

MCPB Item # 22
07/11/2002

July 2, 2002

TO: Montgomery County Planning Board

VIA: Jeff Zyontz, Chief, Countywide Planning Division *JZ*

FROM: John Hench, Supervisor, Park Planning and Resource Analysis *JEH*
Lyn Coleman, Trail Planning Supervisor *LC*
Tanya Schmieler, Park Planning Supervisor *TS*

SUBJECT: PLANNING BOARD PUBLIC HEARING TESTIMONY ON COUNTY COUNCIL BILL NO. 22-02 TO PROHIBIT THE PLANNING, LOCATION OR CONSTRUCTION OF TRAILS IN CERTAIN SENSITIVE AREAS

RECOMMENDED ACTION: OPPOSE Bill No.22-02.

BACKGROUND

On July 16, 2002, the Montgomery County Council will hold a public hearing on an amendment to the Chapter 19, Erosion, Sediment Control, and Storm Water Management section of the Montgomery County Code. This legislation (see Attachment 1) prohibits a county department or agency, including MNCPPC, from locating, planning or constructing a hard surface trail in any:

1. Stream or stream buffer
2. Wetland
3. 100-year flood plain
4. Habitat of threatened or endangered species
5. Steep slope
6. Special protection area.

The term trail includes "any path intended for human passage" but excludes roads "suitable for motor vehicle travel."

The term "hard surface" is defined as any surface that significantly restricts the absorption of water into the underlying soil, including gravel, compacted soil, stone, brick, and asphalt.

A draft of the legislation was sent to staff in May, 2002, and a letter was sent by Planning Director Loehr outlining our concerns (see Attachment 2).

The legislation has been introduced with no changes from the May 2002 version.

STAFF ANALYSIS

Staff has identified the following key concerns related to the bill. Staff recommends they be incorporated into the Board's Public Hearing testimony.

1. The bill fails to recognize our deeply held commitment to responsible stewardship of our park system. Stewardship means finding the right balance between recreation and the protection, preservation and best management of natural and cultural resources in County parks.

The bill rejects this balanced approach by prohibiting the planning and construction of hard surface trails, and even some natural surface trails, throughout the county park system. This legislation, as mentioned in the attached letter (packet attachment B) from Director Charles Loehr to Councilmember Ewing, embraces a "one size fits all" approach to the protection, preservation, and best management of natural and cultural resources and fails to let us address the quality of a resource as we plan for trail-based recreation throughout the County park system.

Proponents of the bill argue they are not against hard surface trails as long as they are located outside of environmental buffers and avoid all the features listed in the bill. In effect, this directs trails to areas where there are no streams, no wetlands, no flood plains and no steep slopes. The only trail currently open in Montgomery County that could meet this criteria would be the Capital Crescent Rail-to-Trail. **NOT A SINGLE OTHER HARD SURFACE TRAIL NOW OPEN IN MONTGOMERY COUNTY COULD BE BUILT**, including Rock Creek Regional hiker biker trail, Sligo Creek hiker biker trail, Damascus hiker biker trail, Paint Branch Hiker Biker Trail and Black Hill hiker biker trail. Given the bill's inclusion of "compacted soil" in the definition of hard surface trail, it is unlikely some of our natural surface trails could be built.

This bill fails to recognize that trails are linear systems and even if a trail is located primarily in an uplands area, crossing of streams might still be necessary.

The legislation prohibits us from accomplishing what has been our agency's mission for the past 75 years: protect natural resources and provide public enjoyment of our parks. Achieving this balance is the essence of stewardship.

2. This bill would effectively exclude a significant number of county residents from enjoying our park system's natural features. In our park surveys, the number one reason why people use hard surface trails is to observe nature; the number two reason is "walking." (see Table 1). Hard surface trails offer these simple pleasures to county residents too young, too old, too unfit or too physically challenged to negotiate natural surface trails. Mothers with strollers, elderly people unsure of their footing, persons requiring assistance to walk—all should be able to stroll in the woods, enjoy views of streams and observe the beauty of the natural landscape. In our view, enjoyment of nature in our parks should not be limited to those people fit enough to hike or bike natural surface trails.

The bill includes compacted soil in the definition of hard surface trail, making accessibility goals for our park system even harder to achieve.

As noted above, providing opportunities for the public to enjoy our park system is part of our agency's mission. An example of the popularity of hard surface trails can be seen in

PARK TRAIL USE

PROS Survey for Montgomery County - 1997

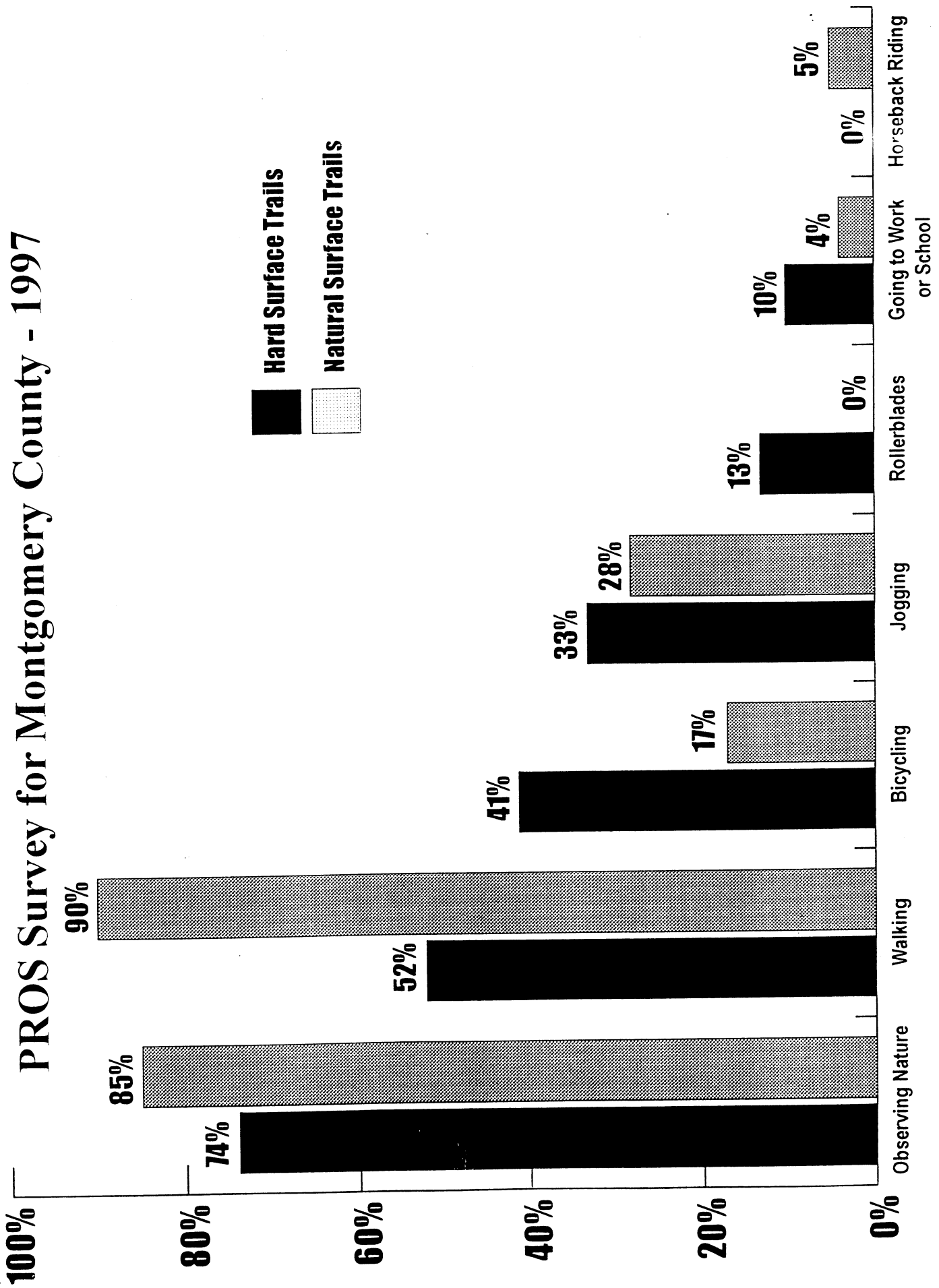


TABLE 1

the 1995 trail user counts of Sligo Creek hiker-biker trail. A total number of 1173 users were observed on the trail during 12 separate one-hour user counts; this averages out to about 100 users per hour.

