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IX. REFERENCES

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Natural Resources Conservation Service
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March 2, 2001

Mr. Brian Bernstein
Assistant Division Chief
Environmental Planning Section
KCI
10 North Park Drive
Hunt Valley, MD 21030-1846

Dear Mr. Bernstein:

Enclosed please find the completed AD-1006 Farmland Conversion Impact Rating Form for the MD 97 Brookeville Bypass Project. Thank you for providing the information that I requested. That information enabled me to complete the form AD-1006 in a more timely fashion.

If you have any questions, please call me at 301-590-2855.

Sincerely,

J. G. Warfield
District Conservationist

JGW/bjb

The Natural Resources Conservation Service
is an agency of the U.S. Department of Agriculture

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U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request: February 15, 2001
Name Of Project: MD 97 Brookeville Bypass	Federal Agency Involved: Federal Highway Administratio
Proposed Land Use: Highway	County And State: Montgomery County, Maryland
PART II *(To be completed by SCS)*	Date Request Received By SCS: 2/21/01

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form).*	Yes: X	No: ☐	Acres Irrigated: 0 / Average Farm Size: 157
Major Crop(s): CORN, SMALL GRAINS, SOYBEANS, HAY	Farmable Land In Govt. Jurisdiction — Acres: 167,100 % 52		Amount Of Farmland As Defined in FPPA — Acres: 113800 % 35
Name Of Land Evaluation System Used: MONTGOMERY COUNTY LAND EVALUATION ANALYSIS	Name Of Local Site Assessment System: NONE		Date Land Evaluation Returned By SCS: 3/2/01

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	9.6/10.69	0.01/0.01	0.59/0.53	1.24/0.99
B. Total Acres To Be Converted Indirectly	0.0	0.0	0.0	0.0
C. Total Acres In Site	58.30	58.51	58.51	58.51
PART IV *(To be completed by SCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	24.19/23.21	4.47/4.25	4.90/4.75	4.64/4.33
B. Total Acres Statewide And Local Important Farmland	5.63/4.74	1.38/1.24	3.96/3.72	5.28/4.73
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0001	0.00004	0.00005	0.00006
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	23.8	30.5	30.5	34.2
PART V *(To be completed by SCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	93.3	76.9	75.6	79.9

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points	Alt. 5C	Alt. 7	Alt. 8A	Alt. 8B
1. Area In Nonurban Use	15	11	11	11	11
2. Perimeter In Nonurban Use	10	10	10	10	10
3. Percent Of Site Being Farmed	20	20	20	20	20
4. Protection Provided By State And Local Government	20	15	20	20	20
5. Distance From Urban Builtup Area	N/A	N/A	N/A	N/A	N/A
6. Distance To Urban Support Services	N/A	N/A	N/A	N/A	N/A
7. Size Of Present Farm Unit Compared To Average	10	0	0	0	0
8. Creation Of Nonfarmable Farmland	25	5	0	0	0
9. Availability Of Farm Support Services	5	5	5	5	5
10. On-Farm Investments	20	2	0	0	0
11. Effects Of Conversion On Farm Support Services	25	0	0	0	0
12. Compatibility With Existing Agricultural Use	10	7	2	2	2
TOTAL SITE ASSESSMENT POINTS	160	75	68	68	68
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100				
Total Site Assessment *(From Part VI above or a local site assessment)*	160				
TOTAL POINTS *(Total of above 2 lines)*	260				

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

PRIME FARMLAND SOILS
Montgomery County

Map Symbol	Soil Map Unit Name
1B	Gaila silt loam, 3 to 8 percent slopes
2A	Glenelg silt loam, 0 to 3 percent slopes
2B	Glenelg silt loam, 3 to 8 percent slopes
4B	Elioak silt loam, 3 to 8 percent slopes
17B	Occoquan loam, 3 to 8 percent slopes
19A	Bucks silt loam, 0 to 3 percent slopes
19B	Bucks silt loam, 3 to 8 percent slopes
20A	Brentsville sandy loam, 0 to 3 percent slopes
20B	Brentsville sandy loam, 3 to 8 percent slopes
21A	Penn silt loam, 0 to 3 percent slopes
21B	Penn silt loam, 3 to 8 percent slopes
25B	Legore silt loam, 3 to 8 percent slopes
26B	Montalto silt loam, 3 to 8 percent slopes
27B	Neshaminy silt loam, 3 to 8 percent slopes
41A	Elsinboro silt loam, 0 to 3 percent slopes
41B	Elsinboro silt loam, 3 to 8 percent slopes
43A	Elk silt loam, 0 to 3 percent slopes, occasionally flooded
45A	Delanco silt loam, 0 to 3 percent slopes, occasionally flooded
46A	Huntington silt loam, 0 to 3 percent slopes, occasionally flooded
47A	Lindside silt loam, 0 to 3 percent slopes, occasionally flooded
50A	Rowland silt loam, 0 to 3 percent slopes, occasionally flooded
57B	Chillum silt loam, 3 to 8 percent slopes
58B	Sassafras loam, 3 to 8 percent slopes

SOILS OF STATEWIDE IMPORTANCE
Montgomery County

Map Symbol	Soil Map Unit Name
1C	Gaila silt loam, 8 to 15 percent slopes
2C	Glenelg silt loam, 8 to 15 percent slopes
4C	Elioak silt loam, 8 to 15 percent slopes
9B	Linganore-Hyattstown complex, 3 to 8 percent slopes
9C	Linganore-Hyattstown complex, 8 to 15 percent slopes
16B	Brinklow-Blocktown complex, 3 to 8 percent slopes
16C	Brinklow-Blocktown complex, 8 to 15 percent slopes
17C	Occoquan channery loam, 8 to 15 percent slopes
20A	Brentsville sandy loam, 0 to 3 percent slopes
20B	Brentsville sandy loam, 3 to 8 percent slopes
21C	Penn silt loam, 8 to 15 percent slopes
25C	Legore silt loam, 8 to 15 percent slopes
26C	Montalto silt loam, 8 to 15 percent slopes
27C	Neshaminy silt loam, 8 to 15 percent slopes
29B	Jackland silt loam, 3 to 8 percent slopes
37B	Travilah silt loam, 3 to 8 percent slopes
45A	Delanco silt loam, 0 to 3 percent slopes, occasionally flooded
48A	Melvin silt loam, 0 to 3 percent slopes, occasionally flooded
51A	Bowmansville silt loam, 0 to 3 percent slopes, occasionally flooded
57C	Chillum silt loam, 8 to 15 percent slopes
59A	Beltsville silt loam, 0 to 3 percent slopes
59B	Beltsville silt loam, 3 to 8 percent slopes
61B	Croom gravelly loam, 3 to 8 percent slopes
61C	Croom gravelly loam, 8 to 15 percent slopes
64B	Croom and Bucks soils, 3 to 8 percent slopes
64C	Croom and Bucks soils, 8 to 15 percent slopes
65B	Wheaton silt loam, 0 to 8 percent slopes

FARMLAND CONVERSION IMPACT RATING FORM AD-1006
RATIONALE FOR EVALUATION OF SIT ASSESSMENT CRITERIA
7 CFR 658.5 (b)
MARYLAND ROUTE 97-BROOKEVILLE, MARYLAND BYPASS
MONTGOMERY COUNTY, MARYLAND
FEBRUARY 2001

1. How much land is in non-urban use within a radius of 1 mile from where the project is intended?

More than 90 percent – 15 points
90 to 20 percent – 14 to 1 point(s)
Less than 20 percent – 0 points

Aerial photography and lane use maps were reviewed and a field review of the site was conducted to determine non-urban use within a 1-mile radius of the project area. It was estimated that 75 percent of the land area around the study area is in non-urban use. The town of Olney, located south of the study area, is the only urban area in the vicinity.

Rating: Alternative 5C-11 points; Alternative 7 – 11 points; Alternative 8A and B – 11 points

2. How much of the perimeter of the site borders on land in non-urban use?

More than 90 percent – 10 points
90 to 20 percent – 9 to 1 point(s)
Less than 20 percent – 0 points

Aerial photography and lane use maps were reviewed and a field review of the site was conducted to determine the amount of non-urban land use bordering the project area. It was estimated that more than 80 percent of the land area bordering the perimeter of the site is in non-urban use.

Rating: Alternative 5C-10 points; Alternative 7 – 10 points; Alternatives 8A and B – 10 points

3. How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

More than 90 percent – 20 points
90 to 20 percent – 19 to 1 point(s)
Less than 20 percent – 0 points

Aerial photographs were reviewed from previous years to evaluate changes in land use patterns. This review revealed that more than 90 percent of the farmland in the study area has been farmed more than give of the last ten years.

Rating: Alternative 5C-20 points; Alternative 7 –20 points; Alternative 8A and 8B – 20 points

4. Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland or covered by private programs to protected farmland?

To preserve farmland and open space, the Maryland National Capital Park and Planning Commission has adopted a Functional Master Plan for the Preservation of Agriculture and Rural Open Space (1980, updated 1988). The plan recommends techniques to protect and preserve farmland and rural open space. The study area is located within two agricultural protection areas of the county. The study area west of existing MD 97 is within the Rural Density Transfer Zone or "RDT" zone. One dwelling unit is permitted per 25 acres of

farmland. The study area east of existing MD 97 is located within the Rural Cluster (RC) Zone. In this zone, overall density is one dwelling unit per five acres with a cluster option for one-acre minimum lot sizes. For example, if the base zone is one dwelling unit per five acres and the tract is 100 acres in size, the number of permitted dwelling units is 20. The cluster option would allow these 20 units to be grouped on lots as small as one acre on approximately 40 percent of the parcel or 40 acres. The remainder of the tract (60 percent or 60 acres) could be preserved as open space or used for agricultural uses.

