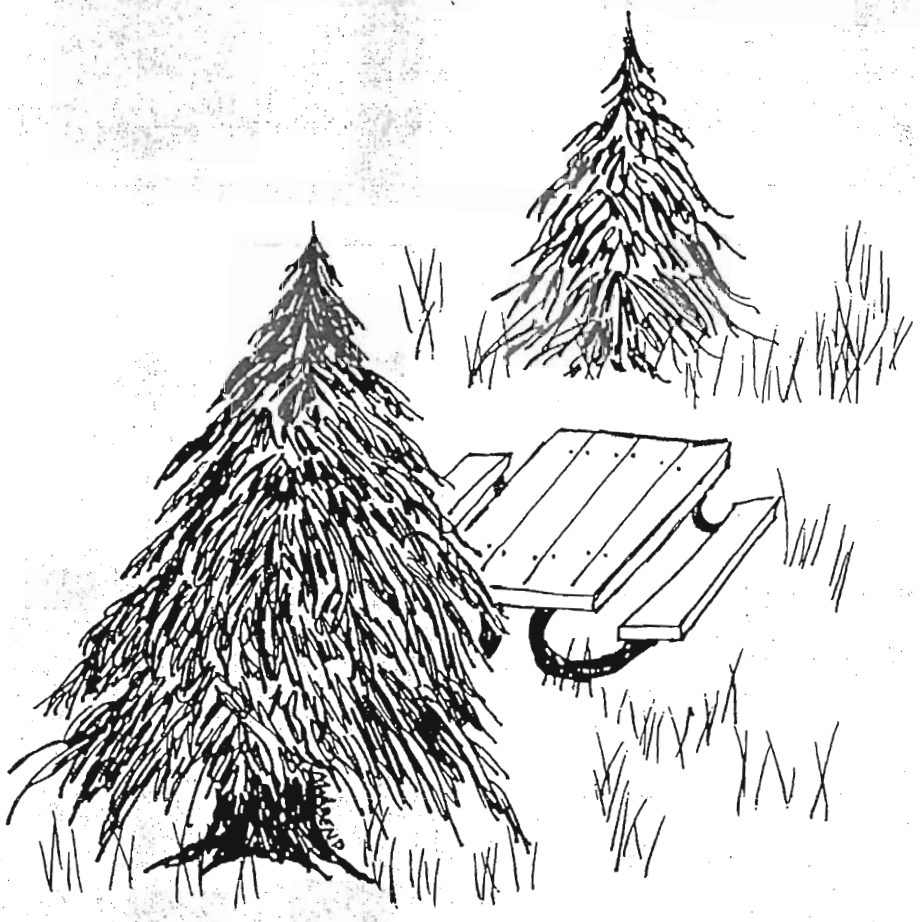
MMAP

MIDWEST MANAGEMENT AND PLANNING



A VISION FOR BOONE COUNTY FAIRGROUNDS

2000

Midwest Management and Planning Inc.

"We will MMAP out your future!"

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Midwest Management and Planning, Inc.

Mission:

The mission of the Midwest Management and Planning agency is to protect and to enhance the resources of a community while providing recreational opportunities for citizens of the community.

Vision:

The vision that Midwest Management and Planning has of the Boone County Fairgrounds is for the area to become a place where both children and adults alike can go for a wide variety of year round recreational activities. We wish to provide recreational opportunities for all people of different age, social, and economic classes for generations to come.

INTRODUCTION

This plan originated when the Boone County Commission purchased the Boone County Fairgrounds in Boone County, Missouri. The goal of the Commission was to make the fairgrounds into a resource that the citizens of the county could use and benefit from. This plan reflects Midwest Management and Planning's (MMAP) efforts for the development and management of Boone County Fairgrounds. The planning process included the history of the site and an inventory of all resources and facilities found at the fairgrounds.

Before decisions could be made about how the fairgrounds should be developed a complete understanding of the issues that may affect the fairgrounds and Boone County as a whole were identified. Goals addressing the needs of the county that are expressed in these issues were also developed. Once MMAP had decided on goals for the fairgrounds, we could then create a set of objectives dealing with these goals. Detailed strategies were then produced to achieve the objectives. The result of this process reflects a comprehensive plan for the development of the Boone County Fairgrounds into a resource that can benefit all of Boone County. Details of the plan are presented in this document in two components: the strategic plan and the operational plan.

STRATEGIC PLAN

This section of the plan contains the history of the Boone County Fairground site, a complete inventory of all natural features found on the site, a discussion of issues affecting the management of the fairgrounds, and statements of MMAP's goal's for the fairgrounds. The inventory includes an assessment of the structures, soils, watershed, the plant community, and the animal communities currently found at the fairgrounds. This portion of the plan deals with demographic, recreational, and environmental issues and develops goals for addressing these issues.

History

The Boone County Fairgrounds, located in Boone County, Missouri, occur in the midlatitude deciduous forest biome and is part of the eastern prairie forest transition. This transition is located between tallgrass prairie to the west and forested prairie-savannas and forest systems to the east. The land is characterized as rolling to hilly and its parent material consists of loess and glacial till. As settlers moved westward, pre-settlement vegetation was cleared for row crops and grazing pasture, and by 1875 the land was used almost extensively for farming and raising livestock (Edwards Brothers of Missouri 1875). Wagon roads bordered the land on the west and the Wabash Railroad bordered it on the east (Edwards Brothers of Missouri 1875). The land was divided between different owners up until its operation as an airport.

The E. W. "Cotton" Woods Memorial airport was constructed on the site in 1952. The airport operated until 1959 (Boone County Recorder of Deeds 2000), when it could no longer meet FFA requirements for runway length. The Boone County Agricultural and

Mechanical Society purchased the land from the Vicky Shy Realtors in 1991 to relocate the Boone County Fair from its original location at Clinkscales and Ash streets in Columbia. The Boone County Agricultural and Mechanical Society owned and operated the fairgrounds until 1999, when it requested a buyout from the county in order to recover some of the debts it accrued while operating the fair there since 1991(Boone County Recorder of Deeds 2000).

In October 1999 the Boone County Commission voted to purchase 134 acres of the original 230-acre fairgrounds for 2.4 million dollars. Soon after that, Columbia businessman Tom Atkins bought an 80-acre portion on the north side of the tract from FJ and Loretta Caudle. The Caudles had possessed the tract since 1982 when they purchased it from Aero Industrial Enterprises, Inc. Soon after Atkins purchased this tract, the Boone County Commission acquired it. The fairgrounds border other county-owned land to the west and are just across US Highway 63 from the Boone County Jail and Juvenile Justice Center. The majority of the land is zoned for residential use, while 65 acres have special use restrictions (Boone County Recorder of Deeds 2000).

Site Inventory

Fairgrounds Location:

The Boone County Fairgrounds is located in Boone County, Missouri just north of the City of Columbia. It is positioned along Highway 63 exactly three miles north of the Interstate 70 and Highway 63 junction. The fairgrounds can be accessed via the Oakland Gravel Road and Prathersville road exits. The property consists of 425 acres and is split into two sections. The lower section is a 357-acre tract that is divided by Highway 63. The 68-acre Ridenhour tract is separated from the rest of the Fairgrounds property and is

1/8 of a mile north of the rest of the property on Oakland Gravel Road. An aerial photo (Appendix A) and topographic map (Appendix B) of the Boone County Fairgrounds has been provided.

Structure Analysis:

Boone County Fairgrounds has twenty functional structures. Almost all structures are equipped with electric and water utilities and most of the structures have a concrete or soil mix base. All of the closed structures have aluminum siding. The concession stands and restrooms are the only structures that do not have steel support beams. Every other structure has wood and steel supports.

The largest structure on Boone County Fairground property is the Coliseum. This building has a large Multipurpose Room that is 22,000 square feet. The Multipurpose Room is a closed structure with a roof and concrete base. This room is a large open space that can be used for many different activities and programs. Behind the Multipurpose room is an Arena that is 66,000 square feet. This includes the concrete area with bleachers that surrounds the 235' by 115' Heated Dirt Arena. The Arena is also capable of hosting various types of activities.

Other closed structures on the property are restrooms, a shower house, concession stands, a shop, and the original hanger building. Refer to Appendix B for a map of all structures on the Fairground property. Refer to Appendix C for a list of the structures and their exact measurements.

Many of the open structures on the property are barns. There are four horse barns, and separate open structures for cows, hogs and sheep. A range of private groups sponser other open structures. For example one of the larger open structures is run by the 4-H

Foundation. The largest open structure is called the Grandstands. This is an area with a great deal of potential because there are huge bleachers for seating, and fixtures for stadium lighting.

Fauna Analysis:

The Missouri GAP analysis was used for determining the species found on the Boone County Fairgrounds. The GAP analysis is a comprehensive list of mammals, reptiles, amphibians, and birds that are found in a given area. The fairgrounds are located in Township 49, Range 12, in Sections 19, 20, 30, and 29. It is important to note that not all species listed for an area are always found there. Many species are seasonal or use the area as a travel corridor. Numbers given in the GAP analysis represent the frequency of an occurrence. The larger numbers represent the higher frequency of an occurrence, while the smaller numbers represent a lesser frequency of an occurrence (MO GAP Analysis 1999).

Mammals:

Mammals found on the Boone County Fairgrounds are listed in Appendix D. They are typical species of Ozark borderlands comprised mainly of pasture, suburban landscape, and small stream woodlots. Most of the species are small mammals like mice, voles, and other rodents. There were also ten different species of bats that could be found on the property. Several species of note, including the Least Weasel, Meadow Vole, and both Indiana and Gray Bats (Federally Endangered) are perhaps found on the fairgrounds.

Birds:

Over 100 species of birds could be found on the Boone County Fairgrounds and are listed in Appendix E. Several species of note include the Sharp Shinned Hawk,

Shinned Hawk, Cooper's Hawk, Bewick's Wren, and the Henslow's sparrow. These species are all listed as "State Rare" or on the Federal Watch list.

Reptiles:

The reptiles found on the Boone County Fairgrounds are listed in Appendix F. Twenty-six species of snakes are possibly found on the property along with various species of lizards and turtles.

Amphibians:

Amphibians found on the fairgrounds are listed in Appendix G. Most of the amphibians found are associated with Bear Creek. Ten species of frogs and four salamanders are among the amphibians found on the Boone County Fairgrounds.

Fish:

On March 2, 2000 fish were sampled in Bear Creek from 3:30 to 4:00 p.m. The seine used to sample the fish had a 1/8" mesh and was 4'x 6'. Four different fish species were found which include: Green Sunfish (*Lepomis cyanellus*), Orangethroat Darter (*Etheostoma spectabile*), Redfin Shiner (*Etheostoma nigrum*), and Johnny Darter (*Lythrurus umbratilis*), (Appendix H, Table 1). Other species of fish that were not found that day may appear in Bear Creek according to Pflieger (1997) (see Appendix H, Table 2).

Invertebrates:

Invertebrates were sampled from three different locations (Appendix I) on March 12, 2000 between 1:00 p.m. and 2:00 p.m. and on March 13, 2000 at 4:30 p.m. Locations of these samples were above upper lagoon (Site 1 Appendix I), at discharge of upper lagoon (Site 3 Appendix I), and below western service bridge (Site 5 Appendix I).

Samples taken above and far below the lagoons were found to have a higher diversity than the sample taken at the discharge of upper lagoon. The sample below the western service bridge, below the lagoons, contained species of invertebrates that were intolerant to poor water quality conditions. This indicated that this area had good water quality by the presence of these species. The other two samples contained species that were tolerant to a variety of conditions. The list of invertebrates sampled is located in Appendix J.

Aquatic Analysis:

Stream Characteristics:

Boone County lies in the Prairie Faunal Region of Missouri and it borders the Ozark Faunal Region. Because of its location streams in Boone County represent the characteristics of both regions. The characteristics of the Prairie Faunal Region include broad, flat, gradually sloping valleys with sand, silt and gravel substrate. The flow of the streams are less constant in this region, unlike other regions of the state. There are also much of erosion of the clay and other fine-textured soils, which contributes to the high turbidity of the waters. Due to turbidity there is little aquatic vegetation, but in rockier bottoms some plants such as water willow occurs (Pflieger 1997).

The Ozark Faunal Region includes steep sided valleys and sometimes limestone bluffs that can be 150 feet in height. The stream bottom consists of chert gravel, rubble and bedrock, and occasionally limestone boulders that have fallen away. These streams have constant flow, cool water, and are clear due to filtering from the chert gravel. As a result of low turbidity the streams have an abundant plant community (Pflieger 1997).

Stream orders are a branching pattern that categorizes bodies of water from the headwater streams to the main river. Headwater streams are designated an order of one

and each subsequent intersecting stream is assigned a larger number as they progress to the river. Bear Creek is a headwater stream, which is characterized by small size, cold water, high gradients, a low diversity of fish species and an evolving community of invertebrates as the stream progresses (Moyle 1996).

Water Quality Analysis:

Water samples were taken from Bear Creek at the Boone County Fairgrounds on March 12, 2000 between 1:00 p.m. and 2:00 p.m. and on March 13, 2000 at 4:30 p.m. Samples were obtained from five different sites: above the upper lagoon (Site 1 Appendix I), at break in dam of upper lagoon (Site 2 Appendix I), at discharge of upper lagoon (Site 3 Appendix I), below all three lagoons (Site 4 Appendix I), and below western service bridge (Site 5 Appendix I). On each day of testing dissolved oxygen and temperature readings were taken on site. All samples were tested at Columbia Environmental Research Center on March 15, 2000. Samples were tested for conductivity, pH, alkalinity, hardness, ammonia, and turbidity (Appendix K). The results indicated that for this area all data appeared to be within standards with the exception of one area, the break in dam of upper lagoon. For this area the ammonia, turbidity, and hardness levels were elevated. A possible reason for the readings is high calcium levels and/or anoxic water conditions (Jones 2000).

Watershed:

The Boone County Fairgrounds are located within the drainage of Bear Creek, a tributary to Perche Creek in Boone County (Appendix L). The section of Bear Creek that flows through the fairgrounds is third order and runs north-south through the eastern side of the fairgrounds. The stream has been channelized along the southeastern edge of the

fairgrounds, which has lead directly to the steepening of the stream banks and increased erosion. The watershed drains land that is either agriculture (grazing pasture) or urban (residential, highways, and the fairgrounds). Four ponds are also found within the watershed of the fairgrounds.

Soils:

Soil definitions and descriptions for the Boone County Fairgrounds are from the 2000 Missouri Digital Soil Survey (http://www.cares.missouri.edu/soils/index.html). A map of soil distributions on the property is found in Appendix M.

