

**MEMORANDUM**

**TO:** Montgomery County Planning Board

**VIA:** Jeff Zyontz, Division Chief, Countywide Planning Division  
John Hench, Supervisor, Park Planning and Resource Analysis (PPRA)  
Lyn Coleman, Trail Planning Supervisor, PPRA  
Brenda Sandberg, Legacy Open Space Program Manager, PPRA

**FROM:** Dominic Quattrocchi, Legacy Open Space Senior Planner, PPRA

**DATE:** November 10, 2005

**RE:** Serpentine Oaks Conservation Park Proposed Public Access Plan

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**Recommended Actions**

- 1. Approve the Public Access Plan proposed for the Serpentine Oaks Conservation Park (See Attachment I).**
  - **Recommendation 1:** Establish interpretive concept for the Park including nature trails and an educational pavilion.
  - **Recommendation 2:** Establish a natural surface trail network that emphasizes interpretation of the park.
  - **Recommendation 3:** Establish equestrian trails that link to nearby community equestrian easements.
  
- 2. Approve name change of the Park to Serpentine Oaks Conservation Park from Serpentine Barrens Conservation Park.**

**Plan Objectives**

**The Public Access Plan shown in Attachment I has been developed based on the following plan objectives.**

- To balance environmental and recreation objectives by establishing a network of natural surface trails to provide safe access for trail users while maintaining the significant resources of the Serpentine Oaks.
- To protect particularly sensitive areas including populations of rare plants, environmental buffers, vernal pools, and other critical natural resources.
- To provide opportunities for interpretation of the Park's considerable natural resources and to make some of these opportunities accessible to people with limited mobility.
- To continue trail connectivity for equestrian usage to the larger community network of equestrian trails.

- To provide convenient and safe gravel parking areas for trailhead access, proposed pavilion location, and areas designated for greater intensity nature observation.
- To establish hiking trails within the interior of the Park for recreation and nature interpretation.

### **Overview of Serpentine Oaks Conservation Park**

The Serpentine Oaks Conservation Park is a 341-acre complex located in southwestern Montgomery County, Maryland, within the Potomac planning area and the Piedmont geologic province (see Vicinity Map, Attachment II). The Serpentine Oaks is the only remaining significant undeveloped area of serpentinite-derived soils remaining in the County (see Geology Map, Attachment III). The park is located south of Travilah Road and west of Piney Meetinghouse Road, between the communities of Big Pine and Palatine Oaks. The park consists of three units: a larger northern unit (258 acres), a southern unit (65 acres), and an eastern unit (18 acres). All sections contain a variety of exceptional natural resources, though the North Serpentine Oaks Unit is most significant due to its size, resource composition and limited encroachment by residential development. The North Unit borders the Rockville Crushed Stone Quarry, the South Unit is located on the southern edge of the serpentinite outcrop adjacent to Glen Road, and the East Unit is located on the east side of Piney Meetinghouse Road.

The Serpentine Oaks Conservation Park has been acquired by M-NCPPC through a combination of purchase and dedication through the development review process. The North and South Units are both identified as Legacy Open Space (LOS) natural resources. LOS focuses on preserving Montgomery County's best natural areas, cultural resources, and urban open spaces. LOS program funding was responsible for purchase of the North Unit. Purchase of the North Unit started in 2001 and will be complete in July of 2006. The South and East Units were dedicated to parkland through the development review process.

From the inception of the LOS Program, the Serpentine Oaks has represented the highest priority for acquisition due to the sensitive and rare nature of the resource. Key natural features include the following.

