FOR BOARD PACKAGE

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Deputy Director	
FROM: D. F. Lederer	
Division Manager	
SUBJECT: <u>Pole Road Area Park</u> Item Type	ITEM FOR BOARD MEETING ON: 1-5-1987 Date
TITLE: <u>Preliminary Master Plan</u>	이 사람은 가슴이 가슴이 있는 것을 바람이 같아. 이 것이 가 가 가 가 가 있는 것이 아니.
AUTHOR: <u>E. W. Nenstiel</u>	Phone No.: <u>941-5000, ext 5692</u>
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() County Attorney <u>N/A</u>	
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IS PROPOSED BOARD DATE CRITICAL? () Yes (x) NO EXPLAIN:
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IS FUNDING INVOLVED? [X] Yes [] NO	0 Fund 940 Subfund 451
NOTE: Be sure item is reviewed appropriate	
WHAT ACTION, EVENT, OR REQUEST INSTIGATED THIS	TEM? A request from the Lee District
Supervisor.	· · · · · · · · · · · · · · · · · · ·
COMMENTS: (Any special action necessary etc.?)	
Nove to send the preliminary master t	olan to a public hearing.
Move to send the preriminary mabeer r	
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WORD PROCESSOR DOCUMENT I.D. No01141_	
OPERATOR NAME Patty Woodall	TELEPHONE: 941-5000, ext. 5732

Memo to the Board

A- <u>Send the Preliminary Master Plan of the Pole Road</u> <u>Area Park to a Public Hearing</u>.

<u>ISSUE</u>: The developer of the Villages of Mt. Vernon has proffered and is ready to build recreation facilities at the Pole Road Area park site in Lee District based on an approved park master plan.

RECOMMENDATION: I recommend that the Park Authority Board move to send the preliminary master plan for Pole Road Area Park to a public hearing.

<u>TIMING</u>: Action by the Park Authority should be taken on January 5, 1987.

BACKGROUND: The preliminary master plan and report is enclosed. The preliminary master plan shows: (2) play apparatus area, (5) picnic areas, a multi-use court, a boardwalk and observation deck, a natural area, an open play area, a bridge, and a trail system linking the park facilities to each other as well as to the major site access points. No lighted facilities are planned.

On July 21, 1987, this report in the form of a draft site feasibility study was presented to the Lee District Park and Recreation Advisory Committee at the request of Supervisor Alexander's office. On October 9, 1987, a letter from the committee supporting the study and recommending that the Authority move forward with the plans outlined in the study was received and is attached as appendix "L" of the report.

FISCAL IMPACT: \$50,000 in bond money has been designated to become available in FY 89. This money is earmarked to upgrade and improve facilities which the developer of the surrounding communities has proffered to build at this park.

January 5, 1988

Memo to the Board Page 2

ENCLOSED DOCUMENTS: Preliminary master plan report dated June 1987.

STAFF: Joseph P. Downs, Park Authority Director; James A. Heberlein, Park Authority Deputy Director of Development; Donald F. Lederer, Park Authority Design Division Manager; Edward W. Nenstiel, Park Authority Project Co-ordinator; Gary Roisum, Park Authority Manager Huntley Meadows Park; Richard G. Little, Director Planning Division OCP; John W. Koenig, Director Utilities Planning and Design Division DPW; Larry Johnson, Co. Soil Scientist.







PRELIMINARY MASTER PLAN REPORT

FOR

POLE ROAD AREA PARK

PREPARED FOR

FAIRFAX COUNTY PARK AUTHORITY

JAY HAMILTON LAMBERT, EXECUTIVE DIRECTOR JOSEPH P. DOWNS, DIRECTOR JAMES A. HEBERLEIN, DEPUTY DIRECTOR DONALD F. LEDERER, MANAGER OF DESIGN

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PREPARED BY

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IN CONJUNCTION WITH

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FAIRFAX COUNTY DEPARTMENT OF PUBLIC WORKS, UP&D DIVISION JOHN W. KOENIG, DIRECTOR

FAIRFAX COUNTY DEPARTMENT OF EXTENSION & CONTINUING EDUCATION LARRY JOHNSON, SOIL SCIENTIST

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APPENDIX

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I. INTRODUCTION

A. Purpose & Objectives

The purpose of this study is to identify & analyze various physical, social, political, economic and other factors which will influence the ultimate development of the Pole Road Area Park site as a primary vehicle for the delivery of recreational services to a densely populated sector in the southern tip of the Lee Supervisory District. Through this analytical process, the basic guidelines for the development of usable active and passive recreation space will be established. It is the further objective of this report to be instrumental in providing this space in a manner responsive to the desires of the potential park users, estimates of short and long term community needs and with minimal disruption of the existing physical site conditions.

II. BACKGROUND

A. Location

The future Pole Road area park is located on property identification maps 100-4 and 109-2. It is bounded on the north by Pole Road, on the east by the residential developments of Woodlawn Mews and the Villages of Mount Vernon, on the south by a large undeveloped tract of land zoned residential and on the west by future residential developments known as Woodlawn Green and the Villages of Mt. Vernon section 3. The future park which is to be assembled from a number of parcels is generally identifiable as 100-4 ((1)) 3A and portion of 2, 100-4 ((5)) B, 100-4 ((6)) (2) B and 109-2 ((5)) B as shown on the following map in the shaded area. This future park area is approximately 35 acres in size.

Of this total area, only three parcels totaling a little over two acres in size, have been dedicated to the Park Authority to date. These three parcels are 100-4 ((5)) B, 100-4 ((6)) (2) B and 109-2 ((5)) B. It is anticipated that the remainder of the site will be transferred to the Park Authority shortly.

B. Size, Acquisition and History

In February 1982, the Park Authority adopted a concept plan, in principle, for the future Pole Road area park. It had already been determined that the 100 year flood plain area of approximately 33 acres on the Dogue Creek would be dedicated to the Park Authority as part of the Stream Valley Policy by the developers of the Villages of Mt. Vernon and Woodlawn

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Mews. In addition to dedicating the 33 acres, the developer of the Villages of Mount Vernon also agreed to construct athletic fields (two soccer fields and three baseball fields) and necessary parking as shown on the adopted concept plan on the following page and described in Appendix "A".

In early 1986 it was suggested that beavers had moved into the area and constructed a dam on the Dogue Creek. As a result of this activity much of the 33 acre flood plain area had been flooded and was under water most of the year.

After some investigation, it was determined by Park Authority staff that although the beaver problem could be eliminated, there could still be other legal and physical constraints on building within a flood plain which would need to be overcome before development of this park could begin (See Appendix "B"). With this background and the developer's need to provide recreational facilities in the area, Supervisor Alexander requested that an area wide survey be conducted so that "a determination can be made regarding the amount of land available for park use and the type of facilities that can be constructed". (See Appendix "C").

In the Fall of last year, (November 1986), an area wide study was completed by Park Authority staff based on Mr. Alexander's request. Based on the premise that athletic fields and associated parking areas as well as secondary facilities such as, basketball/multi-use courts, tennis courts, playgrounds and picnic areas were to be provided. This study concluded that:

"Since the only sites within the primary and secondary study areas which can support the type of recreational facilities proposed for the Pole Road Area are the Edgewood Acres tract and the future Pole Road Area Park site itself, the Edgewood Acres site should be acquired in order to provide the developer proffered facilities in the Pole Road Area. If the Edgewood Acres tract cannot be acquired, then the Pole Road Area Park site should be reconsidered or the provision of recreational facilities in this vicinity eliminated".

Following this study, it was determined by Park Authority Conservation Division staff that beavers were <u>not</u> the cause of the 'high water problem on this site, but rather a series of factors were contributing to the standing water problem including: 1) a water impoundment structure south of the park property built in the early 1950's on private property which had become blocked and inoperable. 2) An inadequate drainage structure where Dogue Creek passes under Route 1. 3) Continued increased residential development in the upper reaches of the Dogue Creek water shed,



and 4) long standing site conditions such as, high water table, soil conditions and an extremely flat 100 year flood plain.

On February 19th of this year, a meeting of the Lee District Park and Recreation Advisory committee was held (See Appendix "D"). At this meeting, it was determined that the Park Authority would provide an indepth analysis of the Pole Road Area Park site including local, state and federal regulations that may impact site development. The possibility of the Park Authority providing facilities on the privately owned land occupied by the community pool was also discussed.

It was requested that the Park Authority prepare a sketch development plan (abbreviated master plan) based on a thorough site analysis and that upon approval of this sketch plan, the developer of the village of Mt. Vernon will be requested per a previous commitment to provide park facilities on this site.

C. Available Funds

The recently approved countywide priority list for CIP acquisition and development projects, included the Pole Road area park. It was number 55 on a priority list of 63 projects to be completed by the Fall of 1988 and had \$50,000 allocated to it for any necessary improvement to the new facilities.

Additional funding (either in the form of a direct contribution of funds or in the form of recreation facilities developed on site) will be provided by the developer of the Villages of Mt. Vernon as part of his original proffer conditions. While the exact dollar value of this proffer has not been determined, it is assumed that since the developer was willing to originally provide 5 ballfields and parking areas, estimated at \$400,000 to \$500,000 that this would be the approximate value of his proffer.

III. Study Area

A. Service Area

The primary service area of a community park is a 3/4 mile radius from the park. This distance is considered.convenient for pedestrian bicycle access, and generally defines the area where most of the park's frequent users live. A secondary service area of 1-1/2 mile radius is considered to further define recreational deficiencies and interest on a broader scale since all FCPA park facilities are open for use by the general public from any area.



B. Population

Analysis of current and future development within the service area of the park indicates that there are approximately 3521 individuals within the primary (3/4 mile radius) service area. Expanding to the secondary (1 1/2 mile radius) service area, the estimated population increases to 13,068.*

C. Nearby Parks and Schools

Within the 3/4 mile radius of the park site there are no public parks or schools other than Cheney Elementary School which serves Fort Belvior only.

Based on an estimated population of 3521 within the 3/4 mile service radius, the following facility standards apply:

* Population count is based on the census update as supplied by the Fairfax County Office of Research & Statistics in their 1986 Standard Reports publication.

FCPA FACILITY STANDARDS AS RELATED TO STUDY AREA

Primary Service Area (3/4 Mile Radius)								
FACILITY	FCPA FACILITY STANDARD	NEEDED FACILIT	ES	EXISTING PARKS	EXISTING SCHOOL FACILITIES	TOTAL	SURPLU DEFICIE	JS/(+) ENCY(-)
		1986	1995				1986	1995
Tot Lot	1/500	7.0	8.4	0	0	0	-7.0	-8.4
Baseball	1/6000	0.6	0.7	0	0	0	-0.6	-0.7
Softball	1/3000	1.2	1.4	0	0	0	-1.2	-1.4
Tennis	1/1200	2.9	3.5	0	0	0	-2.9	-3.5
Basketball/Multi-use	1/500	7.0	8.4	0	0	0	-7.0	-8.4
Swimming Pool	1/15000	0.2	0.3	0	0	0	-0.2	-0.3
Golf Course	1/25000	0.1	0.2	. 0	0	0	-0.1	-0.2
Soccer	1/1500	2.3	2.8	0	0	0	-2.3	-2.8
Estimated population	within the	3/4 mile	serv	ice area:	. 1986 1995	Estima Estima	te = te =	3,521 4,209

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parks and schools:

Within a 1 1/2 mile radius of the park site are the following

PARKS/SCHOOLS	BASEBALL/SOFTBA	BASKETBALL COUR	SOCCER FIELD	PLAYGROUND/TOT	TENNIS COURTS	OPEN PLAY	NATURAL AREA	PICNIC AREA			
Woodlawn Park		1		2	2			1			_
Mt. Vernon Manor Park	1	1		2	2	1	1	1			
Dogue Creek S.V. Park											
Grist Mill Park	3	2	2								
Woodlawn Elem. School	3	2	1	1							

Based on an estimated population of 13,068 within the 1 1/2 mile service, the following facility standards apply: FCFA FACILITY STANDARDS AS RELATED TO STUDY AREA

Secondary Service Area (1 1/2 Mile Radius)

FACILITY	FCPA FACILITY STANDARD	NEEDED FACILITES		EXISTING EXISTING SCHOOL PARKS FACILITIES		TOTAL	SURPLI DEFICI	US/(+) ENCY(-)
		1986	1995				1986	1995
Tot Lot	1/500	26.1	26.9	4	1	5	-21.1	-21.9
Baseball	1/6000	2.2	2.2	0	0	0	-2.2	-2.2
Softball	1/3000	4.4	4.5	4	3	7	2.6	2.5
Tennis	1/1200	10.9	11.2	4	0	4	-6.9	-7.2
Basketball/Multi-use	1/500	26.1	26.9	4	2	6	-20.1	-20.9
Swimming Pool	1/15000	0.9	0.9	0	0	0	-0.9	-0.9
Golf Course	1/25000	0.5	0.5	0	0	0	-0.5	-0.5
Soccer	1/1500	8.7	9.0	2	1	. 3	-5.7	-6.0

Estimated population within the 1 1/2 mile service area:

1986 Estimate = 13,068 1995 Estimate = 13,457

D. Fairfax County Comprehensive Plan:

This site is located in the MV8, Woodlawn Community Planning Sector of Area IV.

The Plan Map shows the Dogue Creek 100-year floodplain area between Pole Road and Route 1 as Open Space and Recreation-Private Open Space.

In general, the Plan states:

- 1. The Environmental Quality Corridor (EQC) System is the centerpiece of the County's open space program.
 - o These basic EQC's are designed to protect the County's streams and adjacent lands which adversely affect and at the same time are most adversely affected by development. They are defined to include: all presently mapped 100-year floodplains and all 100-year floodplains subsequently mapped during the development process; all floodplain soils and soils adjacent to streams which exhibit a high water table and poor bearing strength, or other severe development constraint (these include Fairfax soils numbered 1, 2, 3, 5, 11, 12, 13, 30, 31, 33, 89, 92, 117 and 118, and also soils numbered 39, 68, 84, 85, 90, 110, and 112 when these latter soils are found within the 100-year flood plain or are found to be extremely wet).
- 2. Protect the environmental quality corridor (EQC) open space system as described below:
 - Sensitive Lands EQC's. These lands are to be protected in undisturbed open space, except provisions may be made for the installation of recreational trails, necessary road and utility crossings, and stormwater management structures.
 - Encourage public access and compatible forms of recreation within sensitive lands EQC's. Where appropriate, relate public facility improvement such as parks, camp areas, libraries, schools and nature centers to the EQC system. However, active recreation must be coordinated with and not compete against the conservation goals of the EQC system.
 - Recognize the sensitivity and need to protect the integrity of stream valleys by discouraging any development within 100-year floodplains and adjacent steep slopes.
 - Ensure that land use planning is responsive to the constraints imposed by such factors as floodplains, wetlands, slippage soils, steep slopes, erodible soils, septic limitation areas, and aquifer recharge zones.
 - Prohibit the filling, draining or altering of floodplains and wetlands.