MoB—Mexico silt loam, eroded. Has 2 to 5 percent slopes. This soil is on high upland divides and wide, gently undulating ridgetops. Areas of this soil are irregularly shaped and range from about 7 to 120 acres in size. Included with this soil in mapping are small areas of moderately well drained Gara and Armstrong loams in spots and narrow bands along the outer edges of the mapped areas. Also included are a few small areas of the well drained Lindley loam and moderately well drained Keswick loam. In some small depressions are areas of poorly drained soils that have profiles similar to those of Mexico soils. Runoff is medium, and the hazard of erosion is moderate. The main concerns of management are removing excess water, controlling erosion, and improving tilth and fertility. The use of terraces, diversions, underground outlets, and grassed waterways help in the removal of excess surface water and the control of erosion. Contour farming, minimum tillage practices, conservation cropping sequences, and use of cover crops also help to control erosion. The return of crop residue to the soil and the use of green manure crops help to improve tilth. Timing plowing, planting, and harvesting operations to

concur with optimum soil moisture condition is extremely helpful in maintaining good tilth.

This soil is suited to intensive cropping if the excess water is removed and erosion is controlled. Areas used for pasture need good management in order to establish high quality forage and prevent overgrazing. Excessive compaction of the soil by livestock during periods of wetness is a concern. This soil has moderate to severe limitations for urban uses and recreational development. Suitability as habitat for open land and woodland wildlife is good. Capability unit IIe-5.

Kec-Keswick silt loam, eroded. Consists of deep, moderately well drained, moderately sloping to strongly sloping soils on uplands. These soils formed in a very thin mantle of loess and the underlying old glacial till. The native vegetation is deciduous trees.

In a representative profile the surface layer is very dark grayish brown loam about 5 inches thick. The subsurface layer is brown loam about 5 inches thick. The upper part of the subsoil is reddish brown and yellowish red firm clay; the middle part is mottled, yellowish red and grayish brown firm clay; and the lower part, to a depth of 60 inches, is grayish brown, firm clay loam that has yellowish red and yellowish brown mottles. Permeability is slow, and available water capacity is moderate. The shrink-swell potential of the subsoil is high. Most areas of these soils are used for pasture or hay. Some areas have never been cleared and remain wooded. A few areas are cultivated and planted mostly to corn, small grains, and hay. Where they are uneroded, these soils have medium natural fertility, but where they are eroded, fertility is low. Wooded areas are mostly second growth oak and hickory.

Keswick soils are mapped as a complex with the Lindley soils. They are near Hatton,

Mandeville, Men-fro, Norris, and Winfield soils. Keswick soils have a higher clay content in their subsoil and are wetter than the Lindley and Menfro soils. They lack the fragipan below the subsoil that is characteristic of Hatton soils. Keswick soils are deep and lack the underlying shale bedrock within a depth of 40 inches of the Mandeville soils and shallower Norris soils. They have a higher clay content in their subsoil than Winfield soils.

HaC—Hatton silt loam, eroded. 5 to 9 percent slopes. This soil is on the narrow convex tops of high ridges in the uplands. The areas are very long, narrow, and irregularly shaped. They range from about 5 to 160 acres in size. This soil has the profile described as representative of the series. Included with this soil in mapping are small areas of the moderately drained Keswick soils and the well drained Lindley soils. Also included are small spots on the upper parts of slopes in cultivated areas where the silt loam surface layer has been eroded and the silty clay loam upper part of the subsoil is exposed. Runoff is medium, and the hazard of erosion is moderate to severe. The main concerns of management are controlling erosion and improving tilth, fertility, and organic matter content. Most of the areas are too narrow and irregularly shaped for use of terraces to control erosion. Contour farming methods have a limited use in some areas, but cropping sequences that include small grains and hay are probably the most effective means of cropping these soils and keeping erosion to a minimum. Plowing under crop residue, using green manure crops, and using minimum tillage practices help to improve tilth and organic matter content. This soil is not suited to intensive cropping. A better use is for hay and pasture or woodland. Hay and pasture areas need good management to establish a high quality forage cover and prevent overgrazing. The soil has moderate to severe

limitations for urban uses and slight to severe limitations for developing recreational facilities. Suitability as habitat for open land and woodland wildlife is good. Capability unit IIIe-4.

LeD-Leonard silt loam, eroded. This soil is gently sloping and poorly drained. They are on upland side slopes and at the head of drainageways. Typically, the surface layer is very dark grayish brown, firm silty clay loam about 6 inches thick. The upper part of the subsoil is dark gray, mottled silty clay. The next part is dark grayish brown and gray, mottled silty clay loam. The lower part is gray and grayish brown, mottled clay loam.

WeC—Weller silt loam, 5 to 9 percent slopes. This soil is on very narrow tops and sides of ridges in the uplands. Areas of this soil are irregularly shaped and range from about 3 to 230 acres in size. Included with this soil in mapping are small areas of well drained Lindley loam and moderately well drained Armstrong, Gara, and Keswick loams. These glacial till soils are on side slopes below areas of Weller soils. They are in small spots and narrow bands along the lower boundaries of this soil. Also included are a few small areas of somewhat poorly drained Pershing silt loam. Along the upper parts of the side slopes and on the narrow ridgetops, small areas of moderately well drained Winfield and Ladoga silt loams are included. Where the lower boundaries of this soil border major drainageways and stream bottoms, a few small areas of poorly drained Bremer silt loam and moderately well drained Fatima silt loam are also included. Runoff is medium, and the hazard of erosion is moderate to severe. The main concerns of management are controlling erosion and improving the tilth and fertility. Terraces, diversions, grassed waterways, conservation cropping sequences, contour farming, strip-cropping, minimum tillage, and cover crops help control erosion. The return of crop residue to the soil and use

of green manure crops help to improve tilth. This soil is suited to crops if erosion is controlled. Many areas are in pasture, and good management is needed to establish high quality forage and prevent overgrazing. This soil has slight to severe limitations for urban uses or recreational development. Suitability as habitat for open land or woodland wildlife is fair. Capability unit IIIe-5.

AuD—Auxvasse silt loam. This level and nearly level soil is on high terraces of streams. It occurs only along the major streams in irregularly shaped areas about 5 to 10 acres in size. Runoff is slow. Wetness is a severe limitation. Land grading or land smoothing help to remove excess water. This soil is suited to crops commonly grown in the survey area. Because areas of this soil are small and are not easily accessible to machinery, some areas are in permanent pasture. Capability unit IIIw-2.

MoC/D—Moniteau silt loam. This level to nearly level soil is on low benches and in narrow valleys of streams. It is in irregularly shaped areas about 10 to 50 acres in size. Included with this soil in mapping are areas of Piopolis and Arbela soils. These areas make up about 10 percent of the mapped acreage. Runoff is slow. Wetness is a severe limitation because of flooding. Building levees to protect the soil from flooding is generally not practical, because areas are small. Some areas of this soil are used for corn and soybeans, but other areas are used mainly for pasture because they are very irregular in shape and are subject to frequent flooding. Some areas are in woodland. Capability unit IIIw-2.

HaB—Haymond silt loam. This soil is frequently flooded and lies in stream valleys. It has a minimum slope of 0 percent and a maximum slope of 3 percent.

Forest Analysis:

A group from MMAP took an inventory of the tree species that are found on the Boone County Fairgrounds. We found that there was a wide variety of tree species that occur on the fairgrounds, see to Appendix N. The majority of the species are in the oak genus Quercus. There is some pine, cedar, and ash with sycamore occurring along the creeks that border the site. On the Atkins and Newton tracts we found that mostly cedar and weedy shrubs occur with a few old field species such as Honeylocust (*Gleditsia triacanthos*), Black Locust (*Robinia pseudoacacia*), and White Oak (*Quercus alba*). We also found the site to be undesirable for massive forestation, and what trees are present are not of good quality veneer logs or lumber logs, however, some could be used for staves.

2000). The total population of Missouri rose by 6.9% between 1990 and 1998 (U.S. Census Bureau 2000).

In Boone County the population was 112,379 in 1990 with 17,441 (15.5%) being in the 5-17 year age range and about 24,000 being in the 45 year age range (Boone County Master Plan 1999). In 1999 the population of Boone County was 128,700 with about 28,000 in the 5-19 year age range and about 30,000 in the 45-year age range (Office of Social and Economic Data Analysis 1999). These two age ranges combined make up the majority of the Boone County population (Office of Social and Economic Data Analysis 1999). According to the Boone County master plan, the population is expected to grow to 146,150 by 2015. Reasoning for the growth is because of higher births than deaths and more people coming into the county than are leaving (Boone County Master Plan 1999). The increase of the 45-year age range is attributable to the baby boomers.

Boone County is also among the list of counties that have the highest median household income (Office of Social and Economic Data Analysis 1999). These data may lead to the conclusion that Boone County has the wealth to aid in paying for the additional recreational facilities and services.

Because of these population trends that are occurring and are expected to occur in Boone County, it seems that there will be a lack of various facilities to accommodate the increase in the two highest population segments i.e. 5-17 year old and 45 year age groups. Due to the latest property purchases made by Boone County of the fairgrounds and some adjoining areas, land has become available to perhaps relieve this pressure. Boone County is now in a position to use the newly acquired property to build various

recreational facilities focused on these two age groups and the rest of the citizens of Boone County.

Additionally, future recreational development of the fairground property will provide many economic benefits to Boone County.

Goal 1: To further monitor population changes and trends of Boone County and to manage Boone County Fairgrounds accordingly.

Issue 2:

Nationwide people want to spend more time on recreational activities as use of such facilities is increasing (Department of Natural Resources 1996). There is a lack of facilities to handle all of the public's different recreational wants and needs.

This pattern is also seen in the state of Missouri. More people want to use, and require a variety of recreational facilities. According to the Statewide Comprehensive Outdoor Recreation Plan (Department of Natural Resources 1996) the most important issue was expanding and improving recreational facilities. Also on the list were addressing the needs of senior citizens, youths, and person's with disabilities.

Boone County is one of the fastest growing populations in the state and people want to use recreational facilities (Department of Natural Resources 1996 and Boone County Master Plan 1999). The population is growing around the city of Columbia and the people feel that there is a shortage of recreational facilities. Majority of people in the county would use facilities at the fairgrounds and be willing to pay to use certain types of facilities (Bhullar 1999, Boone County Fairground Survey). There are certain types of facilities that people feel the area needs the most or would be most likely to use and support. These include but are not limited to an ice-skating rink, indoor aquatics center,

This pattern is also seen in the state of Missouri. More people want to use, and require a variety of recreational facilities. According to the 1996 Missouri Statewide Comprehensive Outdoor Recreational Plan, the most important recreational issues now and in the future are expanding and improving recreational facilities and addressing the needs of senior citizens, youths, and person's with disabilities. In addition it was seen that there was a high demand for certain types of activities. The most important activities in Missouri are walking, fishing, hiking, swimming, and sports (Department of Natural Resources 1996).

Boone County is one of the fastest growing populations in the state of Missouri (Department of Natural Resources 1996, Boone County Master Plan 1999). According to the Boone County Master Plan availability of recreational facilities is an important issue to the residents of Boone County. A majority of people in the county would use facilities at the fairgrounds and be willing to pay to use certain types of facilities (Bhullar 1999, Boone County Fairground Survey). There are certain types of facilities that people feel the area needs the most or would be most likely to use and support. These include but are not limited to an ice-skating rink, indoor aquatics center, recreation/community center, a water park, trails, multipurpose athletic fields, and golf course. The proposed construction of the Columbia Community Recreation Center would address some of the indoor recreational needs of the county (Columbia Parks and Recreation Community Center Plan 1999). However, there is still a lack of outdoor facilities according to the Diamond Council of Columbia, Inc. They state that there is a lack of facilities for youth baseball and softball and that the fairgrounds would be a good location for additional facilities. Henage (2000) the Columbia Public Schools Athletic Director said there is a

high demand for sport facilities in the county. Because successful parks need to be attractive and easily accessible (Gavin 1999) the fairgrounds make a good site to provide recreational opportunities. In addition a major concern in creating parks is the availability of land near populations (Gavin 1999, Gillespie 1983, Richwine 1999). Since the fairgrounds is already in public ownership it provides a great opportunity to provide recreational facilities that the entire county is willing to use (Bhullar 1999, Boone County Fairground Survey).

Goal 2: To develop the Boone County Fairgrounds for the provision of recreational facilities, programs, and services for citizens of Boone County

Issue 3:

World's human population is increasing at an alarming rate, putting an ever-increasing demand on our natural resources. Since 1920, human population has increased from about 1.65 billion to 6.23 billion and is expected to reach approximately 10 billion within the next fifty years (United Nations 2000). The increased population has, in turn, led to increased urbanization. Urbanization has created a major demand on our natural resources, causing water quality to diminish and forests to be destroyed as concrete and asphalt replace natural soils and vegetation (Braun and Wood 1999, Yung 1998). Additionally, urbanization leads to high stress in humans (Pickering et al. 1996), which perhaps can be lessened by the addition of green space in our urban environments. It is necessary to realize that as population increases around the world, it is having an effect on our states and communities. According to the United States Census Bureau (2000) resident population growth can be detrimental to the natural habitats that exist in

Missouri. Simply by looking around, one can see many areas of green space becoming developed land for people to live on. The U.S. Census Bureau (2000) also makes projections that show population growth. By increasing awareness of the value of green space, we may at least be able to limit some of the negative effects of the increasing population. It is imperative that as we continue developing natural areas into urban, we leave certain areas undeveloped.

The development of the city of Columbia provides a medium for concerns about residential development encroaching on farmland and other open areas of Boone County. The Community Structure Plan developed by the city of Columbia-Department of Planning and Development (1999) includes areas outside the city limits as a part of their "leapfrogging" development. Columbia's population is expected to increase to 132,000 persons by 2020 (an increase of 52,968 persons). The city's development plan also projected that 16,432 new housing units will be constructed by 2020. The city planners hope to expand Columbia's area by approximately 5,600 acres (Columbia Parks and Recreation Master Plan 1999). This land acquired will accommodate residential, office, commercial, and industrial uses. Currently, the surrounding undeveloped areas rely on centralized sewer systems to provide treatment of household waste. Urbanization of these areas will add stress on the local watersheds and the environment in general. The discharge from the sewer systems will drain directly or indirectly into the area creeks exposing the newly expanded community to poor water quality and health hazards.

