones and each zone in to subzones (Figure 4). Zone one (The Chain of Lakes) and zone two: part 1 (Chain of Lakes to 35W) are reported on in report #2/6. This report will cover zone two: part 2 from 35W to Long Lake and zone three from Long Lake to the Mississippi River. For each of these subzones we have developed experience levels, benefits, activities, and times between access points. With this information we were able to develop recreational types for the Water Trail (Refer to Appendix E and Appendix F for details).
Zone Two (part 2): I35W to Long Lake
Zone Two from access point eight at US Hwy 10 to the south end of Long Lake entry point nine, and should take approximately 60 minutes. This section is
characterized by slower flowing flat water through a more developed riparian area. Some of the problems with this section were increased litter as well as manmade hazards such as fencing and concrete. This section has the potential to provide for family outing, after work exercise and weekend escape typologies. This subzone is ideal for novice paddlers.

Zone Two (part 2): Long Lake Loop

Zone Two the Long Lake Loop is a completely open water paddling experience with one access point (9) at the boat ramp at the south end of Long Lake and should take anywhere from one and a half hours to two hours when paddled straight through. Long Lake is a highly developed lake that has numerous house lots along its shoreline. The Long Lake Regional Park on the eastern shore of the lake provides a swimming beach, picnic areas, playground equipment and restrooms. This subzone provides for a variety of typologies including family outings, after work exercise, outing with friends as well as a unique opportunity for the fishing typology. This lake offers anglers the opportunity to pursue a range of fish from northern pike to blue gills according to the MNDNR’s lake survey (MNDNR, 2003). Under clam weather conditions this lake will be suitable for all levels of paddling experience though paddlers should always pay attention to weather condition when on open water.

Zone Three A: Long Lake to University Avenue

The subzone from were Rice Creek leaves Long Lake to University Avenue is a departure from the other experiences on the creek. This subzone is notably faster flowing with many small rapids and downed tree hazards. This subzone meanders through predominantly county owned park land that is well forested though it does have some housing lots on the east end up until Mississippi Street. This subzone provides a great opportunity to disappear into nature while still being in the Twin Cities. From access point nine on the south end of Long Lake to access point thirteen at University Avenue the trip should take roughly two hours with opportunities to take out at Rice Creek Community Park and Locke Park. This subzone provides for outings with family and friends and after work exercise it should be used by people with intermediate paddling experience.

Zone Three B: University Avenue to Locke Lake

The subzone that runs from University Avenue to Locke Lake is a slow flowing meandering creek experience that runs through low-density housing. The homeowners along this subzone have rip-rap for the creek bank and manicured lawns directly abutting the rip-rap. From access point 13 at University Avenue to access point 14 at Locke Lake the trip should take around a half hour. This section is good for quick family and friend outings as well as for exercising and is navigable by novice paddlers.
Zone Three C: Lock Lake to the Mississippi River (Manomin Park)
The final subzone runs from Locke Lake to the Mississippi River and runs roughly 500 yards. This subzone is fast flowing and has step banks that are a deterrent to reentering the creek; as such this subzone does not provide for any of the recreational typologies that are have been highlighted for the rest of the creek. Two features this site does provide for recreation benefits one is the Banfill-Locke historic house and fishing at the confluence of Rice Creek and the Mississippi River.

Flow Conditions
Lower Rice Creek is characterized by an array of flow conditions that provide various recreation experiences. These flow characteristics range from areas of flat-water to areas of more intense whitewater flows. Water flow conditions are highly variable and can quickly, and in some cases drastically, change aspects of difficulty and risk within a given zone. Over a three-week period (beginning 9-15-07) creek flow at County Road I raised from 10 cubic feet per second to flows that exceeded 80 cubic feet per second, an more than 800% increase (Biehn, 2007). These fluctuations can render narrow corridors, like those found under bridged roads, nearly un-navigable due to clearance issues or intense flow.
Variable flow characteristics also inhibit access on and off the creek. Low flow, low water conditions result in an elevated bank that may exceed 3 feet as we observed in some areas. However, even in high flow conditions continuous banks of 1ft or more were observed. Fast flowing conditions can make getting off the water exceptionally dangerous and difficult for paddlers as there is little time to plan an exit strategy in fast flowing water. We observed the creek at times of medium to high flow (Biehn, 2007) and noted exposed rocks and other debris that infringed on watercraft draft levels. While these draft level obstacles were navigable, lower water levels could render them impassable.

Water Quality
The water quality of Rice Creek is an important consideration and determinant in its success as a water trail. According to the Minnesota Pollution Control Agency’s 2008 draft of impaired waters, aquatic life in Lower Rice Creek (Long Lake to Mississippi confluence) has suffered due to pollutants and stressors indicated by aquatic macro invertebrate bioassessments (Minnesota Pollution Control Agency, 2007). Contaminated lakes, rivers, and streams not only present health risks to those participating in water-contact recreation, but they can significantly diminish the recreation experience (California Water Plan Update, 2005). Site visits and visual assessments identified particular items and areas of concern that may impact paddler’s ability to realize a desired experience.

Litter was visible along most of the creek, consisting of items such as, plastic bags, beverage containers, and clothing. Items such as light bulbs, large picnic structures, and computer monitors were also observed, although on a less frequent basis. Litter was visible on a near continuous basis throughout the lower portion of rice creek, with at least one piece of litter viewable from the paddlers.
perspective at all times. The abundance of litter takes away from the natural setting and aesthetically pleasing attributes associated with a quality recreational experience. Additionally, items such as light bulbs may introduce harmful chemicals into the creek.

Lower Rice Creek contains areas of particular concern, where diminished water quality is apparent. These areas are prominent in locations with decreased flow rates. An example of this can be found approaching University Avenue and onward to Locke Lake (zone 3b, Figure 4). The water was noticeably turbid throughout this slower flowing, lower portion of the creek. In the area just before to University Avenue, debris settles and accumulates as the creek slows down and pools. This area is also accompanied by a rather putrid smell and evidence of leaf litter. While some of this litter appeared to be from the upstream and surrounding natural landscapes, much of it appeared in consolidated piles next to manicured lawns along the riparian area. Leaf litter and grass clippings nutrify the water and may cause algal blooms and excessive vegetative growth. This decreases the amount of available oxygen and sunlight necessary for the survival of fish and other aquatic life (Office of Environmental Quality, 2007). Unfortunately, these areas of decreased flow are also areas where paddlers are better able to view their surroundings, as they do not need to concentrate as much on navigation and have more time to view the surrounding landscape. Similarly, this area has the potential to yield opportunities for fishing, an opportunity that could be significantly reduced by poor water quality.

Recreational User Survey

The recreation user survey yielded 62 responses from recreational/nonrecreational users of Rice Creek. Respondents most desired activities for Rice Creek were hiking/walking and canoeing (Figure 5). These respondents hoped to experience activities that allowed them to enjoy nature, learn from nature and to gain physical fitness. Participating in either hiking/walking or canoeing could provide visitors the opportunities to enjoy the sights and sound of the creek. It could allow visitors to learn from historical markers, environmental education information, and natural characteristics of the creek. Finally, participating in hiking/walking or canoeing could allow visitors to become physically fit through vigorous or leisure hiking/walking and canoeing activities.