3. The bill would undermine the 1998 Countywide Park Trails Plan. Six years ago, the Planning Board recognized the need to establish a comprehensive vision for trails in Montgomery County. Staff prepared a countywide park trails proposal that was the subject of numerous public meetings and community workshops. After Public Hearings and many worksessions, the Board approved the Plan in 1998. Many hard surface trails were excluded for environmental reasons and others were included for further study.

The Countywide Park Trails Plan balances recreation and environmental factors. This legislation prevents even the planning of trails where certain environmental features are present. This blanket prohibition against trail planning will undermine the Countywide Park Trails Plan to such an extent that it will have to be revisited and all proposed hard surface trails will likely be removed. Staff is preparing more detailed analysis of how this legislation would affect the Countywide Park Trails Plan for presentation at the Public Hearing.

4. **This bill rejects the trail planning processes established to date, including the approach to addressing environmental concerns reviewed and approved by Council in 1999.** The Countywide Park Trails Plan proposes a network of trails but the final decision whether or not to actually build a hard surface trail occurs only after detailed environmental review and analysis by staff and the Board. As shown in Table 2, the final decision about a hard surface trail occurs only after many levels of study. Staff realizes that the trail planning process is not familiar to many county residents. For the past several months, we have been meeting with representatives from the Sierra Club to go over our process, most recently defined during the Muddy Branch Trail Corridor Plan. Staff will be prepared to go over this process with the Council during worksessions on this proposed bill.

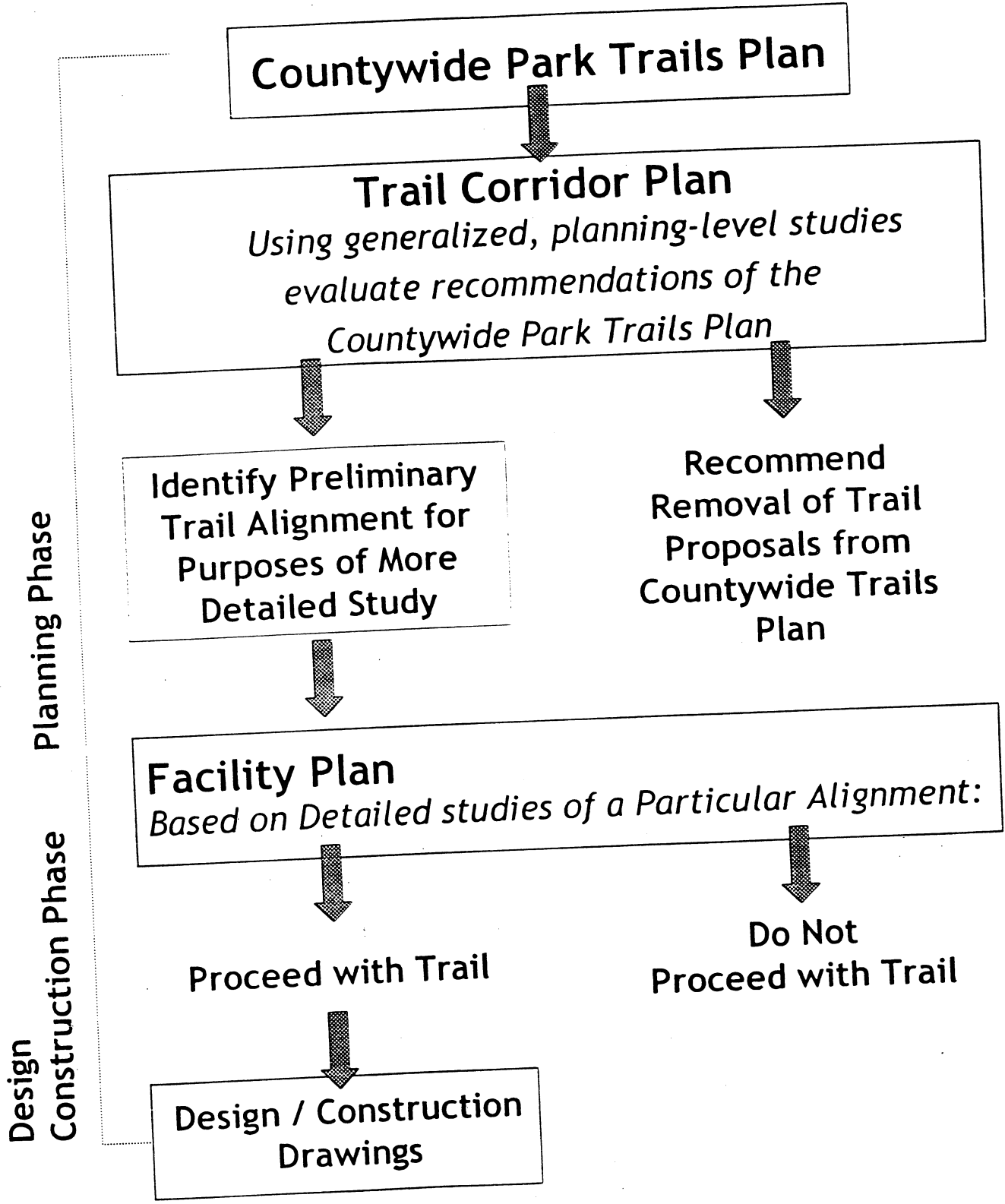
5. **This bill fails to recognize walking and biking as alternatives to using cars.** This legislation defines trails as any path intended for human passage but specifically excludes a "road suitable for motor vehicle travel." Banning trails but allowing roads seems contradictory in legislation intended to enhance the environment, especially since getting people out of their cars has been embraced as an important strategy to improve air quality. Even more questionable is the mandate in the bill that all county departments and agencies—not just MNCPPC—must not plan, locate or construct paths (except roads) where there are certain sensitive features. We are unclear as to whether this encompasses bike paths along roads; sidewalks; paths at playgrounds, school paths, etc.

STAFF RECOMMENDED ACTION

Staff recommends that testimony incorporating the above points be presented by the Planning Board at the County Council Public Hearing on July 16.

The testimony should note we will prepare more detailed background information on trails and the trail planning process for Council's review during worksessions on the bill after the Public Hearing.

The Process For Planning, Designing & Building Hard Surface Trails



Bill No. 22-02
 Concerning: Water Quality - Trails -
Location
 Revised: 4-25-02 Draft No. 1
 Introduced: June 18, 2002
 Expires: December 18, 2003
 Enacted: _____
 Executive: _____
 Effective: _____
 Sunset Date: None
 Ch. _____, Laws of Mont. Co. _____

**COUNTY COUNCIL
 FOR MONTGOMERY COUNTY, MARYLAND**

By: Councilmember Ewing

AN ACT to:

- (1) prohibit the location or construction of certain trails in certain sensitive areas; and
- (2) generally amend the law regarding the location of trails and the protection of water quality in the County.

By amending

Montgomery County Code
 Chapter 19, Erosion, Sediment Control, and Storm Water Management
 Section 19-55

Boldface	<i>Heading or defined term.</i>
<u>Underlining</u>	<i>Added to existing law by original bill.</i>
[Single boldface brackets]	<i>Deleted from existing law by original bill.</i>
<u>Double underlining</u>	<i>Added by amendment.</i>
[[Double boldface brackets]]	<i>Deleted from existing law or the bill by amendment.</i>
* * *	<i>Existing law unaffected by bill.</i>

The County Council for Montgomery County, Maryland approves the following Act:

1 **Sec. 1. Section 19-55 is amended as follows:**

2 **19-55. [Reserved] Trails - Location.**

3 **(a) A County department or agency, including the Maryland-National**
4 **Capital Park and Planning Commission, must not locate, plan, or**
5 **construct a hard-surface trail in any:**

- 6 **(1) stream or stream buffer;**
- 7 **(2) wetland;**
- 8 **(3) 100-year flood plain;**
- 9 **(4) habitat of a threatened or endangered species;**
- 10 **(5) steep slope; or**
- 11 **(6) special protection area designated under Section 19-62(a).**

12 **(b) As used in this Section:**

- 13 **(1) trail means any path intended for human passage, on foot or by**
14 **any other means of transportation, except a road suitable for**
15 **motor vehicle travel;**
- 16 **(2) hard-surface means any surface, such as asphalt, brick, stone,**
17 **concrete, gravel, or compacted soil, that significantly restricts the**
18 **absorption of water into the underlying soil.**

19 *Approved:*

20 _____
Steven A. Silverman, President, County Council

Date

21 *Approved:*


22 _____
Douglas M. Duncan, County Executive

Date



May 6, 2002

The Honorable Blair Ewing
Montgomery County Council
100 Maryland Avenue
Rockville, MD 20850

Dear Mr. Ewing. 