Columbia and other Boone County cities are growing in population and size at an overwhelming rate, much like the rest of the world. Columbia's expected size is sure to put a major stress on the county's floral and faunal resources. Likewise, the water quality

of Boone County is likely to suffer the same fate. The Boone County Fairgrounds offer an important opportunity to protect the natural resources on the fairgrounds that would otherwise be destroyed by urban sprawl.

Goal 3: To manage the Boone County Fairgrounds in order to develop and maintain natural areas and green space.

OPERATIONAL PLAN

The operational plan was developed using the goals that were formulated in the strategic plan. Each goal was further defined by developing a series of objectives to address it. Detailed strategies were produced to deal with each of the objectives. A budget was developed for each strategy. These strategies layout the process that will be used to achieve the objectives and goals that MMAP has developed for the Boone County Fairgrounds.

Goal 1: To further monitor population changes and trends of Boone County and to manage Boone County Fairgrounds accordingly.

Objective 1.1: To conduct public hearings at Boone County Fairgrounds coliseum to allow for public input in the management of the fairgrounds.

Strategy 1.1.1: Public hearings at Boone County Fairgrounds coliseum will be held once a week for a month. These hearings will be conducted by the County Commission and announced through TV, community calendar and radio announcements as well as newspapers.

Outcome 1.1.1.1: Public information and ideas from the county residents will be obtained.

Objective1.2: To dispense suggestion cards at the Nature Center to have continuous information from the public concerning the center.

Strategy 1.2.1: Suggestion cards will be made available at the front desk of the Nature Center. Visitors will be asked questions concerning their satisfaction and

opinions of the Nature Center as well as any ideas on how to improve the Nature Center.

Outcome 1.2.1.1: This will aid in monitoring public opinions towards the nature center.

Objective 1.3: To conduct periodic public surveys to monitor socio/demographic changes and recreation participation of Boone County Residents.

Strategy 1.3.1: Design and distribute a public survey pertaining to Boone County Fairgrounds management. This survey will be conducted after the first year of completion and every five years thereafter. This survey will be statistically designed and distributed to appropriate sample size.

Outcome 1.3.1.1: Updated and current information of Boone County residents will be made available.

Budget: The budget for a public survey will be approximately between $20,000 and $25,000.

Goal 2: To develop the Boone County Fairgrounds for the provision of recreational facilities, programs, and services for citizens of Boone County.

Objective 2.1: To develop environmentally oriented recreational and educational facilities for the citizens of Boone County at the Boone County fairgrounds.

Strategy 2.1.1: Build a nature center at the Boone County Fairgrounds. Construction will begin with location 1 (see Appendix O). Construction of the nature center will begin in the spring of 2001. The center will begin in the spring of 2001. The center will include auditorium,

gallary, exhibit room, specialized class rooms, and a lobby. Examples of modern nature centers are the Runge Nature Center and the Springfield Nature Center. The floor-plans for these centers are shown in Appendix P and Q, and could be used as a model for the Boone County Nature Center. The center will meet all codes and be handicapped accessible. Parking will be provided for both personal vehicles and for busses/ recreational vehicles and for a large number of busses will be provided. A picnic area next to the nature center will also be provided. The finished layout with landscaping, parking and picnic area is shown in Appendix R. Completion of the center is estimated for the fall of 2003.

Outcome 2.1.1.1: The outcome for this strategy would be that a modern nature center will be constructed to provide the citizens of Boone County with an environmental oriented facility by the fall of 2003.

Budget: Estimated cost of the construction of the Boone County Nature Center is 1,000,000 and shown in Appendix U.

Strategy 2.1.2: Construct a trail system (see Appendix O). Trail construction will be done "in house" and will begin in the summer of 2001. Trails will begin at the nature center and run through the various habitats on the property. All trails will be graveled, except for the ADA compliant trail which will be 10 feet wide, and all other trails will be 8 feet in width. Stop stations will be constructed along the trails at various points of interest. The trail locations are shown with lengths in Appendix O. The estimated completion of the system is the spring of 2002.

Outcome 2.1.2.1: A constructed trail system providing the citizens of Boone County with environmental based recreation will be completed in spring of 2002.

Budget: Construction costs of trail sytem are estimated at 180,000 dollars and shown in Appendix U. Costs may be shared with Department of Natural Resources through a grant program.

Strategy 2.1.3: Produce a Boone County Nature Center brochure. Brochure will include a map of the trail system, features of the nature center, and a schedule of events. An example of the brochure is located in Appendix S.

Outcome 2.1.3.1: To provide a map for visitors to follow and to aid in their enjoyment of the center.

Budget: The budget of the production and development of a brochure would be $5,000 initial cost, with a smaller costs for reproduction.

Objective 2.2: To provide Boone County Citizens with facilities and services that address recreational sports needs at the Boone County Fairgrounds.

Strategy 2.2.1: A baseball and softball complex will be constructed on the Rednour tract (location 2 in Appendix O) of the Boone County Fairgrounds. This facility will consist of a complex of four baseball and softball fields, a concession stand with bathrooms, and a pavilion. The baseball and softball fields with lights, dugouts, and bleachers will be built on the north end of the property at positions 1-4 in Appendix T. These fields are capable for hosting tournament play. These fields will be positioned like the spokes of a wheel from each other with paved sidewalks will be built between the

fields. At the center of the four fields the concession stand with water, electric and sewer utilities and the pavilion will be constructed at location 5 in Appendix T. The concession stand will be a lighted 20x30 ft building with 2 10x10 bathrooms, a 10x20 concession area, and a 10x20 storage room. Behind the concession stand a 20x30 pavilion will be built containing six picnic tables. The bid process for construction of all the above will begin March 2001 with all permits and zoning considerations. The grading will begin in September of 2001. Construction of the complex will start in February 2002 with completion date of March 2003.

The facility should be open for use by May 2003.

Outcome 2.2.1.1: A 4-field baseball/softball complex with a concession stand and pavilion will be built on the Boone County Fairgrounds by May 2003.

Budget: The construction of the baseball/softball complex will cost an estimated $1,000,000.

Strategy 2.2.2: A soccer and football complex will be built on the Rednour tract of the Boone County Fairgrounds. This facility will consist of four soccer fields, two youth football fields, concession stand with restrooms and a pavilion. The soccer fields will be at the southern end of the Rednour tract at positions 6-9 in Appendix T. The four fields will be positioned side by side with enough area between the fields for bleachers. To the west of the four soccer fields will be two youth football fields at positions 10-11 in Appendix T. At position 12 in Appendix T, which is north of the soccer and football fields, will be a concession stand and pavilion. The bid process will begin in March 2001 with all permits

and zoning considerations finished and grading to begin by September 2001. Construction will start in February 2002 with completion date of October 2002. Facility should open for use by March 2003.

Outcome 2.2.2.1: A 4-field soccer and 2-field football complex with a concession stand and pavilion will be built on the Rednour tract of the Boone County Fairgrounds by March 2003.

Budget: The Soccer and football complex will cost an estimated $500,000 to build on the Fairgrounds.

Strategy 2.2.3: A parking lot will be built between the baseball/softball complex and the soccer complex on the Rednour tract of the Boone County Fairgrounds. The parking lot will be built at position 13 in Appendix T running east and west and consist of 400 paved parking spaces. The bid process will begin in March 2001 with all permits and zoning considerations finished and grading to begin by September 2001. The construction will start in February 2002 with a completion date of October 2002. The facility should be open for use by January 2003.

Outcome 2.2.3.1: A parking lot containing 400 spaces will be constructed on the Rednour tract of the Boone County Fairgrounds property between the baseball/softball and soccer/football complexes by January 2003.

Budget: Construction of the 400-space parking lot will cost approximately $500,000 on the Rednour tract of the Boone County Fairgrounds.

Strategy 2.2.4: On the Rednour tract of the Boone County Fairgrounds we propose building a playground and two outdoor basketball courts. The facility will

be built to the west of the soccer/football complexes concession stand and pavilion at positions 14-16 in Appendix T. The bid process will begin by March 2001 with all permits and zoning considerations finished and grading to begin by September 2001. The construction will start in June 2002 with a completion date of November 2002. The facility should be open for use by March 2003.

Outcome 2.2.4.1: The completed construction of a playground with outdoor basketball courts at the sports complex on the Rednour tract of the Boone County Fairgrounds are proposed to be completed by March 2003

Budget: The playground and basketball courts will be built with an approximate cost of $85,000.

Strategy 2.2.5: Purchase adjoining 60 acres of land to the immediate west of the Rednour tract of the Boone County Fairgrounds. The future acquisition of this land would allow for expansion of the sports complex in the future if the need arises, in addition to being a good location for the possible construction of a water park, which is another need expressed by the citizens of Boone County.

Outcome 2.2.5.1: Purchase the approximate 60 ares to the west of the Rednour tract in the next five years to expand of the Boone County Fairgrounds by January 2005. It is recommended that costs be part of a joint venture with a private developer and that operation of the concession stand and maintenance of the facility is vended out.

Objective 2.3: To provide the citizens of Boone County with facilities that can be used for community events and programs at the Boone County Fairgrounds.

Strategy 2.3.1: Build an amphitheater at the northeast section of the Fairgrounds (see location 3 in Appendix O). After receiving proper permits, construction will begin in 2001. The amphitheater will seat approximately 300 patrons, including a stage 12 feet in width and 20 feet in length and 10 rows of 10 benches. Construction will be completed by March 2002.

Outcome 2.3.1.1: A completed amphitheater for community, city, and county events to be put into use by all citizens.

Budget: Estimate of cost was obtained from measurements of Pershing State Park amphitheater at Laclede, Missouri and cost of lumber and other materials from Lowes in Columbia, Missouri on March 23, 2000 for a total cost estimate of approximately $2,000.

Strategy 2.3.2: To place the demolition derby track to the new location of the southeast corner of the fairgrounds (see location 4 in Appendix O). This location will need to be leveled and packed. Construction of concrete walls needs to be around new track area and bleachers moved to new location.

Outcome 2.3.2.1: A completed demolition derby track at new location.

Budget: Moving the track will consist of the renting of a bulldozer for a day and the repositioning of the concrete around the track which would be approximately $630 for the bulldozer and operator. This estimate was obtained from Wade & Co. excavating, Columbia, Missouri.

Strategy 2.3.3: Continue programs and events associated with the Boone County Fairgrounds. These would include the continuation of the Boone County Fair and other private and public events such as the Balloon Derby, Missouri Deer Classic, National Antique Tractor Pull, and various horse and dog shows.

Budget: The budget will be paid for by promoters of events.

Goal 3: To manage the Boone County Fairgrounds in order to develop and maintain natural areas and green space.

Objective 3.1: To provide a natural area that protects the natural floral and faunal resources of the Boone County Fairgrounds.

Strategy 3.1.1: To promote annual weed, forb, and native grass production, and enhance wildlife benefits to the area desired (see Appendix O). Use of a prescribed burn to kill 50% of the fescue cool season grass and suppress the regrowth of the fescue. Fire will act as the removal mechanism of the current biomass to enhance the restoration of the annual weed, forb, and native grass prairie. The prescribed burn will be coupled with over-seeding of native floral species, which will increase forage for wildlife species of the area. The prairie will be divided into thirds and two separate fire prescriptions will be made and conducted. Using two separate fire prescriptions, one in the early spring on the northwest and east sections and the other in the fall on the southwest section of the prairie, will kill and suppress the residing fescue cool season grass. The controlled fire followed by over-seeding will aid in creating the proper wildlife

benefits in the prairie restoration area. Additionally, the northwest section of the grassland restoration area will be heavily seeded with native wildflower species to develop a wildflower meadow. This area will be a portion of the prairie, but it will also provide added benefits to the visitors as well as to the wildlife inhabiting the grassland area. The prescribed fire in late February to late May on the northwest and eastern sections of the grassland area and in mid-September to early October on the southwest section should be conducted every three years to reduce biomass buildup that restricts wildlife movement, promote the regeneration of wildlife forage, and control invasive species. The employees of the Boone County Nature Center will carry out the burn with the help of the Missouri Department of Conservation and the University of Missouri-School of Natural Resources educators and students. The required environmental conditions for the burn to take place are a relative humidity of 20-60%, a temperature of 40-65° F., wind speed of 5-15 mph out of the west (possibly east). During the execution of the prescribed burns, the subdivision located to the north of the burn project will be a possible area of smoke hazard. Therefore, residents of that neighborhood and surrounding landowners should be notified of the burn in advance. Within one year of the first burn, over-seeding with native and specific exotic species will conducted. The specific species should be beneficial to wildlife forage and habitat. A manned ATV will do the application of the seeds with a cyclone seeder. Approximately 60 acres will be seeded and approximately 300 pounds of seed will be needed. A vegetation inventory will be taken to determine the results of the burn operation.

The Nature Center's personnel will conduct a random plot survey within one year of each burn.

Outcome 3.1.1.1: An improved wildlife habitat and an establishment of native grasses. It will be a source of excellent aesthetics for visitors and residents of Boone County.

Budget: The budget for this project will be broken up to a total seed cost of $16880.00, labor costing $82.50 for a grand total estimate of $16962.50.

Strategy 3.1.2: Renovate area ponds to provide both fishing and fishless ponds. Renovate ponds 1 and 2 (see Appendix L) from June 2000 through August 2000. The ponds' dams will be breached with a backhoe, and then the ponds will be drained. Ponds 1 and 2 will be dredged with a bulldozer to remove accumulated silt and to ensure a maximum depth of at least 8 feet. The excavated soil will then be used to repair and rebuild the dams. Boone County will provide Labor and equipment. After ponds 1 and 2 have filled, they will be stocked with suitable pond species provided by the Missouri Department of Conservation. Lagoons 1 and 2 (see Appendix L) will be also renovated and left fishless for reptiles and amphibians.

Outcome 3.1.2.1: Quality fishing programs for children and habitat for amphibians and reptiles will be provided.

Strategy 3.1.3: A small wetland will be constructed (see Appendix O) from June 2000 through October 2000. The ground will be scraped with a bulldozer to remove current vegetation and to create 5 different pools. The ground will be

scraped in a manner that allows a varying bottom profile within the pools instead of a homogenous, swimming pool-like bottom. Each pool will have a maximum depth of 5 feet, and their shapes will differ according to their placement in the topography. The pools will be allowed to fill naturally from rain and flood events. Natural colonization of the bare seed banks by aquatic plants will also be allowed.

Outcome 3.1.3.1: A wetland providing essential habitat for wildlife will be constructed.

