



# THOMAS MITCHELL PARK MASTER PLAN

JANUARY 12, 2011



WE WOULD LIKE TO THANK THE MEMBERS OF THE POLK COUNTY CONSERVATION PLANNING COMMITTEE AND POLK COUNTY STAFF. WE WOULD ESPECIALLY LIKE TO THANK THE PUBLIC PARTICIPANTS THAT ATTENDED THE COMMUNITY WORKSHOPS.

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## EXECUTIVE SUMMARY

The master plan for Thomas Mitchell Park provides a clear development plan for the 185-acre park. The year-long planning process began in the Spring of 2010 and has involved local public, park users, Polk County Conservation Advisory Board, RDG Planning & Design consultants and Polk County Conservation staff through public workshops, working sessions, and ongoing meetings.

The first tract of land that currently makes up Thomas Mitchell Park was purchased in 1961. Originally known as Camp Creek, the park has always been highlighted by the creek that runs through it. Camp Creek is a fragile watershed that has received increased attention in the past decade and will continue to receive attention in coming years. The 6-acre pond is also an important park amenity that provides a family-friendly location for fishing and wildlife viewing. Pond improvements that are taking place at the onset of this master plan should ensure that the integrity of the pond remains in good standing through the duration of this master plan.

The mature oak-hickory woodland within Thomas Mitchell Park is known for a spectacular spring wildflower display and abundant wildlife including woodland birds not commonly seen elsewhere. A beautiful nature trail system attracts hikers, birders, and mushroom hunters. Polk County staff has aggressively worked to manage and restore the woodland areas in Thomas Mitchell Park with prescribed fire and timber stand improvement techniques.

Public input and that of park managers identified a variety of park needs in response to the changing amount and type of users. These needs include improved quality and management of Camp Creek, the pond, woodlands, and prairie; recreational enhancements to the campgrounds, nature trail system, pond area, and cabin development; access to and within the park; and accessibility for visitors with disabilities.

Several improvements are recommended in the master plan. The most significant is the enhancement and access to the pond area. Cabins, shelters, an expanded nature trail system and paved accessible trail around the pond, and upgraded vehicular bridge will highlight this area of the park. Although limited in size, some electric campground expansion can take place along with improvements and efficiencies to primitive campgrounds, restroom/shower facilities, and septic systems.

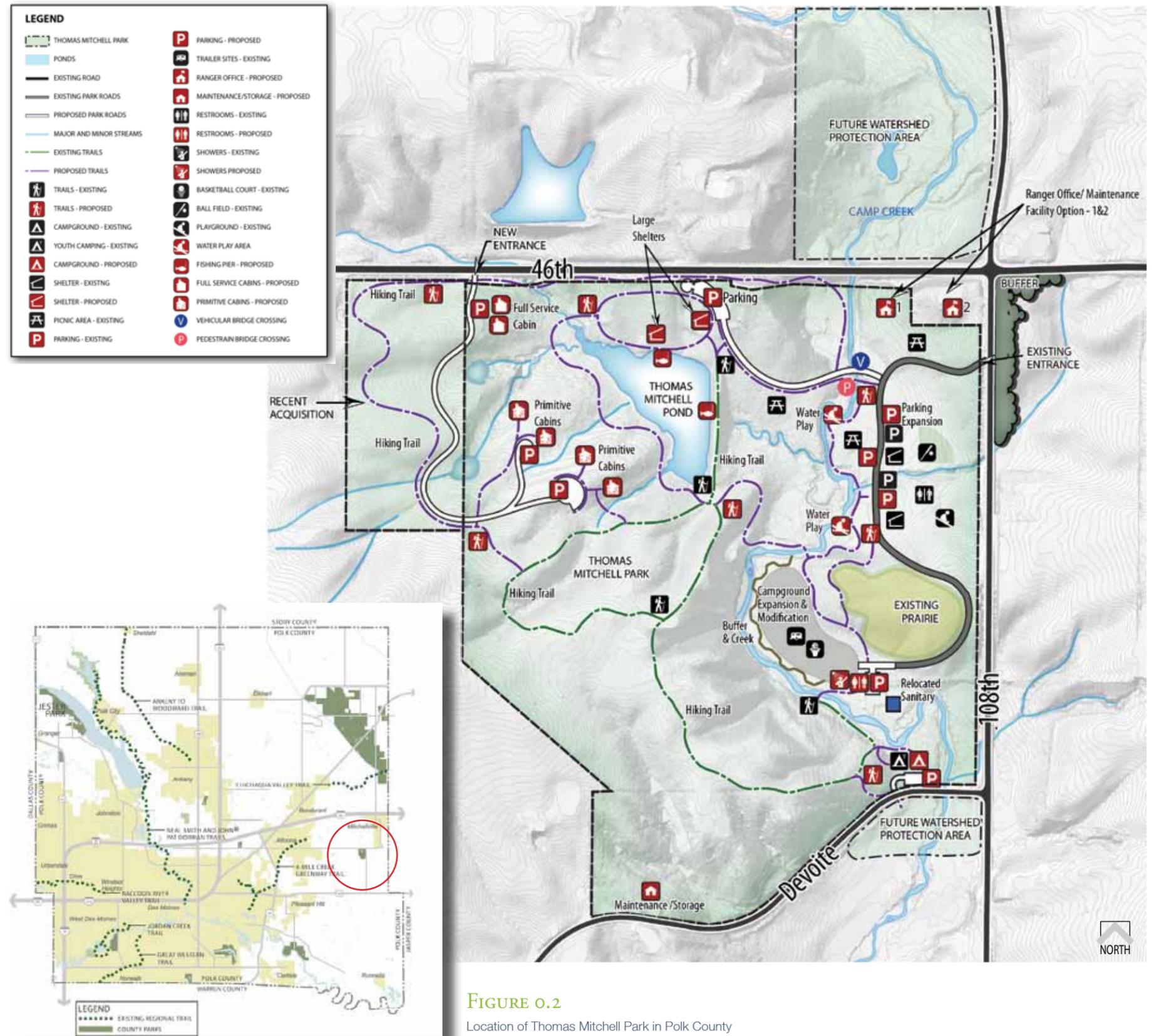


FIGURE 0.2  
Location of Thomas Mitchell Park in Polk County

# Chapter I: Introduction



## PURPOSE

The Thomas Mitchell Master Plan provides a clear development plan for Thomas Mitchell Park. Park master plans provide a means to determine the best uses for a park and to optimize management of the park's natural and human resources. The Thomas Mitchell Master Plan will serve as a general guide for future appropriate park uses and their approximate location within the park. The Plan will provide a long range vision (10-20 year time frame) for future development and programming. The Plan is conceptual in nature and is not intended to address detailed issues related to site planning, facility designs or park operations.

## PROCESS

The Thomas Mitchell Master Plan process was initiated in the spring of 2010. An initial public meeting was conducted in June 2010 to gather input from park users, neighbors and other interested individuals. A Polk County Conservation (PCC) planning committee was developed to oversee the planning process. The Committee completed an assessment of the physical and natural resources of the park and surrounding areas.

A second public meeting was conducted in November to provide feedback and preliminary recommendations to the public regarding their initial input and share the findings from the resource assessments. Based on the input received a draft master plan was prepared and presented to the Polk County Conservation Board at their January 2011 public meeting. The Board approved the Master Plan the following month at their February 2011 public meeting, concluding a year-long planning process.



## GOALS

Preliminary goals were identified to guide the planning process. These goals were based on concerns and opportunities identified by the public, other agencies and staff. The goals can be summarized as:

- Improve the quality of aquatic habitat and recreation
- Provide additional overnight stay opportunities
- Identify the best intended use of the area north of the pond
- Improve vehicular and pedestrian access to the west side of the park
- Increase and improve park trail access
- Increase access to Camp Creek
- Respond to the increasing demand for amenities at developed campgrounds
- Increase parking at recreation area near shelters #1 and #2
- Provide improved accessibility for visitors with disabilities
- Improve access to tent and group camping
- Aggressively manage the prairie, savanna and woodlands
- Enhance and stabilize Camp Creek

Additionally, the following outcomes were identified as products from the process:

- Emphasize sustainable construction and improvements
- Prioritize recommended improvements
- Reduce operating costs where feasible

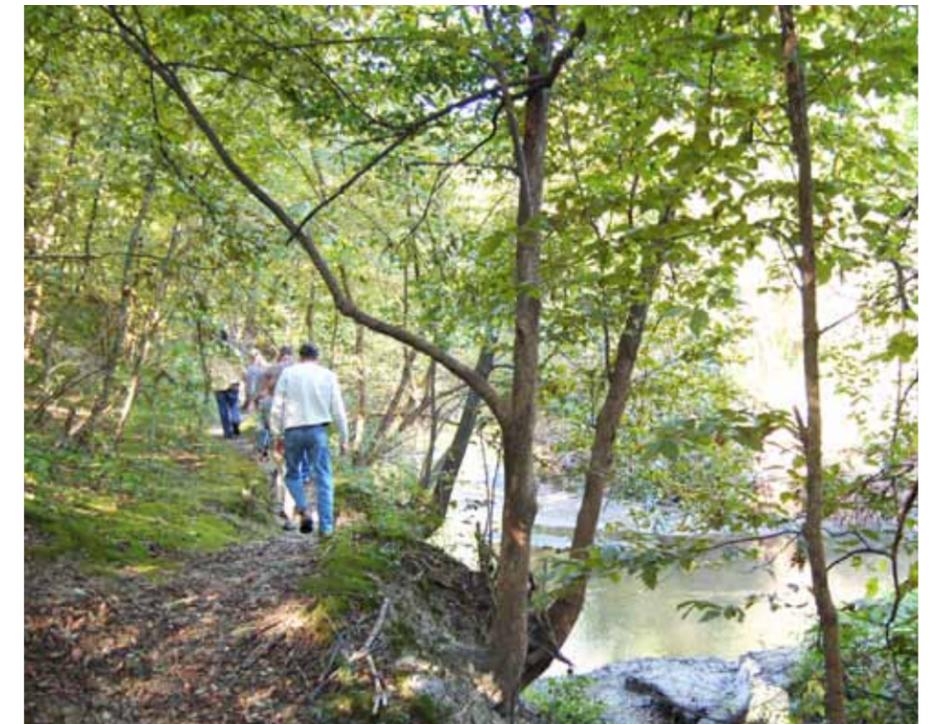


FIGURE I.1 - I.5

Polk County Staff field tour and inventory of Thomas Mitchell Park

# Chapter II: Park Overview



## CULTURAL HISTORY

Thomas Mitchell Park is named for Polk County's earliest Anglo-American settler, who traveled from New Hampshire to build a cabin overlooking Camp Creek in 1844. This event is commemorated by a park monument which bears his name. Thomas Mitchell was from Claremont, New Hampshire. He moved to Fairfield, IA, in 1840 with his brother Henry. Mitchell was given permission by Captain Allen, the Commander of Fort Des Moines, and Captain Beach, the Indian Agent of the Sacs and Foxes, to enter Indian Territory (future Polk County).

Mr. Mitchell moved to Camp Creek (current Thomas Mitchell Park site) in April of 1844 with his wife, son and daughter. Mrs. Mitchell didn't meet another English-speaking woman for three months after she arrived at Camp Creek. Thomas was granted permission by Captain James Allen to establish an inn and build a bridge across Camp Creek between the Native American boundary line (Monroe) and Fort Des Moines. All supplies were brought by wagon from Keokuk to Fort Des Moines. Other non-English speaking settlers were not allowed into the territory for another one and a half years. Mitchell's inn was the only refuge/stagecoach stop between Monroe and Fort Des Moines in 1844.

Iowa has been a land sought after first by Native Americans, and later by settlers, for hundreds, if not thousands, of years. Before European settlement, central Iowa was inhabited by the Sauk and Fox tribes. It wasn't until 1846 that this land was granted statehood and settlement could officially begin.

In 1846, Thomas Mitchell and his family moved about 1 ½ miles southeast of his original cabin to Apple Grove. In 1849, Des Moines's first regular stagecoach service began between Keokuk and Council Bluffs (ended in 1870). During that year, Mr. Mitchell fed 7,000 groups of pioneers heading west. The cabin served as a post office and voting place from 1849-1868.

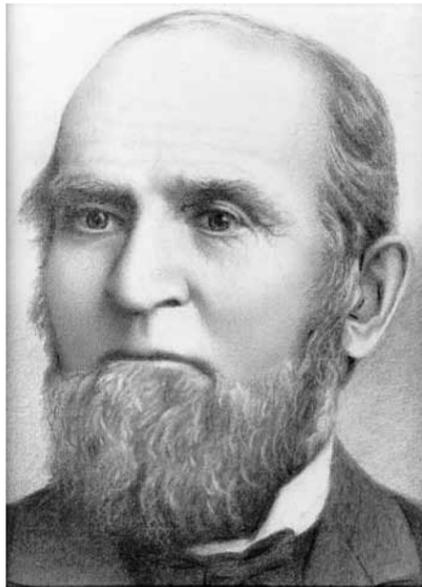


FIGURE 2.1

Photograph of Thomas Mitchell



FIGURE 2.2

Camping in the 1960's

By 1861, there were 200 residents in the Mitchellville area. Thomas Mitchell was a prominent figure in the community and had roles as a farmer, innkeeper, Polk County's first sheriff, and legislator of Polk County.

The Polk County Conservation Board acquired its first 24-acre parcel of land, known as the Camp Creek tract, in 1961. Additional purchases through 2010 have increased the park acreage to 185 acres. The park was renamed Thomas Mitchell Park in 1967 to honor Mr. Mitchell.