- Serpentine geology is responsible for driving "hotspots" of uncommon native plant species. Because of soil-driven stresses, Serpentine Oaks is a rare ecosystem that provide habitat for a number of rare, endemic plant species. Over twenty species of rare, threatened, endangered, and watchlist (RTEW) plants occur in the Serpentine Oaks Conservation Park based on vegetation studies conducted by Natural Resources Division staff, Maryland Department of Natural Resources, the Maryland Native Plant Society, and independent consultants. The stressed soils also create a unique "stunted" forest that is much older and more complex than it appears.
- High quality forested acreage in the park exceeds 300 acres. The park's forested acreage represents one of the largest remaining contiguous forest tracts in the Potomac subregion of the County. The ecosystem consists of maturing, second growth forest with abundant representation of many oak species, including several that are unique for Montgomery County, and a dominance of oaks in the overstory and understory.
- The large forested acreage provides critical habitat for forest interior dwelling species, particularly birds. These species require large unbroken tracts of forest to successfully breed. Large contiguous forest habitat is scarce in Montgomery County.

For additional information on the geologic and natural resources of the site, as well as Management Plan draft text refer to Attachment IV.

### **Park Management Planning Process**

The Management Plan for Serpentine Oaks Conservation Park is being developed to implement the stewardship goals for conservation parkland set forth in both the Legacy Open Space and Park, Recreation and Open Space (PROS) Master Plans. The park classification system outlined in the PROS Master Plan describes conservation parks as:

...generally, large areas that preserve specific natural, archaeological, or historic features; are typically located in upland areas; and are acquired specifically for environmental preservation purposes. Conservation area parks may include outstanding examples of natural communities, self-sustaining populations of rare, threatened, or endangered plant and animal species, or unique archeological and historic resources. Given the sensitive nature of the resources in conservation parks, development is very limited and generally restricted to passive recreation areas and opportunities such as trails, fishing, picnic areas, and nature study.

Park management plans are internal, staff-level documents that provide guidance to Montgomery Parks' operating divisions on the management and maintenance of natural and cultural resources, trails, public access, as well as constructed facilities. These documents typically include an inventory of existing resources and conditions accompanied by detailed management recommendations and protocols. The estimated budget impacts of recommended actions across affected operating divisions are also included. The trails and public access component of the management plan establishes the general location of park trails and parking facilities. It also determines the uses of the trails. To date, two management plans for Legacy Open Space acquisitions have been completed (Bucklodge Forest and Hoyles Mill Conservation Park).

The Planning Board has determined that park management plans do not require the Board's approval. Instead, the Superintendent of Parks typically approve these plans, followed by presentation of the approved plan to the Planning Board as an information item. However, in accordance with the trail planning and implementation process set forth in the Countywide Park Trails Plan, the public access component of the management plan is subject to review and approval by the Planning Board. It is this component of the management plan for the Serpentine Oaks Conservation Park that is recommended for Planning Board approval in this memorandum.

### **Public Access Plan Recommendations**

The Management Plan Team developed three alternatives to frame the decision-making process for possible use and management of the Park. The alternatives were shared with staff and the public during the outreach effort (see Attachment V for summaries of the three alternatives). After extensive public outreach, intensive field work to analyze the conditions in the park, and many discussions among the Management Plan Team, staff recommend the following Public Access Plan for the Planning Board's approval.

The proposed Public Access Plan consists of natural surface trails, trailhead parking and kiosks, and an interpretive component that includes an educational pavilion on the South Unit and interpretive signage. The proposed Plan as shown in Attachment 1 achieves the plan objectives through three major recommendations.

**Recommendation #1: Establish interpretive concept for the Park including nature trails and an educational pavilion**

The Plan establishes an interpretive concept that utilizes both major park units. Interpretive plans include a self-guided nature trail, nature exhibits at an education pavilion, and regular programs for the public. The South Unit will be the “interpretive gateway” to the North Unit and will include an educational pavilion with displays explaining and illustrating the rich array of natural resources in the park. Elements of this interpretive concept include:

**A. An Education Pavilion on the South Unit**

A multiple-use education pavilion is recommended for interpretive use located in the existing cleared area on the South Unit. Further planning and coordination with potential users (park naturalists and school groups) will need to take place to determine precise needs for the design, capacity, and interpretive focus of such a facility. The pavilion should be capable of being secured when not in use to protect the investment in interpretive panels and materials.

