JEFFERSON MEMORIAL FOREST MASTER PLAN

Louisville Metro Parks

July 2009

Jefferson Memorial Forest Master Plan

Louisville Metro Parks
Jefferson Memorial Forest

Acknowledgments:

Jerry E. Abramson, Mayor
Mary Lou Northern
Rick Johnstone
Mike Heitz

Special thanks to our funding partners:

David and Betty Jones
Rick Blackwell
Kelly Downard
Madonna Flood
Robert Henderson
Dan Johnson
Vicki Aubrey Welch

Metro Parks Staff:

Martha Berner
Milana Boz
Jerry Brown
James Crockett
Larry Hilton
Lisa Hite
Bennett Knox
Shawn Nevins
Carl Suk
Tonya Swan
John Swintosky
Jerry Waddell
Christa Weidner
Sherry Wright

Jefferson Memorial Forest Master Plan Steering Committee:

Peggy Baas
Ken Baker
Peter Barber
Portia Brown
Margaret Carreiro
Jim Caskey
Phyllis Croce
Linda Duncan
Bobby Ferreri
Alan Goldstein
Dirk Gowin
Robert Henderson
April Jones
Patti Linn
Kurt Mason
Teressa Mattei
Bruce Maza
Judith McCandless
Diane McGraw
Scott Newsome
Mary Lou Northern
Anita Solomon
Nancy Stephen
Claude Stephens
Carl Wedekind
Vicki Welch
Ron Weston
David Wicks
Don Wittry
Dan Young

*Committee member **Anita Solomon** passed away peacefully in July 2009, at the age of 66. Anita was a planner for Louisville Metro Parks for 27 years, and continued to passionately serve the field of parks and recreation after her retirement, as a member of the city's Parks Advisory Commission. She served on the Jefferson Memorial Forest Master Plan Steering Committee. Her contributions to this master plan are immeasurable.*

Prepared by

Jones & Jones Architects and Landscape Architects, Ltd.
Charlie Scott & Greg Murphy

in association with

Biohabitats, Inc.
Mike Lighthiser

Horizon Research
Paul Schulte

Environs, Inc.
Mike Smiley

BTM Engineering, Inc.
Phil Bills

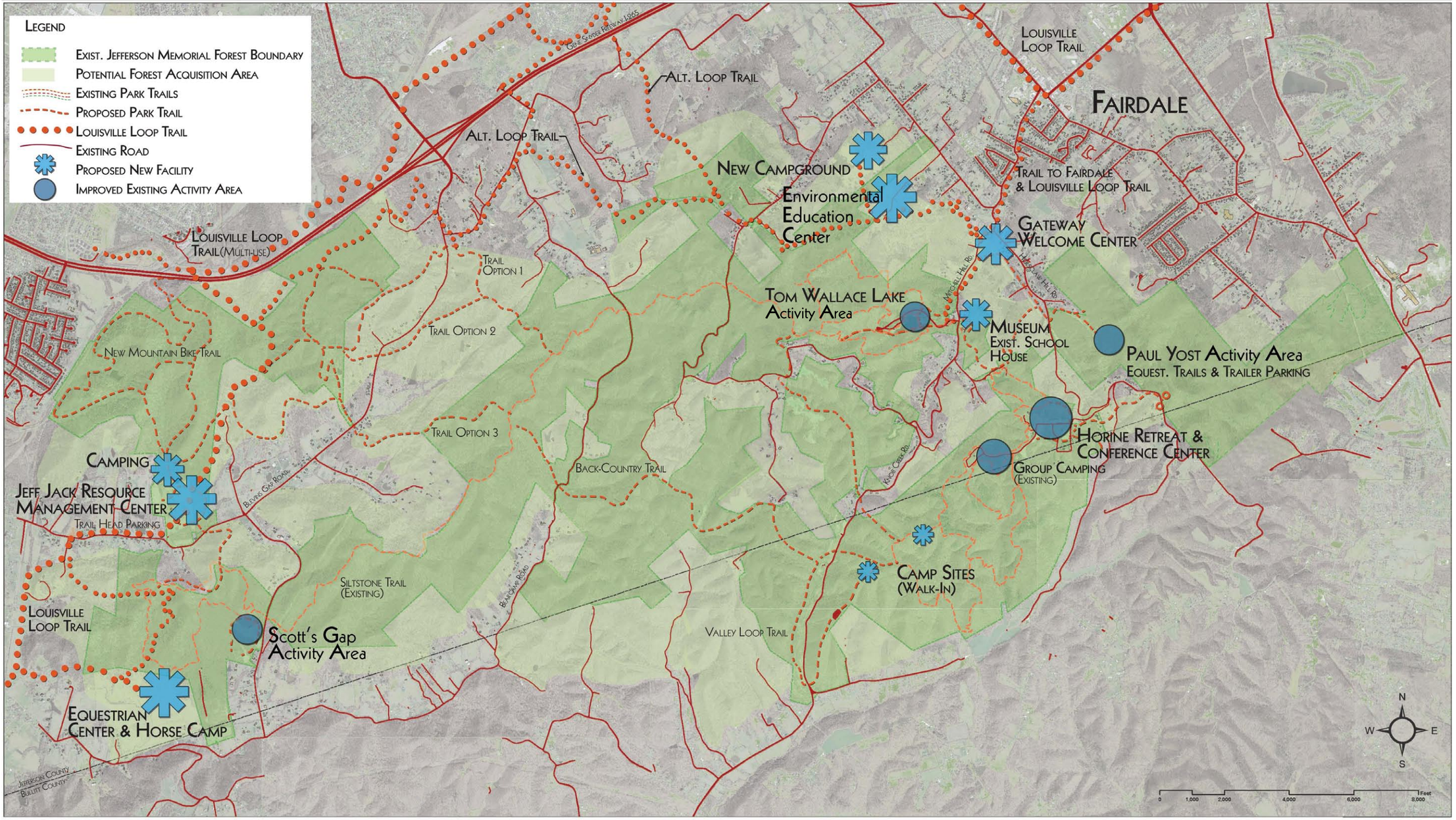
Corn Island Archaeology, LLC
Anne Bader

cover image © Ted Wathen, Quadrant

JEFFERSON MEMORIAL FOREST MASTER PLAN

Table of Contents

	Page
Executive Summary	1
1. Introduction	3
2. Project Context	9
3. Needs and Requirements	59
4. Recommendations	71
5. Implementation Strategies	117



Jefferson Memorial Forest

Master Plan

Executive Summary

This master plan was initiated by the Louisville Metro Parks Department to guide future development and improvements at Jefferson Memorial Forest (JMF), a 6,190-acre nature preserve and park in southwestern Louisville. The plan addresses the relationship between JMF and the larger Louisville community with the primary goals of enhancing visitor experience, improving management of natural areas, and increasing revenue opportunities. The plan explores ways to strengthen JMF's connections with the community through an improved trail system, environmental education programs, stewardship of lands adjacent to the park, and other means.

The master plan confirms the location of JMF's major visitor use areas and facilities. Conceptual site designs are provided for major activity areas with descriptions of the facilities and amenities that will be required to support recreational activities and educational programs at each area. The plan also provides recommendations for other park-wide improvements and initiatives such as cultural resource protection and interpretation, safety, way-finding, and protection of natural resources on adjacent private lands. The routing and design of the Louisville Loop Trail through and near the park is also addressed.

Most of all, the master plan reflects comment and opinion gathered through an extensive public involvement process. Park users are comprised of a broad constituency, and various techniques were employed to engage current and potential park visitors during the planning effort. Implementation of the plan will require the continued support of a wide range of community organizations, agencies, and stakeholder groups.

PLAN OBJECTIVES

Jefferson Memorial Forest lies at the outer edge of the Louisville Metro area, but the park's importance belies its peripheral geographic location. This plan will strengthen JMF's place in the community as a major recreational and educational resource and encourage more visitation by putting in motion a cohesive and well-organized set of improvements. Initial improvements will be carried out in a way that generates momentum and funding for future upgrades and enhancements throughout the park.

Recreational activities in the midst of a natural setting are the primary visitor attractions at JMF. To remain relevant and valued, the park must offer a fulfilling and rewarding experience to those who come to JMF to hike, camp, fish, watch wildlife, ride horses, or simply relax. While nature provides the setting, well-designed and maintained facilities will be crucial to people's continued enjoyment and use of the park.

JMF currently plays a vital role in the community by offering a wide range of environmental education programs for children and adults. Few places offer a vast outdoor classroom of forests, creeks, lakes, and meadows within a twenty minute drive of a major urban center. JMF's position as the region's pre-eminent environmental education venue will be advanced through a continued focus on education programs, partnerships with other organizations and institutions, and development of excellent facilities to accommodate programs and learning.

JMF is an ecological sanctuary, safeguarding a natural heritage that has been severely compromised elsewhere in the region. Moreover, the park's environmental benefits—clean air and water, beautiful scenery, plant and animal diversity—reach far beyond its boundaries. Protection and management of natural resources within the park is assured, and the stewardship of natural resources on privately owned lands adjoining the park must also be encouraged to maintain and improve JMF's natural ecology.

PLAN ORGANIZATION

This master plan consists of five chapters: 1) *Introduction* outlines the plan background, process, and goals; 2) *Project Context* describes the park's existing conditions, characteristics, and qualities; 3) *Program* establishes the needs and requirements for new park facilities and improvements; 4) *Recommendations* gives direction for major park improvements, organizational structure, area-wide stewardship, and other initiatives; and 5) *Implementation Strategies* provides suggestions for building partnerships, obtaining funding, and prioritizing improvements to carry out the plan.

NEXT STEPS

The following actions should be taken simultaneously or in succession to advance the master plan agenda and heighten JMF's recognition and appeal:

- Implement a high profile project like the new Welcome Center or Environmental Education Center.
- Acquire targeted lands adjoining the park (for new facilities or resource protection) as opportunities arise.
- Develop the Louisville Loop Trail through and near the park.
- Strengthen partnerships with local organizations and institutions.
- Establish watershed based stewardship program for lands near and adjoining the park.
- Establish State Nature Preserve designation for large areas of the park's interior.

1. INTRODUCTION

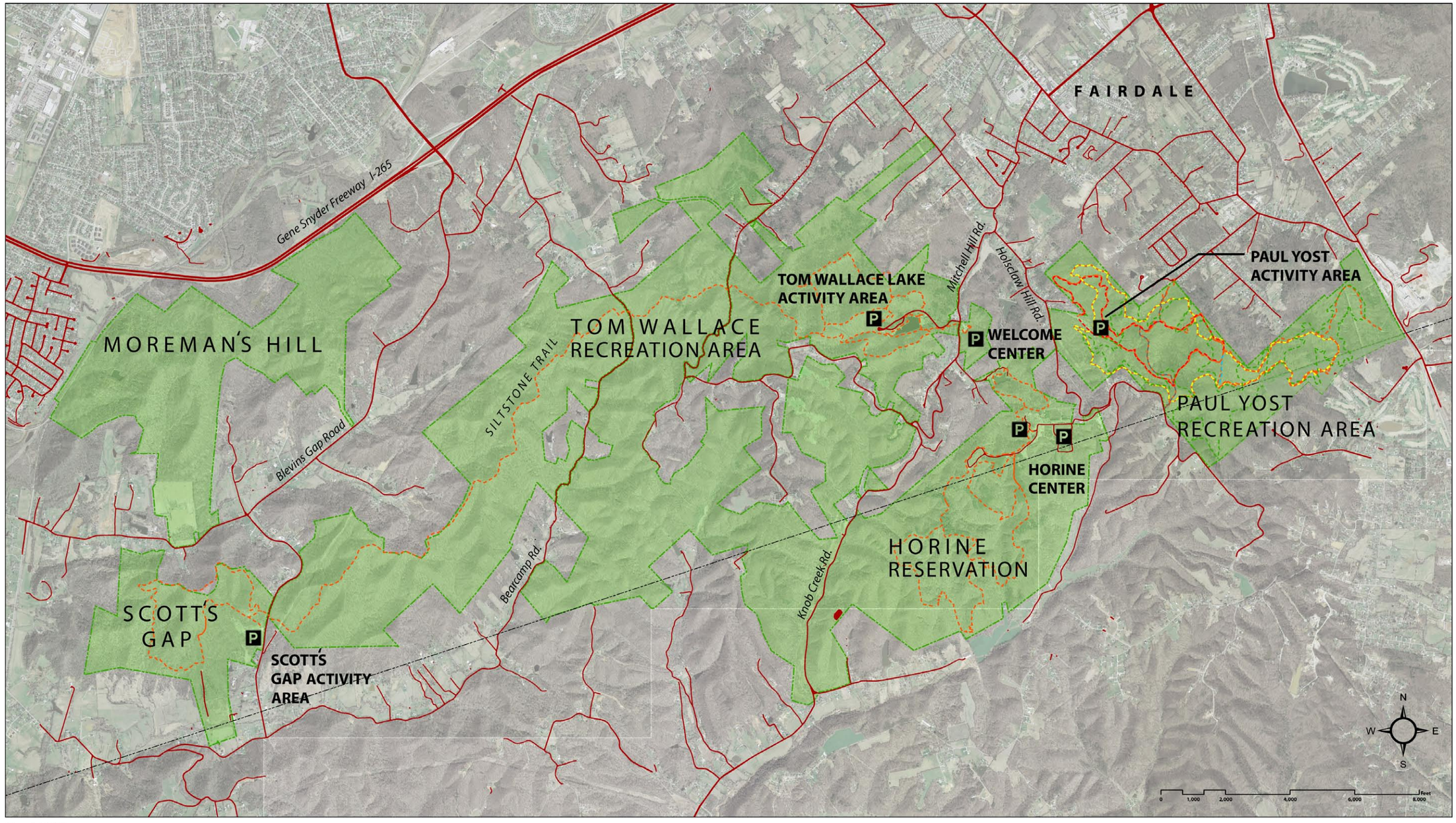
1

1.1 Project Background

1.2 Planning Process

1.3. JMF Mission Statement

1.4 Planning Principals and Goals



March 2008

Jefferson Memorial Forest

Park Sections & Boundaries

1. INTRODUCTION

1.1 Project Background

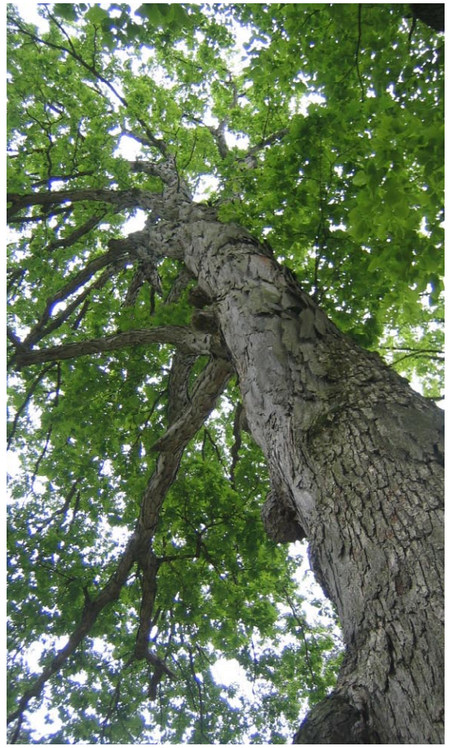
The Jefferson Memorial Forest (JMF) was established in 1948 to honor Kentucky's war veterans, and it remains today an immense living memorial to veterans of past wars. From its original 1,500 wooded acres in southern Jefferson County, JMF has grown to a 6,190-acre nature preserve and recreational resource managed by Louisville Metro Parks for the enjoyment of residents of Louisville and the surrounding region. Made up of large hills or "knobs" covered by deciduous forest, JMF is one of the nation's largest urban forests and represents a rare vestige of the forested landscape that once characterized central Kentucky prior to Euro-American settlement. Within this woodland setting, visitors are offered a variety of recreational and educational opportunities, all easily accessible from nearby urban areas.

The beauty and natural resources of the JMF area have long attracted those who came to settle and farm the creek valleys that wind between the steep forested knobs. Farmland is rapidly being overtaken by residential development however, and current and historic land use patterns have contributed to the fragmented, irregularly shaped parcels that now comprise JMF. Encroaching development coupled with a growing number of park visitors, who often bring diverse and competing interests, compelled Metro Parks to create a long-range strategic plan to reconcile visitor needs and to explore appropriate stewardship strategies for the park.

This master plan report discusses the unique qualities and potential of JMF and establishes a program for visitor activities and amenities that can be integrated into the ecologically sensitive forest setting. The plan provides a long-range vision as well as specific recommendations for a series of improvements and alterations to park infrastructure, facilities, and programs. This report also supports previously established resource management plans for JMF and expands the concept of ecological health and stewardship to encompass the relationship between park lands and private lands that surround the park. Finally, the master plan affirms JMF's multi-faceted role in the community and charts a course for implementing improvements and programs in a sustainable and cohesive manner.

To help guide the development of the master plan, Metro Parks assembled a Steering Committee made up of 42 individuals from the Louisville area who represented various organizations and interests including schools and education, commerce, government, environmental protection, outdoor recreation, and law enforcement. The Steering Committee met three times during the planning process to review the work of the planning team and to provide comment and direction on the plan's evolution. In addition, park user groups—hikers, horseback riders, educators, etc.—were engaged on a separate basis to provide suggestions and ideas about the park's facilities and operations. Three public meetings were also conducted during the course of the study to allow participation and input by the greater community and other interested groups.

Woodland where Siltatone Trail crosses Bearcamp Road



1.2 Planning Process

Development of the JMF master plan followed a three-part process of 1) understanding the project setting, 2) determining the needs and requirements for park activities, facilities and resource protection, and 3) developing recommendations for facility improvements, expanded programs and better ecological function. These three steps in the process are summarized as follows:

1) Data Gathering and Review of Existing Conditions

The initial stage of the planning process included an affirmation of project goals and establishment of a project schedule identifying major milestones and meeting dates. LOJIC map data of the park was assembled and previous planning studies and management plans were reviewed. During this initial planning phase, the planning team conducted a thorough site reconnaissance of JMF with park staff. The team gathered information on existing park facilities, utilities, natural and cultural resources, programs and activities, road and path circulation, and so on. This information was portrayed on a series of map diagrams which gave the planning team and Steering Committee a good understanding of the wide range of conditions and issues throughout JMF. The information on existing conditions and characteristics was continually referenced to inform all decisions regarding proposed improvements and changes to JMF.

2) Determine Needs and Requirements

A series of workshops were conducted with JMF staff to determine programmatic requirements for the park. Staff members were asked to contribute information about park operations, programs and activities, anticipated staffing needs, projected building space requirements, accessibility and siting concerns, and security needs. Requirements were identified for access, trails and parking, educational and recreation facilities, and resource protection. This information was synthesized by the planning team into a set of programmatic requirements and development principles for park improvements. The program was refined through further review and input by JMF staff.

3) Recommendations for Park Improvements

Based on existing park conditions, program requirements and planning goals, an overall land use concept was developed to show where new and expanded facilities and activity areas could be integrated into the JMF landscape. Design schemes were then prepared for specific facilities and activity areas throughout the park. Recommendations were developed for a cohesive trail system, visitor access and wayfinding, critical land acquisitions, resource protection, and ecological function. Recommendations were reviewed with the Steering Committee and Metro Parks and refined per their comments.

Park Staff & Planning Team discuss issues at Tom Wallace Lake

Steering Committee meeting at Horine Center

1.3 JMF Mission Statement

JMF's Mission Statement was updated and expanded early in this study through input by Metro Parks staff and the Steering Committee. The Mission of the Jefferson Memorial Forest is:

To protect and enhance the regionally significant knobs ecology while promoting environmental stewardship and knowledge through nature study, education, and outreach.

Through this mission, the Forest enables local citizens to experience and enjoy the many qualities of:

- *Forest as Nature Sanctuary:* for perpetuation of native plant communities, wildlife, unique geologic features, and healthy creeks and streams.
- *Forest as Educator and Outdoor Learning Lab:* for the study and understanding of forest ecology, species diversity and interdependence, and the relationship between humans and nature.
- *Forest as Resource Management Leader:* promoting and implementing professional and science-based resource management and environmental education within Metro Parks.
- *Forest as Environmental Benefactor:* providing clear air, clean water, erosion control, carbon-dioxide absorption, and cooler summer temperatures.
- *Forest as Stewardship Catalyst:* encouraging environmentally responsible development and providing improved quality of life for the residents of surrounding communities.
- *Forest as Woodland Memorial:* honoring the sacrifices and commemorating the service of Kentucky veterans of our nation's military conflicts.
- *Forest as Recreation Amenity:* for hiking, horseback riding, fishing, camping, scenery, nature enjoyment, and relaxing.
- *Forest as Provider:* for game and plants historically used by woodland tribes, rich agricultural soils, charcoal to fire former kilns and smelters, and timber for building construction and countless wood products.

1.4 Planning Principles and Goals

The following planning principles were established to guide the master plan process:

- Preserve and restore important natural and cultural resources within JMF.
- Invite citizens of Fairdale and Louisville Metro to enjoy, appreciate and become stewards of JMF.
- Connect JMF with nearby neighborhoods and Louisville Metro with a sustainably designed and maintained trail system.
- Recognize the role of the JMF within the larger regional ecological system.

Woodland Trail at Horine Reservation

The following six primary goals for the master plan were also articulated.

1. ***Ensure that JMF activities and facilities fit with the forest setting, advance JMF's conservation and education mission, and are effective at generating revenue.***

This is a tall order, but one that must be realized to enable the continued operation and relevance of JMF. Park activities and improvements will need to be carefully orchestrated to achieve a combination of contextual fit, resource protection, environmental learning, and revenue generation.

2. ***Connect JMF to other parks, neighborhoods, nearby schools, and the 100-mile Louisville Loop Trail.***

JMF is an important natural and recreational resource for the region and a vital component of a diverse and enriching Louisville community. Strong linkages and connections between JMF and other places are critical to the park's continued use and appreciation, as well as to the community's health and environmental consciousness. This symbiotic relationship has to be strengthened.

3. ***Make park facilities good examples of environmental stewardship and sustainable design.***

All new facilities and improvements for JMF should demonstrate best practices and methods for energy conservation, low resource consumption, pollution containment and remediation, efficient land use, and minimal impacts upon natural resources. Consideration must be given to various "green" techniques and technologies including solar heating for buildings, "rain garden" stormwater treatment for hard surface run-off, low toxicity and recycled construction materials, and facility siting that reduces maintenance and motor vehicle travel. The integration of interpretive and learning opportunities describing sustainable methods and practices must also be pursued.

4. ***Make the entrance to and circulation through JMF comprehendible, enjoyable, and safe.***

Among the major issues confronting increased use and enjoyment of JMF is access and way finding. Whether it is by auto, bicycle or foot, visitor circulation to and through park areas needs to be well articulated and understandable. Access and circulation must also work in conjunction with the park's ability to collect visitor fees and effectively control access and usage. Finally, the circulation system should manifest qualities of anticipation, discovery, and surprise.

5. ***Promote forest stewardship and watershed protection throughout JMF and adjacent lands.***

Resource protection and restoration within JMF is a given and the park will continue to advance sound forest management and conservation practices. However, the ecological health of JMF is not simply a matter of what happens within the park boundaries. Forest lands extend far beyond the park perimeter and, as such, forest dynamics (wildlife movement, native plant populations, hydrologic function) flow back and forth across JMF and adjacent private lands. Good stewardship of adjacent lands will prevent JMF from becoming merely forested islands and parcels of trees set within a degraded and developed landscape.

6. ***Plan for JMF to be the pre-eminent environmental education venue for the region.***

JMF's natural resources and convenient location are the essential ingredients for making JMF the foremost environmental learning center in the Louisville Metro area. Current programs have generated considerable momentum toward achieving this distinction. The planning carried out in this study will further this momentum and demonstrate JMF's commitment to being the region's environmental learning classroom.

2. PROJECT CONTEXT

2.1 Regional Context

2.2 Geology and Terrain

2.3 Forest Community and Age

2.4 Hydrology

2.5 Scenic Quality and Viewsheds

2.6 JMF History and Cultural Resources

2.7 Land Use

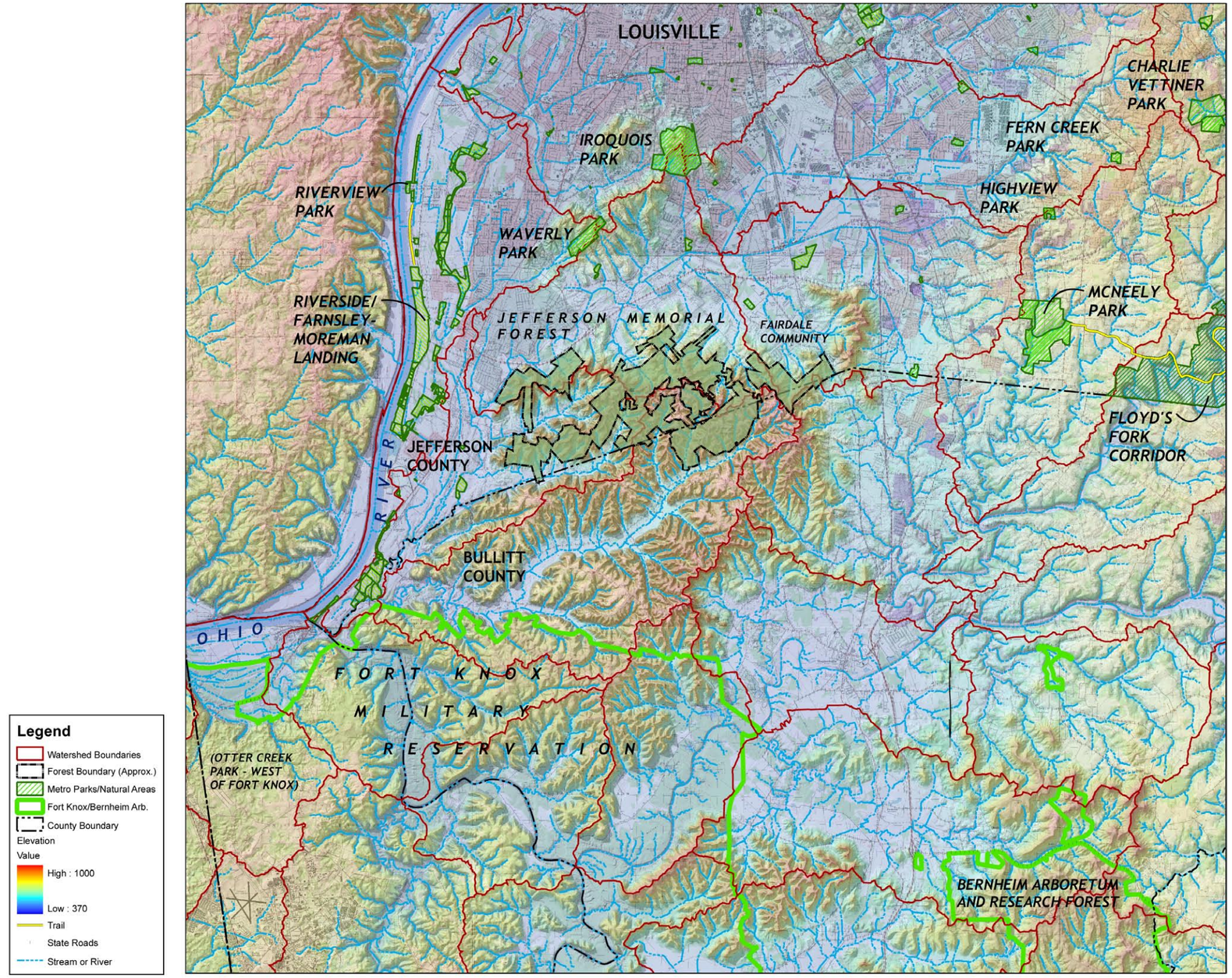
2.8 Transportation and Access

2.9 Wayfinding

2.10 Utilities

2.11 Existing Visitor Activity Areas

2.12 Existing Trail System



Legend

- Watershed Boundaries
- Forest Boundary (Approx.)
- Metro Parks/Natural Areas
- Fort Knox/Bernheim Arb.
- County Boundary

Elevation
Value
High : 1000
Low : 370

- Trail
- State Roads
- Stream or River

Jefferson Memorial Forest

Parks and Open Space Context

0 6,000 12,000 24,000 36,000 48,000 Feet

January, 2008

2. PROJECT CONTEXT

2.1 Regional Context

Jefferson Memorial Forest (JMF) is located in the southwest corner of Louisville about 15 miles from the city's downtown. The park lies on an outer lobe of the Knobs geologic region which extends farther south into Bullit County and sweeps west and north across the Ohio River into southern Indiana. The steep hilly terrain of JMF and surrounding landscape has deterred urban development, placing JMF at a transition point between Louisville's urban sprawl to the north and relatively undeveloped forested hills to the south. Other nearby Metro parks include Waverly Park, Iroquois Park, and McNeely Park. The undeveloped expanses of Fort Knox and Bernheim Forest occur a little further south in Bullit County.

Jefferson Memorial Forest operates primarily as a large-scale recreational resource and nature preserve serving the citizens of the greater Louisville Metro area. Current visitation at JMF is estimated at 125,000 to 150,000 people per year. People come to the wooded knobs of JMF to hike, camp, picnic, fish, ride bicycles and horses and participate in the various programmed activities and events provided within the park. Environmental education classes and programs are offered throughout the year at the Horine Center, and naturalist-led hikes and presentations are conducted at other locations in the park. Team building programs and corporate retreats are accomodated at the Horine Center as well where a team building course and the Horine Conference Center are found. Additionally, JMF provides the setting for the Forest Fest Music Festival and for private gatherings and celebrations like weddings and receptions. Local clubs and organizations such as the Louisville Orienteers, Boy Scouts, and various other groups also use the park for their programs and events.

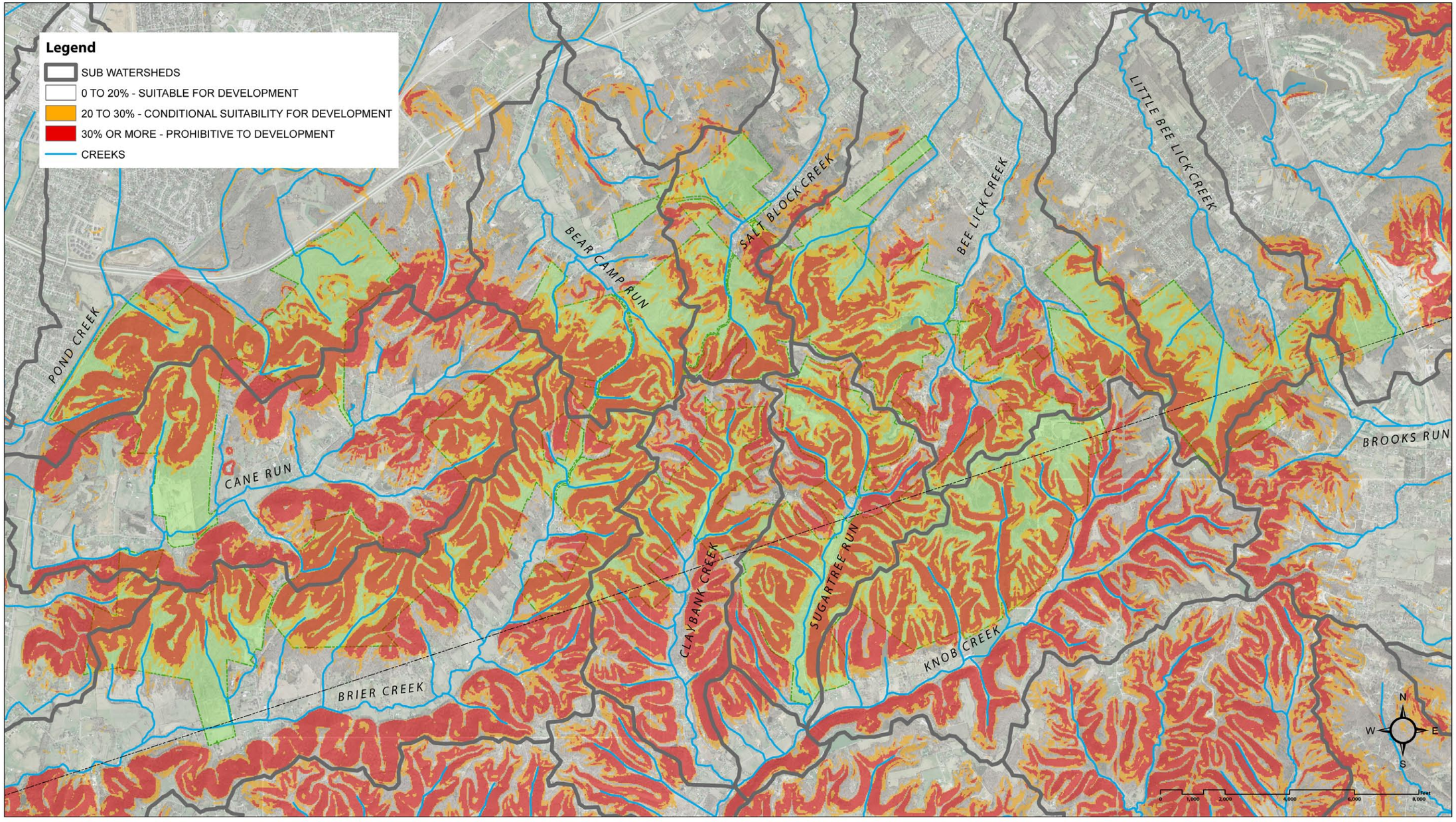
Hiking is by and large the most popular recreational activity at JMF. The park's trail system allows visitors to take short easy hikes or day-long strenuous hikes through the rugged and beautiful forested terrain. Horseback riding, fishing, camping and picnicking are also popular pursuits at designated areas within the park. Access to JMF's dispersed recreational sites and activity areas is from local roads and park drives.

As a "City of Parks," Louisville boasts a number of parks and recreation areas throughout the greater metro area. JMF's role has been considered within the context of these recreational resources and the larger community. Its relevance and importance can be framed largely by its unique attributes and characteristics, including:

- At 6,190 acres, JMF is the largest of Louisville Metro's parks.
- JMF contains large intact stands of indigenous forest over a rugged knobs terrain; as such, the park protects a complex, functioning forest ecosystem that is found nowhere else in Louisville at a comparable scale.
- JMF's size and resources approach that of a state park and, to some extent, give it image parity with the much larger Bernheim Forest further south in Bullitt County.
- Although JMF is at the outer edge of the city at some distance away from densely populated areas, JMF's close proximity to Interstate 65 and the Gene Snyder Freeway make it fairly accessible to large numbers of people.
- JMF's system of woodland hiking trails is the longest and most varied in the region with opportunities to expand trails to other areas of the park; JMF also contains the most extensive equestrian trail system in the county.
- JMF's environmental education programs are unparalleled in the region, providing a much needed educational asset in a setting that is essentially a large outdoor learning lab.
- In addition to hiking and passive recreational activities, JMF offers the only public campgrounds in the county.

Pinquely Property at Moreman's Hill

Above: View from Moreman's Hill looking north toward Louisville



March 2008

Jefferson Memorial Forest

Terrain Features - Slopes, Watersheds, Creeks

2.2 Geology and Terrain

The most defining characteristic of Jefferson Memorial Forest and surrounding area are the undulating Knobs landforms. These steep hills and ridges and deep ravines have influenced the make-up of the local soils, hydrology, and biotic communities. The rugged terrain has also kept large tracts of forest land from being overtaken by farming and development. The panoramic views from the tops of the knobs and the peaceful seclusion of the deep ravines are among the attractions that draw visitors to the trails, campgrounds and picnic areas within JMF.

The Knobs landforms can be explained by dynamic geological processes over millions of years, whereby changing hydrologic and other environmental conditions led to the formation of distinct layers of rock. The formation of these rocks came about through sediment deposits formed in ancient seas. Each rock layer has its own unique characteristics that through erosion has contributed to the landscape. Soft shale and siltstone make up the lower slopes, with harder limestone and sandstone on the top. The protruding knobs and ridges that are seen today were created as the deposits of hard cap sandstone and limestone resisted the erosion that carved away the softer surrounding shale and siltstone over geologic time. The result is an undulating and dissected topography of rounded or elliptical hilltops and narrow ridges rising to elevations of 800' MSL above the lower creek valleys and ravine bottoms, which are generally at 400' to 500' MSL.

Notable characteristics of the Knobs include the following:

- The steep topography of the Knobs strongly influences land use both within and around JMF, dictating where roads, buildings, trails and activity areas are located.
- Slopes within JMF range from 1% to over 40% with perhaps as much as three-quarters of the land area within JMF comprised of slopes greater than 30%; these slopes are poorly suited to building and road development.
- Moderate slopes (less than 20%), which are suitable for buildings and roads, occur primarily along the north, east, and west edges of JMF; some small areas of moderate slopes are also located in narrow valley bottoms and along ridgetops.
- Lands bordering JMF contain wider valley bottoms along major creeks where there is more flat to moderately sloping ground; most of the residential development advancing around JMF has occurred in these wide, flatter valley bottoms; some of the wider ridges south of JMF also have been developed.
- While the tops of some of the larger Knobs may have moderate slopes and a firm sub-strata, intensive development of these areas in JMF could cause erosion over adjacent slopes and visually impact surrounding areas.
- The undulating topography of the Knobs is a unique and fascinating geologic feature made all the more remarkable by the proximity to the broad floodplain and low-lying river benches of the Ohio River.

Pinquely Property in Moreman's Hill

Trail at Scott's Gap

Soils

The different geologic layers that form the Knobs are the parent material for the soils. The Carpenter silt loam, Gilpin silt loam, Gilpin-Weikert complex, Tilsit silt loam and Garmon silt loam map units are the most prevalent soils on the knobs. These soils have been formed from siltstone, shale, and to a lesser extent limestone. The Crider silt loam and Nicholson silt loam map units are the most common soils located on the ridges and are typically formed from limestone. Other minor soil map units are also present within JMF.

In general, the soils of JMF are unstable and have a high erosion potential, especially on steeper slopes. Of particular interest for this master plan is the suitability of soils for recreational development (camps and trails) and limited building-site development (visitor and education centers). The National Resource Conservation Service (NRCS) soil survey rates soil map units according to limitations that affect their suitability for various uses and management. Ratings are based on restrictive soil features such as wetness, slope, and texture of surface layer. These ratings are solely based on soil characteristics and do not consider other important factors like road and utility access, vegetation, adjacent land use, and so on. Development ratings as follows:

- Not limited: The soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.
- Somewhat limited: The soil has features that are moderately favorable for the specified use. The limitations can be overcome of minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.
- Very limited: The soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome with major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Most of the soils within JMF have a very limited development rating.

Some small areas, usually on the tops of ridges or in valley bottoms, have soils that are not limited or are somewhat limited for certain uses. The maps on the following page show areas that have soils suitable (lighter shades) for recreational and building development.

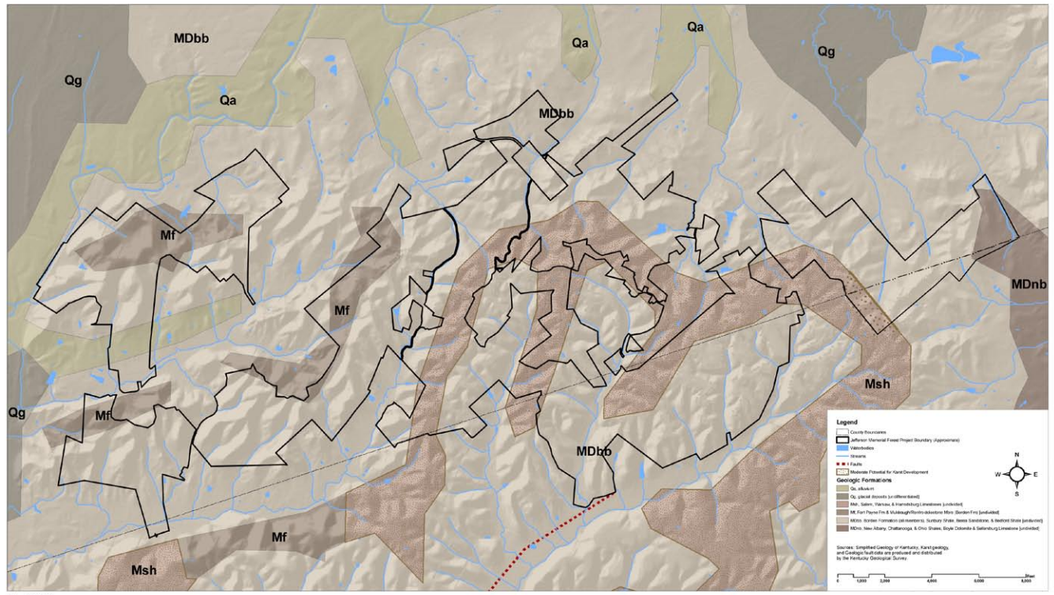
Other notable soil characteristics include the following:

- Soil is thin on the knobs with bedrock outcrops common on the upper slopes.
- The vulnerability of steep slopes is evidenced by the severe erosion at Moreman's Hill caused by all-terrain vehicles.
- Areas with hydric soils are scarce in JMF. Only two map units, Melvin silt loam and Robertsville silt loam, have significant hydric soils components. Melvin silt loam tends to form on floodplains, and Robertsville silt loam tends to form on gently sloping ridge tops.

The unstable soils and steep terrain of JMF are a major factor in determining the type, location and extent of activities and supporting infrastructure throughout the park. The siting and placement of new facilities and buildings (like the new Welcome Center, Learning Center and campgrounds discussed in later sections of this report) have been influenced by soils and gradients. Moreover, JMF's vulnerable soils weigh heavily on the necessity to continually protect and limit activity over large interior areas of the park.