Respondents were interested in promoting services that accommodate hikers and canoers. They ranked the following services as very important to important, expanded walking/biking trails, natural area information, historical information markers and picnic/rest areas for visitors (Appendix F, Table 1). More respondents were interested in a shorter paddle time on the creek. Thirty-seven respondents were interested in being on the creek for half a day (6) and 22 respondents would like to be on the creek from 1 to 2 hours. Respondents favored spending a short time over spending the whole day on the creek. This recreational approach allows visitors to paddle the creek, have
a picnic with family and friends, learn about the natural area from environmental information signs, and walk a short circuit without spending most of their day.

![Pie chart showing recreational user survey responses](image)

**Figure 5.** Recreational user survey responses regarding desired recreational activities on Rice Creek, 2007 (n=62).

Attributes that may deter visitor use focus primarily on visitor safety regarding motorized watercrafts and low water levels (Appendix F, Table 2). In addition, respondents were concerned about aesthetics of the area, a majority of respondents answered that water sports on the lakes (n=36) is highly undesirable and pollution/litter was highly undesirable (n=18) and undesirable (n=29). In general, respondents desired a water trail that accommodates hiking/walking and paddling long enough to support a 1-hour to 6-hour experience. They want areas that were aesthetically pleasing, with environmental information, picnic areas, and toilets. (Refer to Appendix G for the complete list of survey results).

**Environmental Education and Recreational Programming Interviews**

Two recreational organization representatives and four school representatives provided insight about using the Rice Creek Water Trail. One primary challenge for schools is that the Anoka-Hennepin School District curriculum for science programs, particularly for elementary schools is not staffed specifically for a science education. One teacher is responsible for teaching math, reading, writing, and science. In many instances, teachers face
sacrificing their science curriculums due to little time or resources. They mentioned that math and English curriculums had priority over science education. If proficiency of math or English is not met for students, teachers generally sacrifice science curriculum to compensate for student skills in those subjects.

Recreational organizations that provide activities/experiences appropriate for Rice Creek are not using the creek for these activities. Wilderness Inquiry provides recreational services for canoeing, kayaking, naturalist talks, nature walks and birding. This organization was unfamiliar with opportunities on Rice Creek, however would consider Rice Creek as a location for canoeing. Wilderness Inquiry is an organization designed to allow everyone the opportunity to experience recreational opportunities. Primary participants in the Wilderness Inquiry trips include people with disabilities or who have limited mobility. When determining programs, they look for places with easy access for parking and boat launching locations which follow Americans Disabilities Act requirements.

The Chain of Lakes-YMCA is a new YMCA branch, opened recently in Lino Lakes, Minnesota. Activities at the YMCA include canoeing, kayaking, naturalist talks, nature walks and birding. This YMCA branch has environmental science and biology scientist camps for pre-school to 12 year olds. In addition, the YMCA has an all day care program for children. This program is particularly field trip based, allowing children to experience canoeing, kayaking and other recreational experiences. As mentioned earlier, the Chain of Lakes YMCA is fairly new. They were not aware of Rice Creek’s recreational opportunities nor have they used the creek as a part of their recreational programming. Reasons for this is that the branch is just beginning their programs, the lack of communication with Rice Creek officials, and the lack of discussion of new programs and curriculums. Fortunately, after knowing about the recreational opportunities, the Chain of Lakes YMCA will be considering partnership opportunities with Rice Creek officials. This organization is hoping to incorporate programs such as day camps encompassing canoeing, kayaking, and camping, and a senior program which includes nature walks and birding.

The K-12 school representatives all responded that naturalist talks, nature walks and/or birding were used for environmental education purposes. Only three science teachers, from Centennial Middle School and Rice Lake Elementary and Jefferson Elementary, were aware of the environmental education opportunities, and have used of Rice Creek as a part of their science curriculum. The life sciences teacher at Centennial M.S. discussed a one-time activity at Rice Creek three years ago. Centennial had an after-school program which included canoeing, nature walks and other various environmental programs. The fifth grade mammalogy science teacher from Rice Lake Elementary spoke about the educational programs at Rice Creek. Occasionally, students were taken to the creek where the school has an osprey
pool for students to observe animals along the shoreline. Jefferson Elementary has used the Rice Creek area, particularly Wargo Nature Center focusing on science-based stations and activities.

When asked if schools would use Rice Creek as an environmental education resource, many responded that the creek would be an appropriate site. Centennial Middle School would like to partake in naturalist talks and other ecological activities. Rice Lake Elementary would like to provide more canoe/kayaking activities for their students.

Unfortunately, the programs and activities provided by the schools on the creek have discontinued due to structural and financial reasons. The teacher from Rice Lake explained that the constraints of leading these programs were safety, supervision, access, and time to teach additional curriculum. Without the appropriate funding and support staff, it is difficult or nearly impossible for one science teacher to lead and teach thirty students on the creek. Other schools that do not use Rice Creek believe transportation, limited funding, and lack of relevance in the curriculum are primary reasons for not using the creek. Edgewood Middle School often sacrifices the quality of Ecology Unit (science program in the spring) due to low funds. They explained that funding is generally exhausted in the spring and there are not enough resources for fieldtrips and materials. Also, many teachers believe their science curriculum does not fit with the creek. There is a lack of focus on education at these schools pertaining to environmental education, making it difficult to use Rice Creek as a resource.

Recommendations

Recommendation 1: Provide Opportunities for Unique, Enjoyable Recreational Typologies

The lower Rice Creek Water Trail can be managed to maintain a novice to intermediate lake and creek paddling experience.

Rice Creek is already a slow flowing creek that has limited rapids and is located in the Twin Cities metropolitan area; it is in the best interest of the participating partners and citizens of the metro area to develop a water trail that provides a diverse, novice to intermediate level paddling experience. This recommendation was developed by using the typology findings as well as the user survey and interview findings. Providing diverse novice to intermediate level paddling opportunities is important for a couple of reasons. Diversity in recreational experiences such as fishing, biking or a casual flat water paddle maximizes the opportunity and range of people the water trail will attract. This is important because there is no such thing as a normal outdoor recreational experience. As Joseph Roggenbuck pointed out “… the manager needs to begin to think about
providing a variety of opportunities for the diversity of experiences desired, expected, and enjoyed by recreationists” (University of Minnesota, 2000). These diverse opportunities are outlined in appendix H.

Entry level paddling experiences allow for recruitment opportunities of new outdoor enthusiasts. One of the biggest issues facing resource managers is the dwindling number of youth being exposed to and enjoying the outdoors. By maintaining a beginner to intermediate level water trail in the Twin Cities urban center you can provide a steppingstone for urban youth to rediscover the outdoors. The Rice Creek Water Trail is an ideal setting for outdoor recruitment, since one of the biggest roadblocks to these experiences for urban youth is getting them to the resource (Recreation Forums, 2007). Instead of bringing the youth to the experience, you can bring the experience to the youth. By doing this you can foster an important aspect of social and individual health; a sense of place through the creation of opportunities that provide togetherness for families, communities, and nature. This steppingstone will hopefully lead to more outdoor recreation and eventually valuing natural resources.

There are areas where improvements will be needed on the creek to make it a viable water trail. The first improvement to address is cleaning up litter and other man-made debris. This aesthetically displeasing problem is most noted in zone two from Hwy 10 to Long Lake; this area has plenty of litter, and illegal dumping notably washing machines at the entry point off of Hwy 10 (See Figure 4). One way to get this done, as outlined in the Recreational Forums Summary Proceedings 2007, is to use volunteers. Volunteering not only helps in enhancing the quality of recreational resources but also provides a connection between the members of the community and their natural resources.