**B. A self-guided interpretive trail loop on the South Unit (Serpentine Trail)**

One-mile and half-mile trail loops will be developed that will provide an introduction to the unique ecological system of the serpentine forest. Interpretive trail signage will be coordinated with the educational pavilion so the trail can either stand alone as an educational experience or complement the educational materials in the pavilion.

**C. A self-guided interpretive trail loop on the North Unit (Post Oak Trail)**

The North Unit will offer the opportunity to experience trails that provide access and views of resources highlighted at the interpretive area to the south. Facilities here will be limited to a gravel parking lot, a trailhead kiosk and trail signage. A one-mile trail loop will be designed as an interpretive trail to complement the facilities provided in the South Unit.

**D. Coordination with Montgomery County Schools to include this park in the science curriculum for appropriate age groups**

Park Naturalist staff has started working with the Science Curriculum section of the Montgomery County Public Schools on special programs focusing on the unique biological community that occurs here, developing programs especially for upper grade levels.

**E. Incorporation of the educational pavilion and interpretive trails into programming by the park naturalists**

In addition to working with the public schools, park naturalists will work on incorporating the educational resources at this conservation park into their programming for members of the public.

#### **F. Provision of ADA accessibility into the education pavilion and the interpretive trail on the South Unit**

All or portions of the interpretive trail in the South Unit will be designed to meet outdoor trail guidelines for accessibility to ensure people of all levels of mobility can learn about the unique ecosystem in the Park. The parking areas and education pavilion on the South Unit should also be designed to meet Americans with Disabilities Act (ADA) guidelines.

#### **Recommendation 2: Establish a natural surface trail network that emphasizes interpretation of the park.**

A hiking-only natural surface trail network is proposed that will allow for interpretation and recreation in the park while protecting the most sensitive and important features of the park. Existing people's choice trails in the Park are incorporated into the proposed trail network where appropriate, while other sections will be closed and re-vegetated.

##### **A. Post Oak Trail (North Unit)**

This one-mile loop trail will be a self-guided interpretive trail starting from the proposed parking area on Piney Meetinghouse Road. This trail traverses hilly terrain providing views of oak stands, rock outcrops, and other unique features that are representative of the prototypical stunted oak forest found on serpentine soils. The most expansive view of the Serpentine Oaks is provided where the Post Oak Trail intersects the PEPCO right of way (ROW) at a high point in the park. This trail will cross the PEPCO ROW at two locations.

##### **B. Blackjack Oak Trail (North Unit)**

This two to three mile trail loop branches off the Post Oak Trail and crosses the majority of the park while staying a safe distance from the Quarry, avoiding dense concentrations of RTEW plant species, and maintaining large undisturbed areas of forest. The trail crosses the Greenbrier Branch at two places, one of which will require a minor bridge crossing. This trail also crosses the PEPCO ROW at one additional location, for a total of three PEPCO crossings. The Blackjack Oak Trail is illustrative of a variety of habitats found in the park, including various kinds of oak glades and greenbrier thickets.

##### **C. Serpentine Trail (South Unit)**

The Serpentine Trail is the primary trail proposed in the South Unit, creating a one-mile interpretive loop with a connector to allow for a shorter, one-half mile loop. Approximately half of the proposed trail will use an existing unimproved pathway. The trail crosses through good examples of serpentinite-influenced forest. Interpretive features include large numbers of post and blackjack oaks, good views of exposed bedrock, and an in-stream pond that is transitioning to a large wetland area. Gentle to moderate grades make this trail potentially ADA compliant, wheelchair accessible trail. The trail will cross the Greenbrier Branch at two locations, both requiring bridge crossings.

##### **D. North Unit access (parking lot, kiosk) off Piney Meetinghouse Road**

A 5000 square foot parking lot that can accommodate up to 20 automobiles is proposed on Piney Meetinghouse Road just south of the PEPCO ROW. This location

has the best sight distance along the road for turning vehicles and will result in the least impact to forest. Trailhead amenities will include a kiosk and possibly other small-scale interpretive or educational displays.