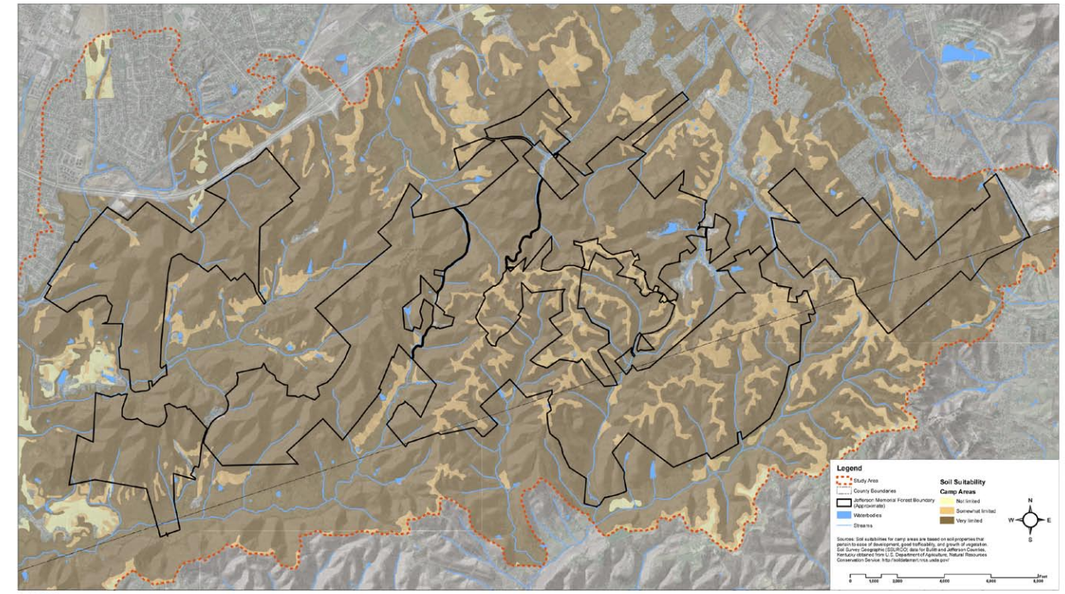
View from Mitchell Hill Road

Eroded hillside in Moreman's Hill section



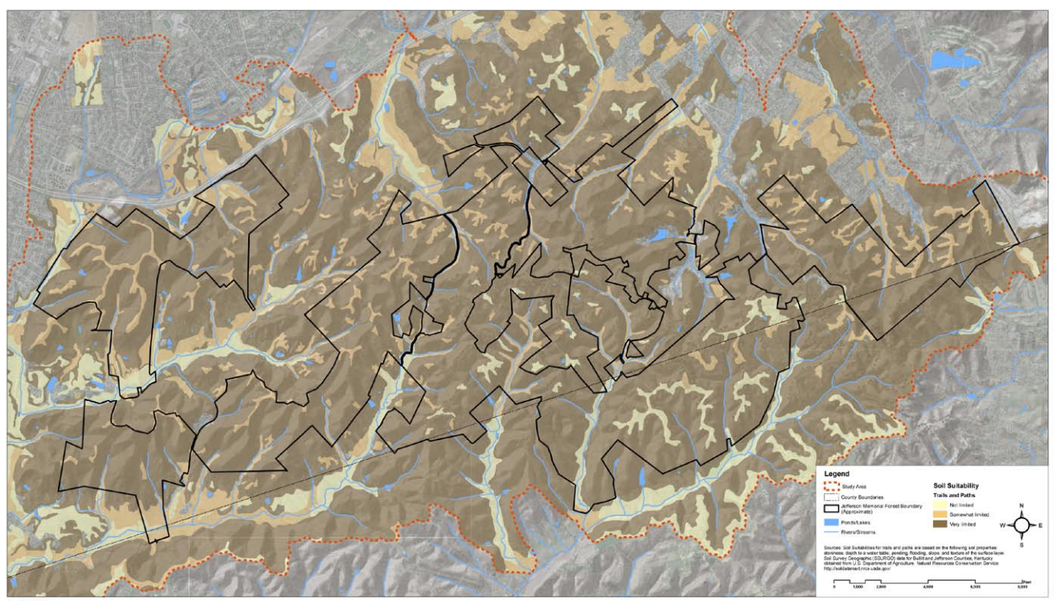
March 2008

Jefferson Memorial Forest Geologic Features



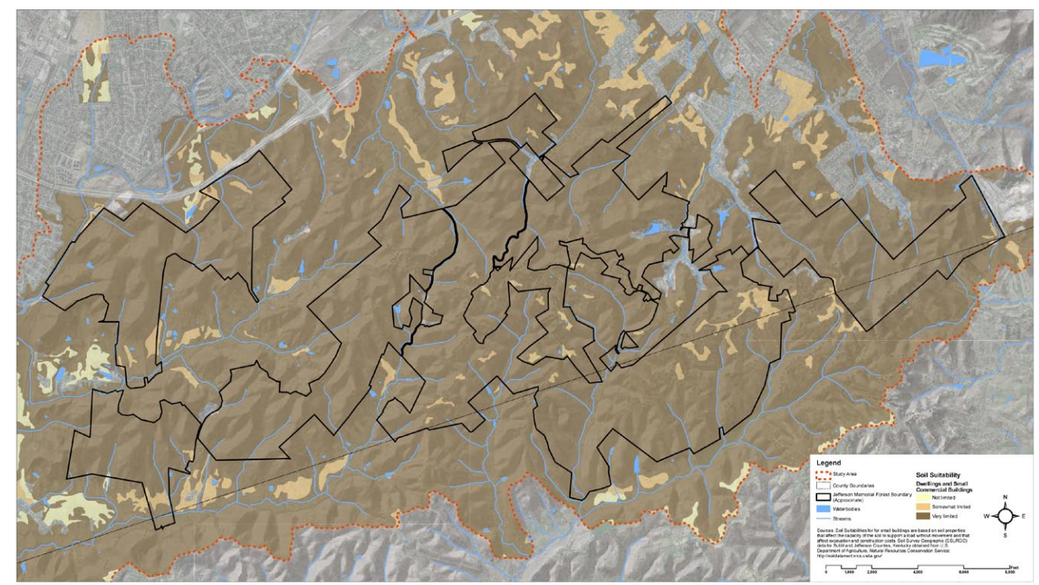
April 2008

Jefferson Memorial Forest Soil Suitability: Camp Areas



April 2008

Jefferson Memorial Forest Soil Suitability: Trails and Paths



April 2008

Jefferson Memorial Forest Soil Suitability: Dwellings and Small Commercial Buildings

December 2008

Jefferson Memorial Forest

Forest Communities

2.3 Forest Communities and Age

Geology lays the foundation for JMF's topography and soils, and, in turn, the topography and soils heavily influence JMF's most precious natural resource – the forest itself. JMF is located in the Western Mesophytic Forest region, which descended from ancient deciduous plant communities formed millions of years ago. JMF's woodlands have evolved in response to the area's physiography and climate. Within this forest, the interplay of slope, aspect, and soils has led to the formation of several distinct forest communities:

- Starting at the lower elevations in the valleys and lower slopes, the relatively deeper and moister soils support an acidic mesophytic forest. These site conditions are conducive to a diverse forest with large canopy trees such as beech, sugar maple, white and red oaks, and tuliptree along with a well-stratified understory of smaller trees, shrubs, and herbaceous plants.
- Moving up the slope, the soils are drier and the community transitions to an acidic sub-xeric forest. Due to the drier conditions and increased exposure, growing conditions are harsher. As a result, canopy tree species that grow to impressive heights in the Mesophytic forest are smaller here, with a less diverse and developed understory. Shrubs such as mountain laurel and lowbush blueberry are adapted to these conditions and thrive.
- Where dryness and exposure further increase near the ridgetops, particularly on slopes that face south and west, the forest transitions into an acidic xeric forest. In this community, soils are thin, dry, and rocky, causing the harshest growing conditions. The plants are sparse, with smaller trees consisting mainly of post, blackjack, and chestnut oaks. As in the sub-xeric forest, the harsh conditions reduce or eliminate competition from more mesic-adapted plants, allowing unique species such as highbush and lowbush blueberry to prosper.

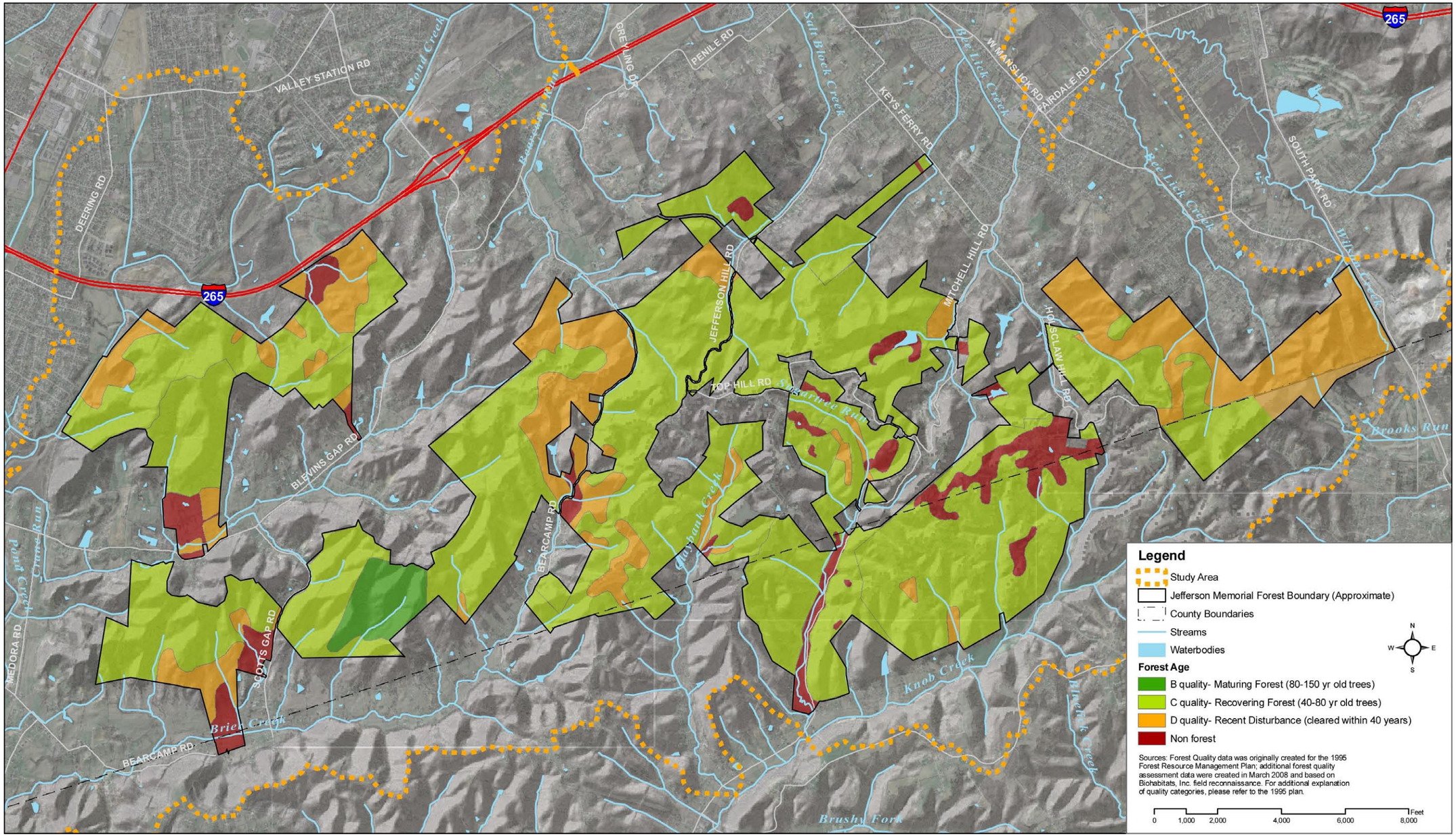
During field assessments conducted for this master plan, observations were made of the different forest communities that blanket the knobs. Forest age was also assessed on JMF parcels acquired after completion of the 1995 Resource Management Plan. The 1995 Plan's map showing forest age has been updated here (page 18) using the same general categories used for the 1995 Plan – Maturing Forest (mostly 80 to 150 years old), Recovering Forest (40 to 80 years old), and Recent Disturbance (less than 40 years old). Based on observations, the largest percentage of forest appears to fall within the Recovering category. While much of JMF shows some evidence of past disturbance (some areas more recently than others), most of the forest is naturally regenerating into a healthy and diverse ecosystem. Only disturbed areas near forest edges, such as the now-removed house site in the Malloy tract or the Churchman property near Belvin's Gap Road, appear to have significant problems with invasive plant species.

Hillside in Tom Wallace

All of the natural features mentioned in this section are vital components of the JMF ecosystem. Certain features and resources, however, are especially important. These features and resources are identified on the Important Natural Features map (page 19) and described below:

- Acidic xeric forest and associated barrens are important because they are unique plant communities that have adapted to the harshest growing conditions in the Knobs region. Rare plants are typically part of these xeric communities, and, although no such species have been recorded in JMF, they would be a good place to look as part of an in-depth inventory.
- The oldest forest stands have considerable importance. While all forested lands are valuable, the Maturing Forest shown on the Forest Age map, known as Headly Hollow, is the best example of mature forest in JMF. It displays a structure and species diversity that is an excellent representation of a healthy Knobs forest and, if protected, serves as a biological reserve that improves the surrounding forest adjoining it.
- Another important resource in JMF are the riparian corridors along small streams and creeks. Many different species make use of riparian corridors and some species, such as amphibians, absolutely depend upon riparian areas to survive. Riparian forests contribute vital substrate and nutrients to streams in the form of leaves and wood upon which a healthy stream ecosystem is based. Vegetated riparian areas also provide water quality benefits by filtering runoff that flows toward a stream and by shading the stream itself.
- Hydric soils are important since they indicate possible wetland conditions. As shown on the map, only two small areas of hydric soil have been identified in JMF.
- Large areas of contiguous forest, or patches, are especially valued. Patches are discussed more thoroughly in this section.

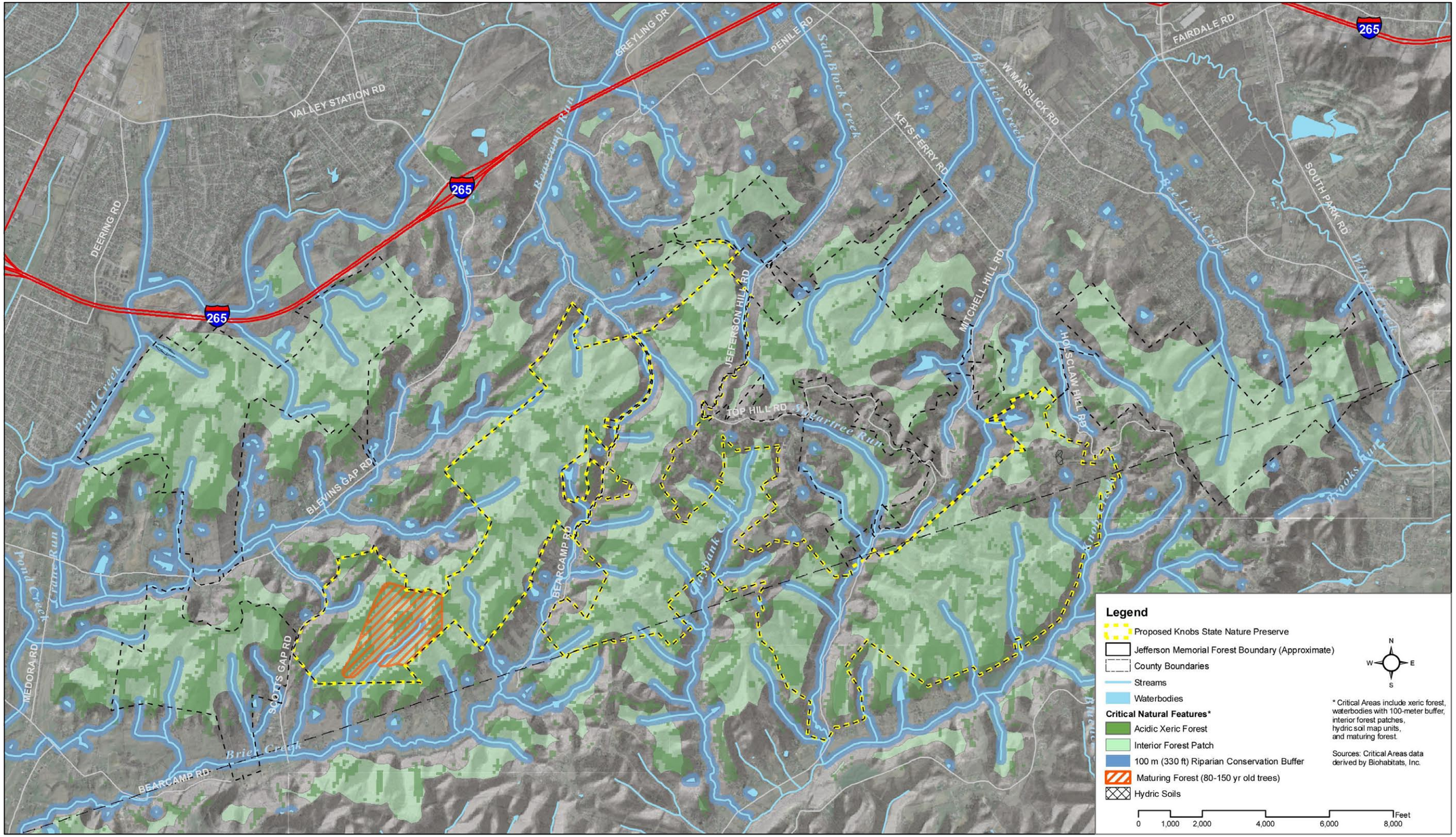
In addition to these important natural features, the map on page 19 also shows the boundaries of an area proposed for designation as a Kentucky State Nature Preserve. This designation is based on the presence of important natural features as well as the size of interior forest patches and their relative location within JMF.



December 2008

Jefferson Memorial Forest

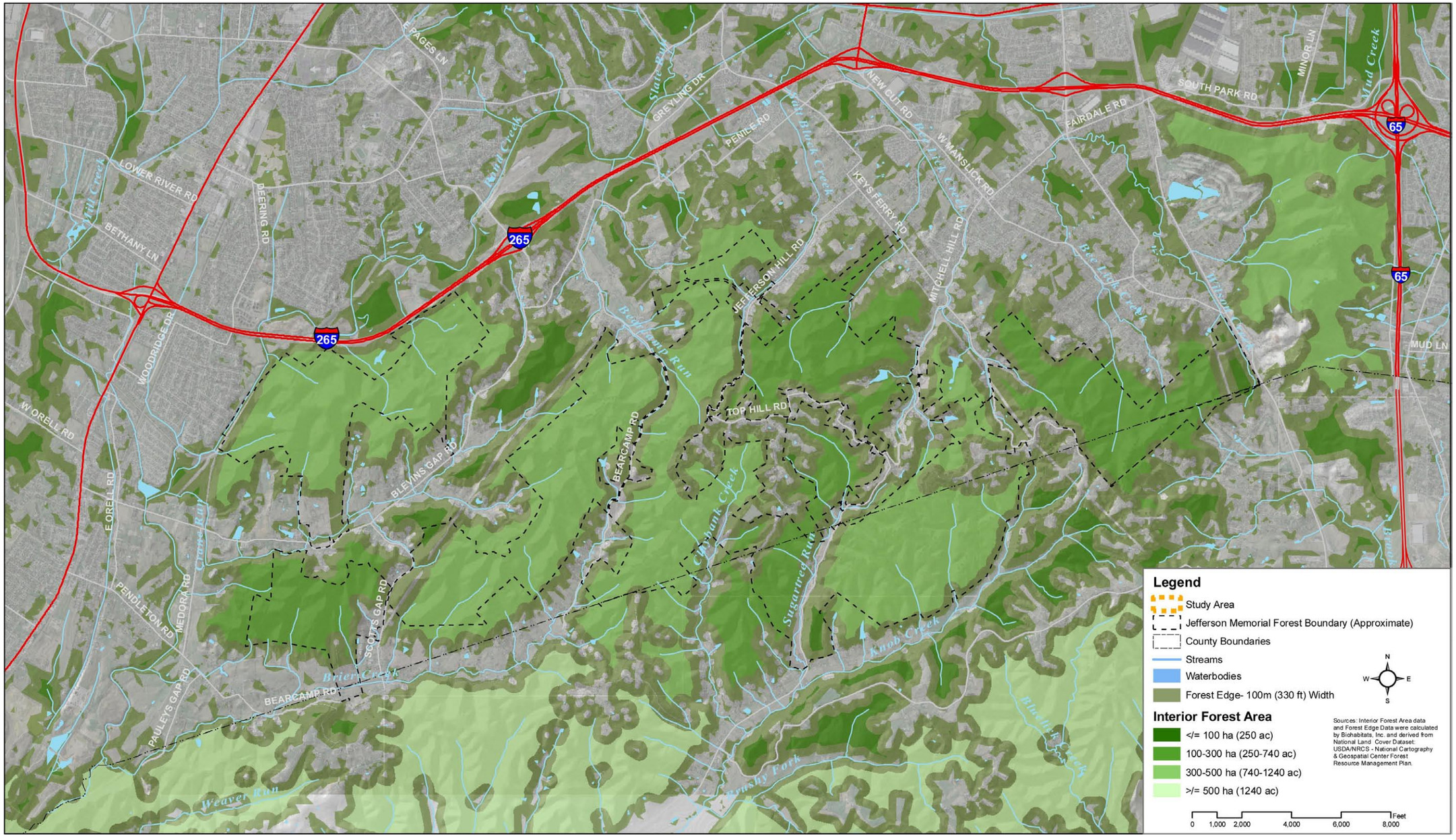
Forest Age



December 2008

Jefferson Memorial Forest

Important Natural Features



December 2008

Jefferson Memorial Forest

Interior Forest Patches

Forested Hubs and Linkages

JMF consists of publicly owned tracts of forest land that is interspersed among privately owned farmland, forest land, and residential areas. Overall, the most critical factor to the well-being of JMF's forests is the interconnection of its fragmented patches of woodland. By being connected, native plant and animal species have a better chance to migrate, regenerate, and maintain healthy populations.

The study of patches and connectivity is part of the science of landscape ecology, which has influenced certain recommendations in this master plan. In landscape ecology, areas of habitat that are interspersed with areas of development or disturbance are called hubs (or patches). Hubs come in an infinite number of sizes and shapes and can have varying degrees of connectivity with each other. The connections between hubs are called linkages (or corridors). These landscape ecology principles can be used to characterize current and potential habitat structure and patterns.

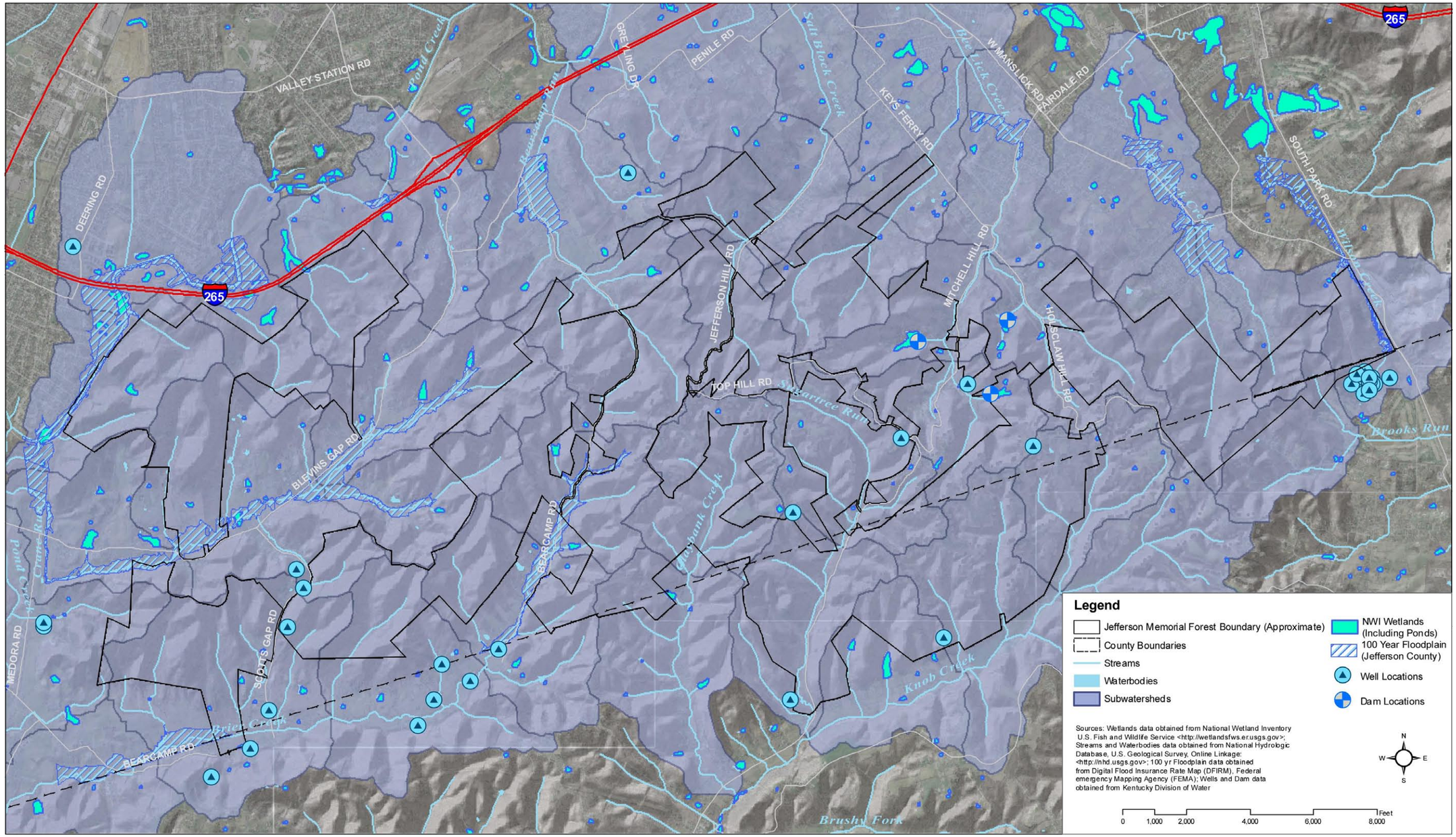
Various factors affect the quality and health of hubs and linkages. Scientific studies have shown that larger hubs (Robbins et al. 1989, Schiller and Horn, 1997) and wider linkages (Mason et al. 2006, Schiller and Horn, 1997) result in higher quality habitat. Much recent research in landscape ecology and habitat quality has been done using data collected on neotropical migratory birds, which nest in the continental U.S. in the summer and migrate to Mexico, the Caribbean, or Central or South America in the winter months. Neotropical migrants comprise approximately 50% of the total number of bird species in North America (Franzreb and Phillips 1996). The populations of many of these species are rapidly declining, and their presence has been linked to viable habitat for other important interior forest species. They have been used as habitat indicator species for a broad range of sensitive forest animals because of their need for forest interior habitat, their use of the entire range of forest habitat types and vertical vegetation levels, and the relative ease with which they can be identified and counted. Mason et al. (2006) found that some interior forest species of birds were found primarily in greenways wider than 100 meters, while other interior species, including some ground-nesters, were recorded in greenways wider than 300 meters. Freemark and Collins (1992) found that few forest interior neotropical migrants were found in forested tracts less than 25 acres. Robbins et al. (1989) reported the median minimum size of forest habitat to be 25 acres for isolated forests; however, they stated that their study indicated that a smaller area can support many species if there is additional forest area in patches nearby (less than 2 kilometers or 1.2 miles away). Published research also suggests that interior forest habitat can support not only bird species, but also amphibians, reptiles, and insects. In general, species native to an area need habitat that existed prior to development in order to persist under developed conditions, and interior forest patches provide that type of habitat. Looking at a map of JMF, we would expect that it contains viable interior forest habitat. Bird sampling data compiled by JMF staff and others show that neotropical migrants have been sited, confirming this expectation. Consequently, important habitat for other phyla is also likely present.

Additionally, the shape of the hubs affects their potential quality (Matlack 1993, Chen et al. 1990). Habitat patches have edges along their perimeter, and these edges are of much lower habitat quality than areas in the interior of the hub that are beyond the inner border of the edge. The width of the edge, or the amount of habitat negatively affected by its location on the perimeter of a hub, is determined by individual species habitat preferences (Matlack 1993). If the shape of the hub is elongated or narrow, then the amount of interior high quality habitat is diminished as the habitat edges approach and converge on each other, squeezing out interior habitat. The more urbanized the development is along the edge, generally the more detrimental the disturbance.

Vegetation composition, age, height and adjacent land use also affect the quality of hubs and linkages as habitat or natural resources (Mason et al. 2006, Rodewald and Bakermans 2006). Vegetation with varying degrees of diversity, age, and height attract and support different species of wildlife. A relatively young forest stand can attract and support a very diverse array of species. An older forest may not have as much faunal diversity, but it may support species that are more uncommon. Older growth forest stands have become rarer due to development and disturbance and take longer to replace; therefore their protection should receive a high priority when preserving open space.

The presence of streams or wetlands in hubs or linkages enhances their ecological value by increasing habitat diversity. They also provide important ecological services such as potential water supply storage and surface and groundwater retention and purification.

Interior forest hubs were mapped in and around JMF (page 20). The results show that a number of patches of varying size exist within the vicinity. In almost all cases, the patches themselves extend into private land beyond the borders of JMF, so they are not completely protected. The ranges of size shown on the map are partly based on two migratory bird species that serve as indicators of overall forest health. The Worm-eating Warbler (Helmitheros vermivorus) and Louisiana Waterthrush (Seiurus motacilla) were identified in the Kentucky Comprehensive Wildlife Conservation Strategy (2005) as two examples of birds of greatest conservation need that live in and around Jefferson Memorial Forest. Studies have shown that the Worm-eating Warbler prefers large forest patches between 300 and 1000 hectares of non-fragmented forest (NatureServe Explorer). Conservation guidelines for the Louisiana Waterthrush suggest forested riparian areas 100 meters wide within a forest tract of at least 100 hectares (NatureServe Explorer). Forested hubs of these sizes can provide the type of habitat necessary for protecting native biodiversity; as shown on the map, a few of them presently exist, though they are not completely protected within JMF. Also, the largest existing patches extend southward into Bullitt County.



December 2008

Jefferson Memorial Forest **Hydrologic Features**

2.4 Hydrology

Interwoven among the ridges and valleys and the diverse plant and animal communities of Jefferson Memorial Forest is a complex hydrologic system. The knobs in and around JMF are high points that act as drainage divides. Headwater streams begin on the knobs etching deep ravines and joining with others to form larger streams such as Brier Creek and Knob Creek in the lower and flatter valleys. Since JMF occupies the top of several watersheds, it contains few large creeks or wide floodplains. All of the creeks in JMF eventually have their waters discharged to the Ohio River via larger creeks outside of JMF. Most flow into Pond Creek; one small area in the southeastern edge of Paul Yost flows into Floyd's Fork by way of Brook's Run.

Generally, the condition of the creeks depends on their location. In the interior parts of JMF, the headwater streams are in good physical shape with intact pool/riffle features, extensive riparian buffers, and minimal bank erosion. However, along roads, near heavily-used trails, or in power line easements, the corresponding impacts lead to damaged and reduced riparian buffers and increased channel instability. Once the streams leave JMF and flow into wider developed valleys, they appear more degraded and have little or no riparian buffer. The section of Cane Run Creek on the Pinquely property is an example of a degraded stream channel; it is also a good restoration opportunity with existing stands of native river cane and a wide floodplain terrace.

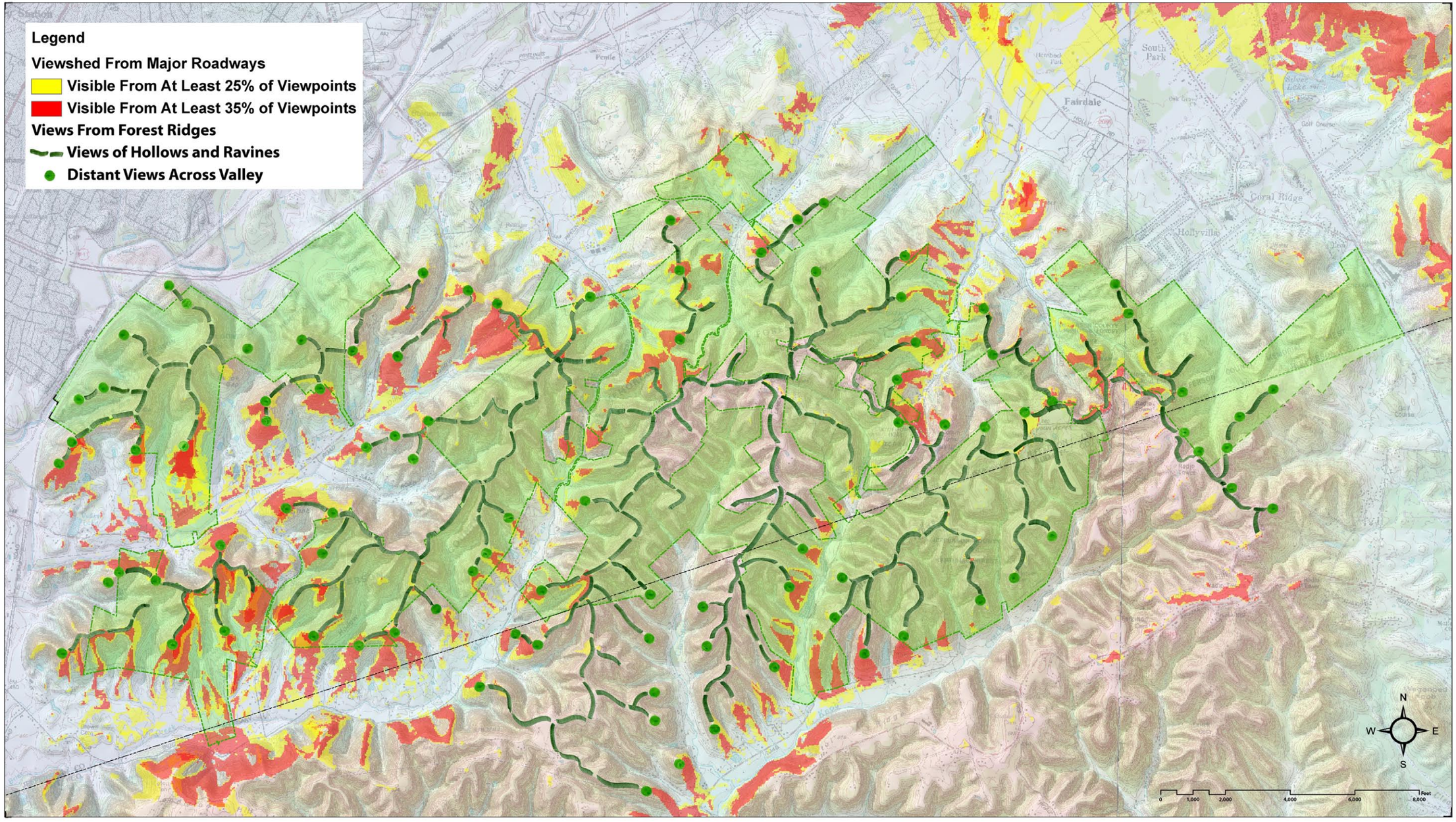
In addition to the creeks, there are many ponds and small lakes for agriculture and fishing in and around JMF. All of them were constructed sometime in the past by damming small drainage basins. Tom Wallace Lake and Mitchell Hill Lake are both contained within JMF and provide valuable aquatic habitat as well as recreational opportunities. A small pond on the Pinquely Property portion of the Moreman's Hill Section is a good example of the many small farm ponds that dot the landscape.

Pond on Pinquely Property

Claybank Creek near Knob Creek Road

Healthy, undegraded creek channel

Bee Lick Creek along Mitchell Hill Road



May 2008

Jefferson Memorial Forest

Viewshed Analysis

2.5 Scenic Quality and Viewsheds

Outline

JMF's rugged knob terrain and lush woodlands define the park's visual character. The beautiful scenery of JMF changes with the seasons and with one's location in the forest, and this scenery is one of the primary attractions that draw people to the park. Upon approaching JMF from local highways and roads, visitors can see the high, undulating profile of the knobs which characterize the park and surrounding landscape. Consequently, visual recognition of the JMF landscape occurs from some distance away at vantage points as far north as Iroquois Park and Louisville International Airport.

Access to JMF requires traveling local roads to reach various park destinations and activity areas. A few local roads pass directly into and through the rugged terrain of JMF. However, most roads travel the broader, flatter creek valleys where residential development and farm fields usually border the roadway. When driving these roads, the foreground view is dominated by homes, yards, driveways, fields, and fences. In many locations though, the high wooded knobs loom above the valley development and visually dominate the background. The knobs' undulating rise and fall and unbroken tree cover lend considerable visual cohesion and vividness to what otherwise would be a cluttered and incoherent scene.

The forested knobs both within and around JMF are the primary visual identifier for the park, and it is upon seeing these knobs from local roads that most visitors get their first experience of the JMF landscape. The map on page 24 highlights the knobs and hillsides that are visible and visually dominant from relatively long stretches of road. Some of these knobs and slopes are outside the boundaries of the park, but they nevertheless contribute to the park's perceptibility. Even though other wooded knobs throughout this landscape may not be highlighted, they also contribute significantly to the overall visual character and viewshed quality that visitors experience upon driving to and around the park.

Within the boundaries of JMF, most lands are steep and wooded with the exception of cleared openings associated with major visitor activity areas. Access into the interior of the forest is mostly by hiking trails. While tree cover is generally unbroken within JMF's woodlands, scenes vary from place to place with the size and type of trees, density of under-story plants, presence of creeks and drainages, angle of the ground's repose, position of viewer, and of course the season. On hillsides and in deep ravines, outward views are contained by nearby slopes, and one ravine or wooded hillside becomes nearly indistinguishable from the next. However, from along the tops of narrow ridges and on the pinnacles of high knobs, the drama of this landscape unfolds. From these higher elevations, the ground literally falls away beneath the viewer creating a remarkable and vivid visual experience where the incredible steepness and depth of ravines can be appreciated and long vistas across the larger creek valleys can be enjoyed. The map on page 24 shows the intricate pattern of ridgelines and knobs from which these beautiful and dramatic vistas occur.

This visual environment is an inherent part of the physical setting that hosts JMF's trails, campgrounds, education programs and recreational activities. Preserving and enhancing this visual environment is critical to the enjoyment and value of JMF. While there are captivating views from the tops of many knobs and ridgelines, views from others are negatively affected by encroaching development in the larger valley bottoms. And while a heavy blanket of vegetation remains intact on most of the knobs outside the park, some knobs have been scarred by logging, roads and sporadic development. Nearby residents do provide a portion of the park's user base, but the area's visual quality that is appreciated by both nearby residents and park visitors stands to be adversely affected by unchecked development. A partnership between JMF and its neighbors will be necessary to protect the scenery and viewsheds that all enjoy.

Visual Character Summary

- The strongly expressed knob landscape is visible from major roads, including the Gene Snyder Expressway, and from nearby communities such as Fairdale. The knobs can be seen by many people in distant locations; the knobs should be readily associated with JMF.
- The wooded knobs that backdrop the developed creek valleys are generally the reason for the high scenic quality throughout the JMF area.
- The knob summits and ridges, particularly those with dramatic views and vistas, make them ideal viewpoint and overlook destinations for trail users.
- The deep ravines within JMF create a sense of enclosure, quietude, and seclusion that is rare in urban and suburban areas.

View from Moreman's Hill

2.6 JMF History and Cultural Resources

The term "cultural resources" encompasses a range of entities and concepts significant to establishing and maintaining an understanding, appreciation, and linkage between people and their rich cultural and historical pasts. Cultural resources include above-ground structures such as buildings and bridges, and below-ground or buried resources such as archaeological sites and cemeteries. In recent years, a less tangible form of cultural resource has been recognized, namely Native American traditional or sacred sites. In addition, oral histories reflect a type of traditional resource that is verbally handed down from generation to generation. Stories, photographs and family histories imbue the physical resources with the lives and voices of the people who created and inhabited these resources.

The JMF area has a rich but largely undocumented cultural history beginning in the prehistoric past. Although few historic native groups were known to inhabit central Kentucky during this period, native groups undoubtedly knew about and valued the rich and varied resources of the region such as the salt licks and chert deposits as well as the abundant wildlife. Native American presence during the early historic period most often consisted of scouting parties, hunting parties, and raids. The ever-increasing flow of Euro-Americans into the region was an intrusion that proved impossible for woodland tribes to stem; however raiding of white settlements and homesteads by native groups was active through the 1780's and 1790's, with several incidents in the area surrounding JMF including skirmishes around the Brook's homestead and locations along the Wilderness Road.

JMF lies within Jefferson and Bullitt counties. Jefferson County is one of the three original counties of Kentucky. The early white settlements of the county were concentrated around the Falls of the Ohio River and extended up tributary streams, notably Beargrass Creek. Bullitt County was created from portions of Jefferson and Nelson Counties. Shephardsville was designated the Bullitt County seat at a location where the famed Wilderness Road crossed the Salt River.

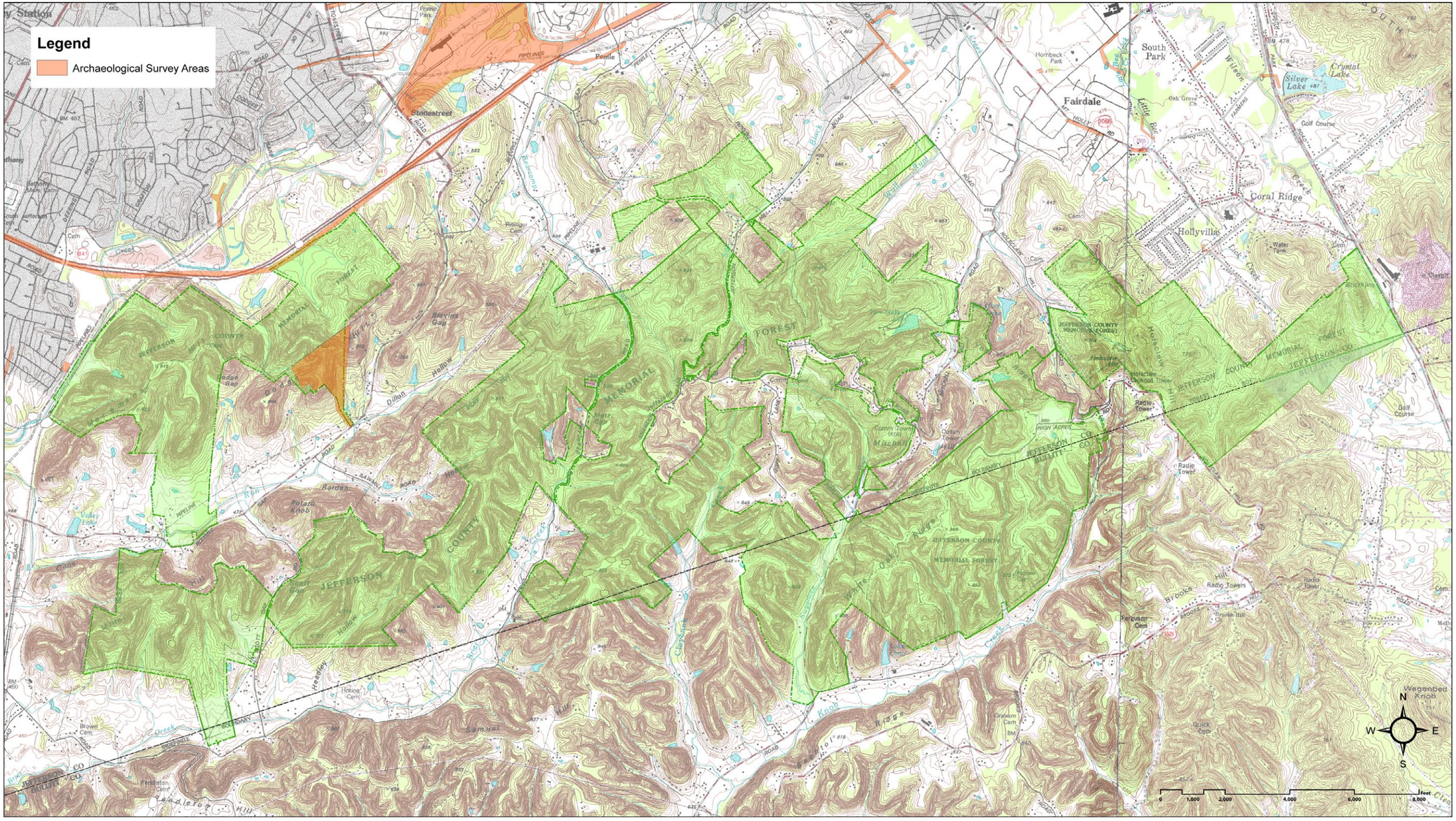
Rivers and streams provided the easiest and earliest routes of transportation for early travelers of the region. Waterways along with buffalo traces and Native American trails served as the primary arteries of travel. Early landowners in and around the JMF were typically not resident, due in part to the unsuitability of the area for farming. Much of this landscape was characterized by a preponderance of low, flat, wet ground within an area known as the Wet Woods, and by the steep, rugged hills known as the Knobs. Over time, however, small villages and settlements were established at points where streams, roads, and railroads intersected. These locations were not only crossroads, but also were locations where goods and passengers were loaded and unloaded as they changed mode of conveyance (Kramer 2001:59).

Various industries were established within and surrounding the present day JMF. Outside the current forest boundaries, salt licks such as Manslick played an important economic role in the area until about 1830. Later, brick kilns functioned south of Coral Ridge and charcoal was produced in the Wet Woods area. Within the forest boundaries, industries included tanneries, iron furnaces, charcoal making, trapping, logging, and sawmills. The products of these industries may have been shipped north to Louisville over roads such as National Turnpike, but many were taken south to the Salt River and loaded onto ferries. Goods traveled downriver to the Ohio River, then north to Portland (Rootsweb 2008a). Taverns sprang up to serve the workers of the area.