We share your concerns regarding the impacts of hard surface trails on environmentally sensitive areas. However we believe that any policy or regulation that is directed at the stewardship of sensitive areas in our County park system must be balanced with the public right to access parks for recreation. We believe the key to responsible stewardship is finding the right balance between recreation and the protection, preservation, and best management of the park system's natural and cultural resources.

We are not opposed to the responsible stewardship of County parks, but rather to the one-size-fits-all approach of the proposed legislation. Clearly, not all areas of the park system are equal in their environmental or cultural sensitivity. Nor are all recreational needs equal across the County's 21 planning areas. Just as population density and land-use vary across Montgomery County, the environmental and cultural value of our public parks varies across the park system. By in large we attempt to address the public right to access parks for recreation in areas where we serve the greatest public need with the least amount of negative impact to important natural and cultural resources.

From our viewpoint, the proposed legislation would largely prohibit the planning and construction of hard surface trails throughout the County park system. No doubt, paved or gravel cart paths on public and private golf courses as well as the County's bikeway system would be similarly affected. As written, the legislation would also preclude use of previously disturbed gravity sewer corridors for future hard-surface trails. And given that the proposed definition of *hard surface* includes *compacted soil*, our heaviest use natural surface trails – which are often open to mountain bike and equestrian use – would not be permitted as well. In the alternative, the legislation would mandate the use of boardwalk, which raise the costs of stream valley trails considerably.

Thousands of citizens enjoy hiking, jogging and biking every weekend on the C&O Canal, the Capital Crescent Trail and the Rock Creek and Sligo Creek hiker-biker trails. As noted in our 1997 Park, Recreation, and Open Space Survey for Montgomery County, the top recreational activities by far are walking and bicycling in parks, often to enjoy nature. We do not want to deny citizens the opportunity to use hard surface trails in other urban and suburban areas of the County, particularly if new facilities can be built in stream valleys that have been severely impacted by the construction of gravity sewer lines or other public utilities. Further, we believe it is unrealistic to assume that reasonable access to the beauty, peace, and solitude of our stream valley parks could be afforded to the handicapped, disabled, and elderly, or to families with young children in strollers on a low impact style natural surface trail system. We are not arguing for the opportunity to plan and construct hard-surface trail systems in every one of Montgomery County's major stream valleys. But we do want to ensure that there is reasonable access to a hard-surface trail system in those areas of Montgomery County with the greatest number of potential trail users. The key to providing public access to parks in an environmentally responsible way is always balance.

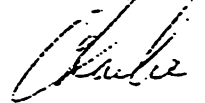
Balancing the protection and preservation of natural and cultural resources while concurrently providing a variety of recreational activities for our park users is perhaps the greatest challenge we face as stewards of the County park system. Toward this end, our staff have assembled and mapped an extensive amount of information on natural and cultural resources over the past decade. This information includes the location of rare, threatened, and endangered species of plants and animals, the relative size and health of their populations, and threats to their continued existence. Monitoring efforts allow staff to update this information on a somewhat regular basis. Not surprisingly, our staff continue to find that these important resources occur not just in areas defined as stream buffers or on steep slopes (for example), but rather that they are scattered across the County in both stream valley and upland settings. Accordingly, we are not prepared to say that hard surface trails should never be built in an area defined as a stream buffer, wetland, 100-year floodplain, habitat of a threatened or endangered species, steep slope, or special protection area. Nor are we prepared to say that recreational improvements can go anywhere outside of these defined areas. Rather, the balance we strive for can only occur on a case-by-case basis given full consideration for the recreational benefit and associated environmental or cultural impacts of any proposed site improvement.

Every five years, M-NCPPC prepares the Park, Recreation, and Open Space (PROS) Master Plan. This important functional plan, which was last updated in 1998, provides broad policy guidance for the acquisition, planning, development, and management of County parks. Within the context of our next revision to the PROS Plan, we would be open to up-dating our trail planning and decision-making process. We admit that both our current PROS Plan and the

Countywide Trails Plan (1998) are somewhat deficient in this regard. Recent memoranda dealing with a *Process for Council Review of Park Planning Documents and the Countywide Park Trails Plan* (Attachment A) and the *Muddy Branch Stream Valley Park Trail Plan* (Attachment B), have captured some of this information and our commitment to balance. However, we believe that the public and policy decision makers would benefit from a full understanding of the recreational, environmental, financial, and policy trade-offs associated with planning, constructing, maintaining, and policing hard surface trails and natural surface trails in stream valleys and on uplands. Once there is a clear understanding of the various trade-offs, a formal decision-making process could be agreed upon and incorporated into the next PROS Plan. We propose that the *Process for Planning, Designing, and Building Hard Surface Trails* and the *Process for Planning, Designing, and Building Natural Surface Trails* (Figures B-1 and D-2, respectively, in Attachment B) is a good first step towards achieving this important objective.

What is missing from the proposed legislation on *Trail Location* is the issue of balance; more specifically, balance between the stewardship of natural and cultural resources and recreation in County parks. Whether you proceed with the proposed legislation, or choose to support our proposal to address the matter through an up-coming revision to the PROS Plan, we look forward to working with you on this important issue.

Sincerely,



Charles R. Loehr
Director

Attachments

cc: Steven A. Silverman
Montgomery County Planning Board Members
Donald K. Cochran
James Caldwell
Albert J. Genetti

Attachment A

PHED COMMITTEE #4
August 2, 1999

MEMORANDUM

July 29, 1999

TO: Planning, Housing, and Economic Development (PHED) Committee

FROM: *MLM*
Marlene L. Michaelson, Senior Legislative Analyst

SUBJECT: Process for Council Review of Park Planning Documents and the Countywide Park Trails Plan

On June 21, 1999 the PHED Committee began discussing the Countywide Park Trails Plan and raised a number of issues for follow-up discussion. At that time the Committee also deferred discussing a general policy for Council review of Park policy documents and some of the policy issues related to the Park Trails Plan raised by Staff. These issues are addressed below. Committee Members may wish to bring a copy of the Countywide Park Trails Plan to the meeting.

I. COUNCIL REVIEW OF PARK PLANNING DOCUMENTS

Last fall and then again early in 1999 after the new Council was in office, Staff outlined for Councilmembers options for Council review of park planning documents. The process recommended below is Staff's attempt to find an approach representing the preferences of those Councilmembers who responded to Staff's request for comments on the options. All Councilmembers who responded to Staff believed that there should be some level of review by the Planning, Housing, and Economic Development (PHED) Committee or Council of major park planning documents (confirming the sentiments expressed by the Council at the fall 1998 Bi-Annual Report meeting). Councilmembers also agreed that park planning documents did not require the same level of review as land use master plans. Other recommendations are as follows:

1. The PHED Committee should schedule a briefing on all major park planning documents. (The briefing on the Countywide Park Trails Plan occurred at the June 21st worksession.) Briefings on the PROS Plan and any major park planning document completed in the last year will be scheduled for future dates. In the future, the Committee will schedule briefings any time major park planning documents are completed.
2. Staff should work with Park and Planning Department Staff to identify any major policy issues raised in a park planning document that may warrant discussion by the Committee. For example, in the discussion the Committee held on the Countywide Park Trails Plan, Staff had identified the issue of designating trails as hard or natural surface as a policy issue warranting Committee attention. The Committee would discuss these major policy issues but would not review each specific finding or recommendation in these plans.
3. The Council will not hold a public hearing on the Trails Plan or other Park Planning Documents. Only one Councilmember expressed an interest in holding a public hearing and some Councilmembers were strongly opposed to holding hearings on park planning documents, feeling that this should remain the responsibility of the Planning Board.
4. The PHED Committee may identify issues that require follow-up discussion on a particular plan or document, or issues of sufficient importance that should be presented to the Council. As a general matter, the Council's review will occur in the PHED Committee and will be limited to the PHED Committee's briefing and discussion of any key policy issues identified by Staff.