#### **E. South Unit access (parking lot, educational pavilion) off Glen Road**

An existing cleared area adjacent to Glen Road will easily contain the proposed parking area for the South Unit and the education pavilion. The parking area will be designed to contain approximately 20 automobiles and two buses, covering approximately 15000 square feet. A conceptual design of the parking area and educational pavilion is found in Attachment VII. An existing driveway is currently located at the best site distance location for an entrance onto Glen Road and will be maintained as the park entrance.

### **Recommendation #3: Establish equestrian trails that link to nearby community equestrian easements**

A combination of public use easements and “handshake” trail agreements with property owners provide an equestrian trail network in the surrounding community. The Public Access Plan for Serpentine Oaks Conservation Park provides equestrian trails to continue and expand this network.

#### **A. North Unit Equestrian Connector Trail**

An existing 10-foot equestrian easement is platted adjacent to the southeast side of the North Unit crossing nine recorded and built single-family lots. The existing equestrian trail along this corridor does not follow the platted easement area, but is mostly inside park boundaries. The Public Access Plan proposes allowing the equestrian trail to be maintained on park property largely as currently located with only minor improvements and rerouting. Maintaining the trail’s current location would maintain equestrian access/connectivity in the area, not encroach any further on the interior of the forest, and reduce potential conflicts with adjacent residents.

Further, the Public Access Plan proposes to extend this equestrian trail 800 feet to the proposed parking lot along Piney Meetinghouse Road. This equestrian extension would overlap a portion of the Post Oak Trail and could replace a portion of the existing equestrian easement that currently traverses private land. This trail extension benefits the equestrian community by bringing riders to a more visible portion of Piney Meetinghouse Road for crossing and reduces the potential for conflicts with adjacent residents.

#### **B. South Unit Equestrian Connector Trail**

Two extensions of an existing equestrian easement are proposed for the South Unit. The first connector trail traverses an existing roadbed west of the cleared area, extending to the northernmost edge of the South Unit. At this point, this connector trail will link up with an existing equestrian easement that leads toward the North Unit and Piney Meetinghouse Road and also branches off to the northwest, eventually reaching the Muddy Branch Stream Valley Park trail corridor, a major equestrian riding location.

The second proposed connector trail is parallel to Glen Road from the new Park entrance south to the existing recorded trail easement on the frontage of Greenbrier

Estates (a new subdivision under construction). This extension will provide connectivity among several existing equestrian easements: an easement directly across Glen Road from the proposed South Unit Park entrance that leads west; the Great Elm Drive easement that connects to Watts Branch Stream Valley Park; and the northern easements discussed in the above paragraph. The trail should be buffered by adequate trees between the road and the trail for the protection and safety of equestrian users and possibly pedestrians using the path. This connection will involve minor clearing and a ford of the Greenbriar Branch.

**Public Input on Public Access Plan**

Public review and input was an important part of the planning process. A general public meeting was held in September 2005. Staff also meet in person or discussed by phone the recommendations with representatives from various special interest groups including equestrian, biking, and environmental groups. Table 1 summarizes these meetings, comments received, and staff responses to those comments.