The JMF area saw a significant increase in residents as a result of Joseph Brook's saltworks at Manslick, which began in 1787. The population at this time included a number of African American slaves as well as white workers. Perhaps the earliest actual community in the area was Newtown. "New Town" was incorporated by an act of the 3rd session of the Kentucky General Assembly in 1794 on lands owned by Colonel James F. Moore, adjoining the lands of James Speed and Joseph Brook's (Governor Isaac Shelby Correspondence File - Enrolled Bills 1792-1794). Boundaries of Newtown were centered a little northeast of the present town of Fairdale, from Wilson Creek on the west to South Park Hills on the east and from Fairdale Road northward (Nelson n.d.a). In 1800, a large saltworks was built near Newtown and the community expanded accordingly, but by the late 1800's Newtown was all but forgotten. The town charter was dissolved in the 1890s due to changes in Kentucky incorporation laws.

Farmhouse on Pinquely Property

Bearcamp Road



March 2008

Jefferson Memorial Forest

Archaeological and Historical Elements

Other nearby communities included Mt. Holly, where a school was established in 1823. It was named for the moniker given the area in 1779 by Colonel Moore in reference to its holly-covered hills. The present day community of Hollyvilla was likely named in remembrance of this early settlement. In the mid 1850's, the Louisville and Nashville Railroad established the Old Deposit Station. The name was later changed to South Park in 1889. In 1927, the South Park Post Office was relocated a mile away and renamed Coral Ridge (Kleber 2001:280).

The community of Fairdale began as a store opened by John and Si Morgan in 1881. The client base for the store included residents who settled the area surrounding the Old Deposit Station. Morgans' Store prospered and grew, and the surrounding settlement also expanded. The settlement, however, had no name, and its identity became associated with the nearby Wet Woods. This vast swampy lowland extended from today's I-264 to the Knobs of the JMF. As is true with most swamplands, the area was considered undesirable and a wasteland. As such, it attracted an abundance of people who needed just such a place in which to seek refuge. The Wet Woods became known as an area for criminals, bandits, and nomads—the dark forest of many fairy tales. By 1910, residents of the settlement surrounding Morgan's store opted to officially name the settlement and distance itself from the nefarious reputation of the Wet Woods. The name Fairdale was suggested by Mr. Oscar Reed and was accepted. Fairdale attained its first post office in 1949 when the post office at nearby Coral Ridge was moved to Fairdale. The present day location of the Fairdale post office was established in 1955 (Kleber 2001: 279; Nelson n.d.a; Rennick 1984:97).

Despite the area's long, rich, and sometimes colorful history, there are relatively few locations within the JMF where this history is immediately apparent. Many early buildings and houses have deteriorated with age and have been demolished. The forest, logged on multiple occasions in the past, has reclaimed the hillsides, and the locations of old houses, wagon road routes, and even small family cemeteries have been forgotten. The history of the JMF area now resides primarily in memories of the elderly and in the stories passed down through families who once lived there.

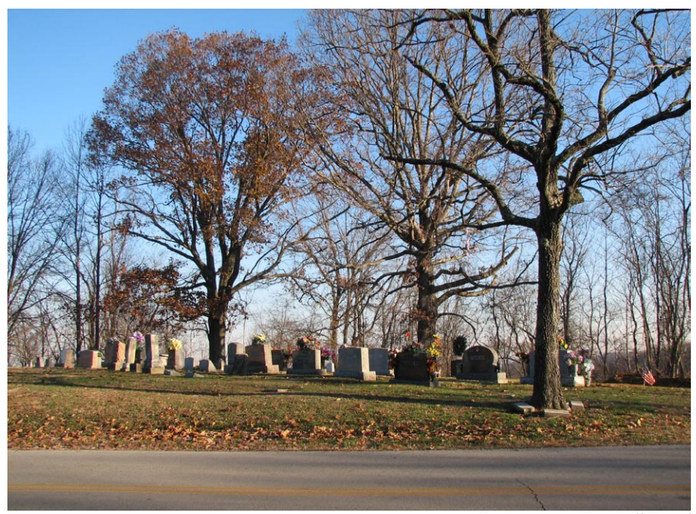
Moreover, the area has retained its isolated nature and there have been few large development or construction projects to trigger federally or state mandated investigations designed to identify cultural resources. Within the forest itself, few cultural resources of any kind have been officially recorded and documented with the appropriate state and city/county agencies, and only nine archaeological sites have been identified, all of which are prehistoric. To date, no Native American traditional sites have been identified, although the nearby Buttonmold Knob is considered sacred to some native groups. Of the few historic structures within JMF that have been recorded in state inventories, all have been demolished with the exception of the Mitchell Hill School that is currently used as the JMF Welcome Center. Three historic cemeteries are known to be located on JMF property.

Only two archaeological surveys have been conducted in JMF. The first of these was done in October and November of 1981 by the University of Louisville Archaeological Survey (ULAS). During that time, selected portions of the Forest were surveyed, but an actual report was never prepared. Fourteen field sites were apparently discovered, nine of which were formally recorded as archaeological sites with the Office of State Archaeology. Eight of these sites are located in the boundaries of the JMF. The second survey was conducted in 2005 for the Churchman Tract by the Kentucky Archaeological Survey (KAS) (Stottman 2006). The Churchman Tract is located along Belvin's Gap Road and Cane Run, and the area examined encompassed 24.3 hectares (60.5 acres). Only six artifacts were discovered; these were all clear or brown glass of recent origin, and no official site number was assigned to this find.

Archaeological surveys have been conducted in the vicinity of the JMF. Of special interest is the survey that was done prior to the construction of the Interstate 265 (Gene Snyder Freeway, previously the Jefferson Freeway). This reconnaissance was completed by the University of Louisville Archaeological Survey (Granger and DiBlasi 1975). The survey encompassed a 29 mile corridor beginning northwest of Louisville and continuing around to the southeast and to the southwest of the city. Over a range of landforms in this corridor, 38 sites were identified. Twenty-three of these sites were located just north of the JMF, along

Old barn on Pinquely Property

House near Mitchell Hill Lake



Cemetery at Top Hill Road

the proposed right-of-way between Dixie Highway and the National Turnpike. Most of these were prehistoric lithic scatters with no cultural assignment.

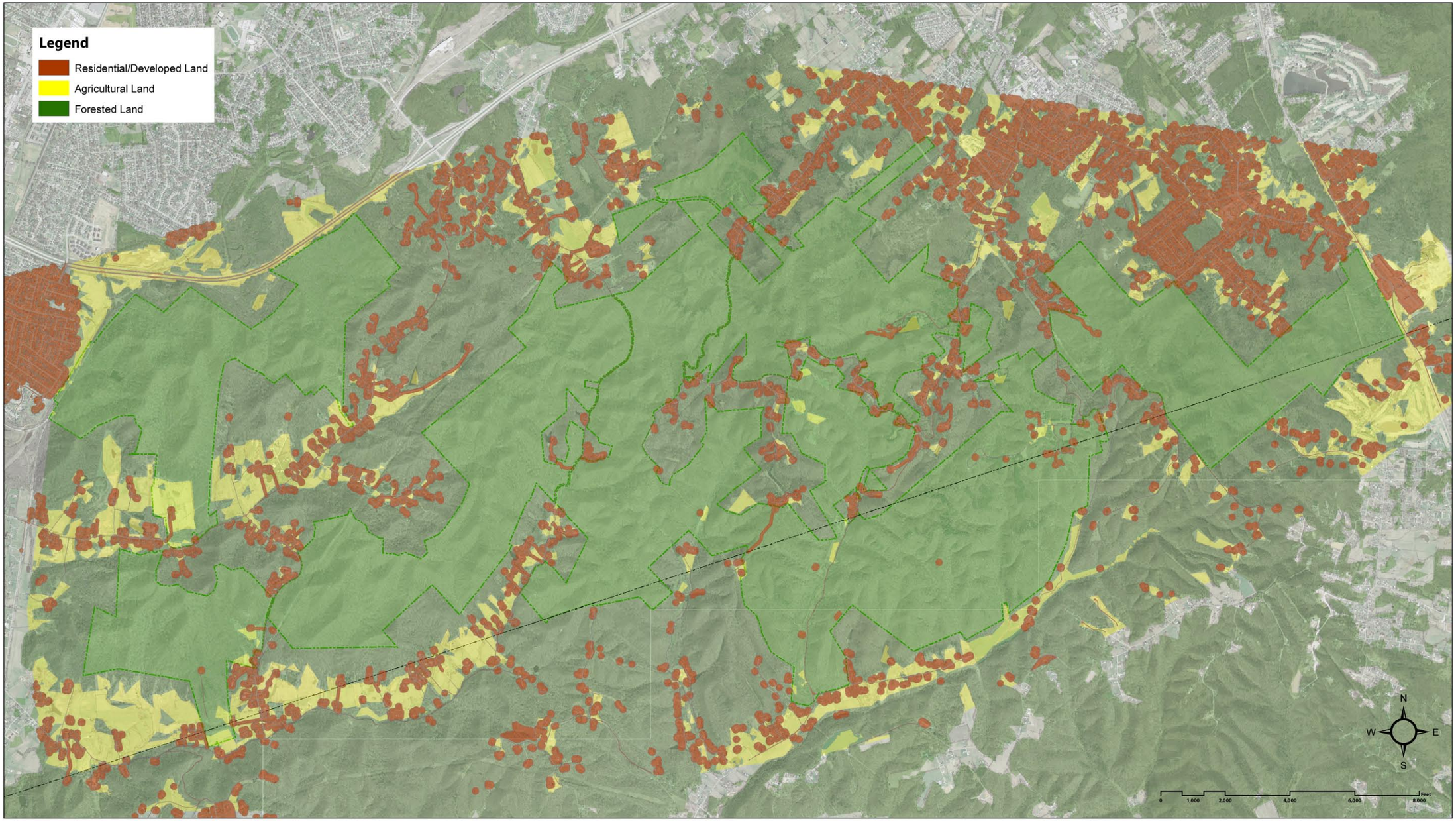
The majority of the historic structures within JMF that were recorded with the Kentucky Heritage Council and the Metro Louisville Planning Commission were residences that have now been demolished. As mentioned, there are few standing structures within the JMF itself. Of particular note is the Mitchell Hill Schoolhouse that was constructed in 1916 to replace an earlier building. This structure, one of three that historically housed the Dennis Mitchell School, was updated and converted in 1994 to serve as the JMF Welcome Center.

Nevertheless, there is considerable evidence of unrecorded archaeological sites, historic standing structures and historic sites within and bordering the JMF. Collectors monitor streambeds in and near JMF to gather artifacts that erode from prehistoric sites. Modern day flintknappers routinely collect chert specimens from prehistoric quarry sites that were once so important to ancient hunters and craftsmen. Isolated chimneys and moss-covered foundation stones mark the locations of former house sites, and locals know the locations of small historic family cemeteries with one or two graves that have become overgrown and virtually invisible. Many historic structures in the vicinity of the forest have never been officially recorded with the state or county. Traditionally, the recordation of structures has targeted the large and stately residences of affluent individuals, structures associated with historical events of national or state significance, or very early pioneering buildings such as forts and stations. Simple rural vernacular architecture has been less frequently recorded in historical county surveys. Although this has been changing in recent years, many such homes and other commercial, community, and religious structures still remain undocumented, and numerous examples abound in the JMF area on privately-owned properties.

Some unrecorded standing structures within the JMF have been converted to administrative and operational units for the park. Instances include an early-mid twentieth century residence used as staff offices in the Horine section of the Forest; the Horine Manor House which is currently used for conferences and meetings; and the Mitchell Hill School used as the Welcome Center and staff offices.

These structures have been structurally modified, a process which may have compromised somewhat their historical integrity and significance. Recently acquired properties, such as the Pinquely Tract, contain intact houses, barns, and other outbuildings that – while dating primarily to the early-mid twentieth century –are examples of the traditional rural structures and agricultural landscapes of the area. Aside from buildings, there are other known but unrecorded structures present at the forest. Recreational structures include an Alpine climbing tower that was among the first of its kind in the nation. A memorial to Veterans has been constructed at the Welcome Center.

Judging from adjacent or nearby properties located in environmental settings similar to the JMF (including Fort Knox, Bernheim Forest, and Otter Creek State Park), the low numbers of recorded cultural resources in the JMF reflects more of a sampling issue rather than a reflection of low prehistoric and historic land use throughout the area. Less than one percent of the more than 6,000 acres that comprise the JMF has been systematically inventoried for cultural resources. At Fort Knox, by comparison, the construction of training facilities on the base has required environmental and cultural studies that have revealed the presence of many cultural resources. By contrast, the JMF has seen little development that would trigger similar Federally mandated studies. Because of this and the fact that local governments simply do not have the financial resources necessary to complete a systematic inventory, the cultural resources of the JMF are largely unknown or only known to a handful of long-time residents.



March 2008

Jefferson Memorial Forest

Land Use

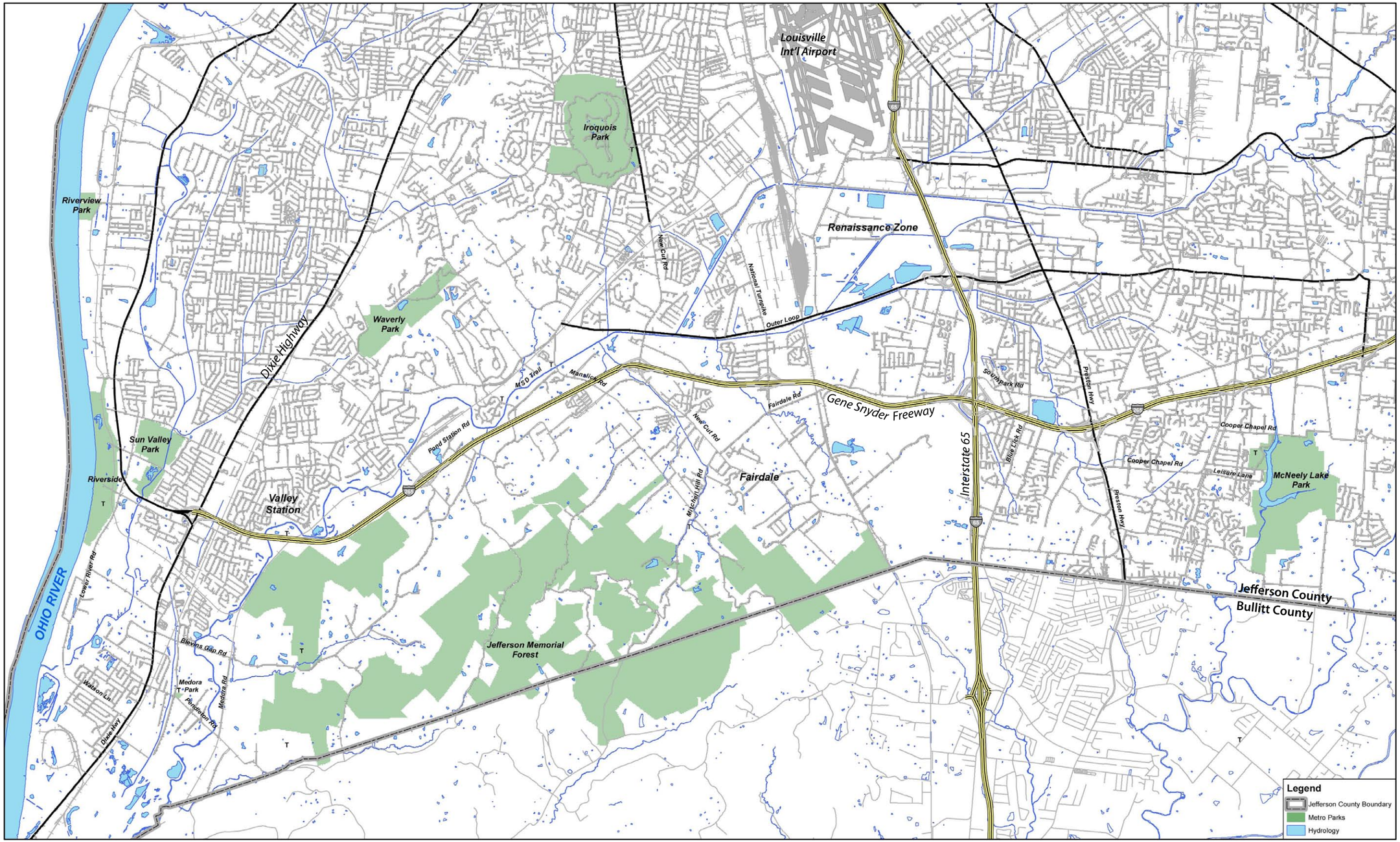
2.7 Land Use

Human activity and land use in and around JMF has been heavily influenced by the terrain. Land within JMF was in private ownership at one time, but the knobs landscape was prohibitive to agriculture and residential development, even though the knobs were extensively logged. The steep rugged knobs outside of JMF remain mostly woodlands with little encroachment by farming or residential activity. However, the wider flat valley bottoms outside of JMF have been cleared for agriculture and are now being overtaken by residential development in some places.

The map on the opposite page shows the extent of tree cover, farmland, and residential development in and around JMF. Remarkably, large areas bordering JMF remain in tree cover although the age and condition of these woods is extremely varied. In addition, most cleared areas around and near the park are still agricultural lands that are either actively farmed or fallow. Residential development, while spreading and conspicuous, represents a relatively small percentage of the overall land area between the large JMF parcels.

While tree canopy is still pervasive on private lands bordering JMF, the cleared and developed valley bottoms represent major fissures or fractures in the biotic continuum. Key to JMF's health and continued enjoyment will be finding ways to stop these fissures from growing and to even shrink them in places.

Looking north, just on the other side of the Gene Snyder Freeway, the gently rolling and flatter land of south Louisville is dominated by residential and commercial development. South of JMF, the preponderance of steep knobs have helped to keep much of the landscape in woodlands even though the wider valley bottoms and flatter ridge tops have been cleared for farming and residences. Consequently, JMF is positioned in a transition zone between urban and rural landscapes. Development pressure is certain to increase on privately owned lands bordering JMF, and as this pressure mounts, the steep knobs will not remain prohibitive to home-building for long.



Jefferson Memorial Forest **Highway & Road Network**

2.8 Transportation and Access

Jefferson Memorial Forest (JMF) is located in southwest Jefferson County, approximately 15 miles from downtown Louisville. Major highways near the JMF include Interstate 65 one mile to the east, Interstate 265 (Gene Snyder Freeway) just to the north of the park, and U.S. Highway 31W (Dixie Highway) about one mile to the west.

Jefferson Memorial Forest consists of fragmented holdings over a fairly large geographic area. As a result, a number of local roads lead to and through JMF lands. Primary access to the eastern half of the park is through the community of Fairdale via exits from the Gene Snyder Freeway at the National Turnpike and at New Cut Road. These exits are 2.5 and 4 miles west of I-65, respectively. Further west, the Stonestreet Road exit on the Snyder Freeway provides access to the western portions of JMF via Belvin's Gap Road. This exit is 3 miles east of the Dixie Highway where the Snyder Freeway terminates. The north-south Dixie Highway intersects with Belvin's Gap Road to the south of the Snyder Freeway, providing access to JMF from the community of Valley Station and the western parts of Jefferson County. Local road access from Bullit County, which borders the south edge of the Forest, is by way of Knob Creek Road and Bearcamp Road.

JMF visitors who exit the Snyder Freeway at the National Turnpike must travel into the center of Fairdale on Fairdale Road and then transition to Mitchell Hill Road to reach the park. The off-set intersection of Fairdale Road, West Manslick Road, Mitchell Hill Road and Mt. Holly Road is somewhat confusing to non-locals and the intersection is occasionally congested.

Fairdale Road / Mitchell Hill Road Off-Set

Jefferson Hill Road

Consequently this intersection is being redesigned to improve the road geometry and traffic flow through the center of Fairdale. Three alternative designs were recommended as part of the Fairdale Neighborhood Plan which was completed in 2006. The designs will be considered during a review process and Louisville Metro Government will approve a design contract for the preferred alternative. Reconstruction of the intersection will improve traffic circulation through Fairdale and enable better access to JMF for visitors using the Fairdale Road route.

The neighborhood plan also promotes Fairdale as the "Gateway to Jefferson Memorial Forest", implying that local residents and business owners are strongly supportive of JMF visitors continuing to travel through or near Fairdale to reach the park. The Neighborhood Plan outlines some general recommendations toward strengthening Fairdale's gateway image with the realization that further studies and design projects will need to be implemented to address a wide array of potential gateway enhancements.

Most of the local roads accessing the widely dispersed areas of the JMF are classified as Secondary Collectors by the Louisville Metro Comprehensive Plan (Cornerstone 2020). These roads include:

- Mitchell Hill Road
- Holsclaw Hill Road
- Keys Ferry Road
- Bearcamp Road
- Scott's Gap Road
- Knob Creek Road

Belvin's Gap Road, which runs generally east and west across the northern edge of the forest, is classified as a Primary Collector. Streets and roads classified as primary or secondary collectors are intended to collect traffic from local streets and provide connection to the area's arterial streets and expressways. There are no arterial roadways directly serving the forest area.

The remaining roadways within the forest area are classified as Local Roads by the Comprehensive Plan. Local roads provide access to the dispersed residences lining these roads. Local roads include Jefferson Hill Road, Top Hill Road, Goff Lane. The required right-of-way is typically 30 feet while pavement widths vary from 16-22 feet.

Bearcamp Road

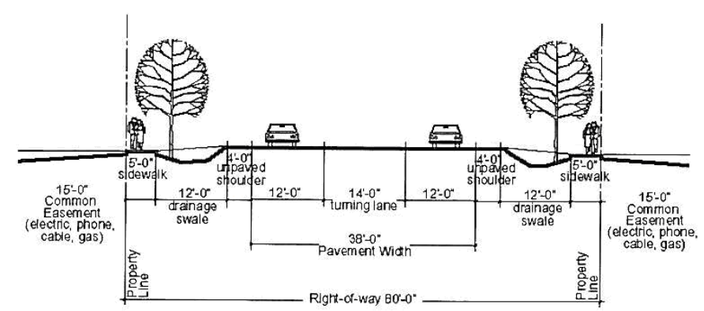
Most of the collector roads serving Jefferson Memorial Forest do not meet modern roadway design standards as depicted on the cross-section drawing below. The typical design cross-section for a rural collector roadway consists of 24 feet of pavement (2 twelve foot lanes), four foot shoulders, and traversable drainage ditches. However, all of the roadways serving Jefferson Memorial Forest have pavements less than 24 feet in width with little or no shoulders and deep roadside ditches. Roadway widths range from 16 feet where the Siltstone Trail crosses Scott's Gap Road to 21 feet at the intersection of Mitchell Hill and Top Hill Roads. The narrow roadway cross-sections create unsafe conditions, but the narrow roads may also encourage motorists to travel at slower speeds.

Bicyclists use collector and local roads to travel to and through the JMF. However, bicycle lanes would be difficult to add along the edges of these roads due to existing narrow pavement widths, rugged topography, and insufficient right-of-way. Kentucky state law stipulates that rights-of-way for rural collectors be only 30 feet in width unless otherwise defined by dedication or legal documents. Additional right-of-way would likely have to be purchased to accommodate new bike lanes and traversable drainage ditches along local collector and access roads.

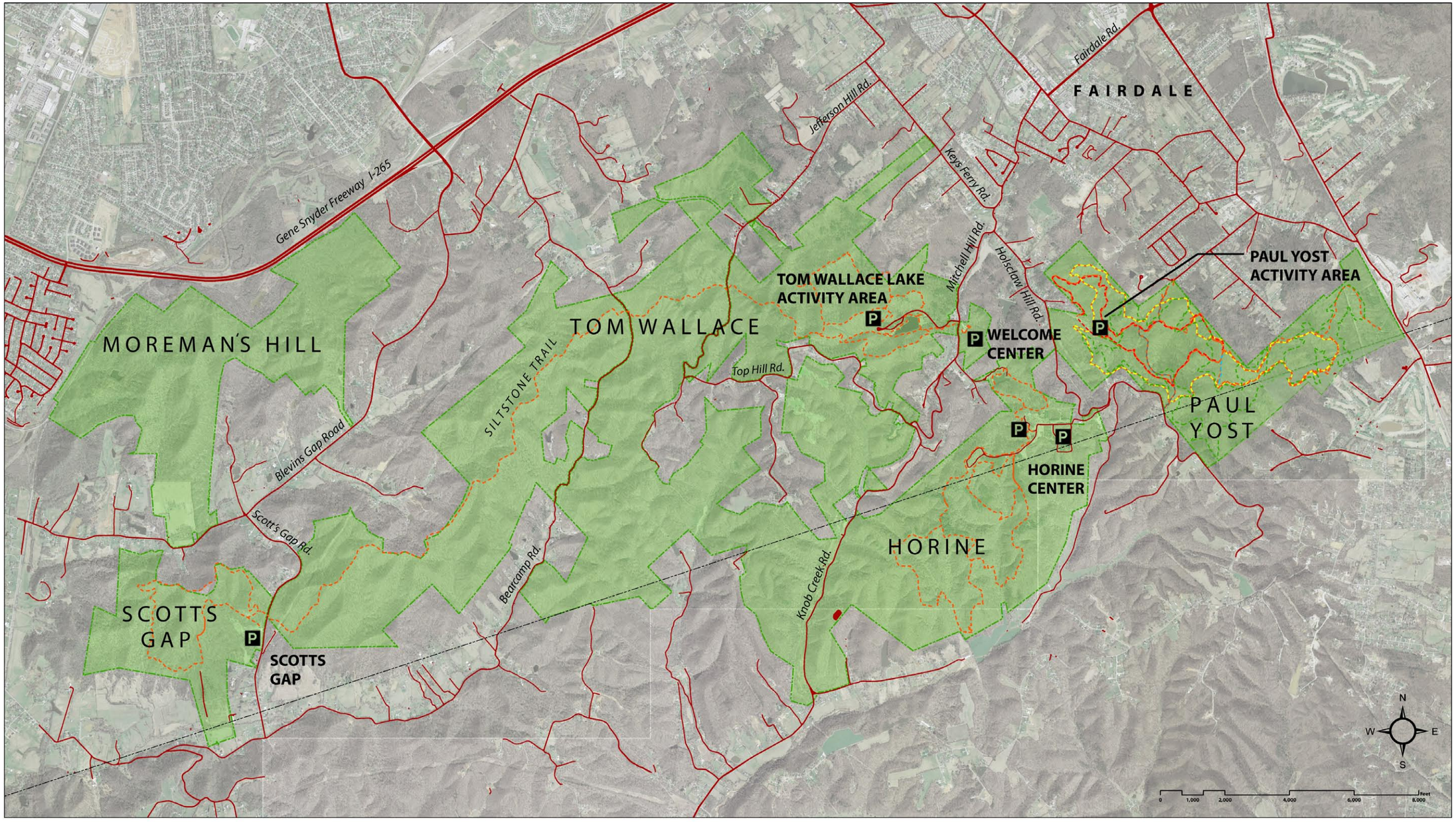
The current narrow pavements and steep gradients along collector and local roads also are a detriment to the creation of shared lane options. Shared lanes have been designated in some areas of Louisville and involve signage and street markings to caution motorists about the presence of bicycle riders who may be sharing the vehicle lane. A notable example of a shared lane is the Second Street Bridge across the Ohio River.

Separate bike trails should be given consideration where they are feasible along collector and local roads around and through JMF. Louisville Metro recently adopted a "Complete Streets" manual which provides several recommended designs and signage techniques for bicycle facilities.

Jefferson Hill Road



Secondary Collector Road Design Criteria



March 2008

Jefferson Memorial Forest

Circulation - Roads & Trails

Mitchell Hill Road Corridor
Mitchell Hill Road travels southwest from the community of Fairdale, providing the primary access route for visitors coming to the eastern part of JMF. Mitchell Hill Road intersects with Holsclaw Hill Road and Keys Ferry Road before reaching the park boundaries.

Mitchell Hill Road is approximately 20 feet in width. A sidewalk next to the road extends from the center of Fairdale to Base Drive, near the intersection of Keys Ferry Road. Some sections of the roadway have narrow shoulders but generally there are no shoulders and the pavement drops off into deep drainage ditches. The road transitions to a curving alignment which fits with the rural landscape. At the intersection of Keys Ferry Road and Mitchell Hill Road, visitors to the forest must choose which portion of the forest they will be accessing. Access to the central or western portions of the forest requires turning right onto Keys Ferry Road and proceeding north and west, while access to other forest areas entails continuing along Mitchell Hill Road.

Just south of its intersection with Keys Ferry, Mitchell Hill Road intersects with Holsclaw Hill Road. Here again visitors must choose whether to continue along Mitchell Hill Road to the Welcome Center and Tom Wallace Lake or to turn left onto Holsclaw Hill Road to reach the Paul Yost Recreation Area and the Horine Center within JMF. Directional signage at the intersection makes this choice somewhat apparent, but way-finding can be confusing to first time JMF visitors.

At about one-half mile past the Holsclaw Hill intersection, Mitchell Hill Road reaches the JMF Welcome Center on the east side of the road and the turn-off to Tom Wallace Lake Recreation Area west of the road. Continuing southward, Mitchell Hill Road ascends a steep grade and terminates at the intersection of Top Hill Road at the top of the incline.

Along its route from Fairdale to the base of the steep hill, Mitchell Hill Road is lined by residences that are set back at varying distances from the road. The combination of confusing intersections, residential development and inadequate signage do not contribute to good way-finding or a sense of arrival for visitors coming to JMF and its Welcome Center.

Holsclaw Road Corridor
From its intersection with Mitchell Hill Road, Holsclaw Hill Road travels in a southeasterly direction and accesses the entrance to the Paul Yost Recreation Area at a short distance past the Mitchell Hill intersection. Holsclaw Hill Road is lined by homes before it reaches a steep climb up the side of a deep ravine toward the Horine Center and into Bullitt County. Near the top of the incline, a sharply angled right turn on a narrow driveway is required to access the Horine Center.

As it ascends up the side of the ravine, the west side of Holsclaw Hill Road abuts a rock wall and the east side of the road steeply drops off into the ravine. This roadway has been damaged by soil and geologic failures in recent years and gabion walls were constructed in an attempt to stabilize portions of the roadway. One gabion wall is 27 feet in height. In May of 2008, a slope failure above the roadway resulted in soil flowing onto the roadway below the entrance to the Horine Center. Because of the geologic and topographic conditions here, there are no feasible options to relocate or make substantial improvements to this roadway.

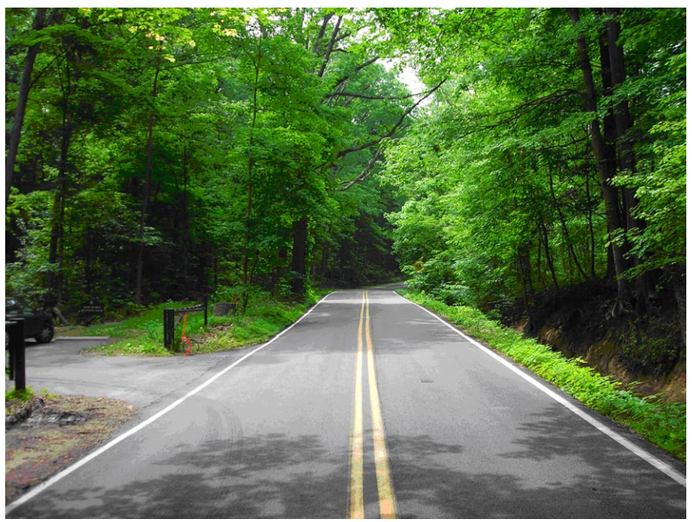
Entrance into the Horine Center from Holsclaw Hill Road requires a sharp right turn maneuver which larger vehicles, such as school buses, cannot accomplish. These vehicles must continue along Mitchell Hill Road to a turn-around near the Jefferson / Bullitt County line. After turning around, large vehicles travel back to the access drive which they can then enter from the opposite direction.

Holsclaw Hill Road is 19 to 20 feet in width at its intersection with the access drive into the Paul Yost Activity Area. The access drive is only 16 feet in width and has substandard turning radii at the intersection. A network of horse trails in the Yost Area means that pick-up trucks pulling horse trailers must access the Paul Yost parking and trailhead area along this drive. The substandard geometry of the intersection creates an unsafe condition for vehicles entering and leaving the Yost Area. This drive entrance should be redesigned to improve access and safety conditions.

Entrance to Paul Yost Activity Area

Jefferson Hill Road Corridor
Jefferson Hill Road intersects with Keys Ferry Road near the north edge of JMF and travels southwesterly through interior areas of the forest. Along certain sections through the forest, the roadway is only 17 feet wide and without shoulders. This is 7 feet narrower than the standard for a secondary collector road. However, traffic along this road is fairly light as it provides access to only a few residences.

Bearcamp Road Corridor
Bearcamp Road travels roughly north-south through the central portion of JMF before crossing into Bullitt County along more of an east-west orientation. Near the north boundary of the forest there is a small parking area and trailhead access at the intersection of the road and the Siltstone Trail. The road is 18 feet wide at this point. The parking area accommodates 8 to 10 cars.



Bearcamp Road / Siltstone Trailhead

Belvin's Gap Road and Scott's Gap Road
Belvin's Gap Road travels through the Cane Run Creek Valley which separates the Moreman's Hill and Tom Wallace sections of the forest. Farms and pasture lands on the valley floor are quickly transitioning to residential development. Perhaps due to this development, Belvin's Gap Road has a fair amount of traffic. The road averages 20 feet in width and is striped.

Entrance to Scott's Gap parking area

Scott's Gap Road is a short segment of local road that connects Belvin's Gap Road and Bearcamp Road. It travels north-south between the Scott's Gap and Tom Wallace sections of the forest and provides access to a parking area and trailheads in the Scott's Gap section as well as to the Siltstone Trail. Scott's Gap Road averages 17 to 18 feet in width. Portions of this narrow roadway are not striped to divide the driving lanes because the roadway is less than 18 feet in width. The photograph above was taken near the Scott's Gap parking area.

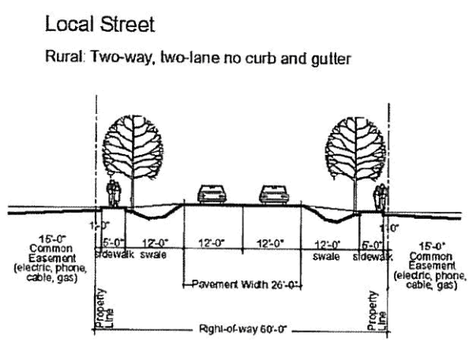
Horine Center Access
The intersection of the Horine access drive and Holsclaw Hill Road is an extremely tight geometric design. Vehicles must make a turning movement of nearly 180 degrees in a very short distance. The access drive ranges from 12 to 16 feet in width even though it is travelled by two-way traffic. The music festival held at Horine in May of 2008 was attended by more than 4,000 visitors, resulting in serious traffic congestion issues along the drive.

Topographic features and privately owned property surrounding the intersection will make improvements to the drive problematic. However, intersection and drive improvements should be given high priority because of the many activities and programs located at Horine.

Intersection of Holsclaw Hill Road and Horine Access Drive

Intersection of Holsclaw Hill Road and Horine Access Drive

Local Streets
The remaining streets and roadways serving the JMF area are classified as local streets. The exhibit below depicts the typical cross-section for a Rural Local Street. Most of the local streets in the JMF area were constructed prior to the establishment of current standards, so these roads generally do not meet the desired design criteria. Like the roads classified as secondary collectors, many of the local streets are located in rugged terrain, making road improvements difficult.



Parking Facilities
The major parking facilities within JMF are associated with the Welcome Center, Tom Wallace Lake, the Horine Center and the Paul Yost Activity Area, all of which are at the eastern end of the park. Other parking areas occur along Bearcamp Road where the Siltstone Trail crosses the road and in the Scott's Gap tract near the terminus of the Siltstone Trail. The Bearcamp Road parking area is paved with asphalt, striped and accommodates approximately 10 vehicles. The Scott's Gap parking area is paved in crushed stone and can accommodate perhaps 18 to 20 vehicles.

The parking area at the Paul Yost Area is extremely deficient for pick-up trucks towing horse trailers. The parking area here is designed more for automobiles and single unit vehicles. The parking area at the Welcome Center is paved but lacks a sufficient number of parking spaces to accommodate visitors, particularly during special events. Parking at the Tom Wallace Lake usually occurs along the edges of the drive, creating congestion and safety concerns on busy days. A large paved parking area above the lake is un-striped and under-utilized, while a lower, smaller parking area nearer the lake receives good use but is poorly sited next to a woodland creek. Parking at the Horine Manor House/Conference Center is inadequate and poorly laid out. Large events at Horine, like the Forest Fest, require visitors to park in a big grassy field. The single lane access drive into Horine from Holsclaw Road is entirely inadequate for two way traffic, resulting in considerable congestion and visitor frustration during major events.

Horine Conference Center parking

Summary
Collector and local roads serving the JMF area are all substandard to varying degrees, and topographic conditions and features remain a major limiting factor to implementing roadway improvements. Dedicated bikeways and bike lanes are also hampered by topographic constraints. Local roads serving major activity areas should be further evaluated and studied to determine appropriate improvements. The intersections of park drives and local roads also should be closely examined to determine safety and improvement measures. (The lack of adequate turning radii at these intersections usually requires park visitors to swing out wide onto the roadway, going into the opposing traffic lane.) Signage identifying shared roadway bicycle usage also should be considered for roadways serving the JMF area.

Welcome Center parking area

2.9 Wayfinding

A limited amount of directional signage can be found along local roads and highways leading to JMF. This signage provides direction and distances to certain JMF activity areas and resources. Most signs are standard highway-type signs for designating parks and recreation areas, consisting of white lettering on a brown background. Because of their small size and awkward placement, signs are not noticeable or are difficult to read in many locations.

A large sign for JMF is located on the Gene Snyder Freeway (I-265) approaching westbound Exit 6 for New Cut Road. At the bottom of the exit ramp for New Cut Road there is directional signage telling visitors how to continue along local roads to JMF. By contrast, there are no directional signs to JMF at the exit for the National Turnpike from the Snyder Freeway. Motorists taking this exit must find their way to Fairdale Road and drive into Fairdale to reach JMF. At the intersection of Fairdale Road, Mitchell Hill Road and Manslick Road, a single small sign directs JMF visitors to continue southbound on Mitchell Hill Road. No signage is located on Fairdale Road or northbound Manslick Road indicating the turn onto Mitchell Hill Road to reach the forest.

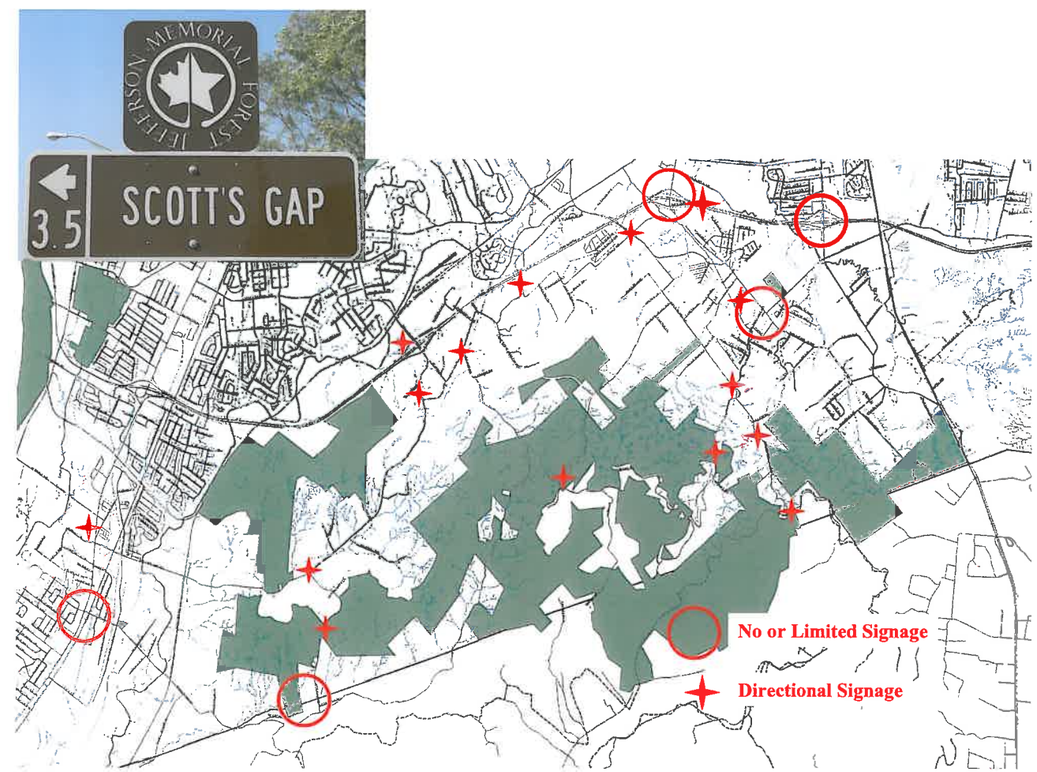
A sign near the intersection of Holsclaw Hill Road and Mitchell Hill Road identifies four major destinations in JMF. However, the sign's size, lettering and location on Mitchell Hill Road make it difficult to read and understand while driving the curved roadway.

From the Dixie Highway (US 31W), directional signage to JMF occurs near the intersection of Belvin's Gap Road. Unfortunately, the sign for southbound and the sign for northbound are too small to see from a five lane highway with high travel speeds. There is no signage at the intersection of Pendleton Road and Dixie Highway. Although the route to JMF along Pendleton Road is somewhat circuitous, it does lead into the southern (Bullet County) portions of JMF and to the proposed location for the new Equestrian Center on Bearcamp Road.

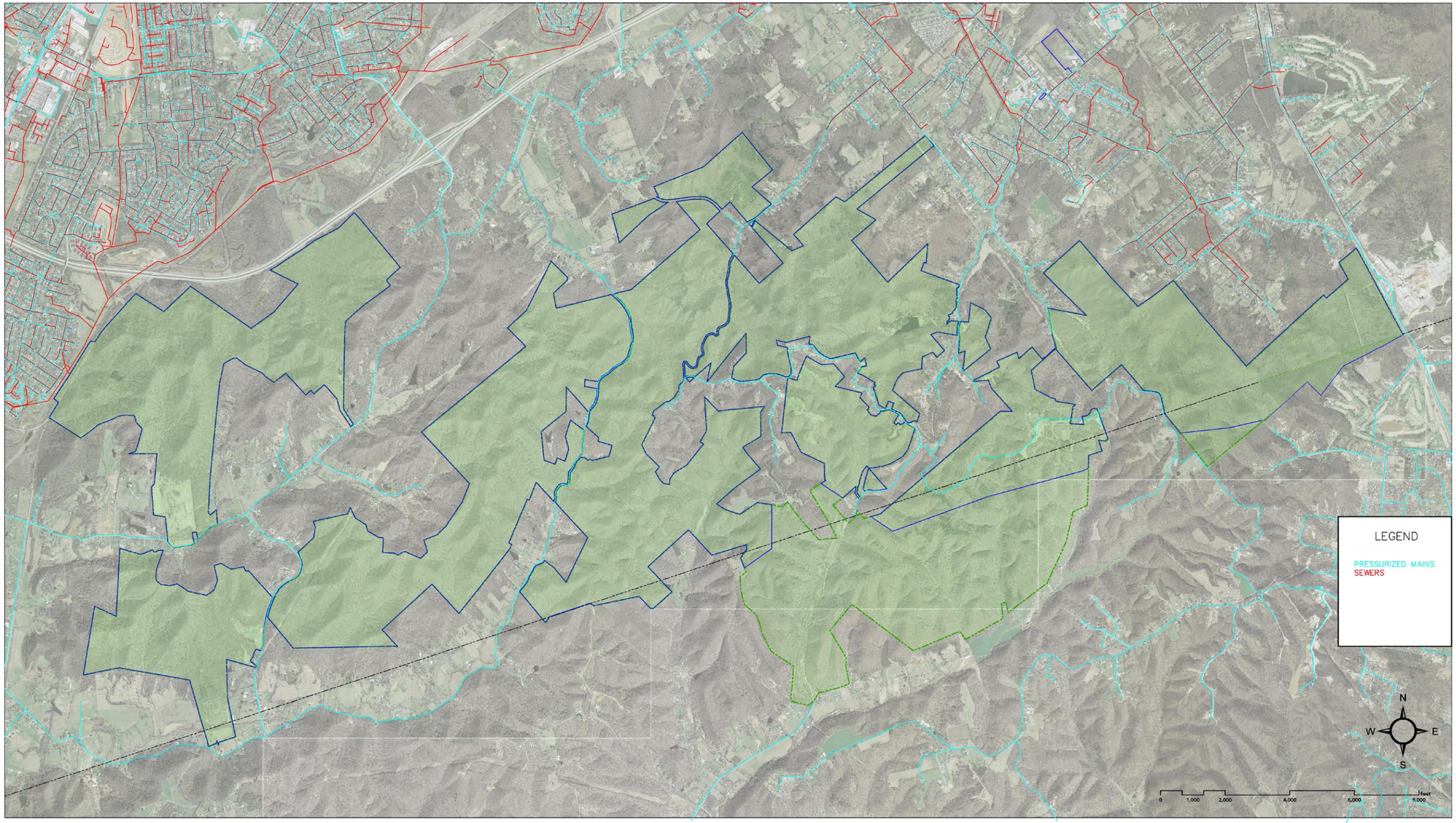
Large gateway-type signs occur along local roads at the entry drives to JMF's major activity areas. These signs are effective at marking the location for the activity areas which usually consist of parking, trailheads and picnic areas. One drawback to these signs is that they occasionally seem to blend too well with the landscape and are difficult to see upon approaching the entry drives.