Strategy 3.1.4: Trees and shrubs planted along the edge of the amphitheater area can reduce the noise level by up to 10 dB (which is approximately a 50 percent reduction in noise intensity). These noise buffers also collect dust from the air, attract all types of birds and reduce harsh winds. A few rows of trees will be sufficient, if the correct species and arrangement is chosen. To start, use tall plants with dense evergreen foliage, such as white pine (Pinus strobus) and plant dense shrubs, such as Viburnum spp. in front of the pines. The foliage from the shrubs will help cloak the tree from the ground up. To further reduce noise, trees will be planted on a 10 ft. x 10 ft. spacing and shrubs on a 5 ft. x 5 ft. A 50-ft.-wide belt of shrubs and trees will be planted parallel to the amphitheater. The outside edge of the planting should be 50 ft. from the amphitheater. Six to eight foot tall shrubs should be placed on the edge closest to the amphitheater and two rows of trees will be placed behind them. The length of the buffer should be double the distance between the amphitheater and grassland area.

Outcome 3.1.4.1: Several rows of trees and shrubs that provide a buffer between the amphitheater and the grassland area will be planted.

Budget 3.1.4.1.1: The budget of this project will be broken up to a total white pine cost of $915.00, *Viburnum* spp. of $1,222.50, and labor cost of $136.00 equaling a grand total of $2,273.50.

Objective 3.2: To provide ample buffering between the urban spread of Columbia and the Boone County Fairgrounds.

Strategy 3.2.1: The Boone County Commission should secure compartments, natural areas, to act as a buffering mechanism against the environmental threats of urban sprawl. As land adjacent to the Boone County Fairgrounds becomes available, the Boone County Commission should make the purchase of the lots. Portions of the Boone County Commission's annual budget will be set aside for land procurement. Land that should be considered occurs in T49N, 12W, sections: 19,18, 21, or 29. These areas should be developed into wildlife refuges. This can be accomplished by restoring the natural habitat as described in the prairie, the wetland, or the riparian restoration strategies. However, sound restoration efforts should be defined by the site limitations and past history of each individual lot. Each lot purchased should be managed accordingly.

Outcome 3.2.1.1: An accumulation of undeveloped tracts of land with the potential of establishing natural habitats or providing recreational resources for Boone County.

Objective 3.3: To protect and preserve the water quality of Bear Creek and connecting drainages in the Boone County Fairgrounds.

Strategy 3.3.1a: Clean refuse from the drainages and main channel of Bear Creek (see Appendix L). Conduct a stream-cleaning project on Bear Creek and its

drainages from September 2000 to October 2000. A crew of 10-20 people will be hired (at a wage of $6.50/hr) to perform the labor. If the Boone County Commission sees it more economically feasible, the crew could be composed of county inmates and criminal offenders sentenced to community service. All trash will be removed from the stream channel and its drainages over the entire fairgrounds. All trash will, then be removed from the fairgrounds and taken to a landfill.

Strategy 3.3.1b: Maintain quality water in Bear Creek.

All sewage lagoons and other wastewater storage/draining structures (see Appendix L) will be evaluated and dismantled or reconstructed according to Missouri Department of Natural Resources requirements. Future monitoring and clean up of the stream will be coordinated by a volunteer Missouri Stream Team based out of the nature center.

Outcome 3.3.1.1: Bear Creek will be clean and its water quality will be monitored.

Strategy 3.3.2: Stabilize the stream banks of Bear Creek and its connecting drainages. Stream bank stabilization on Bear Creek and its tributaries will be accomplished according to the recommendations of the Missouri Department of Conservation. Willow, cottonwood, and sycamore stakes (1-3" in diameter) will be driven into all bare areas of the stream banks. The stakes will come from local stands of willow, cottonwood, and sycamore saplings on the area that should be cut the day of the project. The willow stakes will be planted near the edge of the water and the sycamore and cottonwood stakes will be planted higher on the

service will be given the opportunity to clean up Boone County Fairgrounds. Under the supervision of county officials or police officers, community service workers will clean up the land, repair damaged roads, and maintain the cleanliness of the land. This community service program will occur on an "as needed" basis and the program will help to improve the beauty of Boone County Fairgrounds.

Outcome 3.3.4.1: The fairground land will be cleaned and beautified.

Objective 3.4: To promote environmental education and awareness on the Boone County Fairgrounds.

Strategy 3.4.1: Prairie, wetland, and forest areas will surround the nature center; and a trail system will run through this area of land. To make the nature center function, a professional staff of naturalists will be hired. The staff must have prior experience working with children, and experience with activity planning. The hired Naturalists must also have references from at least one previous job that involved working in a nature center. The staff will run programs such as Kid's Fishing Clinics (KFC's), animal tracking, Native American coil pots, Geology Detectives, and wildlife nature walks. More programs will be instituted as the demand for them increases. The staff will also organize seasonal programs such as wild flower walks, and local bird watching. All activities will be catered to specific age groups. Programs can begin six months after the construction of the nature center.

Outcome 3.4.1.1: Environmental programs will be provided for county residents.

Strategy 3.4.2: Provide information at various stops along the trail system for those who want to use the trail during their leisure time. The staff will allow the nature center visitors to sign up for interpretive trail tours. These tours will be for small or large groups and will change depending upon the season.

Outcome 3.4.2.1: A self-guided, interpretive trail will be provided to educate public about prairies, wetlands, and forests.

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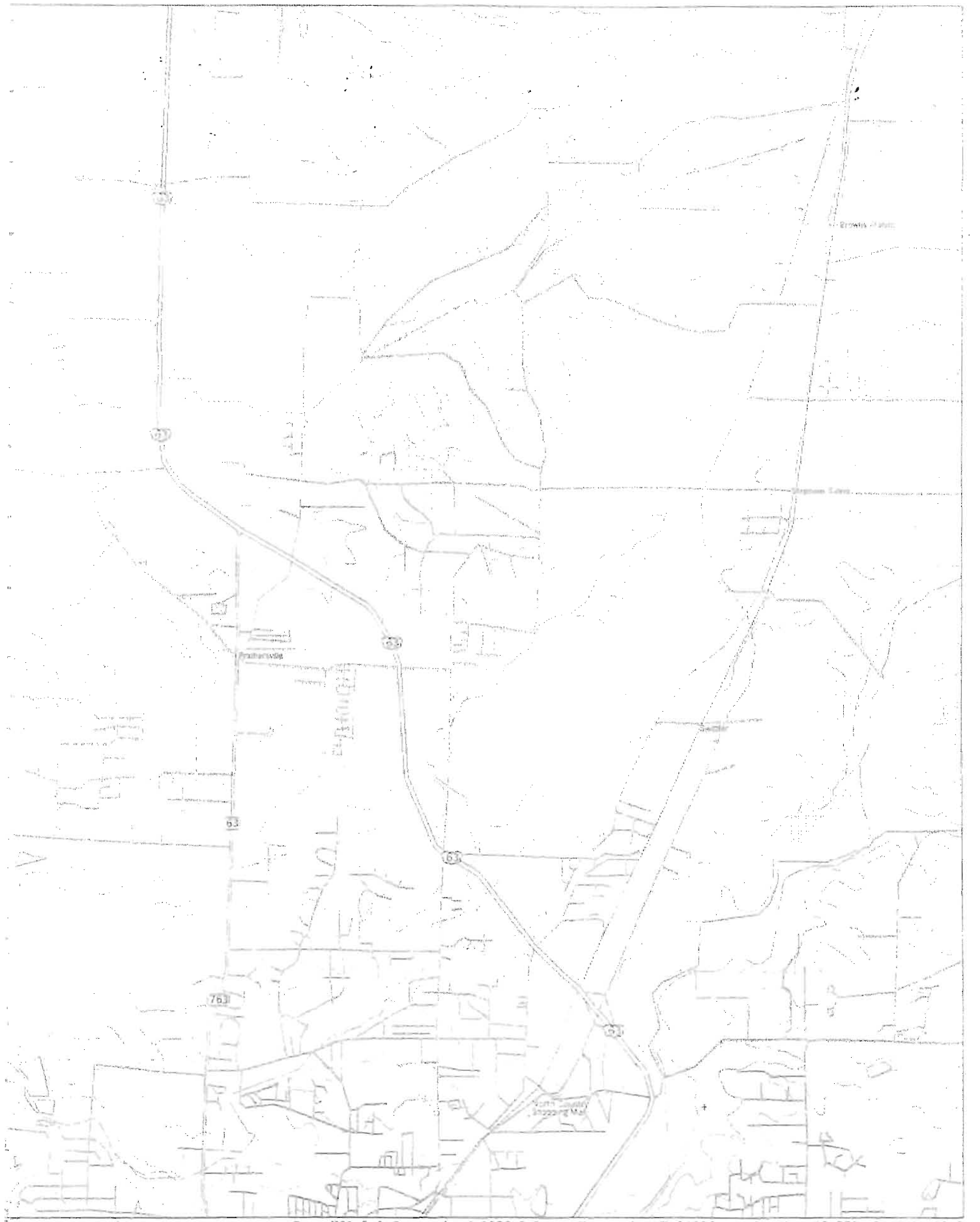
Appendix A: Aerial photograph of Boone County Fairground location

Appendix B Topographic map of the project area

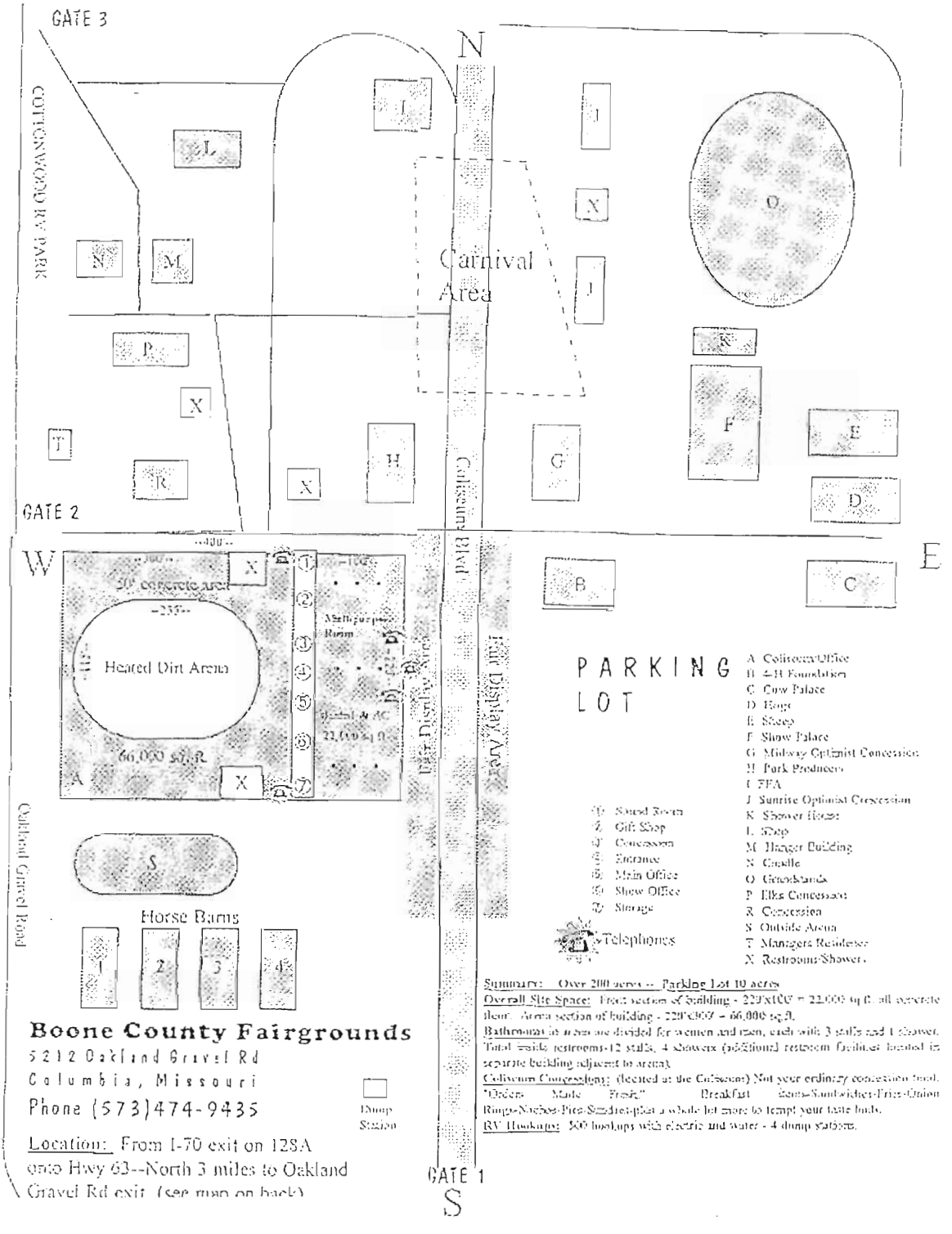


3500 ft

 Scale: 1 : 43,750 Detail: 12-2

Appendix C: Existing structure analysis of Boone County Fairgrounds.

Table 1



Appendix C: Existing Structure Analysis of the Boone County Fairgrounds

Table 2

Map Key	Facility	Linear Feet	Area (square feet)
A	Coliseum		
	*Multipurpose Room	100 x 220	22,000
	*Arena	300 x 220	66,000
B	4-H Foundation	25 x 40	88,000
C	Cow Palace	120 x 60	1,000
D	Hog Barn	120 x 72	7,200
E	Sheep Barn	120 x 72	8,640
F	Show Palace	200 x 72	8,640
G	Optimist Concession	25 x 40	14,400
H	Pork Producers	25 x 40	1,000
I	FFA	25 x 40	1,000
J	Optimist Concession	25 x 40	1,000
K	Shower House	40 x 60	1,000
L	Shop	60 x 60	2,400
M	Hanger Building	225 x 72	3,600
O	Grandstands		
P	Elks Concession	25 x 40	1,000
R	Concession	25 x 40	1,000
S	Outside Arena	300 x 100	30,000
T	Manager's Residence		
X	Restrooms/Showers	25 x 40	1,000
1	Horse Barn	120 x 60	7,200
2	Horse Barn	120 x 60	7,200
3	Horse Barn	120 x 60	7,200
4	Horse Barn	120 x 72	8,640

Appendix D: Mammals in which range includes Boone County Fairgrouds.