The second area to address will involve communication between Anoka and Ramsey counties and landowners along the Rice Creek Water Trail as well as those on Long Lake and Locke Lake. There are three points along the Creek where private property abuts the trail and is quite noticeable. These three areas are Long Lake, Long Lake to Mississippi Road and from University Avenue to Locke Lake. The land use along these stretches does not reflect best management practices for the stream banks. The most notable practices were the use of manicured lawns to the water’s edge and rip-rap for erosion control. The partners can engage the landowners along the Rice Creek Water Trail and work with them to establish healthy and natural stream banks in order to increase the health of the watershed and the aesthetics of the water trail. See recommendation two for details.

Finally one problem associated with development of the Water Trail as an entry-level paddling experience is the creek’s susceptibility to seasonal variations in water flow. When we first experienced the creek in mid-September we got out and walked on numerous occasions and negotiated around rocks, trees and other hazards; although this does fulfill the physical health experience, it does little for
the other outdoor experiences and could act as a deterrent to recreation on the water trail. One possible solution would be to encourage people to use the bike and walking trails along the creek during low water levels in order to allow people to get out and enjoy the Creek even if they cannot paddle it. It will be important to develop a web site that communicates with the public about current creek water levels and what this means for their recreational experience on the creek.

By maintaining the Water Trail as a novice to intermediate paddling experience that is supported by biking and hiking/walking alternatives, Rice Creek will be a recreational opportunity that provides togetherness with family, friends, community, and nature as well as physical fitness. These benefits serve a sustainable community and society.

Recommendation 2: Improve Recreational Experiences through Water Quality Management

The water quality of Rice Creek is an important consideration and could determine its success as a water trail. According to the Minnesota Pollution Control Agency’s 2008 draft of impaired waters, aquatic life in Lower Rice Creek (Long Lake to Mississippi confluence) has suffered due to pollutants and stressors indicated by aquatic macro invertebrate bioassessments (MPCA, 2007). Contaminated lakes, rivers, and streams not only present health risks to those participating in water-contact recreation, but they can significantly diminish the recreation experience (California Water Plan Update, 2005). Additionally, Rice Creek is littered with both trash and natural litter. Research on litter indicates that the presence of litter is the least acceptable form of interference with individuals’ recreation experience (Ruddell & Gramann, 1994; Roggenbuck, Williams & Watson, 1993; Hammitt & McDonald, 1983; Noe, Hammitt & Bixler, 1997).

Utilize Shoreline Vegetative Buffers to Mitigate Runoff and Nonpoint Source Pollution and Enhance the Recreational Experience

The Rice Creek Watershed District (RCWD) utilizes a variety of tactics to promote water quality within the district. Nonpoint source pollution can be managed most effectively at the source, by implementing Best Management Practices (BMPs) to eliminate or minimize polluted runoff (Minnesota Shoreland Management, 2001). In fact, the RCWD employs a series of BMPs that outline various mitigation strategies such as green roofs, infiltration trenches, and rain gardens. The RCWD has also contributed towards projects such as a Model Low Impact Development projects along the Vermillion River (RCWD, 2006), which is a site design strategy with a goal of maintaining or replicating the predevelopment hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic landscape (Low-Impact Development Center, 2000). While such improvements to the watershed will help to maintain and even improve the Rice Creek Watershed’s water quality overall, a more locally focused initiative in the form of a vegetative buffer strip along the creek may be the most appropriate measure for Rice Creek.
Nearly every resident that owns property along the lower portion of Rice Creek had a manicured lawn directly abutting the creek. These lawns were often accompanied by supportive bank structures or retaining walls. Other more natural shoreline areas displayed evidence of shoreline erosion. The manicured lawns and eroded riparian areas allow pollutants and sediment to enter the creek at levels beyond what a naturally vegetated shoreline buffer would otherwise permit. They also make for a landscape that may hinder a paddler’s ability to enjoy a more natural environment.

A stable vegetative buffer is the last line of defense for impacts that may seriously threaten a healthy, stable ecosystem (Chicago Metropolitan Agency for Planning, 2007). Buffers are known to enhance fish and wildlife habitat, filter pollutants from runoff water, stabilize stream banks and shorelines, provide shade, screen noise, serve as greenways, and enhance aesthetics. Costs of this approach are relatively low, and homeowners can implement this approach on their own (Tennessee Valley Authority, 2007). Numerous programs have been developed across the nation to help local residents and managing agencies implement effective vegetative buffers. Many of these exist in the form of online tools that help landowners select appropriate species and provide them with information on how to manage them properly. Recently, the RCWD developed such a tool, outlined below.

*The Blue Thumb - Planting for Clean Water™ program makes it easy for residents interested in doing their part to protect water quality to plan, purchase and plant native gardens, rain gardens and shorelines with native plants. The Blue Thumb program was started by the Rice Creek Watershed District as an outreach program to meet water quality goals identified in their strategic plan and to help their cities meet their federal Clean Water Act mandates. Now Blue Thumb reaches beyond the Rice Creek Watershed District boundaries into the Twin Cities metro area and greater Minnesota. There are currently about 30 Blue Thumb partners*  (RCWD, www.bluethumb.org, 2007).

The Blue Thumb program provides guidance to local landowners who decide to implement vegetative buffers along their shoreline. However, it is evident that many landowners have not taken advantage of this resource. Landowners need to be informed of the Blue Thumb program and its potential benefits to water quality. Historically, landowners prefer written educational materials regarding water quality, non-point source pollution, and best management practices, although utilizing a variety of educational formats will reach an even greater number of landowners (Flynn, 1999). Informative literature could be distributed; directing landowners to resources like Blue Thumb as well as provide them with additional resources for water quality improvements they can help make. If further encouragement is needed, the viability incentive based programs may be investigated.
Continue to solicit the help of local philanthropic groups to clean up the creek
Local organizations such as Boy and Girl Scout troops, Lions Clubs, and church youth groups have helped to clean up portions of the creek in the past. Their continued assistance is necessary for the maintenance and improvement of the creek as a water trail. Moreover, their efforts could be coordinated so that specific areas of concern can be targeted for clean up. Coordination of this kind could stem from the development of an “adopt a creek” program, whereby groups can select a portion of the creek they would routinely clean up. There are many examples of successful “adopt a creek” programs that could serve as an example for a similar program for Rice Creek.

For example, the adopt a creek volunteer program, the City of Oakland, Public Works Agency provides a unique opportunity for individuals, neighborhood groups, civic organizations, and businesses to play an active and ongoing role in cleaning, greening, and maintaining neighborhood creeks (City of Oakland, 2007). They accomplish this by providing a contract to those who wish to participate. A copy of this agreement can be found at the City of Oakland’s website (http://www.oaklandpw.com/AssetFactory.aspx?did=2214). Austin Texas’ -a-Creek program gives groups the opportunity to help their local community by collecting litter and beautifying creeks in their neighborhood. Their application can be found on the Keep Austin Beautiful website (http://www.keepaustinbeautiful.org/page.php?p_page_child_id=181).

Through the adopt a creek volunteer programs, these Cities provide a unique opportunity for individuals, neighborhood groups, civic organizations, and businesses to play an active and ongoing role in cleaning, greening, and maintaining neighborhood creeks.

Provide intermittent disposal facilities and Encourage No Trace Waste Management
The presence of litter is certainly due in part to the lack of trash receptacles along the creek. We never observed a single receptacle while conducting visual assessments all along the lower portion of Rice Creek. While the addition of trash receptacles would help to mitigate the presence of litter, furnishing and maintaining trash receptacles may prove costly and periodic trash collection may prove difficult along more remote portions of the creek. Accordingly, trash receptacles could be installed at points of access but may not be a viable option elsewhere along the creek.