**TABLE 1: SERPENTINE OAKS MANANGEMENT PLAN PUBLIC MEETINGS and OUTREACH**

Date	Group/Organization	Comments	M-NCPPC Position
21 JULY 2005	Aggregate Industries/Bardon Inc. Rockville Crushed Stone	Quarry representatives expressed enthusiasm in having a park next to their facility rather than more houses. They are willing to help support the management plan and park interpretive elements, but are strongly opposed to trail access within proximity of the quarry's highwall including any type of observational platforms overlooking their facility. Aggregate Industries also expressed interest in providing assistance and donations to aid in the interpretation of the geology of the park, such as gravel for parking lots and large rocks for exhibits.	Staff is looking at the potential of trail reroutes to minimize safety concerns.
JULY 2005	Outreach Mailing	Letters and an informational brochure were mailed to inform residents within ½ mile radius about the park, its special ecological features, and park regulations including prohibited ATV use, avoidance of boundary encroachments, etc.	
16 AUG 2005	Equestrian Trail Users including members of Trail Riders Of Today (TROT) and Potomac Bridal and Hiking Trail Association (PBHTA)	Attendees stated the Park is used by at most 5 equestrians. Attendees stated that the impact of only a few riders, going through the forest once a week at the most often is negligible and that riders are steward of the area (i.e. reporting incidents of dumping and maintaining trails). They argued that horseback riding is part of the culture of the area, and that the community supports it. Concerns were expressed about the loss of areas to ride because of development and about maintaining access through the Travilah loop easements. Several equestrians asserted that use of the gas line easement around the park perimeter is	Trail improvement impacts will be the same in area regardless of the number of equestrian users because of trail standards governing height and width of clearing.  Staff is proposing to provide equestrian trails extensions that link to nearby community equestrian trails.  A Glen Road trail extension for equestrians in proposed. Trails provided in the proposed

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		unsafe for horses because there are ruts and holes that are overgrown and difficult to see. A suggestion was made to establish a trail along the Glen Road frontage of the South Serpentine to minimize existing safety concern for users along Glen Road.	management plan, combined with existing easements, will provide access to the Muddy Branch stream corridor and the Travilah Loop.
<b>05SEPT 2005</b>	Outreach Mailing	Mailing to 178 adjacent property owners and 12 HOAs and Special Interest Groups, notifying of Public Meeting to be Held on 15SEP2005 at Adventure Conservation Park regarding Serpentine Oaks Management Plan	
<b>07SEPT 2005</b>	Mountain Biking Off-Road Enthusiasts (MORE)	MORE has concerns about access, but no specific issues addressed regarding the Serpentine Oaks. A mountain biker expressed interest in a connection from Glen Mill Road to Muddy Branch along the PEPCO ROW.	As the right of way is PEPCO's property, bike riders would have to bring access requests to PEPCO.
<b>15SEPT 2005</b>	Public Meeting, Adventure Conservation Park	<p>Approximately 30 citizens in attendance, representing the equestrian community, West Montgomery County Citizens Association, environmental groups and neighboring citizens. Residents who live on Glen Road said that the entrance proposed in the South Serpentine is in a dangerous location, on a sloping curve. There was concern that the parking area would exacerbate existing traffic congestion on Glen Road.</p> <p>A property owner adjacent to the proposed parking area on Piney Meetinghouse Road was concerned about her personal safety and the safety of her house being impinged upon by parties in the parking area.</p> <p>Members of environmental groups said they preferred Alternative A (Conservation emphasis) and suggested that a 'no trails option' be proposed for the park. Another representative of an environmental group stated that an educational pavilion was too much development for the rarity of the ecosystem and was concerned that it was unprecedented for a conservation park.</p> <p>Members of the equestrian community said that they should be given more access to the park. One person stated they would accept a trail around the perimeter of the park. Some members of the equestrian community said that students shouldn't be brought to the park because they will damage the ecosystem and buses will exacerbate traffic.</p>	<p>The parking lot sites for the management plan alternatives were chosen because they provide the best line of sight as confirmed by Transportation staff analysis. The locations also represent accessible areas with the least amount of impact to the natural resources in the park.</p> <p>The proposed parking/trailhead location in the North Unit is more than 400 feet from any improved adjacent property.</p> <p>A no trails option has not been considered by the Serpentine Oaks Management Team. Trails are permissible in Conservation Parks and experiences through visitation of Conservation Parks is a key component of M-NCPPC's mission of providing educational and recreational opportunities to county residents.</p> <p>Access to the interior of the Park by equestrians and cyclist is a key discussion point for the Management Team.</p>
<b>17SEPT 2005</b>	Sierra Club (MC), Maryland Native Plant Society, Audubon Naturalist Society	Phone conversation with various organizational representatives. No objections or concerns were expressed.	
<b>22SEPT 2005</b>	Potomac Edison Power Company	PEPCO will require recorded easements associated with three proposed crossing of their overhead powerline. PEPCO expressed willingness to work with M-NCPPC staff to facilitate ecologically sensitive management of	