The PHED Committee should determine whether you support the process outlined above or wish to make any changes. If the Committee agrees with this process, Staff will begin to schedule briefings on other park planning documents. The schedule for Planning Board approval of major park planning efforts is as follows:

Approved Plans	Date of Planning Board Action
Park, Recreation, and Open Space Master (PROS) Plan	Approved July 1998
Countywide Park Trails Plan	Approved July 1998
Clarksburg Greenways	Approved May 1999
Upcoming Plans	
Rock Creek Master Plan	Approval Anticipated June 1999
Cabin John Master Plan	Planning Board Public Hearing – November 1999
Black Hills Master Plan	Planning Board Public Hearing – October 1999
Green Farm Conservation Park	30% Complete – Completion in FY00
Little Bennett Master Plan	Scheduled for FY02

Staff believes that the Committee should also hear from the Park and Planning Department whether they have decided what other parks will have master plans. (Alternatively the Committee may believe it is preferable to schedule for a later date a more complete discussion of whether all parks should have master plans – or if not – how to determine which parks require plans.)

II. COUNTYWIDE PARK TRAILS PLAN

Councilmembers have already received a copy of the Countywide Park Trails Plan as approved by the Planning Board in July 1998. The two issues raised by Staff that you did not have the opportunity to address at your June 21 meeting are (1) whether you approve of the basic underlying concept in the Plan to plan for a system of trail corridors and connectivity and (2) how the Park and Planning Department disseminates information to the public on trails. In addition Committee members identified several issues for follow-up that are discussed below.

Staff recommends that the Committee endorse the Plan's recommendation to develop a system of corridors. Connectivity between trails and between major destinations (e.g., the Potomac River) has been a major goal of the County's park planning efforts. The recommendation to establish a system of corridors appears to be an excellent way to achieve this goal in a logical fashion. Since it will not be possible to link every trail in the County, the corridor concept presents an organized means for determining which trails should be connected and also ensuring significant trail systems in each area of the County.

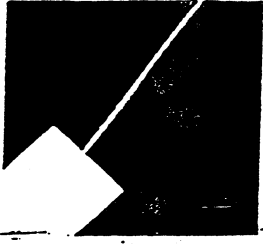
Page 53 of the Plan includes recommendations to update and improve the M-NCPPC maps of trails and trail signs or markers. The limited and outdated information currently available makes it very difficult for most citizens to learn how they can access trails. The Council has received requests over the years asking for this information and Staff agrees with the Plan's assertion that this information is essential. Without this information, planning for park trails can become an academic planning exercise without limited practical use. While this language in the Plan is helpful, without follow-through, this will continue to be a problem. Staff suggests that the Committee inquire what the Department's Plans are for updating maps and other information regarding trails– or ask that this issue be addressed more fully either at the Bi-Annual Report meeting or as part of the FY01 budget.

At the June 21st meeting Committee members asked that the following issues be discussed at a subsequent Committee meeting:

- Processes/Issues associated with putting hard surface trails in stream valley parks.
- Which of the Plan's recommendations call for placing hard surface trails in stream valley parks.
- Trail Development Costs
- Trail Widths

Each of these issues is addressed in a memorandum from Park and Planning Department Staff attached at © 1 - 15. Staff believes that Park and Planning Department Staff are to be commended on providing a very thorough response to each of the questions raised by Committee Members. Of the issues discussed, the one that Staff recommends the Committee particularly focus on is the process outlined on © 2 to 8 for how the Park and Planning Department addresses a trail recommendation in an environmentally sensitive area such as a stream valley. Their analysis proceeds through a series of options in which they first attempt to *avoid* any potential negative environmental impacts; if avoidance is not possible, then to *minimize* impact, and if that is also not possible, then to *mitigate* impacts. The attachment provides examples and graphics of different approaches they use and Planning Staff is prepared to brief the Committee on this process.

As noted in the information submitted by the Department, the Committee will have the opportunity to consider many of these issues further during review of future Capital Improvements Programs, particularly those issues related to cost and fiscal impact. The information presented in this packet related to cost should be viewed as rough estimates and the timing of budgetary requests will depend on the Planning Board's determination during their review of the budget.



MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION8787 Georgia Avenue
Silver Spring, Maryland 20910-3760

July 29, 1999

To: Marlene Michaelson
County Council Staff

From: Terry Brooks and Jeff Zyontz
Montgomery County Park and Planning

Subject: Material for August 2 PHED Committee Meeting on Trail Issues

At the request of the PHED committee, we are providing information on the below listed topics in the following pages.

1. Hard Surface Trail Locations Within Trail Corridors: Responsiveness to Significant Environmental Features
2. Hard Surface Trail Existing and Proposed Trails in Stream Valley Parks
3. Trail Development Costs
4. Trail Widths

1

HARD SURFACE TRAIL LOCATIONS WITHIN TRAIL CORRIDORS: RESPONSIVENESS TO SIGNIFICANT ENVIRONMENTAL FEATURES

M-NCPPC follows the tiered approach described above during the trail planning, design and construction processes to avoid, minimize and mitigate potential negative environmental effects of a trail proposed in a certain corridor. This approach follows M-NCPPC and county policies, and local, state and federal regulations. In fact, trail development in Montgomery County Parks often goes above and beyond what is required by regulations. M-NCPPC takes its role of steward for the natural resources on park land on behalf of the citizens of Montgomery County seriously. Therefore, M-NCPPC tries to make every reasonable effort to use best management practices and state-of-the-art techniques and technologies in trail design and construction in order to balance the need for environmental sensitivity and protection and the recreation and transportation needs of County residents.

This attachment answers the following question:

Can a trail be located within a stream valley park but outside the stream valley buffer and associated areas of significant environmental features?

If YES, proceed with trail planning and design.

If NO, explore following alternatives within the corridor:

- a. Expansion of existing park boundaries to include less sensitive areas for trail location.

EXAMPLE: The Country-wide Park Trails Plan proposes this approach in the Northwest Branch where the Plan recommends expanding "the Northwest Branch stream valley park boundaries to accommodate the trail while minimizing environmental impacts." (See Figure 1) The Plan states:

This approach means construction of a hard surface trail would await redevelopment of a [a nearby] golf course. However, this is an appropriate trade-off given the opportunity to protect a highly sensitive environmental area which deserves a high level of protection.

- b. Acquisition of new parkland to accommodate a trail.

EXAMPLE: The Country-wide Park Trails Plan proposes a trail connection from Magruder Branch Stream Valley trail system to the North Germantown Greenbelt. Although there is already parkland in the area (the Seneca Greenway) the Plan states "opportunities for a hard surface trail in this portion of the Seneca Greenway may be limited due to topography, and the relatively narrow width of the Great Seneca Extension at this location." The Plan continues:

For this reason, this Plan suggests an alternative hard surface trail connection be studied which avoids the Great Seneca stream valley (see Figure 2).