Perhaps a more appropriate means of waste management could be the use of a “leave no trace” policy along Rice Creek. In particular, paddlers should be required to practice “pack it in, pack it out” waste management whereby paddlers are encouraged to leave the creek with the items they brought in. This common
saying is a simple yet effective way to get visitors to think about taking their trash home with them. In the case of Rice Creek, paddlers need only hang on to their waste until reaching a designated access point (provided a receptacle is available at that point). This method would require minimal costs to implement. Paddlers could be informed of this practice through brochures, websites, signage and any other relevant information sources.

**Develop a flow monitoring program and user interface**

Rice Creek’s fluctuating water flows and levels can rapidly change the characteristics of the creek. Currently, there is one flow rate monitor at County Road I. This single instillation could act as a reference point for which to gauge the flow conditions for the rest of the creek. However, this assumes individual portions of the creek change in a consistent manner relative to one another. It may be necessary to set up additional instillations in order to more accurately extrapolate and report creek conditions.

Measurements should be taken at regular intervals and conducted in tandem with periodic site visits to determine flow conditions at various rates of flow. Over time, a schedule of creek conditions could be mapped so recreationalists can forecast creek conditions. Ideally, creek flow data and inferred conditions would be made available to potential recreationalists by way of a website, phone, or on site indicators (see report #6/6 for more details).

**Recommendation 3: Support Recreation with Necessary Amenities: Rest Areas, Equipment and Transport Services**

Developing rest areas and amenities will attract visitors to the creek. Families and individuals will be able to enjoy the Creek at their own leisure, with their varying skill levels. One critical barrier for potential recreationalists is those who do not have access to equipment or the ability to transport equipment. To expand visitor opportunities, it is necessary to provide services that cater to visitors who do not have the resources to own their own equipment. By creating services for equipment rental and transportation services, more people who have not been exposed to outdoor recreation will be able to appreciate this urban oasis.

**Access points should have restrooms**

To accommodate the expanding visitor numbers, these access points will need additional facilities. Information from the recreational survey indicated restrooms were a very important amenity. Paddlers who finish their journey on the creek will need permanent or non-permanent bathroom facilities. Also, these facilities will be helpful for individuals and families who plan on using the picnic areas for lunch. This provides convenience and allows visitors to enjoy their recreational experiences without worrying about restroom facilities.

A potential barrier for installing restrooms is the cost of installation and maintenance; without the appropriate care of these amenities, visitors may not return to the creek. This problem may be solved by seeking volunteers and grants.
to support maintenance of the infrastructure. As mentioned in recommendation two, Rice Creek could create a program where organizations or individuals help keep the park and restroom facilities clean and functioning. Rice Creek officials may solve the financial problem by partnering with local businesses. Businesses may pay Rice Creek officials to advertise their business with bulletins, banners and other information near parking lots and other paved areas.

**Points of access can be pull outs and rest areas**

To accommodate varying water levels on the creek, additional access points are needed. There are many instances where water levels are low, making it difficult for visitors to navigate the waters. Pull out areas can allow paddlers to avoid non-floatable areas and to continue their recreational experience. In addition, pull outs along the creek are necessary for families and individuals who would like to take a break and relax. Rest areas are a great place for visitors to picnic and enjoy the scenery. Creating additional access points and rest areas provides the potential for a greater volume of diverse visitors.

One potential barrier to this recommendation is that rest areas should be compliant with ADA requirements, to allow visitors of varying needs to enjoy the creek. The Wilderness Inquiry, an organization dedicated to leading outdoor trips for people with mobility issues would like to see more ADA compliant areas. Implementing these amenities would bring a different crowd such as the Wilderness Inquiry to the Rice Creek Water Trail. This may pose as a problem as there is a lack of financial resources and staff to ensure these facilities are installed and maintained properly. A possibility to overcome the financial burden is by collaborating with other organizations in seeking grant money. Rice Creek officials can work with non-profit organizations such as the Wilderness Inquiry to seek funding for incorporating ADA compliant facilities and access points. Using this method to request for funding could be successful since there are two organizations responsible for implementation. In addition, these two organizations are very versatile and function differently. By gaining funding, these groups will be able to distribute benefits to a wide range of recreational users.

**Develop relationships with public and private outfitters to support citizens who do not have their own equipment**

Many citizens in Anoka and Ramsey counties do not have equipment, however would benefit from using a water trail both personally as well as in understanding and valuing natural resources. Relationships will need to be created between public and private outfitters to create initiatives in safe paddling, educating visitors on *leave not trace* philosophies and as a means to provide rental discounts on equipment. Doing so expands the visitor’s knowledge about conservation and preservation philosophies, as well as creating social capital or trust among outfitters, individuals, and local officials. This relationship will invest in educating more visitors about the concepts addressed above while promoting stewardship (University of Minnesota, 2000). Visitors will be able to enjoy the
creek while promoting stewardship for maintaining the Rice Creek Water Trail. Furthermore, these relationships stimulate economic growth (economic capital) and community development among local officials, individual visitors, and local outfitters (Manning and More, 2002). Local outfitters will be able to increase profits, create more jobs for the local community while promoting use of the creek.

Creating partnerships with outfitters is a great opportunity for Anoka and Ramsey Counties. However, a potential barrier to this recommendation is the effort required. As a result of few staff and other important county issues, it would be difficult for the counties to create and maintain a project of this magnitude. A method used to ease participation issues is to create informal communication among outfitters and local officials. Local officials may invite outfitters to participate in local activities and events.

**Establish facilities, public or otherwise that provide access and equipment**

A concern among potential visitors is having the resources to go on the Creek and having a way to transport equipment to their desired destination. As students, we did not own equipment (kayaks or canoes) and we did not have a way to transport rented equipment. Based on our survey results, we found that 57 respondents owned their own equipment, while five respondents rented equipment. This sample of survey results reflect many individuals who live in urban areas who do not own equipment; this may inhibit them from using Rice Creek as a recreational resource. In the Twin Cities Metro area, there are many people of varying income levels. It is more difficult for people with limited economic means who do not own their own equipment to experience the Creek. Rice Creek partners need to work for equity in resource availability to allow everyone and anyone to enjoy these natural spaces on public lands (University of Minnesota, 2000). Another problem in which may be faced after implementing a discount rental service is the lack of rental use. There is no guarantee that implementing discount rental services will generate and expand targeted visitors to the creek.

A possible solution to this dilemma is to create partnerships with outfitters. Outfitters could provide discount rental rates and transportation for creek users. To alleviate the rental use volume problem, Rice Creek officials could incorporate promotional method and undergo a rental trial period. The outfitters may play a large role in advertising discount equipment by posting information via their online website, the local newspaper and other media options. Wargo Nature Center could potentially house rental canoes and kayaks from outfitters to accommodate visitors who do not own equipment. The rental trial period would be a method for officials to understand the use needs of visitors on Rice Creek. Officials may choose to continue or discontinue the program depending on the volume of use during the trial period.
Recommendation 4: Implement Information Services to Support the Recreation Typologies of Rice Creek

The Rice Creek Water Trail has great potential to draw users from different parts of the metro area that desire a natural experience in an urban setting. One of the main criteria for determining how many people get out onto the creek will be of the ease of use. In planning a day on the creek or just an afternoon or evening, users are going to want a variety of information. The main things users want to know is the current water level, where they can put their canoe or kayak in the water, where bathrooms or rest areas are located, and where scenic areas can be experienced. A map is the best way to give them much of this information while aiding them in navigating the creek. The map should include things such as scenic areas, rest stops, bathrooms, access points, parking lots, and skill level requirements. In many cases, however, a map is not enough. In order to provide the best experience for users, some of the following recommendations should be considered.