## NATURAL RESOURCES - GEOLOGICAL HISTORY AND FOOTPRINT ON CENTRAL IOWA

Iowa's geological history is heavily influenced by millions of years of change, including continental drift, climate change, and the rise and fall of great oceans, inland seas and ice sheets. Much of Iowa's current landforms are the remnants of glacial advancements and retreats over the past tens of thousands of years. This back and forth migration of glacial activity has created subtle but unique landforms throughout the state of Iowa, including Polk County.

Thomas Mitchell Park is located on or very near the terminal moraine of the Wisconsin Glaciation, Des Moines Lobe. The glacial melt-water outflow created narrow valleys with steep sides surrounded by rolling uplands. One of those valleys contains the waters of Camp Creek which flow through the park creating a rich environment for wildlife. While Thomas Mitchell Park falls just within the southern extent of the Des Moines Lobe, Yellow Banks Park, just 15 miles to the south, falls just outside the terminal moraine.



FIGURE 2.3

Aerial photograph is of the area that will become Thomas Mitchell Park. This photograph is from the 1950's.

Today, as one flies over the state, there are sometimes subtle, sometime distinct lines in the landscape that indicate the passing of time through the demarcation of landforms—the shape and surface materials of the land, as formed by geological processes. Iowa's geological building blocks are:

- Sedimentary rocks – limestone, sandstone, dolomite, shale – millions of years old
- Ice Age deposits – glacial till left by retreating ice, sand and gravel from glacial melt water, and loess, a fine wind-borne particle – hundreds of thousands to thousands of years old
- Alluvium – gravel, sand, clay from river deposits – thousands of years old to present time

Thomas Mitchell Park, located just within the Des Moines Lobe, provides a glimpse of all three of these geological building blocks. Depicting Thomas Mitchell in cross-section, Figure 2.6 illustrates the associated plant communities found in the typical cross section of Thomas Mitchell park.

The Des Moines Lobe is the youngest glaciated area in the state. Because it is so young, drainage ways are not well developed and as a result this relatively flat area was historically studded with tens of thousands of "potholes"—slight depressions that filled with water in the spring and gradually dried over the summer, only to fill again in the fall. Located at the terminus of the Des Moines Lobe, Thomas Mitchell Park does have more advanced stream bed development in Camp Creek. Because of its location, Camp Creek actually cuts through the layer of glacial deposits and in some locations is carving away at bedrock.



FIGURE 2.4

Aerial photograph of Thomas Mitchell Park in 2009.

In recent years, the creek has been dramatically impacted by significant changes in land use and more specifically in land cover. Surface runoff and tiling has also impacted the creek significantly.

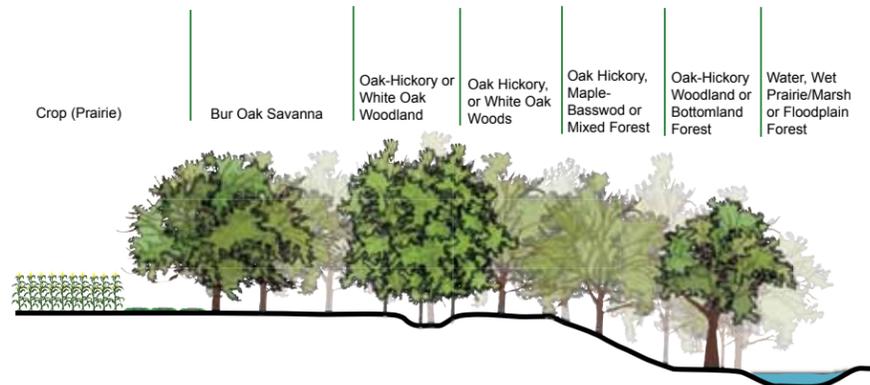
### ECOLOGICAL HISTORY IN CENTRAL IOWA - PLANT COMMUNITIES, VEGETATION CHANGE, AND POLK COUNTY PARKS

Central Iowa's natural plant communities have undergone significant changes in vegetation over the years. From 1832 to 1859 the entire surface of Iowa was mapped to enable settlers to buy land. As part of this mapping, surveyors noted the types of plant communities they encountered, the names and sizes of trees, stream crossings, water bodies, settlements and roads. From this information, gathered along every section line of the state, it is possible to assemble a map of the "historical vegetation" of Iowa 1832 to 1859.

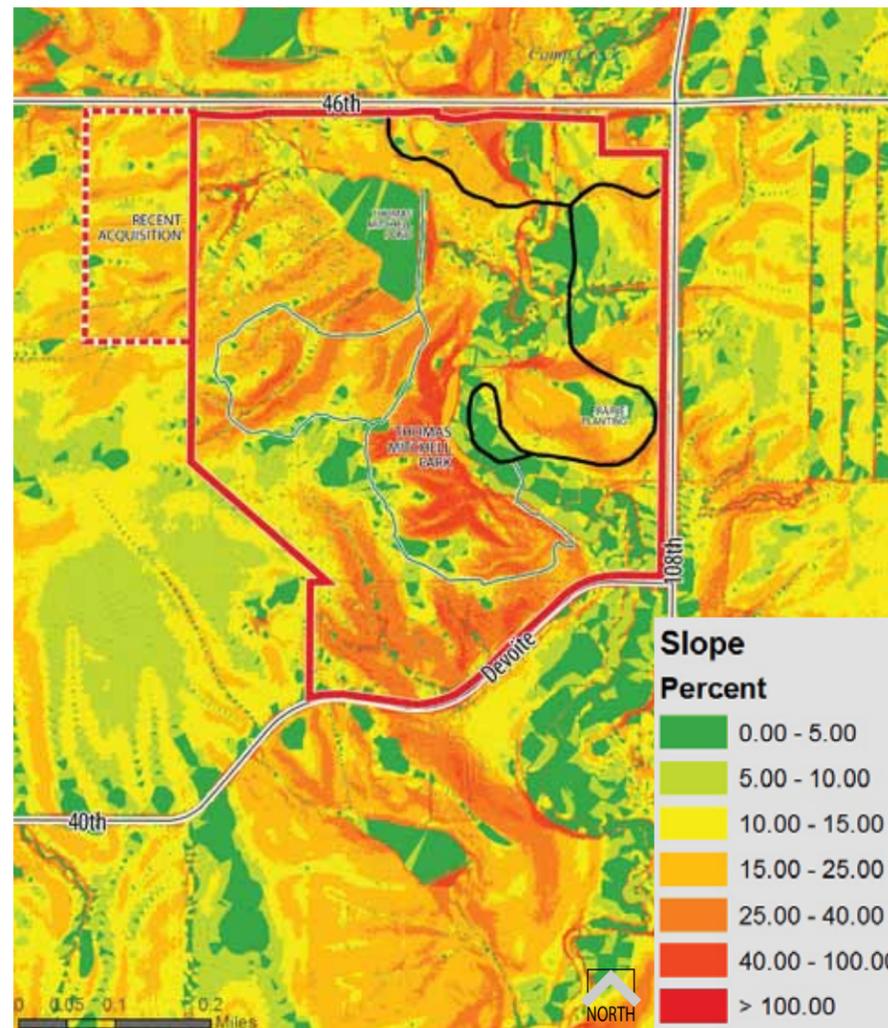
Most of Iowa (78 percent) was prairie before European settlement. Embedded in this prairie were tens of thousands of wetlands, many concentrated in the recently glaciated Des Moines Lobe, but also along drainage ways and in river valleys. Out of the original 30 million acres of prairie, only some 30,000 acres remain (0.1 percent), most concentrated in the Loess Hills of western Iowa. Wetlands have experienced similar losses.



**FIGURE 2.5**  
This map of Polk County illustrates the terminus of the Des Moines Lobe and its proximity to Thomas Mitchell Park

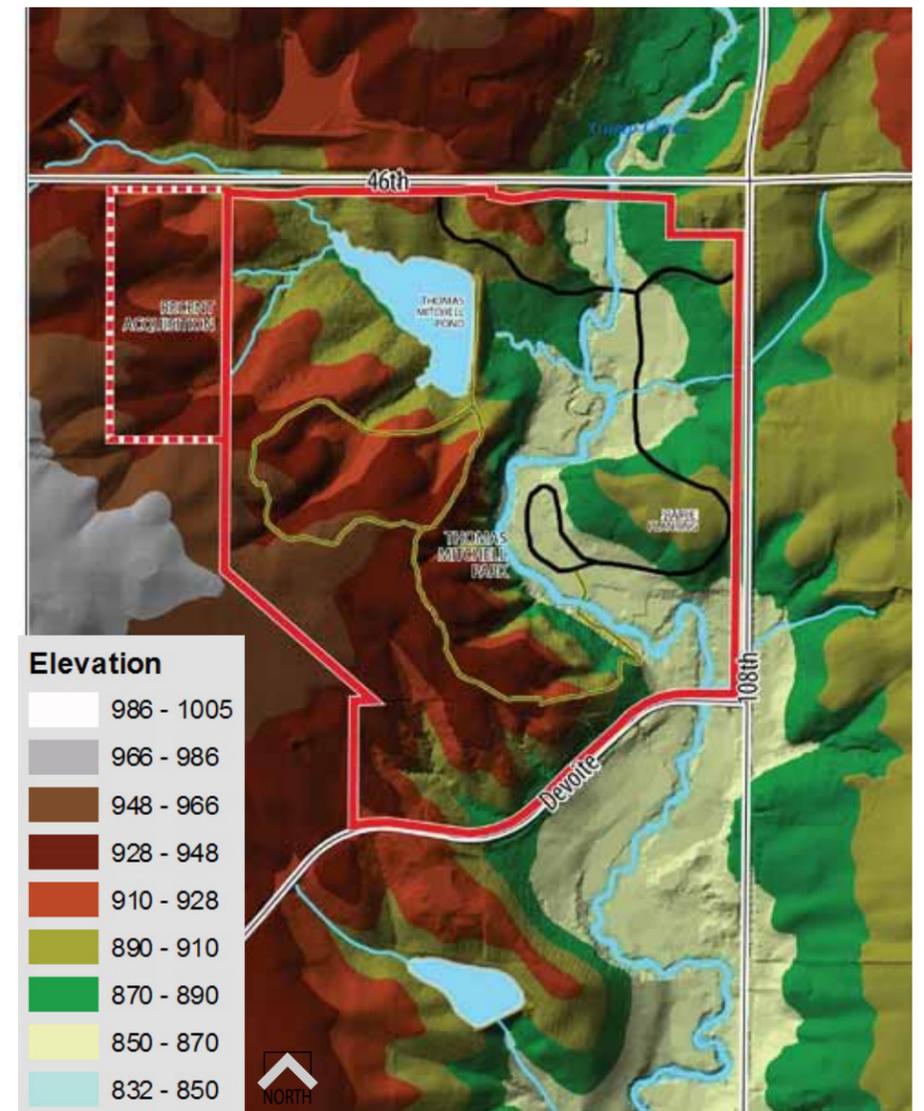


**FIGURE 2.6**  
This section illustrates the typical cross-section found in Thomas Mitchell Park and associated plant communities found within the park.

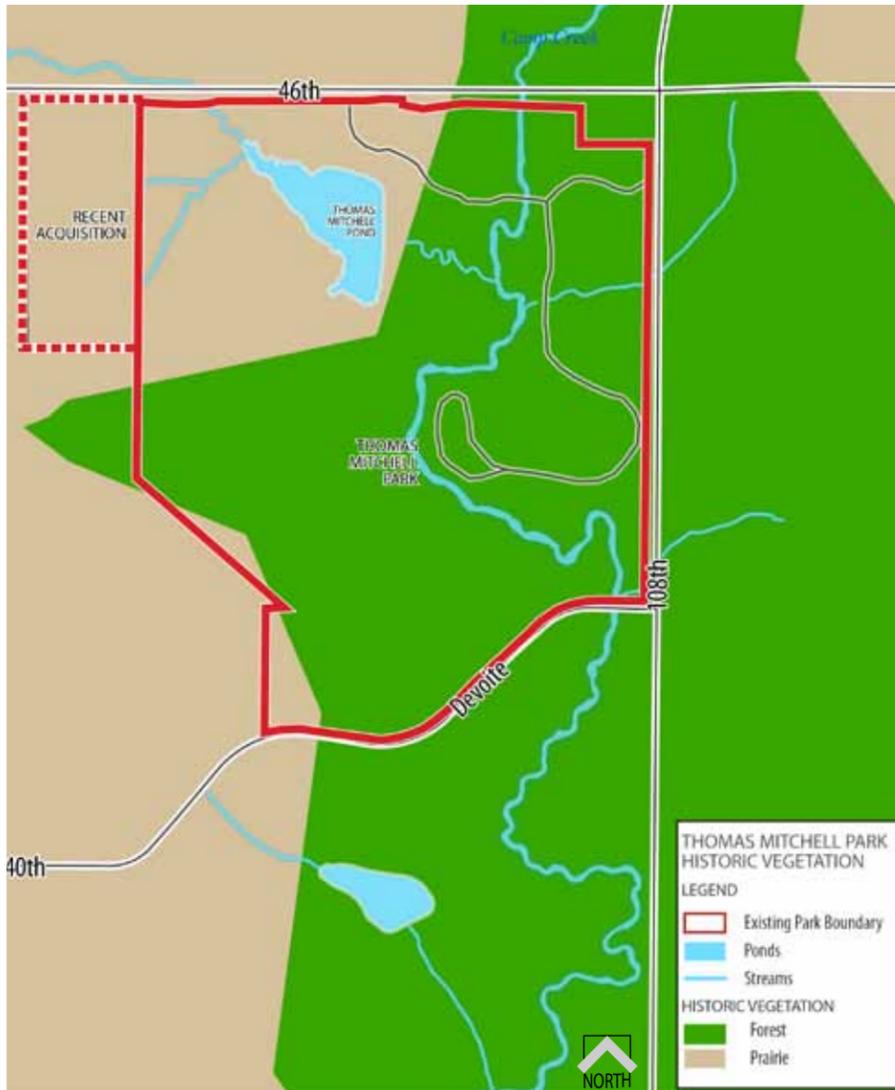


**FIGURE 2.7**  
Thomas Mitchell Park utilizes the areas of limited slope for active recreation and the areas with greater severity of slope for habitat.