In relation to parks and recreation, the Plan states:

"The existing and proposed system of Fairfax County's parks attempts to establish full opportunity for all residents and visitors to make constructive use of their leisure time through the provision of recreational and cultural programs within safe, accessible and enjoyable parks. Additionally, the park system serves as the primary public mechanism for the preservation of environmentally sensitive land and water resources and areas of historic significance. Parklands to be acquired shall usually be classified in one of the categories listed below. However, the list is not restrictive since citizen needs, both present and future, may require acquisition of combination park types or ones that differ from all the categories listed below.

Stream valley parks include land lying in the floodplain and associated slopes exceeding 15 percent. Development is limited mainly to trails with emphasis on conservation."

The primary goals related to the provision of parkland are:

- to provide the residents of Fairfax County with a park system that will meet their recreational needs with a variety of activities;
- to establish full opportunity for all residents and visitors to make constructive use of their leisure time through the provision of recreational and cultural programs within safe, accessible and enjoyable parks;
- to systematically provide for the long-range planning, acquisition and orderly development of a quality park system which keeps pace with the needs of an expanding population;
- o to acquire parkland in locations which will relieve the activity and locational deficiencies in local-serving parks among the older parts of the County and provide an adequate level of service in the newer, developing areas;
- to urge the preservation of major stream valleys which provide natural drainage, wildlife habitat, parkland linkages, and supplemental recreation areas, contribute towards flood control, and afford other environmental benefits.

o to emphasize the dedication of land for parks and recreational facilities associated with new development, recognizing that purchase will be necessary, especially in the older, more densely populated areas.

All major stream valleys are to be preserved, with dedication being the primary mechanism for acquisition. Purchase of stream valley acreage or easements should be authorized where acquisition through purchase as well as dedication is not possible, for example, in the case of noncluster development with densities of .5 du/ac or more. This would help preserve the stream valleys and ensure public access to them."

Under the specific Area IV park recommendations, the Plan suggests:

"Area IV Recommendations"

Parks, Recreation and Open Space. The accompanying table summarizes the Area IV Plan recommendations pertaining to parks, recreation and open space where public action through acquisition and/or development is needed.

Area IV

Parks	and Recrea	tion Requirements and Recomme	ended Actions
Areas	Affected	Project Description	Recommended Action
	•	•	•
	•	•	•
	MV8	Stream Valley-Dogue Creek	Acquisition
	•	•	•
	•	•	•
	•	•	•
			* *

Under the specific Plan recommendations for the MV8 Woodlawn Community Planning Sector found on page IV-44, the following guidance is provided;

> "Public Facilities Parks, Recreation and Open Space"

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- o The Dogue Creek and Little Hunting Creek Environmental Quality Corridors should be protected. The County should acquire parkland along the Dogue Creek stream valley in accordance with the with the Fairfax County Stream Valley Policy. Improved channelization of Dogue Creek under Route 1 is recommended." (See Appendix "D").
- E. Zoning

The area surrounding Pole Road park is zoned for high density development. Woodlawn Mews and the Villages of Mt. Vernon sections 1 and 2 along the eastern boundary of the park are zoned R-20 as is the future Villages of Mt. Vernon section 3 (100-4 ((3)) 3D) development. The large lots bordering southern portion of the park (109-2 ((1)) parcels 18A and 18C) are zoned R-2. It is unlikely that these parcels would be rezoned in the future or that any significant development would occur on them since they are completely within the 100-year flood plain. The other major development, on the western side of the park, Woodlawn Green, (100-4 ((1)) 2) was rezoned to PDH-16.

F. Countywide Trail Plan

The approved countywide trail plan indicates that trails will eventually be developed along the north side of Pole Road, the east side of Old Mill Road and the north side of Route 1. No countywide trails are to be developed along Dogue Creek according to the plan.

- IV. Site Analysis
 - A. Topography

Approximately 90% of the site can be classified as extremely flat with most slopes in the 0 to 2% range except along the eastern boundary line where slopes rise sharply and are in the 8% to 13% range. Likewise, there is a limited area of the site adjacent to the future Woodlawn Green development along the western property line with slopes in the 6 to 10% range.

B. Hydrology: Virtually the entire 35 acre site falls within the adopted 100 year flood plain as shown on the County's published maps. This flood plain is currently being re-studied by the Federal Emergency Management Agency (FEMA) and their preliminary results indicate a correlation with the adopted flood plain to within approximately 1.0 feet in elevation (see Appendix "E" Attachment 2). The FEMA study is in draft form and should be available for detailed review by County staff later this





18-- year. Based on the preliminary FEMA results, it is not anticipated that their report will result in a significant alteration of the adopted flood plain limits.

The site has been extremely wet with either flowing water or standing water covering a significant portion of the flood plain. In areas where no standing water is present, the water table is generally within a foot of the surface.

County staff has studied the hydraulic characteristics of this reach of Dogue Creek a number of times in the past. In the County's Master Drainage Plan, published in December, 1978, the feasibility of constructing a major flood control impoundment north of Pole Road was investigated (see Appendix "E" Attachment 3). While it was determined that hydraulic benefits could be derived by the reservoir, the concept was unacceptable to the Corps of Engineers and to officials at Fort Belvoir. The project was not implemented.

The most recent investigation pertains to a refinement of the impoundment study for the Southeast Fairfax Development Corporation (SFDC). SFDC was interested in possible hydraulic modifications of the area to reduce the flood plain limits and reclaim portions of the flood plain for economic development purposes. Staff completed an analysis of various hydraulic improvements to determine feasible options to reduce the flood plain limits in the area. These alternatives included combinations of the impoundment north of Pole Road, channel modifications between U.S. Route 1 and Pole Road, and improvements to the culvert at U.S. Route 1. All of the alternatives showed that while the improvements would reduce peak flows and flood plain elevations to some degree, a large amount of fill would be required in the area in order to remove a significant amount of land from the flood plain. This information was presented to SFDC and a representative from Fort Belvoir on April 4, 1985. To our knowledge, the SFDC has not pursued any of the alternatives presented in the study. (See Appendix "E" Attachment 4A thru 4C).

On March 18 of this year, the Department of Public Works reached an agreement with the owner of the private property south of the park site (109-2 ((1)) 19) to remove the obstruction which had been causing water to back up into the park. On March 27 of this year, the obstruction was removed and the standing water level was reduced approximately 2 1/2 to 3 feet although no monitoring system was installed to record and verify this data (see Appendix "F").

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C. Soils: There are two predominant soil types on the site. The first is mixed alluvial (1A+). These soils are in flood plains and drainage ways and consist of eroded material from surrounding hillsides from agricultural or construction activity. Soil materials in this group range from soft organic silts and clays to dense gravel-sand-silt-clay mixtures. These soils have a seasonal high water table that may be at or near the surface during wetter seasons and after heavy rainfalls. Soft, poor-bearing strata are present within these soils.

The second soil type present on the site is Bertie (26A1). These soils are found on some of the higher areas of the flood plain. The seasonal high water table may approach one (1) to two (2) feet below the surface. These higher areas would be suitable for playing fields and non-permanent structures which could stand occasional flooding.

The high water table and flooding conditions exclude all of the soils on this site for any type of on-site septic disposal system. (See Appendix "G"). Soils in this area are classified as hydric soils.

Access: Public vehicular access to this +35 acre parcel is D. limited to two points off of Pole Road. The primary vehicular access point would be on the western side of the site adjacent to the Woodlawn Green development where entry into the site and the provision of parking facilities would be the easiest and would cause the least amount of disruption to the site. The secondary vehicular access point would be at Pole Road east of Doque Creek just behind the townhouses of Woodlawn Mews. This relatively narrow area with its steeper slopes would require a great deal more in time, effort and funds to prepare it for a roadway and parking facility. Additionally, its proximity to an area designated for neither primary nor secondary use makes it less desirable than the access on the Western site which would relate directly to a primary use area. A discussion of primary and secondary use areas occurs in the section titled "concept plan development" in this report.

Pedestrian access to the site was also analyzed in terms of primary and secondary points. This is somewhat less critical, however, in that there are or will be numerous points of pedestrian access all along the eastern and western boundaries of the site as shown on the summary analysis map. Pedestrian access to both primary and secondary use areas is direct, easy and will cause relatively little disturbance to the site.



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E. Vegetation/Wildlife: Vegetation appears to be diverse and representative of several general wetland habitat types. This is confirmed by aerial photographs taken of the area in August 1986, when vegetational differentiation is at an optimum. These photos were taken for the Fairfax County Tidal Wetlands Board; however, the study area is above tidal influence, the extent of which is about 800 feet upstream of the Mt. Vernon Memorial Highway. The habitat types present in the study area were principally of the riverine-palustrine system as defined by the U. S. Fish and Wildlife Service classification of wetlands. Specific wetland types

included:

- 1. Unconsolidated bottoms (the streambed)
- 2. Emergent wetlands, nonpersistent
- 3. Emergent wetlands, persistent
- 4. Scrub-shrub wetlands
- 5. Forested wetlands
- 6. Dead forested wetlands
- 7. Upland floodplain forest

The map shows the approximate extent of these vegetative areas.

Associated with the wetland habitats was abundant wildlife. Species observed at the time of the visit included song birds, ducks, a blue heron, a hawk and deer (tracks only). Evidence of former beaver activity was abundant, but none of the tree cuts observed were recent. Additionally, green backed herons, cranes, snowy egrets, canada geese and muskrats have also been observed.

F. Utilities: The main utility impacting the site is the 30 inch diameter sanitary sewer which traverses the site in a generally north/south direction and generally along the eastern side of the main channel of Dogue Creek. Eight (8) inch sanitary sewer laterals from the developments on the east side of the park (Woodlawn Mews and villages of Mount Vernon Sections 1 and 2) cross the parkland to connect with the sewer main at various points. Likewise, sanitary sewer laterals from the future woodlawn green development will cut across the park site to connect with the 30 inch main. Additional utilities, electricity, phone, water and gas are available to the site along Pole Road and in the surrounding communities although none of these utilities appear to cross the site.



V. OTHER CONSTRAINTS/OPPORTUNITIES

Aside from the direct effect of existing conditions and features within the surrounding communities and on the site itself, there are additional local, state and federal regulations which appear to apply to the Pole Road site. In studying this site and determining its potential for providing the recreational facilities need in the community, these considerations must also be taken into account.

A. Local Considerations

The Comprehensive Plan recommendations for open space classify the study area as an environmental quality corridor composed of the stream, the 100-year floodplain and the adjacent freshwater, wetlands. As a sensitive lands EQC, the Plan recommends that the area be protected in undisturbed open space allowing for the installation of recreational trails. The Plan encourages public access to these types of lands, promoting an environmentally compatible form of recreation. Active recreation must be coordinated with, and not compete against, the conservation goals of the EQC system. The Plan also states that filling, draining or altering of flood plains and wetlands should be prohibited.

Of note, the Plan EQC policies are not in conflict with the parks and recreation language of the plan. To the contrary, the EQC policies and the park policies of the Plan complement one another. The park classification language in the Plan recognizes that stream valleys are an appropriate form of parkland, but indicates that development in these types of areas should be limited mainly to trails with an emphasis on conservation. One of the primary park goals stated in the Plan urges the preservation of major stream valleys that provide natural drainage, flood control, and that afford other environmental benefits. The specific Area IV parks, recreation and open space recommendations of the Plan recommend that the Dogue Creek stream valley be acquired and not developed. The Doque Creek stream valley is to be acquired in accordance with the Fairfax County Park Authority Stream Valley Policy. The Stream Valley Policy recognizes flood plains as sensitive environmental areas and highlights this in recognizing that the first guideline in developing a stream valley park system is for the conservation of land and water resources, flood control and the provision of outdoor recreation.

Therefore, both the EQC-Open Space policies and the Parks and Recreation policies of the Plan provide complementing guidance in the use of lands such as the study area. In essence, the Plan guides us to protect and preserve the study area because of its ecological importance, yet the Plan recognizes that light, passive recreation, compatible with the ecological resource is appropriate so that the citizens of the County can enjoy and appreciate the valuable resource that has been preserved. From a land use-environmental regulatory standpoint, several considerations arise in relation to the study area. At the local level, the Flooplain Regulations (Section 2-900) of the Zoning Ordinance are prominent. The purpose and intent of these regulations state that floodplains are to be preserved and protected in as natural a state as possible for the preservation of wildlife habitats, the maintenance of the natural integrity and function of the streams, for water quality protection and for promotion of ground water recharge. Under the Floodplain Regulations (see Appendix D-4) limited recreational uses (those not requiring major fill or land disturbing activities) are permitted uses within a floodplain area. These include wildlife preserves, picnic areas, boat ramps, hiking trails, play courts, etc. A major fill is defined as any fill in excess of 5,000 square feet in area or more than 278 cubic yards in volume.

For uses in the study area floodplain that do not meet the described permitted uses, a Special Exception permit would be necessary. For approval of an SE in a floodplain, certain use limitations apply. The most significant limitations, as stated in Section 2-900 of the Zoning Ordinance are:

- 1. Except as may be permitted by Par. 6 and 7 of Sect. 903 above, any new construction, substantial improvements, or other development, including fill, when combined with all other existing, anticipated and planned development, shall not increase the water surface elevation above the 100-year flood level upstream and downstream, calculated in accordance with the provisions of the Public Facilities Manual.
- 5. To the extent possible, stable vegetation shall be protected and maintained in the floodplain.
- 7. For uses other than those enumerated in Par. 2 and 3 of Sect. 903 above, the applicant shall demonstrate to the satisfaction of the approving authority the extend to which:
 - A. There are no other feasible options available to achieve the proposed use; and
 - B. The proposal is the least disruptive option to the floodplain.
 - C. The proposal meets the environmental goals and objectives of the adopted Comprehensive Plan for the subject property.

B. STATE CONSIDERATIONS

The State of Virginia also has a regulatory jurisdiction over activities within the study area if these activities alter the stream subaqueous bottoms:

Section 62.1-3 of the Virginia Code states that it shall be unlawful and constitute a misdemeanor for anyone to build, dump, or otherwise trespass upon or over or encroach upon or take or use any materials from the beds of the bays and ocean, rivers, streams, creeks, which are the property of the Commonwealth, unless such act is pursuant to statutory authority or a permit by the Marine Resources Commission.