In summary, directional signage to JMF along local roads is poor. Given the geographic extent and fragmentation of JMF, the network of winding local roads serving it, and the dispersed nature of its major recreational destinations, effective signage is of utmost importance in guiding visitors and improving park identity and cohesion.

The Fairdale Neighborhood Plan recommends signage along local roads to promote Fairdale's image as the "Gateway to Jefferson Memorial Forest." This type of signage could be helpful to visitors trying to find the park.



Existing JMF Directional Signage



March 2008

Jefferson Memorial Forest

Water Mains & Sanitary Sewers

2.10 Utilities

Future improvements to Jefferson Memorial Forest will be affected by the availability of public utilities throughout the area. The following is an overview of the utility infrastructure serving the JMF vicinity.

Public Water

The Louisville Water Company provides water to residents of Jefferson and Bullitt Counties throughout the JMF area. Transmission water mains generally follow local roads through and around JMF. Fire hydrants occur at regular intervals along these roads. The size and type of water mains are as follows:

- Scott's Gap ROAD 8" PVC
- Belvin's GAP ROAD 12" AC
- BEARCAMP ROAD 8:" PVC
8:" DIW
- JEFFERSON HILL ROAD 6" DI (ENDS AT PARK BOUNDARY)
- TOP HILL ROAD 8" PVC
- MITCHELL HILL ROAD 6" DI (4" PVC ENDS AT 11806 MITCHELL HILL RD)
- KNOB CREEK ROAD 8" DI (ENDS SOUTHBOUND AT BULLITT COUNTY LINE)
- RAYHILL ROAD 6" DI (LEADS TO 100,000 GAL STANDPIPE)
- HOLSCLAW HILL ROAD 8" DI (ENDS AT 11504 HOLSCLAW HILL ROAD - FROM MITCHELL HILL ROAD)
- HOLSCLAW HILL ROAD 8" PVC (FROM BULLITT CO) LEADS TO 150,000 GALLON TANK @ HORINE CENTER
- SOUTH PARK ROAD 16" DPW (ACROSS RAILROAD TRACKS)

Water company standpipes or water tanks are located in or near JMF to ensure adequate water pressure is maintained throughout the service area. A large elevated water tank at the Horine Center provides storage for 150,000 gallons and creates adequate water pressure to an elevation of 1,030 feet. A water standpipe located at the end of Rayhill Road, off of Mitchell Hill Road, provides storage for 100,000 gallons of water. The water company has acquired property at 2060 Top Hill Road for a future water tank at this location.

The water company has no plans for future water main or service line construction in JMF. The company has indicated that the location of future mains and service lines could be based on park needs.

Sanitary Sewers

Wastewater treatment facilities operated by the Louisville and Jefferson County Metropolitan Sewer District provide limited service around the JMF area. There are no public sanitary sewers providing direct service to JMF and sewers in the vicinity of JMF are few. The community of Fairdale is served by a sanitary sewer collection system that is connected to the West County Wastewater Treatment Plant. The plant is located at 11621 Lower River Road to the west of JMF. The public sewers closest to JMF are located just north of the intersection of Mitchell Hill and Keys Ferry Roads, south of Babe Drive. A sewer line also occurs along Keys Ferry Road, extending southward to 10209 Keys Ferry Road.

Gravity-flow or force-main sewers could be extended from the Paul Yost Activity Area (11400 block of Holsclaw Hill Road) and the Welcome Center (11311 Mitchell Hill Road) to the sewer along Keys Ferry Road. Sewer connections could also be made from Keys Ferry westward to any future development on park land.

Public sewers extend along Dezern Avenue from South Park Road, to the eastern boundary of the Paul Yost Activity Area where a trailhead access point is located. South Park Road borders the far eastern edge of Paul Yost. This arterial contains a sewer collection line that extends southward just past the intersection of Smith Road and continues north to its intersection with National Turnpike.

A sanitary sewer line also exists near the northwest boundary of the Moreman's Hill section of JMF. This sewer trunk line however is on the other side of the railroad tracks that parallel the west edge of the Moreman's Hill tract. Should future development be planned in the Moreman's Hill section, it may be possible to extend a sewer connection to the existing line across the tracks.

The balance of the JMF area does not have access to sanitary sewers. Effluent from existing restroom facilities in the park (at the Horine Manor House, and the Welcome Center) is treated by on-site septic tank and drainfield systems. Portable toilet "outhouses" are provided at all other visitor parking areas and picnic areas.

Electric Service

Electricity and telecommunication service are available along roadways throughout the JMF area.

Maintenance building and water tank at Horine

JMF Welcome Center

2.11 Existing Visitor Activity Areas

Jefferson Memorial Forest is subdivided into five separate sections or tracts, each of a differing size and shape. The Tom Wallace Recreation Area forms the largest section, stretching east to west from Mitchell Hill Road to Scott's Gap Road. The Paul Yost Recreation Area and the Horine Reservation comprise the eastern end of the park while the Scott's Gap Preserve and the Moreman's Hill section anchor the west end of JMF.

Each section contains a highly used activity area where there is a concentration of visitor facilities (parking, picnic areas, toilets, trailheads, etc.) supporting various forest related recreational activities and programs. These activity areas are currently found at Horine, Paul Yost, Tom Wallace Lake, and the Scott's Gap Preserve. The Welcome Center and the Bearcamp Road Trailhead are also considered activity areas. A future activity area at the Moreman's Hill section has yet to be developed.

The activity areas at Horine Reservation, Paul Yost, Tom Wallace Lake, and the Welcome Center are all located in the eastern end of JMF with direct access to and from Fairdale along Mitchell Hill Road. The Bearcamp Road Trailhead is located roughly in the middle of JMF along Bearcamp Road. Scott's Gap activity area and Moreman's Hill are both located on the western end of JMF with access from Valley Station along Belvin's Gap, Pendleton, Stonestreet, and Bearcamp Roads.

The following is an overview of the six major visitor activity areas within JMF.

JMF Welcome Center

The Jefferson Memorial Forest Welcome Center is located at 11311 Mitchell Hill Road directly across from the access drive to the Tom Wallace Lake activity area and over one-half mile past the intersection of Mitchell Hill and Holsclaw Hill Roads. (Holsclaw Hill Road provides access to the Paul Yost Recreation Area and the Horine Reservation.) The Welcome Center location is problematic because it does not lend itself to being the point of entry into the park and it can be difficult to find for visitors who are seeking camping permits and other information.

The Welcome Center building contains park administrative offices, a gift shop, visitor information and a registration office. The structure was originally built as a schoolhouse in 1916 and served as such until 1928 when it was turned into a church. The building was used as a church throughout the 1940s until it was purchased by Jefferson County Fiscal Court in 1950. After decades as little more than a storage building, followed by a brief period as a maintenance facility, the potential of this historic structure was realized in the early 1990s when it was extensively renovated to become the JMF Welcome Center.

Welcome Center pedestrian bridge

Unfortunately, the facility now has inadequate interior space for offices, conference, gift shop, exhibits, and volunteers. Access to the second floor is awkward via a combination of exterior steps, ramp and walkway/bridge. Additional parking space is needed for staff, volunteers and visitors, especially during programmed events and classes. During certain events at the Welcome Center, visitors often must park along the drive to Tom Wallace Lake and walk back to the Welcome Center.

The 0.2 mile Memorial Trail at the Welcome Center is dedicated to County employees who died while in service to the County. The Welcome Center also provides trailhead access to the Siltstone Trail, the longest trail in JMF. This trail runs the length of the Tom Wallace section of JMF from the Welcome Center all the way to Scott's Gap, a distance of 6.2 miles one-way. Possible acquisition of the Lamont Property behind the Welcome Center could enable a trail connection between the Welcome Center, the Paul Yost Recreation Area, and the Horine Reservation.

Memorial Trail near Welcome Center

Horine Center

The Horine Reservation contains perhaps the most highly used of the visitor activity areas within Jefferson Memorial Forest. Located on top of a high flat ridge off of Holsclaw Hill Road, the Horine activity area includes maintenance facilities, a small environmental education center, offices for education staff, day camp areas, a team building course (including an alpine climbing tower), the Horine Center/Manor House meeting and conferencing building, camping areas, and an area for outdoor festivals and gatherings for up to 3,500 people.

As mentioned in the section on Access and Circulation, vehicle access to the Horine activity area is somewhat difficult, requiring a long ascent up Holsclaw Hill Road and a sharp right turn onto the entry drive near the top of the hill. School buses cannot make the turn and must continue some distance further along Holsclaw Hill Road to make a U-turn at a wide spot in the road and then come back to the Horine entry drive. The entry drive is paved in asphalt but is very narrow, not allowing oncoming vehicles to pass easily. The drive crosses in front of three private residences (on an easement for one segment) before entering the park property.

The maintenance facility at Horine serves JMF as well as all of Metro Park's natural areas. The maintenance compound consists of a collection of small shed and storage buildings and outdoor storage areas. The buildings are in poor condition and do not provide adequate area for staff and equipment. The facility is not fenced and security is a concern. The long climb up Holsclaw Hill Road causes excessive wear and tear on maintenance vehicles.

Staff offices for the Education Program are located in a building (formerly a house) next to the maintenance facility. The office area is insufficient for the five permanent staff and three to five seasonal staff who occupy the building. Privacy is non-existent, storage is inadequate, and there is no conference area. The office also is not conveniently located relative to the environmental education center and outdoor education areas.

Kids arriving for environmental education classes and camps are met at a bus pull-off/parking area on the Horine access drive. The kids are escorted in groups from the bus area to a shelter pavilion overlooking an adjacent large lawn area. Students are then split into small groups at the shelter to undertake "field initiatives." The bus area and shelter could be closer together and it would be good to have a larger shelter that could be divided into four quadrants ideally with a central fire pit.

Environmental education classes and programs are set mostly in outdoor locations or "learning labs" which staff continue to develop and expand. Aquatic ecosystems are a popular learning program but the pond at Horine has dried up so classes must now travel to Tom Wallace Lake or other ponds farther away in the forest.

A small building used for environmental education programs functions as a classroom, meeting area, exhibit space, staging area, and storage facility for education materials. Outdoor exhibits and learning labs are conveniently situated near this building along trails and paths. Other facilities scattered over the environmental education area include latrines (restrooms would be preferable), storage sheds, two small shelters for class groups, and two platform tent sites for school groups and family camping.

Environmental education is a primary focus at Jefferson Memorial Forest and there is a strong desire to expand the education programs, especially the pre-school programs which generate significant revenue. Current facilities can accommodate only 60 kids per day, but demand could easily reach 120 students per day.

Shelter building at Horine

Staff offices for Education Program

Environmental Education Building

November 2008

0 200 400 800 1,200 Feet

Jefferson Memorial Forest Horine Center

Team building programs are offered for both kids and adults at Horine. The main team building course consists of nine activity venues arranged in a circle like spokes on a wheel. This course is in an out-of-the-way location, across the drive from the bus drop-off area. Other team building areas include the alpine climbing tower and an archery range which are located near the environmental education building. Corporate groups also use the Horine Center/Manor House as a staging area for some team building activities.

The Horine Center/Manor House was the former residence of Dr. Emmit and Helen Horine whose heirs donated the 1,156 acres now known as the Horine Reservation to Jefferson County for inclusion in JMF. (The land had been a Boy Scouts of America reservation for approximately 25 years.) The Manor House is now used for conferencing, meetings, and small retreats by Parks staff and forest volunteers as well as by corporate groups and others. The building has an attractive setting and offers distant views looking toward Louisville and the Ohio River.

Overnight camping in Jefferson Memorial Forest is currently only allowed at the Horine activity area. Three large group camp sites can each accommodate up to 75 campers, and seven individual tent/car camp sites are interspersed among the group camp sites. The campground is open year round. Airplane noise is a significant problem at the Horine activity area since it is located directly in the flight path of planes taking off from Louisville International Airport. Campers in particular have to contend with frequent night-time airplane noise. Camping areas in locations not impacted by this noise would be preferable at JMF.

Power line easements pass through the Horine Reservation (as well as elsewhere through Jefferson Memorial Forest). The wide cleared swaths associated with these easements are unattractive and create a conduit for invasive plants that have seriously infested some areas. Utility companies should be encouraged to maintain these easements in a way that reduces disturbance on native plant communities and minimizes adverse visual impacts. Over time, the power lines and easements will hopefully be removed from JMF.

Horine Center Manor House

Alpine Tower at Horine

Manor House terrace

Tent Cabins at Horine

The Forest Fest Music Festival has been held annually at the Horine activity area for the last four years. This event started with fairly small attendance and has grown each year to where more than 3,500 people attended the event in May 2008. The performance area occupies a large bowl-shaped natural depression near the Horine Center/Manor House. Parking occurs in a large open field nearby. Limited capacity and difficult access at Horine, however, poses problems for the Forest Fest and other large outdoor events that have high attendance.

The Horine Reservation hosts several trails that offer a variety of hiking experiences. Trailheads at the activity area provide access to the 1.5 mile Mitchell Hill Trail (to Mitchell Hill Lake), and the 1.7 mile Orange Trail which passes through camping areas before traveling into forested areas. The 4.5 mile Red Trail provides a longer hike through the high wooded ridges of the Horine Reservation. A shortcut on the Red Trail gives hikers the option of a 3.1 mile hike.

Existing Maintenance Facilities

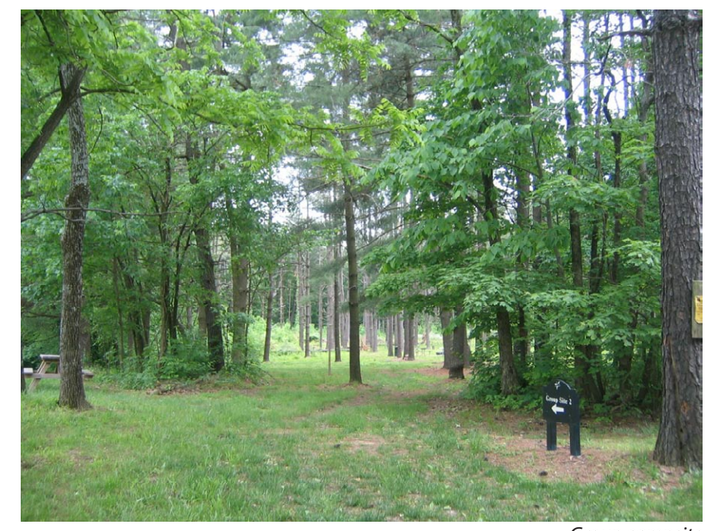
A maintenance facility serving JMF and all of Metro Park's natural areas is located at the Horine activity area. This facility consists of a collection of small shed and storage buildings and outdoor storage areas. The buildings are in poor condition and do not provide adequate area for staff, supplies and equipment. The area is not fenced and security is a major concern especially since expensive equipment and materials are stored outside.

Access to the maintenance area is difficult, requiring a long ascent up Holsclaw Hill Road and a sharp right turn onto the entry drive near the top of the hill. Trucks with trailers cannot make the turn and must continue some distance further along Holsclaw Hill Road to make a U-turn at a wide spot in the road before coming back to the Horine entry drive. The long climb up Holsclaw Hill Road causes excessive wear and tear on maintenance vehicles. The entry drive is asphalt but very narrow, making it difficult for oncoming vehicles to easily pass by each other.

Maintenance staff are not only responsible for managing and maintaining the activity areas and facilities at JMF but also for maintaining Metro Parks' many other natural areas, including Caperton Swamp, the Beargrass Creek Greenway at Irish Hill, Miles Park, the Tyler-Schooling property and Waverly Park. Many of these properties are spread across the county and require considerable travel time to and from JMF.

Individual campsite

Group camp shelter



Group campsite

Tom Wallace Lake Recreation Area

The access drive to Tom Wallace Lake is located at 11311 Mitchell Hill Road, directly across from the Welcome Center. The drive travels about one-quarter mile through a narrow, lightly wooded valley before reaching Tom Wallace Lake — a five acre dammed impoundment surrounded by steep forested slopes. Two poorly defined parking areas (upper and lower) at the west end of the lake induce visitors to park along the access drive that runs along the north side of the lake.

The main activity area at Tom Wallace Lake consists of a assortment of structures — picnic shelters, restroom building, footbridges, play structure, fishing pier — and various trails and walks. Access for disabled and physically impaired visitors is poor. Soil erosion and vegetation removal on the sloping ground around the lake has been caused by heavy visitor use and uncontrolled access to the shoreline and other visitor areas. Periodic flooding occurs along the intermittent creek that flows into the west end of the lake. Sedimentation, poor water quality, fish declines, and dam integrity are among the other problems that afflict Tom Wallace Lake.

A concrete block restroom building was constructed some years ago along the access drive on the lake's north slope. Because sewers do not serve the area, the restroom was built with composting toilets. Chronic malfunction and maintenance problems have caused the building to be permanently closed. Visitors must use two portable toilets located in the lower parking lot.

Despite its problems, the lake is a very popular for picnicking, fishing, hiking, and relaxing. The beautiful setting offers water views, shady shorelines and picnic areas, and forested slopes rising up around the water. The quietude and the cooling summer breezes on even the hottest days make for a very pleasant place.

Three hiking trails can be accessed at the Tom Wallace Lake area. The 0.25 mile Tulip Tree Trail is ADA accessible and leads out of the lower parking area to the Siltstone Trail. The 0.5 mile Lake Loop Trail provides access around the lake for fishing and hiking, and the 2.0 mile looped Purple Heart Trail is accessed out of the upper parking lot by both hikers and horseback riders. Because of its steepness and susceptibility to erosion, the Purple Heart Trail's continued use as an equestrian trail should be curtailed or it should be rerouted.

Tom Wallace Lake is popular for fishing and occasional canoeing, but swimming is not allowed. A wooden fishing pier extends out over the lake at about the midway point along the north shoreline. Fishers heavily impact the shoreline around the lake, contributing to moderate to severe bank erosion in places. The spread of invasive plants is another problem encountered at the lake area.

Environmental education programs and classes in aquatic ecology are currently conducted at Tom Wallace Lake. However, the lack of plumbed toilets and potable water for hand washing, as well as conflicts with park users who are occasionally disturbed by large groups of kids, make the setting less than optimal for these classes.

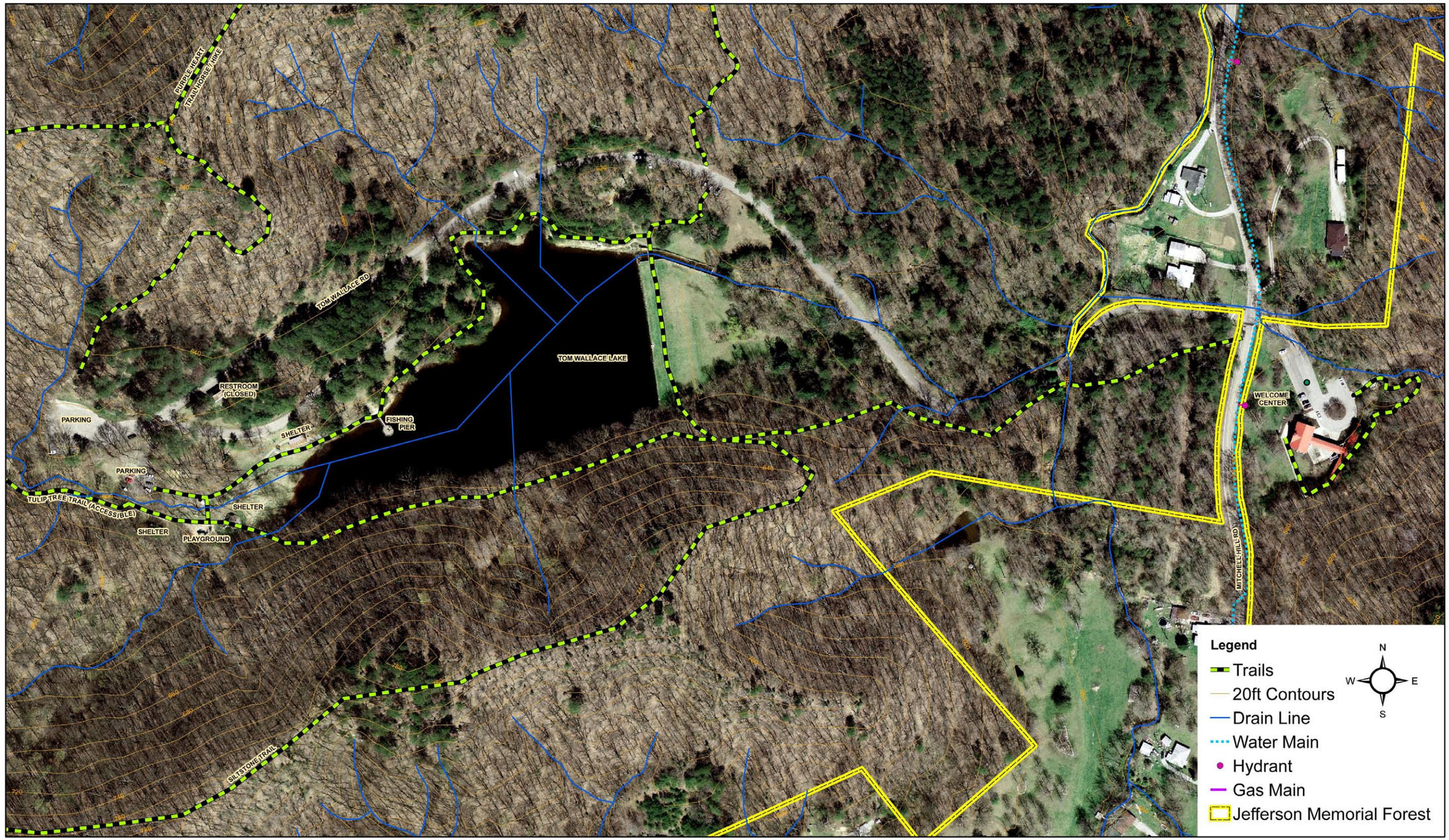
Tom Wallace is a popular recreation area but overuse and inadequate facilities coupled with erosion, bank destabilization, and poor water quality create some serious issues that must be addressed if visitor activity is to continue at the lake.

Fishing pier

Restroom building

Eroded shoreline

Picnic Shelter



November 2008

Jefferson Memorial Forest

0 100 200 400 600 Feet

Tom Wallace Lake Area

November 2008

Jefferson Memorial Forest

0 100 200 400 600 Feet

Paul Yost Activity Area

Paul Yost Activity Area

The main visitor activity area in the Paul Yost Recreation Area is located at the end of a drive (Jones Hollow Road) off of Holsclaw Hill Road, about one-half mile from the intersection with Mitchell Hill Road. Although Paul Yost is the primary venue for equestrian trails in Jefferson Memorial Forest, hiking trails are also found here. Many of the hiking and equestrian trails are steep, poorly sited, and have contributed to severe erosion across the steep terrain.

The Paul Yost activity area is situated at the lower end of a watershed where five or six small creeks converge and steep wooded slopes border the activity area. The access drive from Holsclaw Hill Road follows the small creek through the lower segment of Jones Hollow. The activity area contains poorly defined parking areas for cars and horse-trailers, an outdated play structure, a few picnic tables and a large dilapidated picnic shelter. Erosion and roadbed instability are problems at a culvert crossing under the drive.

The Paul Yost area has four woodland trails for hikers and horseback riders, including the 1.0 mile White Horse Trail, the 2.7 mile Blue Trail, the 3.0 mile Forest View Horse Trail and the 5.4 mile McConnell Trail. Trailheads are ill-defined at the parking area. JMF staff are planning a new equestrian trail system through Paul Yost. Loops of five miles and eleven miles are to be developed with gradients no steeper than five percent. There is also a desire to eventually connect Paul Yost to the Welcome Center via a hiking trail through the Lamont Property, which has yet to be acquired.

Picnic shelter

Picnic shelter

Play structures

November 2008

0 100 200 400 600 Feet

Jefferson Memorial Forest Scott's Gap Activity Area

Scott's Gap

The Scott's Gap section is located at the western end of JMF. The activity area in Scott's Gap is accessed from Scott's Gap Road just north of Bearcamp Road. This activity area is somewhat remote, requiring staff to travel some distance to it every morning and evening to open and close the driveway gate.

Meadow at Scott's Gap

Scott's Gap trail head

The activity area consists of a gravel parking lot, trailhead with message board, and a large meadow area with a small pond nearby. The meadow has been seeded with native grasses and wildflowers and provides good wildlife habitat. Park staff maintain control of invasive plants (mostly tree of heaven) on the meadow edges. Some of the steep slopes on the knobs within Scott's Gap have been severely degraded by grazing which occurred when the land was still in private ownership.

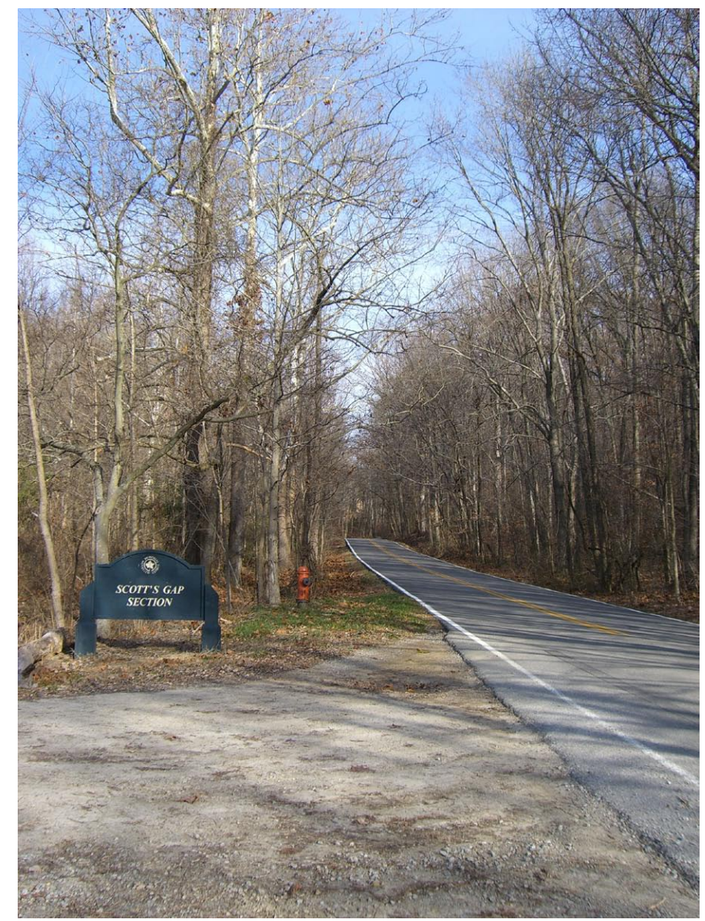
The Scott's Gap section contains two hiking trails accessible from the activity area. The 3.0 mile Red Trail loops through the steep knobs of Scott's Gap while a 1.25 mile spur trail provides a shortcut loop. The Scott's Gap activity area is also the western terminus of the Siltstone Trail which starts at the Welcome Center, 6.2 miles away.

The Scott's Gap activity area has high potential for added visitor amenities. The location is quiet and secluded with good opportunities for bird watching. The open meadow is on fairly flat terrain and could support an ADA accessible trail. A picnic area, restrooms, and drinking fountain would make this a more desirable recreational destination. City water is available at the road.

Bearcamp Road Trail head

Bearcamp Road Trailhead for Siltstone Trail

The Bearcamp Road trailhead is located just inside the Jefferson Memorial Forest boundary where the Siltstone Trail crosses Bearcamp Road. The trailhead consists of a small gated parking area and a short access trail to the Siltstone Trail. The parking area is well maintained and illicit activity in this area has diminished. This trailhead area would benefit from the addition of a message board and a drinking fountain. A city water line is buried next to the road.



Scott's Gap Road

Moreman's Hill

The Moreman's Hill section occupies the northwestern corner of Jefferson Memorial Forest between Belvin's Gap Road and the Gene Snyder Freeway. This irregularly shaped 866 acre section consists of gently rolling pastures near Belvin's Gap Road and high, steep forested knobs bordering the freeway. The Pinquely Property in Moreman's Hill contains a small house, shed, barn and small pond. Cane Run Creek (a Blue Line stream) passes through the southern-most extremity of the property. The creek is bordered by stands of native cane, and the adjacent low lying pasture was probably wetlands or wooded swamp prior to being converted to pasture.

The forested knobs in this section contain a network of trails, some with significant erosion caused by unauthorized ATV use. Trails along the ridge tops afford panoramic views across the terrain below and occasional views of the Ohio River Valley in the distance.

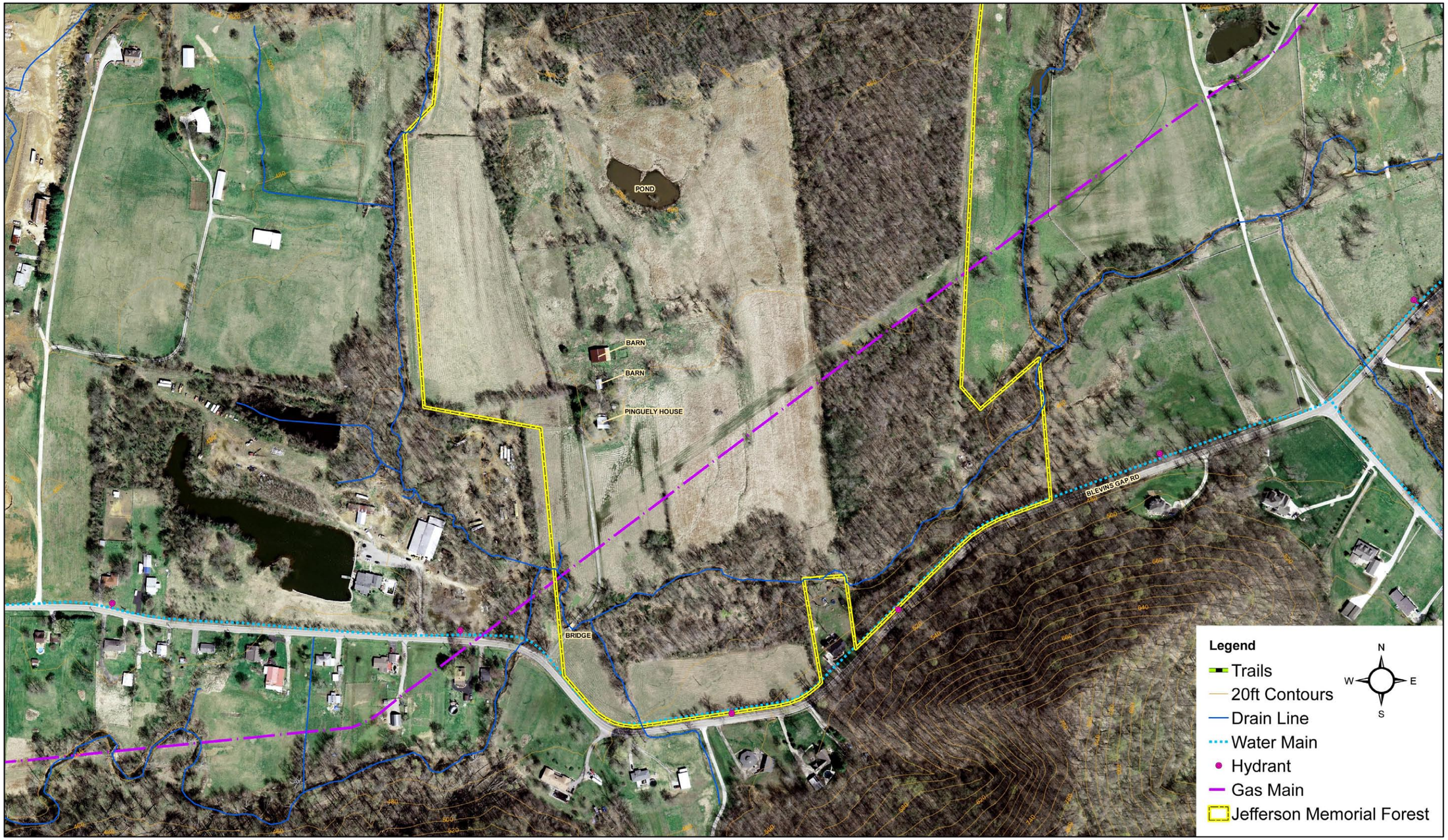
Currently, there is no visitor activity area in the Moreman's Hill section, and visitor use is limited to hiking the knob trails which are difficult to access and in poor condition. The attributes and beauty of this section, however, make it an ideal location for a wide range of recreational activities and educational programs.

Woodland trail at Moreman's Hill

View from Moreman's Hill

Pasture on Pinquely Property

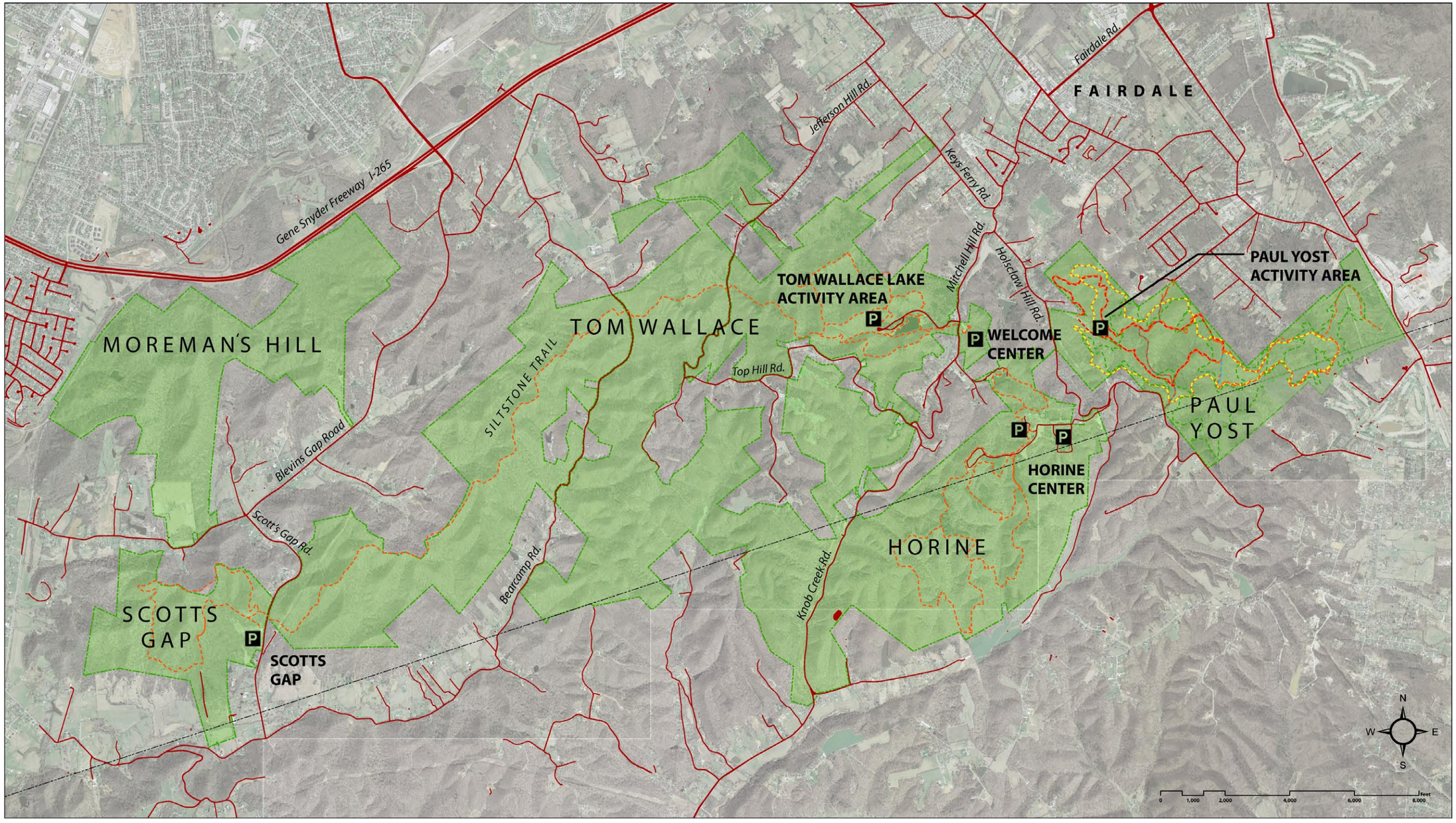
Barn on Pinquely Property area of Moreman's Hill



November 2008

0 150 300 600 900 Feet

Jefferson Memorial Forest Moreman's Hill Area (South End)



March 2008

Jefferson Memorial Forest

Circulation - Roads & Trails

2.12 Existing Trail System

Jefferson Memorial Forest has over 35 miles of hiking trails, ranging from the rugged Siltstone Trail (6.2 miles one-way) to the ADA accessible Tulip Tree Trail (.25 miles). JMF also offers equestrian trails for horseback riders in the Paul Yost and Tom Wallace Recreation Areas. The trail system traverses landscapes ranging from low-lying forest glades and creek bottoms to steep hillsides and ridge tops. Many of the trails on steep slopes have been severely degraded by erosion while certain trails in low areas have wet and mucky surface conditions caused by poor drainage. JMF staff is continually working to improve the trail system by making repairs and developing new trails using sustainable trail design methods.

Following is a brief description of each trail at JMF:

Siltstone Trail – (Welcome Center to Scott's Gap)
The 6.2 mile long Siltstone Trail starts at the Welcome Center and runs east to west through the Tom Wallace section all the way to Scott's Gap. It is the longest trail in JMF. This trail has a strenuous difficulty rating and takes about three hours to complete one-way. It has many steep climbs up and over high ridges and is severely eroded in places. The trail can also be accessed from the Bearcamp Road trailhead which occurs at about the mid-point on the trail.

Memorial Trail – (Welcome Center)
The 0.2 mile long Memorial Trail is located at the Welcome Center and connects the lower level parking lot with the second floor walkway/ bridge. It is dedicated to County employees who died while employed by the County. This asphalt paved trail takes about 10 minutes to complete and is rated easy.

Tulip Tree Trail – (Tom Wallace Lake Area)
The 0.25 mile Tulip Tree Trail is located at the Tom Wallace Lake visitor activity area. This one-way trail is paved for handicapped accessibility and starts at the lower parking area at Tom Wallace Lake. It runs follows a narrow stream valley and crosses several bridges before connecting with the Siltstone Trail. This trail is rated easy and takes about 10 minutes to complete.

Purple Heart Trail – (Tom Wallace Area)
The Purple Heart Trail is also located at the Tom Wallace Lake visitor activity area. This 2.0 mile loop trail is accessed out of the upper parking lot and is used by both hikers and horseback riders. This trail has a moderate difficulty rating and takes about one hour to complete.

Lake Loop – (Tom Wallace Area)
The 0.5 mile Lake Loop Trail provides visitor access around Tom Wallace Lake for fishing and hiking. This trail has an easy difficulty rating and takes about thirty minutes to complete. It is severely eroded in several places due to excessive use and steep grades along the shoreline.

Mitchell Hill Trail – (Horine Area)
The 1.5 mile long Mitchell Hill Trail starts at the Horine Center visitor activity area and loops downhill around Mitchell Hill Lake and then back to Horine. This trail has a moderate difficulty rating and takes about forty-five minutes to complete.

Orange Trail – (Horine Area)
The 1.7 mile long Orange Trail starts at the Horine campground area and travels forested ridges, looping back to the campground area. This trail has a moderate difficulty rating and takes about one hour to complete.

Red Trail – (Horine Area)
The 4.5 mile long Red Trail starts at the Horine Conference Center and travels through upland forest, making two ravine crossings before returning to the campground area. This trail has a strenuous difficulty rating and takes about two hours to complete.

A shortcut on this trail gives hikers the option to hike 3.1 miles instead of the full 4.5 mile loop. The shortcut trail, which is also rated strenuous, shortens the longer hike by about thirty minutes.

Blue Trail – (Paul Yost Area)
The 2.7 mile long Blue Trail starts at the parking area and loops out across steep forested hillsides before returning to the parking area at Paul Yost. It overlaps with the McConnell (Yellow) Trail for approximately two miles of its length. This trail has a moderate difficulty rating and takes about one and a half hours to complete.

McConnell (Yellow) Trail – (Paul Yost Area)
The 5.4 mile long McConnell (Yellow) Trail starts at the parking area and loops out through steep wooded hillsides before returning to the parking area at Paul Yost. It overlaps with the Blue Trail for approximately two miles of its length. This trail has a strenuous difficulty rating and takes about two hours and forty minutes to complete.

White Horse Trail – (Paul Yost Area)
The 1.0 mile White Horse Trail begins in the northeast corner of the Paul Yost section near Dezern Court and travels to the southwest where it intersects with Holsclaw Hill Road.

Forest View Horse Trail – (Paul Yost Area)
The 3.0 mile Forest View Horse Trail starts at the Duncan Shelter and loops out across steep forested terrain before returning to the parking area at Paul Yost. It overlaps with the White Horse Trail for a short distance.

Scott's Gap Red Trail – (Scott's Gap Area)
The 3.0 mile Red Trail starts at the Scott's Gap parking area and loops through the steep forested knobs of the Scott's Gap Preserve before returning to the trailhead. This trail has a moderate difficulty rating and takes about one hour and thirty minutes to complete. A shortcut on this trail gives hikers the option to hike 1.25 miles instead of the full 3.0 mile loop. The shortcut trail is rated easy and shortens the longer hike by about forty-five minutes.

Powerline easement crossing Siltstone Trail

Siltstone Trail bridge near Scott's Gap

Siltstone Trail

3. PROGRAM

3

3.1 Introduction

3.2 Community Involvement

Steering Committee Meetings

Public Meetings

User Survey

Stakeholder Interviews

3.3 Needs & Requirements

JMF Welcome Center

Environmental Education Center

Team Building and Leadership Center

Large Gathering and Events Venue

Camping

Park Maintenance

Tom Wallace Lake Activity Area

Paul Yost Activity Area

Scott's Gap Activity Area

Park Trails

Cultural Resources

Forest Ecosystem Health and Stewardship

3. PROGRAM

3.1 Introduction

JMF hosts many visitor activities and programs supported by a variety of facilities. There are trails for hiking and horseback riding, clearings and shelters for picnicking, and classrooms and outdoor labs for environmental education. Some activities and programs are adequately served by park facilities while other activities and functions are under-served by deficient or non-existent facilities.