Comparing the current forest cover in Iowa to the historical cover, it appears things have not changed significantly. Forests were and are today concentrated in northeast Iowa, south-central Iowa, and along rivers and streams. Pre-European forest cover, calculated from historical survey data, totaled 7 million acres. Yet that number hides an interesting and poorly known aspect of Iowa's ecological past—the savanna. Close inspection of the early surveyor notes indicates that some areas that might appear to be forests because trees were present were called "barrens" or "oak openings" by surveyors. Other surveyors described the plant community as part prairie-part timber, or timber with scattering trees, or "openings." Brush and thicket were also named. These plant communities shared a common ecological feature—they originated with disturbance, such as major windstorms or, more commonly, wildfire. The disturbances—usually fire—occurred often enough that a forest with tall, dense trees did not develop. It is estimated that historically there were three million acres of this disturbance-related plant community in Iowa.



**FIGURE 2.8**  
This diagram provides some analysis of the elevations found in the park.



**FIGURE 2.9**

During the survey work of 1847, the land surveyor varied with accuracy and specificity. The vegetation cover of Central Iowa was typically identified as forest or prairie. A significant amount of woodland was however a mix of both forest and savanna. The vegetation in the mid 1840's would have been a mix of prairie, savanna and forest.

Oak trees tend to have a less layered arrangement of branchlets and leaves than trees of shaded environments, such as maple. Forests tend to have multiple layers of trees, saplings and shrubs, while savannas tended to have a single layer—the tree canopy—with scattered saplings and shrubs, or at most a single layer of shrubs under the canopy. The result of these differences is that more light reaches the ground in savannas than in forests. This enables herbs and grasses that require more sunlight to grow under the oaks, while in forests only shade-tolerant ground layer plants can survive.

### NATURAL RESOURCE ISSUES IN PARKS

The plant communities in most Polk County Parks including Thomas Mitchell have experienced the same changes affecting the rest of the state—loss of prairies and wetlands, evolution of forest cover, and alteration of disturbances that have led to the virtual disappearance of savanna. Issues that seem most urgent when thinking about the Thomas Mitchell Park environment are:

- Edge Effects – Land uses next to parks can damage plant communities in parks and impact water quality. Herbicide drift, microclimate effects, open country and edge predators, and invasive plants originate in lands next to parks and affect plant communities inside parks.
- Decline of Oak Regeneration – Lack of disturbance, dense shading, and other factors prevent oaks from replacing themselves, leading to forests dominated by shade-tolerant species that have a lower value for some wildlife species.
- Invasive Plants – Mostly introduced species, these plants alter plant communities and affect wildlife populations, rare species, and the ecological functioning of ecosystems.
- Fragmentation – Species that need large blocks of habitat are rare in most of Iowa because habitat blocks are often too small for them. Habitat is an important park design consideration. Thomas Mitchell is a relatively small county park but does have the opportunity to provide quality wildlife habitat.
- High Deer Population – Although deer-sightings are popular with the public, when deer become too numerous they preferentially eat certain herbs and tree seedlings, preventing them from regenerating.
- User Impacts – Trampling, wildflower picking, and other intensive uses of plant life can affect rare species. Trail users affect wildlife populations, with some species avoiding areas near trails.

An important activity for Thomas Mitchell Park is the demonstration of methods to improve ecological conditions on the land. In part, this is through education and interpretation, but also by restoring plant communities to a condition of good ecological health.

### IOWA'S FOREST AND THE RELEVANCE TO THOMAS MITCHELL

Starting with over 7 million acres of forest before European settlement around 1850, Iowa lost over half its forests by 1900. After that, forest cover stayed constant until the 1970s when federal farm policy led to a second dramatic period of forest clearing. In the 1990s forest cover began increasing, totaling about 3 million acres today. Forests are expanding, as they are throughout the eastern United States, because fewer livestock are grazing the land. With the cattle removed, trees are now colonizing pastures.

### OAK DECLINE

A steady but unnoticed change is taking place in Iowa's forests with potentially large effects on wildlife populations. Oak forest and oak trees are decreasing steadily each year. In the 1954-2003 period—half a century—oak forests decreased by nearly 300,000 acres, from 1.22 million acres to 930,000 acres. A similar trend is evident in small diameter oaks—those that will in time become mature oak forest. Younger oak forests declined in the 2003-2007 period from 72,000 acres to 53,000 acres, a loss of about 4,800 acres each year.

The decline in oaks will affect wildlife populations. Some 96 species of North American vertebrates (mammals and birds primarily) eat acorns. In Iowa this

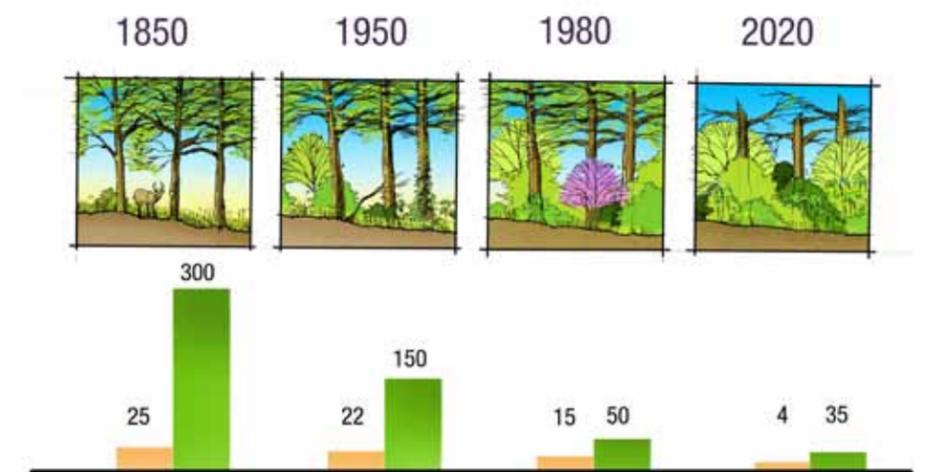


**FIGURE 2.10**

Oak Savannas

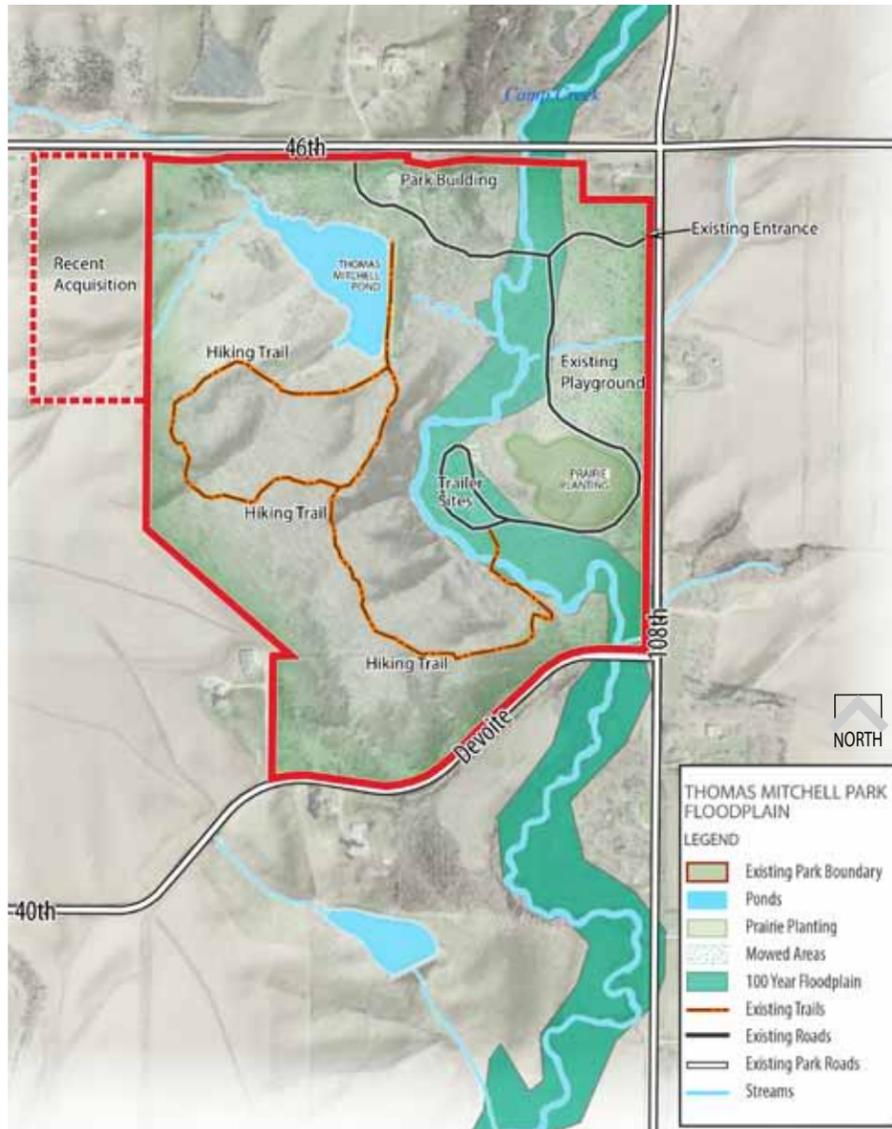
includes deer, blue jay, squirrels, and turkey.

Oak forest and oaks are decreasing in Iowa for several reasons. The most important is lack of proper management. Oaks are a mid-successional tree species, meaning they require a good amount of light to vigorously grow as saplings. Their acorns also must be near mineral soil so the young roots of the seedling can penetrate the soil and obtain water. High light levels together with mineral soil are an uncommon combination. Where enough light exists—fields, prairies—thatch and dense vegetation prevent germination or keep oak seedlings



**FIGURE 2.11**

Decline of Oak Graphic



**FIGURE 2.10**

The floodplain illustrated above identifies the impact that Camp Creek can have in bisecting the park in two during periods of significant rain accumulation. This is reinforced with the impact of flooding in 2010 and the damage created throughout the entire floodplain in Thomas Mitchell Park.

from surviving. Where there is mineral soil—as in shaded forests—there is not enough light. Before 1850, fire was a common feature of Iowa’s landscape. Fire cleared out saplings, shrubs, and thatch in forests and forest edges, creating good conditions for oak germination and growth. Modest grazing can mimic some of fire’s effects, as long as grazing doesn’t kill the oak seedlings.

Expanding its acreage at the expense of oak forest is the mixed hardwood forest. This type replaces oaks because its members are more shade tolerant. Maple seedlings numbering in the tens of thousands germinate in deep shade and can

survive for many years in low-light conditions until a tree above them dies or is felled. The seedlings race toward the light gap, easily outdistancing any oak seedlings that are present. In the absence of fire, maple and some other species are able to colonize oak forests beneath the oaks, and grow up into the oak canopy because the light levels in oak forest are adequate for maple growth.

Adding to the problem is the old age of many of Iowa’s oaks, the loss of the best specimens and even all mature oaks in a forest due to high-grade harvesting, the periodic seed production that sometimes coincides with good germination conditions, and deer grazing where numbers are high. There is also the problem of parcelization—breaking up large forest ownerships into smaller ones. Landowners of small parcels are unwilling, or find it too difficult, to manage their forests to promote oaks. Lastly, oaks are experiencing diseases and pests that were not evident a few decades ago. Why these are affecting oaks now to such an extent is unknown.

**SUMMARY**

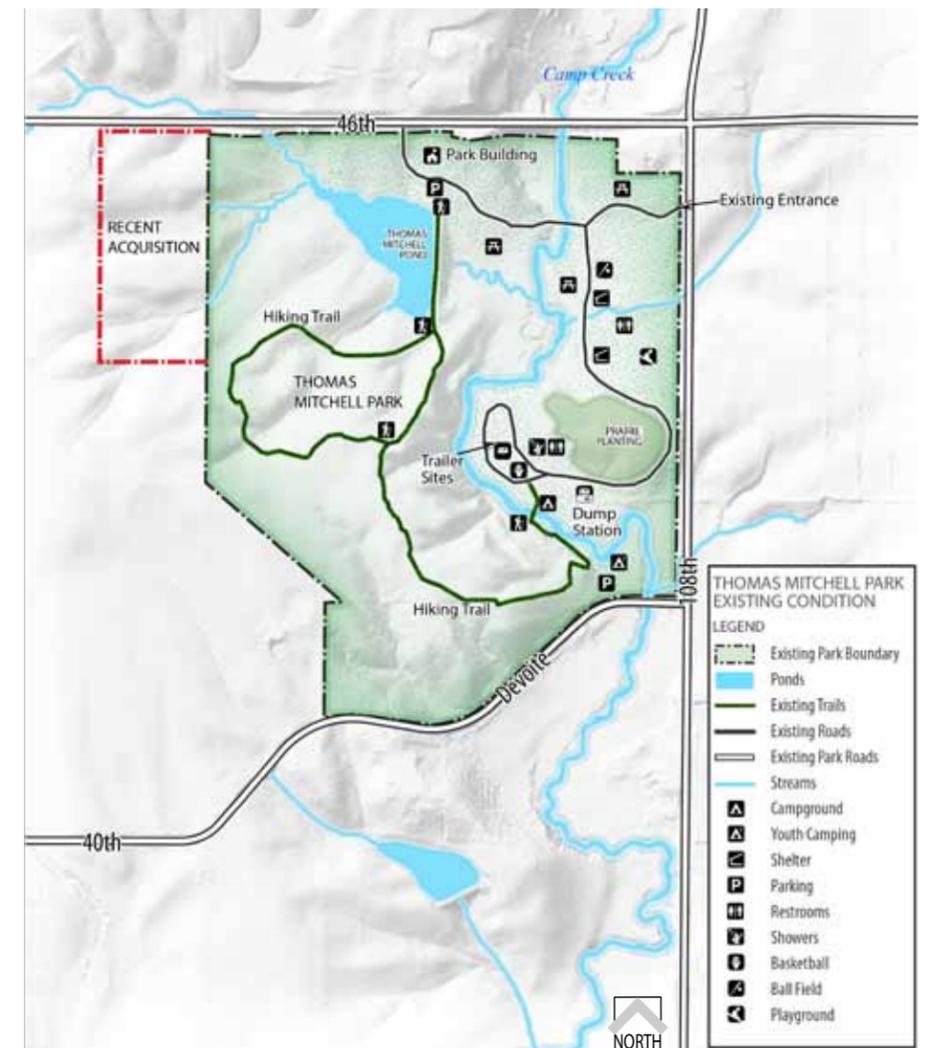
The woodland forest and riparian zones have changed dramatically since settlement. As fire and other woodland management regimes have been reduced or removed from the landscape, Iowa forests have changed dramatically. The oak woodland within Thomas Mitchell Park is known for a spectacular spring wildflower display and abundant wildlife including woodland birds not commonly seen elsewhere. This is because Polk County staff has aggressively worked to manage the woodland areas.