C. FEDERAL CONSIDERATIONS

The U. S. Army Corps of Engineers has a broader regulatory jurisdiction over the study area under Section 404 of the Clean Water Act. The Corps of Engineers requires the issuance of a permit for activities within waters of the United States and adjacent wetlands. Nontidal waters and wetlands are included. Waters of the U. S. include:

"Coastal (including territorial seas) and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including adjacent wetlands. Tributaries to navigable waters of the United States, including adjacent wetlands. Man-made nontidal drainage and irrigation ditches excavated on dry land are not considered to be tributaries. Interstate waters and their tributaries, including adjacent wetlands. All other waters of the United States such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could effect interstate commerce."

The Federal definition of wetlands is:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Federal wetlands generally include swamps, marshes, bogs, and similar areas. It should be noted in many cases the federal definition of wetlands includes areas at higher elevation than 1-1/2 times the mean tide range and are not limited to tidal areas."

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D. THE VILLAGES RECREATION INC.

A relatively recent consideration in the study of the site has been the suggestion by the Villages H. O. A. that an undeveloped portion of the privately owned swim club property may be available for use by the Park Authority for development of recreation facilities. The Woodlawn Mews community has also offered to dedicate a strip of their home owners land to the Park Authority.

The Superintendent of the Park Authority's Division of Land Acquisition and Planning has indicated that, in general, based on past experience, the Park Authority would not develop facilities on privately owned land. The Park Authority would prefer that the current owners dedicate the parcel to the Agency. A dedication could entail the approval of all the homeowners who are members of the Villages Recreation Inc. Although a representative of the Villages HOA has indicated that he would need only a majority vote from the membership, he has been asked to check his legal documents to confirm this. Additionally, the County Attorney has been requested to render an opinion on this matter (See Appendix H).

VI. PROGRAM DEVELOPMENT

A. Past Commitments

As indicated in the background section of this report, in February 1982 the Park Authority adopted a concept plan, in principle, for the future Pole Road area park. It had already been determined that the 100 year flood plain area of approximately 33 acres on the Dogue Creek would be dedicated to the Park Authority as part of the Stream Valley Policy. In addition to dedicating the 33 acres, the developer of the Villages of Mount Vernon also agreed to construct athletic fields (two soccer fields and three baseball fields) and necessary parking as shown on the adopted concept plan.

B. Citizen Requests

Primary input from citizens has come from the residents of Woodlawn Mews and the Villages of Mount Vernon.' They have requested through Supervisor Alexander's office and through the Lee District Park and Recreation Advisory Committee that active recreational facilities be provided at the Pole Road area park site as soon as possible.

Although the initial request from these communities was to provide multiple athletic fields, playgrounds, etc. per the developer's proffered plan, they have since modified their requests to include small scale facilities such as a basketball/multi-use court, a playground, picnic areas and a limited open play area (see Appendix "I"). One letter from a citizen living in the Villages of Mt. Vernon community has been received. The main concern of this person is that the Pole Road area park site is a natural ecological resource and that the area should be left undeveloped in order to continue providing a sanctuary for the type of flora and fauna that currently exists there (see Appendix "J").

C. County Agency Comments

Selected agencies within the County and divisions within the Park Authority have provided comments and input regarding the development of this park. The following is a brief summary of their comments.

Fairfax County Soil Scientist's Office, has indicated that the major factors affecting the use of this site are a seasonal high water table and the potential for flooding.

The majority of the site consists of Mixed Alluvial Soils (1A+). These soils have a seasonal high water table that may be at or near the surface during wetter seasons and after heavy rainfalls. Soft, poor-bearing strata are present within these soils. The entire tract is located within the 100-year floodplain and is subject to flooding.

Bertie soils (26A1) are found on some of the higher areas of the floodplain. The seasonal high water table may approach one (1) to two (2) feet below the surface. These higher areas would be suitable for playing fields and non-permanent structures which stand occasional flooding.

The narrow tract west of Woodlawn Mews (100-4-005-B) consists of approximately four (4) to five (5) feet of uncontrolled fill over alluvial soils. This material would not be suitable for building support and would require an engineering evaluation and design for such purposes. Because of the fill material and the narrow area, this tract would best be left to minimal disturbance and development (see Appendix "G").

Fairfax County Department of Public Works, Utilities Planning and Design Division recommended that any proposed park facilities be located on land that does not experience extended periods of standing water. Their field review indicated that, except for a strip of land immediately behind the townhouse lots, the areas that appear feasible for facilities are located west of Dogue Creek. Any Park development requiring paved surfaces within this area should be designed with sufficient filter fabric and stone to prevent settlement. Minor fill within the fringes of the floodplain area would not be expected to adversely affect the hydraulic conditions of the flood plain. Any proposed fill would require close coordination with OCP and the Department of Environmental Management (DEM). The exact hydraulic impact of all specific fill proposals would need to be determined as part of the special exception approval process and be in accordance with the requirements specified in the Public Facilities Manual (see Appendix "E").

Fairfax County Office of Comprehensive Planning, suggested that the Comprehensive Plan recommendations for open space classify the study area as an environmental quality corridor composed of the stream, the 100-year floodplain and the adjacent freshwater wetlands. As a sensitive lands EQC, the Plan recommends that the area be protected in undisturbed open space allowing for the installation of recreational trails. The Plan encourages public access to these types of lands, promoting an environmentally compatible form of recreation. Active recreation must be coordinated with, and not compete against, the conversation goals of the EQC system. The Plan also states that filling, draining or altering of floodplains and wetlands should be prohibited.

Of note, the Plan EQC policies are not in conflict with the parks and recreation language of the Plan. To the contrary, the EQC policies and the park policies of the Plan complement one another. The park classification language in the Plan recognizes that stream valleys are an appropriate form of parkland, but indicates that development in these types of areas should be limited mainly to trails with an emphasis on conservation. One of the primary park goals stated in the Plan urges the preservation of major stream valleys that provide natural drainage, flood control, and that afford other environmental benefits. The specific Area IV parks, recreation and open space recommendations of the Plan recommend that the Dogue Creek stream valley be acquired and not developed. The Dogue Creek stream valley is to be acquired in accordance with the Fairfax County Park Authority Stream Valley Policy. The Stream Valley Policy recognizes floodplains as sensitive environmental areas and highlights this in recognizing that the first guideline is developing a stream valley park system is for the conservation of land and water resources, flood control and the provision of outdoor recreation.

Therefore, both the EQC-Open Space policies and the Parks and Recreation policies of the Plan provide complementing guidance in the use of lands such as the study area. In essence, the Plan guides us to protect and preserve the study area because of its ecological importance, yet the Plan recognizes that light, passive recreation, compatible with the ecological resource is appropriate so that the citizens of the County can enjoy and appreciate the valuable resource that has been preserved (see Appendix "D").
Park Authority's Conservation Division recommended that since frequent flooding in this topographically flat floodplain will occur even after the private impounding structure is removed, the site would retain its classification as a wetland. FCPA is charged with responsible stewardship of the natural resources within public parkland. If it is the Park Authority's desire to physically modify or alter these wetlands for recreational purposes, it is recommended that we first approach the U. S. Fish & Wildlife Service and U. S. Army Corps of Engineers for approval (see Appendix "K").

In response to the proposal to use a portion of this privately owned swim club, the <u>Park Authority's Land Acquisition & Planning</u> <u>Division</u> stated that this parcel of land is privately owned, and based upon past Park Authority policy we do not put facilities on private property. That leaves us the option of having it dedicated to the Park Authority (see Appendix "H").

A dedication would entail the approval of the homeowners who are members of the Villages Recreation Inc. The County Attorney would have to respond on the viability and requirements of such a dedication.

D. Site Analysis Conclusions

Based upon the site's characteristics and natural features, as well as all other pertinent on site and offsite data accumulated, the following conclusions were made:

This future park should be developed with an emphasis on conservation and preservation while still providing some limited degree of active recreation which would be coordinated with, and not compete against the conservation goals for this area. In general, the large central portion of the site would be left in its undisturbed natural state with the development of a recreational trail system which would tie into small limited "nodes" of more active facilities located on the extreme edges of the site. These "nodes" of development would occur at those locations on the site which were identified as primary or secondary use areas through the site analysis process described earlier in this report (see summary analysis map). The two primary use areas would be in the vicinity of the Villages Recreation Inc.'s swimming pool and west of Dogue Creek immediately adjacent to the future Woodlawn Green development.

The primary use area near the swimming pool would require the acquisition of additional land from the Villages Recreation Inc. and Woodlawn Mews. The land that would be needed from Woodlawn Mews is a narrow strip (approximately 5 feet in width) along the southern boundary of the community. This area is approximately 1700 square feet in size or about .04 acre. The land required



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from the Villages Recreation Inc. is an L-shaped piece along the northern and western sides of the property and is approximately 30,500 square feet in size or about .7 acre. Acquisition of these two parcels through dedication from the two communities would allow the development of active recreation facilities in this area with minimal impact in the flood plain.

VII.PRELIMINARY PLAN DEVELOPMENT

In planning, and ultimately developing this park facility, we must be cognizant of all factors affecting this site. Physical restraints and attributes of the site, aesthetic values, resident desires and short and long term recreational needs all contribute to the planning In proposing park development, immediate needs, likes or process. dislikes cannot be the sole consideration. The park will be in use for decades to come and should be planned to fulfill many of the recreation needs of future generations as well. Parks mature and become comfortable as do homes and neighborhoods. The trees, shrubs and wildflowers on the site will mature and change their spatial images, vistas will open and close, and colors change with the seasons. In recognizing the unique value and aesthetics of nature, addressing the often conflicting desires of the residents and fulfilling the recreational needs of the population, a preliminary plan has been developed. The preliminary plan is dependant upon the willingness of the members of the Villages Recreation Inc. and members of the Woodlawn Mews home owners association to dedicate portions of their land to the Park Authority.

As shown on the following plan in the shaded areas, an L-shaped parcel of approximately $\pm 30,500$ square feet or .7 acre would be required from the Villages Recreation Inc. A long narrow section of property approximately ± 1700 square feet or .04 acre in size would required from the Woodlawn Mews home owners association.

The following narrative describes the features shown on the preliminary master plan:

A. ACCESS

Pedestrian access will occur at two points on the park site. The primary access from the east will be from Sacramento Drive between the Woodlawn Mews Community and the Villages Recreation Inc. swimming pool. A 6 foot wide asphalt trail will tie into the park's internal circumferential trail system. The other primary access at Pole Road will be west of Dogue Creek just behind the future Woodlawn Green development. Similarly, a 6 foot wide asphalt trail will link the park to the future countywide trail on the north side of Pole Road. Virginia Department of Transportation will be requested to provide a painted crosswalk and flashing pedestrian crossing signs at this location as well as at Sacramento Drive for the safety and convenience of park users.



B. TRAILS

Trails within the park will be 6 feet in width and asphalt surfaced. However, it is anticipated that in areas of extremely wet soil conditions a boardwalk system may be necessary. Additionally, a stream crossing or bridge will be required to complete the trail system within the park.

The precise locations and limits of the asphalt trail and boardwalk will be determined after detailed field surveys have been completed.

The trail system within the park will be linked to the main park access points at Sacramento Drive and Pole Road.

C. OBSERVATION DECK

A small wooden deck or platform of approximately 400 square feet will be provided in the interior of the park. The deck will be elevated in order to weather the periodic flooding which may occur. The deck will be connected to the main trail system within the park by a boardwalk. The observation deck is provided as an opportunity to experience and observe a unique ecological habitat.

D. PICNIC AREAS

Five separate picnic areas will be located throughout the park site in order to serve a maximum number of people from the surrounding communities. Each of these picnic areas will consist of five tables, three grills and two trash receptacles. One will be located between Woodlawn Mews and the Villages Recreation Inc. swimming pool while another will be developed near the south west corner of the pool. A third area is to be located in the extreme southern pan handle of the park adjacent to the Villages of Mt. Vernon section two. Two additional picnic areas are shown on the west side of the park. The first is south of the future tennis courts at Woodlawn Green. The second is just south of Pole Road and immediately behind the future Woodlawn Green community.

E. PLAY APPARATUS AREA

Two separate play apparatus areas will be developed. One will be located just south of the Villages Recreation Inc. swimming pool. The other is located just south of the future tennis courts at the Woodlawn Green community. Both play apparatus areas will contain a variety of play equipment to challenge and entertain various age groups. A resilient surface of woodchips or other appropriate material will be provided under the equipment for safety.



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POLE ROAD PARK PROPERTY MAP: 108-4/108-8

F. OPEN PLAY AREA

The open play area is a grass field located just to the east of the future Woodlawn Green community. It measures approximately 200 feet by 100 feet in size. It is intended for informal use such as "pick-up" games of soccer, football or baseball as well as kite flying, frisbee throwing, etc.

G. MULTI-USE COURT

A standard multi-use/basketball court will be developed on the west side of the Villages Recreation Inc. swimming pool. In order to construct this facility on the relatively steep slopes at this site and not impact the flood plain unnecessarily, the court will be constructed on a terraced fill area bounded by a retaining wall of approximately 3 feet in height on the east side of the court and a retaining wall of approximately 6 feet in height on the west side of the court. Both retaining walls will be topped with a 6 foot high chain link fence to prevent accidental falls.

H. NATURAL AREA

The interior of the park will be left in its natural, undisturbed state in order to preserve this environmentally sensitive area and its unique habitats & resources.

I. LANDSCAPE DEVELOPMENT

New plant material will be introduced to the park site compatible with the environment and suited to screening and visual enhancement of the facilities. Primary emphasis will be placed on providing new screening and upgrading existing screening along the property boundaries.