Rating: Alternative 5C-15 points; Alternative 7 – 20 points; Alternative 8A and 8B – 20 points

5. Criterion 5 is not considered applicable for corridor-type projects.

6. Criterion 6 is not considered applicable for corridor-type projects.

7. Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the country?

As large or larger – 10 points
Below average – deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more
Below average – 9 to 0 point(s)

According to the Natural Resources Conservation Service in Montgomery County, the average size of a farm in the county is 157 acres. All four Alternatives impact one farmland parcel. The size of each farmland parcel affected by these alternatives is less than 50 percent of the average farm size in the county.

Rating: Alternative 5C – 0 points; Alternative 7 – 0 points; Alternatives 8A and 8B – 0 points

8. If this site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of the interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project – 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project – 24 to 1 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project – 0 points

Only Alternative 5C will bisect farmland. Alternatives 7, 8A and 8B will only affect the edge of the existing farm field. Because the proposed roadway improvements will be two-lane undivided roadways with shoulders, access to the remaining farmland is not anticipated to be a problem.

Rating: Alternative 5C – 5 points; Alternative 7 – 0 points; Alternatives 8A and 8B – 0 points

9. Does the site have available adequate supply of farm support services and markets, i.e. farm suppliers, equipment dealers, processing and storage facilities and farmers markets?

All required services are available – 5 points
Some required services are available – 4 to 1 point(s)
No required services are available – 0 point(s)

All required services are available to the farms in the area for each alternative. According to the Natural Resources Conservation Service in Montgomery County, agricultural services are located outside of the study area in Frederick, Howard and Montgomery Counties.

Rating: Alternative 5C – 5 points; Alternative 7 – 5 points; Alternatives 8A and 8B – 5 points

10. Does the site have substantial and well maintained and on-farm investments such as barns, other storage buildings, farm trees and vines, field terraces, drainage, irrigation waterways or other soil and water conservation measures?

High amount of on-farm investments – 20 points
Moderate amount of on-farm investment – 19 to 1 point(s)
No on-farm investment – 0 point

A minimal amount of on-farm investments was noticed during a field visit to the study area. No structures related to farming activity would be required by any of the proposed build alternatives.

Rating: Alternative 5C – 2 points; Alternative 7 – 0 points; Alternatives 8A and 8B – 0 points

11. Would the project at this site, by converting farmland to non-agricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted – 25 points
Some reduction in demand for support services if the site is converted – 24 to 1 point(s)
No significant reduction in demand for support services if the site is converted – 0 points

None of the proposed build alternatives are anticipated to reduce the demand for farmland support services in the area. The 10.69 acres of active farmland impacts associated with Alternative 5C is the maximum amount of active farmland impacts generated by any of the proposed build alternatives. The other three alternatives affect less than 1.25 acres. The viability of the study area for farming activity should not be jeopardized by the proposed roadway improvements.

Rating: Alternative 5C – 0 point(s); Alternative 7 – 0 point(s); Alternatives 8A and 8B – 0 point(s)

12. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to non-agricultural use?

Proposed project is incompatible with existing agricultural use of surrounding farmland – 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland – 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland – 0 point(s)

The purpose of the proposed roadway improvements is to remove the increasing volumes of traffic from the town of Brookeville, improve traffic operations and safety on existing MD 97 and preserve the historic character of Brookeville. The zoning classifications of land in the study area (see item 4) are in place to preserve agricultural activity and provide developers the opportunity to cluster their developments on agriculturally zoned land.

Rating: Alternative 5C – 7 points; Alternative 7 – 2 points; Alternatives 8A and 8B – 2 points

Total Rating: Alternative 5C – 75 points
Alternative 7 – 68 points
Alternative 8A – 68 points
Alternative 8B – 68 point

Summary Statistics, Hawlings River Near Sandy Spring, Maryland, Water Years 1978-1995

Parameter	Measurement	Comments
Annual Mean	29.1	
Highest Annual Mean	48.3	
Lowest Annual Mean	16.0	
Highest Daily Mean	1500	October 1, 1979
Lowest Daily Mean	1.7	September 11-13, 1995
Annual Seven-day Minimum	1.8	September 10, 1995
Instantaneous Peak Flow	4300 (a)	September 6, 1979
Instantaneous Peak Stage	8.80	September 6, 1979
Instantaneous Low Flow	.75 (b)	January 30, 1981
Annual Runoff (cfsm)	1.08	
Annual Runoff (inches)	14.64	
10 Percent Exceeds	48	
50 Percent Exceeds	18	
90 Percent Exceeds	5.6	

Source: James, R.W., Simmons, R.H., and Helinsky, B.M. U.S. Geological Survey Water-Data Report MD-DE-95-1. Water Resources Data Maryland and Delaware Water Year 1995. Volume 1 - Surface-Water Data.

(a) From rating curve extended above 1,200 cubic ft/s on basis of contracted-opening and flow-over-road measurement of peak flow.

(b) Result of freezeup

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 1+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
2.00	0.55	99.45	
3.00	1.05	98.95	
3.50	1.70	98.30	
5.80	2.60	97.40	Bankfull
10.00	4.05	95.95	
12.00	4.30	95.70	
14.00	4.65	95.35	
16.00	4.62	95.38	
18.00	3.90	96.10	Boulder
20.00	5.00	95.00	
22.00	4.85	95.15	
24.00	4.60	95.40	
26.00	4.70	95.30	
28.00	3.95	96.05	
30.00	0.40	99.60	
31.00	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.032	Flow Area	38.00 ft^2	Average Depth	1.66 ft
Channel Slope	0.01 ft/ft	Wetted Perimeter	24.61 ft	Width/Depth Ratio	13.87
Water Surface Elevation	97.4 ft	Top Width	22.96 ft	Entrenchment	1.35
Discharge	235.73 cfs	Maximum Depth	2.4 ft	Rosgen Classification	F4
		Velocity	6.2 ft/s		

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 2+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
2.00	1.35	98.65	
3.40	2.85	97.15	Edge of water
5.00	3.15	96.85	
7.00	3.00	97.00	
10.00	3.25	96.75	
12.00	2.75	97.25	
14.00	3.20	96.80	
16.00	3.40	96.60	
18.00	2.70	97.30	
20.00	3.30	96.70	Edge of water
22.00	3.00	97.00	
24.00	2.10	97.90	
25.00	2.75	97.25	Bankfull
26.00	1.90	98.10	
28.00	1.20	98.80	
30.50	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.04	Flow Area	24.61 ft^2	Average Depth	1.05 ft
Channel Slope	0.025 ft/ft	Wetted Perimeter	24.99 ft	Width/Depth Ratio	22.42
Water Surface Elevation	98.1 ft	Top Width	23.49 ft	Entrenchment	1.30
Discharge	143.03 cfs	Maximum Depth	1.5 ft	Rosgen Classification	B3
		Velocity	5.81 ft/s		

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 3+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
1.00	0.70	99.30	
3.00	1.80	98.20	
4.20	2.90	97.10	Edge of water
6.00	2.85	97.15	
7.00	2.75	97.25	
9.00	2.65	97.35	Edge of water
10.00	2.30	97.70	
11.00	1.45	98.55	Bankfull
12.00	0.80	99.20	
13.20	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.037	Flow Area	9.06 ft^2	Average Depth	1.05 ft
Channel Slope	0.04 ft/ft	Wetted Perimeter	9.53 ft	Width/Depth Ratio	8.24
Water Surface Elevation	98.55 ft	Top Width	8.64 ft	Entrenchment	1.53
Discharge	70.29 cfs	Maximum Depth	1.45 ft	Rosgen Classification	A4
		Velocity	7.76 ft/s		

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 4+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
2.00	5.05	94.95	
3.00	5.30	94.70	
4.00	5.10	94.90	
6.00	5.55	94.45	
8.00	5.75	94.25	Thaweg
10.00	5.50	94.50	
12.00	5.20	94.80	
14.00	5.20	94.80	
16.30	5.00	95.00	Edge of water
17.00	3.75	96.25	
18.00	2.20	97.80	Bankfull
19.00	1.65	98.35	
21.00	0.90	99.10	
23.80	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.035	Flow Area	48.85 ft^2	Average Depth	2.85 ft
Channel Slope	0.004 ft/ft	Wetted Perimeter	20.8 ft	Width/Depth Ratio	6.01 *
Water Surface Elevation	97.8 ft	Top Width	17.13 ft	Entrenchment	2.35
Discharge	231.76 cfs	Maximum Depth	3.55 ft	Rosgen Classification	C4
		Velocity	4.74 ft/s	* Does not fit Rosgen's Classification for width/depth ration	

Note: All elevations relative to an arbitrary datum. View facing upstream

Station **5+00**

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
1.00	0.20	99.80	
1.60	0.40	99.60	
2.00	1.30	98.70	
4.00	2.20	97.80	Edge of water
5.00	2.25	97.75	
6.30	2.20	97.80	
7.00	2.05	97.95	
8.00	2.15	97.85	
9.00	2.30	97.70	
9.60	2.20	97.80	Edge of water
11.00	1.40	98.60	Bankfull
14.00	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.037	Flow Area	5.71 ft^2	Average Depth	0.65 ft
Channel Slope	0.04 ft/ft	Wetted Perimeter	9.2 ft	Width/Depth Ratio	13.50
Water Surface Elevation	98.6 ft	Top Width	8.78 ft	Entrenchment	1.25
Discharge	33.37 cfs	Maximum Depth	0.9 ft	Rosgen Classification	B3
		Velocity	5.84 ft/s		