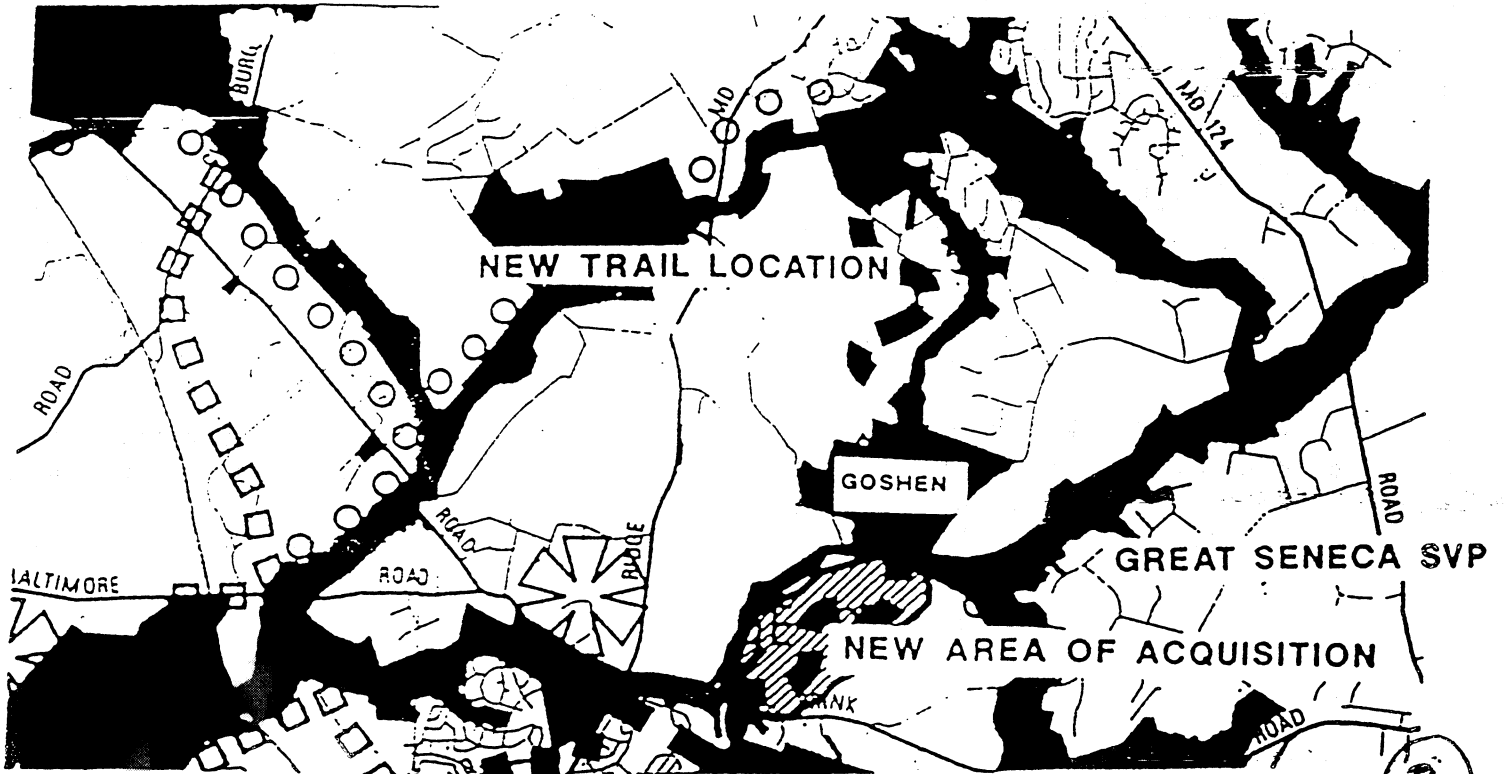
FIGURE 1

EXPANSION OF EXISTING PARK BOUNDARIES TO INCLUDE LESS SENSITIVE AREAS FOR TRAIL LOCATION



FIGURE 2

NEW TRAIL TO BE LOCATED OUTSIDE OF GREAT SENECA SVP



c. Designing the trail as part of the bike path system.

The Clarksburg Greenway Study, which refines the hard surface trail system for the upcounty, notes that in portions of the Little Seneca Greenway, "it is recommended that part of the hard surface trail be located along a roadway rather than impact steep slopes and wetlands." The Study notes that when portions of the hard surface greenway trail network relies on bikepaths, "a special cross-section is needed to assure the bikepath has a park-like character..." Figure 3, shown in the Clarksburg Greenway Study, illustrates how a bikepath along a road can be located in a park-like setting through the use of plantings and by making the path horizontally and vertically separate from the road.

If alternatives A-C are found to be infeasible, use these other alternatives:

d. Minimize total environmental impact within the portions of the buffers which cannot be avoided.

EXAMPLE: In some cases, trails may take advantage of already disturbed areas – such as cleared rights-of-way for sewer lines. These rights-of-way are often placed within the stream buffer to accommodate gravity flow for the sewer line. Although priority would be given to reforesting these areas, a trail might be allowed if especially sensitive areas are avoided. The Magruder Branch Stream Valley Park boardwalk trail is an example of coordinating trail construction with sewer line construction. A similar approach will be used for a portion of the Clarksburg Greenway Trail where WSSC has already cleared a swath of land in the stream valley (see Figure 4). There are several other examples of trails within utility corridors. Parts of Sligo Creek Trail follow a WSSC sewer line. In addition, portions of the Northwest Branch Trail and trails within Black Hill Regional Park fall within previously cleared utility corridors.

e. Use environmentally-sensitive design and construction techniques.

During trail facility planning, design, and construction, M-NCPPC staff and consultants look for ways to provide a safe and high quality trail user experience while minimizing negative environmental impacts. Avoid, minimize and mitigate environmental damage is always the order of addressing sensitive areas. As trail design and construction has become a more specialized field over the last decade or so, new technologies and techniques have been and continue to be developed for more "environmentally friendly" trails. Staff will be developing a Trail Implementation Guide this year, which will be a technical supplement to the Country-wide Park Trails Plan. The Guide will recommend and may require some of these types of techniques and technologies.

DESIGN TECHNIQUE EXAMPLES:

1. **Design of trail alignments:** Alignments should follow natural topographic contours to minimize erosion, and design around or minimize crossings of the most environmentally sensitive areas. These guidelines have been utilized in planning the Rachel Carson Conservation Park trail system and new Black Hill and Ridge Road park trails.

2. **Use alternative surfaces to asphalt:** Several materials have been developed to provide a firm and stable surface with a more natural look. A soil stabilizer made of natural tree resin has been mixed with soil and installed in a test section of the Northwest Branch Trail.
3. **Use helical piers for boardwalks and bridges:** These piers cause less environmental disturbance than concrete or wooden piers, and can be installed with a portable generator, causing less construction impact. They have been used on a boardwalk on a Sligo Creek Trail connector, and as the foundation for a bridge on the new Percheron Trail in the Agricultural History Farm Park.
4. **Trail safety:** Widen trail at steep slopes and curves to increase safety without widening entire trail. This is being done on the Rock Creek Trail Extension, currently in design.
5. **Use tree protection techniques to limit disturbance to trees near trail:** These include air blasting technology to expose and analyze root structure, clean-cutting tree roots by hand during construction, aeration of roots, and maintaining tight limits of disturbance for construction equipment.
6. **Use new, lighter weight materials where possible:** Bridge components made of an advanced composite material with fiberglass reinforcement will be used for small bridges on the Northwest Branch Trail. Lighter but strong materials can be brought on site by smaller vehicles, or hand carried.
7. **Use smaller construction machinery:** Smaller construction vehicles do exist: the California-based SWECO Company makes a 4' wide paver. However, smaller machinery, and contractors experienced with them, may not be as readily available, and may also increase costs due to the increased time and effort involved.
8. **Use small modular construction or end-on construction techniques:** Especially applicable to boardwalk-type facilities, trail sections can be built piece by piece, limiting the area of construction disturbance to the section already constructed. More research is necessary for the application of this technique.

