Publication Notice

This program is the result of tax supported initiatives and as such is not subject to copyright. It has been financed in part through grants from the United States Department of Transportation and the United States Environmental Protection Agency.

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Introduction

Rationale

Successful sustainable communities meet present human needs while not compromising the resources for future generations to meet their needs. Sustainable plans and communities focus on four key principles: education, equity, environment, and economy. Every year, more and more cities and communities throughout the world are putting these sustainability principles into practice. Residents of Muncie and Delaware County are becoming more conscious of how local natural resources, open spaces, parks and greenways can contribute to improving the quality of life and transforming Muncie and Delaware County into a healthy and sustainable community.

During the public input process of the 2000 Muncie-Delaware County Comprehensive Plan, participants generally saw natural resources and recreational opportunities as strengths of the community. They noted that there was an increase in demand for open-space recreational opportunities. Furthermore, the Prairie Creek Reservoir was seen as a unique community resource that the City and County should capitalize on for recreational opportunities. However, capitalizing on the recreational opportunities of the Prairie Creek Reservoir and using it as a tool to stir economic development could create some water quality concerns if not handled properly.

In 2001, the White River Watershed Project (WRWP) was initiated to study water quality and land use conditions in three subwatersheds within the Upper White River Watershed in Delaware County. The Prairie Creek subwatershed was chosen as one of the subwatersheds for the WRWP. The results of the WRWP Management Plan's baseline study indicated that some pollutant levels were problematic to the water quality in the Prairie Creek subwatershed. A positive finding from the baseline study was the existence of an extensive wooded and grassed buffer acreage surrounding the Prairie Creek Reservoir. Indiana-American Water Company leases this buffer acreage to the Muncie Parks Department, and the 60 year lease is due to expire in 2021. Therefore, the future of the Prairie Creek Reservoir is uncertain. For all these listed reasons, it was recommended in the 2000 Muncie-Delaware County Comprehensive Plan and phase one of the White River Management Plan that a strategic master plan for development and preservation in and around the Prairie Creek Reservoir be created.

The 1998 Muncie Park and Recreation Master Plan called for several improvements across the spectrum of city parks. Among those were several that remain pertinent to date. These include a "Lack of conceptual development plans for individual parks and facilities."[1] The 1998 Master Plan called for such conceptual development plans to be prepared for each park and facility including Prairie Creek Reservoir. A lack of public awareness and participation in park activities was cited as another cause for concern. Many citizens are unaware of park facilities and activities and therefore the parks including Prairie Creek are underutilized. It was recommended more use be made of local media, mailings and civic organization contacts. A lack of adequate funding was also cited as a problem that needed to be addressed. Without adequate funding, facilities cannot be maintained or improved. It was suggested that funding sources be explored outside the traditional appropriation from property taxes including grants, bonds, foundations and cooperative projects. Specific improvements called for at Prairie Creek Park included the installation of a shock-absorbent/resilient surface to play areas and the renovation of picnic areas, including upgrading the tables to permanent heavy-duty fixtures. Renovation of the beach bath house and shelter and of the restrooms was also suggested. All those improvements were called for by the year 2000.

1 Rundell Ernstberger Associates, Muncie Park & Recreation Master Plan, December 1998, p. 84

The Muncie-Delaware County Comprehensive Plan, completed in 2000, noted that Prairie Creek Reservoir Park meets the National Recreation and Park Association's definition of a regional park. The Comprehensive Plan stated the Prairie Creek area is a very special regional amenity and that a subarea study should be conducted to help plan its long-term future. The Plan suggested the following issues should be examined:

- Environmental amenity preservation areas
- Utility extension alternatives
- Other infrastructure requirements
- Alternative development patterns including the provision of upscale housing sites

The Comprehensive Plan listed six goals as statements of policy describing the community's desired future conditions. Goal 4 is to "preserve, protect and maximize benefits from the natural environment". Objective C under that goal is to "capitalize on recreational opportunities provided by Prairie Creek Reservoir as a unique community resource". The specific policies listed for that objective are to "encourage passive recreational sites and activities at Prairie Creek such as scenic overlooks and habitats", and "develop a strategic master plan for development and preservation in and around the Prairie Creek Reservoir"[2].