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 6+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
2.00	1.10	98.90	
2.30	1.30	98.70	Bankfull
3.00	1.60	98.40	
4.00	2.20	97.80	
6.00	2.30	97.70	
8.00	2.50	97.50	
10.00	2.65	97.35	
12.40	2.90	97.10	Edge of water
15.00	2.80	97.20	
17.00	2.90	97.10	
18.00	3.00	97.00	
20.00	2.80	97.20	
21.00	2.80	97.20	
22.00	3.00	97.00	
23.00	2.90	97.10	
24.00	3.10	96.90	
25.00	3.00	97.00	Edge of water
26.00	0.20	99.80	
27.00	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.033	Flow Area	31.59 ft^2	Average Depth	1.36 ft
Channel Slope	0.009 ft/ft	Wetted Perimeter	24.83 ft	Width/Depth Ratio	17.20
Water Surface Elevation	98.7 ft	Top Width	23.31 ft	Entrenchment	1.16
Discharge	158.44 cfs	Maximum Depth	1.8 ft	Rosgen Classification	F4
		Velocity	5.02 ft/s		

Note: All elevations relative to an arbitrary datum. View facing upstream

Station 7+00

Offset (ft)	Rod Depth (ft)	Elevation (ft)	Comments
0.00	0.00	100.00	
3.00	2.70	97.30	
3.40	3.30	96.70	Bankfull
5.00	4.25	95.75	
6.50	5.30	94.70	Edge of water
8.00	5.60	94.40	
10.00	5.50	94.50	
12.00	5.60	94.40	
14.00	5.75	94.25	
16.00	5.92	94.08	
18.00	5.85	94.15	
20.00	5.55	94.45	
21.00	4.75	95.25	
22.00	4.25	95.75	
24.00	2.60	97.40	
26.00	0.00	100.00	

Section Data		Results		Stream Classification Parameters	
Wtd. Mannings Coefficient	0.033	Flow Area	38.58 ft^2	Average Depth	1.95 ft
Channel Slope	0.0067 ft/ft	Wetted Perimeter	21.15 ft	Width/Depth Ratio	10.11 *
Water Surface Elevation	96.7 ft	Top Width	19.75 ft	Entrenchment	1.32
Discharge	212.29 cfs	Maximum Depth	2.62 ft	Rosgen Classification	F4
		Velocity	5.5 ft/s	* Does not fit Rosgen's Classification for width/depth ratio	

Surface Water Quality Data (EPA STORET DATABASE)

(Station: 21MDMONT/60040 Reddy Branch BRKVILLE-BRGHTN RD-River/Streams-S)

Parameter	Unit of Measurement	Maximum	Minimum	Beginning Date *	Ending Date *
Water Temp.	Celsius (Fahrenheit)	23 (73.4)	0 (32.0)	2/3/71	12/4/84
Turbidity	PPM $Si0_2$	292.0	0	1/12/72	11/29/77
Turbidity	HACH FTU	30.0	0.8	2/15/78	12/4/84
Conductivity	Micromho	142.0	142.0	12/4/84	12/4/84
DO	mg/l	14.6	6.4	2/3/71	12/18/80
DO	Percent	126.4	57.7	2/3/71	12/18/80
BOD	mg/l	5.8	0.3	1/12/72	12/18/80
pH	SU	8.8	4.9	2/3/71	12/4/74
Residue	Total mg/l	158	54	9/11/75	12/4/84
NO_2 & NO_3	N-Total mg/l	4.64	0.90	1/12/72	12/18/80
T PO_4	PO_4 mg/l	1.59	0.02	1/12/72	6/2/80
PHOS-TOT	mg/l/P	0.14	0.14	12/4/84	12/4/84
Total P as PO_4	mg/l	0.60	0.23	7/17/80	12/18/80
Fecal Coliform	MPN	120,000	23	1/12/72	10/9/79
Fecal Coliform	MPNECMED/ 100 ml	11,000	36	1/29/80	12/4/84
Total Coliform	MPN CONF Tubecode	2,400,000	210	1/12/72	10/9/79

* Most recent data available.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.27 ac.	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"
Adjacent land use:	Low density residential			Distance to nearest roadway or other development		600 ft
Dominant wetland systems present	PEM / SS			Contiguous undeveloped buffer zone present		YES
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin		Towards headwaters		
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	1 - A Pond w/ emergent edge	
Latitude	Longitude	
Prepared by	Date	
Wetland Impact:		
Type	Area	
Evaluation based on:		
Office:	Field:	
Corps manual wetland delineation completed:		
Yes X	No	

Function/Value	Occurence Y	Occurence N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		1,2,5,7,9,13,14,15	X	
Floodflow Alteration	X		2,3,5,6,7,8,9,10,13,15,16,18	X	
Fish and Shellfish Habitat	X		7,9,10,12,13,15,16		
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,10,11,12,14,15	X	
Nutrient Removal	X		2,3,4,5,7,11,12,13,14,15	X	
Production Export	X		1,4,5,13		
Sediment/Shoreline Stabilization	X		4,9,15		
Wildlife Habitat	X		3,4,5,6,7,8,9,17,19,20		
Recreation	X		5,6		
Educational Scientific Value	X		2,4,11,12,13		
Uniqueness/Heritage	X		6,10,11,16,17,19,21,22,27		
Visual Quality/Aesthetics	X		1,5,7,8,10,11,12	X	
ES Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.20	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest w/ some residential			Distance to nearaest roadway or other development			100 ft
Dominant wetland systems present		Riverine and PEM		Contiguous undeveloped buffer zone present			Yes
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin				
How many tributaries contribute to the wetland?		1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	W1 - B		
Latitude		Longitude	
Prepared by			Date
Wetland Impact:			
Type		Area	
Evaluation based on:			
Office:		Field:	X
Corps manual wetland delineation completed:			
Yes	X	No	

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)		Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,7,9,13,15,16,	X		
Floodflow Alteration	X		5,6,7,8,9,10,13,18	X		
Fish and Shellfish Habitat	X		1,2,7,8,15			
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,7,9,10,13,16	X		
Nutrient Removal	X		3,4,7,8,9,11,12			
Production Export	X		1,2,4,5,7,11,12,14	X		
Sediment/Shoreline Stabilization	X		2,3,5,6,8,9,12,13	X		
Wildlife Habitat	X		1,3,4,5,6,7,8,9,12,13,14,15,16, 17,18,19,21,23	X		
Recreation	X		1,2,4,5,8,12			
Educational Scientific Value	X		3,5,7,10,11			
Uniqueness/Heritage	X		2,8,11,12,13,14,15,16,19,22,27			
Visual Quality/Aesthetics	X		1,2,3,4,5,6,7,8,11			
ES Endangered Species		X				
Other						

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:		Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Recreational fields / forrest			Distance to neareast roadway or other development		250 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		Some-what	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin		Headwaters			
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W1 - C
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments		Occurence Y	Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge		X	1,2,4,5,7,13,14,15,16	X	
Floodflow Alteration		X	2,3,5,6,7,9,12,11,12,13,14,18	X	
Fish and Shellfish Habitat		X	8,15,16,17		
Sediment/Toxicant/Pathogen Retention		X	3,4,7,9,10,11,12,14,15,16	X	
Nutrient Removal		X	3,5,7,8,9,11,13,14,15		
Production Export		X	1,2,4,5,7,10,12,13	X	
Sediment/Shoreline Stabilization		X	1,2,6,9,12,13,15		
Wildlife Habitat		X	3,6,8,13,16,17,18		
Recreation		X	12		
Educational Scientific Value		X	9,10		
Uniqueness/Heritage		X	7,8,15,19,22,27		
Visual Quality/Aesthetics		X	4,6,11		
Endangered Species	ES		X		
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.14	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Agricultural/Forest/Fallow Field			Distance to neareast roadway or other development		3500 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		Proposed Development	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin		Headwaters			
How many tributaries contribute to the wetland?	1-2	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W1-D			
Latitude		Longitude		
Prepared by		Date		
Wetland Impact:				
Type		Area		
Evaluation based on:				
Office:		Field:	X	
Corps manual wetland delineation completed:				
Yes	X	No		

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,7,9,13,14,16	X	
Floodflow Alteration	X		2,3,5,6,7,8,,9,13,14,15,16,18	X	
Fish and Shellfish Habitat	X		1,2,4,8,11,15,16,17		
Sediment/Toxicant/Pathogen Retention	X		1,3,4,5,6,8,9,10,12,13,14,15,16	X	
Nutrient Removal	X		2,3,4,5,7,8,9,11,12,13,14,15	X	
Production Export	X		1,2,4,5,7,8,10,12,13,14	X	
Sediment/Shoreline Stabilization	X		2,3,6,8,9,12,13,14,15		
Wildlife Habitat	X		1,3,4,5,6,7,8,10,11,13,14,15,16 17,18,19,20,21	X	
Recreation	X		5,6		
Educational Scientific Value	X		2,4,5,10,11,13,14		
Uniqueness/Heritage	X		2,5,7,10,11,12,13,15,19,22,23		
Visual Quality/Aesthetics	X		1,2,3,4,5,8,10,11	X	
ES Endangered Species		X			
Other					

* Refer to back up list of numbered considerations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland:	0.27	Human Made:	Yes	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Agricultural/Forest			Distance to nearest roadway or other development		200 ft	
Dominant wetland systems present	PFO/PEM			Contiguous undeveloped buffer zone present		Proposed Development	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin			Upper 1/3		
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W1-E	
Latitude		Longitude
Prepared by		Date
Wetland Impact:		
Type		Area
Evaluation based on:		
Office:		Field: X
Corps manual wetland delineation completed:		
Yes X	No	