FIGURE 3

HOW A BIKEPATH ALONG A ROAD CAN BE LOCATED IN A PARK-LIKE SETTING

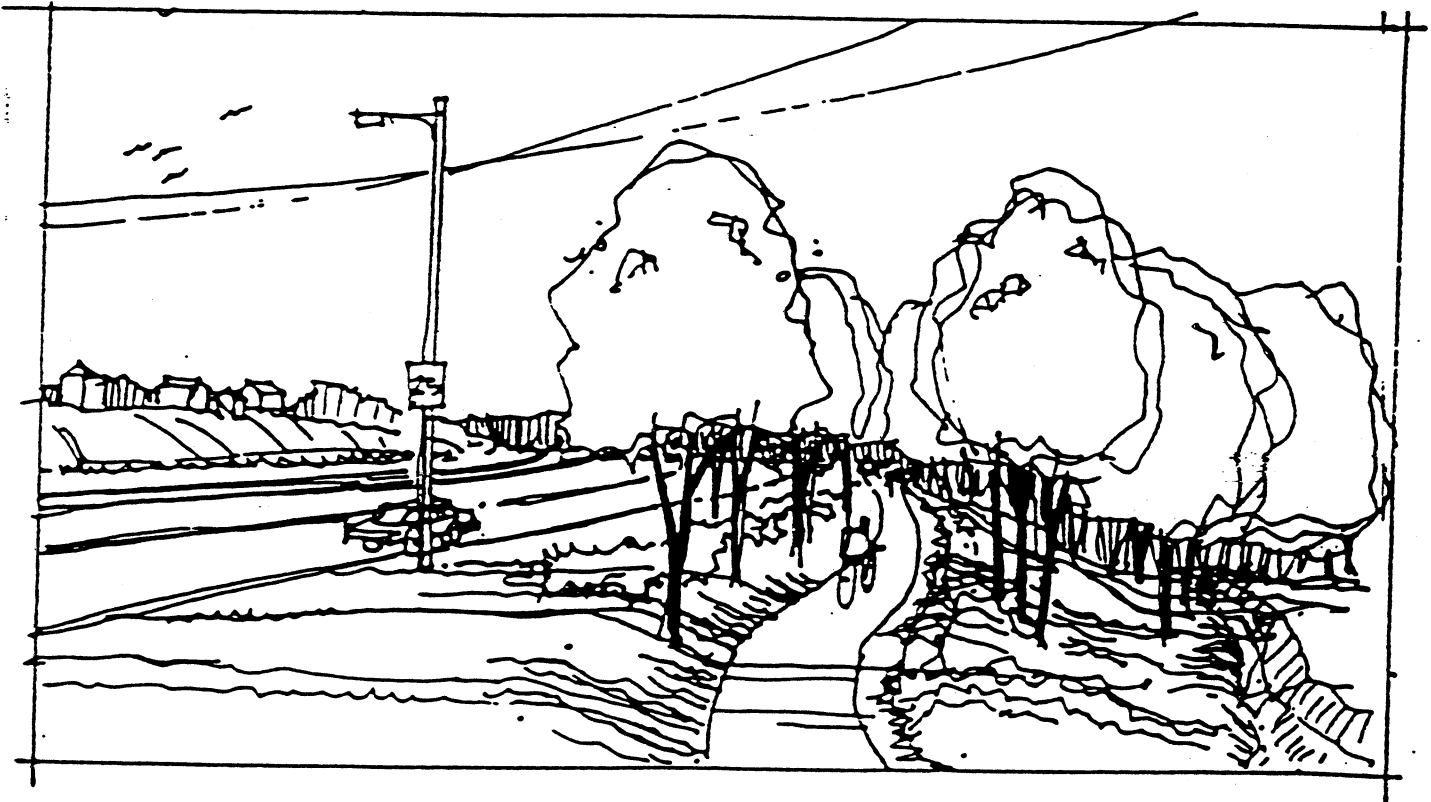
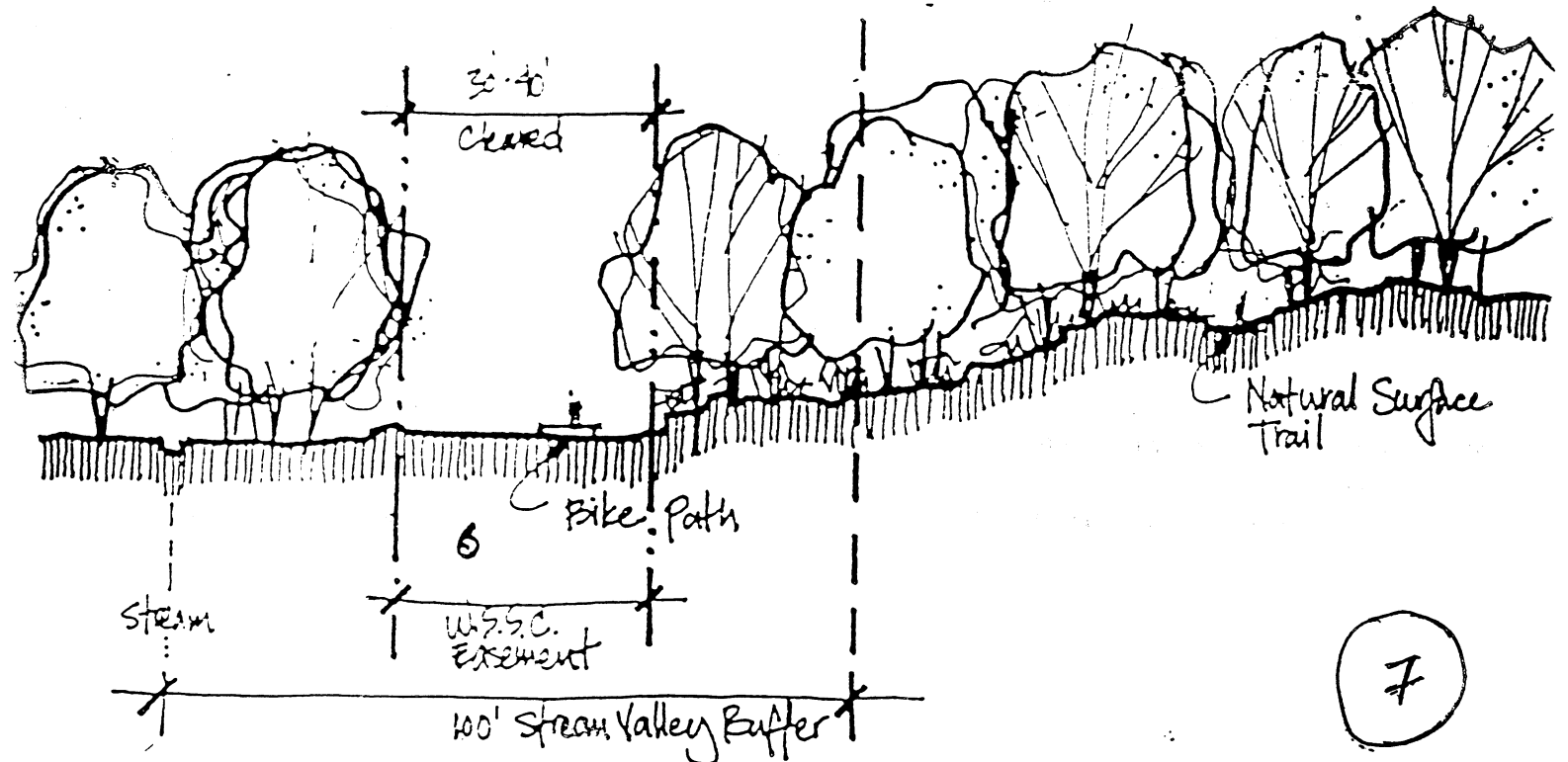


FIGURE 4

USING DISTURBED AREA IN STREAM VALLEY FOR BIKEPATH



CLEARED WSSC SEWER RIGHT-OF-WAY, LITTLE SENECA CREEK GREENWAY



f. Mitigate for negative environmental impacts caused by trail

MITIGATION FOR TRAIL IMPACTS: Trail projects can include a wide array of mitigation techniques for trail impacts, as required by permitting agencies. They will serve to improve the general conditions of the corridor's environment. These can be done within the trail corridor or elsewhere.

EXAMPLES:

1. Stormwater management facility improvements or construction: the Rock Creek Extension will improve an existing stormwater management pond to help control the quantity of stormwater runoff from the trail and other nearby facilities.
2. Stream restoration: some of the rip rap and other stream restoration in Sligo Creek was constructed in part as mitigation for the Sligo Creek Trail Extension. The rip rap helps control erosion, thereby improving the water quality.
3. Vernal pool construction: These were constructed as part of the Magruder Branch Trail project. These pools provide habitat for creatures such as salamanders.

ENVIRONMENTAL IMPROVEMENTS FOR CONDITIONS NOT CAUSED BY TRAIL: Trail projects can and do also include tasks that improve some environmental damage that had been caused by sources other than the trail. In addition, trails provide some long-term positive impacts to the environment by providing access to natural areas so that citizens can develop a public appreciation of nature, and by educating the public regarding environmental issues through interpretive signage, brochures and programs.

EXAMPLES:

1. Clean up of accumulated trash and old dumps within a trail corridor. Old cars and large appliances litter the undeveloped areas of the park system.
2. Stream restoration along tributaries in the trail corridor, which have been incised by stormwater runoff from development outside of park lands.
3. Wetland creation or enhancement.
4. Reforestation, forest enhancement.
5. Removal of invasive exotic plants.
6. Creation of wildflower gardens using plants to attract native birds or butterflies.
7. Provision of wildlife corridors, such as underpasses under major roads, wide enough to serve trail users and wildlife.