The White River Watershed Management Plan referred to the Prairie Creek Subwatershed as a unique Delaware County watershed possessing a man-made drinking water reservoir as its major water body. The major positive finding of the study for this watershed was the extensive wooded and grass buffer acreage that surrounds the reservoir. The status of this buffer was noted as in jeopardy due to the acreage being held by a private water company and leased to the local park department through 2021 after which its future is uncertain. The Plan also noted the problem is compounded by there being no master plan for the reservoir or the surrounding subwatershed. Specifically mentioned among the recommendations is to develop a Master Plan for the Prairie Creek Watershed.

Drinking water quality, wildlife diversity, aesthetics, fishing, boating and swimming were all community identified concerns that served as impetuses for the initial White River Watershed Project and are applicable to Prairie Creek Reservoir. The Management Plan that came out of that project calls for the development of a plan that will achieve a balance between development and resource protection needed for a subwatershed that provides drinking water. For the Prairie Creek Subwatershed specific water quality concerns included the threat of potential development on the banks of the reservoir, the impact of conservation practices on agricultural lands that might positively affect water quality, the affects recreational activities on the reservoir, geese, broken drainage tiles and the impact of woodland loss. The Management Plan states that Prairie Creek Subwatershed has most of its reservoir surrounded by trees or grass which is appealing on many different fronts, most importantly as a zone of protection against non-point source pollution runoff.[3] Part of the implementation phase of the White River Watershed Management Plan included partnership with the Delaware-Muncie Metropolitan Plan Commission to develop a Master Plan for the Prairie Creek Reservoir area. Specifically the Watershed Management Plan calls for this Master Plan to address urban sprawl, recreation on the reservoir and the loss of woodlands.

2 HNTB, Muncie-Delaware County Comprehensive Plan. 27 August 1999. p. 7-9. 27 February 2006. <http://www.co.delaware.in.us/departments/plancommission2/>

3 White River Watershed Management Plan, 2004, p. 45

Justification

The positive effects of parks and accessible natural areas make them important contributors to a community's health and economic vitality. People and businesses choose to locate near parks and trails and cite the importance of those quality of life amenities as variables that affect their decisions. Studies have shown that natural open space, parks and trails are one of the deciding factors in retirees choosing a community. Properties with a view to a river, stream, lake or woodlot are often more desirable. Access to the outdoor recreational opportunities afforded by proximity to parks and trails are also seen as positives. Owners of small companies cited recreation and parks as the highest priority in choosing where to locate their businesses.[4] Increased marketability of properties near such amenities can result in higher accessed values and increased tax revenues for local governments. Parks and trails can help define a community and give it a sense of place adding to local pride.

People are increasingly becoming aware of the health benefits of hiking, walking and biking. There are health care cost benefits for those who exercise regularly and they carry over to a community's economic prosperity. A National Park Service study indicates that regular exercise can lead to 14% fewer healthcare claims, 30% fewer days in the hospital and 41% fewer claims of more than $5,000.[5]

Haphazard development has led to numerous problems in many communities. Developing in important watersheds can reduce the abilities of the natural waterways to control flooding, filter out toxins and nutrient pollutants, trap sediments and support wildlife and plant species. Flooding, water pollution and habitat problems have been linked to the existence of impervious surfaces in a watershed that causes runoff when it rains.[6] Rainwater flows across the impervious surface collecting pollutants and during warmer months heat. The amount of impervious surface in a watershed significantly impacts the quality of the water and the health of the stream ecosystem. As little as eleven percent of the ground covered by impervious surfaces such as roads and buildings can adversely impact this condition. Above 25% impervious surface the run off radically alters the streams and they become non-supporting environments. Currently the watershed is at 1.5 percent impervious surface runoff into the streams that feed Prairie Creek Reservoir. However, a significant increase in the built environment of the watershed would push the level to impacted leading to degradation. Once a watershed becomes impacted the increased water flow changes the geometry of the streambeds. The banks become unstable meaning the physical habitat of the stream declines noticeably. Stream water quality shifts from good to fair and stream biodiversity declines. The most sensitive species begin to disappear.

Providing infrastructure and other public services to outlying development may cost more than the development produces in tax revenues. This is particularly true when homes are spaced out on larger lots. Farmland generally produces more tax revenue than it costs government to supply services, but residential properties usually consume more service dollars than they generate. Green infrastructure is necessary to manage stormwater and reduce pollution even along farmland.