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VIII. DEVELOPMENT COST ESTIMATE

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A.	FACILI	ITY COSTS	NO. <u>UNITS</u>	UNIT PRICE	TOTAL	FACILITY <u>TOTAL</u>
	1. P3 0 0 0 0	icnic Areas (5) Site preparation Tables Grills Trash receptacles Landscaping	LS 25 15 10 50	\$350/ea \$300/ea \$250/ea \$150/ea	\$5000 \$8750 \$4500 \$2500 \$7500	
		Sub-total 20% Contingency Total Picnic areas	s (5)		\$28,250 \$ 5,650	\$33,900
	2. P.	lay Apparatus Areas	s (2)			
		Site prep/grading Woodchip surfacing Timber edging Play equipment Landscaping Sub surface draina	2 g 450 SY 330 LF LS 10 age LS	\$1000/ea \$6.50/SY \$25/LF \$150/ea	\$2000 \$2925 \$8250 \$40,000 \$1,500 \$1,000	
		Sub-total 20% Contingency Total Play Appara	tus Areas	(2)	\$55,675 \$11,135	\$66,810
	3. Mi	ulti-Use Court				2
	0	Court (complete) Basketball Goals	LS LS		\$13,000 \$1,600	
	0	(concrete)	270 LF	\$125/LF	\$33 , 750	
	0	fence	270 LF	\$12/LF	\$3,240	
	0	Earthwork (IIII & grade)	560 CY	\$25/CY	\$14,000	
		Sub-total 20% Contingency Total Multi-Use	Court		\$65,590 \$13,118	\$ 78,708

FACILITY COSTS (cont'd)	NO. <u>UNITS</u>	UNIT PRICE	TOTAL	FACILITY TOTAL
4. Open Play Area				
o Clearing & grubbin	g LS		\$2500	
o Earthwork/light grading (Includes seeding,	LS sod & mu	lch)	\$22,000	
Sub-total 20% Contingency Total Open Play Ar	rea		\$24,500 \$4,900	\$29,400
5. Observation Deck				
o Deck (complete)	400 SF	\$25/SF	\$10,000	
Sub-total 20% Contingency Total Observation	Deck		\$10,000 \$2,000	\$12,000
6. Trails				
o Asphalt trail (6 ft.) 3 o Boardwalk (6 ft.) o Bridge	450 LF 800 LF 1	\$18/LF \$90/LF \$24,000	\$62,100 \$72,000 ea \$24,000	
Sub-total 20% Contingency Total Trails			\$158,100 \$31,620	\$189,720
TOTAL FACILITY COSTS	5			\$410,538
DESIGN/ENGINEERING*				
o Survey o Design/Engineering	LS		\$25,000	
Fees (10%) o Soil Tests	LS		\$41,000	
TOTAL DESIGN/ENGINEERIN	IG			\$71,000
CONTRACT ADMINISTRATION**				
o Plan review-staff			\$12 300	
o Site plan review-co.	LS		\$8,000 \$40,720	
o As-builts	LS		\$ 4,500	

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	FACILI	TY COSTS	(cont'd)	NO. UNITS		UNIT PRICE	TOTAL	FACILITY TOTAL
	TOTAL (CONTRACT	ADMINIST	RATION				\$65 , 520
	TOTAL	COST ES	TIMATE					\$547 , 058
an	d/or con	nsultant	estimate	d cost	to	prepare	construction	plans

- and specifications.
 ** Staff salaries and related expenses to administer facility construction
 including plan review and inspection.
- IX. ANNUAL OPERATING AND MAINTENANCE COST ESTIMATE*

*

Staff

Α.	Bridge	\$	148
в.	Boardwalk	\$	500
C.	Play Apparatus Areas	\$	1,606
D.	Observation Deck	\$	600
E.	Multi-Use Court	\$	826
F.	Picnic Areas	\$	1,756
G.	Open Play Area	\$	358
н.	Trails	\$	2,545
I.	Natural Area	\$1	15,345

Total Annual estimated Operating and Maintenance Costs \$23,684

* Prepared from Productivity Report by Office of Research and Statistics, Fairfax County, Virginia (10/74, rev 6/77). Figures updated and supplied by Fairfax County Park Authority, November 1983 and further updated to August 1986.

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APPENDIX

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To: Chairman and Members

Date: 2/12/82

From : Louis A.

Subject: Woodlawn Area

Recommendation:

Adopt the attached park concept plan in principle, with the athletic fields and parking. Then allow staff to work with the Developer who is offering to construct these facilites as best possible, to our standards, over a 3 - 6 year period. This means by taking this action you will waive the master plan process.

Background:

- 1. Bob Travers, the owner of this partially developed property, the Villages, is getting ready to phase added development on location.
- 2. It has already been determined that the floodplain area (33[±] acres) on the Dogue Creek, will be coming to the Park Authority per stream valley policy.
- 3. The PIES projections show deficits in both land and active recreation facilities in this area.
- 4. The developer made the offer to construct these needed facilities within his means, through the good efforts of Supervisor Joe Alexander and Planning Commission member Carl Sell.
- 5. Jim Wild and the community is aware of this "arrangement" and concur.
- The consultant for the developer is Dewberry and Davis; we will work with their representatives as this matter progresses over the years ahead.
- 7. Staff will present the alternative plans, considered up to this point, Tuesday night.

LAC/jm Attachment

cc: Joseph Alexander, Carl Sell, Dick Davis Bob Travers, Larry Fones





Fairfax County Park Authority

MEMORANDUM

To Dorothea Stefen

Date May 6, 1986

Gil Aldrid From

Subject Woodlawn - Wetland Matters

Reference is made to our conversation on 5/6/86 regarding the "wetland" area upon which recreational development is proposed.

Contact was made with Mr. Glen Kinsen, USFWS, Annapolis about the matter. Although he offered alternative solutions to meeting the beaver problem, it did not appear that removal was in violation of any federal regulations.

The problem does arise however, in the fact that the Corps of Engineers may require a permit for any actions which require filling of the flood plain area. From the wordage used, it appeared that a waiver might be given depending upon the circumstances. Such waiver however would require review by appropriate agencies.

Please keep in mind that there are county regulations regarding the filling of wetlands, which require approval by the Board of Supervisors.

I have discussed this matter with Mr. Dana Kaufman of Mr. Alexander's staff based on a phone call which he made to my office. I explained the situation to him as noted in this memo.

As a final note, I do not believe that we should accept the problems on the land, with the land transfer.

cc: J. Downs



1 get is nea FAIRFAX COUNTY, VIRGINIA This is not Item MEMORANDUM . Hamilton Lambert, County Executive DATE July 16, 1986p file. Sea - who Joseph Alexander, Supervisor, Lee District Park Priorities in Lee District TRENCE

During several recent meetings with homeowner groups in areas throughout the Lee District, the question of park facilities has been a major concern. In each case, park facilities are either pending, or are acquired but not scheduled for Park Authority development. In all instances, the need for park facilities is a high priority to homeowners and to me. This list has been coordinated with Jim Wild.

Given the concerns raised by citizen groups and the need for facilities in these areas, I would request that the following park facilities be expedited, in order of priority.

- Springfield Forest: In this instance, a rezoning application is pending which will have a major impact on this facility. As part of the rezoning, the Carr Corporation has proffered to trade a parcel of land for park development. At this time, the funds to develop the land are not available. I would request that adequate funding be transferred to this project to complete its development.
- o Amberleigh: Land is available adjacent to this subdivision for park development. However, funding is not presently available. I believe that funding that is now available to develop the Indian Springs site should be transferred to the Amberleigh site. The homeowners association in the Amberleigh subdivision is very anxious to make the available land a viable recreational area.
- o Pole Road Area Park: The developer of the area adjacent to this site has proffered to provide park facilities for the homeowners in the area. However, the land that is available for park development has recently been inhabited by beavers, thereby making much of it unusable for park land.

I request that a survey of the area be made as soon as possible so that a determination can be made regarding the amount of land available for park use and the type of facilities that can be constructed. As soon as this is determined, I have obtained a commitment from the developer that he will provide park facilities.

APPENDIX "C

FAIRFAX COUNTY, VIRGINIA

MEMORANDUM

то:	Ed Nenstiel Fairfax County Park Authority	DATE:	APR 2	4 1987	• •
FROM:	Richard G. Tittle, Director Planning Division, OCP				
FILE NO.	75 (swietlik)			500 - F	Ę.
SUBJECT:	Pole Road Area Park: Environmental A	ssessme	nt s		

To assist you in the preparation of your study of the recreational potential of the Dogue Creek floodplain between Route 1 and Pole Road, we have prepared a three part report. The first part consists of direct quotations from the Comprehensive Plan which provides guidance for the use and development of this type of land. The second portion is a staff evaluation of what was observed during the site visit of March 17, 1987. The third portion provides an analysis of the site conditions in relation to the Comprehensive Plan recommendations and the ramifications of these upon recreational development. Attached for your information is a copy of the Comprehensive Plan Map and a copy of the current Zoning Map for the study area (Appendices 1 and 2 respectively).

The environmental and parks and recreation recommendations of the Comprehensive Plan recognize the unique ecological value of stream valley floodplain areas such as the study area. extensive wetlands within the study area which constitute almost the entire EQC provide valuable wildlife habitat, flood storage, water quality improvements, ground water recharge, biological diversity and potential passive recreational opportunities. Because of these natural values, the Plan quides the usage of such lands to the primary purpose of protection and preservation. Recreational uses need to be compatible with this primary goal. The Plan identifies such uses as trails, picnic areas, hiking, and other low impact, passive recreational uses as appropriate. A recreational use plan for the study area that achieves preservation and protection through compatible passive recreation could. therefore, be considered in conformance with the Comprehensive Plan. Regulatory requirements exist at the local, state and federal levels which require permits for certain types of uses within floodplains, stream subaqueous bottomlands and wetlands. The principal objective of these regulations is to protect and preserve sensitive environmental lands and to mitigate adverse

APPENDIX D

Ed Nenstiel Page Two

impacts where significant alterations cannot be prevented. A recreation plan that avoids causing significant impacts to the ecological resources found in the study area would be more conducive to permitting under these respective laws.

APPENDIX

If you have questions regarding this assessment, please call William F. Swietlik at 691-4251.

WFS:jrk

cc: James P. Zook, Director, OCP L. Johnson, County Soil Scientist J. W. Koenig, Director, UP&D Division, DPW

75 (swietlik)

<u>Part I - Comprehensive Plan Citations</u>

This site is located in the MV8, Woodlawn Community Planning Sector of Area IV.

The Plan Map shows the Dogue Creek 100-year floodplain area between Pole Road and Route 1 as Open Space and Recreation -Private Open Space.

In general, on page I/C 74, the Plan defines the Open Space policy as:

"Open Space

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The Environmental Quality Corridor (EQC) System is 1. the centerpiece of the County's open space program. The two components of the EQC system are described briefly below. A generalized map of the EQC's and a detailed discussion of the policy is located in Section 1: Background and Analysis of this text. The EQC's have been mapped in limited areas and may be shown on the Comprehensive Plan Map under the appropriate open space land use category. In large sections of the County, the entire EQC has not been mapped. When determining the open space areas to be preserved in the development process, the Plan Map should not be used in lieu of a site specific delineation of the EQC area based on the criteria listed below.

Sensitive Lands EQC's. These basic EQC's are designed to protect the County's streams and adjacent lands which adversely affect and at the same time are most adversely affected by a second second They are defined to include: all development. presently mapped 100-year floodplains and all 100-year floodplains subsequently mapped during the development process; all floodplain soils and soils adjacent to streams which exhibit a high water table and poor bearing strength, or other severe development constraint (these include Fairfax soils numbered 1, 2, 3, 5, 11, 12, 13, 30, 31, 33, 89, 92, 117 and 118, and also soils numbered 39, 68, 84, 85, 90, 110, and 112 when these latter soils are found within the 100-year floodplain or are found to be extremely wet); tidal wetlands as delineated by the Wetlands Overlay District on the Official Zoning Map; fresh water wetlands adjacent to streams; steep slopes (greater than 15 percent) adjacent to the above floodplains, soils and wetlands; and at a minimum, where the above floodplains, soils, and wetlands cover only a narrow area, a buffer on each side of the stream or water body calculated from the following formula:

Buffer width = 50 + (4 X percent slope) in feet.

"This EQC definition has been used in several watershed studies and should be used in the review of all proposed developments on a case-by-case basis to delineate the exact extent of the sensitive lands EQC's."

Page 2.

Also on page I//C 74, the Plan recommends for Open Space, Sensitive Lands EQC's;

"2. Protect the environmental quality corridor (EQC) open space system as described below:

Sensitive Lands EQC's. These lands are to be protected in undisturbed open space, except provisions may be made for the installation of recreational trails, necessary road and utility crossings, and stormwater management structures, and for some development of steep slopes and marine clay (soil number 118) soils, subject to the following conditions. The number of road and utility crossings should be minimized. Alternatives to the installation of utilities parallel to streams should be actively pursued. When trails, roads, and utility crossings, and stormwater management structures are placed in EOC's, efforts should be made to mitigate adverse impacts on streams, wetlands, vegetation, and slopes; impacts such as sedimentation, excessive clearing of vegetation, and erosion. Generally sensitive lands EQC's should not be developed with buildings or parking lots. However, in cases where steep slopes cover an extensive area, some buildings may be allowed on the steep slopes furthest away from the stream if grading is minimized, care is taken to remove as little vegetation as possible, and if the floodplain, floodplain soils, wetlands, and minimum buffer width remain undisturbed. Marine clay soils may be built upon, subject to design and construction standards set by the County Geotechnical Review Board. Otherwise, the sensitive lands EQC's as defined in recommendation 1 represent the limit of clearing of natural vegetation along the County streams.

3. Pursue a variety of implementation tools for the preservation of open space land including, for example, new zoning categories, additional performance standards, open space dedication at rezoning and site plan review, fee simple and easement acquisition, tax incentives, and agricultural and forestal districts. To the extent possible, sensitive lands EQC's should be protected

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through implementation methods which provide public ownership or control so that adverse impacts of these ecologically sensitive areas can be minimized.

Page 3.

4. Encourage public access and compatible forms of recreation within sensitive lands EQC's. Where appropriate, relate public facility improvements such as parks, camp areas, libraries, schools and nature centers to the EQC system. However, active recreation must be coordinated with and not compete against the conservation goals of the EQC system."

In relation to water quality, the Plan states on page I/C 74;

"Water Quality and Quantity

4. Recognize the sensitivity and need to protect the integrity of stream valleys by discouraging any development within 100-year floodplains and adjacent steep slopes."

For development hazards, the Plan recommends on page I/C 75;

"Physical Hazards

1. Ensure that land use planning is responsive to the constraints imposed by such factors as floodplains, wetlands, slippage soils, steep slopes, erodible soils, septic limitation areas, and aquifer recharge zones.

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2. Prohibit the filling, draining or altering of floodplains and wetlands."

In relation to parks and recreation, the Plan states on page I/C 55;

"Parks and Recreation

The existing and proposed system of Fairfax County's parks attempts to establish full opportunity for all residents and visitors to make constructive use of their leisure time through the provision of recreational and cultural programs within safe, accessible and enjoyable parks. Additionally, the park system serves as the primary public mechanism for the preservation of environmentally sensitive land and water resources and areas of historic significance. Parklands to be acquired shall usually be classified in one of the categories listed below. However, the list is not restrictive since citizen needs, both present and future, may require acquisition of combination park types or ones that differ from all the categories listed below.

Stream valley parks include land lying in the floodplain and associated slopes exceeding 15 percent. Development is limited mainly to trails with emphasis on conservation."