Develop signage at key points such as access points, creek-bridge junctures, and areas of turbulent water.

Rice Creek Water Trail users are going to be looking for different experiences ranging from a lazy paddle to a rigorous challenging ride. Providing information and amenities for both of these experience types is important in attracting and retaining water trail users. A primary way to provide them with this information is to develop signage at key points. Access points are an obvious spot for signage that tells users this is a good place to stop, relax, have a snack or pull out (in addition, these areas can offer restrooms and room for other activities). The key to making signs successful planning aids is to include times to the next rest stop and restroom locations along the way. Another key location for signage is at creek-bridge junctures. In this case, the primary function of these signs is to notify users of water level issues and ultimately if it is safe for them to go under the bridge. Finally, providing notification signs for users when turbulent waters are ahead gives them time to either prepare or to pull off and portage the area. In any case, signage would greatly improve experiences for a variety of users along the Rice Creek Water Trail.

Develop signage that utilizes a difficulty measure at access points.

Water trail users need to remain safe above all else. Though staff cannot constantly monitor the safety of the creek, certain precautions can be taken. A key way to keep users safe is to provide signage along the creek that notifies users of changing water flow rates. In many cases this can mean an increase in speed or hazards, but it can also mean the slowing down of the water. By creating a difficulty measure that rates creek conditions on a set scale and made known to users, they can make preparations for the next part of the journey or can choose to get off the creek. By locating these signs near access points, users are given the option to exit the creek without going through the next section, or they can rest before taking it on. By providing signage that notifies users of changes in the
creek, users can make decisions to keep themselves safe, happy, and ready to come back another time.

*Generate and maintain an Internet interface that users can consult prior to their trip to determine creek conditions and to provide feedback.*

A common problem users may face is the constantly changing water levels of the creek. At some times of the year it may be too high for them to navigate and at other times, far too low. A method to measure this level must be implemented and difficulty assessments made available to the public in order for them to actively use the creek and enjoy it. Creating an Internet interface that regularly updates creek water levels will help users decide what times are the best to go on the creek, avoiding some potentially negative experiences. The site could contain the general type of experience at different water levels on the same page as it reports the current water level. This way, users could review the page and determine whether the experience listed for the current water level would in fact fulfill their needs. This Internet site would be useful in other ways as well, either as a place for managers to post trip ideas or creek updates or for users to notify managers and other users of down trees or other management issues. Managers could also utilize the site to notify users of problems on the creek or changes they’d like to make note of. Creating this site would also provide a place for people to comment on their experiences on the creek, provide feedback to managers, and possibly draw more interest from potential users.

As managers, it is critical to understand the user needs as well as to maintain the water trail. As mentioned above, developing an Internet interface would provide users with a place to not only check for information on current conditions of the creek, but also to provide feedback to managers. For managers, this information could be vital in the overall safe management of the creek. Users know firsthand what problems the creek has while managers may or may not have this information. Allowing users to note what they have problems with, or what they like, on the creek would be a valuable management tool. In addition, having a means of open communication with water trail users would give them more of a sense of control and ownership, as they contribute to keeping the trail safe and navigable.

*Produce a water trail map with proper indications.*

An integrating tool for all the information discussed previously is a Rice Creek Water Trail map made available to the public via a website or physical location along the trail. This map should have enough detail to help users get to the Creek and locate an appropriate access point. They should be able to identify areas that require greater or less skill, rest stops and bathrooms, parking lots, and areas of special significance. It would also be ideal if some recommended routes were laid out on the map for specific types of users that only have a certain amount of time, whether long or short. A map is imperative to the success of the trail (See report #6/6 for more details).
Recommendation 5: Market Rice Creek to Potential Users

The Rice Creek Water Trail has the potential to become a premier destination for urban citizens looking for a natural experience. The key to the success of this water trail lies not only in the quality of the creek and its map and amenities, but also in the public’s knowledge that it exists and is open for use. In order to attract users to the Rice Creek Water Trail a few key things can be done.

Create and distribute a water trail map and promotional brochure inviting people to use the creek.

Though the development of a water trail map has been mentioned previously, it is clearly an important tool for multiple purposes in the success of the creek. By creating a detailed water trail map that provides useful information for creek users as well as potential users, more people are likely to be drawn to experience the creek. Potential users will be able to view the beauty of the creek at-a-glance. This map can provide convenience for visitors in locating desired locations efficiently. Coupled with this, a brochure can serve as an invitation to get out onto Rice Creek could mean the difference between a much hidden treasure and a hidden treasure that may have been experienced. By inviting the public onto the creek, awareness and interest will show itself in user numbers.

Create a logo for the Creek as a branding and identity strategy.

Creating a logo for the Rice Creek Water Trail will promote an identity for the creek. This will establish familiarity with the resource among local communities and recreational users. In addition, branding the Rice Creek Water Trail will distinguish this Creek from other urban water trails. Anoka and Ramsey Counties already have logos for their Parks and Recreation areas; creating a separate logo can encourage unity across the water trail partners and municipalities the creek runs through.

Solicit the interest of different user groups and hold meetings at regular intervals to encourage community participation and stewardship of the creek.

Public land managers often solicit the help of user groups and local citizens in the upkeep and education and awareness aspects of a specific public land. For the Rice Creek Water Trail, it would be extremely helpful if a “Friends of Rice Creek” or similar group was created in order to facilitate changes that may need to be made on the creek as well as to help the creek enter the greater community consciousness. These groups can also aid in the upkeep of the creek and help notify managers of specific needs the community may have (see Recommendation 2).

As a method for continued participation, Rice Creek officials should work with the K-12 public schools system. Schools in the Anoka-Hennepin area are interested in facilitating class outside on the Creek. For example, Joe Sauer from Centennial Middle School is interested in providing naturalist talks and other ecological activities for his students. Paula Andzejewski, a fifth grade science
teacher at Rice Lake Elementary responded that she would like to have more floating activities to educate her students about water safety. Ramsey and Anoka Counties could partnership with schools by creating Rice Creek stewardship initiatives or environmental educational programs with local K-12 schools. Student at these schools would be able to participate in maintaining the quality of the creek with “trash clean up” programs. In addition, the Anoka-Hennepin school district could establish “after-school” environmental programs on the creek, highlighting the benefits of maintaining the creek. This will expose youth to the creek and support goals for lifelong valuing of land stewardship. In addition, schools could work with Ramsey and Anoka counties to create curriculum for chemistry, environmental education, biology and ecology while using the creek as an educational tool. The school representatives interviewed were very interested in collaborating with the counties and providing environmental education with the students.

Problems may be faced while attempting to establish a land stewardship or after school environmental education program. A major barrier for this initiative is finding qualified personnel to implement this program. It is imperative to have coordinators and managers of these programs versed in leading stewardship projects or environmental educational lectures. One possible solution to this barrier is to seek for volunteers within the local communities. Rice Creek officials and K-12 teachers may request parents, friends, family with special expertise to donate their time and effort for leading these projects. This option is cost effective and it could create relationships between local residents, school officials and Rice Creek officials.