**RECREATIONAL AMENITIES**

Thomas Mitchell Park now covers 185 acres and features two open shelters, a modern playground, a 25 site electric campground, a 20 site primitive tent campground and a two-site youth group campground. A ¼ mile walking trail with an optional ¼ mile loop will take you from the campground through a predominantly oak – hickory forest to the pond. Thomas Mitchell Park is heavily used by the public despite its small size. During 2009 the park had 109,286 visitors. Visitors are primarily from the Altoona/Mitchellville/East Des Moines/Colfax/Prairie City area.

The two shelter houses are used daily throughout the summer and were reserved 112 times accommodating 6,665 visitors. Shelters are reserved most Saturdays and Sundays throughout the summer. The shelter areas are used heavily by local schools/preschools for weekday outings during the spring and fall.

The Youth Camp Area was used by thirty groups with 689 participants in 2009. 481 camping units were registered on the primitive sites for a 9.5% occupancy rate and



**FIGURE 2.11**

This diagram illustrates the existing facilities within Thomas Mitchell Park.

2,268 units were registered for the electric sites for a 38.5% occupancy. The electric sites are full most weekends May through September. Sunday through Wednesday are the least utilized days of the week.

The hill just south of shelter #2 is extremely popular for sledding during the winter months. Cross country ski and snowshoe enthusiasts frequent the walking trails during the winter. The pond has been an attractive area for many anglers, young and old alike, with good access to most areas of the pond. The pond renovation will increase the draw to this resource.

Thomas Mitchell Park has become a popular location for local photographers using many sites throughout the park for high-school senior pictures, family and wedding photos. Park visitors say quite often that they like the small, intimate, quiet atmosphere that Thomas Mitchell Park offers.

### ENVIRONMENTAL EDUCATION

Thomas Mitchell is a great site for environmental education programming. The pond is great for fishing and pond studies. The woodland has a nice hiking trail with some of the best wildflowers in Polk County. Public wildflower programs are conducted annually at the park. Once the prairie is reestablished, it will again be used for insect hunts and habitat discussions by school groups and public participants. The creek provides a great opportunity to catch and study aquatic life. The shelters, with nearby restroom and playground are ideal. The hillside south of the playground makes a natural amphitheater for outdoor concerts.

Possible improvements include:

- Develop a trail across from the shelter
- Accessible trail around the pond
- Accessible dock
- Small shelter/ gazebo near the pond
- Grave interpretation
- Improvements to the youth camp area so it can be used for environmental education programming

### MAINTENANCE

The size and amenities at Thomas Mitchell Park lend itself to being a lower maintenance park overall. There have been a multitude of updates around the park that have kept the facilities useable and up to current standards. Below is a list of these updates and challenges that will impact future development:

#### Natural Systems

- The waters and woodland of Thomas Mitchell are being actively restored. The stream bed of Camp Creek is being stabilized to prevent future degradation,
- The pond is being dredged and protected from silt by a series of protective structures,
- The woodlands are being restored by the removal of invasive species and less desirable tree species are being removed to ensure the sustainability of the oak woodland. Prescribed fire is being employed to mimic natural processes.

#### Campground Parking Lot

- The parking lot at the campground accommodates the majority of the cars for

both the electric and tent camping. It is a gravel lot with two large drains for water run-off. The drains tend to fill up with rocks, dust, and leaves which leads to severe plugs and costly repairs of the drain lines.

#### Sewage Lagoon

- The showerhouse utilizes a sewage lagoon that is located near the tent camping area. Tree roots have invaded the outflow piping and the lagoon requires constant maintenance to comply with the Department of Natural Resources permit for operation.

#### Playground

- The only playground in the park is located at the shelters and is used daily by daycares, schools, and shelter users. It is fifteen years old. The repairs have been costly and the soft-fall material surrounding it needs constant maintenance to conform to safety standards.

#### Camp Creek Low-Water Crossing

- The crossing over Camp Creek is a concrete one-lane structure with five culverts passing through it and 6x6 bumpers lining the sides. The crossing is constantly under water after heavy rains. The culverts in turn get plugged with debris and the bumpers on the sides are broken by floating debris moving down the creek. It is a popular area for visitors that will need changes to increase the functionality and decrease the maintenance.

#### Hiking Trails

- The trails in the park have a variety of hills that lead to erosion from water run-off. There are also wet crossings that have been repaired using culverts. The culverts have been subject to constant plugging, requiring frequent cleanings and repairs.

#### Storage

- The shop at Thomas Mitchell houses mainly equipment from the Natural Resources Unit. It has limited space to house the materials needed for daily maintenance within the park.



## PROCESS

Public input and involvement in developing the Thomas Mitchell Master Plan was an essential and important aspect of the master plan process. Initial public meetings were held in the Spring of 2010. The first meeting involved park users, neighbors and staff. The second meeting involved the Polk County Conservation Advisory Committee. The purpose of these initial meetings included developing goals and priorities, identifying improvements to existing park facilities, and proposing facilities or services to be added to the Park.

A follow-up public meeting was held in the Fall of 2010 to share the information staff had gathered and to obtain additional input from the public. During this meeting some of the key issues identified by the public in the Spring were further defined. These issues include adjacent park land uses, natural resources, circulation both vehicular and trail, recreational facilities, overnight opportunities, signage, administration facilities, and improvements to programs and services. Public response to the proposals was received and considered in preparing the final recommendations.

## MEETING HIGHLIGHTS

Key elements that came from these two public meetings are listed below.

- Compatible land use around park
- Vehicular access to the west side of the park without removing the crossing
- Effectively manage the woodlands, prairie and Camp Creek
- Improve fishing at pond
- Provide more accessible trails
- Determine the best intended use for the land north and west of the pond
- Improve RV camping opportunities
- Improve tent camping opportunities
- Develop affordable cabin opportunities
- Improve water quality
- Provide more nature trails
- Develop more shelters with access to parking and trails
- Enhance interpretive park signage

The draft master plan was presented to the Polk County Conservation Board at their January 2011 meeting. The final master plan was approved by the Board at their meeting in February 2011.



FIGURE 3.1

The pond restoration and the opportunities for enhanced fishing were well received during the public input sessions.



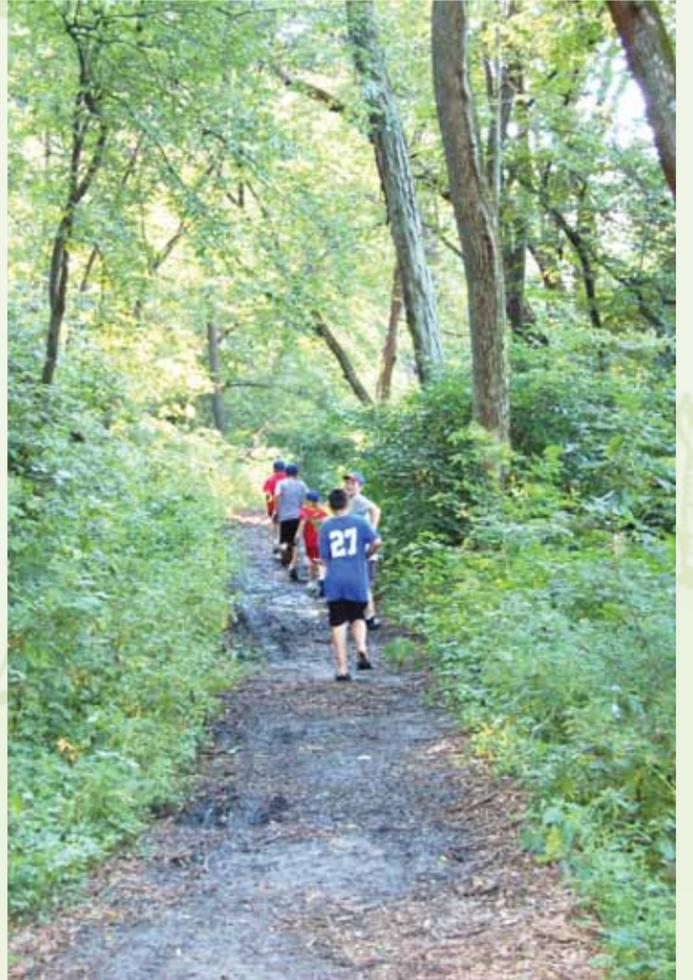
FIGURE 3.3

The area west of the pond has great potential. The views to the pond are excellent.



FIGURE 3.2

The Camp Creek Crossing was discussed and the desire to both improve vehicular access and maintain the crossing was expressed in the public meetings. This crossing is significantly impacted during periods of flooding. In 2010, due to flooding, the crossing was impassable and significantly impacted access across the creek to both park users and staff.



## EVALUATION OF CURRENT AND FUTURE PARK NEEDS

The process of identifying the current and future needs of Thomas Mitchell Park involves a synthesis of the information received throughout the process. This information was gathered through public meetings, input from other governmental agencies, natural resource assessments and additional data obtained by the staff and consultants. The needs can be organized into six categories. They are as follows:

### LAND USES

- Minimize negative impact from surrounding land uses

### NATURAL RESOURCES

- Improve wildlife habitat
- Protect slopes
- Improve Camp Creek banks
- Manage against invasive species
- Improve health of woodlands, savanna, prairie, creek & pond

### VEHICULAR CIRCULATION

- Improve internal vehicular access
- Close the north maintenance access off NE 46th Ave.
- Provide additional parking at the active recreation areas
- Provide access and additional parking to new and upgraded Tent Camping and Youth Group Area
- Improve vehicular access across Camp Creek

### TRAIL CIRCULATION

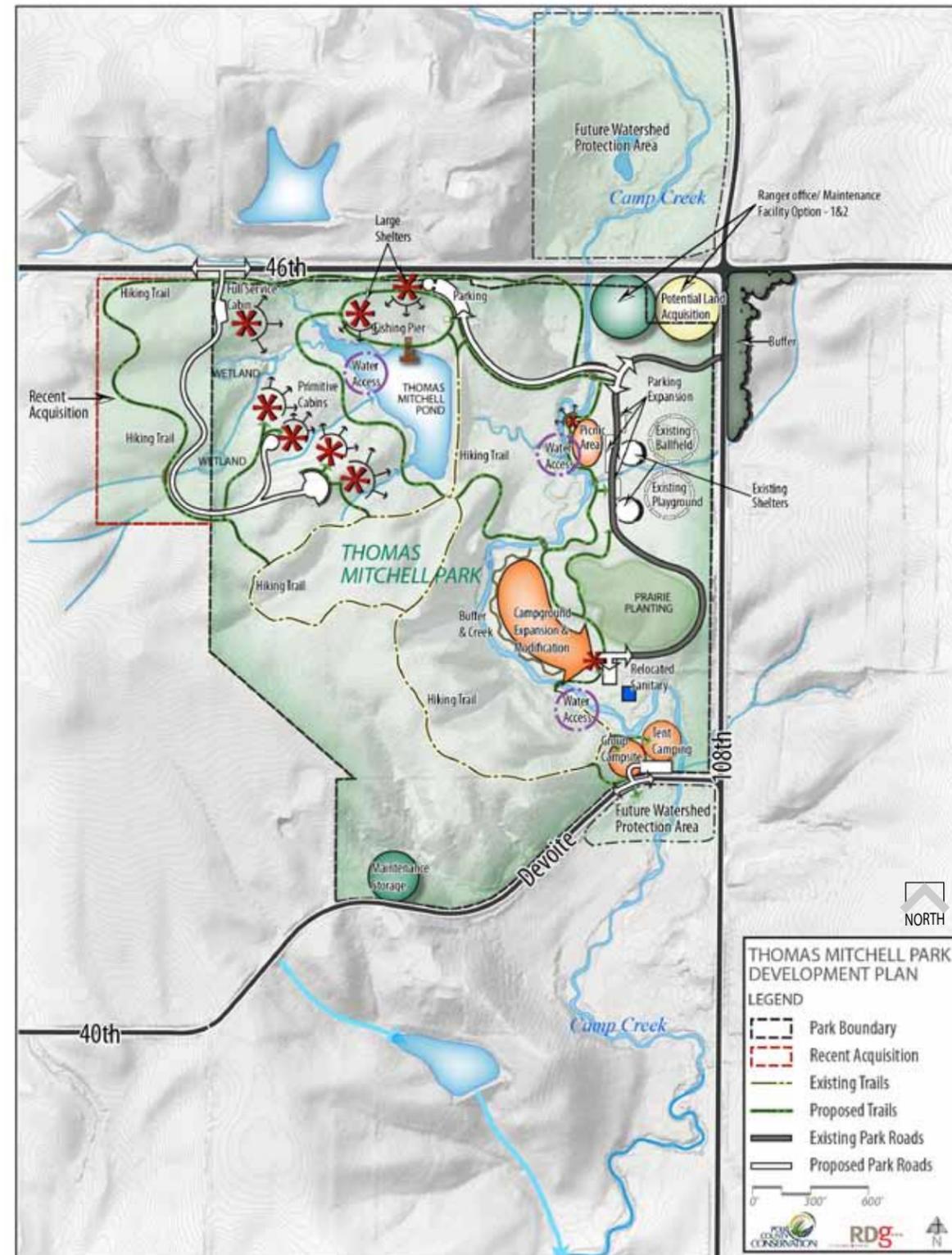
- Develop additional hiking trails
- Provide accessible pathways and trails
- Keep in place the low water crossing that currently stretches across Camp Creek for pedestrian use only