On page I/C 58 and I/C 59;

"Parks

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Goals The primary goals related to the provision of parkland are:

- to provide the residents of Fairfax County with a park system that will meet their recreational needs with a variety of activities;
- to establish full opportunity for all residents and visitors to make constructive use of their leisure time through the provision of recreational and cultural programs within safe, accessible and enjoyable parks;
- to sytematically provide for the long-range planning, acquisition and orderly development of a quality park system which keeps pace with the needs of an expanding population;
 - to acquire parkland in locations which will relieve the facility and locational deficiencies in local-serving parks among the older parts of the County and provide an adequate level of service in the newer, developing areas;
- to urge the preservation of major stream valleys which provide natural drainage, wildlife habitat, parkland linkages, and supplemental recreation areas, contribute towards flood control, and afford other environmental benefits.
 - to emphasize the dedication of land for parks and recreational facilities associated with new development, recognizing that purchase will be necessary, especially in the older, more densely populated areas.

All major stream valleys are to be preserved, with dedication being the primary mechanism for acquisition. Purchase of stream valley acreage or easements should be authorized where acquisition through purchase as well as dedication is not possible, for example, in the case of noncluster development with densities of .5 du/ac or more. This would help preserve the stream valleys and ensure public access to them." Under the specific Area IV park recommendations, the Plan suggests;

"Area IV Recommendations

Parks, Recreation and Open Space The accompanying table summarizes the Area IV Plan recommendations pertaining to parks, recreation and open space where public action through acquisition and/or development is needed.

				Area IV				
Parks	and	Recreation	Requ	irements	and	Recomm	ended Ac	tions
Areas	Affe	cted Pro	oject	Descript	ion	Reco	ommended	Action
								•
				•				•
N	4V8	Strea	am va	lley-Dogu	le Cr	eek	Acquisi	tion

Under the specific Plan recommendations for the MV8 Woodlawn Community Planning Sector found on page IV-44, the following guidance is provided;

> "Public Facilities Parks, Recreation and Open Space

D. The Dogue Creek and Little Hunting Creek Environmental Quality Corridors should be protected. The County should acquire parkland along the Dogue Creek stream valley in accordance with the Fairfax County Stream Valley Policy. Improved channelization of Dogue Creek under Route 1 is recommended."

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Part II - Site Visit Observations

During the site visit of March 17, 1987, the following observations were made.

The study area, encompassed within the 100-year floodplain of Dogue Creek, was extremely wet with either flowing water or standing water covering a significant portion of the floodplain. In areas where no standing water was present, the water table was generally within a foot of the surface. Most soil borings taken by the soil scientist were classified as "hydric" soils.

Vegetation, although in winter condition, appeared to be diverse and representative of several general wetland habitat types. This is confirmed by aerial photographs taken of the area in August, 1986, when vegetational differentiation is at an optimum. These photos were taken for the Fairfax County Tidal Wetlands Board; however, the study area is above tidal influence, the extent of which is about 800 feet upstream of the Mt. Vernon Memorial Highway. The habitat types present in the study area were principally of the riverine-palustrine system as defined by the U. S. Fish and Wildlife Service classification of wetlands. Specific wetland types included;

1. Unconsolidated bottoms (the streambed)

2. Emergent wetlands, nonpersistent

3. Emergent wetlands, persistent

- 4. Scrub-shrub wetlands
- 5. Forested wetlands
- 6. Dead forested wetlands
- 7. Upland floodplain forest.

A map of these general areas is attached as Appendix 3.

Associated with the wetland habitats was abundant wildlife. Species observed at the time of the visit included song birds, ducks, a blue heron, a hawk and deer (tracks only). Evidence of former beaver activity was abundant, but none of the tree cuts observed were recent.

Part III - Analysis

The Comprehensive Plan recommendations for open space classify the study area as an environmental quality corridor composed of the stream, the 100-year floodplain and the adjacent freshwater wetlands. As a sensitive lands EQC, the Plan recommends that the area be protected in undisturbed open space allowing for the installation of recreational trails. The Plan encourages public access to these types of lands, promoting an environmentally compatible form of recreation. Active recreation must be coordinated with, and not compete against, the conservation goals of the EQC system. The Plan also states that filling, draining or altering of floodplains and wetlands should be prohibited.

Of note, the Plan EQC policies are not in conflict with the parks and recreation language of the Plan. To the contrary, the EQC policies and the park policies of the Plan complement The park classification language in the Plan one another. recognizes that stream valleys are an appropriate form of parkland, but indicates that development in these types of areas should be limited mainly to trails with an emphasis on conservation. One of the primary park goals stated in the Plan urges the preservation of major stream valleys that provide natural drainage, flood control, and that afford other environmental benefits. The specific Area IV parks, recreation and open space recommendations of the Plan recommend that the Dogue Creek stream valley be acquired and not developed. The Dogue Creek stream valley is to be acquired in accordance with the Fairfax County Park Authority Stream Valley Policy. The Stream Valley Policy recognizes floodplains as sensitive environmental areas and highlights this in recognizing that the first guideline in developing a stream valley park system is for the conservation of land and water resources, flood control and the provision of outdoor recreation.

Therefore, both the EQC-Open Space policies and the Parks and Recreation policies of the Plan provide complementing guidance in the use of lands such as the study area. In essence, the Plan guides us to protect and preserve the study area because of its ecological importance, yet the Plan recognizes that light, passive recreation, compatible with the ecological resource is appropriate so that the citizens of the County can enjoy and appreciate the valuable resource that has been preserved.

From a land use-environmental regulatory standpoint, several considerations arise in relation to the study area. At the local level, the Floodplain Regulations (Section 2-900) of the Zoning Ordinance are prominent. The purpose and intent of these regulations state that floodplains are to be preserved and protected in as natural a state as possible for the preservation of wildlife habitats, the maintenance of the

APPENDIX ."D"

natural integrity and function of the streams, for water quality protection and for promotion of ground water recharge. Under the Floodplain Regulations (copy attached as Appendix 4) limited recreational uses (those not requiring major fill or land disturbing activities) are permitted uses within a floodplain area. These include wildlife preserves, picnic areas, boat ramps, hiking trails, play courts, etc. A major fill is defined as any fill in excess of 5,000 square feet in area or more than 278 cubic yards in volume.

For uses in the study area floodplain that do not meet the described permitted uses, a Special Exception permit would be necessary. For approval of an SE in a floodplain, certain use limitations apply. The most significant limitations are:

- Except as may be permitted by Par. 6 and 7 of Sect. 903 above, any new construction, substantial improvements, or other development, including fill, when combined with all other existing, anticipated and planned development, shall not increase the water surface elevation above the 100-year flood level upstream and downstream, calculated in accordance with the provisions of the Public Facilities Manual.
- 5. To the extent possible, stable vegetation shall be protected and maintained in the floodplain.
- 7. For uses other than those enumerated in Par. 2 and 3 of Sect. 903 above, the applicant shall demonstrate to the satisfaction of the approving authority the extent to which:
 - A. There are no other feasible options available to achieve the proposed use; and
 - B. The proposal is the least disruptive option to the floodplain.
 - C. The proposal meets the environmental goals and objectives of the adopted Comprehensive Plan for the subject property.

The State of Virginia also has a regulatory jurisdiction over activities within the study area if these activities alter the stream subaqueous bottoms:

> Section 62.1-3 of the Virginia Code states that it shall be unlawful and constitute a misdemeanor for anyone to build, dump, or otherwise trespass upon or over or encroach upon or take or use any materials from the beds of the bays and ocean, rivers, streams, creeks, which are the property of the Commonwealth, unless such act is pursuant to statutory authority or a permit by the Marine Resources Commission.

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The U. S. Army Corps of Engineers has a broader regulatory jurisdiction over the study area under Section 404 of the Clean Water Act. The Corps of Engineers requires the issuance of a permit for activities within waters of the United States and adjacent wetlands. Nontidal waters and wetlands are included. Waters of the U. S. include:

> "Coastal (including territorial seas) and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including adjacent wetlands. Tributaries to navigable waters of the United States, including adjacent wetlands. Man-made nontidal drainage and irrigation ditches excavated on dry land are not considered to be tributaries. Interstate waters and their tributaries, including adjacent wetlands. All other waters of the United States such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could effect interstate commerce."

The Federal definition of wetlands is:

"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Federal wetlands generally include swamps, marshes, bogs, and similar areas. It should be noted in many cases the federal definition of wetlands includes areas at higher elevation than 1-1/2 times the mean tide range and are not limited to tidal areas.

WFS:jrk

cc: James P. Zook, Director, OCP
L. Johnson, County Soil Scientist
J. W. Koenig, Director, UP&D Division, DPW

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APPENDIK

FAIRFAX COUNTY



FLOOD PLAIN ORDINANCE

NOTE: IF YOU HAVE QUESTIONS REGARDING INTERPRETATION PLEASE CONTACT SPECIAL PROJECTS AT 691-4321.

APPENDIX "D-4"

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT SPECIAL PROJECTS SECTION

EDITED TEXT Zoning Ordinance Amendment #115, Adopted 1/28/85 Effective 1/29/85

Amend Article 20, Part 3, Definitions, by deleting the existing definition of FLOODPLAIN in entirety and by substituting a new definition in lieu thereof as follows:

FLOODPLAIN: Those land areas in and adjacent to streams and watercourses subject to continuous or periodic inundation from flood events with a one (1) per cent chance of occurrence in any given year (i.e., the 100-year flood frequency event) and having a drainage area greater than seventy (70) acres. For the purpose of administering Part 9 of Article 2, Floodplain Regulations, minor floodplains shall be those floodplains which have a drainage area greater than 70 acres but less than 360 acres.

Floodplains shall include all areas of the County which are designated as a floodplain by the Federal Insurance Administration, by the United States Geological Survey or by Fairfax County. Areas designated as floodplains by the Federal Insurance Administration shall not have their base flood elevations altered without prior approval from the Federal Insurance Administration.

Amend Article 7, Overlay District Regulations, Part 7, Floodplain Overlay District, by deleting it in its entirety.

Amend Article 2, General Regulations, as follows:

- Amend Part 4, Qualifying Lot and Yard Regulations, by revising Sect. 2-415 to read as follows:
 - 2-415 Yard Regulations for Lots Having Area in Floodplain

Except as provided for in Sect. 412 above, no dwelling or portion thereof shall be located closer than fifteen (15) feet in horizontal distance to the edge of a floodplain, except the Director may approve the location of dwellings closer than fifteen (15) feet to a permanent water surface of any appropriately designed impoundment. For the purpose of this Ordinance, the fifteen (15) feet in horizontal distance shall be deemed a minimum required yard. If a dwelling or portion thereof is proposed for location in a floodplain, however, such shall be regulated by the provisions set forth in Part 9 below.

- Amend Part 6, Land Regulations, as follows:
 - Amend Sect. 2-601, Limitation on the Removal and Addition of Soil, by revising Par. 1 to read as follows:
 - 1. Sod and soil may be removed from or added to any lot to a depth of not more than eighteen (18) inches but only in an area not exceeding 5,000 square feet; provided, however, that this provision shall not apply to the temporary storage of top soil by plant nurseries. In a floodplain, sod and soil may be removed in accordance with this paragraph, however, the addition of sod and soil shall only be permitted in accordance with the provisions of Part 9 below; or
 - Amend Sect. 2-602, Drainage and Floodplain Regulations, by revising it to read as follows:
 - 2-602 Drainage, Floodplains, and Wetlands
 - 1. Notwithstanding the provisions of Sect. 601 above, no building shall be erected on any land and no change shall be made in the existing contours of any land, including any change in the course, width or elevation of any natural or other drainage channel, in any manner that will obstruct, interfere with, or change the drainage of such land, taking into account land development that may take place in the vicinity under the provisions of this Ordinance, without providing adequate drainage in connection therewith as determined by the Director in accordance with the provisions of the Public Facilities Mannal.
 - There shall be no filling, change of contours or establishment of any use in any floodplain except as may be permitted by the provisions of Par. 1 of Sect. 601 above, or Part 9 below.
 - 3. There shall be no filling, change of contours, or establishment of any use or activity in any wetlands except as may be permitted by the provisions of Part 10 below.

- Add a new Part 9, Floodplain Regulations, to read as follows:
 - PART 9 2-900 FLOODPLAIN REGULATIONS
 - 2-901 Purpose and Intent

In furtherance of the zoning powers, purposes and jurisdictions provided for by Sections 15.1-486, 15.1-489 and 15.1-490, Code of Virginia, 1950, as amended, these regulations are created to provide for safety from flood and other dangers; to protect against loss of life, health, or property from flood or other dangers; and to preserve and protect floodplains in as natural a state as possible for the preservation of wildlife habitats, for the maintenance of the natural integrity and function of the streams, for the protection of water quality, and for the promotion of a zone for ground water recharge.

- 2-902 Administration
 - The provisions of this Part shall apply to all land within a floodplain. The floodplain limits shown on the Zoning Map shall be used as a guide; provided, however, that only those land areas which meet the definition of floodplain shall be subject to the provisions of this Part.
 - 2. The Director shall be responsible for the administration of this Part. He shall review all proposed uses to determine whether the land on which the proposed use is located is in a floodplain. The Director may, in appropriate cases, require information from the applicant, including, but not limited to, an engineering study of the floodplain. Upon a determination that the land on which the proposed use is located is in a floodplain, he shall determine whether such use may be permitted in accordance with the provisions of Sect. 903 below or requires the approval of a special exception as set forth in Sect. 904 below.
 - 3. Any decision of the Director or Board regarding a use in a floodplain shall be based on consideration of at least all of the following factors:
 - A. Type and location of proposed structure and/or use
 - B. Access to site
 - C. Frequency and nature of flooding
 - D. Nature and extent of any proposed grading or fill

- E. Impact of proposal on the floodplain on properties upstream and downstream
- F. Potential of proposal to cause or increase flooding or to jeopardize human life +
- G. Impact of the proposed use on the natural environment and on water quality

2-903 Permitted Uses

The following uses and topographic improvements, as qualified, may be permitted in a floodplain upon a determination by the Director that such use is permitted in the zoning district in which located, and that the use is in accordance with the provisions of this Part and the standards and criteria set forth in the Public Facilities Manual. Any such approval by the Director shall be in writing and shall specify such conditions deemed necessary to ensure that the proposed construction and resultant use conform to the provisions of this Part. Any use, including associated fill, permitted in the zoning district in which located, which does not meet the qualifications set forth below as determined by the Director, may be permitted upon the approval of a special exception by the Board.