**Conclusion**

In this age of busy lives and technology-driven recreation it is important to take time to reconnect with nature. By expanding the recreational opportunities on Rice Creek through the development of a water trail you provide the citizen of the Twin Cities metro area a convenient, fun, and integrated opportunity to reconnect with nature in the heart of an urban center.

In closing, we found that Rice Creek has the potential to provide a convenient novice to intermediate level water trail experience. Its full potential is hindered though due to its vulnerability to seasonal flow fluctuations and overall lack of information about the creek. By increasing citizen awareness of the paddling opportunities on the creek from the Chain of Lakes to the Mississippi River as well as providing opportunities to recreate along the creek during low flow, you can provide a recreational opportunity that is holistic and integrated through nature in the heart of the city.
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Natural Resource Management: Emerging Issues and Practical Applications.
Appendix A: Values of State Parks for Potential and Current Users (Manning and More, 2002).

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<thead>
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<td>Therapeutic (“State parks are places to maintain or regain one’s health and mental wellbeing”)</td>
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<tr>
<td>Spiritual (“State parks are places to get closer to God or spiritual matters”)</td>
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Appendix B: Recreational User Survey

1. Please select the age range you belong to
   - Under 20
   - 21-30
   - 31-40
   - 41-50
   - 51-60
   - 61 and older

2. Which of the following activities do you routinely partake in? (Check all that apply)
   - Canoeing
   - Kayaking
   - Fishing
   - Birding
   - Biking
   - Hiking/Walking
   - Other (please specify)

3. Are you currently aware of the recreational opportunities on Rice Creek water trail?
   - Yes
   - No

4. Which of the following activities would you like to engage in on Rice Creek Water Trail?
   - Canoeing
   - Kayaking
   - Fishing
   - Birding
   - Biking
   - Hiking/Walking
   - I am unfamiliar with Rice Creek
   - Other (please specify)

5. On a scale from 1 to 5 what level of seclusion do you look for in your outdoor experience
   - 1 being a back country experience and 5 being a city park experience
Recreational User Survey Continued

6. What services do you think are important for counties to provide for your enjoyment of an urban water trail?
   - Picnic/rest areas
   - Historical Informational Markers
   - Preplanned trips
   - Expanded walking/biking trails
   - Other (Please specify)

7. What attributes of a water trail would most deter you from using it?
   (With a ranking system from: Highly undesirable, undesirable, Somewhat a problem, Not a problem)

   - Water sports on the lakes (jet skis, water skiing)
   - Fishing
   - Remote sections of the creek
   - Pollution/Litter
   - Weather uncertainty on lakes
   - Other (please specify)

8. What experiences would you like to have on Rice Creek?
   (With a ranking system from: Very important, Neutral, Unimportant, Very unimportant)

   - Use equipment
   - Achievement
   - Enjoy nature
   - Learn from nature
   - Physical fitness
   - Risk taking

9. If you were to use the water trail, how much time would you be on the water?
   - 1 to 2 hours
   - Half a day (6 hours)
   - All day (12 hours)

10. Do you have your own equipment or would you need to rent?
    - Have
    - Rent
Appendix C: Lower Rice Creek Environmental Education and Recreational Interviews

1. What school/organization do you belong to?

2. Which of the following activities do you partake in when leading outdoor trips, or for environmental education purposes? (Choose all that apply)

   - Canoeing
   - Naturalist talks
   - Birding
   - Kayaking
   - Nature walks
   - Biking
   - Fishing
   - Other (please specify)

3. Are you currently aware of the recreational opportunities on Rice Creek?

   - Yes
   - No

4. Do you use Rice Creek Regional Park as an educational resource at your school or organization?

   - Yes. How?
   - No. Why not?

5. Rice Creek Regional Park is an urban creek with a navigable water route and facilities that encourage and support water use via kayaking, fishing etc. Given that information, would you use Rice Creek Regional Park as an educational or recreational resource with your programs or schools?

   - Yes. What types of activities would you partake?
   - No. Why not?
Appendix D: Standards for Rice Creek Observations

**Portage** - a location on the creek where one must exit and carry their watercraft to a point downstream in order to continue.

**Easy:** Clear path for transit

**Moderate:** Negotiable but problematic

(i.e. no landing area, vegetation interference, anthropogenic influence)

**Difficult:** Portage nearly impossible in current condition due to obstruction

- Number of portages (note approximate difficulty level, length (m) and location)
- Number of areas of low water - i.e. portage necessary in dry conditions, places where a canoe runs aground (not approximate location)
- Locations where continuing downstream is physically impossible.

Noticeable Landmarks (Geographic & Historic)

Stopping / Rest points
- Note where, approximate area, ease of access and opportunities at each

Areas of heavy development
- Note infrastructure, including homes, easily seen from creek or stopping points

Developments at Access Points - signage, piers, concrete launches, railings, parking lots, etc
- Note spatial relationships, physical condition, quality of information, etc

Areas for risk management investigation (logs, low hanging branches, dangerous manmade structures)
- Note approximate location

Other:
Definitions

For purposes of this analysis, the following terms are acknowledged in the following context.

- Portage-a location of the creek where one must exit and carry their watercraft to a point downstream in order to continue.

Other creek aspects slighted for identification were noted on a more discretionary and situational basis; however the following guidelines were used.

- Low water- an area where a standard drafting canoe (4-6 inches) may continue downstream without portage but runs aground
- Rest point- an area not in close proximity to an access, where vegetation and shoreline may permit the beaching of watercraft as well as an area for users to rest and potentially utilize restrooms
- Developed areas- areas where humanmade structures are easily viewable from the creek
- Area of risk- any area where two or more researchers feel poses significant risk to users
Appendix E: Rice Creek Visual Assessment

10/13/07 Anoka Rd. to East River Rd.

Joseph C. Anderson

The trip form Anoka Rd. (just east of the trail head off of 69th Ave.) to Manomin Park can be broken up into two distinct canoeing/kayaking opportunities. The first recreation zone ran from our put in at Anoka Rd. to University Ave at the western boundary of Locke Community Park. The second zone ran from University Ave. to the west end of Locke Lake on East River Rd. Estimated trip time two hours.

**Locke Park Zone Narrative**

The zone from Anoka Rd. to University Ave. is a fast flowing meandering river that runs through the heart of Anoka County’s Locke Park. The pluses for this section of the river are that it was exciting to paddle and was secluded for being in the middle of an urban center. Since this section of the RCWT is in a creek valley it is insulated from surrounding auto and city noises. The biggest negative for this section was the amount of downed tree obstacles in the creek as well as the steep banks that prevented us from portaging around these risks.

**Locke Park Zone Rating**

(I being this zone readily offered this experience 5 being it did not)

Use equipment: 2. this section gave me an opportunity to use a kayak in a fast flowing meandering creek and gain more experience with this equipment.

Achievement: 3. I did not feel a lot of achievement in paddling this section of the creek besides only falling in the creek once.

Enjoy Nature: 2. this section of the creek is quite secluded given the fact that it is 20 minutes north of downtown Minneapolis. I also saw waterfowl and fall woods scenery.

Learn From Nature: 4. I did not learn from this section of the creek outside of being careful when going under downed trees.

Physical fitness: 3. Overall this section required minimal paddling outside of steering.

Risk taking: 4. although this section was fast flowing the rapids were minimal and with management the downed trees would be less of an issue.