To correct deficiencies and create a reliable, long-term plan to guide improvements at JMF, it's important to understand the range of activities and programs at JMF and to establish preliminary criteria for the physical infrastructure that will be necessary to support these activities. The needs and requirements, or program, for the park's infrastructure form much of the basis for the recommendations provided in this report.

Preliminary requirements for park facilities and recreation areas were developed in workshops with park staff and then reviewed with members of the Steering Committee who provided additional input and direction. The data also reflects information gained through an extensive community involvement process summarized here.

3.2 Community Involvement

Various methods of public outreach were employed to engage the community during the master planning process. Outreach was intended to measure visitors' perceptions, behavior and demographics and to identify the perceived strengths and weaknesses of Jefferson Memorial Forest as a place to camp, hike, fish, explore, learn, and engage in other forms of recreation. Outreach methods consisted of the following:

- Steering Committee Meetings
- Public Meetings
- Public Opinion/User Group Survey
- Stakeholder Interviews

Steering Committee Meetings
A project Steering Committee was established early in the planning process. This group was made up of 42 individuals from the Louisville Metro area who represented various interests and organizations including childhood development and education, recreation, environmental protection, business and commerce, and local government. The Steering Committee and Planning Team met three times during the course of the project to discuss park issues and the master plan direction.

The first Steering Committee meeting was conducted on January 24, 2008 to introduce the planning team, discuss project goals, objectives and guiding principals, and to preview the planning process.

The second Steering Committee meeting was conducted on May 20, 2008 to review the planning team's analysis of existing site conditions and to discuss the program for park improvements that had been developed through workshops with JMF staff. A new mission statement for JMF and a public opinion survey conducted by Horizon Research was also reviewed.

The third Steering Committee meeting was held on August 27, 2008 to review the master plan recommendations for JMF.

Public Meetings
The project included three public meetings, all held in the town of Fairdale. The first public meeting was held at Fairdale High School on May 21, 2008 where over 100 people attended. The purpose of this meeting was to introduce the master planning process and to briefly describe the assessment of existing conditions that had been conducted by the planning team. Attendees were also asked to provide ideas and opinions about expanding and improving programs, activities and facilities at JMF.

The second public meeting was held at the Fairdale Playtorium on June 26, 2008. This meeting was for the purpose of discussing Fairdale's potential as a "gateway community" to Jefferson Memorial Forest. Various strategies for achieving gateway status were discussed along with the benefits of this designation.

A third public meeting was held on October 22, 2008 at Fairdale High School to present the master plan recommendations. Approximately 70 people attended this meeting where reaction to the master plan was generally very positive.

User Survey
Two public opinion/user group surveys were conducted by Horizon Research, Inc. during March and April of 2008. The first survey targeted respondents from the at-large community in the Louisville region. The second survey solicited information from recipients of the JMF Newsletter. The surveys were performed and tabulated separately.

The first survey was conducted on Horizon's website among their proprietary "Platinum Panel" of over 2,000 metro-area residents who represent a broad demographic profile. This sample population is weighted to exactly reflect the general population's age, geography, income, and gender characteristics.

The survey revealed some surprising information. Almost seven out of ten people enjoy visiting a park at sometime during the year, if only to stop and relax a little. When asked to identify places where one can see wooded areas, go for a hike, and experience a natural outdoor area, survey respondents listed dozens of places around Louisville. However, the following important observations were made relative to Jefferson Memorial Forest:

- About one in four people mentioned JMF as a place for hiking and enjoying a natural outdoor area, without any prompting.
- About two in three people have actually heard of JMF and nearly all of these folks have very positive impressions of it. Those who have visited in the past three years rate JMF as providing a high quality natural resource experience. Only Bernheim Forest enjoys a stronger image.
- Many of those who go to JMF (annual visitation is estimated at 125,000 and 150,000 people) can do things at JMF that they cannot do at other places. Visitors can hike trails (short or longer challenging ones), ride horses, watch wildlife, study nature and learn about the forest environment. The many activities at JMF seem oriented toward the under 40 Millennials and Generation X segments of the population who enjoy active outdoor recreation.
- The largest and fastest growing segment of JMF users appears to be in eastern Jefferson County and in Oldham County.
- Most people visit JMF to hike, camp, fish, enjoy nature and view wildlife.
- A new nature center was identified as among the high priority needs for JMF.
- The possible provision of small rental cabins at JMF received positive responses by a majority of past visitors and over 40 percent of non-visitors.
- The implementation of user fees at JMF (as long as people are not charged for park entrance or for use of the hiking trails) received generally favorable response.

Those who have not visited JMF offered the following reasons:

- They have never heard of JMF (about a third of all adults and teens in the local community).
- Although they know of it, they don't know enough about it to risk a visit; or they just never think of JMF when the opportunity for outdoor activity arises.
- Signage and way-finding was identified as a big problem for many people who feel they may not be able to find their way there and back. Only about one in five people who are aware of JMF, but have not visited, thought they could find the park's entrance if they had to.
- Respondents were open to a number of new initiatives, such as a new nature/visitor center, especially if it is located near a signature entrance that is well identified.

The second survey was conducted among 164 JMF newsletter recipients who were invited via e-mail or the newsletter to access Horizon's survey website site and complete the 12 minute survey. These respondents were all familiar with JMF.

Because these individuals are typically frequent visitors to Jefferson Memorial Forest, their survey results were tabulated separately from the survey findings from the general population (Platinum Panel). A quick review of the two survey reports suggests the following demographic differences:

- The newsletter recipients were slightly older than the general population and more likely to be from the southern parts of the Louisville Metro area, including Bullitt County.
- There were few newsletter recipients in Southern Indiana and only slightly more in the eastern parts of the Metro area.
- What strongly differentiated the newsletter group from the general population was their intense interest in hiking and camping, particularly the longer challenging hikes and the more rustic camping alternatives.
- These "JMF-connected" people were not very different from others when it came to the frequency of activities like relaxing at a park, picnicking, and taking children to public play areas. However, their level of participation in activities that are physically challenging was dramatically higher than among the general population.
- About 56 percent of the general population said they enjoyed hikes on short nature trails while over 80 percent of those from the newsletter group said they enjoyed this activity. Differences became most pronounced when respondents were asked if they enjoyed long challenging hikes: 25 percent among the general population said they did versus 67 percent for the newsletter recipients.
- Overnight camping and canoeing were also enjoyed at considerably higher levels, thus reinforcing the "active" traits of the newsletter respondents.
- Newsletter subscribers were also more environmentally aware and active than the general population. They were much more likely to enjoy wildlife watching, study nature and the environment, volunteer for some "green" activity or attend an environmental workshop.
- Obviously, these respondents were very aware of the Jefferson Memorial Forest as a place for vigorous activities. Interestingly, they considered Bernheim Forest to be a passive and relaxing environment rather than a place for challenging or intense recreation. Only 13 percent said they could undertake strenuous hikes and other vigorous physical activities at Bernheim.

- Because the newsletter group is outdoor oriented, it was not surprising to see their high awareness of parks in general and their discriminating set of expectations for parks and recreation areas. They gave lower evaluations to almost every park mentioned (except JMF) than did the general population respondents.

Regarding the need for various JMF initiatives and improvements, the newsletter respondents were usually not as enthusiastic as were the general population.

- Newsletter recipients showed less interest in seeing small rental cabins established in JMF (38 percent extremely/very likely) than did the general population group (60 percent extremely/very likely).
- It appears that expanded camping facilities (primitive, car and back country) as well as a new nature visitor center were of most interest to the newsletter respondents.
- Newsletter subscribers were also more interested in the membership program and willing to pay a little more in fees.
- Subscribers most enjoy JMF's natural environs and challenging hikes in a beautiful secluded setting. They wish JMF was easier to access, but for the most part they had few complaints.

Mitchell Hill Lake

Stakeholder Interviews

A series of meetings were held with five different stakeholder or focus groups in early March of 2008 to discuss ideas concerning JMF. The meetings were organized around the following topics:

- Natural Resources: Participants were very interested in forest protection and restoration as well as in exploring ways to educate people about the value of JMF and the importance of protecting it.
- Environmental Education: Attendees represented primary and secondary schools and colleges. They were primarily focused on outreach and partnerships between educational institutions and JMF, and on identifying the special places and resources within JMF for interpretation and education.
- Active Recreation: Representation came from the Louisville Astronomical Society, the Louisville Orienteering Club and the Sierra Club who all desire better hiking and camping facilities. Astronomy hikes and facilities, an orienteering course and backcountry camping are also desirable.
- Volunteers: These folks were interested in fostering better public awareness about JMF and finding ways to improve safety, security and law enforcement, communications, training, maintenance, and resource protection throughout JMF.
- Trail Users: This group represented hikers, horseback riders, and mountain bikers. They were primarily concerned with improving and adding trails using sustainable trail design methods and creating a wider range of trail experiences over varying terrain.

The following two stakeholder interviews were held after the initial stakeholder meetings:

- A meeting with educators within the Louisville area was held on May 8, 2008 to discuss the significant role Jefferson Memorial Forest should take in environmental education. Participants at this meeting represented Metro Parks, the Jefferson County Public Schools, the Louisville Olmsted Parks Conservancy, the Louisville Zoo, the Louisville Science Center, Bernheim Arboretum and Research Forest, and the Jefferson County Soil and Water Conservation District. Participants agreed that each institution has its own particular area of educational interest or focus that can be enhanced through a coordinated effort with other institutions and facilities.
- Another meeting was held on May 27, 2008 to explore the possibilities of JMF partnering with an even broader range agencies and institutions in the region. Participants in this meeting included Metro Parks, the Jefferson County Public Schools, the University of Louisville, the Louisville Partnership for a Green City, and Greater Louisville, Inc.

Representatives at these interviews contributed valuable ideas and information considered in the development of the master plan program and recommendations. Metro Parks and Jefferson Memorial Forest staff should continue to nurture relationships with these partners in order to implement various aspects of the plan.

3.3 Needs & Requirements

Preliminary needs and requirements for the following park areas, facilities, and resources were developed with Park staff. This information informed basic planning decisions and recommendations for the master plan and should not be construed as a thorough inventory of facility requirements or design criteria for new buildings and renovated visitor areas. Additional programming and planning will be required to develop detailed criteria for new park facilities and improvements.

- JMF Welcome Center
- Environmental Education Center
- Large Gatherings and Events Venue
- Team Building and Leadership Center
- Camping
- Park Maintenance
- Tom Wallace Lake Activity Area
- Paul Yost Activity Area
- Scott's Gap Activity Area
- Park Trails
- Cultural Resources
- Forest Health & Stewardship

Welcome Center

JMF Welcome Center

Activities and Functions

- Visitor information and orientation
  - Forest maps and guides
  - Recreation area locations, activities, hours
- Interpretation of forest setting and resources
- Making reservations, collecting fees, issuing permits
- Sales of small gift items: cards, books, local crafts, etc.
- Public meeting/gathering venue for park volunteers and other groups
- Administration of park staff

Facility Needs

- Indoor areas for visitors
  - Park information (trail maps, plant/wildlife guides, model, etc.)
  - Interpretive area (self-guided, rotating and interactive exhibits about forest themes)
  - Information/fee collection/reservation desk and office
  - Public meeting room (for Volunteers and other groups, approximately 35-40 people)
  - Public restrooms
- Gift Shop
- Staff offices
  - Private office for park director
  - Office areas for resource management, administrative and maintenance staff and volunteer coordinator
  - GIS map room/resource library
  - Conference room
  - Break room with kitchen
  - Restrooms, possibly with lockers & showers
- Parking
  - Visitor parking (approximately 30 cars)
  - Staff and volunteer parking (approximately 20 cars)
  - Access and parking for 2 buses
- Other features, amenities, requirements
  - Self-guided nature trail
  - Native plant garden(s)
  - Outdoor gathering area (with possible shelter)
  - Picnic area
  - Example of energy efficient, sustainable building and site design, ADA accessible
  - Location: ideally, near intersection of Mitchell Hill, Holsclaw Hill, and Keys Ferry Roads

Staffing Requirements

- Park Director
- Information / Reservation Coordinator
- Gift Shop Manager
- Naturalist
- Marketing/Events Coordinator (See Large Gatherings and Events)
- Resource Manager
- Infrastructure Manager
- Volunteer Coordinator
- Program Manager
- GIS Coordinator

Alpine Tower at Horine Center

Environmental Education Center (currently at Horine Center)

Programs and Activities

- Student Programs, K–12
  - School Programs
    - Day use programs
    - Residential (overnight) programs
  - Summer Youth Programs
    - Day Camps
    - Overnight Camps
    - Arts and crafts
    - Backpacking trips
  - Traveling Programs
    - To tour public and private schools
- Teacher Programs
  - In partnership with university teaching programs (teachers earn credits and provide instruction while at learning center)
  - In-service teacher experience (continuing education credits for licensed teachers)
  - Student teacher training and experience (internship credits for students pursuing teaching degrees)
  - Graduate residency program
- Family and General Public Programs
  - Family weekends and vacations
  - Classes and workshops (orienteering, canoeing, etc.)
  - Elder hostels (grandparents/grand kids)
  - Guided tours (with naturalist)
  - Informal, stop-in visits

Facility Needs

- Exhibit Space
  - Entry/reception area for information, orientation, gifts (gift shop could be at Welcome Center)
  - Large exhibit area for groups to view information, displays and exhibits, some containing small live animals
- Indoor Classroom/Labs (Education Space)
  - Large lab space for up to 30 students
  - Multi-use classroom for up to 50 people
  - Classroom(s) with A/V equipment
  - Presentation/gathering area
  - Environmental Education Library
- Staff Offices
  - Private office for program director/supervisor
  - General office with cubicle dividers for naturalists
  - Volunteers' area
  - Conference room/common work space
  - Break room with kitchen
- Indoor Restrooms
  - Plumbed toilets and lavatories
  - For staff, students, public
- Lodging and Food Services
  - Initially—cabins or bunkhouses not requiring extensive housekeeping
  - Initially—a place for kids and groups to store lunches and food they bring; maybe a small kitchen area
  - Long-range—additional cabins, dormitories, staff lodging
  - Long-range—area for dining hall with commercial kitchen
  - Picnic areas for program participants
- Outdoor Classrooms/Learning Labs/Teaching Areas
  - Native plant gardens (native plants, native food plants for wildlife)
  - Bird blind feeder station(s)
  - Pond, creek, other aquatic features
  - "Learning Labs" for soil science, decomposers, tracking pit, habitat hide-out
  - Large shelter pavilion with paved floor and stone fireplace
  - Camp circles
- Parking and Circulation
  - For staff, buses, and general public
- General Building Requirements
  - Use natural and recycled materials
  - Example of energy efficient, sustainable building and site design
  - ADA accessible
  - Close to trails, natural areas

Staffing Requirements

- Program Manager
- Program Coordinator/secretary
- Early Childhood Instructor (1 position at JMF)
  - Support staff include environmental education specialist (at least 1 full-time JMF position), education interns as listed above, seasonals (+/-4 positions), and volunteers
- Naturalists (3 positions at JMF)
  - Support staff include environmental education specialist (2 positions), recreation coordinators (2 positions), education interns, seasonals (+/- 12 to 16 six-month positions), and volunteers

Note: Program Manager would also potentially supervise off-site naturalist/early childhood instructor at satellite locations.

Team Building and Leadership Center (currently at Horine Center)

Activities and Programs

- Staff Conducted Programs
  - Outdoor activities and challenges
  - Strategic planning
- Integrated staff/client programs
- Client conducted programs

Facilities

- Meeting and conferencing rooms
  - Indoor space for 60 to 75 people
  - Two to three adjacent spaces for smaller groups
- Restrooms
  - Indoor, fully plumbed with toilets, lavatories, showers
- Food service
  - Initially—food storage and prep area/small kitchen
  - Long-range—dining hall with commercial kitchen (possibly shared with Environmental Learning Center)
- Lodging (for overnight programs)
  - Initially—JMF campsites, basic cabins and/or hotels in Fairdale
  - Long-range—lodge or dormitory (possibly shared with Environmental Learning Center)
- Staff Offices (ideally, in close proximity to Environmental Education staff)
  - For program director and staff
  - Private conference room
  - Break/lunch room
- Parking
  - Ample spaces, convenient to meeting rooms
  - Stable/paved surface
  - Good access from public road
- Outdoor activity and gathering areas
  - Adequate space for outdoor challenges and team activities
  - Large covered pavilion for groups
  - Separate from Environmental Learning Center children's areas

Staffing Requirements

- Team Building Specialist (full-time)
- Recreation Coordinator (full-time)
- Seasonal Recreation Coordinators (2 to 4, six-month positions)
- Volunteer assistants

Horine Conference Center

Large Gatherings and Events Venue (currently at Horine Center)

Activities and Programs

- Music Festivals—Forest Fest
- Art/Craft/Food Fairs
- Large private events—weddings, receptions, banquets, parties
- Organization/Society gatherings—Astronomy Club, Boy Scouts, Girl Scouts
- Staging/break area for cycling events, tours, runs—Run for the Hills, Race for the Cure, etc.

Facilities

- Large, open, relatively flat outdoor area(s) in attractive setting
- Parking
  - Ample space for large events—up to 1,500 cars
  - A portion can be temporary or over-flow parking on lawn or field
  - Good access from public road(s)
- Restrooms
  - Indoor, plumbed facilities for private weddings, banquets, parties, etc.
  - Portable toilets for large public events
- Support Areas
  - Staging area for trucks, equipment, etc.
  - Nearby indoor lounge, restrooms for music fest performers

Staffing Requirements

- Events Coordinator (full-time)

Camping (currently at Horine)

Campground Types

- Individual tent sites: Increase quality and quantity
- Group sites: Increase quality and quantity
- Tent cabins: Modest increase in quantity
- Backpacking/walk-in sites: Locate near but not on backcountry trails
- Horse camp: Provide as destination site(s) with picnic shelters, open air stables, restrooms, hitch and manure pit

General Site Characteristics for Campgrounds

- Flat to moderately sloping terrain
- Open to lightly treed
- Attractive scenery, vistas
- East, south exposure

Desirable to be Near/Close to

- Welcome Center (or at minimum, visitors must pass through Welcome Center to obtain permits, info, etc.)
- Local roads (good access)
- Forest trails
- Creek or pond
- Enviro learning
- Gathering/event areas
- Connections to Louisville Loop Trail

Restrooms

- Enclosed restroom buildings, fully plumbed with toilets, lavatories, and showers

Associated Amenities

- Play structure(s)
- Multi-use field/lawn
- Amphitheater
- Camp circles
- Firewood storage and purchase area(s)
- Waste disposal and recycling areas
- Station for campground steward

Shelter building at Horine Center

Park Maintenance

Requirements

- Close to high visitor use areas, such as campgrounds, to reduce travel, but not exposed to visitors
- Adequate land area away from sensitive resources
- Provide areas for General Maintenance equipment and staff, Land Management equipment and staff, Trails Maintenance equipment, and for volunteers

Facilities

- Storage building(s) for materials and equipment
- Secured outdoor storage
- Staff offices, break/lunch room, restrooms, conference space
- Parking
- Volunteer staging areas

Staffing Requirements

- Seasonal park aides (four positions, March through October)
- Year-round campground staff (two to three, to manage and maintain campground)

Tom Wallace Lake Activity Area

Uses and Activities

- Continue to operate as day-use area for picnicking, relaxing, hiking, fishing

Requirements

- Access Drive: Keep entrance gate at current location; repair erosion in ditches and at culvert crossings, especially at crossing of Bee Lick Creek; remove overhead electrical lines along drive
- Parking: Delineate stalls and aisles in upper asphalt lot; possibly eliminate lower lot; delineate parallel and perpendicular stalls along roadsides; provide ADA accessible stalls
- Trails and Walks: Re-route as necessary to reduce erosion and maintenance; concrete walk near lake especially needs stabilization; maintain trailhead access for Siltstone, Purple Heart, and Tuliptree Trails
- Restrooms: Provide enclosed ADA accessible restroom building with toilets and lavatories; retrofit existing (closed) restroom building or demolish and rebuild in better location; provide potable water to site
- Picnic and Play Areas: Continue to provide picnic and play areas; picnic shelters and pavilions should have consistent design; locate picnic and play on stable ground areas
- Lake: Continue to allow fishing access, but restrict trail access around entire lake; control erosion of adjacent ground areas draining to lake
- Security: Establish controlled vehicle access through Welcome Center, or install card-keyed gate whereby visitors pick up card at Welcome Center
- Resource Protection: Remediate (filter, detain) stormwater run-off from parking areas; repair and control erosion; establish native plants in eroded areas; confine pedestrian circulation to clearly defined trails

Paul Yost Activity Area

Use and Activities

- Continue to operate as day-use area for hiking, equestrian trail access, limited picnicking

Requirements

- Access Drive: Possibly eliminate existing drive or, at minimum, remove drive beyond culvert crossing
- Parking: Provide limited car and truck/horse trailer parking if drive remains; create and delineate gravel parking areas on suitable ground
- Trails: Develop hiking and possibly equestrian trail connection between Paul Yost and Welcome Center; re-route trails in Paul Yost to reduce erosion and limit creek crossings; consider equestrian trail connections between Paul Yost and Moreman's Hill or the Pond Creek/100 Mile Loop Trail
- Restrooms: Provide enclosed restroom building with toilets; provide potable water service (outdoor spigots) to activity area
- Picnic and Play Areas: Remove existing large shelter pavilion; maintain/improve small picnic area with small shelter(s); eliminate play area; provide hitching posts, water trough, and manure pit for horses
- Security: Establish controlled access to come through Welcome Center; or eliminate drive altogether and provide only trail access into Paul Yost
- Resource Protection and Enhancement: Remediate (filter, detain) stormwater run-off from parking areas; repair and control erosion; establish native plants in eroded areas; confine pedestrian circulation to clearly defined trails
- Other Activities, Issues
  - Eliminate trails emanating from private property
  - Address issues such as bridle tags and windshield permits for public use of equestrian trails and for private entities using trail system without compensation to park
  - Consider beauty of Paul Yost entrance area and year-round creek; perhaps make area a destination point

Scott's Gap Activity Area

Primary Uses and Activities:

- Parking and trail access for Siltstone Trail and trails in Scott's Gap Preserve; wildlife watching and hiking

Requirements:

- Access Drive: Continue to maintain in current location off Scott's Gap Road
- Parking: Continue to maintain gravel lot in current location
- Trails: Provide self-guided, ADA compliant, nature trail around large meadow area and pond; continue to maintain access trails to Siltstone Trail and Scott's Gap Trails; repair/re-route access trails to reduce erosion and maintenance
- Restrooms: Provide low maintenance restrooms/toilets and potable water service near parking area
- Picnic and Play Areas: Provide small picnic area with shelter(s) near parking areas
- Security: Retain driveway gate
- Resource Protection and Enhancement: Remediate (filter, detain) stormwater run-off from parking areas; repair and control erosion; establish native plants in eroded areas; confine pedestrian circulation to clearly defined trails; restore/repair pond and increase pond associated habitat
- Other Activities, Issues: Consider interpretive exhibits that discuss prescribed burns of meadow, pond habitat, etc., along nature trail

Park Trails

Trail Types within JMF

- Hiking/foot trails (for recreational day hikes)
- Back-country trails (for overnight backpacking trips, can combine with hiking/foot trails)
- Equestrian trails (at Paul Yost and possibly at Moreman's Hill)
- Self-guided interpretive/nature trails (short to moderate loops near parking/activity areas, ADA accessible)
- Mountain bike trails (at Moreman's Hill)
- Road bikes (along local public roads)
- NO snowmobile or ORV trails in Forest areas

Purpose and Activities

- Hiking
- Nature enjoyment and study
- Environmental learning
- Backcountry camping
- Horseback riding
- Accessing scenery, vistas, geologic features, historic sites; experiencing the new and unknown
- Exercise, physical fitness, relaxation
- Transportation alternatives to driving within and around park
- Linking of park areas and amenities with Loop Trail and neighboring communities
- Monitoring of woodland conditions (by staff and volunteers)
- Woodland management and stewardship (by staff and volunteers)

General Needs and Requirements

- Sustainable
  - Protects environment
  - Has low maintenance requirements
  - Fulfills visitors' needs and expectations
  - Affords reasonable degree of monitoring and control
- Accessible and Safe
  - Usable by broad range of users, including people with disabilities
  - Convenient trail head access points with parking, restrooms, water
  - Appropriate surface materials and safety measures for trail conditions
  - Coordinated with emergency and rescue routes
- Enjoyable
  - Accesses points of interest—scenic vistas, beautiful creeks, interesting rock formations, etc.
  - Trail route, length, gradients, and surface appropriate for intended use—e.g., backcountry hiking vs. horseback riding vs. self-guided nature trail
  - Appealing alignment—curving to create interest, moderate instead of steep gradients, etc.
  - Away from roads (noise) and views of disturbed and developed lands
  - Good way-finding signage
- Surface Options
  - Compacted in-situ soil (lowest installation cost)
  - Crushed rock
  - Wood chips/shredded bark
  - Asphalt or concrete (ideal for wheelchairs & strollers, but costly)
  - Elevated timber or steel boardwalk/bridge (usually across wetlands, creeks & severe terrain)

Staffing Requirements

- Trails Management
  - Horticulture worker (2 full-time positions)
  - Forester (1 to 2 full-time positions)
  - Seasonal workers, interns, and volunteers (four seasonal positions at 40 hours per week)

Cultural Resources

- Develop and Implement Resource Protection Measures
  - Inform public about importance of resource
  - Confirm recorded sites and identify unrecorded sites
  - Protect sites from further degradation and damage
- Develop Interpretive Materials and Programs
  - Identify locations and venues (both within and outside JMF) to convey interpretive information and develop exhibits
  - Establish programs to explain and celebrate heritage
  - Make connections and draw comparisons between the historic and today's places, events, people, and activities

Forest Ecosystem Health and Stewardship

Ecosystem Components and Viability

- Forest, meadows, barrens, streams, wetlands, riparian areas, and ponds
- Forest plant communities
- Forest patch characteristics: size, shape, condition
- Habitat connections between patches—corridors both within the park and connecting to habitat-patch areas outside of the park
- Watersheds (upland areas contributing flow to streams) and water quality
- Species diversity, population status

Ecosystem Benefits and Services

- Wildlife habitat—stability of populations and diversity for the future
- Water quantity and quality—groundwater and surface water recharge, pollutant filtering through naturally pervious areas
- Air quality
- Lower peak air and water temperatures
- Resiliency to climate change
- Aesthetic and recreational value
- Environmental learning

Prescription for Ecosystem Health

- Protection and improved management of existing contiguous forest and corridors surrounding JMF
- Continued implementation of JMF Management Plan (acknowledged as the official guideline for forest management in the 2007 Metro Parks Natural Resources Management Plan)
- Natural regeneration of disturbed forest within JMF
- Reduction of existing forest edges and gaps caused by roads, utilities, land use
- Invasive species management plan development and implementation
- Biological inventories to identify threatened and rare species
- Protection of threatened and rare species and sensitive areas
- Increased protection level for critical areas through state nature preserve designation
- Restoration of streams in disturbed areas, such as Cane Run on the former Pinquely property
- Appropriate low-impact use within JMF—trails, camping, environmental education and interpretation
- Appropriate design of activity areas—erosion control, stormwater BMPs
- Dialogue and planning between protected forest landholders throughout the western Knobs region in Kentucky (Metro Parks including Otter Creek Park, Fort Knox, Bernheim Arboretum, The Nature Conservancy)

Strategies for Improving Ecosystem Health

- Land acquisition
- Conservation easements
- Sustainable logging programs
- Habitat linkages to other parks, preserves, open space areas
- Environmental education and stewardship programs
- Federal, state, and local conservation and restoration programs
- Carbon sequestration credits
- Incentive toolbox for private landowners
- Metro Form District Standards
- Volunteers for invasive species removal and trail improvements

Current and Potential Strategic Partners

- Universities—biological sciences field lab or research center (botany, taxonomy, forest and aquatic ecology, etc.)
- Outdoor recreation groups and associations—programs and activities
- Environmental organizations
- Local groups and agencies such as the Louisville/Jefferson County Environmental Trust, MSD, U.S. Army Corps of Engineers esp. in context of Pond Creek Watershed
- State agencies such as the Division of Forestry and their landowner programs
- Community organizations
- JMF Foundation or Trust
- American Forest Foundation and Forest Stewardship Council
- Otter Creek Park, Fort Knox, Bernheim Arboretum, The Nature Conservancy

JMF Area: Model of Integrated Regenerative Design and Ecological Stewardship

- Community/Watershed-based stewardship
- Stormwater management
- Resource protection and restoration
- Sustainable land use and site design

Staffing Requirements

- Land Management
  - Management Supervisor (1 full-time position)
  - Horticulture worker (3 full-time positions, minimum)
  - Mapping/data collection specialist (1 full-time position)
  - Seasonal workers, interns, and volunteers (to support full-time, professional land management staff; use of only volunteers to meet stewardship objectives is wholly inadequate)

4. RECOMMENDATIONS

4

4.1 Concept Plan

4.2 Master Plan Overview

4.3 Welcome Center

4.4 Horine Center

4.5 Tom Wallace Lake

4.6 Paul Yost

4.7 Environmental Education Center

4.8 Campground

4.9 Resource Management Center

4.10 Scott's Gap

4.11 Equestrian Center

4.12 Trail System

4.13 Ecological Connectivity and Stewardship

4.14 Cultural Resources

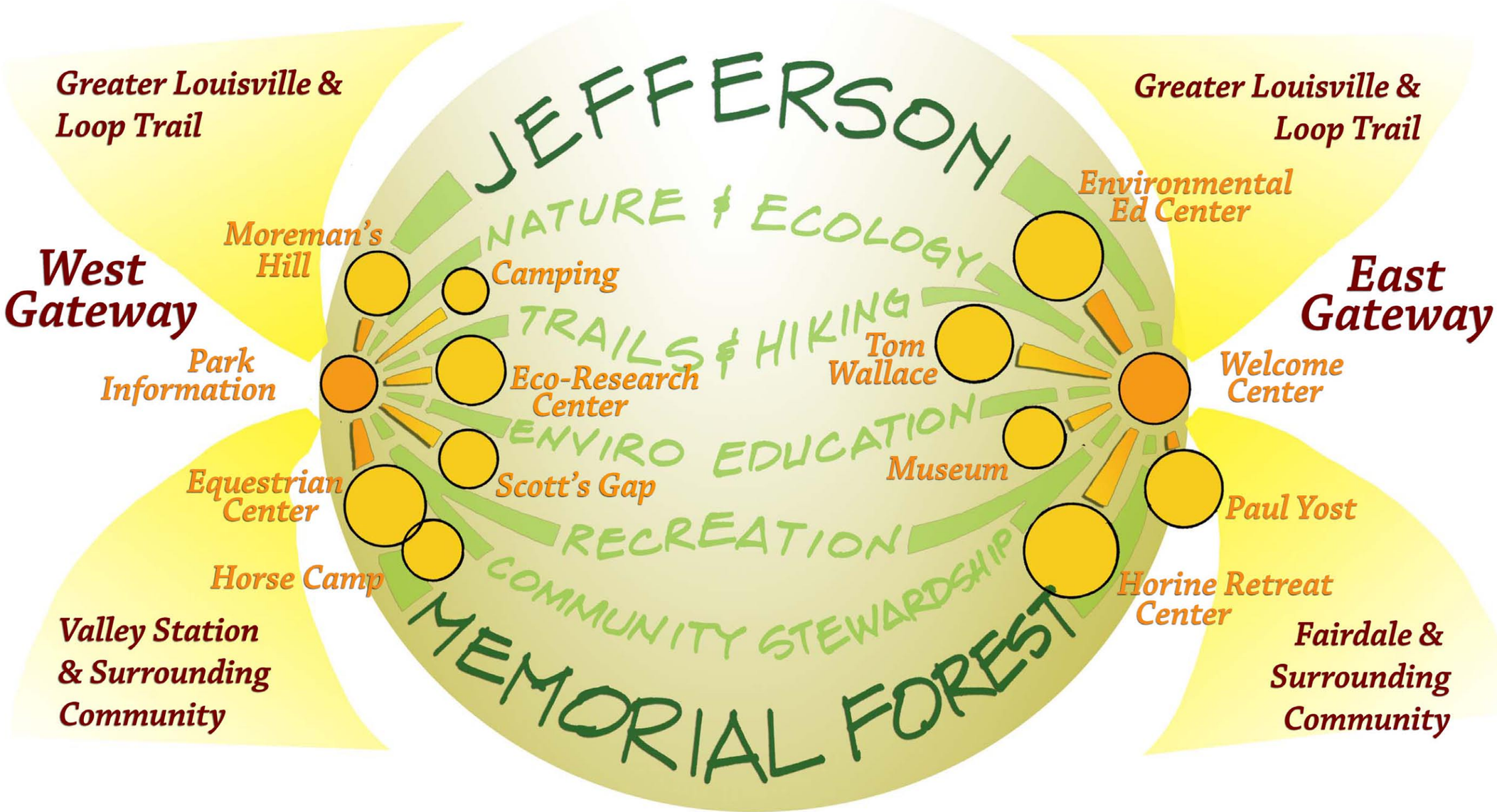
4.15 Interpretive Program

4.16 Safety and Security

4.17 Louisville Loop Trail

4.18 Access and Wayfinding

4.19 Fairdale as Gateway to JMF



Jefferson Memorial Forest **Concept Diagram**

4. RECOMMENDATIONS

4.1 Concept Plan

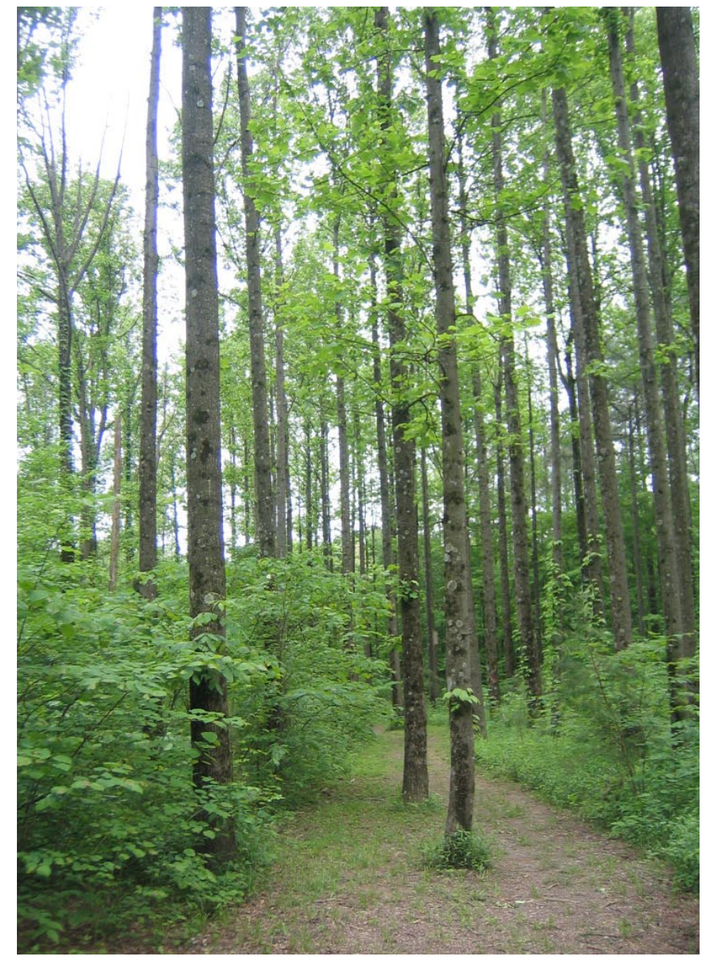
Major improvements will be required at JMF to increase the park's appeal, accommodate more visitors, replace aging infrastructure, and safeguard vulnerable natural and cultural resources. The pace and sequence of improvements will depend on many factors, but ideally growth will strike a balance between correcting ever present deficiencies and encouraging more visitor use. The purpose of this master plan is to lay out a vision and direction for JMF's growth, primarily by describing the physical form and location for a range of new and expanded facilities to handle a variety of recreational, educational, and resource protection needs throughout the park.

Upon considering JMF's attributes, constraints and needs, an overall concept or "big-picture" view emerged to guide future improvements at the park. As shown on the Concept Diagram on page 72, major activity areas should anchor the east and west ends of JMF, while interior areas of the park should host lighter levels of activity and fewer facilities. Basically, major activity areas should be concentrated at the east and west ends of the park and the interior areas of JMF should be managed mostly as a nature preserve for hiking, environmental education, and resource conservation.

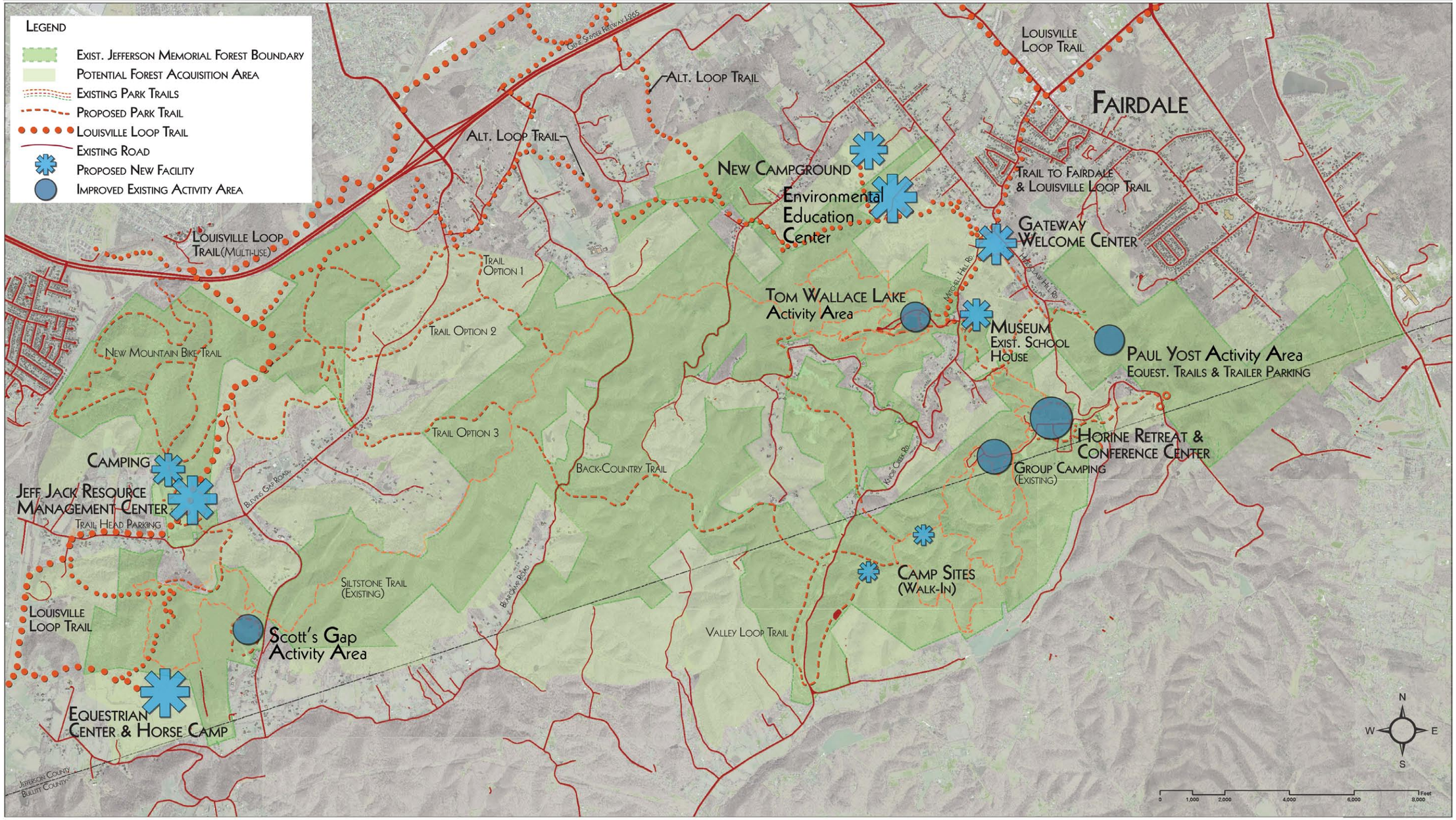
This concept builds upon the current physical organization of JMF whereby major activity areas at Tom Wallace Lake, Paul Yost, and Horine Center occur at the eastern edge of the park, easily accessible to visitors coming from the east through Fairdale. Similarly, new activity areas at the park's western edge would satisfy a need for park facilities here that are readily accessible from local roads for those coming from Valley Station, the Dixie Highway, and points west. In addition to convenient access, the east and west ends of JMF also have a fair amount of gently sloping and open land which is suitable for the development of buildings, parking, picnic areas, and camping facilities. The concentration of activities and facilities at the east and west ends of the park essentially will serve as gateways or portals for the larger JMF resource.

Hilly interior areas of JMF, by contrast, are served by fewer roads and lack convenient access. Local roads here are generally winding and narrow, serving a limited number of residences dispersed over the rugged terrain. Just as this terrain has deterred road building and residential development, it is also poorly suited to the construction of large park buildings, picnic areas, campgrounds, and parking areas. Although interior portions of JMF are not readily accessible or buildable, these rugged, forested lands give JMF its unique identity and appeal. These areas should be protected and expanded for their natural features and qualities that in many instances can only be experienced by hiking trails and backcountry campsites.

This concept and the master plan recommendations that follow support JMF's mission and are consistent with the planning principles and goals outlined in Section 1.4. The recommendations are also thoroughly grounded by existing site conditions discussed in Chapter 2 and by the needs and requirements outlined in Chapter 3.



Woodland trail at Horine



Jefferson Memorial Forest **Master Plan**

4.2 Master Plan Overview

The master plan for Jefferson Memorial Forest has been guided by the planning principles and goals discussed in Chapter 1. Recommendations are intended to engender stronger community connectivity and relevance, better resource management, and heightened visitor experience. The master plan will put JMF on course to fulfilling its stated mission and becoming a major recreation, educational, and natural resource for the region.

The map on the opposite page shows general aspects of the master plan that are more fully discussed in the following sections of this chapter. Blue circles identify existing activity areas to be improved, and blue asterisks identify activity areas and facilities that are to be newly developed. Major activity areas and park facilities will be concentrated at the east and west ends of the park as discussed in the preceding section. The location of major activity areas corresponds to the more developable and accessible areas of the park, and their close proximity to each other creates efficiencies for park use, operations, and management.

Light green areas represent tracts of privately owned woodlands outside of current JMF boundaries that could be acquired or conserved to improve the ecological health of JMF. The current fragmentation of the park compromises the health of its plants and animals, presents problems for park security and management, and diminishes visitor experience. Acquisition or conservation of shaded areas would reduce fragmentation and alleviate many of the problems associated with it.

Local roads will continue to provide the primary means of access to JMF's dispersed resources and recreation areas. The existing road network can be expected to remain more or less intact around and through the park. Hopefully, some roads will be improved for safety and to implement other enhancements suggested in this chapter. New or improved park drives and parking areas will be required in a number of park areas.

New trails are proposed in order to expand and improve JMF's current trail system. The plan on the opposite page shows potential locations for new trail connections between JMF's many sections and parcels and into backcountry areas. In addition, the Louisville Loop Trail will pass along the perimeter of JMF, linking the park to a city-wide network of other parks, trails and recreation areas, as well as to neighborhoods and schools. JMF will become a popular destination on the Loop Trail, offering visitors a range of unique experiences and wonderful scenery found nowhere else in Louisville.

The following sections of this chapter describe these and other proposed features, actions and improvements for JMF. The recommendations are intended to guide improvements over the next ten years; however, changing conditions and events, fluctuations in timing and funding, and modified program requirements will continue to influence and shape JMF's future.