### RECREATION FACILITIES

- Expand RV Campgrounds
- Improve restroom facilities
- Identify opportunities for cabins on west side of pond
- Identify areas to recreate along Camp Creek
- Relocate the tent camping area
- Identify areas for shelter development
- Replace the current lagoon sanitary system

### INTERPRETATION/ADMINISTRATION FACILITIES

- Enhance interpretive park signage (pond, woodland, creek/watershed, prairie)
- Relocate Ranger residence and maintenance facility
- Move current maintenance materials storage area



**FIGURE 4.1**

During the public input sessions, several major topics were discussed. From those public discussions and much internal review by staff, the concept diagram above was created. This diagram captures many of the major considerations discussed at the public meetings.



## MASTER PLAN RECOMMENDATIONS

The key outcome of a master plan are the actions that are proposed as a result of the planning process. Recommendations were arrived at after considering a range of alternatives. The recommendations respond directly to the needs identified through the planning process and shape the future for how the park will be improved. The following recommendations include a brief explanation of the basis for the recommendations. The recommendations are grouped by category.

- Land Use
- Natural Resources
- Vehicular Circulation
- Trail Circulation
- Recreational Facilities
- Interpretive/Administrative



FIGURE 5.1

Master Plan Legend

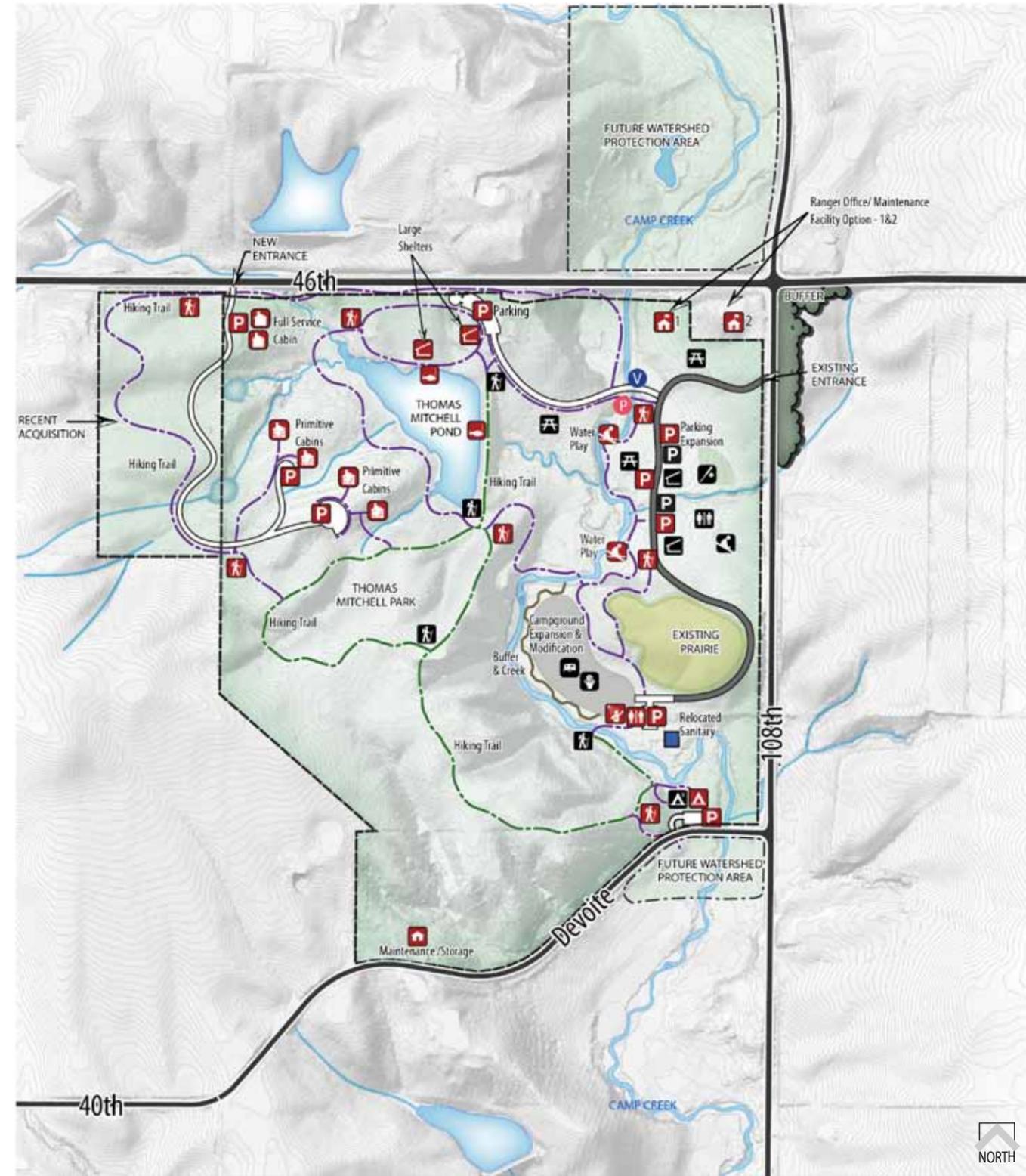
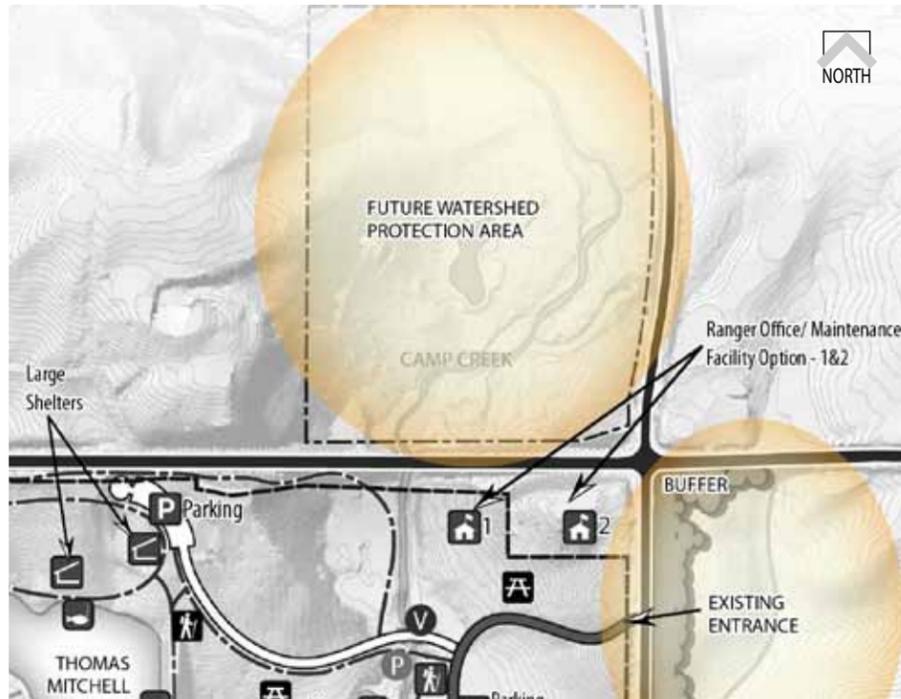
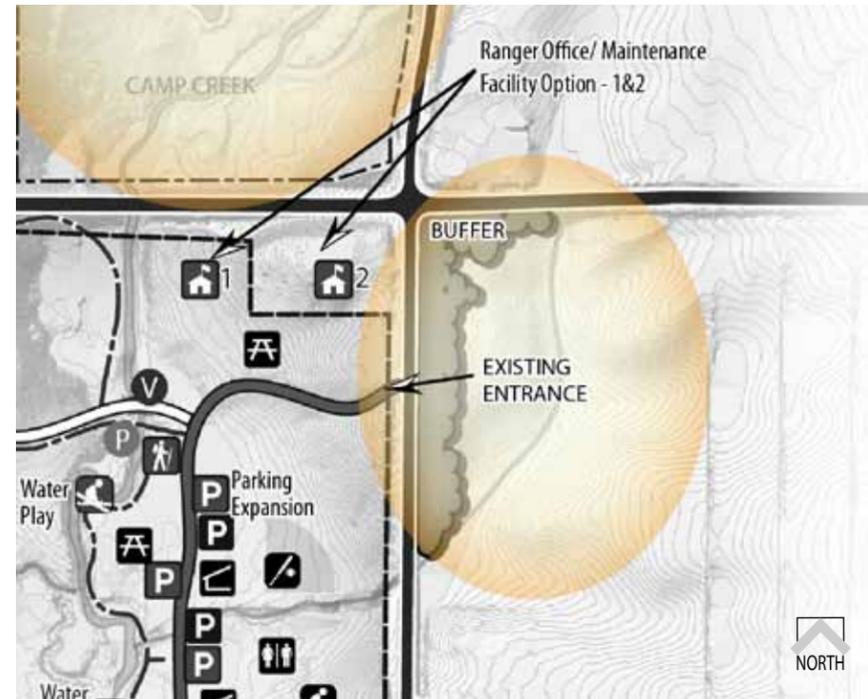


FIGURE 5.2

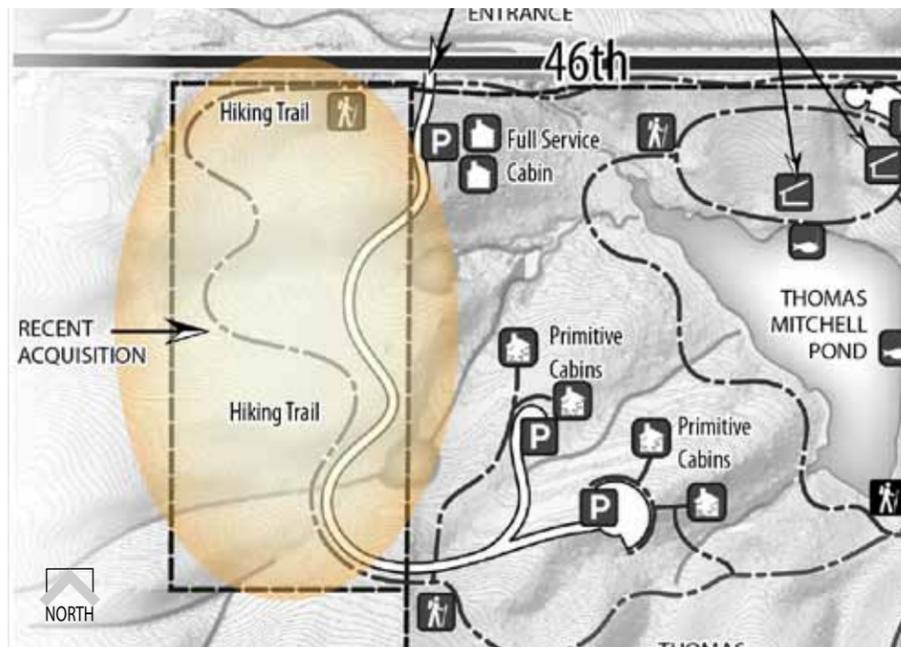
The new Thomas Mitchell Master Plan illustrates existing facilities in with black symbols and recommended new, enhances or restored facilities with red symbols.



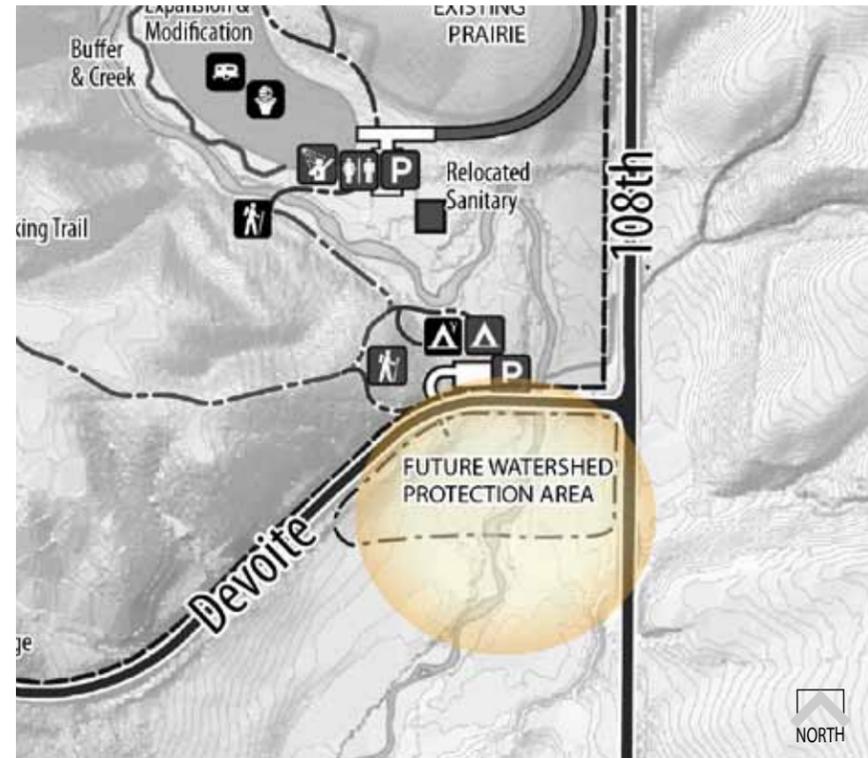
**FIGURE 5.3**  
To improve the water quality of Camp Creek, working with adjacent land owners up stream will be critical.