4 Crompton, John L., Lisa L. Love, and Thomas A. More. 1997. An empirical study of the role of recreation, parks and open space in companies' (Re) location decisions. Journal of Park and Recreation Administration pages 37-58.
5 Greenways Incorporated, p. 14.
6 Benedict, Mark A. and Edward T. McMahon. 2001. Green infrastructure: smart conservation for the 21st century. Sprawl Watch Clearinghouse Monograph Series. 20 September 2006.

A recent study conducted by Ball State University demonstrates that a concentration of phosphorus from fertilizers used in agriculture and lawn treatments together with wastewater seepage from surrounding septic systems and soil erosion has contributed to algal growth, aquatic weeds and a lack of dissolved oxygen which can negatively impact fishing, recreational use and drinking water quality.[7] The process of eutrophication, having already began, should be addressed. Measures should be taken to halt the progression of this process and return the reservoir to a healthy state.

It is hoped that the City of Muncie, Delaware County, landowners and interested groups will see the need to protect and enhance the special gifts this community has in Prairie Creek Reservoir and Park. Clean water, animal and plant habitat and natural landscapes, especially water bodies, are increasingly rare in our environment. It is a basic belief that this community has an obligation to ensure that these gifts are well cared for so they may be passed on to future generations.

Study Area

The area covered by this study is multi-boundary reflecting a number of different levels of interest. The physical watershed based on topography and draining into Prairie Creek Reservoir is one way to define the area. On another level the viewshed, that land which can be seen from the reservoir and land from which one can observe the water, is an area of study. The park and reservoir is the subject of some aspects of this study. At times this plan will refer to the "ring roads", those roads that adjoin the park, as an area of interest. A larger area contributes to the study regarding transportation and marketing issues. See Figure 1, on page 14, for a graphic representing the primary study area.

7 Popovicova, Jarka, Ph.D. 2006. Water Quality Assessment of the Prairie Creek Reservoir.

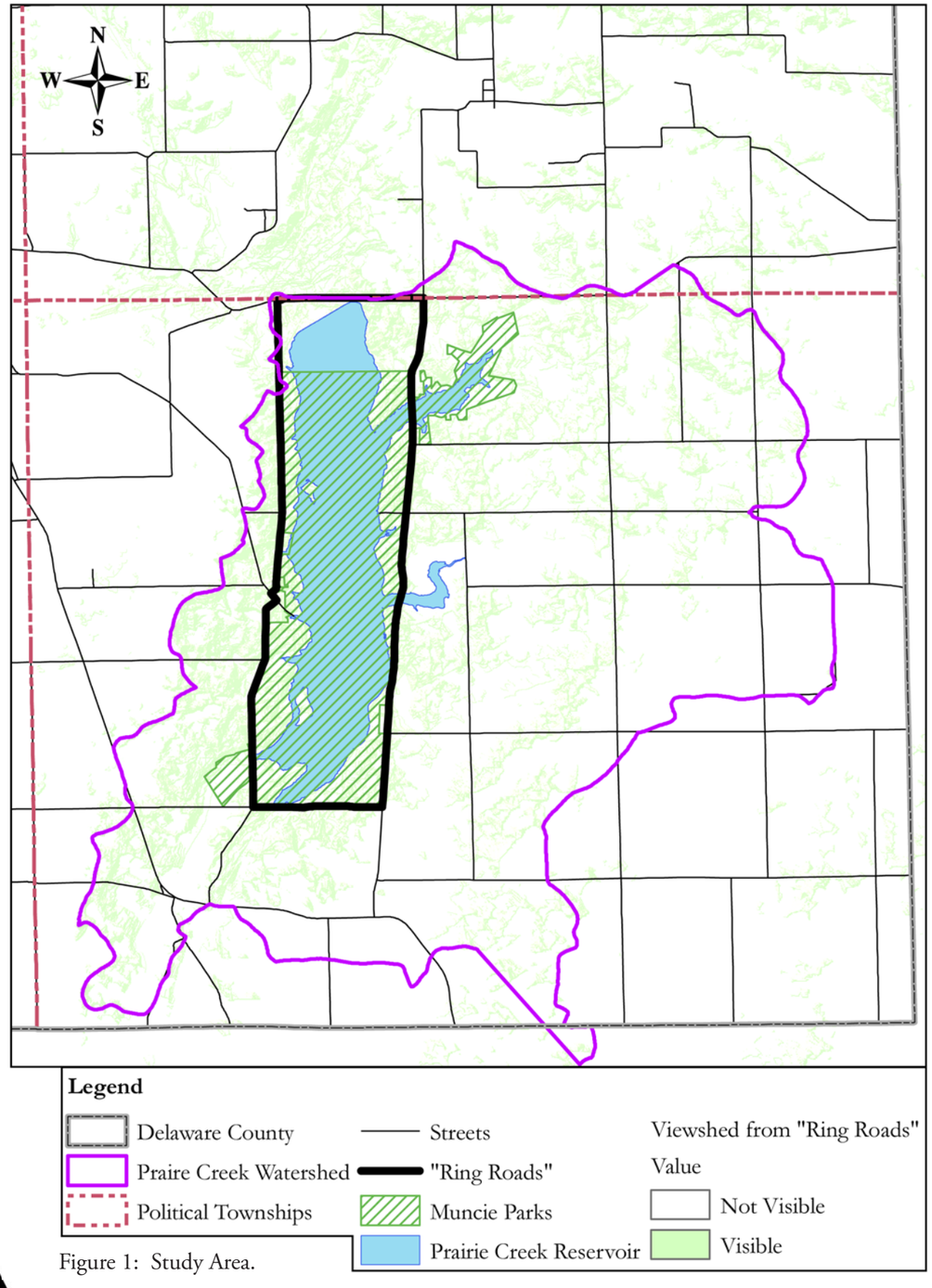

Figure 1: Study Area.

Process

This document is a plan for the efficient and intelligent development and management of the resources of the Prairie Creek Reservoir. The goal is to develop a master plan that enhances the long-term ecological health of the reservoir and supporting watershed while at the same time providing ample opportunity for human use and appreciation of this unique resource, finding the right balance between ecology and the built environment. It is hoped that this document can be a catalyst for connecting the entire community to the reservoir. The creation of a sense of place that gains public respect will greatly aid in this process. Community education about caring for the water, water quality, habitat and natural vegetation is key. The desire for new recreational opportunities and protecting the local ecology while increasing the value of personal property are important considerations. Fostering economic growth and vitality is also a consideration.

The plan is a joint effort between the Delaware-Muncie Metropolitan Plan Commission and the White River Watershed Project. It is an outgrowth of both the Muncie-Delaware County Comprehensive Plan and The White River Watershed Management Plan. The Prairie Creek Master Plan was written by Delaware-Muncie Metropolitan Plan Commission Staff Fred Daniel and Lorey Stinton with assistance from two Ball State planning interns and Delaware County Soil & Water Conservation District's Watershed Coordinator Angela Brown. A Steering Committee was formed from members of the community with various backgrounds and expertise to help guide development of the plan.

The process for developing the plan began in August 2005 when the DMMPC hired two Ball State University graduate assistants. The graduate assistants and the planning team held initial meetings and began preliminary background research about the area. The second major phase of the plan entailed a site inventory and analysis of the natural resource and ecological features, current land uses and development, relationship of the site to adjacent land uses, and compatibility. Two site visits were conducted in September and October to survey the area, take photographs, and speak with the park staff. Written text and maps using Geographic Information System technology were created to articulate findings for presentation. After the site inventory and analysis phase was complete, a needs assessment was conducted. A 3-D graphic video produced by intern Hemanth Tallam takes the viewer through the reservoir valley from an aerial perspective using ArcGIS technology.

A webpage was created for the Prairie Creek Master Plan, as an extension to the White River Watershed Project's website. The web address is http://www.co.delaware.in.us/watershed/PC_master_plan.htm. The Prairie Creek Master Plan webpage contains links to relevant documents including a copy of the lease agreement for Prairie Creek Reservoir between the Indiana American Water Company and the City of Muncie, and graphics showing the land owned by the Water Company and the watersheds that contribute directly to Muncie's drinking water. The Muncie-Delaware County Comprehensive Plan can also be viewed from the Prairie Creek Master Plan site and there is a link to the Delaware-Muncie Metropolitan Plan Commission website. This webpage was also used to host a link to an online survey. Other materials were posted as they became available including the focus group recommendations.

A Steering Committee was formed from sixteen members of the community with various backgrounds and expertise to help guide development of the plan. The Prairie Creek Master Plan Steering Committee met for the first time in November. At that meeting interns Molly Molter and Hemanth

Tallam shared the results of their preliminary studies. An informational notebook prepared by staff was passed out at the meeting.

The Prairie Creek Master Plan Steering Committee met for the second time on January 6th. Bob McCormick of Planning With Power talked to the Committee about services his program offers as well as general water quality and planning issues. At this meeting the need for a public input survey was discussed. The survey was mailed in February to 1,500 Delaware County residents chosen randomly. We received two hundred and nine returned survey forms, fourteen percent of those mailed out. The results were compiled and are included in the appendix. The survey was also available online. An article appeared in the Star Press February 26th that mentioned the online survey.

An Executive Committee was formed as a guiding body from members of the Steering Committee. Jarka Popovicova, Jon Creek and Dave Ferguson met with staff on February 16th to discus the future organization of the Steering Committee and issues regarding the Master Plan document. An adjusted timeline and strategies for plan development were discussed at this meeting. Other public outreach projects discussed included a public informational meeting and a water quality educational module for elementary school presentation. The Steering Committee again met in February and performed a S.W.O.T. exercise identifying the Strengths, Weaknesses, Opportunities and Threats they saw at Prairie Creek Reservoir. The outcome of this exercise helped to refine the issues.

A meeting on Feb. 24th with Plan Commission staff and Prairie Creek Park Superintendent Ron Bonham was held in his office. Ron shared his perspective on the challenges facing the reservoir and answered several background questions. Ron Bonham's unique knowledge of the reservoir and surrounding area added greatly to our ability to define the important considerations in planning for Prairie Creek's future. Foremost among his concerns is the ability to protect the resources at Prairie Creek beyond the terms of the current lease so that they will be available for future generations.

Members of the Steering Committee met with Ron Bonham at Prairie Creek Park on March 11. Mr. Bonham answered member's questions and gave the members some good information on park operations, issues and concerns. He also outlined for them some suggestions for park improvements.

The Steering Committee met on March 13 and reviewed the survey data. Based on the survey results and Committee discussion, the next steps were the creation of three focus groups, one each to address Economic Development, Recreation, and Conservation & Environmental issues. A breakfast workshop was authorized and held March 30. Presentations were given by Mike Lunsford (Economic Development focus), Barry Banks (Conservation & Environment focus), David LeBlanc (Conservation & Environment focus), and Rick Conrad (Conservation & Environment focus). The focus groups then each met separately to devise an ideal land use map and strategies to implement their vision of development in the Prairie Creek Watershed. Two such meetings were held with each group. Lorey Stinton and Jon Creek met with Ron Bonham April 21 to discuss the outcome of the focus group work.

The team met with members of the Steering Committee May 4 and presented the results of the focus group work. This meeting marked the end of involvement by interns Molly Molter and Hemanth Tallam. Lorey Stinton and Fred Daniel completed the Plan with assistance from Watershed Coordinator Angie Brown.

Synthesis and policy development was the next phase following the focus groups. Goals and objectives such as ecological, recreational, education potentials, development concerns, natural resource management issues, and scientific perspectives taken from the focus groups were synthesized to create preliminary master plan recommendations.

A public meeting was held July 25th. This meeting presented background information and land-use scenarios and recommendations developed by the focus groups. Individual invitations were sent to property owners in the Prairie Creek Watershed. The Star Press printed an article June 15th that informed the public that a public meeting would be held in late July, and then printed a follow-up article July 24th announcing the time and place for public meeting on July 25th. Nearly 150 people attended this meeting. Attendees were asked to complete a comment sheet giving their opinion on the recommendations from the focus groups and to provide any additional thoughts and/or suggestions. Feedback from the public meeting was analyzed and used to determine the amount of public support for each recommendation. Articles also appeared in the Star Press July 27th and August 8th following up on this meeting.

The Executive Committee met with DMMPC staff and the SWCD Watershed Coordinator in September through December to finalize Goals and Objectives and Implementation. Land use zone maps and supportive text were created, examples of suitable development and alternative concepts were defined, and project phasing and implementation steps were developed.

The final phase was to write the plan document herein presented.