Access drive to Horine Center

4.3 Welcome Center

As discussed in Section 2.11, the existing JMF Welcome Center has many deficiencies including inadequate interior space and parking, an out-of-the-way location, and insufficient interpretive exhibits. Implementing major additions and improvements to the existing welcome center building would be difficult due to its status as an historic building and the lack of nearby buildable land. For these reasons, it would be preferable to develop a new Welcome Center for JMF at another location where it could be easily accessed by visitors and built to better satisfy the requirements outlined in Section 3.3.

After considering a number of possible locations, a property directly south of the intersection of Mitchell Hill and Holsclaw Hill Roads was identified as an appropriate site for a new Welcome Center. Except for a small rental house, the site remains undeveloped. The property consists of a narrow, relatively flat pasture bordered by a steep forested hillside on the east, and by Bee Lick Creek and Mitchell Hill Road on the west. Although high voltage transmission lines and a few residences abut the north edge of the site, these elements are obscured from most vantage points within the site by dense vegetation. The overall scenic quality of the property is very high with beautiful views across a long meadow edged by lush vegetation.

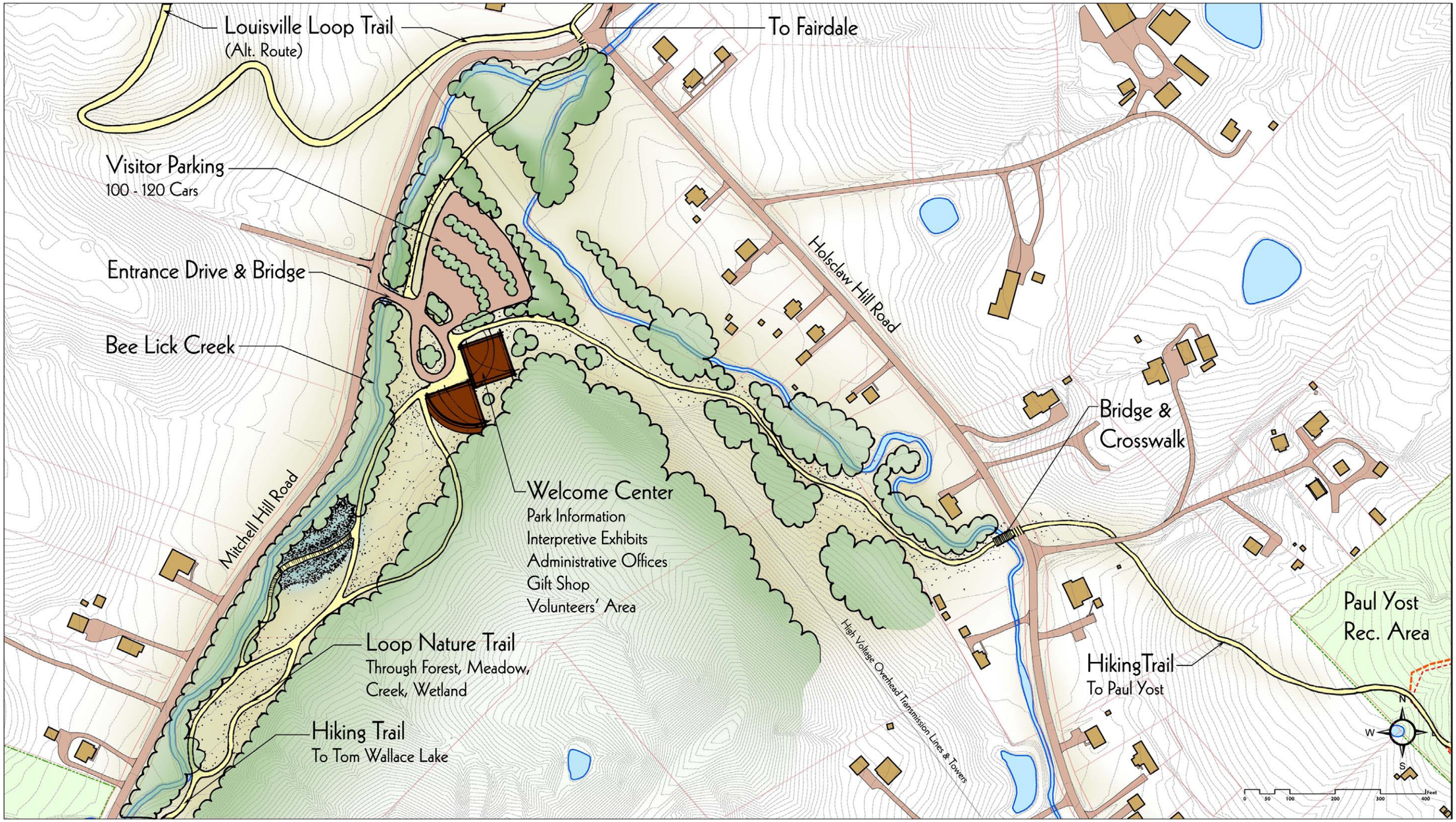
The site is favorably situated at the very eastern edge of JMF near the junction of Mitchell Hill, Keys Ferry, and Holsclaw Hill Roads. At this crossroads, the proposed new welcome center will be the first park amenity that many visitors will encounter before traveling to other recreational destinations within JMF. The new welcome center would essentially become a gateway, defining the eastern portal of JMF and providing visitors with information on the wide range of activities, attractions, and programs available within the park.

As shown in the drawing on the opposite page, the primary components of the proposed welcome center would include:

- A Welcome Center building near the north end of the site to house administrative offices, registration and information, gift shop, meeting room(s), and public restrooms.
- A large adjoining indoor/outdoor space for interpretive exhibits that explain the natural history and ecology of JMF and surrounding area.
- Ample parking for welcome center visitors, staff, and trail users. Parking areas should include facilities to treat stormwater run-off.
- A looped, self-guided nature trail about one-half mile in length that passes through plant communities and landscapes representative of JMF.
- Trail connections to Tom Wallace, Paul Yost, the proposed new Environmental Education Center, and the Louisville Loop Trail.

Cedar River Center, North Bend, WA

Cedar River Center, North Bend, WA



October 2008

Jefferson Memorial Forest

New Welcome Center

October 2008

Jefferson Memorial Forest

Horine Center

4.4 Horine Center

The Horine Center is the most highly used activity area in JMF, hosting environmental education and team building programs, corporate retreats, camping, hiking trails, park maintenance operations, and seasonal festivals. The Center has ample flat, open ground suitable for structures, roads, parking, and other facilities. However, access up and down Holsclaw Hill Road is problematic, and jet noise from low-flying planes diminishes the outdoor experience, especially for campers.

For reasons discussed in other sections of this chapter, camping and environmental education would be better served at locations other than the Horine Center. Maintenance operations also would function better at a location closer to major roads and park activity areas.

With its many attributes and existing infrastructure, the Horine Center can continue to support certain activities and programs however. Team Building programs should remain and be expanded at Horine. The use of the Manor House for retreats and conferences should also continue, and the Center site would easily accommodate additional buildings for meetings and conferencing. The setting at Horine is ideal for outdoor weddings, receptions, banquets and group picnics, and the Forest Fest Music Festival, while drawing ever larger crowds, can still be accommodated with minor site improvements which would enable other festivals and fairs to be staged at Horine.

As shown on the drawing on page 78, a handful of modest improvements would correct many of the problems at Horine. The access drive off of Holsclaw Hill Road needs to be rebuilt with a broader turning radius. The length of the entire access drive should be widened to two lanes (18 feet) to allow vehicles traveling in opposite directions to easily pass each other. The parking area at the Manor House should be improved and enlarged. Finally, the development of group picnic areas at Horine would take some of the burden off of the picnic areas at Tom Wallace Lake and would bolster the use of Horine for outdoor parties and events.

A new trail head area off of the main drive would allow easy and convenient access to the Horine Preserve's trail system. The trail head could be sited at the current maintenance area (once maintenance is relocated) and include parking, a picnic area, and restrooms. A gate located on the drive just beyond the trail head would control vehicle access into the rest of Horine while still allowing visitors access to trails via the trailhead area.

The Horine Center is truly a special place. It has hosted many programs and events over the years and its beautiful setting enjoys widespread recognition throughout the community. Its continued use for group activities and special events will remain of considerable value to both JMF and the greater community.

Existing Education Center building

Native plant garden at Education Center

Group campsite at Horine

4.5 Tom Wallace Lake

Tom Wallace Lake Recreation Area is arguably the most problematic of the highly used recreational areas at JMF. It will be costly to implement effective long-term improvements that serve the lake's high number of visitors and protect the area's natural resources. It would be equally difficult to relocate the activities of Tom Wallace Lake to another site. In other words, Tom Wallace Lake's popularity overwhelms current facilities and damages what is essentially a sensitive landscape, yet the lake's amenities and ambiance cannot be easily replicated elsewhere.

One approach to solving the problems at Tom Wallace Lake would be to implement a series of major improvements at the recreation area. Improvements would be targeted at upgrading and adding visitor facilities as well as repairing and stabilizing the damaged shoreline, creek corridor, trail network, and other site areas. The drawing on page 81 shows the type and extent of foreseeable improvements that would be necessary to create a quality experience for high numbers of visitors and to repair the damaged landscape.

One of the most important improvements at the lake would be development of a shoreline path or walk that is designed to reduce erosion and stabilize the lake edge. This path could consist of wooden boardwalk, paved path, geo-technical stabilization or some combination of these systems that would prevent the destabilization and erosion caused by foot traffic along the shoreline. Platforms or hardened shoreline at fishing areas would also alleviate some of the damage at the water's edge.

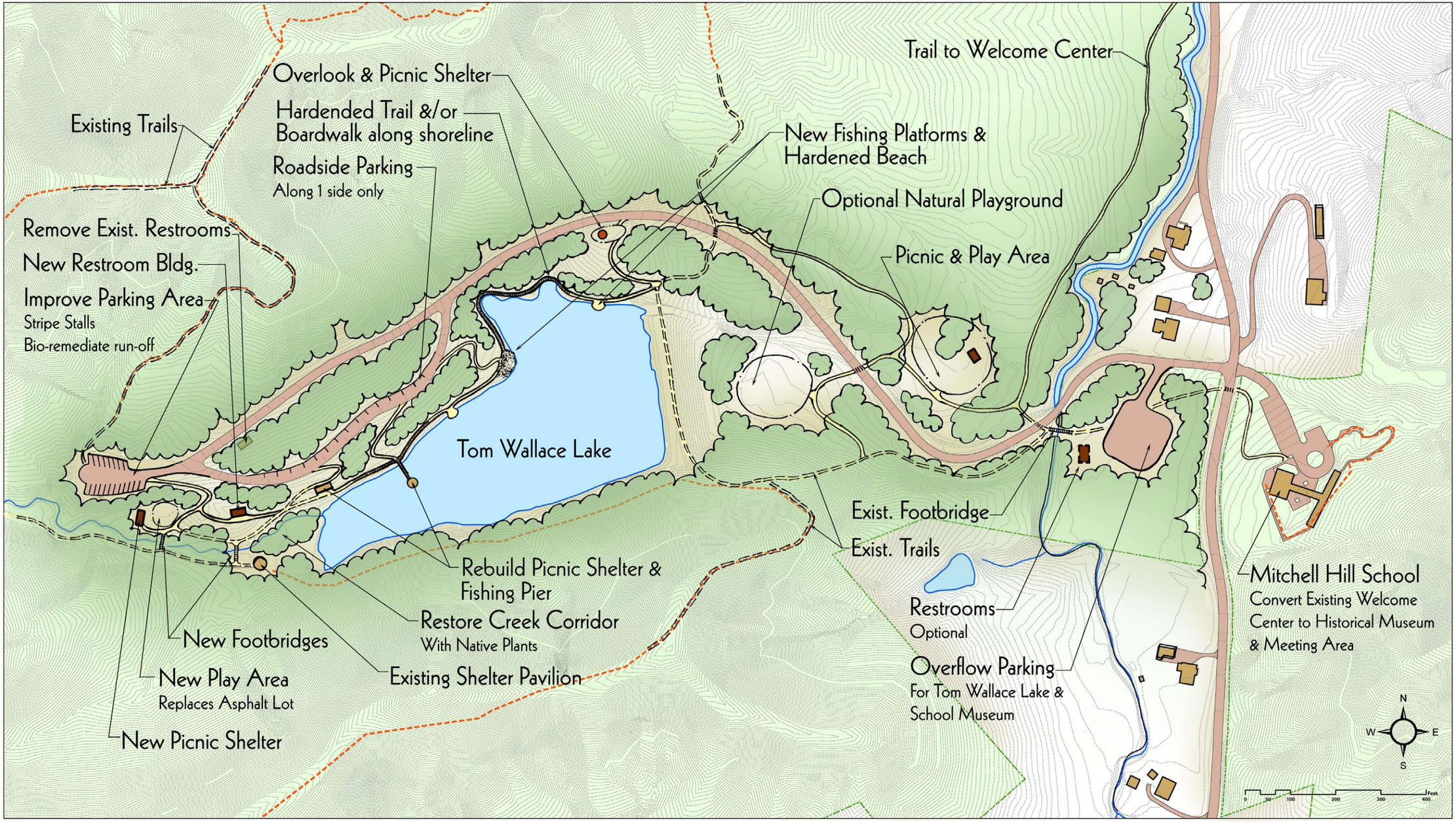
Restrooms are also critically needed at Tom Wallace Lake. The existing composting toilets have been closed due to malfunction, and they are inconveniently sited. The existing portable toilets are unpleasant and insufficient for heavy use. As shown on page 81, new restrooms should be built a little closer to the lake where they are easy to access from lakeside trails and picnic areas. New restrooms should be fully plumbed with water efficient lavatories and toilets. Because of the lakeside location and lack of sewers, wastewater from the restrooms will have to be stored in a periodically pumped tank, treated by a small, self-contained membrane treatment system, or pumped to a drainfield at some distance away from the lake. The existing restroom building should be removed.

Existing deteriorating picnic shelters should be reconstructed and a new picnic shelter added near the site currently occupied by the lower parking area. The existing fishing pier is deteriorating and will have to be rebuilt. All structures—shelters, restrooms, fishing pier, and platforms—should be constructed with local materials and have a consistent character tied to the vernacular rural architecture.

Visitors to the lake should be encouraged to park in the upper parking area and discouraged from parking along the sides of drives. Stalls in the upper lot need to be delineated by striping or wheelstops, and a bio-treatment swale to filter storm-water runoff should be provided along the north side of the parking area. Parking should be allowed along only one side of the drive with bollards or signs along the opposite side of the drive to prevent parking. The lower parking area is too close to the creek and should be removed along with the concrete headwalls, culvert, and pavement over the creek. A simple footbridge is all that would be required to access the trail and picnic shelter on the south side of the creek.

South shore of lake

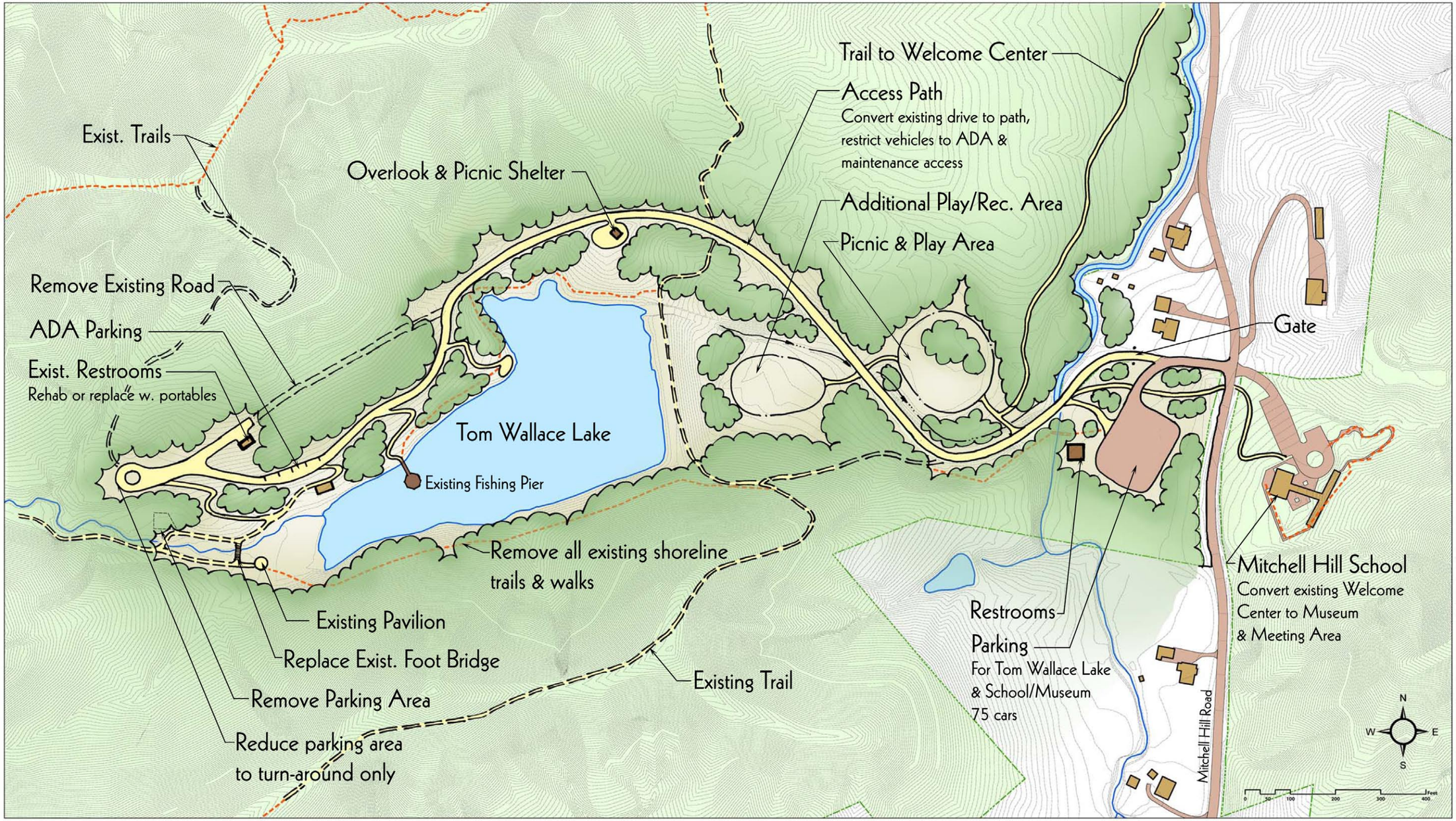
Existing trail and facilities near west end of lake



October 2008

Jefferson Memorial Forest

Tom Wallace Lake (Alt 1)



August 2008

Jefferson Memorial Forest

Tom Wallace Lake (Alt 2)

High priority must be given to the repair and restoration of denuded and eroded areas around the lake. Native plants should be restored along the sides of the small creek that empties into the west end of the lake. Rather than walking across the creek channel as people do now, visitors should be directed to stay on paths and to cross the creek at footbridges (see drawing on page 81). Native plants also should be restored on the bare slopes along the north side of the lake. New shrubs and trees should be closely planted to create thickets with enough density that people cannot easily trample or cut through them. (The two or three small thickets remaining on the slope can be looked to as an example.) Clearly defined trails on the slope will also encourage visitors to stay out of newly revegetated areas.

Another way to alleviate some of the over-use and damage at Tom Wallace Lake would be to reduce the amount of visitor activity at the lake. Activity levels could be significantly reduced by limiting access and scaling back facilities at this recreation area (see drawing on page 82). Visitors could be required to park near Mitchell Hill Road and walk to the lake on the drive that will have been converted to a pedestrian and bicycle path. Only physically impaired visitors would be allowed to drive to the lake and park near it. Major picnic and play areas also could be moved away from the lake toward Mitchell Hill Road where the ground is flatter, less erodable, and more accessible. Visitors would still have access to the lake, but it would be primarily by foot. This, coupled with the relocation of certain recreational facilities, would markedly decrease activity at the lake. Improvements would still be necessary at the lake, but they would be less extensive than what is required now for the current high levels of use. With lower levels of visitor activity, more emphasis could be placed on restoring the bare and eroded shorelines and creek channel with greater potential for success.

However, limiting lake access to only hikers and bikers and removing major picnic and play areas from the lake may be objectionable to many park users, especially if this transformation occurred quickly. A more acceptable approach would be to gradually shift some parking and picnicking toward Mitchell Hill Road while still making improvements at the lake to sustain high levels of use and to repair damaged areas. Over time, activities and facilities near Mitchell Hill Road could increase while facilities at the lake, and corresponding activity levels, are scaled back.

Example of information kiosk and toilet shelter

Example of lakeside information kiosk

October 2008

Jefferson Memorial Forest

Paul Yost

4.6 Paul Yost

Paul Yost will continue to operate as a day-use recreational area for hiking, horseback riding, and picnicking. Paul Yost will be promoted as a local and regional destination for horseback trail riding, and an improved network of equestrian and hiking trails will eventually be constructed to replace the existing degraded trail system. The new system, designed by JMF staff, will include multi-use hiking/equestrian trails of 5 and 11 miles in length.

Paul Yost's parking, trail heads, and picnic area will continue to be accessed by the existing park drive (Jones Hollow Road) off of Holsclaw Hill Road. However, the existing activity area will need to be reconfigured and improved to better accommodate visitors. As illustrated in the drawing on the opposite page, a turn-around and parking area for trucks pulling horse trailers should be sited on the flat, open ground currently occupied by an under-utilized play area. A water trough, hydrant, manure pit, and hitching posts will compliment this staging area for arriving and departing horseback riders. As an added amenity, a small walk-in horse camp could be developed just to the east of the new parking area on the site currently occupied by a large, deteriorated picnic shelter.

As shown in the drawing, car parking for hikers and picnickers should be provided near the horse trailer parking area. Stormwater run-off from parking areas should be treated in biofiltration swales or filtration beds. A small picnic area and shelter pavilion should be conveniently located near the parking area and trail heads.

Trail heads and trails near the parking and picnic area should be sited to reduce the number of bridge crossings over creeks and drainages. Trails should be well marked and perhaps hardened with compacted crushed stone for the first few hundred feet leading out of the activity area. Signs may need to be posted to direct visitors to designated trails and to discourage the use of short-cuts that now occur throughout the area.

Restrooms will be an essential amenity at an improved Paul Yost activity area. Restrooms should be fully plumbed with low-water-use lavatories and toilets (A new water line will need to be extended to the activity area from the water line in Holsclaw Hill Road.). A drainfield septic system may be possible at this site, but other waste water systems, such as a holding tank or self-contained package treatment system, may be required here.

Applying a consistent architectural style to new buildings—picnic shelter, restrooms, information kiosk, storage—will visually tie the structures together and improve the overall visual character of the activity area. New structures should make use of local materials, such as wood and stone, and relate to the older, historic rural buildings found throughout the area.

The loss of vegetation and increased erosion along the banks of Jones Hollow Creek should be included among the improvements proposed for Paul Yost. Replanting of creek banks with native riparian and upland plants will be the most effective, ecological, and attractive way to stabilize soil and deter erosion. Temporary fencing or barriers may be required to keep visitors from trampling newly planted areas until plants have attained adequate size and density.

Consolidate creek crossings to one or two footbridges

Eroded areas require repair and restoration

Old play area should be replaced by horse trailer parking

4.7 Environmental Education Center

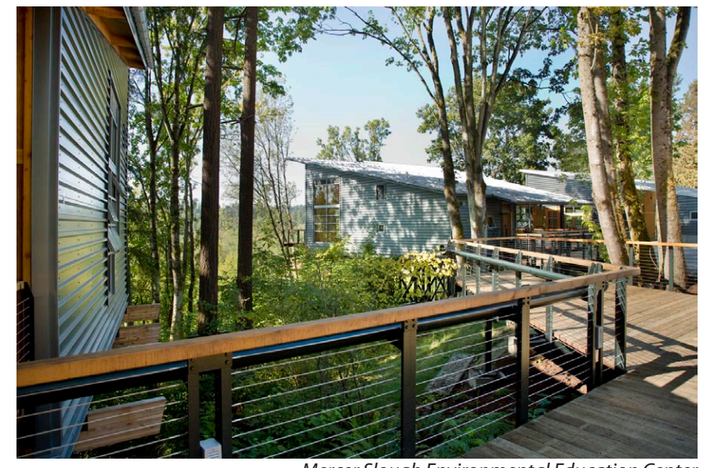
The current environmental education center at the Horine Center has become a victim of its own success. Environmental education staff have improved and increased the appeal of programs to such an extent that existing facilities do not meet the high demand for summer day camps and school-year programs. While the need for new and expanded facilities has become acute, the suitability of the Horine site to host an expanded environmental education center is questionable. Among the deficiencies afflicting the Horine site are a lack of natural aquatic resources, problematic access from Holsclaw Hill Road, and jet noise from planes taking off from Louisville International Airport. If significant investment is made to expand the environmental education programs and facilities at JMF, then a site that has favorable qualities should be secured rather than allowing expansion to occur at a location that has major shortcomings.

After a thorough search for other sites both within and outside the current park boundaries, a site at the end of Wolf Run Road (off of Keys Ferry Road) was chosen as a suitable location for a new environmental education center. At the time of this writing, the 19-acre site is for sale and the owner is receptive to selling the property to Metro Parks. The site is referred to as the Greenwell Property per the name of the current owner.

The Greenwell Property is situated at the eastern end of Jefferson Memorial Forest. Its primary access is from Keys Ferry Road approximately 1/2 mile north of the intersection with Mitchell Hill Road. Consequently, the site's location and access is convenient for visitors and groups traveling to the park from points north and east. The site is also favorably situated near the proposed new welcome center at Mitchell Hill and Holsclaw Hill Roads, and it is close to major activity areas at Tom Wallace Lake and Paul Yost.

The Greenwell Property contains about 10 or 11 acres of overgrown gently rolling pasture. Surrounded by woodlands on three sides, the pasture area is quiet and secluded despite the close proximity of residences along Wolf Run and Keys Ferry Roads. A seasonal creek, Wolf Run, borders the west edge of the property and a small pond occurs roughly in the middle of the site. Although there is a large abandoned storage building and some scattered debris on the property, the site has high scenic quality.

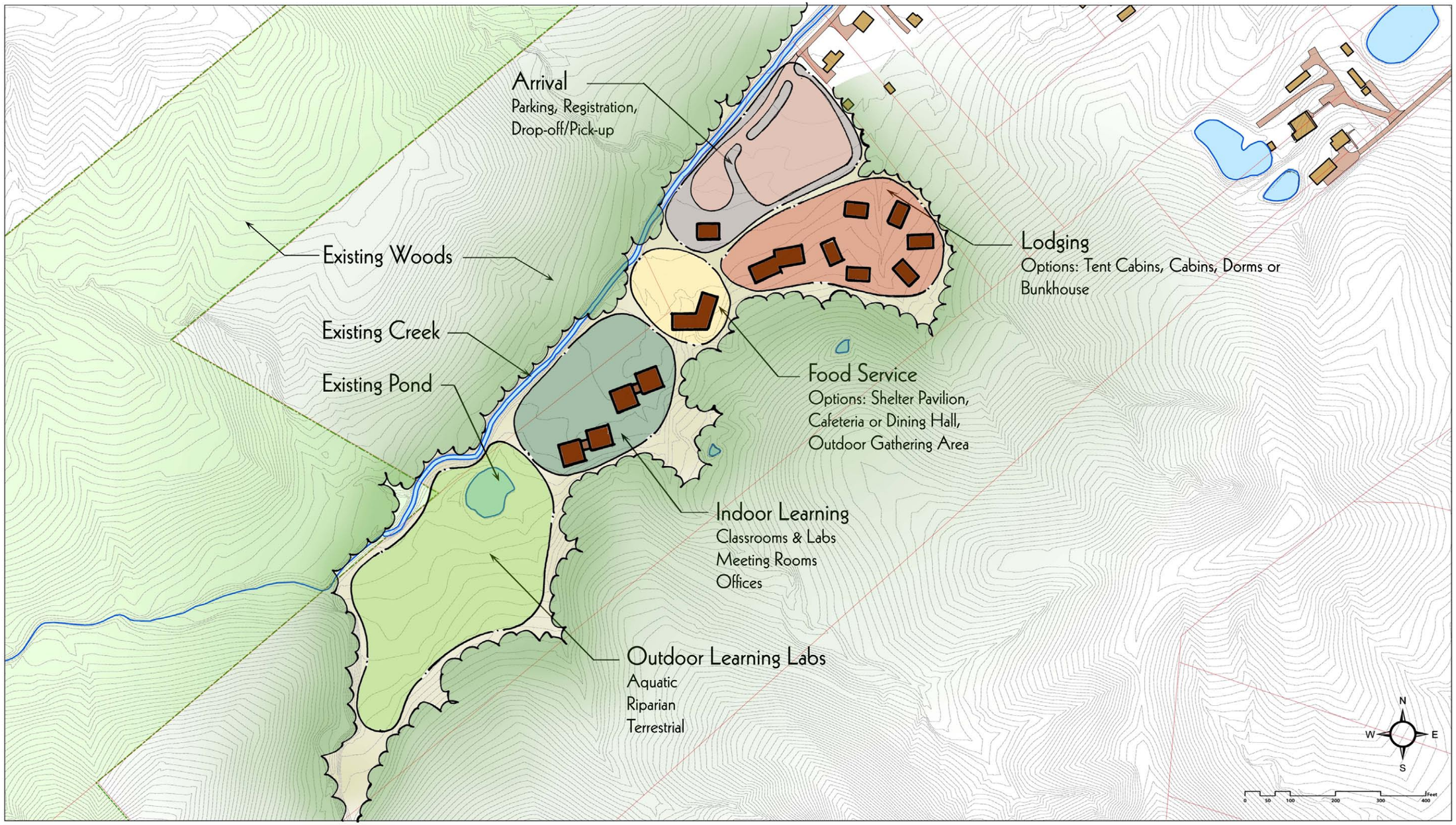
Section 3.3 discusses activities and general requirements for a new and expanded environmental education center. The Greenwell Property can comfortably accommodate a new education center of moderate proportions. The drawing on the opposite page depicts a possible layout for the center's potential range of buildings and facilities. The eventual layout of the education center may take a different form and configuration, and various options are possible in terms of the types of facilities required to serve a certain function. For example, "lodging" can take the form of tent-cabins, cabins, or a dormitory/bunkhouse. Further programming and planning will be necessary to achieve a clearly defined set of facility requirements and a physical form for the environmental education center on the Greenwell Property.



Mercer Slough Environmental Education Center

Greenwell Property

Mercer Slough Environmental Education Center, Bellevue, WA



October 2008

Jefferson Memorial Forest **Environmental Education Center**

October 2008

Jefferson Memorial Forest

New Campground

4.8 Campground

Camping provides a wonderful opportunity to experience the remoteness and natural qualities of JMF and to escape the urban environment. The popularity of camping at Horine Reserve is partly due to the fact that JMF hosts the only campground on public lands in Jefferson County. Although most campsites at Horine are group sites (there are only a handful of individual sites), the appeal of camping at JMF goes undiminished.

Growing demand and limited capacity creates a need to increase camping facilities at JMF. However, conditions at Horine are less than ideal for expanding of the current campground. Jets departing from Louisville International Airport create major noise disturbance, and access from Holsclaw Hill Road is difficult. Another site elsewhere at JMF would be preferred to provide a quality camping experience for group campers, individual car/tent campers, and walk-in-site campers.

Various locations in and around JMF were considered for the development of a new and larger campground. One site in particular stood out from the rest due to its combination of attributes and qualities. This site is referred to as the McCorkle Property and, at the time of this writing, it is privately owned. It is situated just west of Keys Ferry Road and just north of Wolf Run Lane near the proposed location of the new environmental education center. The site consists of 40 acres of upland, gently rolling pasture surrounded by heavily wooded slopes. The setting is beautiful, quiet, and secluded and is easily accessible to visitors coming to JMF from the east. It contains ample buildable land and is relatively close to other recreational areas and facilities at the east end of the park.

The drawing on the opposite page shows a conceptual layout for a proposed campground on the McCorkle Property. Primary access could be either from the existing farm drive off of Keys Ferry or from a new entry drive off Keys Ferry that would serve both the campground and the proposed environmental education center. Trails would provide connections from the campground to the environmental education center, Louisville Loop Trail, Tom Wallace Lake, and proposed new Welcome Center.

The campground would consist of several individual drive-in sites arranged along a series of loop roads. Loops and campsites should be sited near but not in the woodlands. New trees and shrubs can be planted between and around campsites to create privacy and shade. Basically, the woods should be extended into the new campground rather than pushing the campsites into the woods. Walk-in sites, however, could be carefully located in the woodland edges at small existing openings in the vegetation cover.

The campground can be configured to include various combinations of facilities and campsite options. More group campsites can be provided at the expense of individual sites which, given the popularity of group camping, may warrant the trade-off. Other components to consider include large open areas for park programs and active play, interpretive exhibits (perhaps at the trailhead to a nature trail), and buildings for public showers, concessions, campground office and first aid, maintenance equipment, and a rec room. The village of Fairdale is only a short distance away where groceries and other camping provisions can be found, so a camp store probably would not be necessary.

The desire for rental cabins at JMF repeatedly came up at public meetings and received positive reaction on the public opinion survey. While cabins can be a terrific amenity, the costs for their construction, operation and maintenance will be much higher than for campsites. The type of cabin—from simple yurts and tent cabins to self-contained units with heating, bathrooms, and small kitchens—will also cause costs to vary. Metro Parks will need to do a thorough economic analysis weighing development and operation costs against market appeal and rental revenue to fully gauge the feasibility of cabins at JMF. Cabins should also be considered in the context of providing or supplementing lodging for the proposed environmental education center which will likely be only a short distance away from the campground per recommendations in this report.

Like other new or improved recreation areas proposed for JMF, the campground should embody the best in environmental protection, energy conservation, and attractive design. Impervious surfaces should be kept to a minimum: roads and drives should be narrow and campsite parking pads should be surfaced with crushed rock or pervious pavement. Native plants should be given preference over non-natives, and lawn and irrigation should be limited. Buildings should be energy efficient, made of recycled or sustainable local materials, and have a uniform architecture tied to the historic vernacular architecture of the area. Solar panels for heating water or producing electricity may be viable. Although some site lighting may be necessary for safety, it should be kept to a minimum.

The proposed campground is close enough to Keys Ferry Road that sewage from restrooms could be piped to a sewer line along the road. Barring that, sewage may need to be handled by conventional septic tank and drain field systems which are possible on the gently sloping site. All plumbing should utilize low water use fixtures. Water can be piped to the site from the existing water line along Keys Ferry Road.

Campsite at Horine

September 2008

Jefferson Memorial Forest **Jeff Jack Resource Management Center**

4.9 Resource Management Center

The continued health and significance of JMF's plants, animals, creeks, and scenery depend upon the protection and stewardship of these resources on lands both within and adjoining the park. Essentially, Metro Parks must continue to implement effective resource management practices on JMF lands as well as promote environmental stewardship and resource protection among a broad coalition of local agencies, utilities, environmental organizations, schools and local residents, all of whom directly affect or can influence what occurs on lands around and near the park.

To carry out this broad resource management mandate, JMF would benefit by having a centralized base of operations to stage the park's resource management work and to demonstrate best practices for managing forest, riparian, and aquatic resources. This resource management center would basically serve the park and provide the local community with information about how to protect and manage the vulnerable natural resources bordering the park. The center would enable visitors to see and experience first-hand how to restore a creek or wetland, replant a woodland, eradicate invasive plants, or protect a pasture from overgrazing, damage, and erosion. The center could also evolve as a place for local schools and colleges to establish field labs and conduct research associated with their natural sciences and ecology programs. As a base for management operations, visitor demonstration area, and research/field lab, the center would go a long way toward fulfilling JMF's broad mission and would compliment the park's expanding environmental education programs.

An excellent location for a resource management center would be at the site referred to as the Lamkin and Pinquely Properties. These properties are part of the Moreman's Hill tract and are currently accessed by a farm driveway off of Belvin's Gap Road about 1/4 mile west of Scott's Gap Road and about 1-1/2 miles east of the Dixie Highway. The site contains a considerable amount of open, gently sloping ground suitable for buildings, parking, equipment storage, and management operations. Cane Run Creek crosses the south edge of the site and the property is also endowed with woods, pastures, bottomland, small pond, house and barn, and large stands of native cane. High wooded knobs surround the site, contributing to the property's beautiful scenic character.

Because the Lamkin and Pinquely Properties are at the western edge of JMF and close to the Dixie Highway, a resource management center here would serve as the western portal to the park, offering visitors a well-defined activity area where information about JMF recreational activities and programs would be available. The site would also be a good location for accessing proposed hiking and mountain bike trails in the Moreman's Hill tract. The Louisville Loop Trial will be routed through Moreman's Hill (see discussion in Section 4.16), further reinforcing the Lamkin/Pinquely site's potential as a major trailhead facility with parking, picnic areas, restrooms, and a variety of trails, all easily accessible to visitors coming from the Dixie Highway and points west. Finally, the site's attributes and location make it a prime candidate for a small campground which is sorely needed in the western portion of the park.

The Lamkin/Pinquely Property's site characteristics and resources make the site an ideal location for implementing, demonstrating, and monitoring landscape restoration projects. Bottomlands near Cane Run Creek are well suited for wetland protection and restoration. Repair and restoration of portions of the creek channel through the site could give impetus to protecting and restoring creeks on privately owned agricultural and residential land bordering the park. Wooded areas on the site offer opportunities to increase plant diversity and monitor forest succession. The small pond can become a microcosm of aquatic ecology, and pasture areas can be allowed to revert to native plants or can continue to be grazed in a sustainable manner. Finally, new buildings, parking areas, and other facilities developed on the site can become models of low-energy, environmentally-attuned design.

In the course of articulating a vision and determining a location for the resource management center, Metro Parks' staff and members of the Steering Committee recommended naming the center in honor of Jeff Jack, a University of Louisville urban ecology professor and dedicated environmentalist who was tragically killed in an auto accident in 2006.

As shown by the drawing on page 90, the proposed Jeff Jack Resource Management Center would be comprised of the following facilities and activities:

- JMF resource management compound including offices, equipment, storage buildings(s) and yard, plant nursery, and volunteers' gathering area.
- Small office/lab/storage building(s) for university and high school field labs.
- Trail head area to access Moreman's Hill trails and the Louisville Loop Trail; area should include parking, picnic area, restrooms, information board/kiosk.
- Outdoor gathering area(s) with shelter pavilion for large groups for resource management and restoration demonstrations.
- A self-guided nature trail with interpretive exhibits through restored and natural landscapes.
- A fifty-unit drive-in campground with restrooms.

Pinquely Property pasture

4.10 Scott's Gap

The current visitor activity area at Scott's Gap has appealing conditions and qualities that can be supplemented to create an attractive and popular recreation area. The current parking and trailhead area is scenic and peaceful, offering views across a broad native plant meadow backdropped by wooded knobs. Birds and other wildlife frequent the meadow and its edges, drawn by a small nearby pond. The Siltstone Trail ends (or begins) at Scott's Gap, and other trails through the Scott's Gap tract are accessed from the existing parking area.

Additional amenities and improvements would increases this activity area's identity and appeal. A small picnic area with shade trees, lawn, picnic tables and a shelter are suggested. Restrooms with plumbed toilets and lavatories are appropriate and possible here since there is a water line in Scott's Gap Road. The existing crushed stone parking area does not need to be paved, but wheel stops or bollards would help to define parking spaces.

A short 1/2-mile nature trail through the gently rolling meadow would be easy to implement, providing an alternative to the longer, strenuous trails through Scott's Gap. Nature trail gradients should be kept below five percent and it should be paved with compacted crushed rock or asphalt to assure ADA compliance. A looped trail route encompassing the meadow, woodland edge and pond would reveal the area's varied plant communities and habitat which could be further highlighted by interpretive signage.

Fairly modest improvements at the Scott's Gap activity area will achieve measurable results at this beautiful site. Attention to details will be important. Buildings and structures should be made of local materials and have a consistent design character tied to the historic vernacular architecture of the area. New trees in the picnic area and around the parking area should be sited to reinforce a sense of place, frame views, and provide shade. Trails should be clearly marked and an information board or kiosk erected to inform visitors of trail routes and natural features.

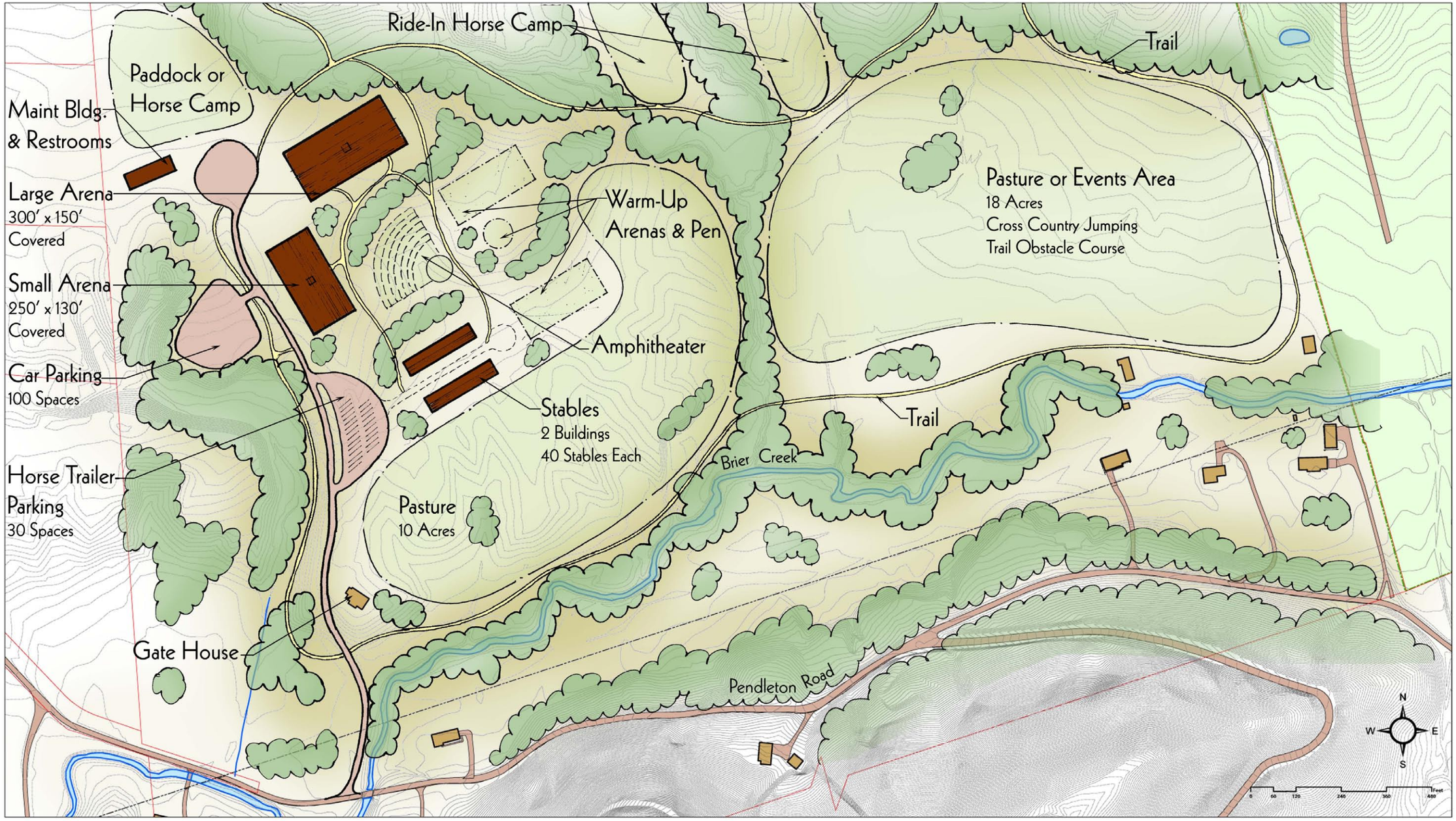
Meadow at Scott's Gap

Drive entrance and trailhead at Scott's Gap

October 2008

Jefferson Memorial Forest

Scott's Gap Activity Area



October 2008

Jefferson Memorial Forest **Equestrian Center**

4.11 Equestrian Center

It goes without saying that the Louisville area has a well-established equestrian culture. Event riding is very popular among youth and adults, yet there are few riding centers in the greater Louisville area, and no large riding arenas can be found in southwestern Jefferson County. Jefferson Memorial Forest's proximity to major highways and to a sizeable riding population makes it a prime location for an equestrian center, granted a suitable site exists in or near the park.

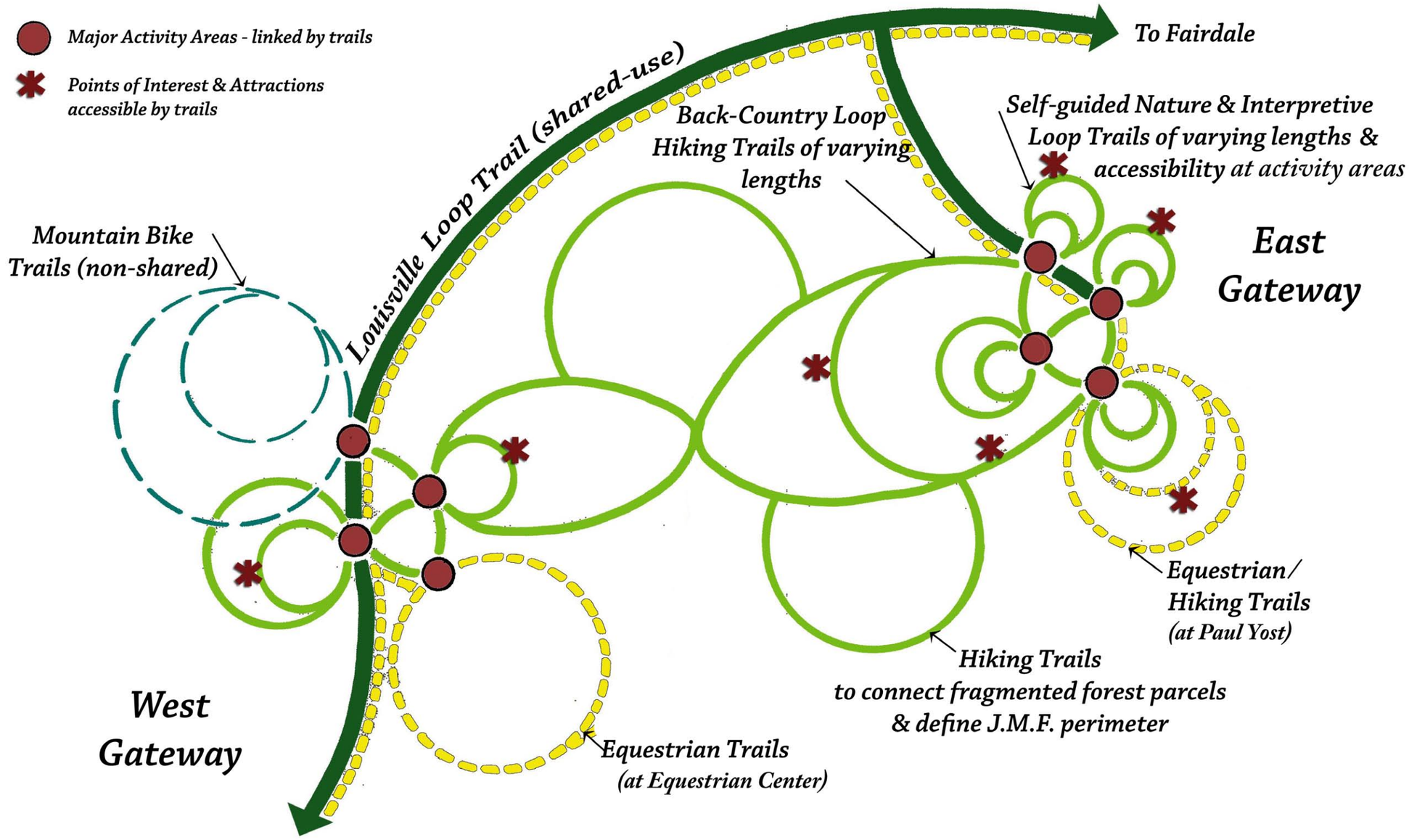
Auspiciously, during the preparation of this master plan, a large property that is for sale at the western edge of the park came to the attention of Metro Parks staff. The Dawson Property contains about 168 acres of gently rolling pasture along the north side of Pendleton Road and Brier Creek, about one mile east of the Dixie Highway. The site has a considerable amount of open land capable of supporting buildings, parking areas, paddocks, and pasture. Homes line Pendleton Road and a few residences have been built some distance from the road at the end of long driveways.

The drawing on page 94 represents one concept for how an equestrian center could be sited on the Dawson Property. The type and size of facilities shown on the drawing are a good approximation of what might be required for a training and competition complex hosting a wide range of equestrian events. Arenas, stables, practice rings, and parking areas are shown clustered on the flattest part of the site which also happens to be located a good distance from the road where the complex would not be overly conspicuous from the road or nearby homes.

It is important that the Equestrian Center be connected to the Louisville Loop. An equestrian trail will be part of the Louisville Loop which will travel through Fairdale and include a spur-trail to the proposed new JMF Welcome Center and to the Paul Yost Activity Area. The equestrian trail component of the Louisville Loop would thereby connect the proposed Equestrian Center to the Paul Yost area, providing an eight-mile long equestrian trail near and through JMF, anchored by two equestrian "nodes" at opposite ends of the park.

The layout on page 94 is intended only to show that an equestrian complex is possible on the Dawson site. An intensive programming and design effort will be required to establish a viable plan. Moreover, if the Dawson Property cannot be acquired by Metro Parks, another site, preferably at the west end of JMF, will have to be found for the Equestrian Center. The viability of an equestrian center in the western end of the park appears solid even if another site may eventually have to be identified. Close coordination with local groups and funding entities, and the participation and commitment of a broad coalition of interests will be necessary to implement something as ambitions as the Equestrian Center.

View from Moreman's Hill



Jefferson Memorial Forest **Trail Circulation Concept**

4.12 Trail System

People experience much of JMF's rugged landscape solely by trails. Hiking is one of the primary activities in the park and trails enable people to connect with nature, exercise, relax, or simply encounter something new and unexpected. Trails are therefore an important component of JMF and their upkeep and expansion throughout the park are important to JMF's continued appreciation and relevance. To accomplish the programmatic requirements outlined in Chapter 3, a mixture of trail types and experiences should be provided at JMF including:

- Short, easy trails for families with small children, for physically impaired or elderly persons, and for those with limited time.
- Nature trails with interpretive information about native plants, wildlife, local geology, etc.; very often these trails are of shorter length.
- Longer trails for half-day or day hikes, offering moderate exertion through varied terrain and environments.
- Backcountry hiking trails through remote areas and possibly across rough terrain.
- Horseback riding trails in limited areas of the park, separated from interior hiking trails.
- Mountain bike trails in limited, specific areas of the park, separated from hiking and equestrian trails.

A trail system composed of loop trails has many advantages. Regardless of length, looped routes usually create a better experience than "out and back" trails where users retrace their steps. Looped trails can also serve more hikers and reduce the incidence of trail users encountering others coming in the opposite direction. Finally, a system of loop trails offers a great deal of variety and route choice based on a straightforward concept of concentric loops, intersecting loops, and loops of variable length.

As conceptualized by the drawing on the opposite page, a trail system of short, moderate, and long loops would be ideal for JMF. Loop trails occur now at Horine, Paul Yost, and Tom Wallace and could be expanded throughout the park. Short loop trails are an excellent amenity at major activity centers, allowing easy walks of brief duration for families with young children and other users. Moderate and long loop trails would likewise originate from activity areas and reach farther into JMF's diverse landscapes, with some trails accessing challenging terrain in remote areas of the park. Trail connections between activity areas would enable visitors to walk from one activity center to another without driving, or to take a long trail beginning at one activity area and ending at another with only a short hike back to the activity area where the hike began.

All trails, regardless of length, should be routed to access interesting geologic and water features, scenic vistas and viewpoints, unique plant communities, and other points of interest. At activity centers, short loop trials can easily serve as nature and interpretive trails, highlighting native flora and fauna, stream ecology, local history, and other characteristics about the area. Longer trails should be planned to access a destination or series of destinations identified on trail guides containing detailed information or descriptions about the attraction.

Expansion of JMF's trail system should also be carried out to reinforce the conservation or acquisition of high quality forest lands lying outside of the current park boundaries. As discussed in this report, land conservation and acquisition will be necessary to reduce the park's fragmentation and to improve ecological function. The development of trail connections between what are now fragmented forest parcels will lend further justification to land acquisition and conservation objectives.

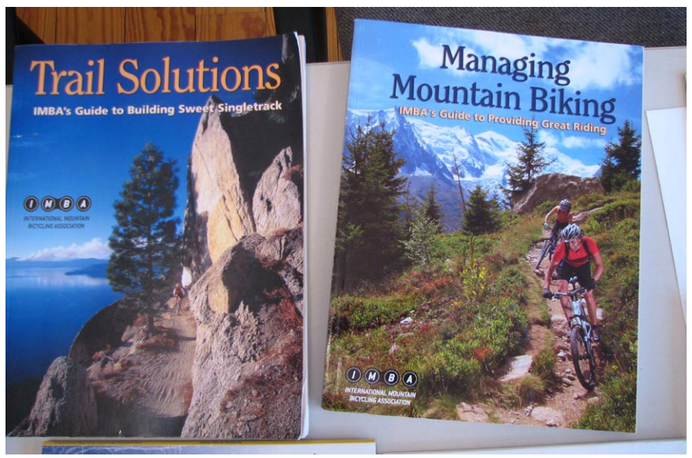
The drawing on page 74 shows potential locations for major trail connections through JMF. These trails would link JMF's dispersed holdings and access backcountry areas and attractions that currently lack trail access. In building upon the existing trail network, any new trails should be routed to create a series of loop routes of varying lengths and ratings. The proposed trails shown on page 74 are routed to generally follow the tops of ridges so as to take advantage of views, limit strenuous climbs, and reduce the potential for erosion.

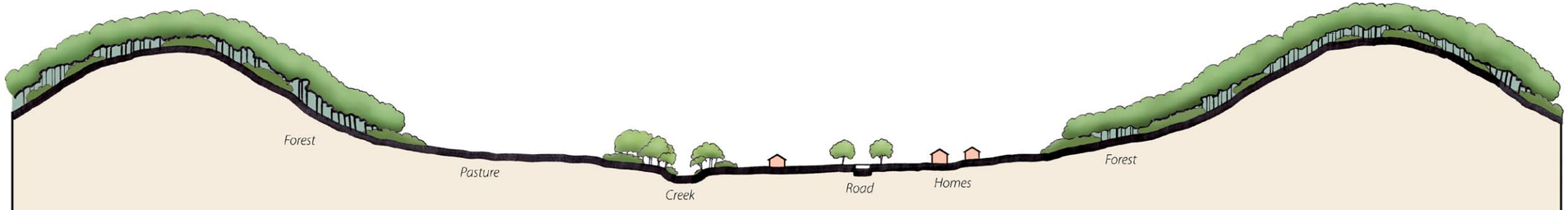
Numerous books, manuals, and articles on trail design and maintenance have been published by various organizations and agencies. Guidelines and recommendations for sustainable trail design do not need to be reproduced or paraphrased here since park staff are familiar with this material and will continue to reference it in the routing and design of new trails. One item worth noting is that new trails should be a minimum 52 inches wide to allow access by emergency and small maintenance vehicles.

In siting new trails and rerouting existing damaged trails, topographic maps can be used to develop a preliminary route. However, the final route should be determined in the field since many terrain features and anomalies will not show up on contour maps. Moreover, other landscape characteristics and features like beautiful views, rare plant communities, and seeps and springs can only be identified in the field.

Louisville has an enthusiastic and vocal mountain bike community who sees JMF's rugged terrain as an ideal setting for a system of public mountain bike trails. However, the vulnerability of the JMF landscape and the park's other uses prohibit the creation of bike trails throughout the park. A mountain bike course can be developed in the Moreman's Hill tract bordering the Gene Snyder Freeway. The Louisville Loop Trail will pass through the Moreman's Hill section, providing convenient bike access to a mountain bike course here. Members of the local mountain bike club would welcome the chance to help layout bike trails at the Moreman's Hill location.

Equestrian trails at JMF will be limited to the Paul Yost section and to areas near a proposed Equestrian Center on Pendleton Road. The Louisville Loop Trail will pass near and through JMF and will include an equestrian trail as part of its cross-section. Horseback riders at Paul Yost and at the Equestrian Center should be able to access the Louisville Loop at both locations.





UPLAND KNOBS

General Characteristics
- Steep forested ridges and hills
- Highly visible terrain features
- Lower development potential

Ecosystem Components and Services
- Forests and woodlands provide important habitat for native plants and animals
- Vegetation slows and filters stormwater runoff, reducing erosion, and improving surface water quality
- Forests improve air quality and regulate temperatures
- Woodlands offer opportunities for recreation and aesthetic enjoyment

CREEK VALLEYS & FLOODPLAINS

General Characteristics
- Flat to gently rolling valley bottoms
- Moderately visible terrain features
- Higher level of human activity and intervention - farming, roads, homes

Ecosystem Components and Services
- Meandering creeks and wide floodplains improve water quality and provide natural flood control, reducing downstream flooding problems
- Deep, rich soils and valleys are well-suited for agriculture and food production
- Pastures, hedgerows and vegetated creek corridors provide habitat for a wide variety of wildlife

LANDSCAPE CHARACTERISTICS & ECOLOGICAL VALUE

THREATS TO FORESTED KNOBS

- Forest fragmentation
- Poor logging practices
- Road building and residential development
- Spread of invasive plants
- Inappropriate recreational activities

THREATS TO VALLEY BOTTOMS

- Dispersed residential development
- Extensive new road construction
- Increased water pollution and runoff volume from development - roads, yards, roofs
- Elimination of vegetation along creeks, pasture hedgerows

threats 1

THREATS TO LANDSCAPE & ECOLOGY

4.13 Ecological Connectivity and Stewardship

Jefferson Memorial Forest is a special place. To many who already know JMF, it is a wild refuge from the urban development of south Louisville and northern Bullitt County - a place to hike, fish, ride a horse, watch birds, and look for wildflowers. As promoted by this master plan, JMF will continue to be such a refuge and a place for all of these activities. However, this plan also expands the significance of the role of Jefferson Memorial Forest within the region. For its future health and relevance, JMF cannot simply be a forest sanctuary and temporary escape from urban life. Rather, Metro Parks and the community must look at JMF in the context of its surroundings and the greater Knobs region to the south, and explore ways to ecologically and culturally connect JMF to this larger realm.

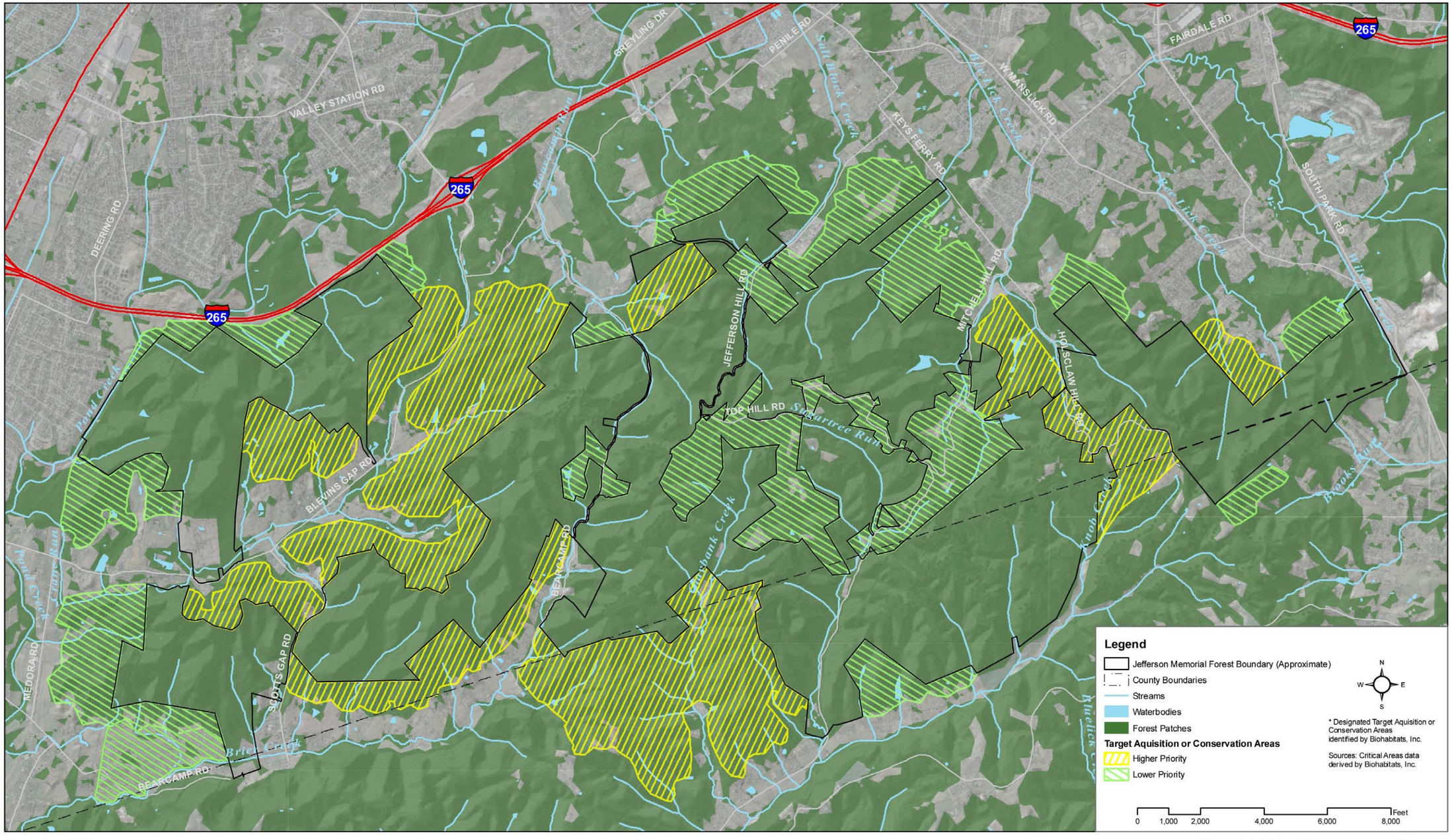
JMF sits at the northwestern end of the Knobs region, which extends southward as a band of wooded hills and ridges. Some of this land is protected from development in places such as Bernheim Arboretum/ Research Forest and Fort Knox. Bernheim consists of approximately 14,000 contiguous acres which is mostly forested. West of Bernheim is the much larger Fort Knox that, even with significant parts used for military training, still has the largest blocks of intact forest in the entire region. These protected areas form a series of ecological hubs that, due to their size, provide valuable habitat for forest species. The proximity of these hubs to each other contributes to the ecological health of the entire area. In other words, with Bernheim and the forested parts of Fort Knox nearby, JMF is ecologically healthier and less isolated. To fully realize and strengthen this interdependency of natural areas over the western Knobs region, a dialogue should be established between Bernheim, Fort Knox, Metro Parks, and other agencies and organizations to promote ecological connectivity and long-term protection of the area's woodlands and natural areas.

As a beginning, this master plan looks at JMF's own collection of fragmented parcels and suggests certain strategies to improve ecological connectivity and cohesion throughout the immediate JMF area. As shown on the map of interior forest patches (Chapter 2, Project Context), significant amounts of privately owned forest land fall outside of JMF's current boundaries. To maintain the ecological health of JMF, it is critical these external forested areas be conserved. Otherwise, they remain vulnerable to uncontrolled development and, as seen by the logging practices on some adjacent parcels, poor management.

Key conservation areas are identified on the map titled Target Acquisition or Conservation Areas Outside of Jefferson Memorial Forest (on page 100). These areas possess a combination of characteristics that make them conservation targets and an important part of a larger JMF ecological continuum. Many strategies exist to protect these areas. Outright acquisition by Metro Parks is one way, and several ecologically important parcels adjoining JMF have been acquired through funding by the Kentucky Heritage Land Conservation Fund. Parcels will continue to be acquired for their ecological value and to enable the development of park facilities such as the new Welcome Center, campgrounds, and Environmental Education Center discussed earlier. However, outright purchase and acquisition of land adjoining JMF remains heavily contingent upon funding and the desires of private property owners. Alternatively, individuals can grant conservation easements on parts of their land and receive tax benefits. In addition, JMF neighbors can obtain grants and funding from various sources to improve their woodlands, wetlands, steams and pastures for ecological benefits. Other stewardship practices available to private landowners include sustainable woodland management, riparian buffer establishment and protection, good stormwater practices, and native plant gardening. This master plan strongly recommends that JMF facilitate local property owners' stewardship efforts on their own land. The diagram on page 101 summarizes some of the management and funding options available to achieving stewardship objectives.

It also should be mentioned that a conservation partnership between JMF and its neighbors will be vital to both the health of JMF and the value of private land. JMF is a great amenity to the immediate area – it helps the community maintain a more rural feel despite being so close to a major city and it provides protection from large scale commercial and residential development. It also provides open-space and passive recreation opportunities virtually right next door to hundreds of residents. In return, the private land holdings bordering JMF act as a buffer that extends the forest footprint outside of JMF boundaries. By working together, JMF and local property owners both stand to benefit immensely with this partnership.

View from Moreman's Hill toward Louisville



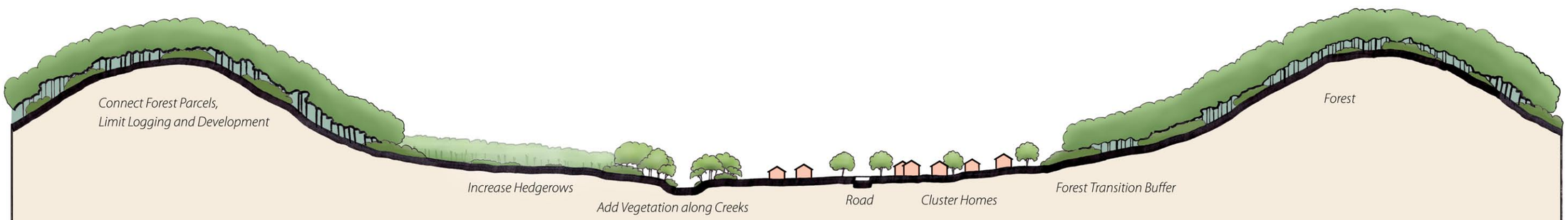
December 2008

Jefferson Memorial Forest

Target Acquisition or Conservation Areas Outside of Jefferson Memorial Forest

Protection and stewardship of the Target Acquisition or Conservation Areas will help maintain JMF's health and hopefully reduce unhealthy practices that have occurred along JMF's boundaries. Significant contribution to forest health will depend on the extent to which JMF can 1) increase its ecological connectivity internally between existing tracts and 2) improve external linkages to the larger protected areas to the south. Without such connectivity, animal movement to food, water, mates, and shelter is hindered, as are plants' ability to disperse their pollen and seeds in order to maintain healthy, genetically diverse populations. The Target Acquisition or Conservation Areas Map identifies key internal connections and begins to outline external linkages to the south along Claybank Creek, which flows into Knob Creek. The Knob Creek corridor with wooded ridges along both sides forms a primary ecological connection to the forested hubs of Fort Knox. Fort Knox's northern boundary is approximately 5 miles south of Claybank Creek near the existing JMF boundary, and its eastern boundary is about the same distance from Bernheim, making it an ecological stepping stone between JMF and Bernheim.

The Critical Natural Features map discussed earlier (see Project Context) shows a proposed State Nature Preserve. The area that it encompasses forms a vital core of large forest patches in the center of JMF that contains a good sampling of the critical features. Its designation as a State Nature Preserve would grant the highest form of land protection in the Commonwealth of Kentucky. The ecological value of this area merits such a designation, and its protection would ensure a future foundation for forest health throughout the region.



FORESTED KNOBS

- Connect and join fragmented forest parcels
- Curtail development on steep, erodable slopes and minimize clearing for new development
- Implement sustainable logging practices (on private land)
- Control the spread of invasive non-native plants and encourage proliferation of diverse native species
- Limit recreation to low-intensity activities

VALLEY BOTTOMS

- Increase native plant cover along creeks to slow and filter water, control erosion, and improve habitat
- To increase wildlife habitat and travel corridors, preserve and add hedgerows, allow fields to become fallow, and restore woodlands to marginal agricultural lands
- Minimize use of pesticides in farm pastures and residential lawns
- Implement methods to reduce and filter storm-water run-off from impervious surfaces - roads, drives, roofs
- Avoid building in flood plains, altering creek channels, diking, and ditching low areas
- Cluster or concentrate housing in selected areas to preserve farmland and forest
- Provide transition buffer between homes and forest; integrate native landscape with residences

PROGRAMS, INCENTIVES, GUIDELINES

- US Fish & Wildlife - Landowner Incentive Program, Wildlife Grants Programs, Partners Program
- USDA NRCS Programs
- Kentucky Department of Fish & Wildlife Programs
- Partnership for a Green City
- MSD Programs, Initiatives, Projects
- Cornerstone 2020 Comprehensive Plan Development Standards

LAND MANAGEMENT & STEWARDSHIP STRATEGIES

4.14 Cultural Resources

The JMF area has a rich cultural history summarized in Chapter 2 and thoroughly discussed in a supporting document titled "The Cultural History of Jefferson Memorial Forest, Jefferson and Bullit Counties, Kentucky" prepared by Corn Island Archaeology for this master plan study. Cultural resources, in their various manifestations, represent a bridge to the past from which people can derive a sense of connectedness to a place or region and use as a foundation for future endeavors. Because of their importance, cultural resources must be both protected and understood. The following strategies are outlined for the preservation and interpretation of cultural resources in and around JMF.

Abandoned shed on Pinquely Property

Resource Protection

- Inventory
  - Record known but currently unrecorded archaeological sites with the Office of State Archaeology, University of Kentucky.
  - Conduct a Phase I archaeological survey of the forest to compile an inventory of archaeological sites.
  - Conduct a literature review of old homestead sites and examine these areas in the field to identify potential significant historic archaeological sites.
- Site Evaluation
  - Conduct archaeological evaluations of known sites in JMF. (This is a management issue. Archaeological sites that are evaluated and found to be insignificant require no further consideration or protection under the law.)
  - Conduct evaluations by architectural historian of any newly acquired structures.
- Identify cemeteries around JMF and record data on gravestones. Use GPS to verify their location and enter data into Roots Web. In particular, veterans' graves should be identified, marked, and noted.
- Identity small family cemeteries (if any) in JMF and ensure the gravesites are maintained and stones repaired. Inscriptions should be fully recorded.
- Conduct an archaeological survey of tracts acquired since the 1981 survey, which includes 3,968 acres, much of which would probably be low probability steeply sloping hillsides. Survey should focus on ridge tops and valley bottoms.
- Update curation standards for archived materials.
- Place signage in the forest alerting public to the fact that collecting artifacts on public land is a violation of the law.
- Control erosion along trails and stream banks that intersect archaeological sites.
- Develop educational program that informs public of why it is important not to dig or collect in JMF and surrounding lands.
- Ensure that improvements in JMF (new facilities, trails, repairs, etc.) do not damage or compromise resources.
- Take appropriate measures to stabilize and prevent further deterioration or damage of resources in JMF.
- Look for opportunities to adaptively reuse historic buildings; the rehabilitation of the Mitchell School for the current Welcome Center is a good example.
- Collect Oral Histories: Many of the families in the region have been there since the nineteenth century. The memories associated with the cultural resources are just as important to document as the structures. (Adam King's oral history of Mabel Colvin is one example that could be followed.)

Resource Interpretation

A broader discussion of the interpretive program for JMF is provided in Section 4.15 of this Chapter. The following interpretive methods pertain mostly to cultural resources:

- Website/Booklet: Compile a brief written history of the settlement, early families, and cultural history of the JMF area. Regularly update website with additional history, land purchases, pictures, etc.
- Database: Begin and maintain a genealogical database of families who settled the area.
- Driving Tour: Prepare a pamphlet and map guiding the public on a driving tour of the forest, pointing out locations of historic or local interest.
- Trails: Incorporate signs presenting information on the cultural heritage of the forest, both historic and prehistoric.
- Exhibit Space: Display artifacts and photos depicting the cultural heritage of the area; the historic Mitchell Hill School (which is now occupied by the JMF Welcome Center) would be an excellent facility for an exhibit space/historic museum after the Welcome Center function is relocated to a new facility at a different site.
- Create informative displays in honor of recreational areas' namesakes (Tom Wallace, Paul Yost).
- Create an exhibit reflecting veteran numbers in Jefferson County, prominently displayed at the Welcome Center.
- Slide Show/Video: Prepare a slide show/video presentation on the rich prehistoric and historic heritage of the JMF area.
- Classroom Programs: Expand the current archaeological hands-on artifact program with additional activities and artifacts, both historic and prehistoric.
- Heritage Weekend: Plan a weekend public event to celebrate the history of the forest. Activities could include historic re-enactors, historic arts and crafts, storytelling, cooking; prehistoric artifact displays and hands-on activities (pottery making), Native American dancers, guest speakers, vendors, etc.

Paddock on Pinquely Property

4.15 Interpretive Program

Interpretation strengthens the connections between people and place. By broadening visitors' perceptions of the places they visit for recreation, renewal and learning, interpretation expands the capacity for people to understand and care for a place. It is therefore critical that an interpretive plan be developed for JMF and the surrounding landscape to foster greater awareness of the natural systems and human history that underlie the JMF experience.

Development of an interpretive plan should be directed by a set of clear goals and objectives. Goals are the foundation for the ensuing plan and might include all or some of the following:

Goal 1: Increase awareness of the natural and cultural history of JMF and convey the importance of protecting the resources that tell the story.

Goal 2: Build advocates for JMF and increase its visitation.

Goal 3: Foster the realization that JMF is part of a larger natural continuum as well as tied to a system of other regional parks, open spaces, nature preserves, and trails.

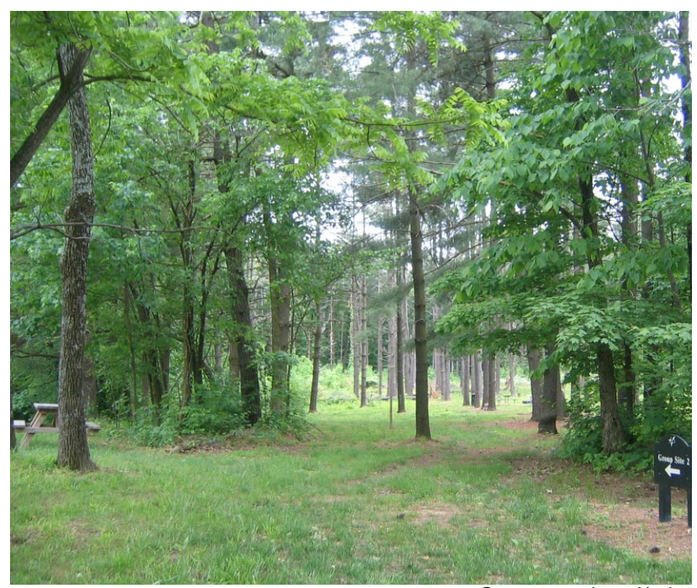
Goal 4: Provide a diverse set of learning experiences using a range of media.

Goal 5: Engage a wide audience composed of various ages, interests, and levels of experience.

Goal 6: Optimize the uniqueness of the various places in and around JMF while conveying consistent themes related to the local natural and cultural heritage.

Clearly, the goal of developing awareness about the park's resources must be combined with caretaking of these resources; education alone is not enough to meet the needs of the park. The interpretive system must encourage JMF visitors not only to understand its resources, but to value them and act to preserve them. The interpretive program should also encourage visitor exploration by clearly communicating through multiple techniques the range of experiences and resources available in the park, and rewarding exploration by providing a high quality recreational and learning experience.

Two important components will need to be considered in the development of an interpretive plan for JMF. The first is the overall interpretive concept from which themes and stories will grow. The second is the method of communication.



Group campsite at Horine

Themes and Stories

Concepts, themes, and stories are related ideas that guide the formation of interpretive messages. They provide a bridge between the "big picture" goals and the actual interpretive messages and exhibits that may eventually populate the landscape.

The opening clause in JMF's Mission Statement reads as follows:

> ***"To protect and enhance the regionally significant knobs ecology while promoting environmental stewardship and knowledge through nature study, education and outreach."***

This statement and ensuing clauses in the mission statement can be used as the conceptual basis for an interpretive plan from which themes and stories (sub-themes) are articulated. Within the context of what has been learned during this master plan, the following interpretive themes may be appropriate for JMF.

Theme 1. *Dynamics of Natural Systems*
The knobs terrain, its plant communities and animal populations comprise an ancient, evolving ecosystem of incredible complexity and beauty.

Theme 2. *People and Place Stories: Land and Livelihoods*
The land's resources have shaped lives, settlement patterns, and livelihoods for hundreds and thousands of years; the land will continue to influence activities and values into the future.

Theme 3. *Human Activity and Natural Processes*
While the land has influenced human habitation, human activity has also dramatically altered ecosystems and natural processes.

Theme 4. *Stewardship of our Natural Systems*
Natural systems in urban areas are sustained by our continuing commitment to their care.

Theme 5. *Natural Systems and Quality of Life*
JMF contributes to the region's quality of life by maintaining natural habitat, protecting drainages and water quality, providing recreational and educational opportunities, and allowing everyday contact with nature, life, and beauty.

Methods

Methods are the vehicles for communicating interpretive messages to the public. Methods range in scale and type from interpretive centers and facilities offering a wide variety of interpretive and orientation information, to naturalists stationed in the park, and brochures describing the park's cultural and natural resources. Each method or type of presentation has strengths and weaknesses for interpretation, and cost and program development considerations as well. Methods usually correlate to one of three different types of interpretive communication:

- Site-Based methods are organized around specific sites and resources and serve park visitors. Site-based approaches have the advantages of direct contact with resources and a receptive audience, but have limited reach since the audience must be in the park.
- General Outreach is communication with the public in an open, non-site specific context, such as brochure racks, displays and exhibits in public places, public mailings, and news media. General outreach reaches a broad audience but only a small portion of the audience may be interested in the information.
- Focused Outreach combines the identification of a target audience with programs specifically tailored to effectively reach that audience. Programs aimed at school kids and special interest groups are good examples of focused outreach technique.

Interpretation of JMF's natural and cultural resources will enhance the relationship between visitors and the setting and, more broadly, between Metro government and its constituents. Basically, communication about the importance of natural and cultural resources and the effects of collective and individual actions is a direct reflection of government's (and society's) attitudes about our environment. As a communication tool, interpretation will remain a critical element in the fulfillment of both JMF's and Metro Park's missions. JMF's interpretive plan—its goals, concepts and themes—will ultimately be a communication instrument shaped by continuing dialogue between city officials, park planners, managers, and the public.

Interpretive signage

Overlook with interpretive exhibits

4.16 Safety and Security

The safety and security of public places and lands is a difficult but critically important issue. While the terms are often used interchangeably, safety relates to the condition of being safe or protected from harm, injury or loss, while security implies measures taken to guard or protect against danger, loss or damage. Park facilities and operations are strongly influenced by both safety and security needs.

Building codes, design guidelines, rules on use, product liability, and insurance policy coverage all contribute to the development of safe and secure human places. Unsafe conditions are usually a result of deteriorated or poorly maintained facilities or the inability of facility upgrades to keep up with changing social and behavioral characteristics. In addition to developing new facilities per current safety requirements, park departments must continually augment safety and security measures for existing park infrastructure to ensure the public's health, safety and welfare.

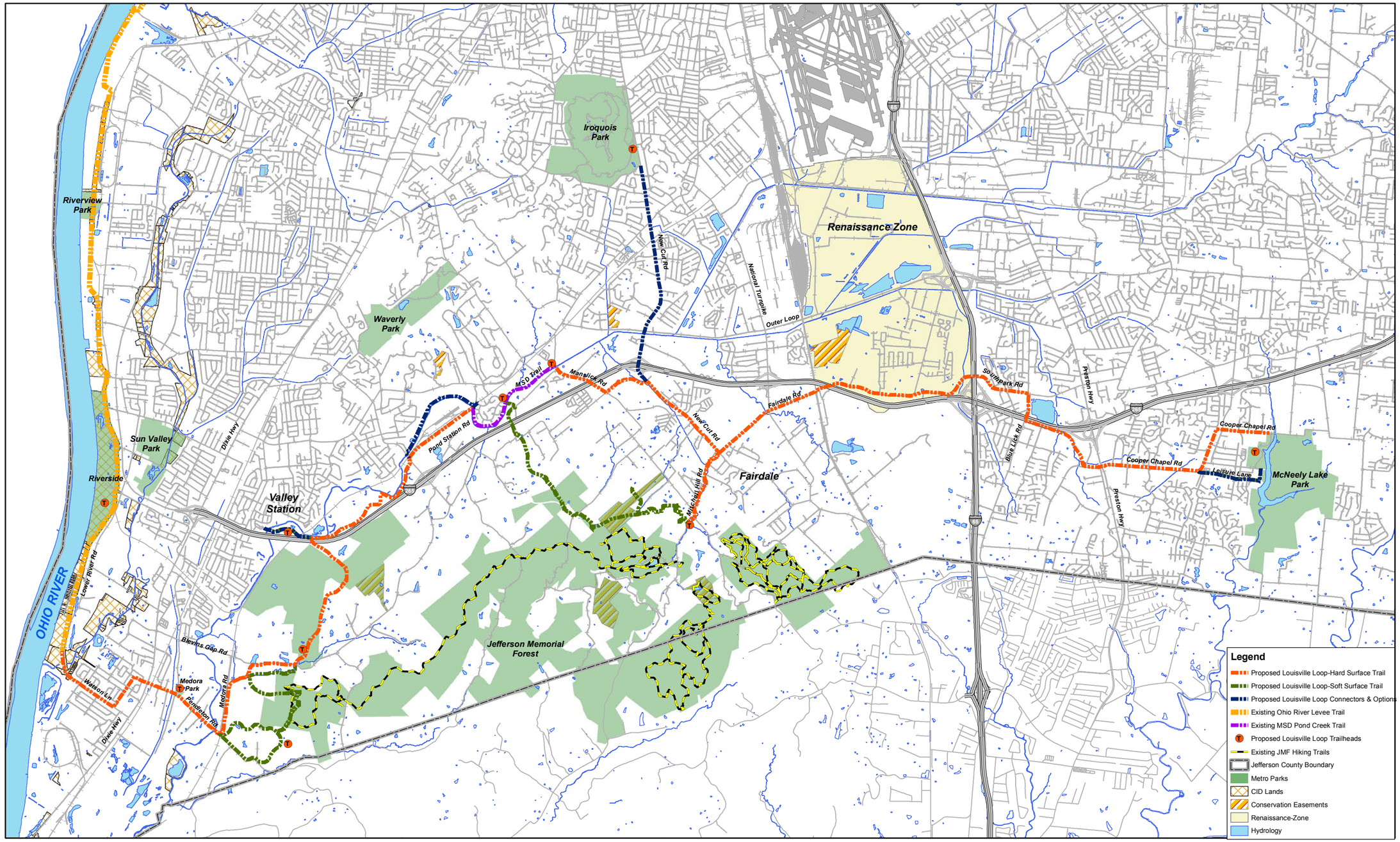
To a large extent, implementing and upgrading safety and security measures throughout Jefferson Memorial Forest will require an incremental and place-specific approach. It can be assumed the development of major new facilities, like a new Welcome Center or Environmental Education Center, will be carried out in full compliance with all safety-related codes and regulations as well as with all other safety and security parameters established by Metro Parks during the planning and design phases of the project. Incremental safety and security upgrades to existing facilities and activity areas ideally should be consistent with conditions at new facilities.

Improvements to existing activity areas should achieve multiple objectives of replacing deteriorated facilities, repairing degraded landscapes, and improving safety and security. Improvements to the park's trail system provides a good example how multiple objectives can be accomplished where the replacement or repair of damaged trails will improve visitor experience, reduce erosion, and improve trail safety. In some instances, safety and security concerns alone will drive improvements, such as at vandal prone locations or places with dangerous conditions. Moreover, a "lessons learned" approach, gained from what worked (or did not work) at certain locations, will provide direction for safety and security measures taken elsewhere.

Given the dispersed and varied nature of activities throughout JMF, park security will involve a combination of control and monitoring by park staff, public awareness of park rules and regulations, and appropriate conduct by park visitors. The following is a list of recommended safety and security measures, some of which have already been implemented for JMF:

- Local Ordinances, strengthened or added for specific issues and conditions: Stronger ordinances are especially needed to address prohibitions on the operation of off-road vehicles in the park, improper trail usage, and restrictions on trail use under certain circumstances. Penalties need to be assessed for violations.
- Park Ranger Program authorized by Metro Louisville: This program would enable a park ranger or designated park staff to issue tickets and enforce park-related ordinances.
- Permits and Fees for camping, fishing, parking, picnic shelter use, horseback riding, and mountain biking: Permits would likely require a fee and include the date and time of the visit and the name and car license plate number for the visitor. This information gives park staff an important record of who is in the park at any given time and instills in visitors a sense that their visit and activity has been documented.
- Monitoring by direct or other means: Direct monitoring includes watchfulness and oversight by park staff, rangers, volunteers, local law enforcement, neighbors, and even visitors. Taped recordings from surveillance cameras is a type of technical monitoring that has proven to be a deterrent to crime and vandalism in urban parks. Permits can also be considered a form of monitoring.

- Public Awareness/Visitor Information provided at specific locations and in park literature: Signage at activity areas is an easy and straight-forward way to convey information about appropriate conduct, restricted or prohibited activities, park hours, and other regulations on park use. This information can also be provided on park maps, brochures, permit forms, the JMF newsletter, and Metro Parks' website.
- Emergency Alert System at major activity areas: This may be unnecessary with the eventual provision of good cell phone service throughout the park. If cell phone service remains sporadic or nonexistent in places, such a system can be inexpensively set up, but it may be vulnerable to vandalism and false alarms.
- Driveway Gates at entry points to activity areas: Most of the access drives to activity areas are already gated, allowing park staff to close off areas to vehicles after hours. Instead of manually operated gates, electronically activated gates could be installed requiring visitors to use a pass card or code (obtained at the Welcome Center) to gain access to the activity area during regular park hours. While it may enable a greater degree of control and security, an electronic gate system is susceptible to vandalism and malfunctions, and may engender visitor animosity and frustration.
- Theft and Damage Resistant Infrastructure: Heavy duty, easily maintained, and serviceable building structures and other park fixtures are a must for JMF. Durability and damage resistance does not mean facilities should be unattractive and ugly however. New and upgraded facilities should combine durability, longevity, and attractive design.
- Arrest and Prosecution for illicit and illegal activity on park lands: JMF experiences abuses ranging from vandalism and theft to illegal dumping and tree poaching. Metro Parks' steadfast pursuit and prosecution of perpetrators and the publicity about this action can be an effective deterrent to crime.