Mammals	Township	49	49	49	49	
	Range	12	12	12	12	
	Section	19	20	30	29	Special Status
Blarina brevicauda	Northern Short-Tailed Shrew	9	11	9	9	
Canis latrans	Coyote	7	8	9	7	
Castor canadensis	American Beaver	7	9	7	9	
Corynorhinus rafinesquii	Rafinesque's Big-Eared Bat	6	8	6	6	
Cryptotis parva	Least Shrew	10	10	10	8	
Didelphis virginiana	Virginia Oppossum	10	12	10	9	
Eptesicus fuscus	Big Brown Bat	15	20	15	15	
Geomys bursarius	Plains Pocket Gopher	9	8	8	8	
Glaucomys volans	Southern Flying Squirrel	7	12	8	8	
Lasionycteris noctivagans	Silver-Haired Bat	7	10	7	8	
Lasiurus borealis	Eastern Red Bat	10	13	9	9	
Lasiurus cinereus	Hoary Bat	6	9	7	5	
Marmota monax	Woodchuck	14	13	14	12	
Mephitis mephitis	Striped Skunk	13	12	14	10	
Microtus ochragaster	Prairie Vole	10	10	9	8	
Microtus pinetoreum	Woodland Vole	10	13	10	9	
Mustela frenata	Long Tailed Weasel	7	12	8	7	State Rare
Mustela nivalis	Least Weasel	8	7	8	6	Watch List
Mycrotus pennsylvanicus	Meadow Vole	8	6	7	6	
Myosis lucifugus	Little Brown Bat	11	12	10	10	
Myosis sodalis	Indiana Bat	8	8	9	8	Federal Endangered
Myotis grisescerns	Gray Myotis	7	8	7	7	Federal Endangered
Myotis keenii	Keen's Myotis	12	13	12	12	
Nycticeius humeralis	Evening Bat	7	9	6	6	
Odatra zibethicus	Muskrat	7	7	7	8	
Odocoileus virginianus	White-Tailed Deer	11	11	12	9	
Peromyscus leucopus	White-Footed Mouse	10	13	10	9	
Peromyscus maniculatus	Deer Mouse	11	10	11	12	
Pipistrellus subflavus	Eastern Pipistrelle	16	17	15	16	
Procyon lotor	Common Raccoon	8	10	8	8	
Reithrodontomys fulvescenus	Fulvous Harvest Mouse	7	6	7	6	
Reithrodontomys megalotis	Western Harvest Mouse	9	7	9	7	
Reithrodontomys montanus	Plains Harvest Mouse	8	5	7	4	State Rare
Scalopus aquaticus	Eastern Mole	14	13	14	12	
Sciurus carolinensis	Eastern Gray Squirrel	8	11	9	8	
Sciurus niger	Eastern Fox Squirrel	8	13	9	8	
Sigmodon hispidis	Hispid Cotton Rat	8	8	9	8	
Spermophilus tridecemlinea	Thirteen-Lined Ground Squirrel	9	8	8	7	
Sylvilagus floridanus	Eastern Cottontail	10	10	10	9	
Synaptomys cooperi	Southern Bog Lemming	8	8	8	8	
Urocyron cinereoargenteus	Common Gray Fox	9	10	9	9	
Vulpes vulpes	Red Fox	10	12	13	10	
Zapus hudsonius	Meadow Jumping Mouse	9	8	8	8	
	Mammal Richness	**23**	**30**	**24**	**18**	

Appendix E: Birds in which range includes Boone County Fairgrounds.

Birds	Township	49	49	49	49	
	Range	12	12	12	12	
	Section	19	20	30	29	Special Status
Accipiter cooperii	Cooper's Hawk	7	8	7	7	State Rare
Accipiter striatus	Sharp-Shinned Hawk	9	9	9	9	State Rare
Actitis macularia	Spotted Sandpiper	7	8	6	10	
Agelaius phoeniceus	Red-Wingled Blackbird	11	9	11	9	
Aimophial aestivalis	Bachman's Sparrow	7	7	7	7	Federal Canidate
Aix sponsa	Wood Duck	7	9	7	8	
Ammodramus henslowii	Henslow's Sparrow	8	7	8	6	State Rare
Ammodramus savannarum	Grasshopper Sparrow	10	9	10	8	
Anas platyrhynchos	Mallard	7	7	7	8	
Bartramia longicauda	Upland Sandpiper	7	7	7	6	Watch List
Bonasa umbellus	Ruffed grouse	6	7	6	7	
Bratnta canadensis	Canada Goose	9	7	9	7	
Bratnta canadensis	Savannah Sparrow	10	10	9	9	
Bubo virginianus	Great Horned Owl	11	12	10	10	
Buteo jamaicensis	Red-Tailed Hawk	11	12	10	10	
Caprimulgus carolinensis	Chuck-Will's-Widow	6	7	7	7	
Caprimulgus vociferus	Whip-Poor-Will	8	10	8	8	
Cardinalis cardinalis	Northern Cardinal	11	13	13	10	
Carduelis tristis	American Goldfinch	12	14	12	11	
Carpodacus mexicanus	House Finch	8	7	8	8	
Cathartes aura	Turkey Vulture	11	13	10	10	
Ceryle alcyon	Belted Kingfisher	8	10	8	11	
Charadrius vociferus	Killdeer	12	9	12	9	
Cistohorus platensis	Sedge Wren	7	7	6	6	
Coccyzus americanus	Yellow-Billed Cuckoo	9	10	8	8	
Coccyzus erythropthalmus	Black-Billed Cuckoo	7	8	7	7	
Colaptes auratus	Northern Flicker	8	11	8	8	
Colinus virginianus	Northern Bobwhite	12	11	12	9	
Columba livia	Rock Dove	19	16	21	15	
Common Grackle	Lark Sparrow	9	9	8	8	
Contopus virens	Eastern Wood-Pewee	8	11	8	9	
Corvus brachtrhtnchos	American Crow	10	14	10	9	
Cyanocitta cristata	Blue Jay	14	16	14	13	
Dendroica cerulea	Cerulean Warbler	5	7	5	5	Watch List
Dendroica discolor	Prarie Warbler	7	8	7	8	
Dendroica dominica	Yellow-Throated Warbler	5	7	5	6	
Dendroica petechia	Yellow Warbler	7	8	7	8	
Dendroica pinus	Pine Warbler	8	8	8	8	
Dolichonyx oryzivorus	Boblink	8	7	7	6	
Dryocopus pileatus	Pileated Woodpecker	7	8	7	7	
Dumetella carolinensis	Gray Catbird	12	13	12	10	
Empidonax trailli	Willow Flycatcher	7	9	7	8	
Empidonax virescens	Acadian Flycatcher	6	8	6	6	
Eremophila alpestris	Horned Lark	13	9	14	10	
Falco sparverius	American Kestrel	8	9	9	7	

Geothlypis trichas	Common Yellowthroat	12	12	12	11	
Guiraca caerulea	Blue Grosbeak	9	10	9	8	
Hirundo rustica	Barn Swallow	15	12	15	13	
Hylocichla mustelina	Wood Thrush	7	8	7	7	
Icteria virens	Yellow-Breasted Chat	8	9	8	8	
Icterus galbula	Baltimore Oriole	8	10	8	8	
Icterus spurius	Orchard Oriole	7	9	7	7	
Lanius ludovicianus	Loggerhead Shrike	10	9	9	9	Federal Canidate
Melanerpes carolinus	Red-Bellied Woodpecker	8	9	8	8	
Melanerpes erythrocepthalmus	Red-Headed Woodpecker	9	10	9	8	
Meleagris gallopavo	Wild Turkey	7	7	8	6	
Melospiza melodia	Song Sparrow	8	8	7	7	
mimus polyglottos	Northern Mockingbird	9	9	9	8	
Molothrus ater	Brown-Headed Cowbird	8	11	9	9	
Myiarchus crinitus	Great Crested Flycatcher	8	9	8	8	
Oporornis formosus	Kentucky Warbler	7	8	7	7	
Otus asio	Eastern Screech-Owl	8	11	9	8	
Parula americana	Northern Parula	8	9	8	8	
Parus atricapillus	Black-Capped Chickadee	7	8	7	7	
Parus bicolor	Tufted Titmouse	8	10	9	9	
Passer domesticus	House Sparrow	21	20	22	18	Exotic
Passerina cyanea	Indigo Bunting	11	14	11	12	
Phasianus colchicus	Ring-Neck Pheasant	7	5	7	5	Exotic
Picoides pubescens	Whip-Poor-Will	8	10	8	8	
Picoides villosus	Hairy Woodpecker	7	8	7	7	
Pipilo erythrophthalmus	Eastern Towhee	8	9	8	8	
Piranga rubra	SummerTanger	7	9	7	7	
Polioptila caerulea	Blue-Gray Gnatcatcher	7	9	7	7	
Pooecetes gramineus	Vesper Sparrow	7	6	7	5	
Progne subis	Purple Martin	15	14	15	12	
Protonotaria citrea	Prothonotary Warbler	6	8	6	7	
Quiscalus quiscula	Common Grackle	15	14	15	13	
Sayornis phoebe	Eastern Phoebe	7	10	7	7	
Seiurus aurocapillus	Ovenbird	6	7	6	6	
Seiurus motacilla	Lousiana Waterthrush	6	7	6	7	
Setophaga ruticilla	American Redstart	5	7	5	6	
Sialia sialis	Eastern Bluebird	9	10	9	8	
Sitta carolinensis	White-Breasted Nuthatch	9	10	9	9	
Spiza ameridana	Dickcissel	11	9	11	9	
Spizella passerina	Chipping Sparrow	9	12	9	9	
Spizella pusilla	Field Sparrow	12	13	11	11	
Strix varia	Barred Owl	6	8	6	6	
Sturnella magna	Eastern Meadowlark	12	10	12	9	
Sturnella neglecta	Western Meadowlark	8	6	7	5	
Thryomanes bewickii	Bewick's Wren	6	8	6	7	Watch List
Thryothorus ludovicianus	Carolina Wren	7	9	7	7	
Toxostoma rufum	Brown Thrasher	17	19	17	17	
Troglodytes aedon	House Wren	10	9	10	9	
Turdus migratorius	American Robin	11	10	12	10	
Tympanuchus cupido	Greater Prairie-Chicken	7	6	6	6	State Rare
Tyrannus tyrannus	Eastern Kingbird	11	12	11	10	
Tyto alba	Barn Owl	11	8	10	6	

Vermivora pinus	Blue-Winged Warbler	6	7	6	6	
Viero olivaceus	Red-Eyed Vireo	7	8	7	7	
Vireo flavifrons	Yellow-Throated Vireo	6	8	7	6	
Vireo giseus	White-Eyed Vireo	7	9	7	8	
Zenaida macroura	Mourning Dove	13	12	15	10	

Appendix F: Reptiles in which range includes Boone County Fairgrounds.

Reptiles	Township	49	49	49	49
	Range	12	12	12	12
	Section	19	20	30	29
Agkistrodon contortrix	Osage Copperhead	8	1	9	9
Apalone mutica	Smooth Softshell	15	17	15	21
Apalone spinifera	Spiny Softshell	18	20	17	22
Carphophis amoenus vermis	Western Worm Snake	9	12	9	10
Chrysemys picta bellii	Western Paint Turtle	13	12	13	13
Cnemidophorus sexlineatus	Prairie-lined Racerunner	8	9	8	8
Cnemidophorus sexlineatus	Six-lined Racerunner	8	9	8	8
Coluber constrictor flaviventris	Eastern Yellowbelly Racer	9	9	9	8
Crotalus horridus	Timber Rattlesnake	8	9	8	8
Crotaphytus collaris	Collared Lizard	5	7	5	7
Diadophis punctatus arnyi	Prairie Ringneck Snake	11	13	10	11
Elaphe guttata emoryi	Rat Snake	13	16	13	12
Elaphe guttata emoryi	Great Plains Rat Snake	9	10	9	9
Eumeces fasciatus	Five-lined Skink	9	11	9	9
Eumeces laticeps	Broadhead Skink	7	9	8	8
Graptemys geographica	Common Map Turtle	11	12	12	14
Graptemys geographica kohnii	Mississippi Map Turtle	13	13	14	16
Graptemys pseudogeographica	False Map Turtle	12	12	12	14
Heterodon platirhinos	Eastern Hognose Snake	19	21	19	20
Lampropeltis calligaster	Prairie Kingsnake	12	13	12	12
Lampropeltis getulus holbrooki	Speckled Kingsnake	9	11	9	9
Lampropeltis triangulum	Red Milk Snake	20	23	21	20
Masticophis flagellum	Coachwhip	8	8	8	8
Nerodia erythrogaster transversa	Blotched Water Snake	8	8	7	8
Nerodia rhombifer	Diamondback Water Snake	10	10	10	11
Nerodia sipedon	Northern Water Snake	11	11	11	12
Opheodrys aestivus	Rough Green Snake	7	9	8	8
Opheodrys vernalis	Smooth Green Snake	8	8	8	7
Ophisaurus attenuatus	Slender Glass Lizard	13	13	12	12
Pituophis melanoleucus sayi	Bullsnake	12	11	12	11
Regina grahamii	Graham's Crayfish Snake	12	12	12	13
Sceloporus undulatus hyacinthinus	Northern Fence Lizard	7	9	8	8
Scincella lateralis	Ground Skink	7	8	7	7
Sternotherus odoratus	Common Musk Turtle	7	8	8	9
Storeria dekayi wrightorum	Midland Brown Snake	14	14	13	14
Storeria occipitomaculata	Redbelly Snake	7	9	8	7
Terrapene carolina triunguis	Three-toed Box Turtle	9	11	9	9
Terrapene ornata ornata	Ornate Box Turtle	11	11	11	11
Thamnophis proximus	Western Ribbon Snake	19	21	19	22
Thamnophis radix	Plains Garter Snake	8	8	8	8
Thamnophis radix haydenii	Western Plains Garter Snake	9	8	9	9
Thamnophis sirtalis	Common Garter Snake	11	11	11	10
Thamnophis sirtalis parietalis	Red-sided Garter Snake	10	11	10	9
Trachemys scripta elegans	Red-eared Slider	11	13	10	11
Tropidocionion lineatum	Lined Snake	9	8	8	7
Virginia striatula	Rough Earth Snake	6	8	6	7
Virginia valeriae elegans	Western Earth Snake	9	12	10	10
	Reptile Richness	**32**	**38**	**32**	**32**

Appendix G: Amphibians in which range includes Boone County Fairgrounds.

Amphibians	Township	49	49	49	49
	Range	12	12	12	12
	Section	19	20	30	29
Acris crepitans blanchardi	Blanchard's Cricket Frog	8	9	7	10
Ambystoma maculatum	Spotted Salamander	8	10	9	9
Ambystoma opacum	Marbled Salamander	4	7	4	5
Ambystoma texanum	Smallmouth Salamander	12	12	12	12
Ambystoma tigrinum	Tiger Salamander	9	10	9	11
Bufo americanus	American Toad	7	9	8	7
Bufo americanus charlesmithi	Dwarf American Toad	5	8	6	6
Bufo cognatus	Great Plains Toad	7	6	6	6
Gastrophryne carolinensis	Eastern Narrowmouth Toad	7	8	7	7
Gastrophryne olivacea	Great Plains Narrowmouth Toad	9	9	8	7
Hyla crucifer	Northern Spring Peeper	9	11	9	10
Hyla versicolor	Gray Treefrog	8	10	8	9
Necturus maculosus	Mudpuppy	9	9	10	12
Notophthalmus viridescens louisianensis	Central Newt	12	13	12	13
Plethodon glutinosus	Slimy Salamander	8	9	8	8
Pseudacris triseriata	Western Chorus Frog	10	10	10	11
Rana areolata	Crawfish Frog	10	10	10	10
Rana blairi	Plains Leopard Frog	12	12	12	12
Rana catesbeiana	Bullfrog	17	18	17	19
Rana catesbeinana melanota	Green Frog	10	10	10	11
Rana palustris	Pickerel Frog	9	9	9	9
Rana sphenocephala	Southern Leopard Frog	8	9	8	10
Rana sylvatica	Wood Frog	7	8	7	7
Scaphiopus bombifrons	Plains Spadefoot	9	8	8	8
	Amphibian Richness	14	19	12	16

Appendix H: Fish species occuring in Bear Creek.

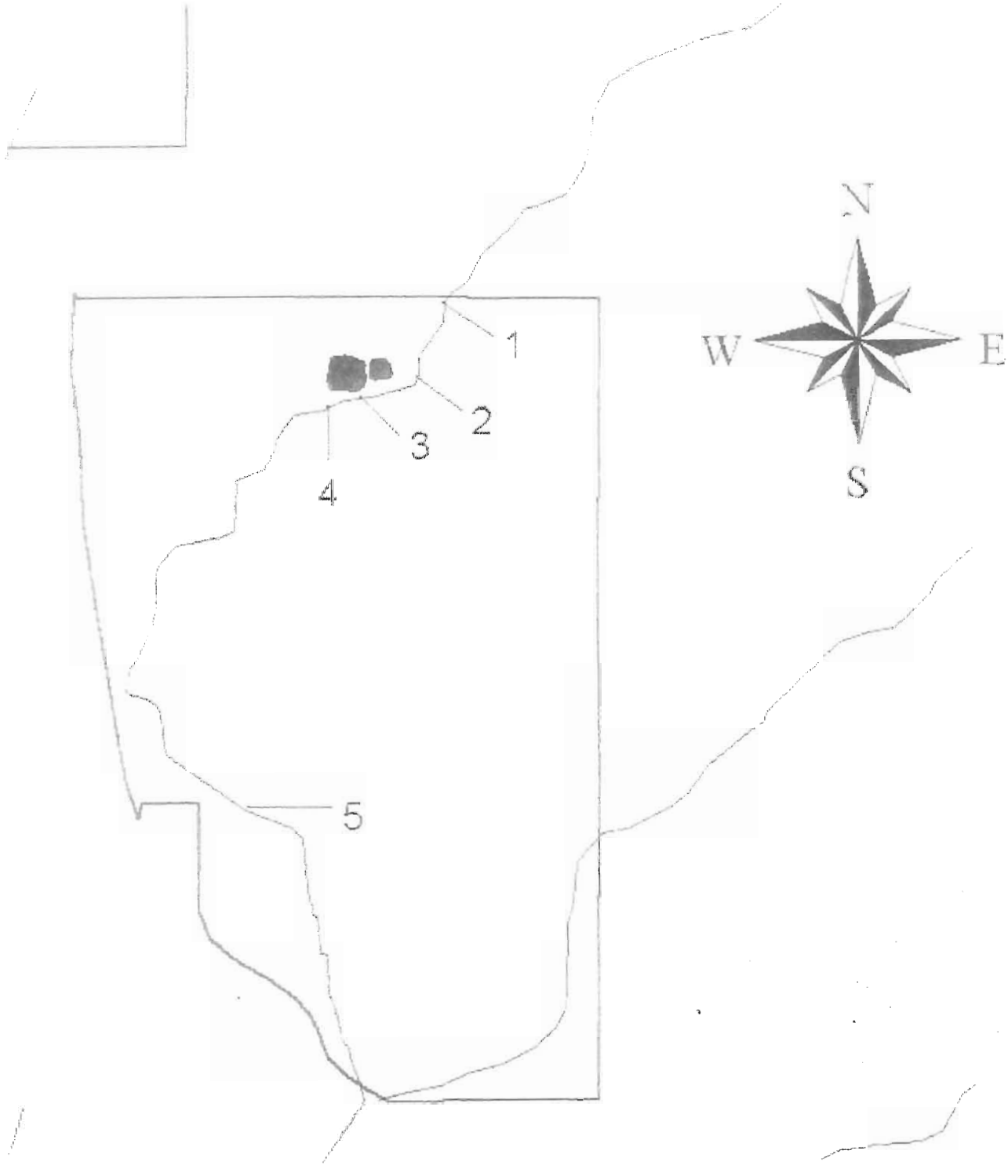
Table 1: Fish sampled in Bear Creek on Boone County Fairgrounds.

Scientific Name	Common Name	Number Sampled
Lepomis cyanellus	Green Sunfish	2
Etheostoma spectabile	Orangethroat Darter	1
Etheostoma nigrum	Johnny Darter	1
Lythrurus umbrailis	Redfin Shiner	1

Table 2: Fish that may occur in Bear Creek according to Pflieger, 1997.

Common Name	Scientific Name
Ameiurus melaas	Black Bullhead
Ameiurus natalis	Yellow Bullhead
Campostoma pullum	Central Stoneroller
Catostomus commersoni	White Sucker
Cyprinella lutrensis	Red Shiner
Etheostoma nigrum	Johnny Darter
Etheostoma spectabile	Orangethroat Darter
Fundulus notatus	Blackstripe Topminnow
Gambusia affinis	Western Mosquitofish
Lepomis cyanellus	Green Sunfish
Lepomis humilis	Orangespotted Sunfish
Lepomis macrochirus	Bluegill
Lepomis megalotis	Longear Sunfish
Luxilus cornutus	Common Shiner
Lythrurus umbratilis	Redfin Shiner (Western)
Micropterus salmoides	Largemouth Bass
Notemigonus crysoleucas	Golden Shiner
Notropis dorsalis	Bigmouth Shiner
Notropis ludibundus	Sand Shiner
Notropis topeka	Topeka Shiner
Noturus exilis	Slender Madtom
Noturus gyrinus	Tadpole Madtom
Percopsis omiscomaycus	Trout-perch
Phenacobius mirabilis	Suckermouth Minnow
Pimephales notatus	Bluntnose Minnow
Pimephales pormelas	Fathead Minnow
Semotilus atromaculatus	Creek Chub

Appendix I: Invertebrate/water quality test sites on Boone County Fairgrounds



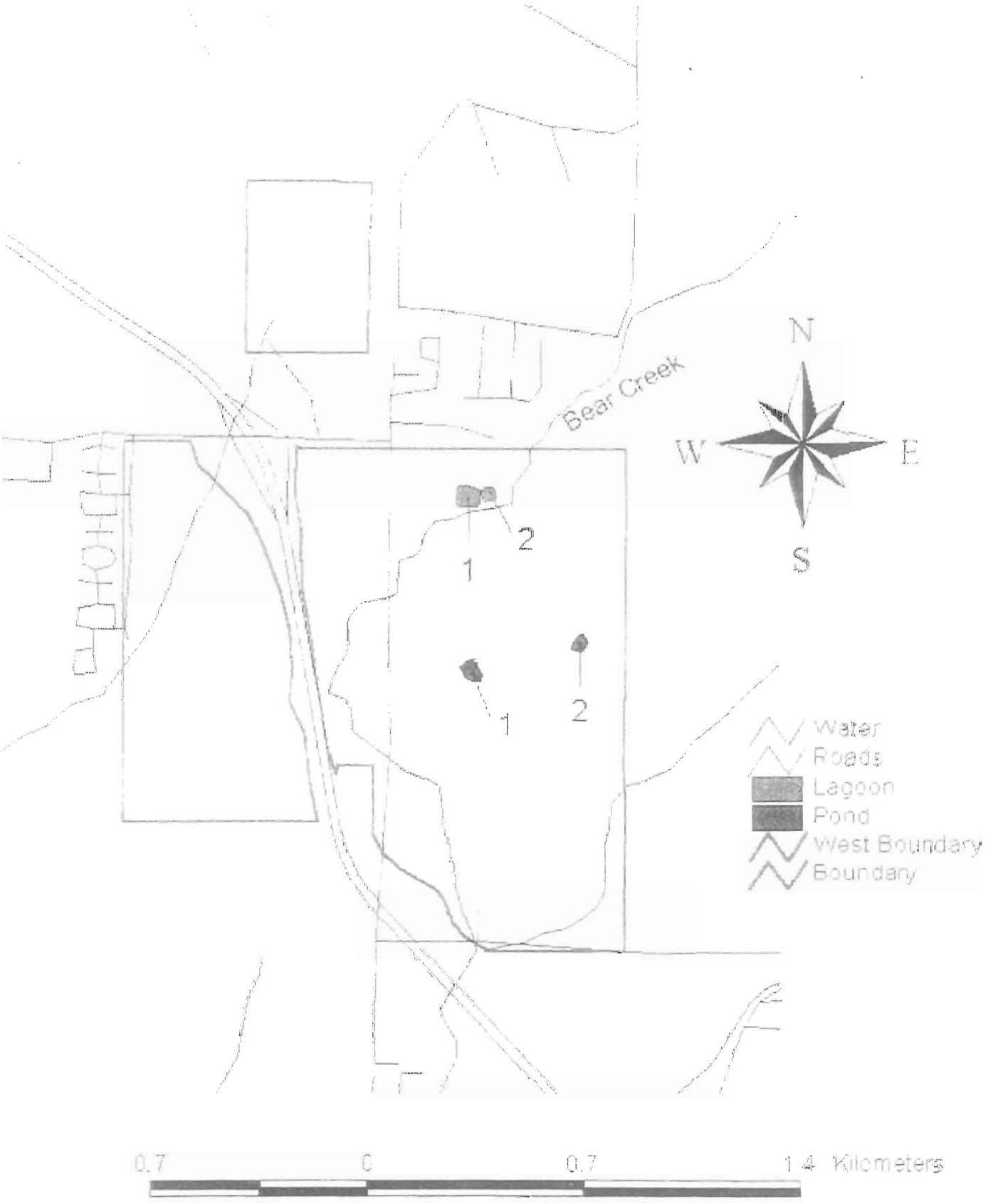
Appendix J: Invertabrates sampled from three locations in Bear Creek on the Boone County Fairgrounds

	Invertabrates	
Sample #	Family	Common Name
at discharge of lagoon	Chronomidae	midges
	Capniidae	snowflies
	Naididae	aquatic worms
above upper lagoon	Chronomidae	midges
	Capniidae	snowflies
	Tabanidae	horse and deer flies
	Physidae	pouch snails
	Tubificidae	aquatic worms
	Hydrophilidae	water scavenger beetles
below western service bridge	Rhyacophilidae	catisflies
	Hydrophilidae	water scavenger beetles
	Capniidae	snowflies
	Chronomidae	midges
	Polycentropodidae	catisflies
	Perlidae	spring flies
	Sphaeridae	fingernail clams
	Elmidae	riffle beetles

Appendix K: Water quality samples taken fron Bear Creek on Boone County Fairgrounds.

	D.O.	Air Temp.	Sample Temp.	Sample Temp.	Condensation	pH	Alkilinity	Hardness	Ammonia	Turbidity
Site Name	mg/L	C	C	C	uS/cm					NTU
Above upper lagoon	13.3	18.8	8.3	23.2	693	7.98	196	262	0.0607	1.8
At break in dam of upper lagoon	3.9	20.8	15.6	23.2	670	7.48	325	452	5.98	17
At discharge of upper lagoon	8.5	13.2	12.5	22.9	654	8.01	194	262	0.045	2
Below all 3 lagoons	8.5	13.2	12.4	22.9	648	8.04	198	254	0.0856	11
Below western service bridge	12.6	20.8	12.6	22.6	1259	7.77	144	370	0.0783	16

Appendix L: Watershed/bodies of water on Boone County Fairgrounds



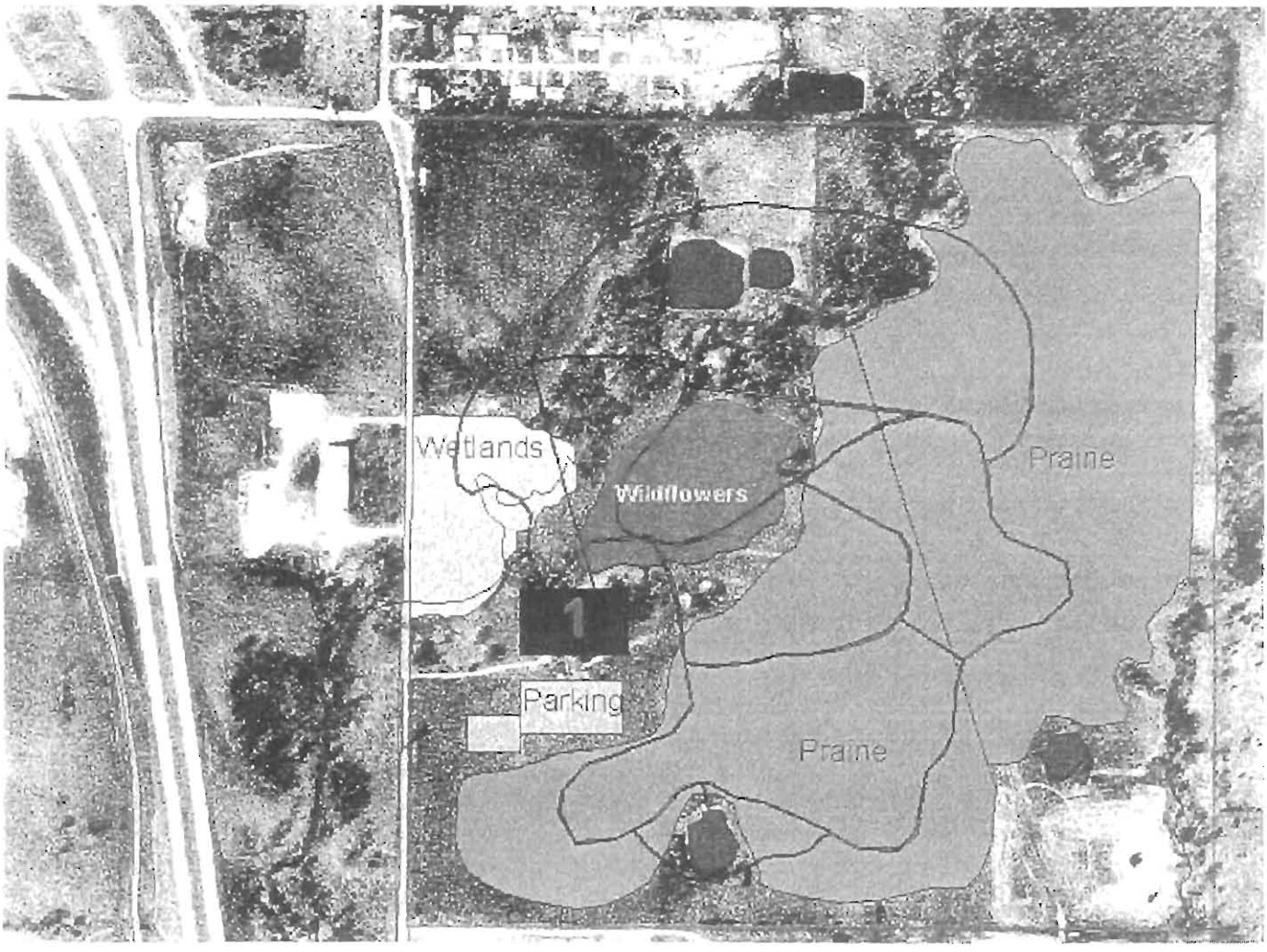
Appendix M: Soil types found on Boone County Fairgrounds

Appendix N: Tree inventory for Boone County Fairgrounds and Newly aquired lands.

		Stand A					Stand B				
Scientific name	Common name	Count	Relative density	(p_i)	($\log_2 p_i$)	(p_i)($\log_2 p_i$)	Count	Relative density	(p_i)	($\log_2 p_i$)	(p_i)($\log_2 p_i$)
Acer negundo	boxelder					0.0000	1	0.2%	0.0016	-9.2574	-0.0151
Acer saccharinum	silver maple					0.0000	54	8.8%	0.0882	-3.5025	-0.3090
Acer saccharum	sugar maple	27	13.2%	0.1317	-2.9246	-0.3852	1	0.2%	0.0016	-9.2574	-0.0151
Betula nigra	river birch	70	34.1%	0.3415	-1.5502	-0.5293					
Carya cordiformis	bitternut hickory					0.0000	18	2.9%	0.0294	-5.0875	-0.1496
Carya ovata	shagbark hickory	1	0.5%	0.0049	-7.6795	-0.0375	1	0.2%	0.0016	-9.2574	-0.0151
Catalpa speciosa	northern catalpa	23	11.2%	0.1122	-3.1559	-0.3541					
Celtis laevigata	sugarberry					0.0000	3	0.5%	0.0049	-7.6724	-0.0376
Celtis occidentalis	hackberry	4	2.0%	0.0195	-5.6795	-0.1108	183	29.9%	0.2990	-1.7417	-0.5208
Cercis canadensis	eastern redbud	1	0.5%	0.0049	-7.6795	-0.0375	1	0.2%	0.0016	-9.2574	-0.0151
Diospyros virginiana	persimmon					0.0000	2	0.3%	0.0033	-8.2574	-0.0270
Fraxinus pennsylvanica	green ash	31	15.1%	0.1512	-2.7253	-0.4121	10	1.6%	0.0163	-5.9355	-0.0970
Gleditsia triancanthos	honeylocust	5	2.4%	0.0244	-5.3576	-0.1307	11	1.8%	0.0180	-5.7980	-0.1042
Juglans nigra	black walnut					0.0000	33	5.4%	0.0539	-4.2130	-0.2272
Juniperus virginiana	eastern redcedar	8	3.9%	0.0390	-4.6795	-0.1826	2	0.3%	0.0033	-8.2574	-0.0270
Maclura pomifera	osage orange	5	2.4%	0.0244	-5.3576	-0.1307					
Platanus occidentalis	sycamore	6	2.9%	0.0293	-5.0945	-0.1491	15	2.5%	0.0245	-5.3505	-0.1311
Populus deltoides	cottonwood	2	1.0%	0.0098	-6.6795	-0.0652	3	0.5%	0.0049	-7.6724	-0.0376
Prunus serotina	black cherry	3	1.5%	0.0146	-6.0945	-0.0892	20	3.3%	0.0327	-4.9355	-0.1613
Quercus bicolor	swamp white oak					0.0000	1	0.2%	0.0016	-9.2574	-0.0151
Quercus imbricaria	shingle oak	4	2.0%	0.0195	-5.6795	-0.1108	165	27.0%	0.2696	-1.8911	-0.5098
Quercus meuhlenbergii	chinkapin oak					0.0000	5	0.8%	0.0082	-6.9355	-0.0567
Robinia pseudoacacia	black locust					0.0000	4	0.7%	0.0065	-7.2574	-0.0474
Ulmus americana	American elm	15	7.3%	0.0732	-3.7726	-0.2760	75	12.3%	0.1225	-3.0286	-0.3711
Ulmus rubra	slippery elm					0.0000	4	0.7%	0.0065	-7.2574	-0.0474
Total		205	100.0%	1.0000		-3.0007	612	100.0%	1.0000		-2.9376
Diversity Index (H')						3.0					2.9
Minimum Diversity Index											
Maximum Diversity Index						3.9069					4.4594

Adkins tract					
Southern Half:			Northern Half:		
Scientific Name	Common Name	count	Scientific Name	Common Name	Count
Ulmus rubra	Slippery elm	1	*Quercus alba*	White oak	3
Maclura pomifera	Osage orange	1	*Fraxinus americana*	White ash	18
roseacae	rose	87	*Quercus bicolor*	Swamp white oak	3
Juniperus virginiana	Eastern redcedar	33	*Celtis occidentalis*	Hackberry	35
Gleditsia triacanthos	Honeylocust	2	*Prunus serotina*	Black cherry	9
Robinia pseudoacacia	Black locust	8	*Cercis canadensis*	Eastern redbud	10
Celtis occidentalis	Hackberry	9	*Juniperus virginiana*	Eastern redcedar	1
Quercus alba	White oak	3	*Pinus sylvestris*	Scotch pine	1
			Quercus imbricaria	Shingle oak	6
			Carya ovata	Shagbark hickory	16
			Ulmus americana	American elm	16
			Fraxinus pennsylvanica	Green ash	1
			Quercus macrocarpa	Burr oak	7
			Platanus occidentalis	Sycamore	12
			Quercus rubra	Northern red oak	19
			Juglans nigra	Black walnut	2

Newton tract		
Scientific Name	Common Name	
Juniperus virginiana	Eastern redcedar	5
Catalpa speciosa	Northern catalpa	3
Gleditsia triacanthos	Honeylocust	23
Maclura pomifera	Osage Orange	20
Platanus occidentalis	Sycamore	12
Quercus rubra	Northern red oak	3
Quercus velutina	Black oak	2
Celtis laevigata	Sugarberry	1
Prunus serotina	Black cherry	1
Quercus imbricaria	Shingle oak	4
Robinia pseudoacacia	Black locust	1
Ulmus Americana	American elm	4



0.07 0 0.07 0.14 Miles

- Trails
- Streams
- Parking Lot
- Prairie
- Ponds
- Wildflowers
- Wetlands
- Derby Track
- Amphitheatre
- Boundary
- Roads
- Nature Center

N
W E
S

Appendix O Future Athletic Complex Site

0.06 0 0.06 0.12 Miles

- Parking Lot
- Prairie
- Ponds
- Wildflowers
- Wetlands
- Derby Track
- Amphitheatre
- Boundary
- Trails
- Streams
- Roads
- Nature Center

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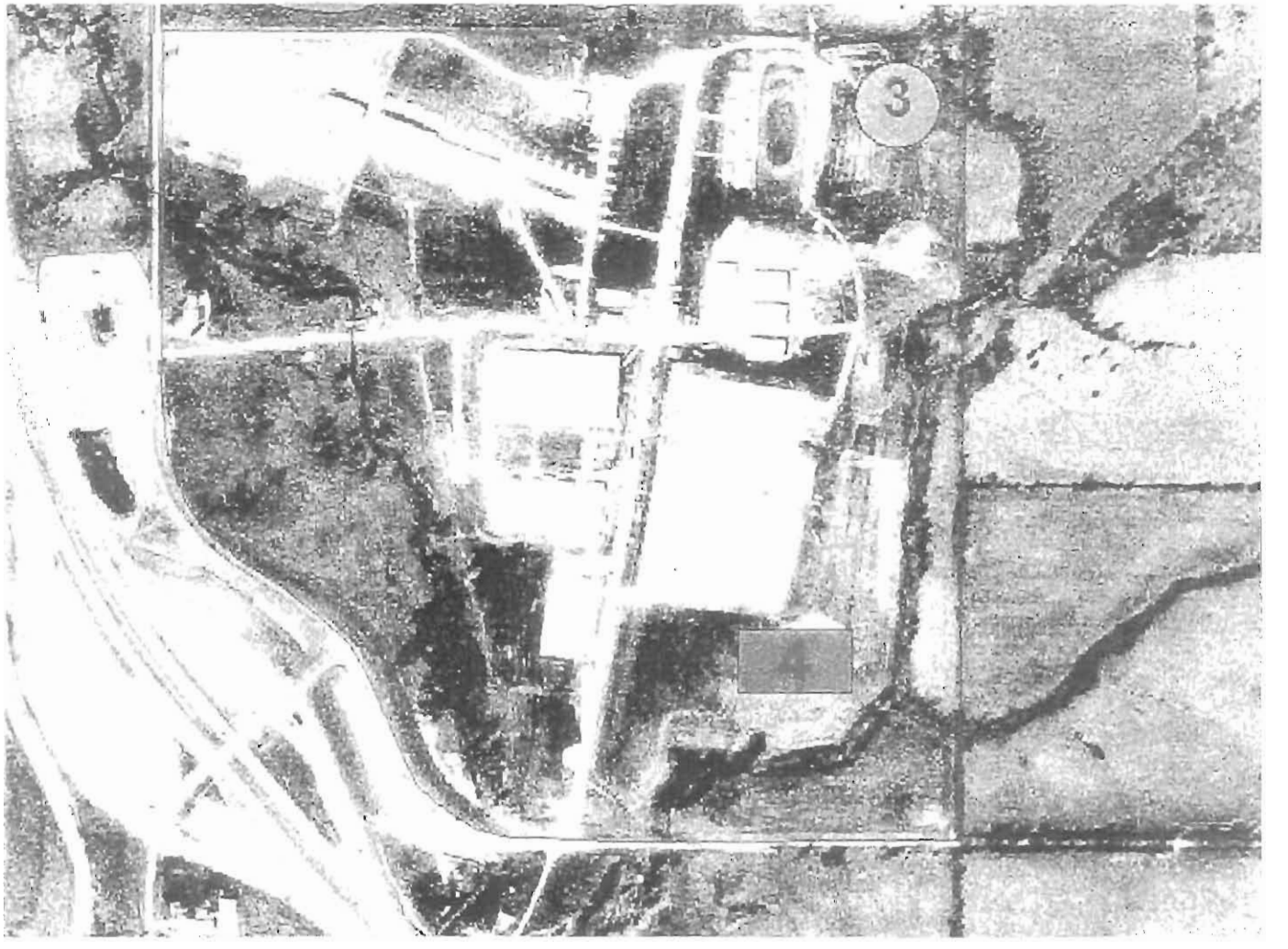
Appendix O: Future Site of Amphitheatre and Derby Track



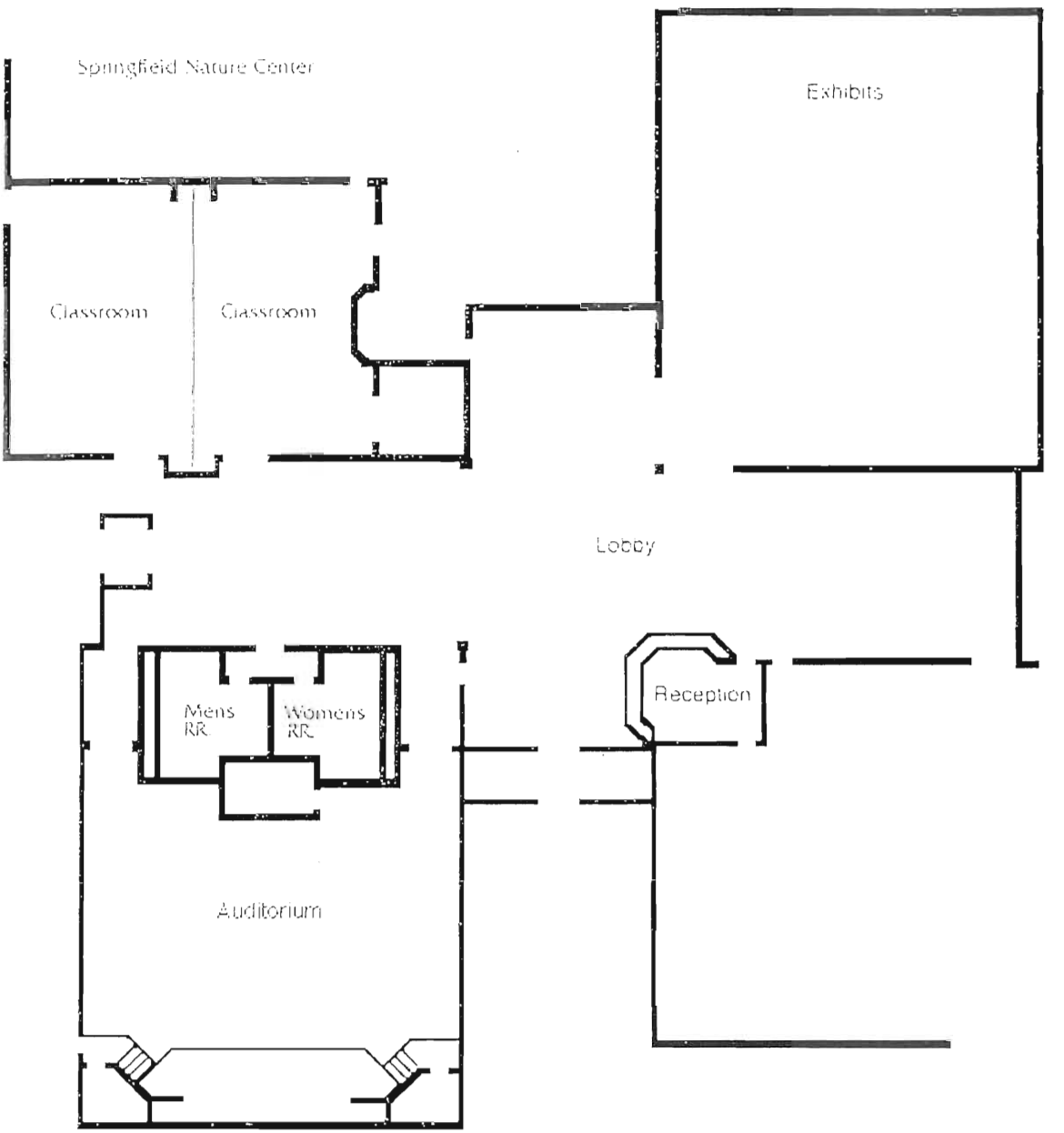
0.07 0 0.07 0.14 Miles

- Trails
- Streams
- Parking Lot
- Prairie
- Ponds
- Wildflowers
- Wetlands
- Derby Track
- Amphitheatre
- Boundary
- Roads
- Nature Center

N
W E
S

Appendix Q: Example of a modern nature center.

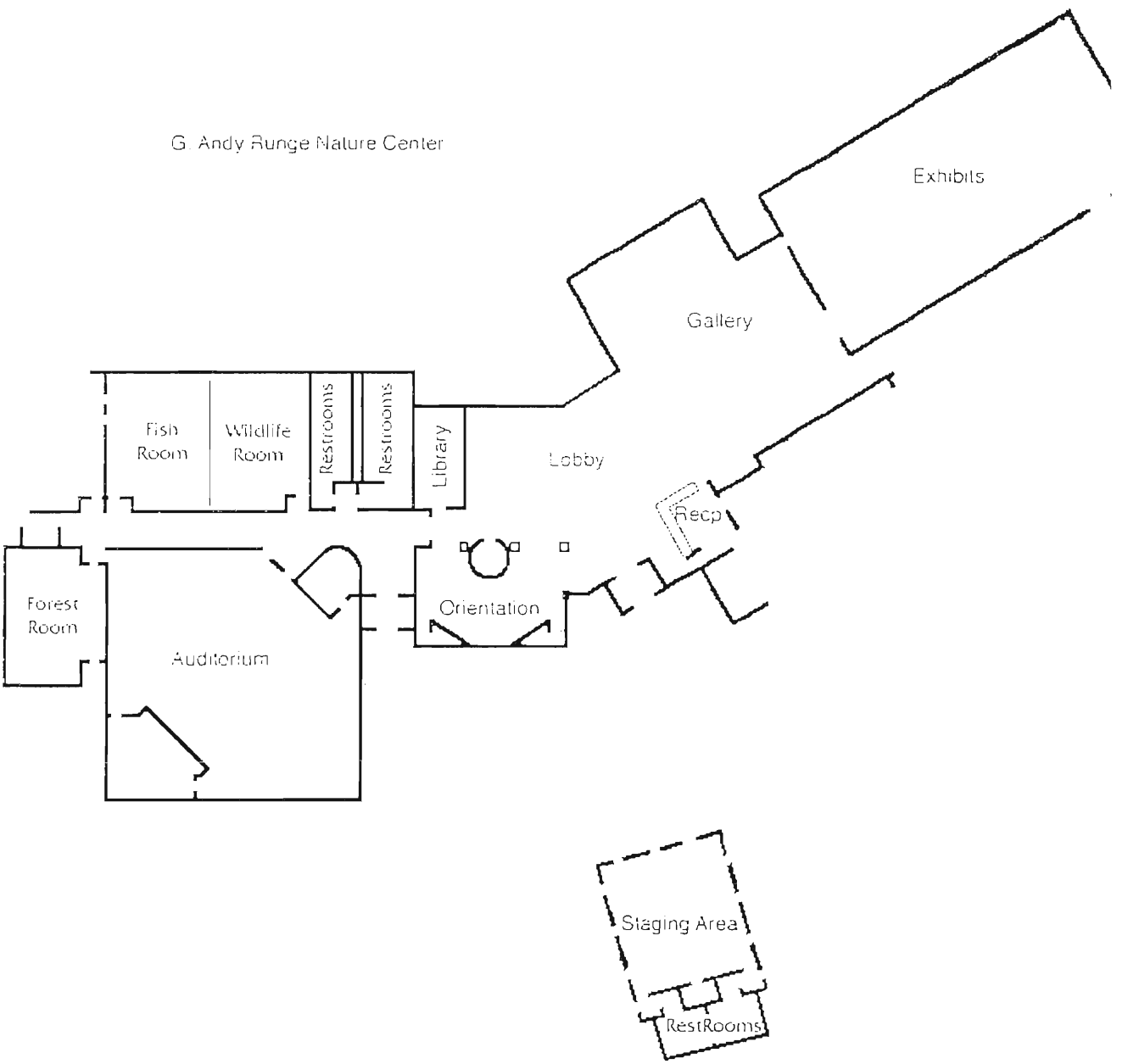
Springfield Conservation Nature Center

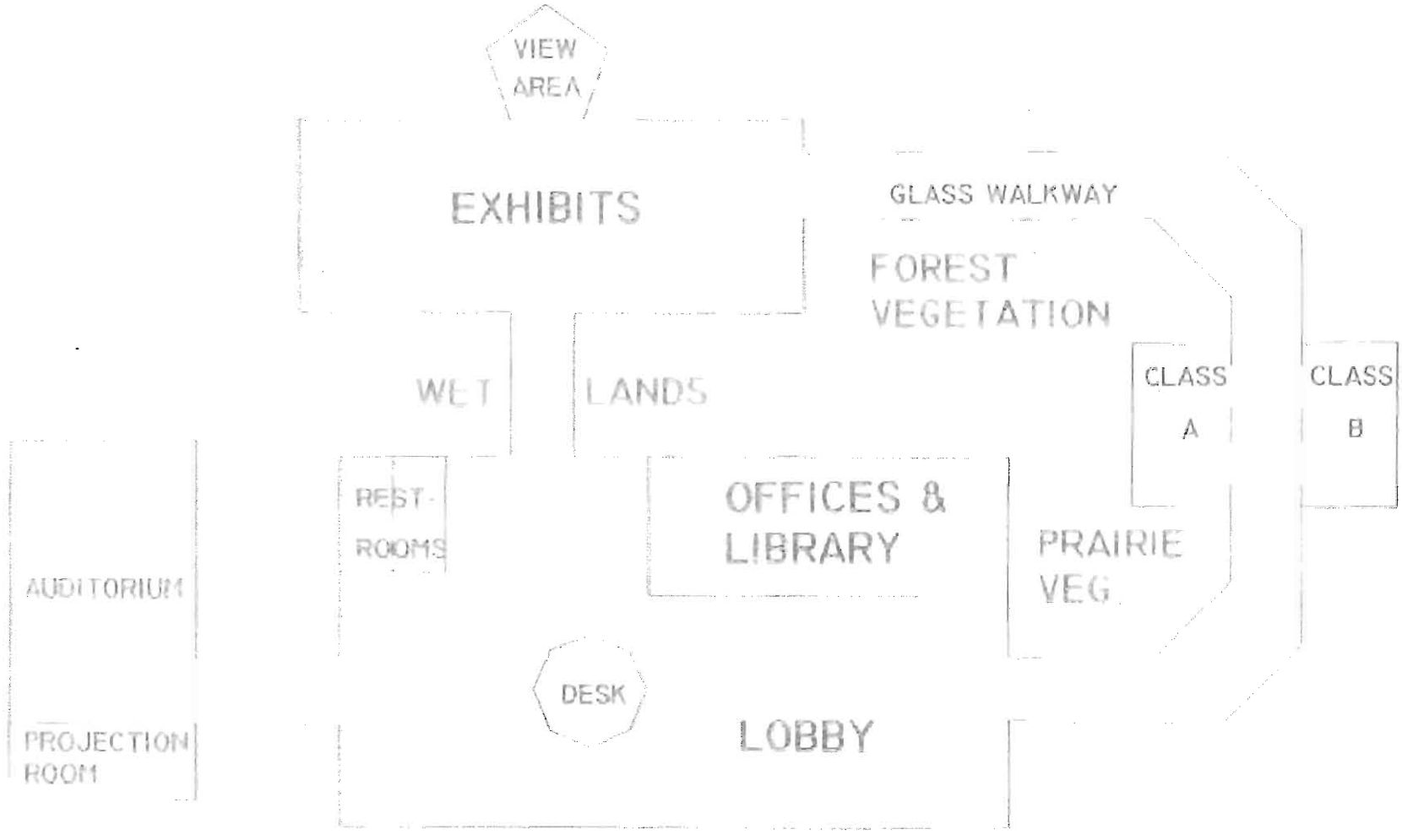


Appendix P: Example of a modern nature center.

Runge Conservation Nature Center

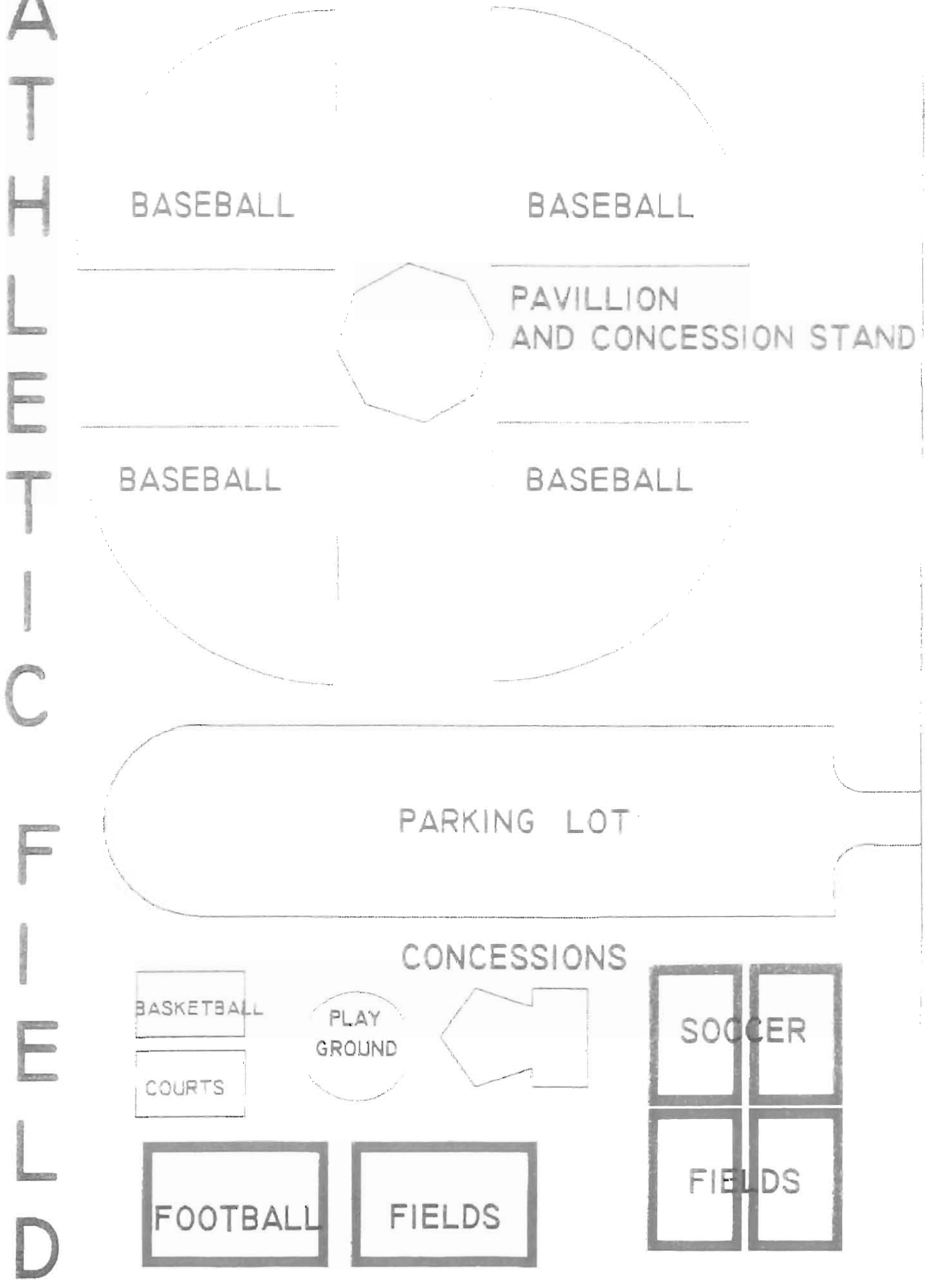
Building





BOONE COUNTY NATURE CENTER FLOOR PLAN

ATHLETIC FIELD



Appendix U: Nature Center and Sports Complex Budget.

Start up/Construction Costs: (Nature Center and Trail Section)

3000 Sq. Ft. – Nature Center Building	$300000.00 ($100.00 p/sq. ft.)
5 Acres of land to grade – construction ready	$20000.00
Nature Center furnishings – Modular furniture	$50000.00 ($5 offices plus misc.)
Phone System	$25000.00
100 Car Asphalt Parking Lot	$300000.00 ($12.00 p/ sq. yd.)
Outside Lighting – Building & Parking	$8000.00
3 Miles of Asphalt Viewing Trail	$180000.00 ($12.00 p/sq. yd.)
TOTAL	$883000.00

Start up/Construction Costs: (Sports Complex)

4 Baseball/Softball Fields	$200000.00
2 Football Fields	$100000.00
4 Soccer Fields	$200000.00
2 Concession Stands w/Restroom Facilities	$30000.00
2 Pavilions w/ Restroom & Shower Facilities	$50000.00
100 Car Asphalt Parking Lot	$300000.00 ($12.00 p/ sq. yd.)
Lighting For Fields	$220000.00
Outside Lighting – Buildings & Parking	$8000.00
5 Acres of land to grade – construction ready	$20000.00
TOTAL	$1128000.00

Total Start Up/Construction Costs for Nature Center and Adjacent Recreational Fields:

Nature Center Total	$883000.00
Recreational Fields Total	$1128000.00
GRAND TOTAL	$2011000.00