- Any use within a minor floodplain. As set forth in the definition of floodplain, a minor floodplain is a floodplain which has a drainage area greater than 70 acres but less than 360 acres.
- 2. Agricultural uses such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, viticulture, truck farming, forestry, sod farming, and wild crop harvesting; provided, however, that such use does not require the approval of a Building Permit or require major fill. All uses permitted by this paragraph shall be operated in accordance with a conservation plan prepared in accordance with the standards of the Northern Virginia Soil and Water Conservation District.
- 3. Residential uses accessory to single family detached and attached dwellings such as play areas, lawns, paved tennis or play courts, trails, gardens, patios, decks and docks, which do not require major fill.
- 4. Community, commercial and public recreational uses such as golf courses, driving ranges, archery ranges, picnic grounds, boat launching ramps, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, target ranges, trap and skeet ranges, hunting

and fishing areas, and hiking, bicycle and equestrian trails. This paragraph shall not be deemed to permit any paved tennis or play court exceeding 5000 square feet in area, swimming pool, or any use requiring the approval of a Building Permit or requiring major fill.

- 5. Off-street parking and loading areas including aisles and driveways which do not exceed 5000 square feet in area, which will have one (1) foot or less depth of flooding and which will not require major fill.
- 6. Metrorail, railroad track and roadway floodplain crossings meeting WMATA, VDH & T and/or Fairfax County design requirements and where any additional rise in water surface will not have an adverse effect upon the floodplain and/or will be set aside in an easement. A stream channel relocation proposed in conjunction with a crossing shall be subject to the provisions of the Public Facilities Manual.
- 7. Public and private utility lines, and all public uses and public improvements performed by or at the direction of the County, or as may be required by County ordinances, to include but not to be limited to channel improvements and erosion control, reservoirs, storm water management and best management practice facilities and similar uses provided the installation of such facilities is accomplished with appropriate easements or agreements and with the minimum disruption necessary to the floodplain.

Notwithstanding the above, ponds, reservoirs, storm water management and best management practice (BMP) facilities in floodplains which have a drainage area of 360 acres or greater and which are designed to serve a specific private development may be permitted only upon the approval of a special exception by the Board in accordance with the provisions of this Part.

- 8. Additions or permitted accessory structures to single family detached and attached dwellings constructed prior to August 14, 1978, subject to the following conditions:
 - A. The estimated cost of the addition or accessory structure is less than fifty (50) per cent of the assessed value of the existing structure.
 - B. The lowest part of the lowest floor of any such structure may be constructed less than eighteen (18) inches above the 100-year flood level provided it is determined that there is less than one (1) per cent chance of flooding the structure in any given year, i.e., the structure is higher than the 100-year flood level.

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- C. As may be required by the Director, the applicant and owners shall sign a "hold harmless" agreement holding Fairfax County harmless from all adverse effects which may arise as a result of the construction and establishment of the proposed use within the floodplain. Such an agreement shall be recorded among the land records of Fairfax County.
- **J** 9.
- Topographic improvements which do not require major fill.

For the purpose of this Section, major fill shall be deemed to be any fill, regardless of amount, in an area greater than 5000 square feet or any fill in excess of 278 cubic yards in an area of 5000 square feet or less. The combined and cumulative area of any fill and pavement permitted under this Section shall not exceed an area of 5000 square feet for all uses on a lot.

In addition, the provisions set forth above which exclude uses requiring a Building Permit shall not apply when such Building Permit is required for structures such as retaining walls, fences, ramps or trail bridges.

2-904 Special Exception Uses

- 1. All uses permitted by right, special permit or special exception in the zoning district in which located that are not approved by the Director under the provisions of Sect. 903 above may be permitted upon the approval of a special exception by the Board. Such special exception may be permitted subject to conformance with the provisions of this Part, the applicable special permit or special exception standards, the Purpose and Intent of the Zoning Ordinance, and the standards and criteria set forth in the Public Facilities Manual. Uses permitted by special permit or special exception shall be subject to their respective fees in addition to the fee for a Category 6 special exception use.
- 2. In addition to the submission requirements for all special exception uses set forth in Sect. 9-011, the following information shall be submitted for all Category 6 special exception applications for uses in a floodplain:
 - A. The following shall be shown and certified on the plat provided with the application:
 - The delineation of the floodplain and the source of floodplain information, such as Federal Insurance Administration, USGS, Fairfax County, or other.
- (2) Existing and proposed topography with a maximum contour interval of two (2) feet.
- (3) Both normal and emergency ingress and egress from highway or street.
- (4) Nature and extent of any proposed fill and any proposed compensatory cut areas with quantities.
- (5) The location and dimensions of any structure or part thereof that is proposed for location in the floodplain.
- (6) Elevation of the nearest 100 year floodplain, and the exact distance from the structure to the floodplain line at the nearest point.
- (7) Lowest floor elevation, including basement, of all buildings, existing and proposed, and information relative to compliance with Federal and State floodproofing requirements.
- B. A written statement providing, in detail, the following information:
 - (1) Any existing or anticipated problems of flooding or erosion in the area of the application and upstream and downstream from the application property.
 - (2) Whether additional Federal and/or State permits are required.
- C. When structures are proposed to be erected, the following information shall be submitted:
 - (1) The proposed use of the structure.
 - (2) A statement certifying all floodproofing proposed, and indicating its compliance with all County, State and Federal requirements. This certification must be signed, sealed, and indicate the address of the certifying professional and it must cover all structural, electrical, mechanical, plumbing, water and sanitary facilities connected with the use.

- (3) Acknowledgment, signed by the applicant, that he is aware that flood insurance rates may increase because of increases in risks to life and property.
- D. Any additional information as may be deemed necessary by the Director, to include but not to be limited to an engineering study or detailed calculation on any proposed drainage improvement.

2-905 Use Limitations

All permitted uses and all special exception uses in a floodplain shall be subject to the following provisions:

- Except as may be permitted by Par. 6 and 7 of Sect. 903 above, any new construction, substantial improvements, or other development, including fill, when combined with all other existing, anticipated and planned development, shall not increase the water surface elevation above the 100-year flood level upstream and downstream, calculated in accordance with the provisions of the Public Facilities Manual.
- 2. Except as may be permitted by Par. 8 of Sect. 903 above, the lowest elevation of the lowest floor of any proposed dwelling shall be eighteen (18) inches or greater above the water surface elevation of the 100-year flood level calculated in accordance with the provisions of the Public Facilities Manual.
- 3. All uses shall be subject to the provisions of Par. 1 of Sect. 602 above.
- 4. No structure or substantial improvement to any existing structure shall be allowed unless adequate floodproofing as defined in the Public Facilities Manual is provided.
- 5. To the extent possible, stable vegetation, shall be protected and maintained in the floodplain.
- 6. There shall be no storage of herbicides, pesticides, or toxic or hazardous substances as set forth in Title 40, Code of Federal Regulations, Parts 116.4 and 261.30 et seq., in a floodplain.
 - 7. For uses other than those enumerated in Par. 2 and 3 of Sect. 903 above, the applicant shall demonstrate to the satisfaction of the approving authority the extent to which:
 - A. There are no other feasible options available to achieve the proposed use; and

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- B. The proposal is the least disruptive option to the floodplain; and
- C. The proposal meets the environmental goals and objectives of the adopted comprehensive plan for the subject property.
- 8. Nothing herein shall be deemed to prohibit the refurbishing, refinishing, repair, reconstruction or other such improvements of the structure for an existing use provided such improvements are done in conformance with the Virginia Uniform Statewide Building Code and Article 15 of this Ordinance.
- 9. Nothing herein shall be deemed to preclude public uses and public improvements performed by or at the direction of the County.
- 10. Notwithstanding the minimum yard requirements specified by Sect. 415 above, dwellings and additions thereto proposed for location in a floodplain may be permitted subject to the provisions of this Part.

Amend Article 9, Special Exceptions, Part 6, Category 6 Miscellaneous Provisions Requiring Board of Supervisors' Approval, as follows:

- Amend Sect. 9-601, Category 6 Special Exception Uses, by revising Par. 2 to read as follows:
 - 2. Uses in a floodplain.
- Revise Sect. 9-606 to read as follows:
 - 9-606 Provisions for Uses in a Floodplain

The Board may approve a special exception for the establishment of a use in a floodplain in accordance with the provisions of Part 9 of Article 2.

Amend Article 8, Special Permits, Sect. 8-002, Authorization, by revising the third paragraph to read as follows:

Notwithstanding the foregoing, any special permit use permitted by this Article, when located within a floodplain, shall also be approved by the Board as a special exception in accordance with the provisions of Sect. 9-606. Amend Article 18, Administration, Amendments, Violations and Penalties, Sect. 18-406, Unauthorized Variances, by adding a new Par. 8 to read as follows:

8. No variance shall be authorized that would permit the establishment of any use not otherwise permitted in a floodplain.

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FAIRFAX COUNTY, VIRGINIA

MEMORANDUM

TO:

Ed Nenstiel Fairfax County Park Authority DATE: March 27, 1987

FROM: John W. Koenig, Director $\longrightarrow \mathcal{WK}$ Utilities Planning and Design Division

SUBJECT: Pole Road Area Park - Dogue Creek Between U.S. Route 1 and Pole Road REFERENCE: Your March 12, 1987, memorandum to Distribution

This is to provide you with information that has been developed for the Dogue Creek flood plain between U.S. Route 1 and Pole Road and is in response to our meeting of March 5, 1987, your memorandum to Distribution dated March 12, 1987, and our subsequent site visit of March 17, 1987. The information is being provided as background to assist you in the preparation of a report addressing potential park development in the area. Our input will be limited to hydraulic/flood plain information. We understand that you will be receiving soils data from the County Soils Scientist and environmental and zoning information from the Office of Comprehensive Planning (OCP).

BACKGROUND:

The adopted 100-year flood plain is shown on the County's published maps as approaching the rear lot lines of the townhouses east of Dogue Creek (see Attachment 1). This flood plain is currently being restudied by the Federal Emergency Management Agency (FEMA) and their preliminary results indicate a correlation with the adopted flood plain to within approximately 1.0' in elevation. The FEMA study is in draft form and should be available for detailed review by County staff later this year. Based on the preliminary FEMA results, it is not anticipated that their report will result in a significant alteration of the adopted flood plain limits (see Attachment 2).

County staff has studied the hydraulic characteristics of this reach of Dogue Creek a number of times in the past. In the County's Master Drainage Plan, published in December, 1978, the feasibility of constructing a major flood control impoundment north of Pole Road was investigated (see Attachment 3). While it was determined that hydraulic benefits could be derived by the reservoir, the concept was unacceptable to the Corps of Engineers and to officials at Fort Belvoir. The project was not implemented.

Our most recent investigation pertains to a refinement of the impoundment study for the Southeast Fairfax Development Corporation (SFDC). SFDC was interested in possible hydraulic modifications of the area to reduce the flood plain limits and reclaim portions of the flood plain for economic development purposes. Staff completed an analysis of various hydraulic improvements to determine feasible options to reduce the flood plain limits in the area. These alternatives included combinations of the impoundment north of Pole Road, channel modifications between U.S. Route 1 and Pole Road, and improvements to the culvert at U.S. Route 1. All of the alternatives showed that while the improvements would reduce peak flows and flood plain elevations to some degree, TO: Ed Nenstiel

Page -2-

•

APPENDIX "E"

RE: Pole Road Area Park - Dogue Creek Between U.S. Rt. 1 and Pole Road

a large amount of fill would be required in the area in order to remove a significant amount of land from the flood plain. This information was presented to SFDC and a representative from Fort Belvoir on April 4, 1985. A copy of the maps from the study are attached for your information. To our knowledge, the SFDC has not pursued any of the alternatives presented in the study. In addition, it is felt that major environmental issues would need resolution prior to securing the approvals and permits necessary to implement any of the channelization options for Dogue Creek (see Attachments 4a through 4c).

This Division is presently preparing plans for a flood control project downstream of U.S. Route 1 on Dogue Creek (Project No. X00069, Subfund 470). The project includes a channel improvement from U.S. Route 1 downstream approximately 2,050 feet and a dike on the east side of the stream. This project will have minimal hydraulic impact on your study area north of U.S. Route 1. A sketch showing the location of the County project is attached (see Attachment 5).

RECOMMENDATION:

We recommend that any proposed park facilities be located on land that does not experience extended periods of standing water. Our field review indicated that, except for a strip of land immediately behind the townhouse lots, the areas that appear feasible for facilities are located west of Dogue Creek (see Attachment 6). Any Park development requiring paved surfaces within this area should be designed with sufficient filter fabric and stone to prevent settlement. Refer to the attached information (see Attachment 7) for general guidance for this type of design.

Minor fill within the fringes of the flood plain area would not be expected to adversely affect the hydraulic conditions of the flood plain. Any proposed fill would require close coordination with OCP and the Department of Environmental Management (DEM). The exact hydraulic impact of all specific fill proposals would need to be determined as part of the special exception approval process and be in accordance with the requirements specified in the Public Facilities Manual.

Hopefully, this information will be helpful to you. If you have any questions, please call Ray Curd at 691-2211.

JWK/lm(1623u)

Attachments: As Stated

- cc: John W. di Zerega, Director, Department of Public Works
- cc: Howard J. Guba, Director, Office of Capital Facilities
- cc: Harold Williamson, Director, Maintenance and Construction Division
- cc: Arthur Hasty, Chief, Storm Drainage Branch, Utilities Planning and Design Division
- cc: William Swietlik, Office of Comprehensive Planning

cc: L. Johnson, County Soil Scientist





fairfax county, virginia

PROPOSED DRAINAGE PLAN

Dogue Creek, Little Hunting Creek, and Belle Haven Watersheds

order 21.3 IMMEDIATE ACTION PLAN

DECEMBER 1978

SONS, BRINCKERHOFF, QUADE & DOUGI



CHENEY SEGMENT

Cheney Segment comprises the 560-acre drainage area of Dogue Creek from its confluence with Tributary D-2 to its confluence with Tributary D-3. All but a small part of this segment is within the boundaries of Fort Belvoir. There are a few scattered residences in the remaining area.

Channel erosion is the only significant problem identified in this area. The recommended project is discussed below and its location is shown in Figure II-14.

Project I: Install Gabion and Riprap Bank Protection in Vicinity of Woodlawn Plantation

Tributary D-2A is badly eroded near Woodlawn Plantation. Protection is warranted because of the severity of the erosion and its proximity to developed areas. A total of 500 feet of gabions and 300 feet of riprap are recommended at an estimated cost of \$84,000. The U.S. Army Corps of Engineers is currently studying drainage problems and a possible housing development in this area. No definite plans for action have yet been made.

Additional Concerns

The crossing of Richmond Highway and Dogue Creek (#228), located downstream of Cheney Segment in Woodlawn Segment, is not capable of safely passing the predicted flow. Traffic interruptions on this major highway would result and flooding of a mobile home sales agency and eight rental cabins is likely. One solution that was considered was construction of a detention pond, and several sites along Dogue Creek were evaluated. The site considered most suitable is in Cheney Segment, upstream of Pole Road. The pond is discussed in detail under Woodlawn Segment. The, pond was discussed with the U.S. Army Corps of Engineers, Baltimore District. Since most of the detention site lies on property owned by Fort Belvoir, it is not recommended for construction. Alternative II involves the following: replacement of the 30- by 5-foot box culverts; construction of a berm upstream of the crossing to prevent water from flowing over the road at its low point; and replacement of the system of pipes upstream of the crossing with riprap transition. The cost for Alternative II is approximately \$2,894,000. A substantial portion of this cost would go toward the purchase of the acres of commercial property adjacent to Dogue Creek; purchase would be necessary because this area would be flooded by water ponded behind the berm. Because its cost far exceeds that of Alternative I, this alternative was rejected.

Alternative III would involve the raising of Richmond Highway in the vicinity of the crossing. A 1600-foot-long section of roadway would be raised an average of 3.5 feet and six 10- by 8-foot box culverts would be installed in place of the bridge. The pipe system would be removed and replaced with riprap transition. In addition, a concrete floodwall and an earthen berm would be necessary to protect the flooded buildings. Alternative III was rejected because its approximate cost of \$928,000 exceeds the cost of Alternative I.

Alternative IV calls for the construction of Cheney Detention Pond. The site considered most suitable is in Cheney Segment, upstream of Pole Road. Cheney Detention Pond (Figure II-I7) would have a 14-foot-high earthen dam with the emergency spillway three feet below the top. The primary outlet would be four 5- by 5-foot box culverts. The expected reduction in peak flows of 45 percent would substantially reduce the corrective measures needed onsite at Crossing #228. The estimated cost of this pond is \$320,000. At a slightly higher cost, a "wet" pond could be constructed, in which a specified amount of water would be stored at all times. This would provide equivalent flood-control advantages.

A detention pond would be beneficial to the aquatic ecosystem because it would reduce sedimentation downstream of the dam and would eliminate the need for extensive channelization at #228. A "wet" pond would also allow recreational benefits to be realized. Storage of a large volume of water would increase the land area covered by the 100-year flood plain, but this increase is not considered significant.

APPENDIX "E"



Alternative IV was rejected after discussions with the Baltimore District, U.S. Army Corps of Engineers, because most of the property on the detention site belongs to Fort Belvoir.

Project 2: Raise Old Mill Road

Old Mill Road will be flooded by the predicted flow because of a backwater condition caused by the crossing at Mt. Vernon Memorial Highway and Dogue Creek (#271). Although Old Mill Road is not a major route, flooding at this location would isolate a sewage treatment plant and a house. (Another access route is normally available, but the crossing at Old Mill Road and the North Fork of Dogue Creek (#270) is also inadequate.) Three alternatives were investigated to solve this problem: raising the road; relocating the road; and raising a shorter section of road and replacing Crossing #270.

Alternative I calls for raising Old Mill Road an average of seven feet for a distance of 1100 feet, as shown in Figure II-18. Where the road is closest to the stream it would have to be protected from erosion. Realignment of the stream is untenable because of the sensitivity of the aquatic environment. A timber pile retaining wall would be less disruptive of the stream ecosystem and is therefore suggested under this alternative. Also required are a yard inlet and 15-inch pipe at a private driveway to accommodate a slight change in drainage patterns brought about by regrading. A 36-inch pipe is recommended to carry local drainage to Dogue Creek from the other side of Old Mill Road. The total cost of these procedures would be approximately \$351,000.

Under Alternative II the road would be relocated as shown in Figure II-19, eliminating the need for the retaining wall. In all other aspects this alternative is identical to Alternative I. The estimated cost of the second alternative is \$304,000.

Alternative III calls for raising the section of Old Mill Road in the vicinity of Crossing #270, as shown in Figure II-20. In addition, four 9- by 10-foot box culverts would replace the existing 30- by 5-foot bridge at #270. Crossing replacement and raising a 700-foot section of roadway an average of four feet would cost approximately \$293,000.







SOUTHEAST FAIRFAX DEVELOPMENT STUDY IMPROVED BRIDGE AND IMPROVED CHANNEL

FORT BELVOIR

RESERVATO

Limits of fill, 100-year flood, no detention (Q=4230 cfs) Limits of fill, 100-year flood, with detention (Q=2160 cfs) 15.50, , , 80'×7' Flood elevation, channel size or bridge size, no detention (14.00) (___)(45'×6) Flood elevation, channel size or bridge size, with detention 99 700

REVISE

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ATTACHMENT 5





Ground Stabilization Fabrics

Construction on weak, wet or frost susceptible soils can cause needlessly expensive delays and added material costs. These types of soil cause rapid deterioration of paved structures like parking lots, roads and streets and also can lead to severe rutting of unpaved structures. Mirafi stabilization fabrics help solve these soil-related construction and maintenance problems and hold down costs in three ways: Mirafi, require 30 - 45% less aggregate

- Construction schedules are more easily for lowed because work can continue during mos types of weather.
- Mirafi fabrics protect the aggregate base against subgrade intrusion thus significantly reducing costly maintenance.

These benefits result from fabric functions of separation, confinement and load distribution as shown below:

• Unpaved roads and areas, when designed with



Subgrade/Aggregate SEPARATION (Using Mirafi fabric)

Separation

Mirafi fabrics with excellent puncture and tear resistant properties act as a separation barrier between fine grain soils and load-distributing aggregate fill material. As a separator it eliminates the loss of costly aggregate material into the subgrade and prevents the upward pumping of silt and other contaminating soil fines into the aggregate Aggregate CONFINEMENT

Confinement

Mirafi fabrics provide a high friction surface between the subgrade and the aggregate layer that helps to keep the aggregate in place. This confining action maintains the thickness and hence the intended load-bearing capacity of the aggregate. Subgrade LOAD DISTRIBUTION (Using Mirafi fabric)

Load Distribution

When placed between the subgrade and the aggregate layer Mirafi fabrication with its high tensile strength and modulus, acts to reduce localized stress by redistributing traffic loads. over a wider area of subgrade.

In ground stabilization uses, Mirafi stabilization fabrics excel in performance because of its woven construction. Mirafi fabric offers excellent resistance to installation abuse with burst, tear and puncture resistance values found in far heavier. more expensive fabric products. More importantly, the inherent high modulus, or low stretch, of woven Mirafi stabilization fabrics means less rutting in the system from repetitive wheel loads. This feature is particularly important in permanent roads. parking lots and other structures where resistance to rutting is a necessity. While many types of construction fabrics have been used for ground stabilization, field experience and research, prove that Mirafi offers a combination of performance, ease of handling and cost effectiveness that is unequalled in the industry.

ATTACHMENT 7





Back dump aggregate onto the fabric, taking care not to drive equipment, directly on the fabric



Spread the aggregate



Compact the agaredate clustandard techniques

Mirafi[®] products are conveniently packaged on rolls which can be handled by two men. No special equipment is necessary and installation is fast and easy, even in bad weather. Typical installation procedures consist of unrolling the fabric directly on the subgrade, backdumping the granular fill, spreading and then compacting (see left). The road or area is then ready for use or paving. Note: As is the case in all ground stabilization installa tions, with or without fabric, selection of the appropriate granular fill and good compaction are critical for performance. While a wide range of fill materials can be used with Mirafi, the optimum fill should be well-graded with a maximum of 10% fines to insure good compaction. Technical Bulle tin 2MT-1, available from your local Mirafi representative, gives more detailed descriptions of design and installation techniques for Mirafi fabr

APPENDIX "E

Mirafi^{*} Stabilization Fabric Applications

Mirafi stabilization fabric has been successfully used for soil stabilization of paved and unpaved structures throughout the U.S. The following are but a few of the many installations that have been helped to a quicker, less expensive conclusion by the use of Mirafi stabilization fabrics.

APPENDIX "E"

Fabric Properties			
Fabric Property 500X	Unit	Test Method	Typical Values ⁽¹⁾
Resistance to Installation Damage			
Grab Tensile Strength	lb	ASTM D-1682-64	200
Grab Tensile Elongation	%	ASTM D-1682-64	30 (max)
Burst Strength	psi	ASTM D-3786-80a(2)	400
Trapezoid Tear Strength	lb	ASTM D-1117-80	115
Puncture Resistance	lb	ASTM D-3787-80(3)	85 1
Fabric Property 600X	Unit	Test Method	Typical Values
Resistance to Installation Damage			
Grab Tensile Strength	lb	ASTM D-1682-64	-300
Grab Tensile Elongation	%	ASTM D-1682-64	35 (max) 11
Burst Strength	psi	ASTM D-3786-80a ⁽²⁾	>600
Trapezoid Tear Strength	lb	ASTM D-1117-80	120
Puncture Resistance	lb	ASTM D-3787-80(3)	130

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Rev.15

^aThe values listed are average values. Contact the Mirafi Technical Department for minimum certifiable values. ²Diaphragm Bursting Tester.

Tension Testing Machine with ring clamp; steel ball replaced with a %-inch diameter solid steel cylinder (with hemisphericality within the ring clamp.



To the best of our knowledge, the information contained herein is accurate. However, Mirafi Inc cannot assume any liability whatsoever for the accuracy or completeness thereof. Final determination of the suitability of any information or material for the use contemplated, of its manner of use, and where the suggested use infringes any patents is the sole responsibility of the user.

Mirali* is a trademark owned by a Dominion Textile company

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MIRAFI INC PO BOX 240967/CHARLOTTE. N C 28224/(704) 523-7477 or (800) 438-1855/TE APPENDI



When you need a tough, versatile fabric for use in ground stabilization you need Mirafi[®] 500X. In paved roads, parking lots, access/haul roads, Mirafi 500X solves stabilization problems where light to medium traffic and loads are expected.

Easily installed. 500X can reduce aggregate base course needs by 30 to 40%, and, its high modulus (low stretch) property provides extra reinforcement against rutting.

A strong, woven construction fabric, Mirafi 500X

also is effective for building embankment over soft ground, for slope erosion control against surface runoff, and other uses.

Mirafi Inc's experienced staff and local representatives are available before, during, and after a project to help solve your particular stabilization. drainage, or erosion control problems. For further information on 500X or any of the Mirafi family of fabrics, call your local Mirafi Inc Representative or 1-800-438-1855.



Fabric Properties

Fabric Property	Unit	Test Method	Typical Values ⁽¹⁾
Resistance to Installation Damage			
Grab Tensile Strength	lb	ASTM D-1682-64	200
Grab Tensile Elongation	%	ASTM D-1682-64	30 (max)
Burst Strength	psi	ASTM D-3786-80a ⁽²⁾	400
Trapezoid Tear Strength	lb	ASTM D-1117-80	115
Puncture Strength	lb	ASTM D-3787-80 ⁽³⁾	85

¹The values listed are average values. Contact the Mirafi Technical Department for minimum certifiable values. ²Diaphragm Bursting Tester.

³Tension Testing Machine with ring clamp; steel ball replaced with a ⁵/₆-inch diameter solid steel cylinder (with hemispherical tip) centered within the ring clamp.



Subgrade/Aggregate SEPARATION (Using Mirati tabric)

Separation

Mirafi fabrics with excellent puncture and tear resistant properties act as a separation barrier between fine grain soils and load-distributing aggregate full material. As a separator, it eliminates the loss of costly aggregate material into the subgrade and prevents the upward pumping of sill and other contaminating soil lines into the aggregate.



Aggregate CONFINEMENT (Using Mirafi fabric)

Confinement

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Load Distribution

When placed between the subgrade and the aggregate layer Mirafi fabric, with its high tensile strength and modulus, acts to reduce localized stress by redistributing traffic loads cver a wider area of subgrade

*E″



To the best of our knowledge, the information contained herein is accurate. However, Mirafi Inc. cannot assume any liability whatsoever for the accuracy or completeness thereof. Final determination of the suitability of any information or material for the use contemplated, of its manner of use, and whether the suggested use infringes any patents is the sole responsibility of the user.

Mirafi* is a trademark owned by a Dominion Textile company

MIRAFI INC + P.O. Box 240967 • Charlotte, NC 28224 • (704) 523-7447 or (800) 438-18: APPENDIX



When you have tough, critical stabilization jobs that call for a heavy duty geotextile, you need Mirafi 600X.

Mirafi 600X is a woven geotextile that helps solve many soil-related construction and maintenance problems by acting as a separating and reinforcing medium in critical applications.

Whether it's soil stabilization for roads, embankments, parking lots, oil field service areas or any other critical application, Mirafi 600X with its high tensile strengths offers the practical solution.

Mirafi 600X is an ultraviolet treated, high modulus woven fabric which ends worries about geotextile or system failures caused by installation stresses and abuses.

Mirafi 600X offers the user a cost-effective margin of safety over most standard stabilization geotextiles.

Shown here are some of the typical uses of Mirafi 600X.



Mirali[®] is a trademark owned by a Dominion Textile company

Railroad Stabilization Fabric

The problem of fouled, weakened ballast is a major concern to the railway maintenance and construction engineer. In areas of high stress or poor subgrade, contamination by subgrade fines leads to detrimental changes in ballast shear strength, permeability, deformation response and frost susceptibility. The consequence is an unstable track system that results in lost revenue and high maintenance costs. Mirafi® 600X trackbed fabric reduces maintenance costs by protecting and confining the ballast section and by reducing localized stress on the subgrade.



Mirafi 600X is a second-generation woven fabric designed exclusively for track-bed stabilization. Mirafi 600X fabric is the result of five years of research and field experience and it offers an unequalled combination of user benefits:

- **Toughness:** Exceptional burst, puncture, tensile and tear strength make Mirafi 600X highly resistant to damage during installation and use.
- **Durability:** Mirafi 600X is highly resistant to ballast abrasion. It is inert to most chemicals and is stabilized against sunlight deterioration to provide long service life.
- Low Deformation: Mirafi 600X fabric resists deformation in the track system because of its high-modulus woven construction.
- Ease of Handling: Because Mirafi 600X is an extremely tough woven fabric, it is not as bulky as many nonwoven track-bed fabrics. A standard-size roll of Mirafi 600X is only 12 inches in diameter and yet contains 360 linear feet of fabric. Each roll weighs approximately 210 pounds.

Mirafi 600X is a cost-effective solution to many problems of track instability. The relatively low cost of using Mirafi 600X is justified when an improvement in maintenance cycle time of about 33% is achieved. Field experience is showing that track life in problem areas can be improved three- to five-fold or more when Mirafi 600X is used.