Function/Value Comments	Occurence Y	Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X	1,2,5,7,8,9,13		
Floodflow Alteration	X	2,5,9,13,15,18		
Fish and Shellfish Habitat	X	1,7,8,15		
Sediment/Toxicant/Pathogen Retention	X	3,4,6,10,13,16		
Nutrient Removal	X	3,5,8,9,11,14,15	X	
Production Export	X	1,5,7,14		
Sediment/Shoreline Stabilization	X	5,9		
Wildlife Habitat	X	3,4,5,6,7,8,13		
Recreation	X	6		
Educational Scientific Value	X	11		
Uniqueness/Heritage	X	10,11,19,21,22		
Visual Quality/Aesthetics	X	5,10,11,12		
ES Endangered Species		X		
Other				

* Refer to back up list of numbered considerations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland:	2.30	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Agricultural/Forest			Distance to nearest roadway or other development		600 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		Proposed Development	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin		Lower 1/4			
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W1-F		
Latitude		Longitude	
Prepared by		Date	
Wetland Impact:			
Type		Area	
Evaluation based on:			
Office:		Field:	X
Corps manual wetland delineation completed:			
Yes	X	No	

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)	
Groundwater Recharge/Discharge	X		1,2,5,7,9,13,14,15	X	No defined outlet	
Floodflow Alteration	X		1,2,3,5,7,9,13,14,18			
Fish and Shellfish Habitat	X		1			
Sediment/Toxicant/Pathogen Retention	X		3,4,6,7,10,13,14,15,16	X		
Nutrient Removal	X		1,3,7,8,9,11,12,13,14,15	X	#10 n/a	
Production Export	X		1,2,4,5,7,8,10,14	X	#9 n/a	
Sediment/Shoreline Stabilization	x		2,4,12,13			
Wildlife Habitat	x		1,3,4,5,6,7,8,13,14,15,17,18,19 ,20,21			
Recreation	X		1,5,6,7			
Educational Scientific Value	X		2,4,5,11,13			
Uniqueness/Heritage	X		7,10,11,16,19,22,27			
Visual Quality/Aesthetics	X		3,5,7,8,10,11			
ES Endangered Species		X				
Other						

* Refer to back up list of numbered c derations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland:	0.19	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest w/ some residential			Distance to nearest roadway or other development			100 ft
Dominant wetland systems present	Riverine and PEM			Contiguous undeveloped buffer zone present			Yes
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin				
How many tributaries contribute to the wetland?		1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	W1 - G
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y	N	Rationale	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,6,7,9,13,15,16	X	
Floodflow Alteration	X		5,6,7,8,9,10,13,18	X	
Fish and Shellfish Habitat	X		1,2,7,8,15		
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,7,9,10,13,16	X	
Nutrient Removal	X		3,4,5,7,8,9,11,12		
Production Export	X		1,2,4,5,7,8,10,11,12,14	X	
Sediment/Shoreline Stabilization	X		1,2,3,5,6,8,12,13,14	X	
Wildlife Habitat	X		1,3,4,5,6,7,8,13,14,15,16,17,18 19,21	X	
Recreation	X		1,2,4,5,8,12		
Educational Scientific Value	X		2,3,4,5,10,11		
Uniqueness/Heritage	X		2,8,11,15,16,19,22,27,31		Scores high but this is a small floodplain wetland - not necessarily unique
Visual Quality/Aesthetics	X		4,5,7,8,11		
ES Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.47	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest, Residential, Roadway			Distance to neareast roadway or other development		<75 ft	
Dominant wetland systems present	PEM/PFO			Contiguous undeveloped buffer zone present		No, Road	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin			Upper 1/4		
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W2-A
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)		Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,5,7,13,14,15			
Floodflow Alteration	X		2,3,5,6,8,9,10,13,15,16,18	X		
Fish and Shellfish Habitat	X		1,4,8,16,17			
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,7,10,12,13,14,15,16	X		
Nutrient Removal	X		3,7,8,9,11,12,13,14,15	X		
Production Export	X		1,4,5,7,10,11,14	X		
Sediment/Shoreline Stabilization	X		6,9,12,13,15			
Wildlife Habitat	X		1,4,5,6,7,8,13			
Recreation	X		6			
Educational Scientific Value	X		2,4,11,13			
Uniqueness/Heritage	X		10,11,16,17,19,20,27			
Visual Quality/Aesthetics	X		7,9,11,12			
ES Endangered Species		X				
Other						

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.13 (B) 0.13 (C)	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest, Road			Distance to nearest roadway or other development			100-200 ft
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present			Yes
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin			Upper 1/4	
How many tributaries contribute to the wetland?		1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	W2-B and W2-C	
Latitude	Longitude	
Prepared by	Date	
Wetland Impact:		
Type	Area	
Evaluation based on:		
Office:	Field:	X
Corps manual wetland delineation completed:		
Yes	No	
X		

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,7,9,13,14,16	X	
Floodflow Alteration	X		2,3,5,7,9,10,13,18		
Fish and Shellfish Habitat		X	1		
Sediment/Toxicant/Pathogen Retention	X		4,5,6	X	stopped after #9
Nutrient Removal	X		3,5,7,8,9,11,12	X	stopped after #12
Production Export	X		1,2,4,5,7,8,14	X	
Sediment/Shoreline Stabilization	X		2,5,9,12,13,15		
Wildlife Habitat	X		1,3,4,5,6,7,8,13,15,17,18,19,20 21	X	
Recreation	X		5,6		
Educational Scientific Value	X		2,4,5,11,13		
Uniqueness/Heritage	X		6,10,11,19,22,27		
Visual Quality/Aesthetics	X		7,8,11		
Endangered Species		X			
Other					

* Refer to back up list of numbered considerations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland:	0.17	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forested			Distance to nearest roadway or other development		2000 ft	
Dominant wetland systems present		PFO		Contiguous undeveloped buffer zone present		Yes	
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin		Upper 1/3		
How many tributaries contribute to the wetland?		1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	W3
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,6,7,9,13,14,15	X	
Floodflow Alteration	X		3,5,6,7,8,9,10,13,14,15,16		
Fish and Shellfish Habitat	X		1,2,8,14,15,16,17		
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,7,9,10,11,12,13,14,15 16	X	
Nutrient Removal	X		3,5,7,8,9,11,12,13,14,15	X	
Production Export	X		1,2,3,4,5,7,8,10,12,13	X	
Sediment/Shoreline Stabilization	X		1,2,4,6,9,12,13,15	X	
Wildlife Habitat	X		1,3,4,5,6,7,8,9,10,13,14,15,16, 17,18,19,20,21,22	X	
Recreation	X		5,6		
Educational Scientific Value	X		2,4,5,10,11,13		
Uniqueness/Heritage	X		6,7,10,16,19,22,27		
Visual Quality/Aesthetics	X		3,5,7,8,10,11		
ES Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.11	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest w/ some residential			Distance to nearest roadway or other development			100 ft
Dominant wetland systems present		Riverine and PEM		Contiguous undeveloped buffer zone present			Yes
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin				
How many tributaries contribute to the wetland?		1	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	W4
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,6,7,9,12,13,14,15,16	X	
Floodflow Alteration	X		3,5,6,7,8,9,18	X	
Fish and Shellfish Habitat	X		1,2,7,8,15		
Sediment/Toxicant/Pathogen Retention	X		1,2,3,4,5,6,7,9,10,13,16	X	
Nutrient Removal	X		3,4,5,6,7,8,9,11,12		
Production Export	X		1,2,4,5,7,8,11,12,14	X	
Sediment/Shoreline Stabilization	X		2,3,5,6,8,12,13,15	X	
Wildlife Habitat	X		1,3,4,5,6,7,8,13,14,16,17,18,19 23	X	
Recreation	X		1,2,4,5,7,8,12		
Educational Scientific Value	X		2,5,7,10,11		
Uniqueness/Heritage	X		2,8,11,12,13,15,16,19,22,31		Scores high but this is a small floodplain wetland - not necessarily unique
Visual Quality/Aesthetics	X		1,2,3,4,5,7,8,9,11		
ES Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.51	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest, Road, Fallow Field			Distance to nearest roadway or other development			0-100 ft
Dominant wetland systems present	PFO/PEM			Contiguous undeveloped buffer zone present			Partial
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin				Upper 1/2	
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W7	
Latitude		Longitude
Prepared by		Date
Wetland Impact:		
Type		Area
Evaluation based on:		
Office:		Field: X
Corps manual wetland delineation completed:		
Yes X	No	

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)		Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,5,8,9,13,14,15	X		
Floodflow Alteration	X		3,5,6,7,8,9,10,13,14,18	X	#15 n/a	
Fish and Shellfish Habitat	X		1,7,8,15			
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,7,10,12,13,14	X	No channelized flow in wetland	
Nutrient Removal	X		3,5,7,8,9,11,12,13,14,15	X		
Production Export	X		1,4,5,7,8,14			
Sediment/Shoreline Stabilization	X		2,5,6,9,12,13,14,15	X		
Wildlife Habitat	X		1,5,6,7,8,13,14,18,19,20		#2 n/a mostly emergent wetland	
Recreation	X		5,6			
Educational Scientific Value	X		5,11			
Uniqueness/Heritage	X		6,7,11,17,19,22,27			
Visual Quality/Aesthetics	X		5,8,9,10,11,12	X		
ES Endangered Species		X				
Other						