November, 2008

Jefferson Memorial Forest

Louisville Loop Trail Concept Options

4.17 Louisville Loop Trail

On February 22, 2005, Mayor Jerry Abramson and Metro Parks announced a multi-million dollar, multi-year initiative to add thousands of acres of parkland, protected green space and trails to Louisville Metro's "greenprint." This effort builds upon the groundwork established by famed landscape architect Frederick Law Olmsted over a century ago, and advances Louisville's transformation into a City of Parks. The City of Parks initiative provides for:

- Acquisition and development of new park land, including
  - Floyd's Fork Greenway Project, an effort led by 21st Century Parks with support by Metro Parks to create a new system of parks, trails and open spaces along Floyd's Fork.
  - Park expansion throughout the southwestern Louisville Metro region, including land acquisition to increase Jefferson Memorial Forest.
- Creation of the Louisville Loop Trail, a paved pedestrian and bike trail of approximately 100 miles in length circumnavigating the city.
- Capital investment at an unprecedented level to improve existing parks.
- Myriad opportunities for citizens, organizations and partnering agencies to get involved.

One of the most exciting elements of the City of Parks initiative is the development of the Louisville Loop Trail around the outskirts of the city. In addition to connecting Louisville's diverse parks and neighborhoods, this path includes planned connections to Southern Indiana and surrounding Kentucky counties, offering significant new opportunities for recreation and alternative transportation. The Louisville Loop Trail will integrate the following trail components:

- **Floyd's Fork Greenway Project** – from Shelbyville Road to Bardstown Road (funded; planning underway).

- **River Road Corridor** – from downtown into the eastern suburbs (partially complete; additional planning underway).

- **Northeast Loop Corridor** – from the northern end of River Road to Miles Park on Shelbyville Road (planning underway).

- **Olmsted Parkways Multi-Use Paths** – a 10 mile path is planned along the historic Olmsted Parkway system (some funding; in preliminary planning phase).

- **Ohio River Levee Trail and Riverwalk** – over 25 miles of newly completed trail from downtown to Riverside, the Farnsley~Moreman's Landing in southwest Louisville.

- **Southwest Loop Corridor** – from Bardstown Road to Riverside, the Farnsley~Moreman's Landing, passing through McNeely Lake Park and Jefferson Memorial Forest.

The Southwest Loop Corridor - Proposed Alignments, Options and Connections

Routing and design recommendations for the Southwest Loop Corridor were developed in a study of the Pond Creek Watershed by Stantec and Environs Inc. for the Corps of Engineers and Metropolitan Sewer District. This study, completed in mid- 2008, identified potential trail routes for the Southwest Loop Corridor throughout the Pond Creek Watershed.

The Louisville Loop Southwest Loop Corridor has been divided into five segments each through a distinct geographic area. Following is a brief description of each trail segment:

- **McNeely Lake Park to Fairdale –**
  This portion of the Corridor will likely run west from McNeely Lake Park along Leisure Lane across Preston Highway through the historic Fishpool Plantation to Maynard Avenue and Blue Lick Road where it will cross under I-265 at an existing underpass. It will then travel north on Blue Lick Road for a short distance to South Park Road before turning west onto Fairdale Road and into the town of Fairdale. This segment of trail will include bike lanes and sidewalks as well as shared use path where possible.

- **Fairdale to Pond Creek –**
  The Southwest Loop Corridor is proposed to split into two routes in Fairdale with a "spur" branch continuing southwest along Mitchell Hill Road to the Jefferson Memorial Forest Welcome Center and the other branch running north along New Cut Road to Old New Cut Road where it will turn west to connect with Manslick Road. The New Cut branch will cross over I-265 at an existing overpass on Manslick Road to connect up with the existing Pond Creek Trail (constructed by the Metropolitan Sewer District). This segment of trail will include bike lanes and sidewalks as well as shared use path where possible. An equestrian trail would be integrated into both trail branches—from Fairdale to Pond Creek and from the new Welcome Center to Fairdale/New Cut Road.

  A trail connection is being considered from the intersection of New Cut and Old New Cut Roads running north along New Cut Road to connect the Louisville Loop to Iroquois Park and the Olmsted Parkways. This segment of trail will likely include only bike lanes and sidewalks.

  A possible trail connection could be developed to link the Jefferson Memorial Forest Welcome Center to the Pond Creek Trail via a trail traversing the relatively undeveloped hilly landscape through and skirting JMF. While some of this trail would be located on existing park land, much of its alignment would require the acquisition of land or easements through privately owned land. This trail, which would be soft and/or hard surface for hiking, biking, and equestrian use, would also access the future Environmental Education Center and Campground proposed in this master plan.

- **Pond Creek Trail –**
  The Metropolitan Sewer District (MSD) recently completed a trail along Pond Creek from Manslick Road to an existing railroad bridge just west of Lambourne Road. This trail has not yet been extended due to the difficulty of getting over or under the existing railroad bridge. The trail is intended for bicycles, horseback riders, and pedestrians and has two possible trailheads accessible from a potential park at a former sand and gravel pit on the north side of the Snyder Freeway.

  The Southwest Loop would continue west from the existing railroad bridge at the end of the MSD Trail by crossing over Pond Creek on a separate bridge and then following Pond Station Road through a commercial area to Stonestreet Road. This section of trail would include bike lanes and sidewalks as well as shared use path where possible. A more appealing option for this segment would be to find a way to cross over or under the existing railroad bridge and follow Pond Creek to Stonestreet Road. This optional route could include a shared use path with a separate equestrian trail and would pass directly by Pond Creek Stables.

  The Pond Creek Trail segment would continue west from Stonestreet Road along Pond Creek through mostly undeveloped land. It would pull away from the creek for a short distance to avoid additional railroad bridges and then return to the creek at an existing private underpass where it will cross under I-265 to re-enter Jefferson Memorial Forest. This segment of trail would include a shared use path with a separate equestrian trail.

  An option in this area would connect the Southwest Loop to Valley Station through an existing sand pit that could be restored for use as a park. This area could also be used as a trailhead.

- **Pond Creek to Jefferson Memorial Forest –**
  After crossing under I-265, the trail will enter the Moreman's Hill section of JMF where it crosses through Dodge Gap and then continues south to the proposed Jeff Jack Resource Management Center on the Pinquely Property. A public campground, trail head, picnic area and parking are all proposed at the center as discussed in this chapter. This segment of the trail will include a shared use path with a separate equestrian trail.

  After leaving the Moreman's Hill section of JMF the trail will turn west and follow Belvin's Gap Road for a distance until it veers off to the south and crosses open fields on the east side of Medora Road. This segment of the trail will include a shared use path.

  An optional spur or branch on this segment would provide a soft-surface trail for horses and hikers along Cane Run Creek to access the Scott's Gap Section of JMF and a proposed Equestrian Center adjoining the Scott's Gap Preserve.

- **Jefferson Memorial Forest to the Ohio River Levee Trail –**
  The trail would leave the southwest corner of Jefferson Memorial Forest near the intersection of Medora road and Pendleton Road, following Pendleton Road all the way to the Dixie Highway where there is an existing controlled intersection. After crossing the Dixie Highway the trail will turn south along a frontage road until it reaches Watson Lane where it continues west to connect up with the Ohio River Levee Trail.

  This segment of trail will include bike lanes and sidewalks as well as shared use path where possible.

The Louisville Loop (Southwest Loop Corridor) through Jefferson Memorial Forest

Building upon trail route recommendations provided in the Pond Creek Study, the JMF planning team was able to focus on the routing of the Southwest Loop Trail immediately adjacent to and through JMF. Potential Loop Trail routes near and through JMF were developed through GIS map analysis, site reconnaissance, and planning team/ Metro Parks interaction over the course of the master plan project.

Several issues were considered in developing a route for the Southwest Loop in JMF. Site factors influencing the trail route included vegetation cover, soils and geology, steep terrain, highway crossings and major intersections, railroad crossings and stream crossings. The sensitive ecology, soils and steep terrain of the Jefferson Memorial Forest were a major determinant in selecting a route for the trail. Several prospective routes were discounted due to on-the-ground discovery of features that were not apparent on the mapping. Topographic features on private lands could often only be evaluated using GIS data since land owner approval could not always be obtained for site visits.

Additional factors in the routing of the Loop Trail included:

- The location of parks, neighborhoods, shopping and commercial areas, and schools were all considered in the development of trail route options. Points of interest like interesting natural features and historic sites also were evaluated.
- Rights of way, utility easements and overall land ownership patterns were analyzed to identify publicly owned land that could be used for trail routes to avoid or reduce land acquisition costs.
- Future roadway improvements that could impact or provide opportunities for the project were identified from the KIPDA Horizon 2030 Transportation Improvements Program and include:

- Widening Cooper Chapel Road from McNeely Lake Park to Preston Highway with bicycle and pedestrian facilities.
- Widening Blue Lick Road from Preston Highway to the County line with pedestrian facilities only. In order to provide for the Louisville Loop, this project should be revised to include bicycle facilities at least on the short stretch from Maynard Ave. under I-265 to South Park Road.
- Widening South Park Road eastward from Blue Lick Road to Shepherdsville Road with pedestrian facilities only. This project could impact the intersection at South Park and Blue Lick Road.

  (The scope of these projects should be monitored as they move forward to ensure that provision for the Louisville Loop is included in their design.)

The results of this analysis were used to identify possible routes for the Southwest Loop amidst the sensitive knobs landscape and the many roads, streams, homes, and businesses throughout the area. The figure on page 106 shows the route that is the strongest candidate for the Southwest Loop through and near JMF. This route is generally consistent with the route described above for the Fairdale to Pond Creek, Pond Creek, and Pond Creek to Jefferson Memorial Forest trail segments.

Although it would be desirable to route the Loop Trail through JMF, no viable east-west route could be established through the park. After considering several options, the extremely steep slopes and unstable soils in and around JMF basically proved too much of an obstacle to an east-west trans-park route. This terrain has similarly deterred the development of an east-west road. The trail route discussed above is seen as the best and most viable route in the vicinity of JMF for the fairly wide cross-section and moderate gradients required for the Louisville Loop.

Trail Types

The trail type and potential usage of different trail segments was influenced by existing topography, hydrology, road right-of-way widths, land use, and future roadway improvements. As mentioned, trail routing and type within Jefferson Memorial Forest was also based on slope, soil, and vegetation conditions. This analysis helped to determine whether a particular trail segment could be a shared use path, shared use path with equestrian trail, soft-surface trail, or a bike lane and sidewalk.

The suitability of trails for equestrian use was also evaluated with consideration of nearby roads, trail corridor width and vertical clearance. Equestrian trails are proposed as an addition to multi-use trail segments along stream corridors and in natural areas. Built as part of a multi-use trail, the equestrian trail would be a five foot wide soft-surface trail built adjacent to the paved multi-use trail with three feet of clearance on either side and at least twelve feet of vertical clearance.

Trail at Scott's Gap

JMF trail marker

Trail Cross Sections
Six different trail cross-sections have been developed for the Southwest Loop to correspond to topographic conditions and the trail type/usage deemed appropriate for each trail segment. The Louisville Loop Trail Design Standards Manual establishes design criteria for these trail cross-section types. Illustrative drawings of the different cross-sections are provided on page 111 for the following trail types:

- **Shared Use Path** – this path type will serve bicycles and pedestrians with a twelve foot wide paved surface with a center-line stripe. The sides of the path will have a minimum clearance of eight feet to keep vegetation from encroaching on the path and a minimum vertical clearance of ten feet to prevent bicyclists from hitting overhead obstacles.

- **Shared Use Path along Roadway** – this path type will serve bicycles and pedestrians with a twelve foot wide paved surface with a centerline stripe offset a minimum of ten feet from the edge of the roadway. All clearance parameters are the same as for the Shared Use Path above.

- **Shared Use Path with Equestrian Trail** – this path type will serve bicycles, pedestrians, and horses with a twelve foot wide paved surface with a centerline stripe plus a separate five foot wide soft surface trail next to it. The sides of the path will have the same clearance as mentioned above plus a minimum vertical clearance of twelve feet to prevent equestrian riders from hitting overhead obstacles.

- **Shared Use Path on Slopes** – this path type will serve bicycles and pedestrians with a twelve foot wide paved surface with a centerline stripe. All clearance parameters are the same as for the Shared Use Path above. This trail section will require additional surface drainage measures to prevent washouts and erosion.

- **Soft Surface Trail** – this path type will serve bicycles, pedestrians, and horses with a ten foot wide compacted aggregate surface. All clearance parameters are the same as for the Shared Use Path with Equestrian Trail above. This trail section will require additional surface drainage measures to prevent washouts and erosion.

- **Bike Lanes & Sidewalks** – this path type will serve bicycles and pedestrians with a five foot bike lane along the edge of the roadway plus a six foot wide paved sidewalk offset three feet from the edge of the road. The sides of the path will have the same clearance as mentioned above plus a minimum vertical clearance of eight feet to prevent pedestrians from hitting overhead obstacles.

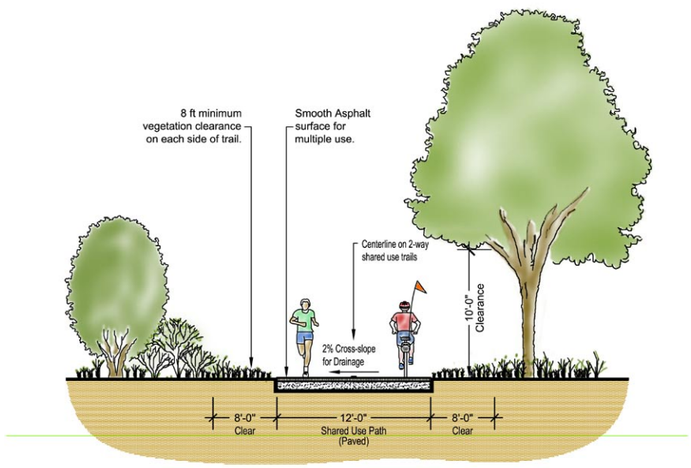
Trailheads and Amenities
The conceptual trail plan also considers potential locations for trailhead access and parking. Since the trail will interface with many existing parks and other facilities, the shared use of certain existing parking areas and amenities is proposed.

Major trailheads for the Southwest Lopp are proposed at existing parks including McNeely Lake, Iroquois Park, Jefferson Memorial Forest, and Riverside/ Farnsley~Moreman's Landing where there are already parking, restrooms, picnic areas and other facilities. Other minor access points such as at schools, shopping centers, government centers and businesses could supplement the park site locations and should be explored. Minor access points like schools and shopping areas may not include amenities such as restrooms and picnic areas.

Landscape Treatment
Landscape treatment along the trail should be kept simple, safe and easy to maintain. Clearing through wooded areas should be limited to only what is necessary for trail construction, safety and maintenance. New plants should be drought tolerant native species and sited in the appropriate location for that species (i.e. riparian plants along creeks, emergent plants in wetlands, etc). Mown areas next to the trail should be kept to a minimum with perhaps a six to eight foot wide strip on either side of the path mown on a semi annual basis (e.g., twice per year).

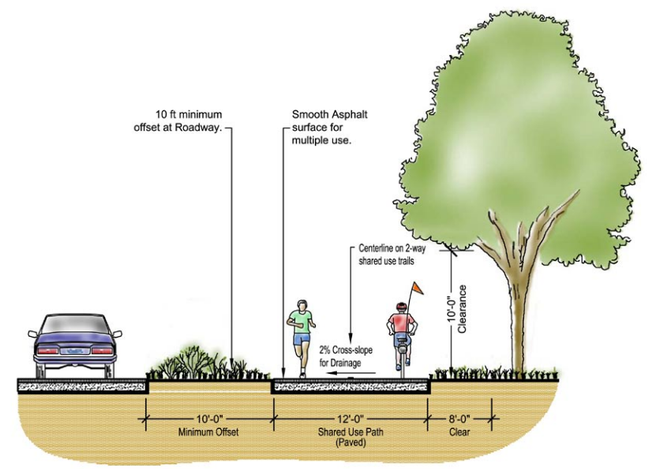
Invasive species will be an ongoing problem along the trail. Invasive plants will need to be removed and controlled as much as possible with native plantings introduced to take their place.

Traffic Control and Signage
Traffic control and signage will be provided according to AASHTO standards and the Manual of Uniform Traffic Control Devices (MUTCD). Additional identification and way-finding signage will be provided according to standards for the Louisville Loop that are being developed by Metro Parks.



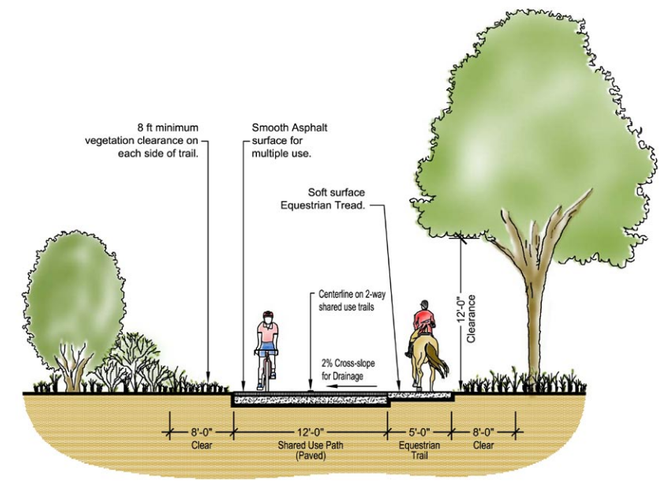
Shared Use Path

- The typical path will be a 12 ft. wide paved path for shared uses.
- The path will have a center stripe for two-way traffic allowing two people to comfortably walk abreast in each direction.
- All vegetation will be kept clear of the trail by 8 ft minimum off each side.
- Tree branches will be pruned to allow 10 ft clear height over the path.
- A minor slope of 2% accross the path will allow drainage.



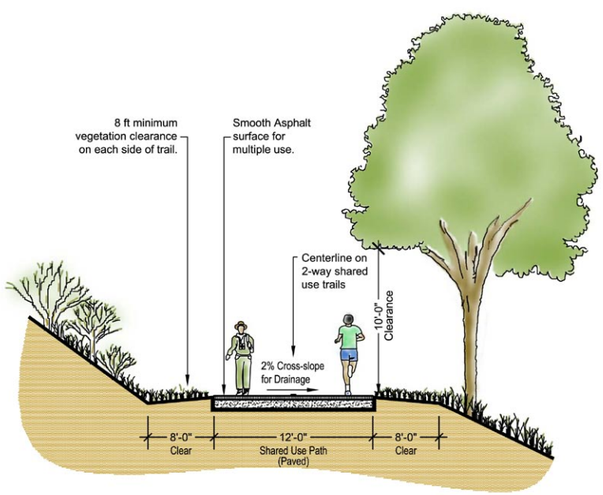
Shared Use Path along Road

- The typical roadside path will be a 12 ft. wide paved path for shared uses.
- The path will be offset from the road a minimum of 10 feet.
- The path will have a center stripe for two-way traffic allowing two people to comfortably walk abreast in each direction.
- All vegetation will be kept clear of the trail by 8 ft minimum off each side.
- Tree branches will be pruned to allow 10 ft clear height over the path.
- A minor slope of 2% accross the path will allow drainage.



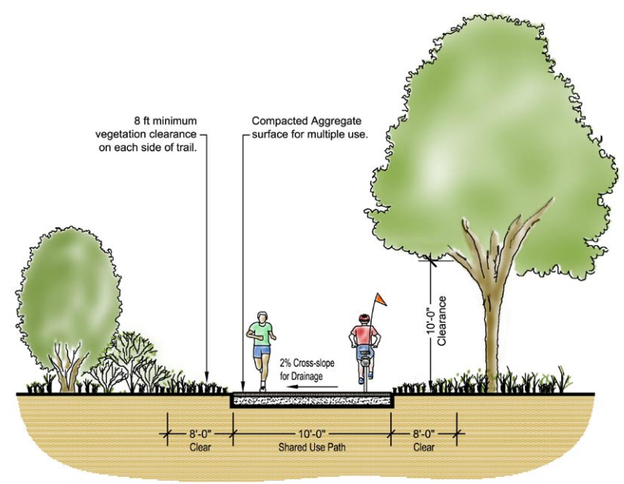
Shared Use Path with Equestrian Trail

- The typical path with horse trail will be a 12 ft. wide paved path for shared uses with an adjacent 5 ft wide soft surface horse trail.
- The paved portion of the path will have a center stripe for two-way traffic allowing two people to comfortably walk abreast in each direction.
- All vegetation will be kept clear of the trail by 8 ft minimum off each side.
- Tree branches will be pruned to allow 12 ft clear height over the horse trail.
- A minor slope of 2% accross the path will allow drainage.



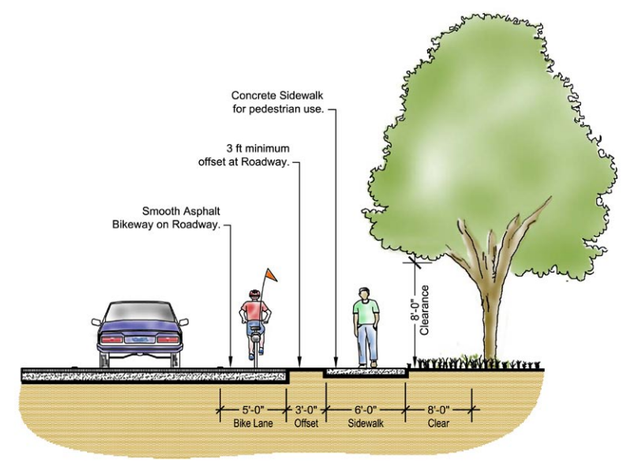
Shared Use Path on Slopes

- The typical path on a slope will be a 12 ft. wide paved path for shared uses.
- The path will have a center stripe for two-way traffic allowing two people to comfortably walk abreast in each direction.
- All vegetation will be kept clear of the trail by 8 ft minimum off each side.
- Tree branches will be pruned to allow 10 ft clear height over the path.
- The path will be cut into the slope with a drainage swale on the uphill side.
- A minor slope of 2% accross the path will allow drainage to the downhill side.



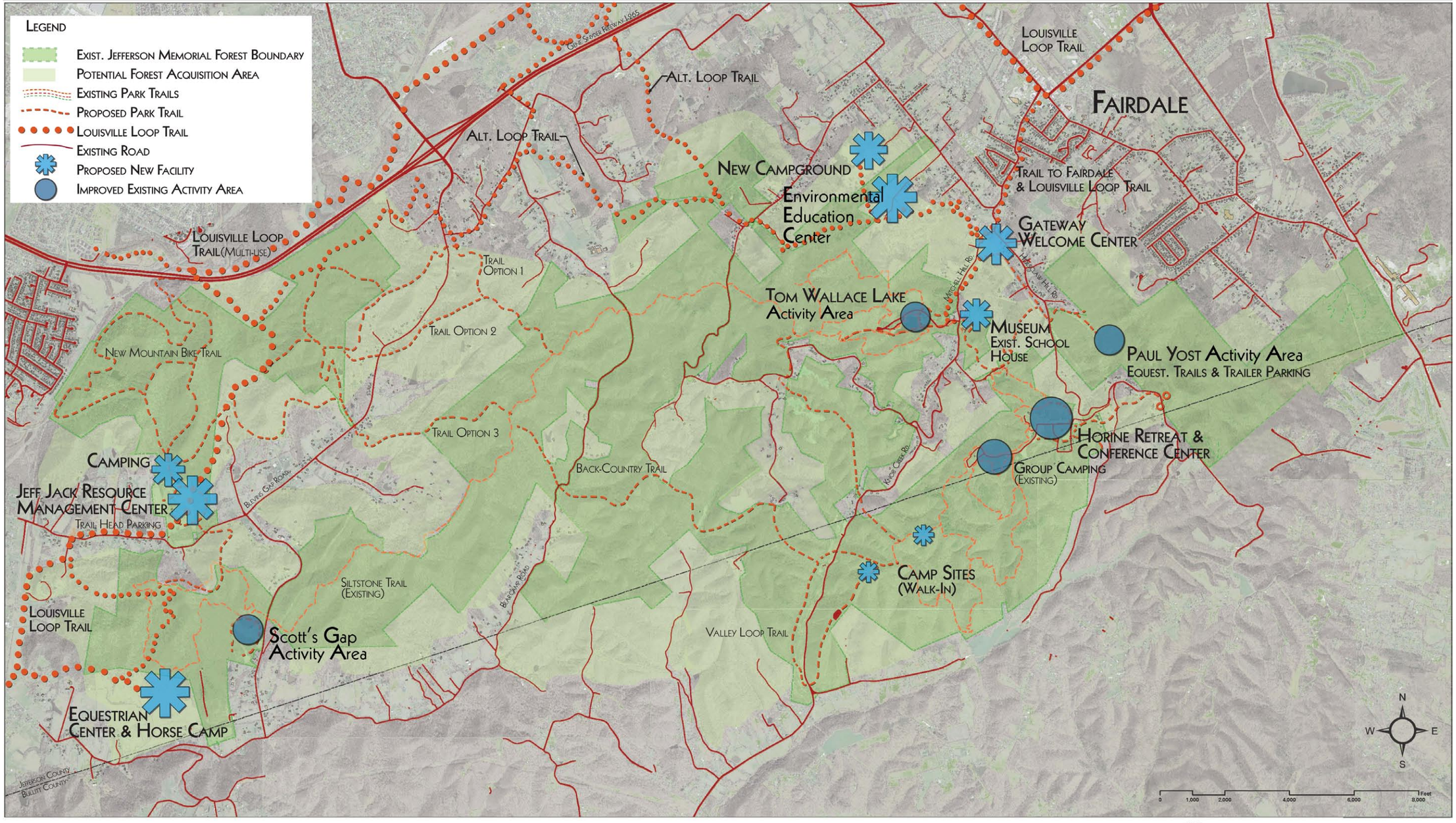
Soft Surface Trail

- The typical path will be a 10 ft. wide aggreagte path for shared uses.
- The path will allow two people to comfortably walk abreast in each direction.
- All vegetation will be kept clear of the trail by 8 ft minimum off each side.
- Tree branches will be pruned to allow 10 ft clear height over the path.
- A minor slope of 2% accross the path will allow drainage.



Bike Lanes and Sidewalks along Road

- The typical roadside walk will be a 6 ft. wide concrete sidewalk for walking.
- The walk will be offset from the road a minimum of 3 feet.
- The sidewalk will allow two people to walk abreast comfortably or pass in opposite directions.
- All vegetation will be kept clear of the walk by 8 ft minimum.
- Tree branches will be pruned to allow 8 ft clear height over the walk.
- A 5 ft wide bike lane will be provided on the adjacent roadway.



Jefferson Memorial Forest **Master Plan**

4.18 Access and Way-Finding

Among the obstacles to increased visitation and enjoyment of JMF is the difficulty of first finding the park and then in finding one's way around the park on the network of winding local roads. The following actions are suggested to improve way-finding to and through the park as well as to increase awareness of JMF's many assets and attractions:

- Develop a comprehensive directional signage system, to be installed along local roads and highways, for guiding visitors to JMF's recreational destinations and amenities.
  - Position signs at key crossroads, intersections, and highway off-ramps where they can be seen and read by motorists. Use a sign size and lettering commensurate with travel speed, roadway scale, and distance from viewer.
  - Create a distinctive sign style and format, consistently applied to all signs, that perhaps includes a logo or graphic image for strong visual identification. For example, signs could incorporate a graphic representation of the knobs landform, the most conspicuous and identifiable feature of JMF.
- Develop an easy to read road map for JMF that enables visitors to understand and navigate the road network in reaching JMF destinations. Make maps available at the Welcome Center.
- At major trail heads and activity areas, post maps of the entire JMF park showing other activity areas and attractions relative to the reader's location.
- In Fairdale (and Valley Station) have JMF maps posted, if possible, in public buildings and at certain businesses to promote JMF as a nearby attraction and to show how easily it can be reached. Maps to/of JMF should also be posted at other Metro parks.

The local roads to and through JMF have operational and design deficiencies that require analysis and remedies beyond the scope of this report. Improvements should certainly be made at some of the driveway intersections that access JMF facilities and recreational areas. These improvements will need to be coordinated with Louisville Metro's transportation and public works agencies.

Local roads remain essential to accessing JMF's dispersed attractions, and as such, local roads are part of how JMF is experienced. Improvements to these roads should achieve a broader range of objectives than just basic safety and operational benefits. Road improvements can integrate various aesthetic, multi-modal, and environmental enhancements. These enhancements will reduce adverse impacts on park resources and heighten the experience of JMF visitors. Following is a brief list of considerations that should be pursued by Metro Parks if and when local road improvements are planned:

- Incorporate pedestrian and bike trails (or lanes) into the roadway right-of-way (see discussion on the Louisville Loop Trail in this Chapter).
- Design roadside drainage systems to remove or capture pollutants from roadway run-off.
- Develop a landscape treatment that improves roadway aesthetics and the overall visual environment for travelers and adjacent residents:
  - Create continuity and unity with JMF lands.
  - Plant trees across open exposed front yards and field frontages.
  - Install vegetation screening and buffers across blighted or unattractive landscapes.
  - Remove or clear vegetation that may be blocking vistas and views.
- Design structures (culverts, walls, barriers) to fit with the setting.
- For road reconstruction and improvements, keep clearing and grading along roadsides to a minimum; limit the amount of disturbance in the adjacent landscape.
- Restore disturbed areas with native plants suited to the location and setting.
- Keep pavement widths (lanes and shoulders) to a minimum.
- Incorporate traffic-calming techniques into the design.

Keys Ferry Road

Example of directional sign with "knobs" image

RECOMMENDATIONS
EXAMPLES OF GATEWAY COMMUNITIES

GATEWAY TOWN

Bayfield, Wisconsin

NEARBY PARK OR RECREATION AREA

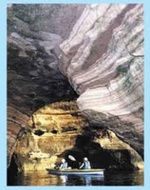
Apostle Islands National Lakeshore on Lake Superior

PARK RECREATIONAL ACTIVITIES

Sailing, boating, kayaking,
Fishing
Hiking & beachcombing
Camping
Swimming & scuba diving
Sightseeing
Nature enjoyment & study
Historic interpretation
Biking

GATEWAY BUSINESSES & ATTRACTIONS

Dining & Lodging
Summer Garden Tours
Marinas, boat rental & supplies
Shops & galleries
Fishing tours
Theater & music
Local arts, crafts, produce
Farm & orchard tours
Bike tours & benefit rides



GATEWAY TOWN

Nashville, Indiana

NEARBY PARK OR RECREATION AREA

Brown County State Park & Hoosier National Forest in south-central Indiana

PARK RECREATIONAL ACTIVITIES

Hiking & biking
Camping
Fishing and hunting
Sightseeing
Wildlife viewing
Nature enjoyment
Environmental Education Camps
Horseback riding
Historic interpretation

GATEWAY BUSINESSES & ATTRACTIONS

Dining & Lodging
Art galleries - "Art Colony of the Midwest"
Retail shops
Theater & music
Art studio tours
Benefit bike rides & runs
Seasonal festivals
Historic building tours

GATEWAY TOWN

Grand Rivers, Kentucky

NEARBY PARK OR RECREATION AREA

Land Between the Lakes Recreation Area in southwestern Kentucky

PARK RECREATIONAL ACTIVITIES

Water sports
Hiking & biking
Camping
Fishing and hunting
Sightseeing
Wildlife viewing
Nature study & enjoyment
O.R.V. trails
Horseback riding

GATEWAY BUSINESSES & ATTRACTIONS

Dining & Lodging
Marina & Resorts
Retail shops
Outdoor outfitter & supplies
Boat rental & supplies
Music & theater
Seasonal festivals and celebrations

4.19 Fairdale as Gateway to JMF

The small rural community of Fairdale lies near the east end of Jefferson Memorial Forest. Local roads travel to and from JMF through Fairdale, carrying a majority of park visitors into or near the community on a regular basis. The Fairdale Neighborhood Plan acknowledges the continued presence of this visitor traffic and goes on to promote the concept of Fairdale becoming the "Gateway to Jefferson Memorial Forest." The gateway role for Fairdale has several potential benefits including a stronger community identity, economic revitalization, land use control, and added incentives for infrastructure improvements.

Examples of successful gateway communities near recreational areas are provided on the opposite page. Like these and other gateways, Fairdale will need to develop its own identity and associated attractions and assets. Establishing a strong partnership with Metro Parks and JMF administrators will be crucial to Fairdale's success. The following strategies are offered toward achieving Fairdale's goal of being the gateway to JMF.

Strategies to Reinforce Fairdale's Gateway Identity:

- Tie Fairdale's character and atmosphere to the JMF park experience.
- Protect and enhance Fairdale's natural and cultural assets; highlight its unique qualities and heritage.
  - Natural areas: creeks, wetlands, woods
  - Parks and recreation areas
  - Historic buildings and places
- Establish links between park activities and gateway businesses.
  - Camping, hiking, biking ⟷ Supply stores
  - Equestrian center and trails ⟷ Tack shop
  - Sightseeing trips ⟷ Restaurants and shops
  - Team building programs and retreats ⟷ Lodging
- Coordinate and combine Fairdale and JMF events.
  - Festivals and fairs
  - Benefit runs, walks, rides
  - Celebrations and special events
  - Natural resource management activities
- Follow through on the Fairdale Neighborhood Plan recommendations.
  - Vehicle and pedestrian circulation (esp. trail between Fairdale and JMF)
  - Street and infrastructure improvements
  - Development and design standards
  - Programs and grants supporting Heritage Tourism, Rural Tourism, Historic Preservation, Resource Conservation and Protection
  - Partnerships among local organizations, agencies, and institutions
- Commission a comprehensive Master Development Plan for the Fairdale Village Core, integrating:
  - Economic revitalization and marketing program
  - Design guidelines for street and road improvements
  - Design recommendations for new and renovated buildings
  - Land use criteria and guidelines
  - Resource protection and enhancement
  - Funding sources

5. IMPLEMENTATION STRATEGIES

5.1 Project Phasing

5.2 Project Funding

5.3 Partnering

5.4 Estimate of Probable Construction Costs

5.1 Project Phasing

The sequence or phasing of major improvements at JMF must be considered in the context of funding, visitor experience, management objectives, and community support. Improvements that garner "more bang for the buck" obviously should be given higher priority over improvements and projects that, while needed, would generate modest benefits or lack widespread appeal. Initial projects that achieve multiple benefits, widespread acceptance, and adequate funding can be strategically leveraged to boost JMF's popularity and build support for later projects.

The prioritization of projects at JMF is problematic because many improvements seem to have so much urgency and pent-up need. However, given limited resources and the competition for funding of park and recreational projects elsewhere, improvements at JMF will need to occur incrementally as momentum builds to carry out later projects. The following development sequence for the major projects discussed in this report has been developed by Metro Parks to achieve the corresponding objectives.

No. 1: New Welcome Center

- To establish an easily found and strong "gateway" marker for JMF.
- To assert the Center's role as primary control point, information source, permit center for the park.
- To provide improved interpretive exhibits, expanded gift shop, and comfortable gathering spaces for visitors.
- To enable a single arrival point where visitors, if they choose, can park and hike to other activity areas without driving.

No. 2: Environmental Education Center

- To accommodate the high demand for popular education programs and to increase participation.
- To advance partnerships with other organizations and agencies who have environmental ed. programs and agendas.
- To increase JMF's appeal, relevance and revenues.
- To establish JMF as the region's pre-eminent venue for environmental education.

No. 3: New Campground

- To accommodate the high demand for camping facilities at JMF.
- To improve the camping experience (by moving away from airplane noise at Horine).
- To increase JMF revenues through camping fees.
- To compliment the proposed environmental education center located nearby; tent cabins or cabins at the campground could provide overnight accommodations for multi-day environmental education programs.

No. 4: Jeff Jack Resource Management Center (Selected Elements)

- To anchor the west end of the park with a major activity area/ gateway element.
- To increase momentum for resource management within the park.
- To increase environmental stewardship and conservation efforts on adjacent private lands.
- To strengthen partnerships with other educational institutions, especially by promoting JMF as a venue for environmental research and field labs.
- To generate revenue (from camping, picnic shelter rentals, trail-head parking, etc.).

No. 5: Tom Wallace Lake Activity Area (Selected Elements)

- To stabilize damaged areas and reverse environmental degradation.
- To better serve visitors at this very popular area.
- To justify user fees for picnic shelter rental, parking, etc.
- To provide activities for campground users and enhance the park's overall recreational value.

No. 6: Equestrian Center

- To provide a much needed facility for a popular regional activity.
- To increase JMF's range of recreational amenities, boosting the park's appeal.
- To expand JMF's range of community partners.
- To increase revenues from user fees.

No. 7: Paul Yost Activity Area

- To provide much needed visitor amenities.
- To repair damaged and eroded areas.
- To justify increased user fees.
- To bolster JMF's reputation as place for equestrian trails.

No. 8: Horine Retreat and Conference Center

- To accommodate the popular Team Building Program as well as retreats and conferences.
- To support the Forest Fest and other similar events.
- To justify increased fees, which generate revenue.
- To take some of the burden off of Tom Wallace Lake for group picnics, family reunions, outdoor birthday parties, etc.

No. 9: Scott's Gap Activity Area

- To compliment this beautiful setting and increase visitor use at the park's west end.
- To justify user fees for trail head parking, shelter rental.

The acquisition of private properties will be necessary to develop the new Welcome Center, Environmental Education Center, Campground, and Equestrian Center. Regardless of the sequencing above, the properties for these proposed facilities should be purchased as soon as funding allows.

Circumstances will mandate that certain repairs and improvements receive immediate attention. For example, shelter replacement and erosion control measures at Tom Wallace Lake and Paul Yost could occur well before the Welcome Center and Environmental Education Center are developed. Also, major projects such as the Education Center and Campground conceivably could be developed during the same time period. The sequence of projects should remain flexible as conditions warrant.

5.2 Project Funding

Implementation of the proposed improvements and projects identified for JMF will require funding. Among the potential funding sources for capital improvements and property acquisition are the following:

- Louisville Metro General Fund: typically applied to capital projects and land acquisition, but recent budget shortfalls may make this a limited resource.
- Louisville Neighborhood Development Funds: available through Council Members' discretionary funds and sometimes used for small construction projects.
- Metro Bond Measure: usually targeted to capital construction projects and occasionally land acquisition; receives better public reception in stronger economy.
- Community Development Block Grants: municipal and county recipients of this federal funding must apply money to certain projects meeting specific objectives; grants have been used for some Louisville Metro Parks construction projects, but funds probably cannot be used for regional parks.
- Land and Water Conservation Fund: this federal grant program is applied to recreation projects but is not appropriate for land acquisition; grants have been limited, but will hopefully increase under the Obama Administration.
- National Recreational Trails Program: this is another federal program providing grants specifically for trail development, maintenance, and interpretive components.
- Kentucky Heritage Land Conservation Fund: state moneys that can be used to acquire lands having natural resource value.
- Private Donations from individuals and local foundations: usually targeted to the acquisition of land needed for a specific purpose or project.
- Forest Legacy Funds: federal money allocated through the Kentucky Division of Forestry for land acquisition, resource protection, and restoration.
- Federal Transportation Funds: several programs and grants provide money for multi-use trails and road corridor enhancements (trails, walks, landscaping, interpretive signage, resource protection).
- Louisville Parks Foundation: this established foundation could receive contributions specifically targeted to improvements at JMF; a "Friends of JMF" group could be created to facilitate this.
- Park User Fees: for camping, fishing, parking, and horseback riding, and for education and team building programs; these fees provide a limited source of revenue consumed mostly by maintenance and operations, with perhaps some residual for small improvement projects.

5.3 Partnering

Stewardship of Private Lands

Human activities on privately owned lands bordering JMF will continue to affect the park's natural ecology. Metro Parks should therefore advance a stewardship program encouraging private landowners to protect and restore natural resources on their land. This program could be structured according to major watershed basins throughout the park area in response to the different landscape characteristics, management issues, and community make-up in each watershed.

This stewardship program should ultimately be led and perpetuated by residents and land owners neighboring JMF. Each watershed could have a "stewardship captain" or core group of individuals who would organize events, disseminate information, and advise their neighbors about resource management and protection on private lands. Metro Parks and JMF staff would continue to be an active partner with these watershed-based stewardship groups surrounding the park.

Given Metro Park's finite resources, other revenue sources should be tapped to launch and continue a stewardship program. The following state and federal programs provide financial incentives, support, and guidance for the protection and restoration of natural resources on private lands:

- U.S. Fish and Wildlife Service, Partners for Fish and Wildlife Program.
- U.S. Fish and Wildlife Service, Wildlife and Sport Fish Restoration Programs, Land Owner Incentive Program.
- U.S. Department of Agriculture, Conservation Reserve Program, and Conservation Reserve Enhancement Program.
- U.S. Department of Agriculture, Natural Resources Conservation Service, Conservation Programs.
- U.S. Forest Service, Forest Health Protection Programs.

JMF Strategic Partners

Local organizations, businesses, schools, and government agencies should all be enlisted as strategic partners in the implementation of projects and improvements for JMF. These partners will be instrumental in gaining widespread support, generating revenue, and contributing services, assets and knowledge toward fulfilling JMF's development and operational objectives. Having already engaged some of these groups, Metro Parks and JMF staff should continue to build a coalition from among the following list of partners:

Community Organizations:

- Audubon Society
- Beckham Bird Club
- Boy Scouts of America
- E-Corps/Youth Build
- Fairdale Lions Club
- Girl Scouts of America
- Kentucky Herpetological Society
- Kentucky Mountain Bike Association
- Kentucky Trail Rider's Association
- Louisville Astronomical Society
- Louisville Orienteering Club
- Louisville Chamber of Commerce
- Partnership for a Green City
- Raptor Rehab of Kentucky
- Southwest Dream Team
- Sierra Club
- Trust for Public Land
- Nature Conservancy

Schools:

- Jefferson County Public Schools
- University of Louisville, Center for Environmental Education
- University of Kentucky
- Bellarmine University, Thornton School of Education
- Male High School
- Fairdale High School

Agencies:

- Kentucky Department of Fish and Wildlife Resources
- Kentucky Division of Forestry
- Louisville Metro Council Districts
- Louisville Metro Cultural Consortium
- Louisville/Jefferson County Environmental Trust
- Mayor's Office of Special Events
- Metropolitan Sewer District
- Louisville Metro Operation Brightside
- Louisville Metro Solid Waste Management
- Jefferson County Soil and Water Conservation District
- USDA Natural Resources Conservation Service
- U.S. Forest Service

Institutions:

- Louisville Science Center
- Louisville Zoo
- Bernheim Arboretum and Research Forest
- Louisville Olmsted Parks Conservancy

5.4 Estimate of Probable Construction Costs

Estimated construction costs for major improvements at JMF are extremely difficult to determine at this point in the planning process. This master plan provides conceptual plans and general descriptions for new facilities and improvements; however, many variables such as building size, materials, and systems remain unresolved, and carry significant cost ramifications.

Further program and design development will be needed in order to accurately estimate construction costs for future improvements. Until then, only the following "cost range" can be projected by making some broad assumptions and using construction costs derived from similar recent projects.

Facility/Activity Area Improvements	Cost Range
Welcome Center	
Building Structures	$3,500,000 to $4,500,000
Site Improvements	$1,200,000 to $1,500,000
Total	*$4,700,000 to $6,000,000*
Environmental Education Center	
Building Structures	$10,000,000 to $13,500,000
Site Improvements	$3,000,000 to $3,500,000
Total	*$13,000,000 to $17,000,000*
New Campground	
Building Structures **(no cabins)**	$1,000,000 to $1,200,000
Site Improvements	$1,300,000 to $1,500,000
Total	*$2,300,000 to $2,700,000*
Equestrian Center	
Building Structures	$9,000,000 to $14,000,000
Site Improvements	$2,500,000 to $3,000,000
Total	*$11,500,000 to $17,000,000*

Facility/Activity Area Improvements	Cost Range
Jeff Jack Resource Management Center	
Building Structures	$2,500,000 to $3,200,000
Site Improvements	$1,500,000 to $1,800,000
Total	*$4,000,000 to $5,000,000*
Tom Wallace Lake Activity Area	
Building Structures	$200,000 to $250,000
Site Improvements	$250,000 to $300,000
Total	*$450,000 to $550,000*
Paul Yost, Scott's Gap, Horine Center	
Building Structures	$500,000 to $1,000,000
Site Improvements	$600,000 to $1,200,000
Total	*$1,100,000 to $2,200,000*