Use of Mirafi[®] 600X

The benefits of using Mirafi 600X are most obvious in areas such as crossings, turnouts and diamonds that have required repeated roadbed maintenance due to high stress, discontinuity and poor soils. In addition, favorable economics associated with Mirafi 600X fabric for roadbed stabilization are becoming more attractive for mainline usage.

In any type of application, Mirafi 600X

fabric installation is quick and easy. No special equipment is used: however, fabric lay-down devices are available for large scale operations. Woven Mirafi 600X is not as thick as most track fabrics; therefore, more material can be wound on a roll. Although a standard roll of Mirafi 600X contains 360 linear feet of fabric, smaller roll sizes are available for use where undercutter clearance is restricted. Larger rolls can be supplied for use with automated lay-down equipment.



MIRAFI 600X is placed by hand on prepared subgrade when track is removed for rehabilitation

damage fabric.

MIRAFI 600X is easily used in sledding operations.

Grab Tensile Strength.300 lbMullen Burst Strength.600 psiTrapezoid Tear Strength.120 lbAbrasion Resistance.130 lbPuncture Resistance.135 lbModulus (load at 10% elongation).150 lb

Water Permeability	
Coefficient (k).	0.01 cm/sec
Pore Size (E.O.S.).	
Roll Weight.	
Roll Length.	
Roll Width	

undercutter cleaners

Once the fabric has been installed, normal construction procedures are followed. Care should be taken to insure that tamper blades do not

Fabric Description and Properties

MIRAFI 600X is a heavy-duty railroad track-bed fabric woven from monofilaments of stabilized polypropylene. Fabric edges are mechanically sealed to increase edge strength and eliminate ravelling. MIRAFI 600X is resistant to a wide range of chemicals and to ultraviolet degradation. F The fabric is non-biodegradable.

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EPHONE CONVERSATION RECOR Т FAIRFAX COUNTY, VIRGINIA DEPARTMENT OF PUBLIC WORKS UTILITIES PLANNING AND DESIGN DIVISION STUN FILE NO: SUBJECT: Crop DATE: TIME: 10 TO: Bekhor FROM: CONVERSATION RECORD: Simac kρ NAME: ADDRESS: TELEPHONE 4: 800 - 438 - 1855 Iter iscussed cloth D an i er Base tood ١C C *Э*СА Simac enas MC FROMME 600 x 654 stronger then soox) lerial VNG (in aggregate base 2 asphalt. When nal deri is initiated soil (berings) teiti br need determine the soil to De öxtermine what needed 15 more accui Kay COPIES TO: Curc (f ? 15u) APPENDIX "E"



FAIRFAX COUNTY, VIRGINIA

MEMORANDUM

William C. Beckner, Executive Assistant to the County Executive DATE:

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APPENDIX "F"

ACX & 0 1901

FROM: John W. di Zerega, Director Department of Public Works

APR 21 BET

SUBJECT: Pole Road Park Backwater Intrusion

REFERENCE: Your memorandum dated March 19, 1987 (copy attached)

In response to your request, staff from the Department of Public Works, Maintenance and Construction Division, removed the man-made obstruction from Dogue Creek. The water level was reduced approximately 2 1/2 ft. to 3 ft. This work was completed on March 27, 1987.

If I may be of further assistance, please contact this office.

JWZ/mw

Attachment: As stated

cc: Supervisor Alexander's Office, Lee District Joseph P. Downs, Director, Fairfax County Park Authority Howard J. Guba, Director, Office of Capital Facilities Harold L. Williamson, Director, Maintenance and Construction Division

FAIRFAX COUNTY, VIRGINIA

MEMORANDUM

TO: Ed Nenstiel Fairfax County Park Authority DATE: April 9, 1987

FROM: Nelson Thurman, Soil Scientist Department of Extension and Continuing Education

Nelson Thurman

SUBJECT: Soil conditions of the Pole Road Area Park

REFERENCE: Tax Map Number: 100-4-001-2 (part), 3A; 100-4-005-B; 100-4-006-02-B; 109-2-005-B

Jim Belshan and I evaluated the soils found on the Pole Road Area Park during the walking tour on Tuesday, March 17.

The major factors affecting the use of this site are a seasonal high water table and the potential for flooding. A map (scale: 1 inch = 200 feet) delineating the soil types present on the site is enclosed.

The narrow tract west of Woodlawn Mews (100-4-005-B) consists of approximately four (4) to five (5) feet of uncontrolled fill over alluvial soils. This material would not be suitable for building support and would require an engineering evaluation and design for such purposes. Because of the fill material and the narrow area, this tract would best be left to minimal disturbance and development.

The majority of the site consists of Mixed Alluvial Soils (1A+). These soils have a seasonal high water table that may be at or near the surface during wetter seasons and after heavy rainfalls. Soft, poor-bearing strata are present within these soils. The entire tract is located within the 100-year frequency floodplain and is subject to flooding.

Bertie soils (26A1) are found on some of the higher areas of the floodplain. The seasonal high water table may approach one (1) to two (2) feet below the surface. These higher areas would be suitable for playing fields and non-permanent structures which could stand occasional flooding.

The high water table and flooding exclude all of the soils on this site for any type of on-site septic disposal system. Any restroom facilities will have to be provided with septic disposal from off-site.

NT:lv Soils:552

Attachment

APPENDIX "G"





Fairfax County Park Authority

MEMORANDUM

April 8, 1987

A PARTICI E ANDER

.

APPENDIX "H"

- To: Ed Nenstiel, Design Division Fairfax County Park Authority
- From: Richard W. Jones, Superintendent) Division of Land Acquisition & Clanning
- Subj: Pole Road Area Park 100-4-((1))-3B

This parcel of land is private (as you stated), and based upon past Park Authority policy we do not put facilities on private property. That leaves us the option of having it dedicated to the Park Authority.

A dedication would entail the approval of the homeowners who are members of the Villages Recreation Inc. The County Attorney would have to respond on the viability and requirements of such a dedication. Such a response would probably not be available by mid April.

I await your answer to above.

cc: Mr. Joseph Downs Mr. Donald Lederer Fairfax County Park Authority

MEMORANDUM

Don Lederer

То

From

Date April 27, 1987

Ed Nenstiel

Subject Pole Road Area Park Meeting @ Mr. Alexander's Office

On Saturday April 25, the following people met @ Mr. Alexander's office to discuss the above referenced project:

Darold Ratliff, President, woodlawn Mews HOA David Lightowler, President Villages @ Mt. Vernon Revolution Ralph Perrino, Supervisor Alexander's office Joe Alexander, Lee District Supervisor Carl Sell, Planning Commission

The purpose of the meeting was to discuss the possible acquisition of the parcel of land between the community pool and the club house for recreational facility development (agenda attached).

During the course of the meeting, the following main points were discussed:

1. Mr. Alexander suggested that the Park Authority could develop on the parcel if it could be either dedicated to the Park Authority or leased to the Authority with an agreement for maintenance and operation. I explained to Mr. Alexander that the Park Authority would probably prefer an outright dedication of the parcel rather than a lease agreement. I also indicated that our land acquisition department suggested that the Villages HOA should check their legal documents to find out if they need 100% approval from their members. Mr. Lightowler said that they would only need a majority vote to their membership in order to dedicate the northern open space portion of the pool property. Mr. Lightowler also said that it would be brought up at their annual home owners assoc. meeting which will be held on May 13, 1987 at 7:30 p.m. at the pool house at 8544 Sacramento Drive. Mr. Alexander asked if someone from the park Authority could attend. I indicated that someone from the Park Authority would be there.

2. Mr. Alexander said that once we know exactly how we want to develop the park, he would want the developer (Bob Travers of Signature Communities) to provide the funding and that the Park Authority would actually do the development. I told Mr. Alexander that I was under the impression that once a plan was developed and approved by the Park Authority that the plan would be given to the developer and that he would design and construct the necessary facilities. Mr. Alexander said he would prefer to do it the other way. 3. Mr. Sell said that he had spoken to the developer within the past week and he is still willing and anxious to fulfill his commitment at this site. While no one knew exactly what that commitment would be in terms of dollars, Mr. Sell said that the developer was still willing to provide the facilities shown on the original February 1982 concept plan that was approved by the Park Authority. Everyone interpreted this to mean that the developer would not cringe at providing something in the neighborhood of \$400,000 to \$500,000 at this site.

-2-

4. Dave Lightowler also suggested that the homeowners would be willing to eliminate the chain link fence that protrudes into the open area next to the pool in order to provide a more squared off and potentially more useable area. He also said that he would want the Park Authority to actually do the fence removal and replacement.

5. We talked briefly about the report that I am working on and the fact that the park could be developed with small nodes of community park type facilities with the bulk of the interior portion of the park being left in its natural state. Mr. Alexander still talked about the possibility of providing athletic fields at this site at some time in the future but Mr. Sell said that he didn't see the need for full size athletic fields and that an open play field where someone could fly a kite, throw a frisbee or just run around was all that would be needed. Everyone agreed and decided that full size athletic fields would open the park to the general public and that this was not desireable. It was also agreed that parking was not wanted.

As you can see, a number of these issues should probably be discussed and some decisions made so that both the Park Authority staff and the Supervisor's office will be on the same track.

EN:ka

cc: Wild Beckner Downs Jones

Attachments

APPENDIX "I"

8644 Venoy Court Alexandria, Virginia 22309 phones: 781-0320, 634-1036

March 6, 1987

James Zook, Director Office of Comprehensive Planning 10640 Page Avenue Fairfax, Virginia 22030

Copy of this with Copy of Zook Inther to

FCPA.

Sir:

I respectfully call your attention to a signi ecological resource at Dogue Creek north of Route 1. A map of the area is attached. It lies downstream of an "Environmentally Sensitive" classified area in Fort Belvoir and Huntley Meadows Park.

As I write, several dozens of Canada geese and mallards are in residence in the swampy parts of this area. In summer, numbers of blue heron and green cranes live there, as well as snowy egrets. In the wooded part live red shouldered hawks. Mammals present include deer, muskrats, and beavers.

Several applications have been made in the past few years to develope the open land in this area. I am concerned that ecological resource values be given due consideration in the review of these applications.

I particularly submit that lands denoted on the tax map section 100-4-3A, 100-4-3D, and 109-2-18A ought to be left undeveloped. Also, future development of section 100-4-2 ought to be consistent with protection of the wildlife present.

Please arrange for a response, informing me of the steps that have been (or will be) taken to recognize this ecological resource.

Sincerely,

R Schanty

Radford Schantz.

copy to: T Farrell Egge District Supervisor



Fairfax County Park Authority

MEMORANDUM

To Ed Nenstiel, Design Division

Date April 6, 1987

APPENDIX "K

From Gary Roisum, Conservation Division

Subject Dogue Creek Stream Valley Park TM 100-4

Per your request, I am forwarding information obtained during two recent field investigations of Dogue Creek Stream Valley Park. I hope this information is helpful in your effort to prepare a master plan for the park.

Attached is a December 12, 1986 memorandum from me to Gilman Aldridge which specifically addresses the presence of beaver in the area and their possible influence on the park's hydrology. The memorandum concluded that beaver activity has little influence on the current flooding problems existing within the park.

Further field investigation by my office reveals the following information:

- 1. The park's flooding conditions are not beaver related. Flooding is partially due to human activity downstream from the park.
- 2. The landowner who owns property along Dogue Creek immediately north of Route 1 highway has installed an "impounding" structure within the creek. Although I have not approached the landowner regarding the purpose of this structure, it appears that he has used the impounded body of water for fishing and hunting purposes. The structure is underdesigned and is insufficient in accommodating the required quantities of water characteristic of Dogue Creek. The appearance and condition of the structure indicates that it was constructed well before 1982. Its efficiency may have dropped around that period due to the structure getting clogged with natural debris.
- 3. Another factor contributing to the park's flooding problems is upstream development in recent years. Precipitation within the increasing impervious watershed upstream is creating a higher volume of water entering the main channel of Dogue Creek within a shorter period of time.
During major storm events, a considerable volume of water is stored within the floodplain north of Route 1 which includes Dogue Creek S.V. Park. Due to the limited efficiency of the privately installed impounding structure previously mentioned, the floodplain remains flooded for a considerable period of time before it resumes normal baseflow conditions. In order to reduce prolonged impacts of flooding, the structure must be removed.

- 4. It is important to note that the benthic topography of the floodplain has been altered for several years since installation of this private impounding structure. Silt and debris have been deposited within the floodplain in areas having slower moving water. This deposition process has subsequently contributed to the current flooding conditions. For this reason, it is my judgement that frequent flooding will continue to occur in the area of Dogue Creek S.V. Park even when the impounding structure is removed. However, the duration of flooding will be considerably less.
- 5. Much of the floodplain that includes Dogue Creek S.V. Park falls under the U.S. Fish and Wildlife Service classification system of wetlands. Most of the park is saturated periodically with shallow water during each year's growing season and hydrophytes are present on the site. This wetland is classified as a "Riverine System" according to the U.S. F&WS "Classification of Wetlands and Deepwater Habitats of the United States."

Since frequent flooding in this topographically flat floodplain will occur even after the private impounding structure is removed, the site would retain its classification as a wetland. FCPA is charged with responsible stewardship of the natural resources within public parkland. If it is the Park Authority's desire to physically modify or alter these wetlands for recreational purposes, I recommend that we first approach the U.S. Fish & Wildlife Service and U.S. Army Corps of Engineers for approval.

Please call me if you have any questions regarding this matter.

APPENDIX "K"

Attachment

cc. Aldridge Beckner Biglin Files

Harold Henderson 7322 Wickford Drive Alexandria, VA 22310 م المدير

October 5, 1987

Mr. Joseph P. Downs, Director Fairfax County Park Authority 3701 Pender Drive Fairfax, Virginia 22030

Dear Mr. Downs:

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As the Chairman of the Lee District Parks and Recreation Advisory Committee, I would like to inform you of an item that was discussed at our last meeting on September 28, 1987, the Pole Road Park.

We recognize the need to provide park facilities in the Pole Road area as soon as possible, since there is so little park land in the Pole Road area.

We discussed the Park Authority's draft feasibility study of the Pole Road Park area and agree, as a Committee, with the recommendations set forth in this feasibility study.

Therefore, let it show in the record the Lee District Park and Recreation Advisory Committee fully encourages and supports the Park Authority with their efforts to plan and design this park. On September 28, 1987 the Committee unanimously voted that the Park Authority move forward with the plans outlined in the feasibility study.

Sincerely

Harold Henderson

HH:mf

cc: Mr. Jim Wild, Chairman Fairfax Park Authority

> Michele Foss, Aide Supervisor Alexander

APPENDIX L