Notes: * Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.05	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest			Distance to nearest roadway or other development		0-500 ft	
Dominant wetland systems present		PFO/PEM		Contiguous undeveloped buffer zone present		Yes	
Is the wetland a separate hydraulic system		NO	If not, where does the wetland lie in the drainage basin			Upper 1/3	
How many tributaries contribute to the wetland?		2	Wildlife & vegetation diversity/abundance (see attached list)				

Wetland ID	WB						
Latitude		Longitude					
Prepared by		Date					
Wetland Impact:							
Type		Area					
Evaluation based on:							
Office:		Field:	X				
Corps manual wetland delineation completed:							
Yes	X	No					

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)		Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,5,7,8,9,13,14	X		
Floodflow Alteration	X		2,3,5,6,7,8,9,10,13,15,18	X		
Fish and Shellfish Habitat	X		1,2			
Sediment/Toxicant/Pathogen Retention	X		4,5,6,9,10,12,13,15,16	X		
Nutrient Removal	X		3,5,6,7,8,9,11,12	X		
Production Export	X		1,2,3,4,5,7,8,14	X		
Sediment/Shoreline Stabilization	X		2,3,5,6,8,12,13,15	X		
Wildlife Habitat	X		1,3,4,5,6,7,8,13,14,15,18,19,20 ,21			
Recreation	X		1,5,6,7			
Educational Scientific Value	X		2,4,5,11,13			
Uniqueness/Heritage	X		10,11,13,16,19,22,27			
Visual Quality/Aesthetics	X		2,3,5,7,8,10,11,12	X		
ES Endangered Species		X				
Other						

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.17	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"
Adjacent land use:	Forest			Distance to nearest roadway or other development		50 ft
Dominant wetland systems present		PFO		Contiguous undeveloped buffer zone present		Partial
Is the wetland a separate hydraulic system		yes	If not, where does the wetland lie in the drainage basin		Upper 1/2	
How many tributaries contribute to the wetland?		0	Wildlife & vegetation diversity/abundance (see attached list)			

Wetland ID	W10
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,5,7,9,14,15	X	
Floodflow Alteration	X		2,3,5,6,8,9,10,13,18	X	
Fish and Shellfish Habitat		X	1		
Sediment/Toxicant/Pathogen Retention	X		1,4,5,6		stopped after #9
Nutrient Removal	X		3,5,7,8,9,11,12	X	
Production Export	X		1,2,4,5,7,14		
Sediment/Shoreline Stabilization	X		5,6,9,12,13,14,15	X	
Wildlife Habitat	X		1,3,4,5,6,7,8,13,17,18,20	X	
Recreation	X		1,5,6,7		
Educational Scientific Value	X		2,4,5,6,11,13		
Uniqueness/Heritage	X		7,10,19,22,27		
Visual Quality/Aesthetics	X		5,7,8,10,11		
Endangered Species		X			
Other					

Notes: * Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.05	Human Made:	Yes	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest and Agricultural			Distance to neareast roadway or other development		1000 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		Proposed Development	
Is the wetland a separate hydraulic system	yes	If not, where does the wetland lie in the drainage basin					
How many tributaries contribute to the wetland?	0	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W11			
Latitude		Longitude		
Prepared by		Date		
Wetland Impact:				
Type		Area		
Evaluation based on:				
Office:		Field:	X	
Corps manual wetland delineation completed:				
Yes	X	No		

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		5		
Floodflow Alteration	X		5,9		
Fish and Shellfish Habitat		X	1		
Sediment/Toxicant/Pathogen Retention	X		4,5		
Nutrient Removal	X		5,7		
Production Export		X			
Sediment/Shoreline Stabilization		X			
Wildlife Habitat	X		3,4,5,7,8		
Recreation		X			
Educational Scientific Value	X		11		
Uniqueness/Heritage	X		11,27		
Visual Quality/Aesthetics	X		5,10,11		
ES Endangered Species		X			
Other					

Notes: ponded wetland possibly created by cattle trampling along pathway

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.38	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest			Distance to nearest roadway or other development		100 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		yes	
Is the wetland a separate hydraulic system	no	If not, where does the wetland lie in the drainage basin		upper 1/2			
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W12
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,7,8,9,15	X	
Floodflow Alteration	X		5,6,7,8,9,10,11,13,14,16,18	X	
Fish and Shellfish Habitat	X		1,7,8,14,15		
Sediment/Toxicant/Pathogen Retention	X		3,4,6,7,10,12,14,16	X	
Nutrient Removal	X		3,7,8,9,11,12,13,14	X	
Production Export	X		1,2,4,5,7,11,14	X	
Sediment/Shoreline Stabilization	X		2,5,7,9,12,13,14,15	X	
Wildlife Habitat	X		1,3,4,5,8,13,17,18		
Recreation	X		1,6		
Educational Scientific Value	X		2,4,6,11,13		
Uniqueness/Heritage	X		7,10,11,16,18,19,22,27		
Visual Quality/Aesthetics	X		5,7,11		
ES Endangered Species		X			
Other					

Notes: poss[illegible]d wetland possibly created by cattle trampling along pathway

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.25	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest w/ perrenial stream			Distance to neareast roadway or other development		200 ft	
Dominant wetland systems present	PEM/PSS			Contiguous undeveloped buffer zone present		yes	
Is the wetland a separate hydraulic system	no	If not, where does the wetland lie in the drainage basin		upper 1/3			
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W13
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,5,7,9,10,13,14,15,16	X	
Floodflow Alteration	X		3,5,6,7,8,9,10,11,13,15,18	X	
Fish and Shellfish Habitat	X		1,7,8,14		
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,10,12,13,14,15,16	X	
Nutrient Removal	X		3,5,7,8,9,11,12,13,14,15	X	
Production Export	X		1,4,7,12,14		
Sediment/Shoreline Stabilization	X		2,5,6,9,12,13,14,15	X	
Wildlife Habitat	X		1,3,4,5,8,13,17,20		
Recreation	X		6		
Educational Scientific Value	X		2,4,11,13		
Uniqueness/Heritage	X		7,10,11,15,19,22,27		
Visual Quality/Aesthetics	X		4,11,12		
Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland:	0.06	Human Made:	NO	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest			Distance to neareast roadway or other development		100 ft	
Dominant wetland systems present	Riverine			Contiguous undeveloped buffer zone present		Yes	
Is the wetland a separate hydraulic system	NO	If not, where does the wetland lie in the drainage basin					
How many tributaries contribute to the wetland?	1	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W18		
Latitude		Longitude	
Prepared by		Date	
Wetland Impact:			
Type		Area	
Evaluation based on:			
Office:		Field:	X
Corps manual wetland delineation completed:			
Yes	X	No	

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,4,7,9,12,13,15,16	x	
Floodflow Alteration	X		2,3,5,6,7,10,11,15,18	X	
Fish and Shellfish Habitat	X		1,2		
Sediment/Toxicant/Pathogen Retention	X		3,4,5,6,9,10,13,16	X	
Nutrient Removal	X		3,4,5,7,9,11,12	X	
Production Export	X		1,2,4,7,10,12,13		
Sediment/Shoreline Stabilization	X		3,4,8,15		
Wildlife Habitat	X		1,3,4,5,6,7,8,9,14,15,19,20	X	
Recreation	X		1,12		
Educational Scientific Value	X		10,11,13		
Uniqueness/Heritage	X		2,10,11,12,16		
Visual Quality/Aesthetics	X		1,2,3,7,8,9,10,11		
ES Endangered Species		X			
Other					

* Refer to back up list of numbered considerations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland:	0.02	Human Made:	No	Is wetland part of a wildlife corridor?	X	or a "habitat island?"	
Adjacent land use:	Forest, Agricultural, Road			Distance to nearaest roadway or other development		75 ft	
Dominant wetland systems present	PFO			Contiguous undeveloped buffer zone present		yes	
Is the wetland a separate hydraulic system	yes	If not, where does the wetland lie in the drainage basin					
How many tributaries contribute to the wetland?	0	Wildlife & vegetation diversity/abundance (see attached list)					

Wetland ID	W19
Latitude	Longitude
Prepared by	Date
Wetland Impact:	
Type	Area
Evaluation based on:	
Office:	Field: X
Corps manual wetland delineation completed:	
Yes X	No

Function/Value Comments	Occurence Y		Rationale N	Principal (Reference #)	Function(s)/Value(s)
Groundwater Recharge/Discharge	X		1,2,5,7,9,13,14,15,16		depressional wetland
Floodflow Alteration	X		3,5,7,9,10,12,13		ponded water, no outlet
Fish and Shellfish Habitat		X	1,7,8,14,15		
Sediment/Toxicant/Pathogen Retention	X		4,5,6,13,16		
Nutrient Removal	X		3,5,7,9,11,15		
Production Export	X		1,2,14		
Sediment/Shoreline Stabilization	X		2,5,12		
Wildlife Habitat	X		1,3,4,5,8		
Recreation		X			
Educational Scientific Value	X		2,4,13		
Uniqueness/Heritage	X		10,11,17		
Visual Quality/Aesthetics	X		5,10,12		
ES Endangered Species		X			
Other					

Notes:

* Refer to back up list of numbered considerations.