**FIGURE 5.4**  
Creating a buffer to the east of the park will add to the arrival experience.



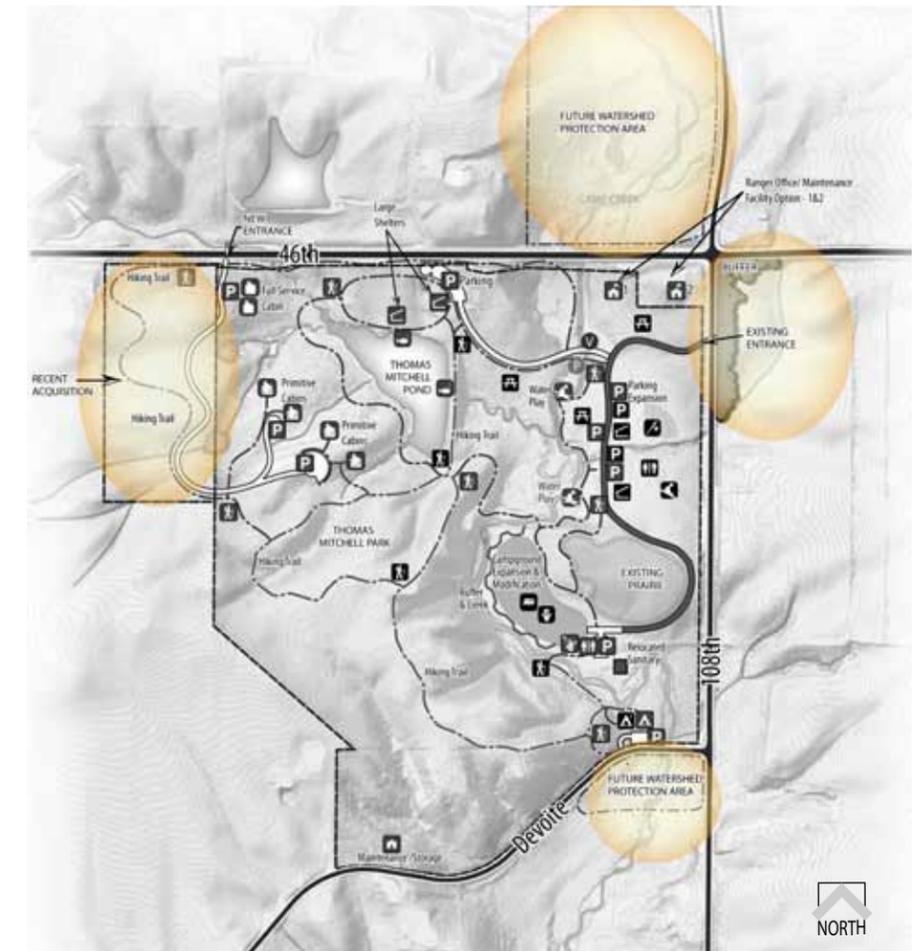
**FIGURE 5.5**  
The plan for the recent acquisition is to increase temporary water storage, allow for park buffering and to provide additional watershed protection above the pond. It is projected that the majority of the area be planted to either cool season grasses or native grasses or a combination of the both. PCC plans on using both fire and mowing to manage the area.



**FIGURE 5.6**  
Future Watershed Protection Area

**LAND USES**

- Provide protection areas surrounding the park through acquisitions, easements or “set aside programs” to protect the water quality and integrity of the park
- Construct a buffer area east of the main entrance that provides more aesthetic appeal and notifies the park user that they are approaching the entrance



**FIGURE 5.7**  
Several adjacent properties to Thomas Mitchell Park are important watershed protection areas and are critical to improving water quality and enhancing the park user experience.

## NATURAL RESOURCES

- Manage woodland and prairie areas and steep slopes to maintain healthy vegetation and minimize erosion
- Actively manage invasive species to reduce occurrences and promote native species
- Improve perennial and intermittent stream beds through bank stabilization and vegetation management
- Enhance aquatic resources to provide improved habitats and support recreation and environmental education opportunities
- Develop wetland sedimentation ponds west and southwest of the pond to protect and improve water quality and extend the life of the pond
- Improve fisheries habitat and continue fish stocking to enhance fishing opportunities in the pond.

## WOODLAND MANAGEMENT

Improve the woodlands for multiple use benefits including watershed protection, wildlife habitat, aesthetics, and recreation. Specifics would be to maintain and enhance oak component, remove invasive species, reestablish the herbaceous layer and reintroduce fire into the management regime. Future timber production may be explored to offset management costs.

### INTRODUCTION:

For purposes of management recommendations, the woodlands are stratified into four areas:

- Stand 1-10.22 Acres
- Stand 2- 3.79 Acres
- Stand 3- 5.08 Acres
- Stand 4-38.16 Acres

### RECOMMENDATIONS:

#### STAND 1 – 10.22 ACRES

The eastern facing slope of this stand is characterized by moderate to steep slopes ranging from 10-30%. The entire watershed drains towards Camp Creek. The most abundant species currently occupying the site are basswood, red and white oak, bitternut hickory, hackberry, ironwood and honeysuckle. Random shagbark hickory, cherry and red elm are scattered across the site. An overstory consisting of large white oaks and scattered red oaks occupy the upper ridge of the site and are large with a diameter at breast height (DBH) of 20-26”.

An understory consisting of shade tolerant species will change the forest composition if management activities aren't encouraged. Removing undesirable trees such as ironwood, bitternut hickory, hackberry, honeysuckle, and basswood will open the canopy and allow for native vegetation to occupy the site. This practice coupled with burning should enhance the herbaceous layer, provide openings for oak regeneration and improve the overall woodland.

Specifically, any vegetation on slopes greater than 20% should be left to stabilize the soil. In the remaining areas, undesirable trees less than 8” DBH should be cut at ground level and treated with a proper herbicide. Trees 8-18” can be killed using the hack and squirt method or double girdle chainsaw method and an approved herbicides. The tree will be entirely girdled at any convenient height, and a herbicide squirted into the cuts. Herbicides used in performing this practice must be applied according to authorized use, label direction, and other federal or state policies and requirements. Contractors will be required to receive approval from PCC before use is approved. Trees larger than 18” may be marketed in the following year to assist in off-setting management costs.

Also in the following year, crop tree release of existing red oak and white oak coupled with burning should be undertaken. The crop tree release will improve the growth rate of the existing oaks and burning will kill unwanted broadleaved weeds and promote native vegetation.

Two large bowls (depressions between ridge tops) are present in the southern portion of this stand. These areas are dominated by hackberry and bitternut hickory. Large mast producing oak (seed trees) surround the site. Removing the hickory and hackberry in conjunction with a good seed crop will allow oaks to

reclaim these highly productive areas.

#### STAND 2 – 3.79 ACRES

This stand on the western side of camp creek consists of mainly riparian species. The relatively few desirable species in this area include black walnut, hackberry, and ash. Less desirable species include willow, American elm, boxelder, mulberry, and an understory of honeysuckle. DBH of trees ranges from less than 1” to 18”. Release existing desirable trees and where there is more than 50’ between desirable trees prepare this area for additional planting by eradicating the less desirable species. Inter-planting a mix of swamp white oak, pin oak, sycamore and black walnut is recommended. Along edges of Camp Creek, plant shrubs for wildlife, such as, hazelnut, ninebark, and American highbush cranberry.

#### STAND 3 – 5.08 ACRES

Large bur oaks are dominant in this site along either side of an existing water way. As the land slopes upwards towards the southwest the woodlands become a mixture of upland hardwoods. Release existing black walnut, bur and red oak, cherry and shagbark hickory. Where there is more than 50’ between desirable trees, eliminate less desirable trees (primarily hackberry, ironwood and basswood) and interplant a mix of oaks and walnut. Remove invasive shrubs and reintroduce fire into this area.

#### STAND 4 – 38.16 ACRES

Large oaks and hickories are dominant in this stand. Scattered Kentucky coffee tree, honeylocust, red elm, black walnut, basswood, hackberry, black cherry, and the occasional butternut are also present. An understory consisting of sapling to pole-sized bitternut hickory, ironwood, hackberry and basswood dominant the site and needs addressed. Invasive shrubs such as honeysuckle are present in small portions. Undesirable trees in this stand include the more shade tolerant species such as honey locust, bitternut hickory, basswood and hackberry. Removal of undesirable trees less than 8” DBH should be cut at ground level and treated with a proper herbicide. Trees 8-18” will be stand and killed either using a double gridling technique or a combination of gridling and herbicide application. Release the crop trees in the following priority; red oak, white oak, walnut, Kentucky coffee tree and red elm. Trees larger than 18” may be marketed in the following year to assist in off-setting management costs. As with other stands use of herbicide must be applied according to authorized use, label direction, and other federal or state policies and requirements.

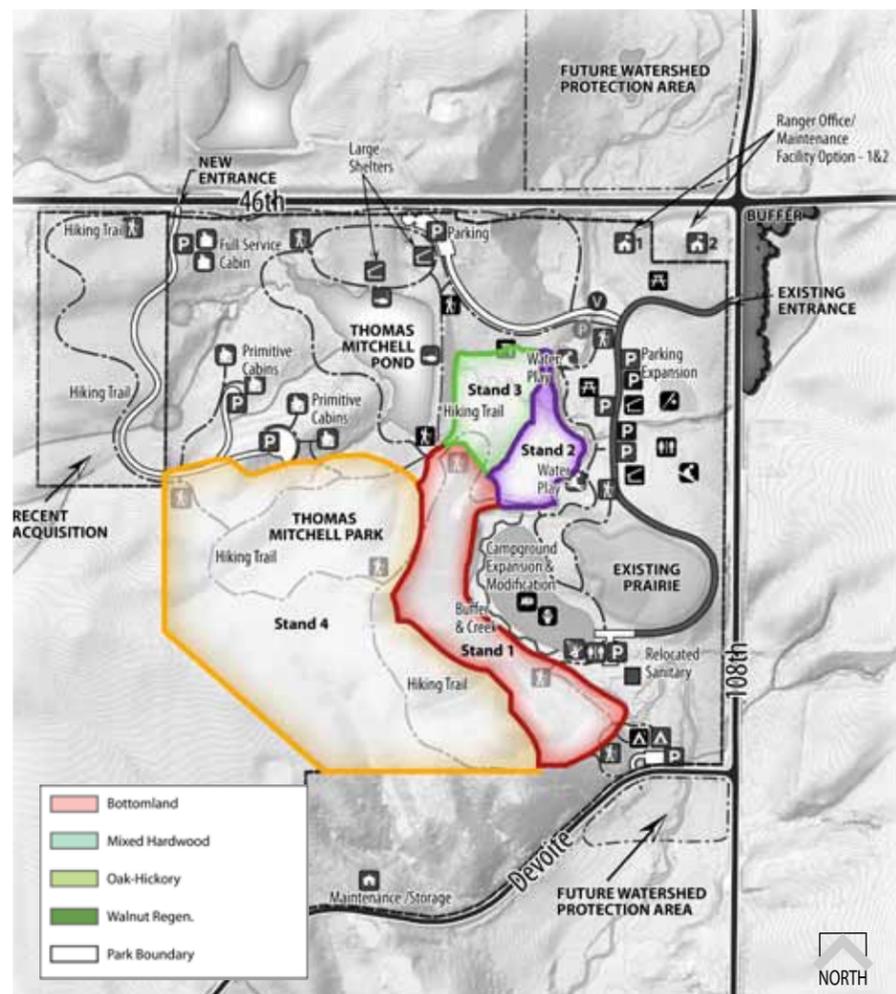


FIGURE 5.8

This diagram illustrates the woodland management zones within Thomas Mitchell Park



FIGURE 5.9

This image illustrates an attractive well-maintained woodland.



**FIGURE 5.10**

This "Texas Crossing" illustrates both an at-grade creek crossing and an elevated vehicular crossing. This is similar to what will be proposed at the crossing of Camp Creek in Thomas Mitchell Park.



**FIGURE 5.11**

Accessible pedestrian trail access is proposed along the park drive from the creek crossing west. This picture illustrates a 6 to 8 foot pathway.