**West Anoka Zone Narrative**

This zone ran from University Ave. in the East to the west end of Locke Lake. This zone is far slower flowing then the previous and offers far different scenery. From University Ave. east the property bordering the creek is predominantly privately owned, and as a result you are paddling through peoples back yards. This is usually not what people think of when the think of paddling. To me this offers both pluses and negatives. Although I usually prefer a more wild paddling experience this zone reminded me of taking a Sunday drive around the neighborhood. The problem is that you can not pull out of the creek and are stuck on it tell you come to the landing at Manomin Park.
West Anoka Zone Rating
Use equipment: 2. this zone allowed me to do more open water paddling with the kayak. 
Achievement: 4. I experienced little achievement on this zone since I am a more 
experience paddlers. 
Enjoy Nature: 3. this zone is very residential but these homes and lots are older probably 
form the 50’s. 
Learn from Nature: 5. there was little or no opportunity to learn from nature. 
Physical fitness: 2. in this section the water flowed slower thus I had to paddle more this 
gave my upper body a little ache by the end. 
Risk taking: 5. I felt no risk on this section since it did run so slow and the land owners 
had cleared the obstacles form the creek.

Locke Lake to the Mississippi
As an end note Gabe and I did not paddle from after the Locke Lake damn to the 
Mississippi. After landing our Kayaks at the west end of the lake we did a quick 
visual/risk assessment of reentering the creek west of the damn but found the water to be 
to fast flowing and the creek banks to be to step to reenter the creek safely.
Appendix F: Rice Creek Visual Assessment

10/13/07 Anoka Rd. to East River Rd.
Gabriel J. Benson
The trip form Anoka Rd. (just east of the trail head off of 69th Ave.) to Manomin Park can be broken up in to two distinct canoeing/kayaking opportunities. The fist recreation zone ran from our put in at Anoka Rd. to University Ave at the western boundary of Locke Community Park. The second zone ran from University Ave. to the west end of Locke Lake on East River Rd.
Estimated trip time: two hours
Mode of transport: Kayak
Water level: High

The zone from Anoka Rd. to University Ave. is characterized by a steady, meandering stream flow and periodic rapids. While the creek is accessible from Anoka Rd., there exists no signage identifying it as such. A brief portage is necessary to reach the creek and is of moderate difficulty. It should be noted however that the initial decent from Anoka Rd. is steep and heavily vegetated, rendering this brief portion of the portage difficult. A relatively flat riparian area provided an easy area from which to launch the kayak but the launch of a canoe from this area would prove much harder, and perhaps, impossible in certain conditions (e.g. exceptionally high or low water/flow conditions). When navigating this stretch of the creek it is conceivable that a portage may not be necessary. Areas of higher rapidity were navigable by kayak due to high flow and high water. Lower water conditions may have required us to portage but lower water levels would also make exiting the creek even more difficult. We did, however, elect to portage around a fallen tree. This portage occurred at the approximate midpoint (45min-1hr) of our journey from Anoka Rd. to University Ave. The portage was difficult due to the creeks fast flowing nature and a tall (2+ft.) riparian area. It is my opinion that our exiting the creek may have posed a greater risk than if we were to attempt to negotiate the fallen tree. Upon further review of the tree from the creek bank, it seemed a navigable corridor would allow a kayak or high drafting canoe to pass. In total there were four fallen trees that spanned the entire creek and others that partially covered it. In every case a submerged portion of the tree allowed our kayaks to pass over but the presence of braches required me to shield my face on more than one occasion.

This stretch contains no areas of heavy development, in fact, the presence of man made infrastructure, aside from walking bridges, is nearly nonexistent until the latter half of this stretch, at which time a few houses are visible. There were no areas of historical significance observed.

This stretch of the creek contained numerous pieces of litter with a piece of litter almost always within eyesight. Litter is particularly evident in areas of Locke par where obstructions protrude into the creek and in the more stagnant area just prior to University Ave.
Locke Park Zone Rating
(1 being this zone readily offered this experience 5 being it did not)

Use Equipment: (2) This stretch required me to utilize the kayak to near full potential. That is to say, I relied heavily on the performance of the kayak and oar while navigating this stretch of the creek.

Achievement: (2) This stretch was both exciting and challenging. While it is not exceedingly difficult, it commanded my full attention and provided me with a great sense of accomplishment upon completion.

Enjoy Nature: (3) This stretch is very secluded especially when considering the location relative to the urban/suburban setting. Manmade structures and the presence of trash hinder this experience.

Learning: (4) I learned nothing beyond getting some additional practice with the kayak.

Physical Fitness: (3) This stretch was not exceptionally straining but did require me to exert myself periodically in order to continue down the creek. The short duration (approx 2 hrs) left me slightly fatigued. Much of this fatigue was due to the portage.

Risk Taking: (2) The lack of pull outs required me to assume a good deal of risk. There were areas of low lying branches as well as areas of floating debris and emerging rocks. Abrupt turns made it difficult to calculate my next move. The presence of trash made me question the safety of the area in and around the creek. More wild paddling experience this zone reminded me of taking a Sunday drive around the neighborhood. The problem is that you can not pull out of the creek and are stuck on it tell you come to the landing at Manomin Park.

West Anoka Zone Narrative
This zone ran form University Ave. in the East to the west end of Locke Lake. Although we have We have distinguished this stretch from the Locke park zone, it was unclear as to where one would access the creek at this point unless they embarked further upstream as we did. Shortly after passing under University Ave. we came to an area of high residential density. Houses lined either side of the creek and most had manicured lawns directly abutting the shoreline. Certainly the presence of homes is a dramatic change from the more natural setting observed in the Locke Park zone but that is not to say the experience was less serene and relaxing. Stream flow in this section was very gradual and no major obstructions were observed. I merely steered my kayak as I observed the various houses and accompanying landscapes.

The continuous stretch of housing meant that pulling out would require me to enter someone’s backyard (at least what appears to be their backyard). As such, I was stuck on the creek until reaching East River Rd. at Manomin Park.
West Anoka Zone Rating

Use equipment: (4) This stretch of the creek was more of a float than anything else. It’s as if I was tubing down the river and my equipment didn’t matter at all that much.

Achievement: (4) For me, the sense of accomplishment came from the zone prior to this one (Locke) and this was more of a cool down. It was not difficult and I did not feel a sense of accomplishment until the last leg of the journey across Locke lake.

Enjoy Nature: (3) Although this stretch of the creek is highly developed I still enjoyed the natural surroundings. It was very calm and I was able to appreciate the natural setting of the creek amongst the development on the periphery. The slower pace of the creek in this stretch also allowed me to observe birds and squirrels along the creek. This area was also very clean as not much trash was visible.

Learning: (4) There is not much for one to learn on this stretch but there is more of an opportunity to appreciate the surroundings and observe animals.

Physical fitness: (4) Navigating this stretch required minimal physical involvement until reaching the flat-waters of Locke Lake.

Risk taking: (3) The transition from Locke Zone to West Anoka required us to shoot through a narrow corridor under University Avenue. This was rather intimidating but negotiable. Beyond that there was no real sense of risk until pulling out near the dam at Locke Lake.

Locke Lake to Mississippi River

Unfortunately, this stretch of creek was not navigable in its current state. By the time an access point from which to safely launch is reached, only a short journey remains before reaching the river.
Appendix G: Recreational User Survey Results (N=62)

1. Please select the age range you belong to

   Under 20 ______ 0
   21-30 _______ 3
   31-40 _________ 7
   41-50 __________ 13
   51-60 __________ 25
   61 and older _______ 14

2. Which of the following activities do you routinely partake in? (Check all that apply)

   Canoeing ____________ 54
   Kayaking ______________ 23
   Fishing ________________ 16
   Birding ________________ 18
   Biking __________________ 41
   Hiking/Walking __________ 57
   Other (please specify) ___________ Cross country Skiing (4), roller skiing

3. Are you currently aware of the recreational opportunities on Rice Creek water trail?

   Yes ______ 48
   No _______ 14

4. Which of the following activities would you like to engage in on Rice Creek Water Trail?

   Canoeing ______________________ 54
   Kayaking ______________________ 24
   Fishing _________________________ 9
   Birding _________________________ 10
   Biking __________________________ 21
   Hiking/Walking ____________________ 31
   I am unfamiliar with Rice Creek ______ 6
   Other (please specify) _______________ Running, roller skiing

5. On a scale from 1 to 5 what level of seclusion do you look for in your outdoor experience

   1 being a back country experience and 5 being a city park experience

   Backcountry ________ 20
   Rank 2 ____________ 18
   Rank 3 ____________ 19
   Rank 4 ____________ 4
   City park __________ 1
Recreational User Survey Results Continued

6. What services do you think are important for counties to provide for your enjoyment of an urban water trail?

**Table 1:** Rankings of services on a water trail (n=62)

<table>
<thead>
<tr>
<th>Service</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Unimportant</th>
<th>Very Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picnic/rest areas</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Historical Info Markers</td>
<td>1</td>
<td>13</td>
<td>10</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Preplanned trips</td>
<td>3</td>
<td>7</td>
<td>14</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Expanded walking/biking trails</td>
<td>12</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Natural area info</td>
<td>12</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>2</td>
</tr>
</tbody>
</table>

**Other important services:** Safety, toilets/portable toilets, maps, quiet areas and animal refuge, access and pervious surface parking, water level website

7. What attributes of a water trail would most deter you from using it?

**Table 2:** Rankings of attributes deterring recreational experience (n=62)

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Highly Undesirable</th>
<th>Undesirable</th>
<th>Somewhat a problem</th>
<th>Not a problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Sports on Lakes (Jet skis, water skiing)</td>
<td>37</td>
<td>9</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Fishing</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Remote sections of Creek</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>Pollution/Litter</td>
<td>20</td>
<td>29</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Weather Uncertainty on Lakes</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>15</td>
</tr>
</tbody>
</table>

**Other:** Low Water Levels, adequate put-in and take-out points

8. What experiences would you like to have on Rice Creek?

**Table 3:** Desired experiences on a water trail (n=62)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Very Important</th>
<th>Important</th>
<th>Neutral</th>
<th>Unimportant</th>
<th>Very Unimportant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Equipment</td>
<td>7</td>
<td>7</td>
<td>13</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Achievement</td>
<td>4</td>
<td>4</td>
<td>23</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>Enjoy Nature</td>
<td>34</td>
<td>20</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Learn from Nature</td>
<td>10</td>
<td>23</td>
<td>8</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Physical Fitness</td>
<td>23</td>
<td>22</td>
<td>7</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Risk Taking</td>
<td>1</td>
<td>6</td>
<td>12</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>
Recreational User Survey Results Continued

9. If you were to use the water trail, how much time would you be on the water?

<table>
<thead>
<tr>
<th>Time Duration</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 2 hours</td>
<td>22</td>
</tr>
<tr>
<td>Half a day (6 hours)</td>
<td>37</td>
</tr>
<tr>
<td>All day (12 hours)</td>
<td>3</td>
</tr>
</tbody>
</table>

10. Do you have your own equipment or would you need to rent?

<table>
<thead>
<tr>
<th>Equipment Status</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have</td>
<td>57</td>
</tr>
<tr>
<td>Rent</td>
<td>5</td>
</tr>
</tbody>
</table>
# Appendix H: Subzone Typologies

<table>
<thead>
<tr>
<th>Subzone</th>
<th>Access points</th>
<th>Approx. distance</th>
<th>Estimated time involved</th>
<th>Typologies</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subzone 2A From I35W to Boat Landing on Long Lake</td>
<td>Access Points 8-9</td>
<td>3 miles</td>
<td>1 hour</td>
<td>- Outings with Family and Friends - After Work Exercise</td>
<td>Zone two from the entry point eight at US. Hwy 10 to the south end of Long Lake entry point nine, and should take around 60 minutes. This section is characterized by slower flowing flat water through a more developed riparian area. Some of the problems with this section were increased litter as well as manmade hazards such as fencing and concrete. This section has the potential to provide for family outing, after work exercise and weekend escape typologies. This subzone is ideal for novice paddlers.</td>
</tr>
<tr>
<td>Subzone 2B Long Lake Loop</td>
<td>Access point 8</td>
<td>4 Miles</td>
<td>2 Hours</td>
<td>- Outing with Family and Friends - After Work Exercise - Fishing Trip</td>
<td>Zone two the long lake loop is a completely open water paddling experience with one entry point (9) at the boat ramp at the south end of Long Lake and should take any were from one and a half hours to two hours when paddled straight through. Long Lake is a highly developed with lake that has numerous house lots along its shore line. This subzone provides for a variety of typologies including family outings, after work exercise, outing with friends as well as a unique opportunity for the fishing typology. This lake offers anglers the opportunity to peruse a range of fish from northern pike to blue gills. Under calm weather conditions this lake will be suitable for all levels of paddling experience though paddlers should always pay attention to weather condition when on open water.</td>
</tr>
<tr>
<td>Subzone 3A Long Lake to University Ave.</td>
<td>Access 9-13</td>
<td>5 Miles</td>
<td>2 hours</td>
<td>- Outing with Family and Friends - After Work Exercise - Fishing Trip - Nature Experience</td>
<td>The subzone from were Rice Creek leaves Long Lake to University Ave. is a departure from the other experiences on the Creek. This subzone is notably faster flowing with many small rapids and downed tree hazards. This subzone meanders through predominantly county owned park land that is well forested though it does have some housing lots on the east end up until Mississippi St. This subzone provides a great opportunity to disappear into nature while still being in the Cities. From access point nine on the south end of Long Lake to access point 13 at University Ave. the trip should take roughly two hours with opportunities to take out at Rice Creek Community Park and Locke Park. This subzone provides for outings with family and friends and after work typologies and should be used by people with intermediate paddling experience.</td>
</tr>
<tr>
<td>Subzone 3B</td>
<td>University Ave. to Locke Lake</td>
<td>Points 13-14</td>
<td>1 Mile</td>
<td>Half hour</td>
<td>- Outing with Family and Friends</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------</td>
<td>--------------</td>
<td>-------</td>
<td>----------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Subzone 3C</td>
<td>Locke Lake to Mississippi</td>
<td>None</td>
<td>500 Yards</td>
<td>N/A</td>
<td>- Outing with Family and Friends</td>
</tr>
</tbody>
</table>

The subzone that runs from University Ave. to Locke Lake is a slow flowing meandering creek experience that runs through low-density housing. The home owners along this subzone have rip-rap for the Creek bank and manicured lawns directly abutting the rip-rap. From access point thirteen at University Ave. to access point 14 at Locke Lake the trip should take around a half hour. This section is good for quick family and friend outings as well as for exercising and is usable by novice paddlers.

The final subzone runs from Locke Lake to the Mississippi and run roughly 500yds. This subzone is fast flowing and has step banks that are a deterrent to reentering the Creek; as such this sub-zone does not provide for any of the recreation typologies that are have been highlighted for the rest of the Creek. Two features of this site does provide for recreation benefits one is the Banfill-Locke historic house and fishing at the confluence of Rice Creek and the Mississippi.