Plant Species Common to the Tulip Poplar Association

Tulip Poplar Association	
Botanical Name	**Common Name**
Liriodendron tulipifera	tulip poplar
Acer rubrum	red maple
Cornus florida	flowering dogwood
Parthenocissus quinquefolia	Virginia creeper
Nyssa sylvatica	black gum
Quercus alba	white oak
Sassafras albidum	sassafras
Prunus serotina	black cherry
Vitis spp.	grape
Carya tomentosa	mockernut hickory
Viburnum dentatum	southern arrowwood
Carya glabra	pignut hickory
Quercus velutina	black oak
Toxicodendron radicans	poison ivy
Smilax spp.	greenbriers
Fagus grandifolia	American beech
Lindera benzoin	spicebush
Quercus rubra	northern red oak
Viburnum acerifolium	mapleleaf viburnum
Vaccinium angustifolium	early low blueberry
Prunus virginiana	choke cherry
Rubus spp.	brambles

Plant Species Common to the Sycamore-Green Ash-Box Elder-Silver Maple Association

Sycamore-Green Ash-Box Elder-Silver Maple Association	
Botanical Name	**Common Name**
Acer rubrum	red maple
Parthenocissus quinquefolia	Virginia creeper
Quercus alba	white oak
Cornus florida	flowering dogwood
Vitis spp.	grape
Prunus serotina	black cherry
Quercus rubra	northern red oak
Lindera benzoin	spicebush
Liriodendron tulipifera	tulip poplar
Nyssa sylvatica	black gum
Sassafras albidum	sassafras
Fraxinus americana	white ash
Carya tomentosa	mockernut hickory
Toxicodendron radicans	poison ivy
Viburnum dentatum	southern arrowwood
Quercus velutina	black oak
Carya glabra	pignut hickory
Rubus spp.	brambles
Smilax spp.	greenbriers
Carpinus caroliniana	ironwood
Fraxinus pennsylvanica	green ash
Platanus occidentalis	sycamore
Acer negundo	box elder
Acer saccharinum	silver maple

Terrestrial Wildlife

Common Name	*Scientific Name*	Common Name	*Scientific Name*
BIRDS			
Red shouldered hawk	*Buteo lineatus*	Mourning dove	*Zenaida macroura*
Wood thrush	*Hylocichla mustelina*	Turkey vulture	*Cathartes aura*
Pileated woodpecker	*Dryocopus pileatus*	Brownheaded cowbird	*Molothrus ater*
American robin	*Turdus migratorius*	Blue-Gray gnatcatcher	*Polioptila caerulea*
Chimney swift	*Chaetura pelagica*	American kestrel	*Falco sparverius*
Rufous-Sided towhee	*Pipilo erythrophthalmus*	Field sparrow	*Spizella pusilla*
Blue jay	*Cyanocitta cristata*	Prairie warbler	*Dendroica discolor*
Gray catbird	*Dumetella carolinensis*	Eastern bluebird	*Sialia sialis*
Northern cardinal	*Cardinalus cardinalis*	Indigo bunting	*Passerina cyanea*
Red-Tailed hawk	*Buteo jamaicensis*	Eastern kingbird	*Tyrannus tyrannus*
Northern mockingbird	*Mimus polyglottos*	Red-Winged blackbird	*Agelaius phoeniceus*
European starling	*Sturnus vulgaris*	Common flicker	*Colaptes auratus*
Common grackle	*Quiscalus quiscula*	Carolina chickadee	*Parus carolinensis*
MAMMALS			
Eastern chipmunk	*Tamias striatus*	Woodchuck	*Marmota monax*
White-tailed deer	*Olocoileus virginianus*	Raccoon (tracks)	*Procyon lotor*
Eastern Gray squirrel	*Sciurus carolinensis*		
REPTILES/AMPHIBIANS			
American toad	*Bufo americanus*	Black Rat snake (shedded skin)	*Elaphe obsoleta*
Box turtle	*Terrapene carolina*		

Fish Species Likely to Reside and Spawn in Reddy Branch

Common Name	*Scientific Name*	Common Name	*Scientific Name*
Blacknose dace	*Rhinichthys atratulus*	River chub	*Nocomis micropogon*
Bluegill sunfish	*Lepomis macrochirus*	Rosyside dace	*Clinostomus funduloides*
Common shiner	*Notropis cornutus*	Satinfin shiner	*Notropis analostanus*
Cutlip minnow	*Exoglossum maxillingua*	Shield darter	*Percina peltata*
Fallfish	*Semotilus corporalis*	Spottail shiner	*Notropis hudsonius*
Green sunfish	*Lepomis cyanellus*	Stripeback darter	*Percina notogramma*
Golden shiner	*Notemigonus crysoleucas*	Swallowtail shiner	*Notropis procne*
Longnose dace	*Rhinichthys cataractae*	Smallmouth bass	*Micropterus dolomieu*
Largemouth bass	*Micropterus salmoides*	Tessellated darter	*Etheostoma olmstedi*
Margined madtom	*Noturus insignis*	White catfish	*Ictalurus catus*
Northern hogsucker	*Hypentelium nigricans*	White sucker	*Catostomus commersoni*
Redbreast sunfish	*Lepomis auritus*		

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 1: Stream Crossing @ Alternate 3 along Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Heptagenidae (Ephemeroptera)	Scraper	4	4	16
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	3	6
Chironomidae (Diptera)	Gathering Collector	8	18	144
Aeshnidae (Odonata)	Predator	4	2	8
Coenagrionidae (Odonata)	Predator	8	2	16
Total Number of Taxa	5			
Total Number of Individuals	29			
Total Tolerance Value Score	190			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 1: Stream Crossing @ Alternate 3 along Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTTAX) (a)	19	5	26%	6	0
Modified Family Biotic Index (FBI) (b)	4.30	6.55	66%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	0.39	2%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	62%	--	6	0
EPT Index (EPTTAX) (a)	10	2	20%	6	0.00
% EPT (EPTTOT) (c)	70%	24%	--	6	3
Total				36	6
% Comparability of Total Biological Condition Score of Sample to Reference (a)				17%	
BIOASSESSMENT				Severely Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

(a) Score is a ratio of sample site to reference site X 100.
(b) Score is a ratio of reference site to sample site X 100.
(c) S[illegible]e evaluates the actual percent contribution of the samp[illegible]ite, rather than percent comparability to the reference s[illegible]

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 2: Stream Crossing @ Alternate 4 off of Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	35	210
Heptagenidae (Ephemeroptera)	Scraper	4	2	8
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	16	32
Baetidae (Ephemeroptera)	Gathering Collector	6	12	72
Perlidae (Plecoptera)	Predator	1	4	4
Peltoperlidae (Plecoptera)	Shredder	0	2	0
Chironomidae (Diptera)	Gathering Collector	8	6	48
Elmidae (Coleoptera)	Scraper	4	1	4
Gomphidae (Odonata)	Predator	3	1	3
Total Number of Taxa	9			
Total Number of Individuals	79			
Total Tolerance Value Score	381			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 2: Stream Crossing @ Alternate 4 off of Brookeville Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTTAX) (a)	19	9	47%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	4.82	89%	6	6
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	11.8	71%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	44%	--	6	3
EPT Index (EPTTAX) (a)	10	6	60%	6	0.00
% EPT (EPTTOT) (c)	70%	90%	--	6	6
Total				36	21
% Comparability of Total Biological Condition Score of Sample to Reference (a)				58%	
BIOASSESSMENT				Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

(a) Score is a ratio of sample site to reference site X 100.
(b) Score is a ratio of reference site to sample site X 100.
(c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 3: Stream Crossing of Alternate 5 along Brighton Dam Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	72	432
Heptagenidae (Ephemeroptera)	Scraper	4	2	8
Ephemerellidae (Ephemeroptera)	Gathering Collector	2	1	2
Baetidae (Ephemeroptera)	Gathering Collector	6	14	84
Perlidae (Plecoptera)	Predator	1	1	1
Peltoperlidae (Plecoptera)	Shredder	0	8	0
Chironomidae (Diptera)	Gathering Collector	8	8	64
Simulidae (Diptera)	Filtering Collector	6	3	18
Total Number of Taxa	8			
Total Number of Individuals	109			
Total Tolerance Value Score	609			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 3: Stream Crossing of Alternate 5 along Brighton Dam Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTTAX) (a)	19	8	42%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	5.59	77%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	12.3	74%	6	3
% Contribution of Dominant Family (DOMTOT) (c)	23%	66%	--	6	0
EPT Index (EPTTAX) (a)	10	6	60%	6	0.00
% EPT (EPTTOT) (c)	70%	90%	--	6	6
Total				36	15
% Comparability of Total Biological Condition Score of Sample to Reference (a)				42%	
BIOASSESSMENT				Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

(a) Score is a ratio of sample site to reference site X 100.
(b) Score is a ratio of reference site to sample site X 100.
(c) Sc e evaluates the actual percent contribution of the samp ite, rather than percent comparability to the reference s

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 4: Control Point east of Alternate 5 along Brighton Dam Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	4	24
Hypdroptilidae (Trichoptera)	Scraper	5	1	5
Heptagenidae (Ephemeroptera)	Scraper	4	4	16
Ephemereillidae (Ephemeroptera)	Gathering Collector	2	7	14
Baetidae (Ephemeroptera)	Gathering Collector	6	6	36
Perlidae (Plecoptera)	Predator	1	3	3
Peltoperlidae (Plecoptera)	Shredder	0	1	0
Chironomidae (Diptera)	Gathering Collector	8	4	32
Elmidae (Coleoptera)	Scraper	4	6	24
Total Number of Taxa	9			
Total Number of Individuals	36			
Total Tolerance Value Score	154			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

MD-SOS DATA SUMMARY

Project: MD 97 Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Reddy Branch
Station 4: Control Point east of Alternate 5 along Brighton Dam Rd.
Date Collected: 6/5/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTTAX) (a)	19	9	47%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	4.28	100%	6	6
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	6.5	39%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	19%	--	6	6
EPT Index (EPTTAX) (a)	10	7	70%	6	3
% EPT (EPTTOT) (c)	70%	72%	--	6	6
Total				36	27
% Comparability of Total Biological Condition Score of Sample to Reference (a)				75%	
BIOASSESSMENT				Moderately Impaired to Non-Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

(a) Score is a ratio of sample site to reference site X 100.
(b) Score is a ratio of reference site to sample site X 100.
(c) S e evaluates the actual percent contribution of the samp' site, rather than percent comparability to the reference

Benthic Macroinvertebrate Data

Project: MD 97 - Brookeville Study
KCI Job No.: 01-95095 F1
Stream: Unnamed tributary to Reddy Branch
Station 5: Stream Crossings of Alternates 3 & 4
Date Collected: 6/27/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas

Taxa (Order)	Trophic Status	Tolerance Value*	Number of Individ.	Tolerance Value Score
Hydropsychidae (Trichoptera)	Filtering Collector	6	95	570
Heptagenidae (Ephemeroptera)	Scraper	4	1	4
Baetidae (Ephemeroptera)	Gathering Collector	6	5	30
Chironomidae (Diptera)	Gathering Collector	8	26	208
Simulidae (Diptera)	Filtering Collector	6	1	6
Tipulidae (Diptera)	Shredder	3	5	15
Elmidae (Coleoptera)	Scraper	4	13	52
Psephenidae (Coleoptera)	Scraper	4	9	36
Gammaridae (Amphipoda)	Gathering Collector	6	1	6
Palaemonidae (Decapoda)	Predator	6	2	12
Total Number of Taxa	10			
Total Number of Individuals	158			
Total Tolerance Value Score	939			

* Modified Hilsenhoff Tolerance Values determined by the Maryland Save Our Streams (SOS) Project Heartbeat Program. Tolerance Values range from 0 to 10 and increase as water quality decreases.

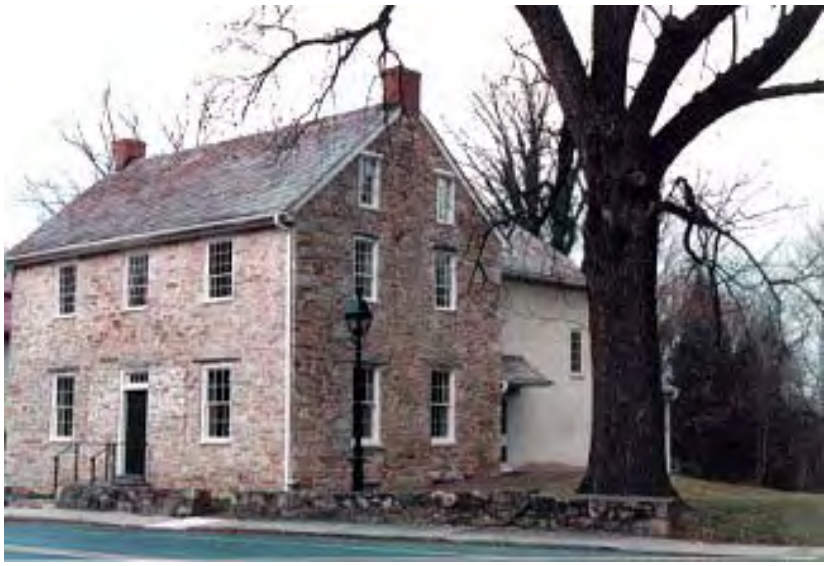
Stream: Unnamed tributary to Reddy Branch
Station 5: Stream Crossings of Alternates 3 & 4
Date Collected: 6/27/97
Method of Collection: Composite kick-net sample of fast and slow riffle areas
Reference Collection: MD-DNR Biological Reference for the Patuxent Piedmont

Metrics*	Reference Score	Sample Score	Comparability of Sample Score to Reference Score	Biological Condition Score of Reference*	Biological Condition Score of Sample*
Taxa Richness (TOTTAX) (a)	19	10	53%	6	3
Modified Family Biotic Index (FBI) (b)	4.30	5.94	72%	6	3
Ratio of EPT and Chironomidae Abundances (EPT:CHIRO)	16.6	3.88	23%	6	0.00
% Contribution of Dominant Family (DOMTOT) (c)	23%	60%	--	6	0
EPT Index (EPTTAX) (a)	10	3	30%	6	0
% EPT (EPTTOT) (c)	70%	64%	--	6	6
Total				36	12
% Comparability of Total Biological Condition Score of Sample to Reference (a)				33%	
BIOASSESSMENT				Severely to Moderately Impaired	

* Metrics and Biological Condition Scoring Criteria based upon information provided by the MDE and Maryland Save Our Streams (SOS) Project Heartbeat Program.

(a) Score is a ratio of sample site to reference site X 100.
(b) Score is a ratio of reference site to sample site X 100.
(c) Score evaluates the actual percent contribution of the sample site, rather than percent comparability to the reference site.

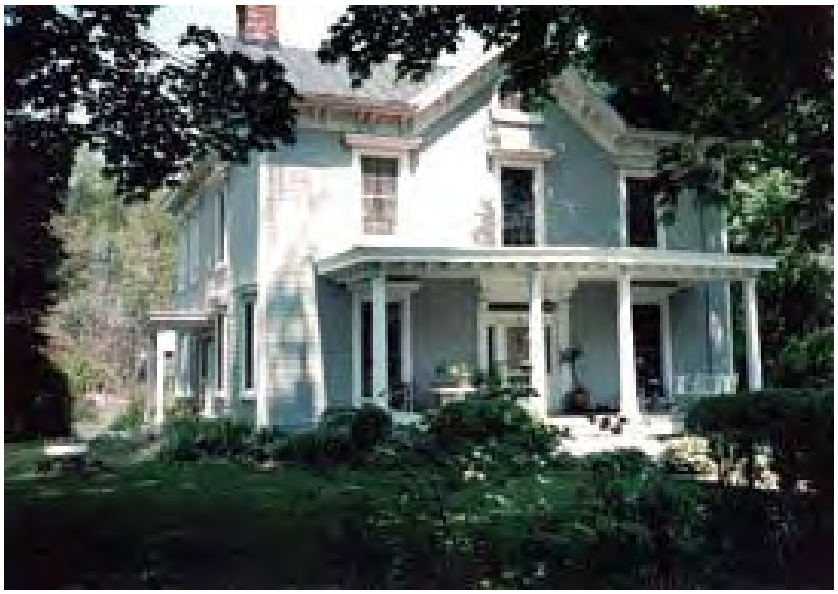
BROOKEVILLE CULTURAL RESOURCE PHOTOGRAPHS



The award winning Brookeville Academy is the town's centerpiece and community focal point.

One of the first private academies in Montgomery County, it offered a full classical curriculum for some sixty male students (later females were allowed), many of whom came from across the state and boarded with local families. Its library consisted of 600 volumes.

I. Brookeville Academy, circa 1810

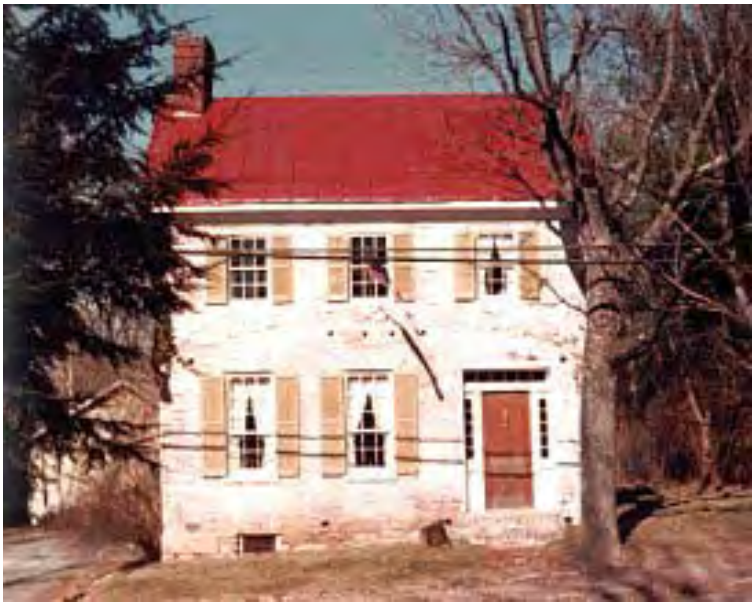


This Market Street house began as a small cottage circa 1820. The house's front block was renovated in 1863 to reflect the popular Gothic Revival style, which it maintains today. In 1928 a two-story addition was built on the rear, which enclosed the original cottage.

II. Gothic Revival, circa 1863 (original house circa 1820)

Photographs and captions taken from the Town of Brookeville website, http://www.townofbrookevillemd.org

BROOKEVILLE CULTURAL RESOURCE PHOTOGRAPHS *(CONTINUED)*



This Market Street house was constructed prior to 1809. With its three bay front facade, front door to one side, gable roof and chimney at the end wall, this simple two-story brick structure is a textbook example of Federal style architecture prevalent in the early years of the nation.

III. Heritage House Federal style, circa 1808

This stately two-story brick home, with fieldstone foundation, was built in several sections over a period of years by Caleb and Henrietta Bentley.

The house's right-hand section was Brookeville's first post office, opened in 1802. It also served as a 19th century store and a refuge for President Madison on August 26, 1814, when he fled Washington after the British burned the city.

IV. Madison House, circa 1783

Photographs and captions taken from the Town of Brookeville website, http://www.townofbrookevillemd.org

LIST OF ACRONYMS

ACHP	Advisory Council on Historic Preservation
ADT	Average Daily Traffic
AEP	Agricultural Easement Program
APE	Area of Potential Effect
BIBI	Benthic Index of Biotic Integrity
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CO	Carbon Monoxide
COMAR	Code of Maryland Regulations
CSPS	Countywide Stream Protection Strategy
CTP	Consolidated Transportation Program
DBH	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
DNR	(Maryland) Department of Natural Resources
EIS	Environmental Impact Statement
ERIIS	Environmental Risk Information & Imaging Services
ERNS	Emergency Response Notification System
FBI	Family Biotic Index
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIBI	Fish Index of Biotic Integrity
FIDB	Forest Interior Dwelling Bird
FIRM	Flood Insurance Rate Maps
FTP	Federal Test Procedure
HAWP	Historic Area Work Permit
HPC	Historic Preservation Commission
HWS	(Maryland Notice of Potential) Hazardous Waste Sites
IAR	Interagency Review
LOS	Level of Service
LRST	Maryland Active Recovery Sites List
MALPF	Maryland Agricultural Land Preservation Foundation
MBSS	Maryland Biological Stream Survey
MC-DEP	Montgomery County Department of Environmental Protection
MDE	Maryland Department of the Environment
MDOT	Maryland Department of Transportation
MDP	Maryland Department of Planning

LIST OF ACRONYMS *(Continued)*

MET	Maryland Environmental Trust
MHT	Maryland Historical Trust
M-NCPPC	Maryland-National Capital Park and Planning Commission
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSPGP	Maryland State Programmatic General Permit
MWCOG	Metropolitan Washington Council of Governments
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NFRAP	No Further Action Planned Sites
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
NWI	National Wetland Inventory
O_3	Ozone
PM_{10}	Particulate Matter
PDR	Purchase of Development Rights
PEM	Palustrine Emergent
PEPCO	Potomac Electric Power Company
PFA	Priority Funding Area
PFO	Palustrine Forested
PHI	Physical Habitat Index
PMA	Primary Management Area
PSS	Palustrine Scrub/Shrub
RC	Rural Cluster
RCRIS CA	Resource Conservation and Recovery Information System - Corrective Action Sites
RCRIS LG	Resource Conservation and Recovery Information System - Large Quantity Generators
RCRIS SG	Resource Conservation and Recovery Information System - Small Quantity Generators
RCRIS TS	Resource Conservation and Recovery Information System - Treatment, Storage and Disposal Facilities
RCZ	Rural Cluster Zone
RDT	Rural Density Transfer Zone
ROW	Right-of-Way
RST	Maryland Underground Storage Tank Report
RTE	Rare, Threatened, and Endangered

LIST OF ACRONYMS *(Continued)*

SACM	Selected Alternate and Conceptual Mitigation
SCEA	Secondary and Cumulative Effects Analysis
SHA	(Maryland) State Highway Administration
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
S/NAAQS	State and National Ambient Air Quality Standards
STORET	Storage and Retrieval System
SWF	(Maryland Permitted) Solid Waste Facilities
TDR	Transfer of Development Rights
TIP	Transportation Improvement Plan
TMDL	Total Maximum Daily Load
UPRRW	Upper Patuxent River Reservoir Watershed
USACOE	US Army Corps of Engineers
USDA	US Department of Agriculture
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
UST	Underground Storage Tank
VEIP	Vehicle Emissions Inspection Program
VPD	Vehicles Per Day
WQC	Water Quality Certification
WSSC	Washington Suburban Sanitary Commission
WUS	Waters of the US

Revised: December 24, 1996
State Highway Administration, Office of Real Estate

SUMMARY OF THE RELOCATION ASSISTANCE PROGRAM OF THE STATE HIGHWAY ADMINISTRATION OF MARYLAND

All State Highway Administration projects must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC 4601) as amended by Title IV of the Surface Transportation & Uniform Relocation Assistance Act of 1987 (P.L. 100-17), the Annotated Code of Maryland entitled "Real Property Article" Section 12-112 and Subtitle 2, Sections 12-201 to 12-212. The Maryland Department of Transportation, State Highway Administration, Office of Real Estate administers the Transportation Relocation Assistance Program in the State of Maryland.

The provisions of the Federal and State laws require the State Highway Administration to provide payments and services to persons displaced by a public project. The payments include replacement housing payments and moving costs. The maximum limits of the replacement housing payments are $22,500 for owner-occupants and $5,250 for tenant-occupants. Certain payments may also be made for increased mortgage interest costs and other incidental expenses. In order to receive these payments, the displaced person must occupy decent, safe and sanitary replacement housing. In addition to these payments, there are also moving expense payments to persons, businesses, farms and non-profit organizations. Actual but reasonable moving expenses for residences are reimbursed for a move of up to 50 miles or a schedule moving payment of up to $1,300 may be used.

In the event comparable replacement housing is not available within the monetary limits for owners and tenants to rehouse persons displaced by public projects or available replacement housing is beyond their financial means, replacement "housing as a last resort" will be utilized to accomplish the rehousing. Detailed studies must be completed by the State Highway Administration before relocation "housing as a last resort" can be utilized.

The moving cost payments to businesses are broken down into several categories, which include actual moving expense payments, reestablishment expenses limited to $10,000 or fixed payments "in lieu of" actual moving expenses of $1,000 to $20,000. Actual moving expenses may also include actual direct losses of tangible personal property and expenses for searching for a replacement site up to $1,000.

The actual reasonable moving expenses may be paid for a move by a commercial mover or for a self-move. Payments for the actual reasonable expenses are limited to a 50-mile radius unless the State determines a longer distance is necessary. The expenses claimed for actual cost moves must be supported by firm bids and receipted bills. An inventory of the items to be moved must be prepared in all cases. In self-moves, the State will negotiate an amount for payment, usually lower than the lowest acceptable bid. The allowable expenses of a self-move may include amounts paid for equipment hired, the cost of using the business vehicles or equipment, wages paid to persons who participate in the move, the cost of actual supervision of the move, replacement insurance for the personal property moved, costs of licenses or permits required and other related expenses.

In addition to the actual moving expenses mentioned above, the displaced business is entitled to receive a payment for the actual direct losses of tangible personal property that the business is entitled to relocate but elects not to move. These payments may only be made after an effort by the owner to sell the personal property involved. The costs of the sale are also reimbursable moving expenses.

If the business elects not to move or to discontinue the use of an item, the payment shall consist of the lesser of: the fair market value of the item for continued use at the displacement site, less the proceeds from its sale; or the estimated cost of moving the item.

If an item of personal property which is used as part of a business or farm operation is not moved and is promptly replaced with a substitute item that performs a comparable function at the replacement site, payment shall be of the lesser of: the cost of the substitute item, including installation costs at the replacement site, minus any proceeds from the sale or trade-in of the replaced item; or the estimated cost of moving and reinstalling the replaced item.

In addition to the moving payments described above, a business may be eligible for a payment up to $10,000 for the actual reasonable and necessary expenses of reestablishing at the replacement site. Generally, reestablishment expenses include certain repairs and improvements to the replacement site, increased operating costs, exterior signing, advertising the replacement location and other fees paid to reestablish. Receipted bills and other evidence of these expenses are required for payment. The total maximum reestablishment payment eligibility is $10,000.

In lieu of all moving payments described above, a business may elect to receive a fixed payment equal to the average annual net earnings of the business. This payment shall not be less than $1,000 nor more than $20,000. In order to be entitled to this payment, the State must determine that the business cannot be relocated without a substantial loss of its existing patronage; the business is not part of a commercial enterprise having more than three other establishments in the same or similar business that are not being acquired; and the business contributes materially to the income of a displaced owner during the two taxable years prior to the year of the displacement. A business operated at the displacement site solely for the purpose of renting to others is not eligible. Considerations in the State's determination of loss of existing patronage are the type of business conducted by the displaced business and the nature of the clientele. The relative importance of the present and proposed locations to the displaced business and the availability of suitable replacement sites are also factors.

In order to determine the amount of the "in lieu of" moving expenses payment, the average annual net earnings of the business is to be one-half of the net earnings, before taxes during the two taxable years immediately preceding the taxable year in which the business is relocated. If the two taxable years are not representative, the State may use another two-year period that would be more representative. Average annual net earnings include any compensation paid by the business to the owner, owner's spouse, or dependents during the period. Should a business be in operation less than two years, the owner of the business may still be eligible to receive the "in lieu of" payment. In all cases, the owner of the business must provide information to support its net earnings, such as income tax returns, or certified financial statements, for the tax years in question.

Displaced farms and non-profit organizations are also eligible for actual reasonable moving costs up to 50 miles, actual direct losses of tangible personal property, search costs up to $1,000 and reestablishment expenses up to $10,000 or a fixed payment "in lieu of actual moving expenses of $1,000 to $20,000. The State may determine that a displaced farm may be paid a minimum of $1,000 to a maximum of $20,000, based upon the net income of the farm, provided that the farm has been relocated or the partial acquisition caused a substantial change in the nature of the farm. In some cases, payments "in lieu of" actual moving costs may be made to farm operations that are affected by a partial acquisition. A non-profit organization is eligible to receive a fixed payment or an "in lieu of" actual moving cost payment, in the amount of $1,000 to $20,000 based on gross annual revenues less administrative expenses.

A more detailed explanation of the benefits and payments available to displaced persons, businesses, farms and non-profit organizations is available in the "Relocation Assistance" brochure that will be distributed at the public hearing for this project and be given to displaced persons.

Federal and state laws require that the State Highway Administration shall not proceed with any phase of a project which will cause the relocation of any persons, or proceed with any construction project, until it has furnished satisfactory assurances that the above payments will be provided, and that all displaced persons will be satisfactorily relocated to comparable decent, safe and sanitary housing within their financial means, or that such housing is in place and has been made available to the displaced person.