Countywide Park Trails Plan

Relation of Existing and Proposed Hard Surface Trails to Stream Valley Parks and Greenway Parks with Streams

	Total Miles of Hard Surface Trail	Trails in Stream Valley Parks or Greenway Parks with Streams	Trails NOT in Stream Valley Parks or Greenway Parks with Streams
Existing MNCPPC Trails	45	33	12
Proposed Trails	65	27 ¹	38
C & O Towpath	37	37	0
Total	147 miles	97 miles	50 miles

¹The mileage shown includes the following:

- a) Muddy Branch (4.7 miles). The Potomac Master Plan will determine whether or not the hard surface trail will occur in the stream valley park or elsewhere.
- b) Clarksburg Greenway (6 miles). The Clarksburg Greenway Study recommends using bike paths in some instances to avoid stream valleys and follows already cleared sewer right-of-way elsewhere.
- c) Germantown Greenway (1.6 miles): The trail will be built in already cleared gas line right of way.

TRAIL DEVELOPMENT COSTS

ISSUE:

During the last PHED committee meeting on the Country-wide Park Trails Plan, on June 28th, the committee asked staff to return with cost estimates for completing the entire trail system in the Country-wide Park Trails Plan.

DISCUSSION:

Rough cost estimates follow. Trail planning, design and especially construction costs vary widely, depending on the existing conditions of the trail corridor, and the type and quality of trail desired. Some of the elements that greatly affect costs are: topography, environmental sensitivity (especially wetland crossings), stream crossings, road crossings, stormwater management requirements, mitigation efforts, trail surface and trail width.

Since most of the projects specified in the Plan have not been through a facility planning process, more exact cost estimates for both the hard and natural surface projects are not available. Each project will proceed through a facility planning process, during which a decision is made whether the project is feasible and desirable, and more exact cost estimates are derived. Design and construction costs are usually not requested in the Capital Improvements Program (CIP) until the facility plan is finished and these more exact estimates are available. The County Council, through its CIP approval process, can review and approve the funding for each project when it is recommended in the CIP for facility planning, and then for design and construction. Cost estimates are in thousands (000's).

Natural surface trails sometimes can be constructed for much less than the figures listed here, if solely volunteer labor and donated materials are used, and if the existing conditions allow for easy trail construction, such as previously cleared land, gentle slopes, and few stream or drainage crossings. Cost estimates that follow assume some volunteer labor and some paid M-NCPPC staff and Montgomery County Conservation Corps labor. The Planning Board has directed M-NCPPC to increase the use of volunteers in trail construction and maintenance, and to utilize trail volunteers where possible. Volunteers are now working on two current projects, and staff is setting up an official trail volunteer program, with training.

Natural surface trail costs also vary depending on the uses for which the trail is designed (pedestrian, equestrian, and/or mountain bicyclists), and on the quality of trail desired. Most current Montgomery County natural surface trails fit most closely in a "wilderness standard" quality (narrow trails, steep slopes and cross slopes, fords through streams, etc.). This standard is used on backcountry trails (farther than 1 mile from a trailhead) within large state and national parks and other lands, and are generally designed for the more avid and experienced trail user. A trail standard that would be more suitable to the urban/suburban Montgomery County environment would provide more bridges over streams and larger tributaries, drainage culverts or other simple facilities, some

stream restoration where trails cross tributaries, some parking areas, and boardwalks or other facilities to traverse wetlands, adequate signage and mapping, and possibly environmental or historical interpretive signage. These upgrades would encourage use of the trails by a wider variety of the public, by making the trails safer and more comfortable for the average citizen, who doesn't want to get their feet wet and their clothes muddy on their afternoon walk. The estimated costs assume a better-than-wilderness standard for the new trails.

TIME FRAME (as presented in the Plan and Technical Appendix)	# OF HARD SURFACE PROJECTS	EST. HARD SURFACE MILES	EST. HARD SURFACE COST ¹ (000's)	# OF NATURAL SURFACE PROJECTS	EST. NAT. SURFACE MILES	EST. NAT. SURFACE COST ² (000's)	EST. TOTAL COST ³ (000's)
First 10 years: 1999 - 2009 (Table 3 in Plan) ⁴	10	13	\$ 7520	8	33	\$ 1170	\$ 8690
Years 7-12 (not including any of the first 10 years' projects):	7	13	\$ 15,520	5	16	\$ 800	\$ 16,320
Years 13+:	8	34	\$ 27,500	15	38	\$ 1900	\$ 29,400
TOTAL PLAN BUILD-OUT	25	65	\$50,540	28	87	\$ 3870	\$ 54,410

¹Cost estimates for both hard and natural surface trails include planning, design and construction for trails, including site preparation, stormwater management, bridges, guardrails, mitigation, and other trail related costs EXCEPT land acquisition. For hard surface trails, in most cases, no site-specific cost estimate was available, and a determination was made based on the best available data on the site as to whether the cost per mile would generally be in a high, medium or low cost category. Average costs per mile for these three categories were derived from actual costs for three recent Montgomery County trail projects, adjusted to 1998 dollars. Average costs (1998 dollars) used for these estimates are: Low: \$350,000; Medium: \$475,000; and High: \$1,000,000. Figures were then adjusted for inflation. For the first "10 years" figure, estimates were adjusted by an estimated 3% per year inflation rate depending on the year of construction anticipated. For the Years 7-12 figure, estimates were adjusted at 3% per year for 10 years. For the Years 13+ figure, estimates were adjusted for a 3% per year inflation rate for 15 years.

²Cost estimates for natural surface trails for the first 10 years figure are based on some preliminary planning and project estimates derived for the upcoming 2001-06 CIP. Cost estimates for the Years 7-12 and Years 13+ figures are based on an estimated cost of \$50,000/mile. Because no new natural surface trails have been built in the recent past, an accurate per mile estimate is not available. Figures are based on actual recent costs for various trail elements, such as bridges, culverts, boardwalk, gravel parking lots, and Montgomery County Conservation Corps labor costs. Costs assume relatively constrained conditions, such as sensitive environmental conditions and difficult topography, as is found in most of the proposed trail corridors, and mostly manual labor for trail construction. Cost estimates include some funding for paid Conservation Corps or M-NCPPC staff labor, but assume that this will be supplemented by volunteer labor.

³It is anticipated that not all of the funding for the implementation of the Plan will be supplied by the County budget. Some trails may be funded and constructed by developers through the subdivision process, by other public agencies such as WSSC, and through federal and/or state programs such as TEA21.

⁴The 2001-06 CIP is being drafted by staff to propose that all of the hard and natural surface projects proposed in Table 3 of the Plan and listed here for the first 10 years be initiated (and most completed) in FY01-06.

HARD SURFACE TRAIL WIDTHS

ISSUE:

During the last PHED committee meeting on the Country-wide Park Trails Plan, on June 28th, Bob DeGroot, one of the citizen speakers, made several comments about paved trail widths. The Committee requested that staff respond to these comments. Specifically, Mr. DeGroot testified that paved trails are 8' to 10' wide with "clear cut" 4' to 5' shoulders.

PAVEMENT WIDTHS:

The Standard: The current adopted M-NCPPC paved trail width standard (1991) is "8' minimum, 10' desirable" for a two-way trail. Several of the new trails, including the Capital Crescent, have been built with 10' wide pavement.

Why is this width needed? All Montgomery County park hard surface (hiker-biker) trails are multiple use. In trail design as in all park design, we try to balance the protection of natural resources and the minimization of negative environmental impacts with the provision of a high quality user experience and the maintenance of user safety. Multi-use means that bicycles, walkers, runners, dog walkers, roller skaters, people with strollers and people in wheelchairs are all using the same trail. A minimum width is needed in order to both maintain user safety and provide a high quality user experience. Negative environmental impacts can be minimized through design and construction techniques, described elsewhere in this memo. The major reasons for the standard widths are as follows:

- **Physical dimensions** - The trail must be wide enough for the various trail vehicles using it, plus some "shy distance" from the trail edge and between trail users going in opposite directions: a bicycle is 28" wide at the handlebars (when leaning around curves the actual space taken up is greater); a bicycle trailer is 34" - 36" wide; a stroller is about 24" wide, and a wheelchair is 36" - 40" wide. A shy distance is needed both physically and psychologically so that trail users do not, and do not think they are about to either run into someone or fall off the pavement.
- **Varying speeds** - Trail users travel at different speeds: an adult bicyclist is likely to travel between 8 - 15 mph; a proficient adult can travel over 20 mph (depending on conditions); roller skaters can match a moderate bicycle speed; average runners may go about 7 mph, while walkers, people with young children may move at a very leisurely pace. This inherent difference in recreational speeds leads to both real and perceived safety concerns, especially when faster moving trail users want to pass. Trail experts agree that the best way to minimize this problem, besides providing separate trails for different users, is to provide an adequate trail width. User experience is enhanced if both faster and slower moving trail users can feel safe and comfortable traveling at their desired speed.

- **Usage levels** - Compared to estimates of other trail usage levels across the country, Montgomery County park trails receive high levels of use. A 1985-86 study counted an average of 88 users/hour on Sligo, Rock Creek and Little Falls trails over all daylight hours. A 1995 Sligo survey counted almost 100 users/hour. A 1996 Capital Crescent survey averaged 125-150/hour. Peak weekend and weekday evening figures are much higher. Capital Crescent was measured at over 300/hour on some peak summer weekends. Crowding and congestion both increase the likelihood of accidents and negatively impacts the users' experiences.

Does trail pavement width ever vary?

Yes. Currently the design for all trails are considered on a case-by-case basis, and factors such as anticipated use levels and multi-use mix, topography (necessary curves and hills), and environmental conditions are considered. Connector trails, which connect a neighborhood or smaller park to a main trail, can and are often built narrower (6' - 8' wide) than a main trail. Trails within local parks or between facilities within a park are sometimes as narrow as 4' wide, especially if mainly pedestrians are expected.

Is our standard width adequate?

Maybe not. The current standard complied with the old standard in the AASHTO Guide for the Development of Bicycle Facilities, considered the national standard for bikeway and shared use path development. However, the question of multiple use conflicts has been a major topic of concern and discussion in the trail planning and design field across the country. The new 1999 AASHTO Guide, after considerable debate among national experts, recommends 10' two-way multi use trails, and states that 8' wide paths are adequate only in "rare instances". Our trails do not meet AASHTO's criteria for these "rare instances". The new Guide also states that it may be necessary to increase multiple use trail widths to 12' or even 14' with high volumes of a variety of user types, use by large maintenance vehicles and/or steep grades. Many park agencies across the country with trail use patterns similar to the Capital Crescent Trail build their trails 12' or wider.

Our current standard will be reviewed and updated in the *Trail Implementation Guide*, which will be developed beginning this year as a technical supplement to the Master Plan of Park Trails.

HORIZONTAL CLEAR ZONES (SHOULDERS)

The Standard: The current Montgomery County Park design standard (not adopted) specifies a minimum 1' shoulder of natural materials (grass or existing soil) to be level with the trail pavement. The 1991 adopted standard does not specify a shoulder, but calls for a horizontal clearance of 2' minimum; 3' desirable on each side of the trail. This means 2' - 3' from the trail edge to anything that could pose a safety hazard, such as signs, steep drop-offs, culvert openings, tree trunks or other dense vegetation, for trail users who may veer off the trail.

Why is any given width needed?

This width is provided for both safety and user enjoyment. If a trail user should veer off the trail to

avoid an accident, there should be a reasonable distance from hazards provided to avoid what could be a more serious accident. In addition, humans tend to shy away from objects along the trail edge that are perceived to be too close for comfort. If objects are too close to the trail edge, trail users will tend toward the middle of the trail, limiting the useful pavement width. If objects are a comfortable distance away from the edge, users will feel more comfortable closer to the pavement edge. This allows for more efficient utilization of the entire paved width, which is especially important on our high volume trails. The clear zone also adds to trail user visibility and greater sight distances. Our paved trails have often been designed with many curves and hills in order to reduce the environmental disturbance. These design elements also tend to limit sight distances for trail users, and for motor vehicles where trails cross roads. The horizontal clear zone helps to increase sight distances. If a trail user can see and anticipate the actions of oncoming trail users (or road traffic), then accidents can be avoided.

Does shoulder/horizontal clearance width ever vary?

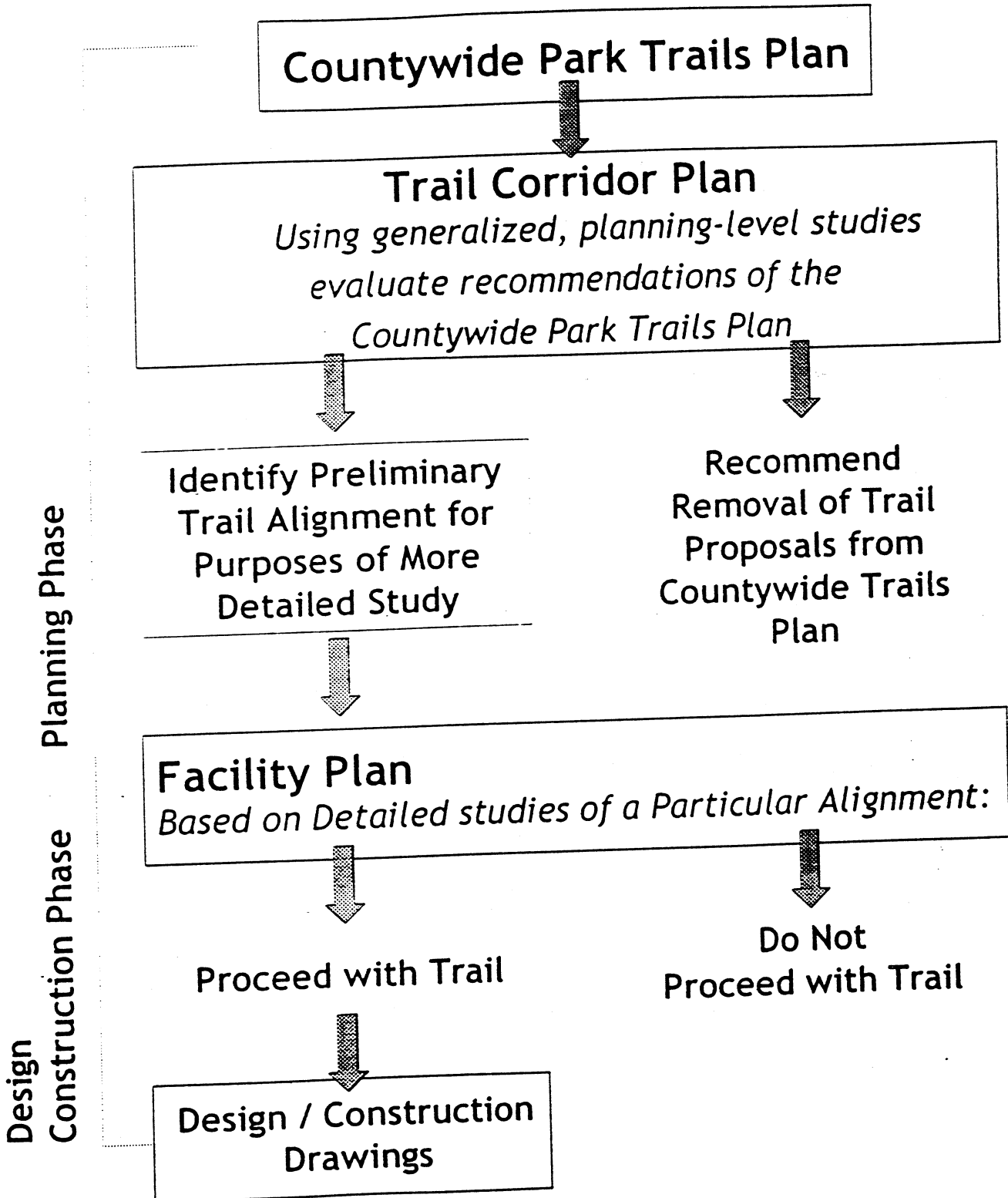
Yes. During the trail planning and design stages, M-NCPPC staff and consultants make every effort to design a safe, comfortable, enjoyable trail while minimizing the environmental disturbance where possible. Where trees or other significant native vegetation or features within the trail corridor can be saved, exceptions to the horizontal clearance are made. Even on older trails such as Rock Creek and Sligo Creek, trees and other vegetation exist very close to the trail edge. Newer techniques such as root aeration and careful root cutting during construction can save trees that are close to where a trail is being installed.

Is the standard adequate?

Probably. Staff will continue to balance the safety needs for horizontal clearances to minimize accidents and increase sight distances, with the effort to preserve the existing native vegetation through case-by-case review of trail planning and design projects. The Trail Implementation Guide will recommend and/or require some of the newer construction techniques that help to minimize the limits of disturbance during trail construction, and to save nearby trees where possible.



The Process For Planning, Designing & Building Hard Surface Trails



The Process For Planning, Designing & Building Natural Surface Trails