**FIGURE 5.12**

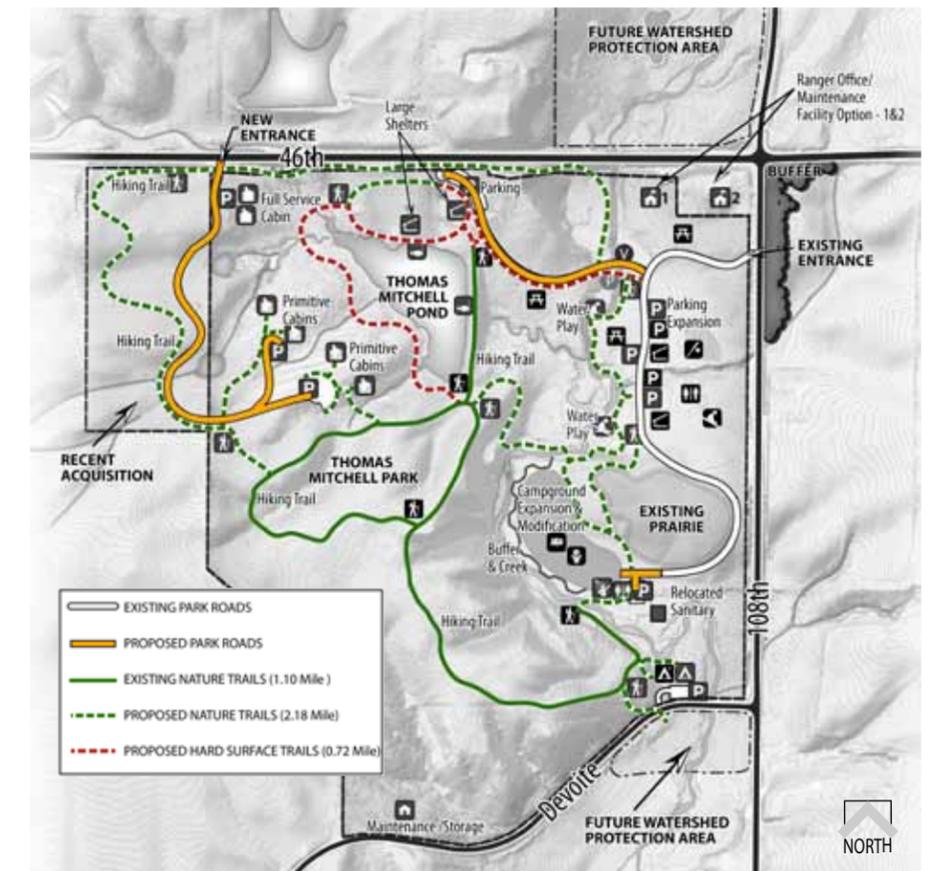
This perspective illustrated a nature trail that would be a mown, mulched or graveled path that would wind through the park providing access to the established or proposed woodlands and prairies.

### VEHICULAR CIRCULATION

- Improve internal park system roads including paving, widening shoulders, realignment and signing to provide safer and more efficient travel.
- Close the north maintenance access off NE 46th Ave.
- Provide a cabin-user only vehicle access off NE 46th Ave.
- Provide additional parking at park facilities in response to increased use site impacts and safety concerns
- Expand and upgrade the Tent Camping and Youth Group Area parking area off NE DeVotie Dr.
- Construct a new vehicle bridge over Camp Creek that will provide safe and accessible access to the pond area

### TRAIL CIRCULATION

- Develop additional hiking trails to improve connections between park facilities, enhance interpretive opportunities and provide increased hiking opportunities
- Keep in place the low water crossing that currently stretches across Camp Creek for pedestrian use only
- Develop an accessible trail around the Pond and an accessible fishing dock to provide additional opportunities for people with disabilities and provide increased environmental education opportunities



**FIGURE 5.13**

This diagram illustrates the location of proposed roads and trail.

## RECREATION FACILITIES

- Install permanent vault toilets near the cabins, pond, and tent camping area to provide improved services to users at these locations
- Develop 4-6 rental cabins to provide additional overnight recreational opportunities in the park
- Develop two larger shelters north of the pond to support special events and public rentals
- Replace the current lagoon sanitary system with an underground system relocated to the southeast.

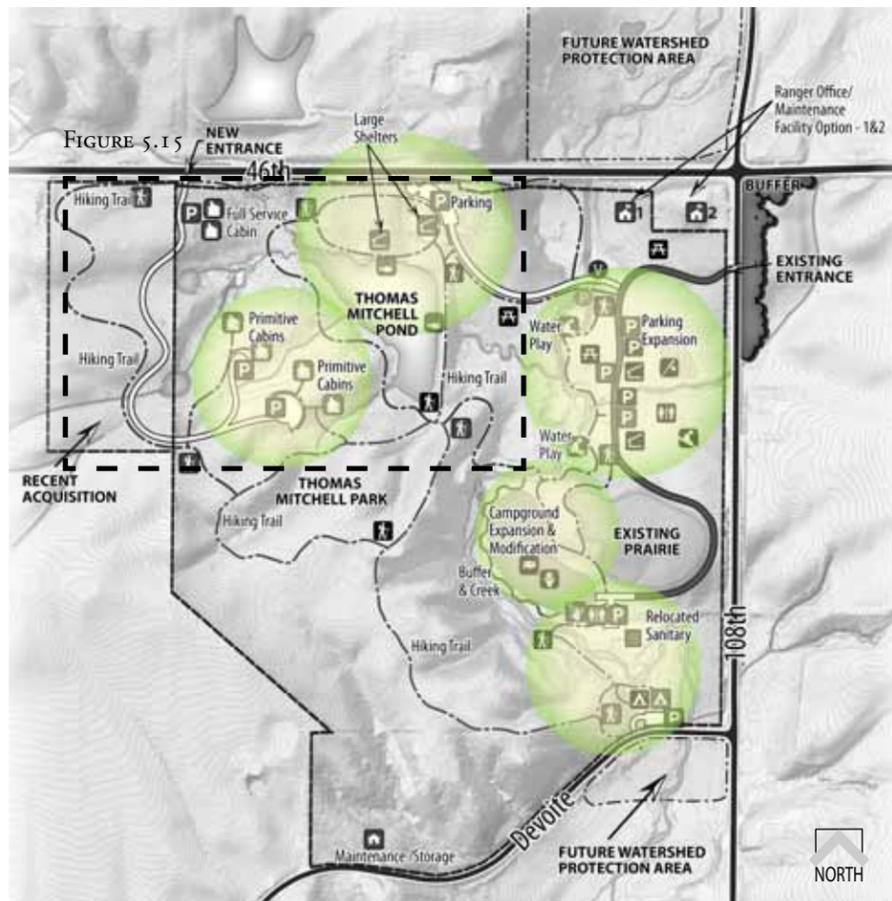


FIGURE 5.14

This diagram illustrates the active zones within the park



FIGURE 5.15

This plan rendering provides a potential layout for the northwest corner of the park.



FIGURE 5.16

This illustration provides a perspective of the proposed cabins and their proximity to the pond.



FIGURE 5.17

This perspective illustrates the proposed redevelopment of the lawn and shelters just north of the pond.



FIGURE 5.18  
View looking at the pond from the east.



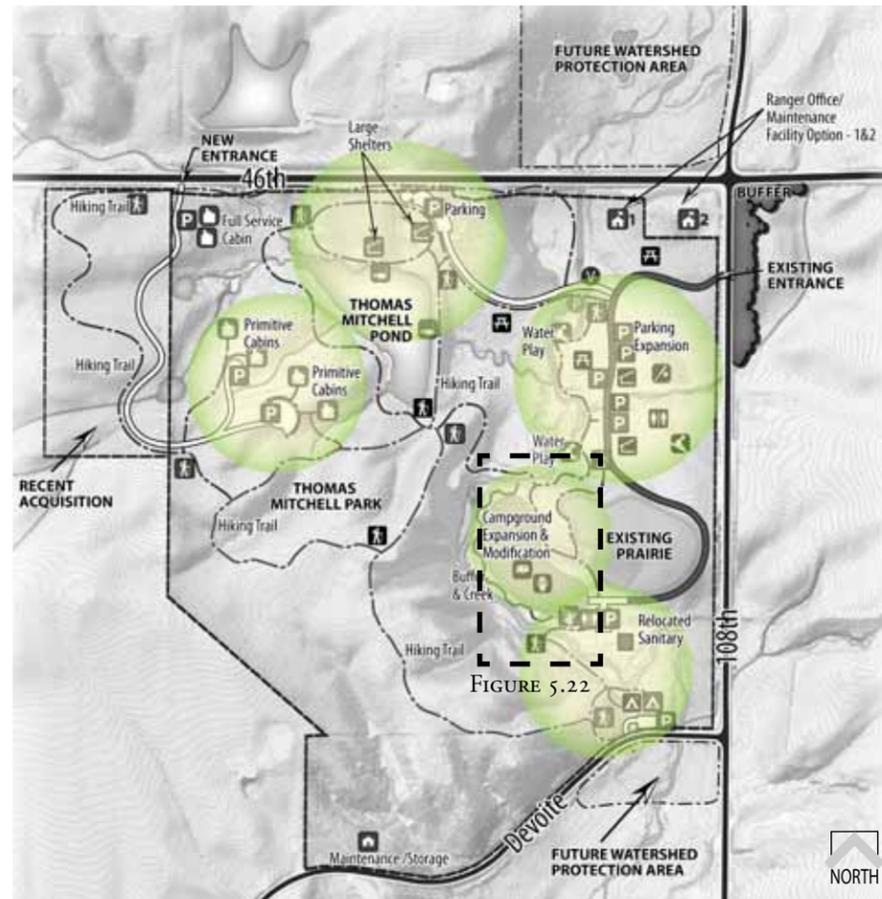
FIGURE 5.19  
View of the pond looking south.



FIGURE 5.20  
This photograph illustrates the pond during water removal and prior dredging. Once completed the pond will provide great aquatic passive recreation including fishing, kayaking and canoeing.

## RECREATION CONTINUED

- Relocate and expand the size of the current park shower house to accommodate increased park usage and camping opportunities
- Provide water access to Camp Creek near the electric campground for better access to outdoor play
- Expand the number of electric campsites in response to the growing demand
- Enhance the picnic area west of the existing shelters to encourage park users to play in and admire the beauty of Camp Creek
- Relocate the tent camping area across the creek to where the current Youth Campground is located. Relocate the Youth Campground west of its existing location. Provide a double vault toilet to serve both the tent camping area and youth area.



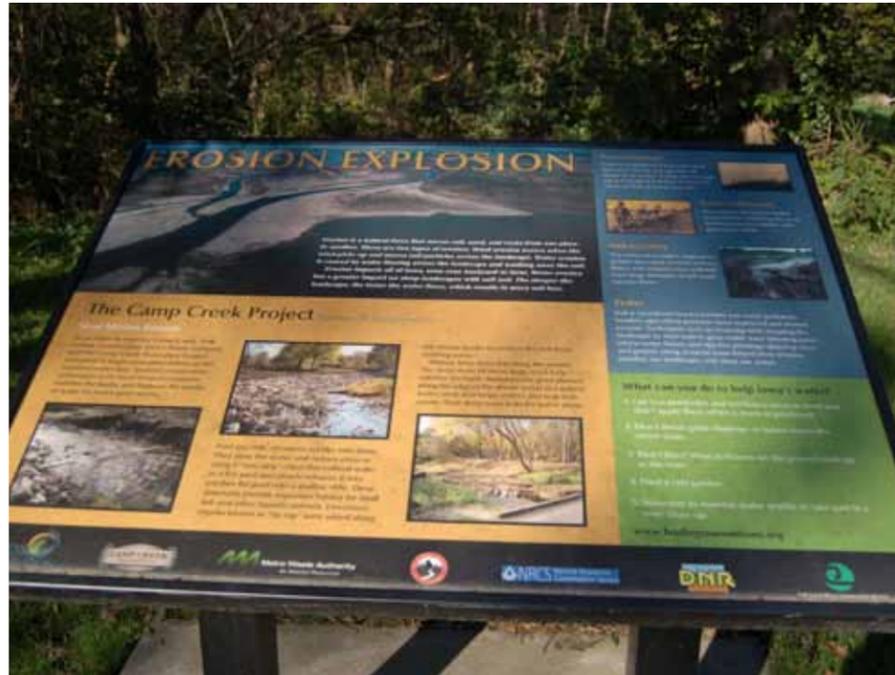
**FIGURE 5.21**  
Recreation Facilities Diagram



**FIGURE 5.22**  
This plan illustrates the proposed expansion and modernization of the RV camp grounds. The proposals include a total of 52 modern camp sites including redesign of camp sites along Camp Creek, a new shower/restroom, new parking, playground, and relocation of the lagoon sewer system to a woodland mound system to the east.



**FIGURE 5.23**  
This photograph illustrates the condition of the bank along Camp Creek and its proximity to RV Camping. Proposed in this master plan is the reconfigured campground.