		the powerline corridor and to allow access to their corridor for policing and management.	
<b>17OCT 2005</b>	Legacy Open Space Advisory Group	LOS Advisory Group endorsed Alternative B and expressed enthusiastic interest in the Management Plan direction for the Serpentine Oaks.	Staff concurs with LOS Advisory Group recommendation. Both the LOS Advisory Group overwhelmingly endorsed Alternative B. Both groups strongly favored limiting public access into the interior of the park to hiking only.

**Issues of Equestrian Access**

Equestrian access is the planning issue with the most citizen comments. Although the proposed plan continues and improves equestrian access through the Park to adjacent equestrian easements, it does not allow for interior access. Equestrian groups have expressed interest in having access to those internal trail loops.

A goal of countywide park trail planning is to provide geographic equity when it comes to trails so different users can enjoy natural surface trails near where they live. In the Potomac area, there are many opportunities for equestrians to ride park trails, including Muddy Branch Stream Valley Park (trail completion underway), Cabin John Stream Valley Park and Blockhouse Point Conservation Park. Of the 94 miles of sanctioned natural surface trails in the county, 72% (or 68 miles) are open to equestrians. This mileage does not include Woodstock Equestrian park, which is in the process of being signed and mapped and will soon be part of the sanctioned natural surface trail network. In addition, an equestrian easement network in the area known as the Travilah Loop provides extensive riding opportunities in this area of the County (Attachment 8).

The interpretive focus of this highly unique conservation park is the key reason to keep the interior park trails as hiking only. It is critical to the educational concept to allow users to wander the trails and immerse themselves in the unique ecosystem with as few interruptions as possible.

A related issue is that the trail design standards for hiking only and hiking/equestrian use are quite different. The width of the trail corridor, the tread width and the clearing height are greater for shared use than for hiking only. Hiking only trails have tread width of 1'-2' and clearance height of 7'. Equestrian trails require a tread width of at least 4' and a clearance height of at least 12'. The trail tread, clearing width and trail clearing height for equestrian use would be the same whether there are 5 or 50 equestrians. Designing the interpretive trails to equestrian standards would not only impact this unique, stunted forest more than in a typical Montgomery County forest, but the wider and higher trail clearing would result in the nature trail users being more removed from the unique forest experience that they came to enjoy.

Given the rarity of the serpentine resources in this conservation park and the education focus of the park, staff does not consider it advisable to introduce additional stresses into the park interior. The proposed Public Access Plan supports keeping the existing forest cover intact

as much as possible; hiking-only trails on the interior of the park would best achieve this objective.

Staff is sensitive to the fact that there is an active equestrian community in Potomac. To support equestrians, the Plan retains and improves upon access to the larger community network. The Public Access Plan recommendations provide over one mile of new equestrian trails that provide several critical links in the local equestrian easement network (Attachment VIII). The Public Access Plan also provides equestrian trails that will give access to potentially safer road crossings of both Glen Road and Piney Meetinghouse Road for the equestrian easement network.

### **Proposed Park Name Change**

The Management Plan Team also recommends that the Planning Board approve a name change for this park from the Serpentine Barrens Conservation Park to the Serpentine Oaks Conservation Park.

Montgomery County's Serpentine Oaks appears to have remained forested since at least 1940 based on review of aerial photography and study of ring counts, indicating a varied ecological condition from the a classic "Barrens." Vegetation at the Serpentine Oaks differs from most "barrens" environments that tend to exhibit glade like, scrubby growth, generally absent in overstory forest structure. The majority of the Serpentine Oaks Conservation Park acreage is covered by mature, second growth forest dominated by members of the oak (*Quercus*) genus. Oaks species are abundantly represented, including several oak species uncommon to Montgomery County, including the Blackjack and Post Oak.