**FIGURE 5.24**  
Interpretive panels provide opportunities to inform park users on cultural or environmental history.



**FIGURE 5.25**  
This existing trail sign along the nature trail.



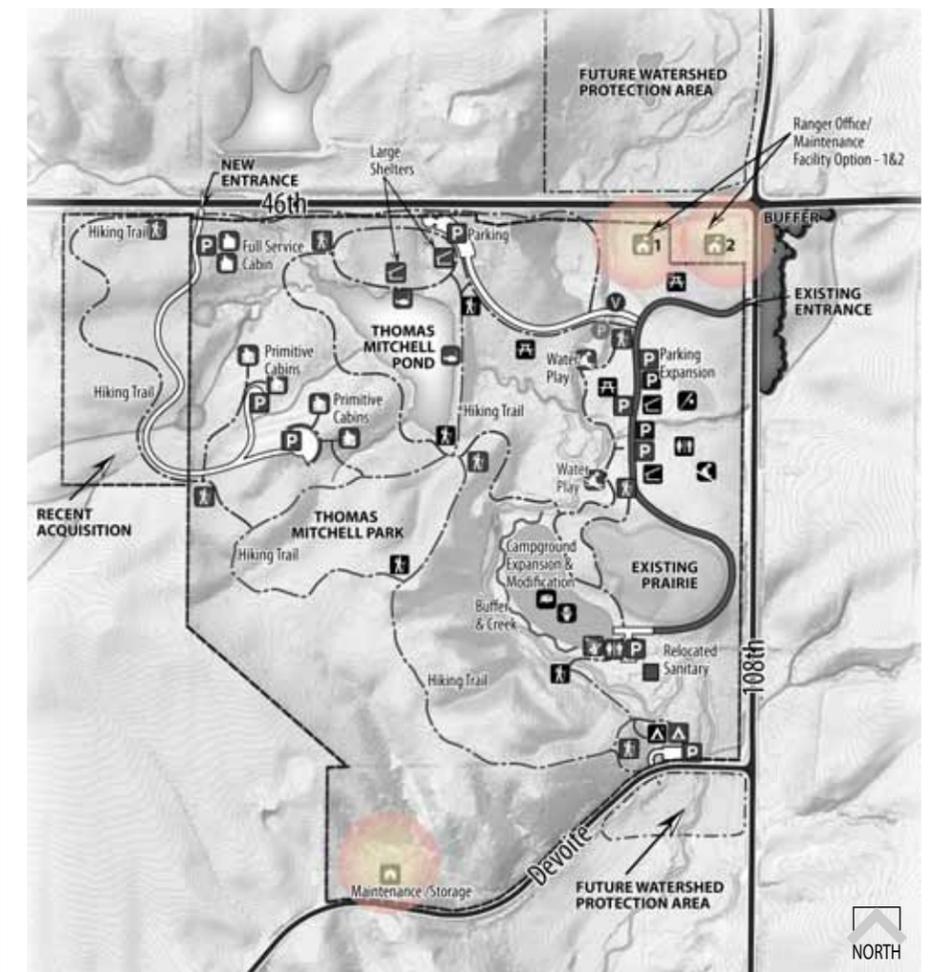
**FIGURE 5.26**  
Kiosks are important ways of providing information to park users. This is an example of what a kiosk could look like in Thomas Mitchell Park.



**FIGURE 5.27**  
The northwest corner of the park provides great access both internally and to adjacent exterior county roads.

**INTERPRETATION/ADMINISTRATION FACILITIES**

- Enhance interpretive park signage (pond, woodland, creek/watershed, prairie)
- Relocate Ranger residence and maintenance facility to the current main entrance area to improve park security, and remove park operations from the pond area which will be a main focal point in the park.
- Move current maintenance materials storage area south of the park off DeVotie Dr.



**FIGURE 5.28**  
Administration Facilities Diagram





## TIMING

The recommended improvements identified in this plan are anticipated to be implemented over time. Some recommendations require more detailed planning and design which would extend implementation of those recommendations. Projects that require less planning and design and can be done with limited funds may be completed earlier.

## PRIORITIES

Higher priorities are assigned to those recommendations that are more responsive to the goals of the plan. Projects related to improving trails, camping and environmental education opportunities are considered high priority. Additionally, those projects that improve park access, provide greater accessibility for people with disabilities and generate increased revenues are considered a higher priority.

## COST ESTIMATES

Cost estimates have been developed for each recommendation within this plan. These estimates are intended for budget planning efforts only and will be updated over time. Project design and contract administration costs are not included in these estimates. The following cost estimates are summarized by category. Projected costs for implementing this plan in its entirety range from \$6-7 million. These estimates are current year costs and do not reflect future year inflation. Projects completed in-house may result in cost savings. Annual operations and maintenance costs associated with the existing facilities are not included in these estimates. More detailed cost estimates will be developed when planning and design is completed on individual projects and as funding becomes available.

IMPROVEMENT CATEGORY	ESTIMATED COST
Protection areas surrounding park	\$ 200,000.00
Buffer area east of entrance	\$ 25,000.00
Minimize erosion	\$ 57,000.00
Manage invasives	\$ 28,000.00
Bank stabilization	\$ 150,000.00
Aquatic resources	\$ 400,000.00
Develop sedimentation ponds	\$ 36,000.00
Fisheries habitat	\$ 15,000.00
Park roads and signage	\$ 90,000.00
Close access NE 46th Ave.	\$ 1,250.00
Access from NE 46th	\$ 120,000.00
Additional parking	\$ 10,000.00
Tent and youth camping areas	\$ 17,500.00
New vehicle bridge	\$ 75,000.00
Hiking trails	\$ 10,000.00
Camp Creek pedestrian crossing	\$ 25,000.00
Accessible trail	\$ 200,000.00

These estimated costs do not include survey, engineering and contingency costs.

## FUNDING STRATEGY OPTIONS

The proposed improvements within this plan for Thomas Mitchell Park must be integrated into the overall budget/program needs of Polk County Conservation. As master plans are completed for other parks within the Polk County Conservation Park System, the proposed improvements will be considered comprehensively across the entire system. Additionally, the needs associated with maintaining the existing facilities within the park system will be considered along with the proposed improvements.

Some recommendations may be completed through the annual program of work as part of the continuing operations and maintenance of Polk County Conservation parks.

Potential funding sources include annual appropriations, grants, partnerships and long-term public financing.

Black represents existing facilities.  
Red represents proposed, enhanced or replaced facilities.

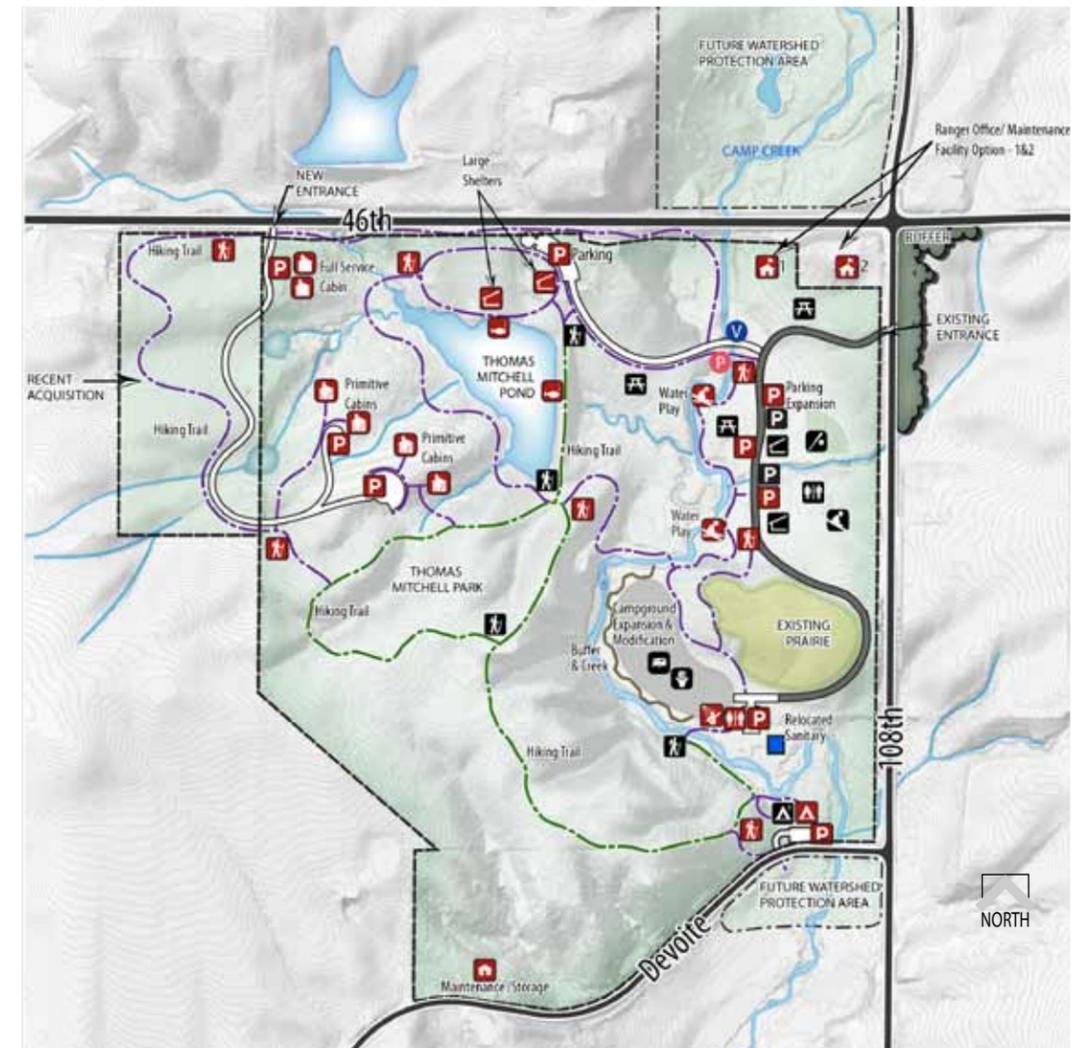


FIGURE 7.1

## RECOMMENDED IMPROVEMENT PRIORITIES

HIGH	MEDIUM	LOW	
			<b>LAND USES</b>
			· Provide protection areas surrounding the park through acquisitions, easements or “set aside programs” to protect the water quality and integrity of the park
			· Construct a buffer area east of the main entrance that provides more aesthetic appeal and notifies the park user they are approaching the entrance
			<b>NATURAL RESOURCES</b>
			· Manage woodland and prairie areas and steep slopes to maintain healthy vegetation and minimize erosion
			· Actively manage invasive species to reduce occurrences and promote native species
			· Improve perennial and intermittent stream beds through bank stabilization and vegetation management
			· Enhance aquatic resources to provide improved habitats and support recreation and environmental education opportunities
			· Develop a wetland sedimentation ponds west and southwest of the pond to protect and improve water quality and extend the life of the pond
			· Improve fisheries habitat and continue fish stocking to enhance fishing opportunities in the pond
			<b>VEHICULAR CIRCULATION</b>
			· Improve internal park system roads including paving, widening shoulders, realignment and signing to provide safer and more efficient travel
			· Close the north maintenance access off NE 46th Ave.
			· Provide a cabin-user only vehicle access off NE 46th Ave.
			· Provide additional parking at park facilities in response to increased use site impacts and safety concerns
			· Expand and upgrade the Tent Camping and Youth Group Area parking area off NE DeVotie Dr.
			· Construct a new vehicle bridge over Camp Creek that will provide safe and accessible access to the pond area
			<b>TRAIL CIRCULATION</b>
			· Develop additional hiking trails to improve connections between park facilities, enhance interpretive opportunities and provide increased hiking opportunities
			· Keep in place the low water crossing that currently stretches across Camp Creek for pedestrian use only
			· Develop an accessible trail around the pond and an accessible fishing dock to provide additional opportunities for people with disabilities and provide additional environmental education opportunities
			<b>RECREATION FACILITIES</b>
			· Relocate and expand the size of the current park shower house to accommodate increased park usage and camping opportunities
			· Install permanent vault toilets near the cabins, pond, and tent camping area to provide improved services to users at these locations
			· Provide water access to Camp Creek near the electric campground for better access to outdoor play
			· Develop 4-5 rental cabins to provide additional overnight recreational opportunities in the park
			· Expand the number of electric campsites in response to the growing demand
			· Enhance the picnic area west of the existing shelters to encourage park users to play in and admire the beauty of Camp Creek
			· Relocate the tent camping area across the creek to where the current Youth Campground is located. Relocate the Youth Campground west of its existing location. Provide a double vault toilet to serve both the tent camping area and youth area
			· Develop two larger shelters north of the pond to support special events and public rentals
			· Replace the current lagoon sanitary system with an underground system relocated to the southeast
			<b>INTERPRETATION/ADMINISTRATION FACILITIES</b>
			· Enhance interpretive park signage (pond, woodland, creek/watershed, prairie)
			· Relocate ranger residence and maintenance facility to the current main entrance area to improve park security, and remove park operations from the pond area which will be a main focal point in the park
			· Move current maintenance materials storage area south of the park off DeVotie Dr.





## REFERENCES - MASTER PLANNING DOCUMENTS (FEATURED ON PAGE 14)

- Dunbar Jones Partnership. (1995). *Central Iowa Greenways Framework Plan: Making Central Iowa More Liveable*
- Iowa Department of Natural Resources. (2006). *Outdoor Recreation in Iowa: A Statewide Comprehensive Outdoor Recreation Plan*
- Leon Younger & PROS, LLC, Ciaccio Dennell Group and ETC/Leisure Vision. (2002). *Polk County Conservation Board: Parks & Recreation Strategic Plan Findings Report 2002*
- Polk County Conservation Board. (2006). *Polk County Comprehensive Plan: Polk 2030*

## ADDITIONAL RESOURCES

- Architectural and Transportation Barriers Compliance Board (2002). *ADA Accessibility Guidelines for Recreation Facilities*. Retrieved from <http://www.access-board.gov/recreation/final.htm>
- Iowa Department of Natural Resources. (2006). *2006 Statewide Comprehensive Outdoor Recreation Plan (SCORP)*. Retrieved from <http://www.iowadnr.gov/grants/scorp.html>
- Lancaster, R.A. (Ed.). (1990). *Recreation, Park, and Open Space Standards and Guidelines*. Ashburn, VA: National Recreation and Park Association.
- Polk County Conservation Board. (2006). *Polk County Comprehensive Plan: Polk 2030*. Retrieved from <http://www.polkcountyiowa.gov/PublicWorks/PDFs/CompPlan/3LandUsePlan.pdf>

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## PUBLIC MEETINGS (REFERENCED ON PAGE 16)

- Public Meeting 1: January 2009  
*To obtain Meeting Minutes, contact Polk County Conservation*
- Public Meeting 2: May 2009  
*To obtain Meeting Minutes, contact Polk County Conservation*

Document Prepared by:



