Appendix A
Geological Formations

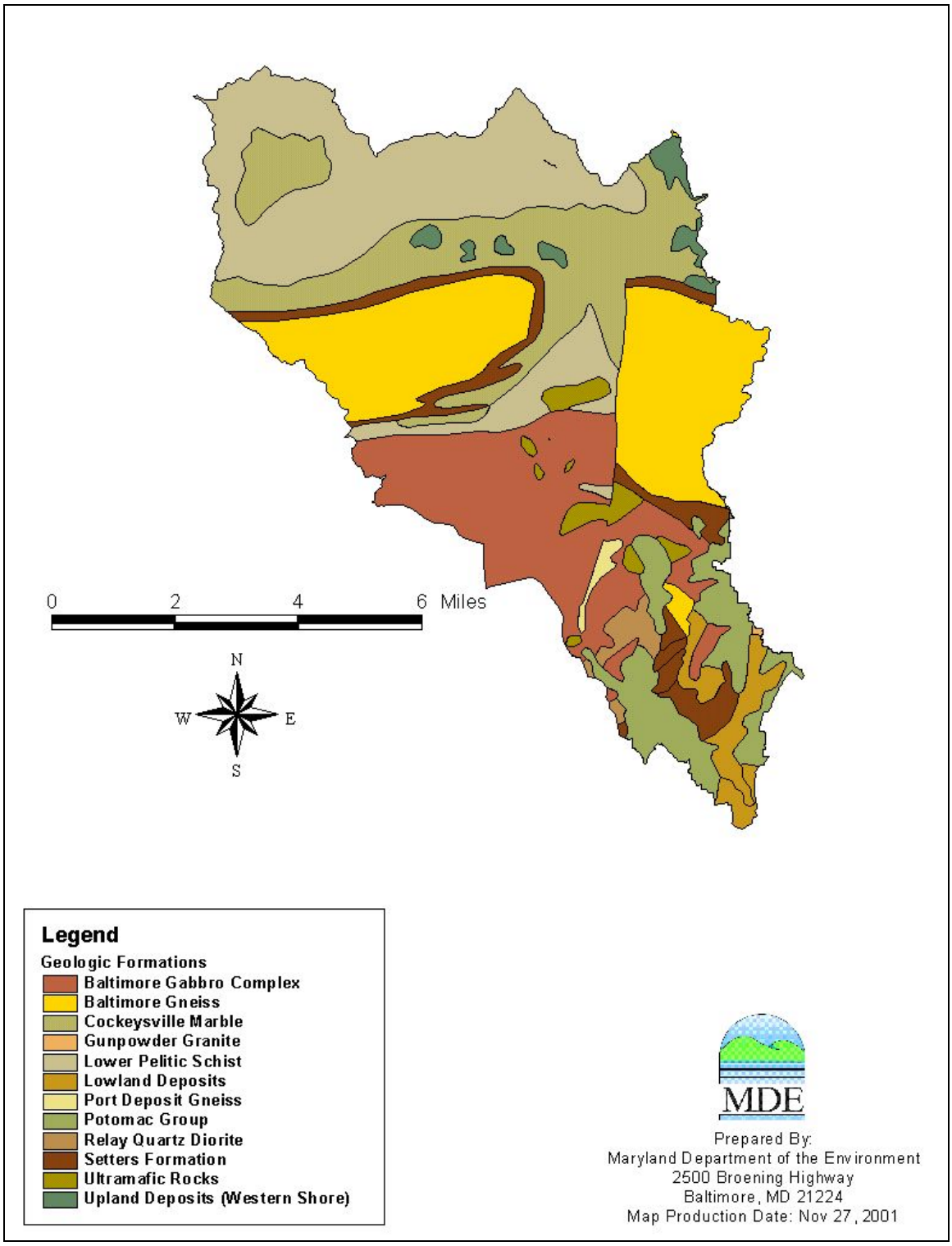

Figure 2.3-2: Jones Falls Geologic Formations

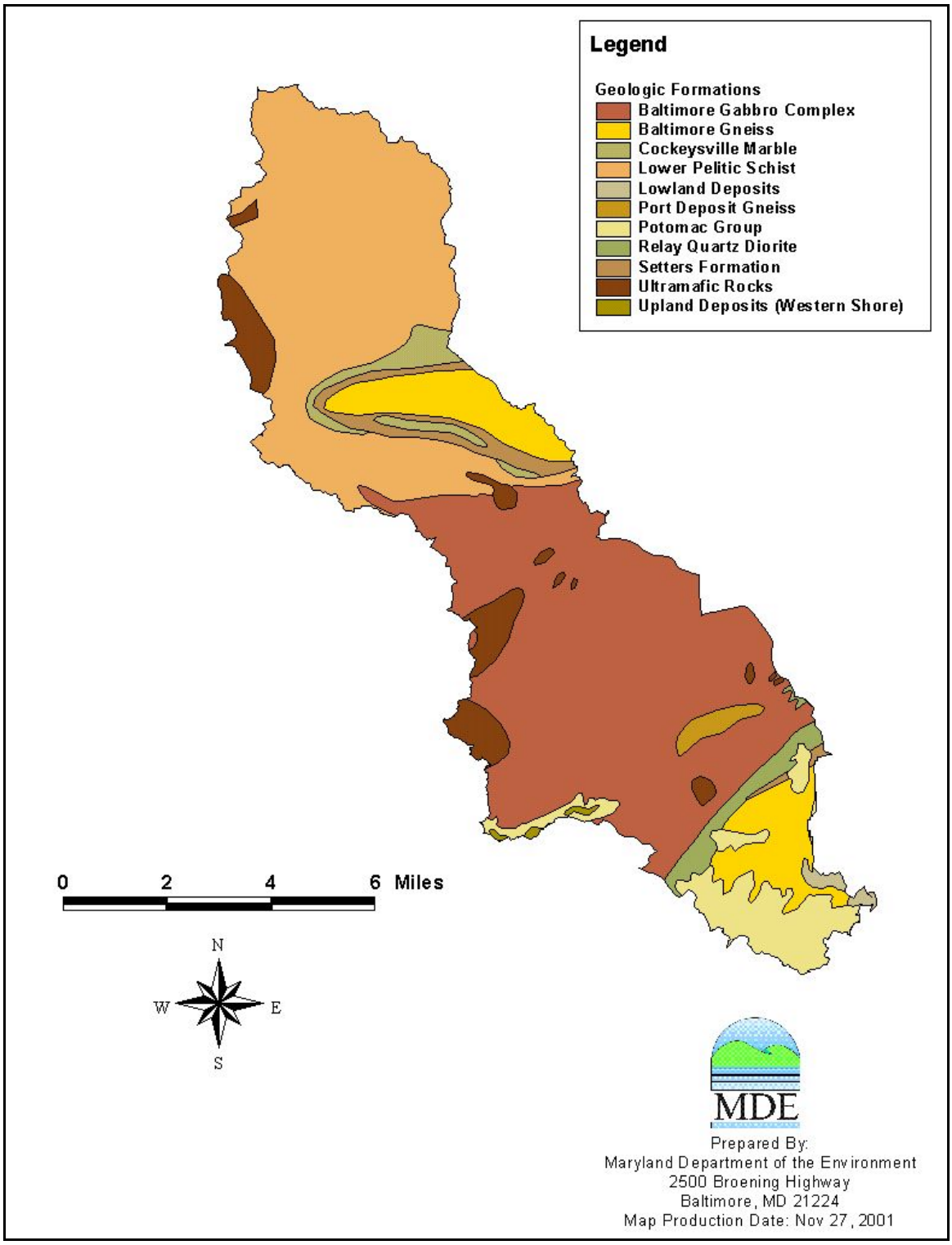

Figure 2.3-3: Gwynns Falls Geologic Formations

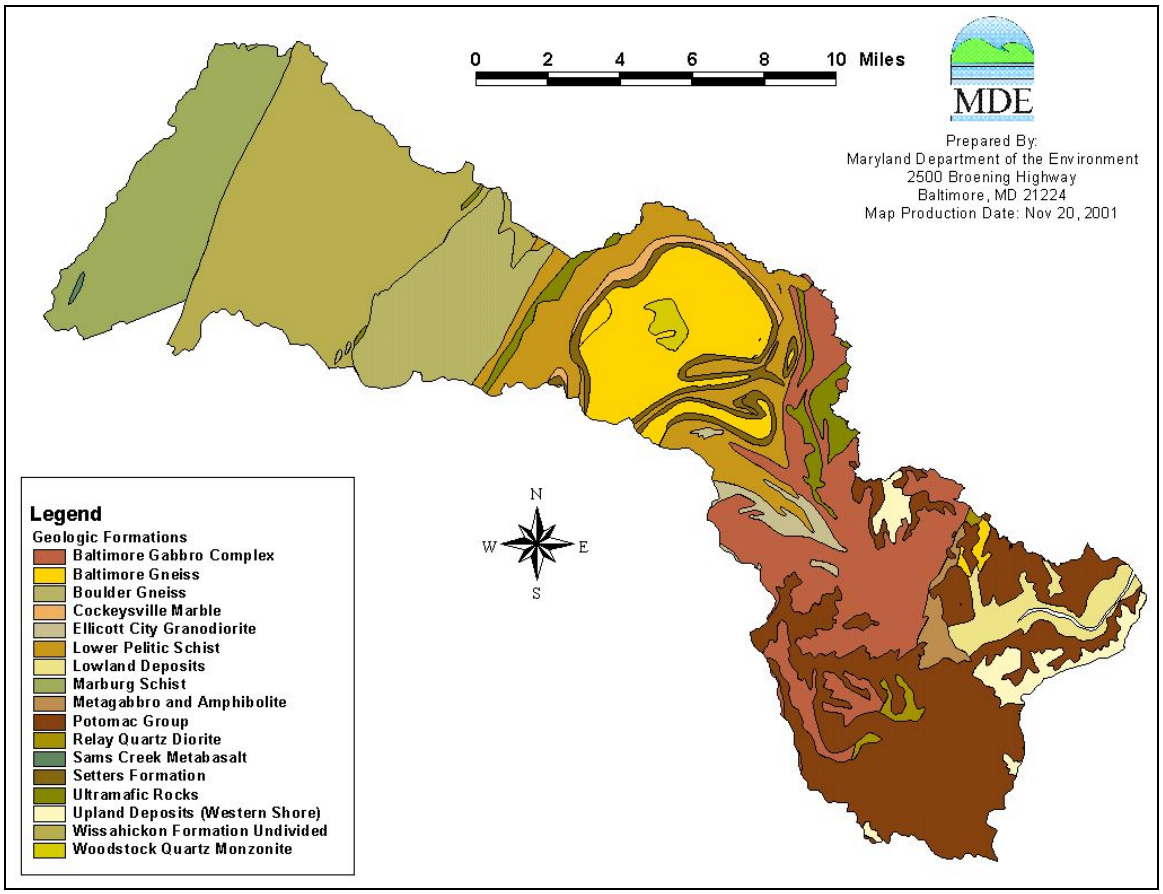

Figure 2.3-4: Patapsco River Geologic Formations

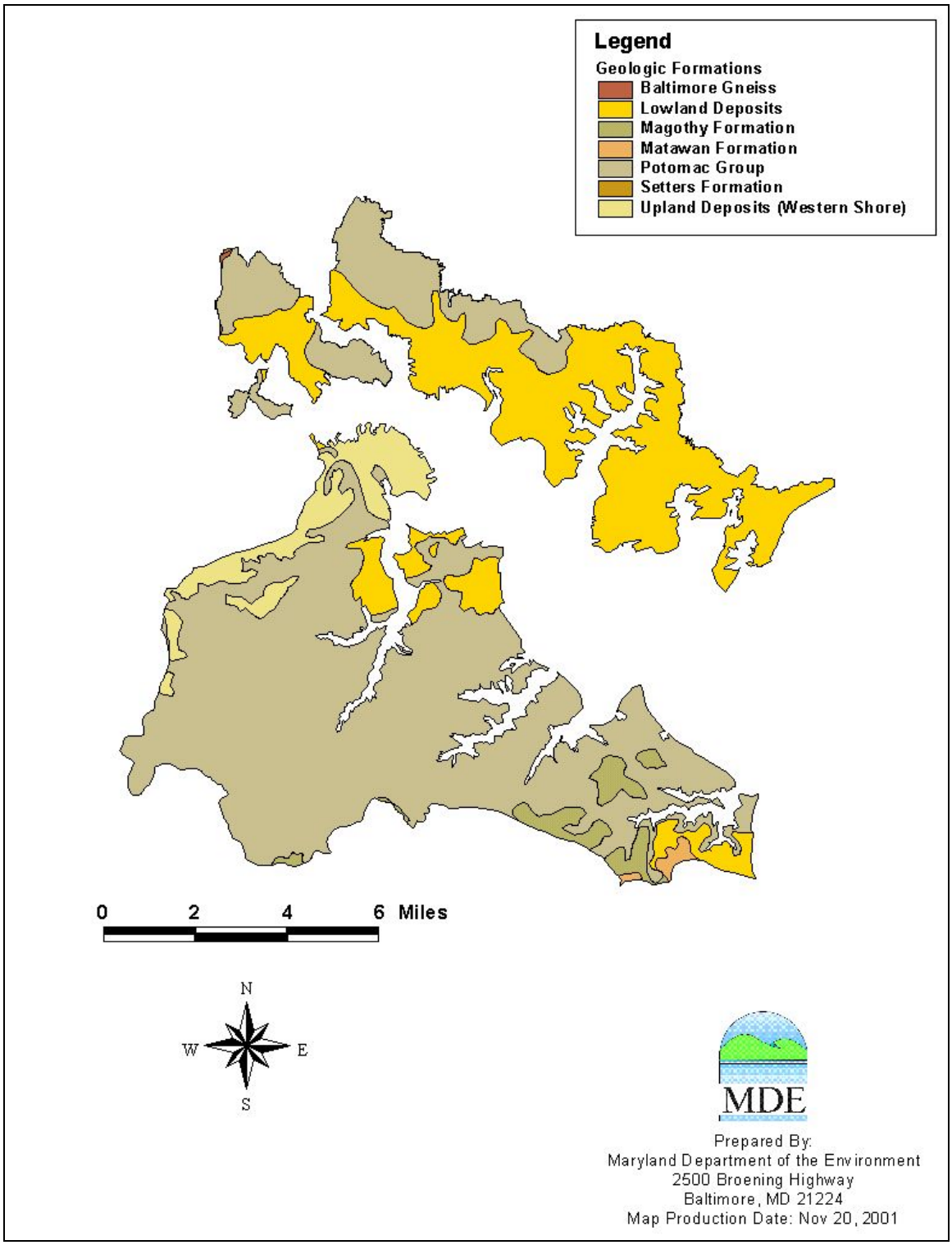

Figure 2.3-5: Baltimore Harbor Geologic Formations

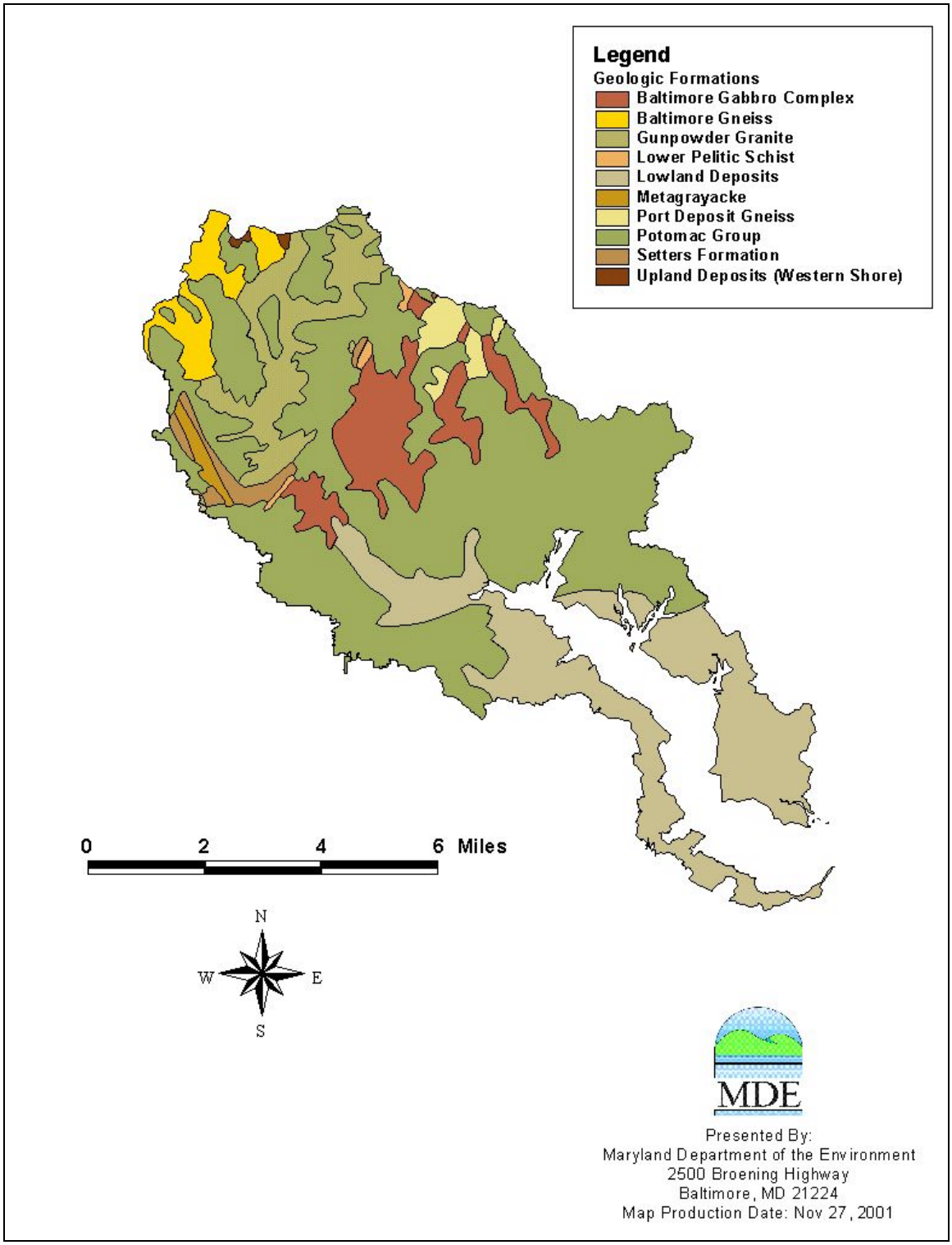

Figure 2.3-6: Back River Geologic Formations

Appendix B
Land Use Coverage

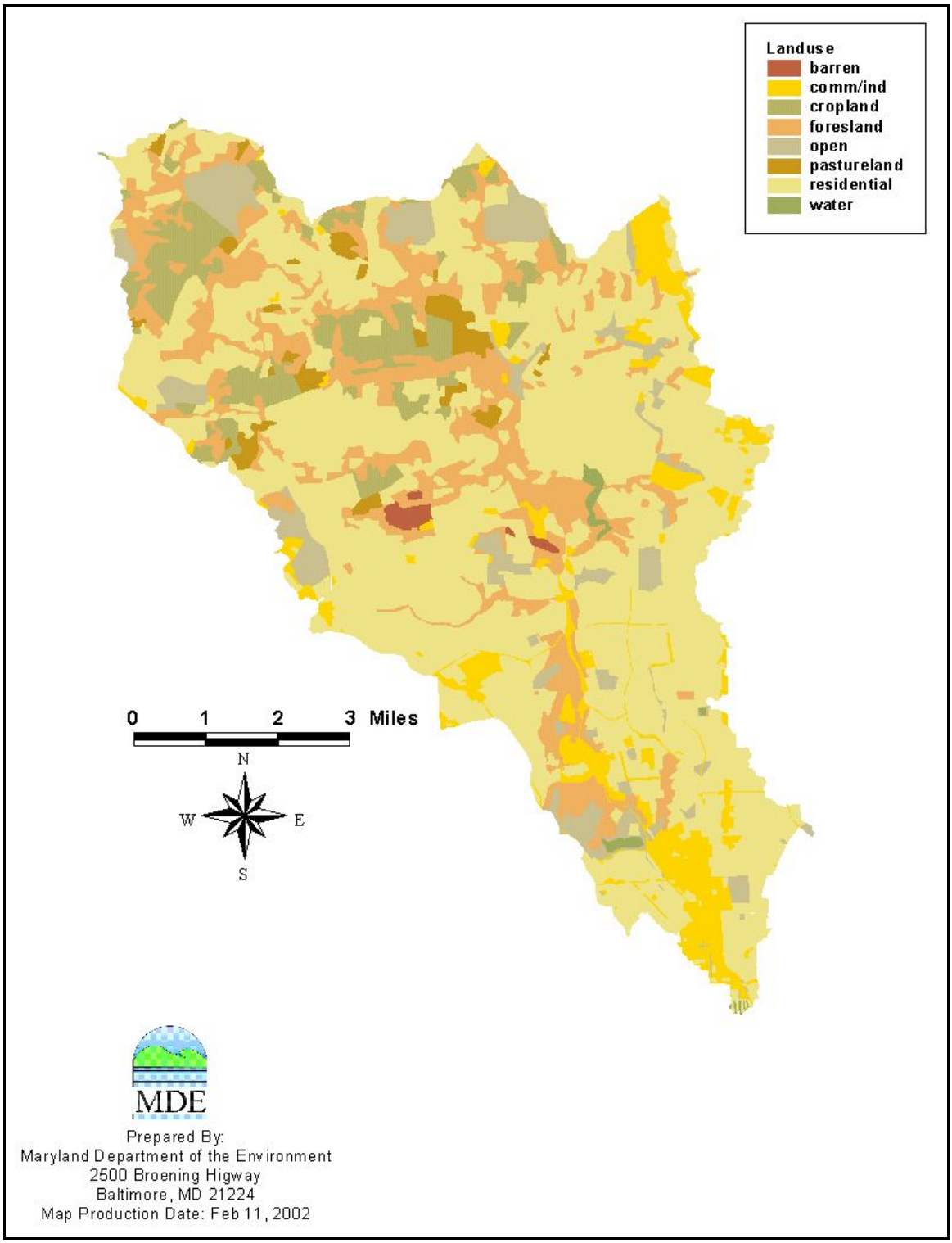

Figure 3.4-2: Jones Falls Land Use Coverage

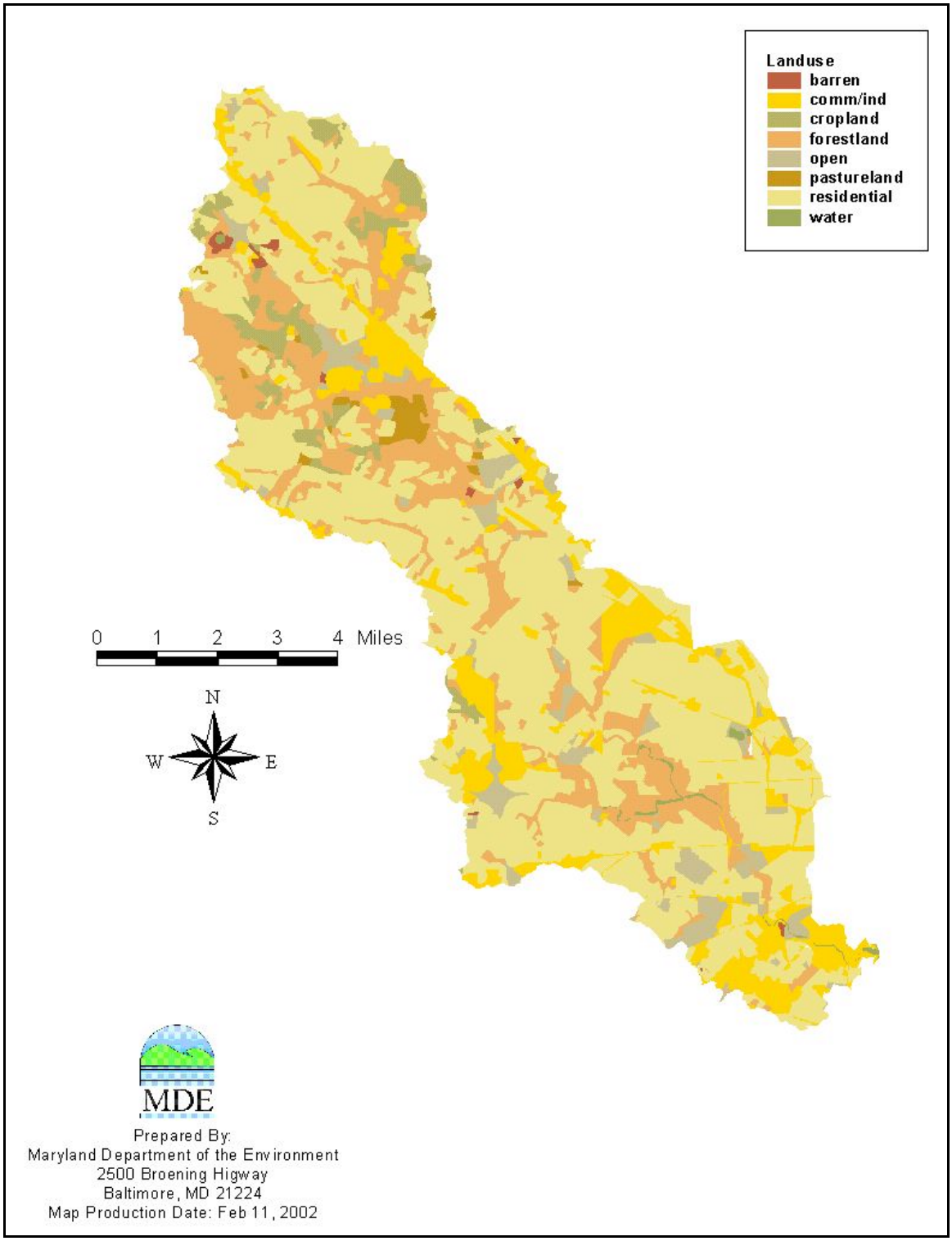

Figure 3.4-3: Gwynns Falls Land Use Coverage

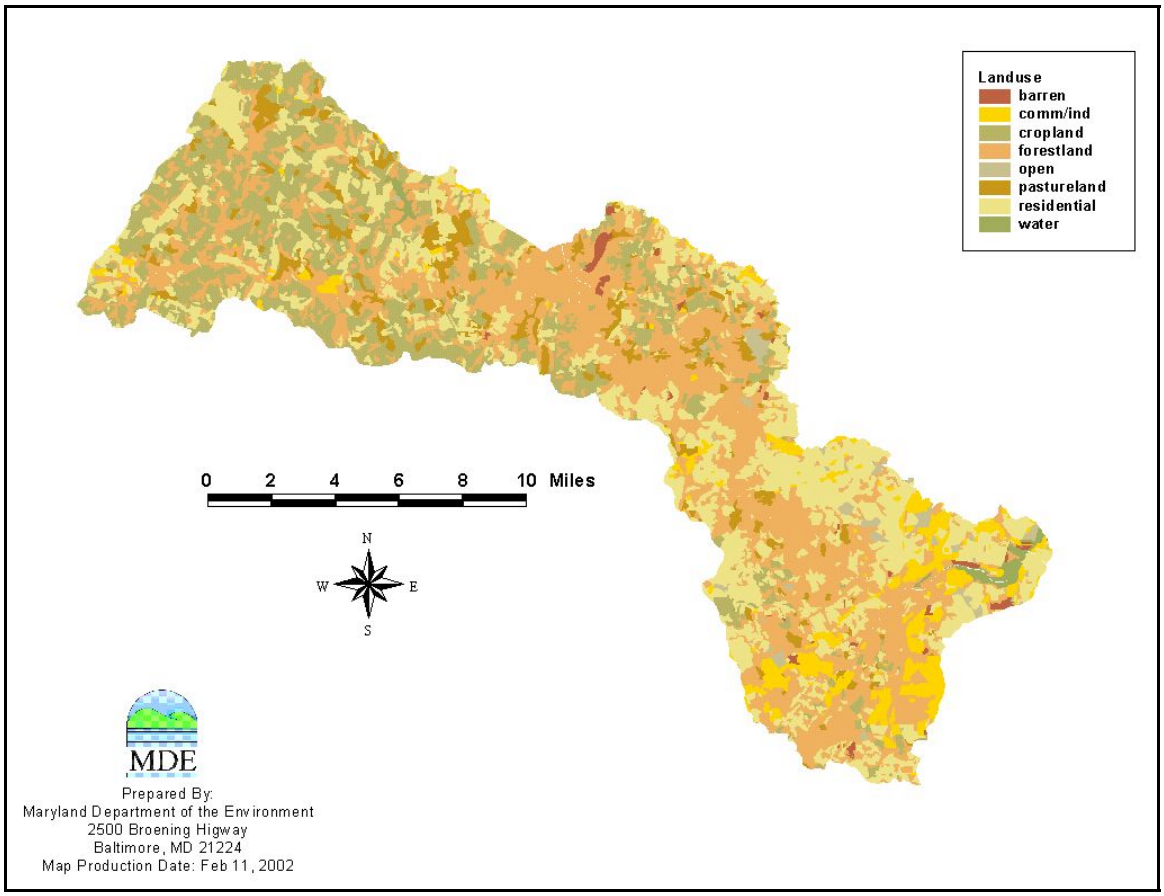

Figure 3.4-4: Patapsco River Land Use Coverage

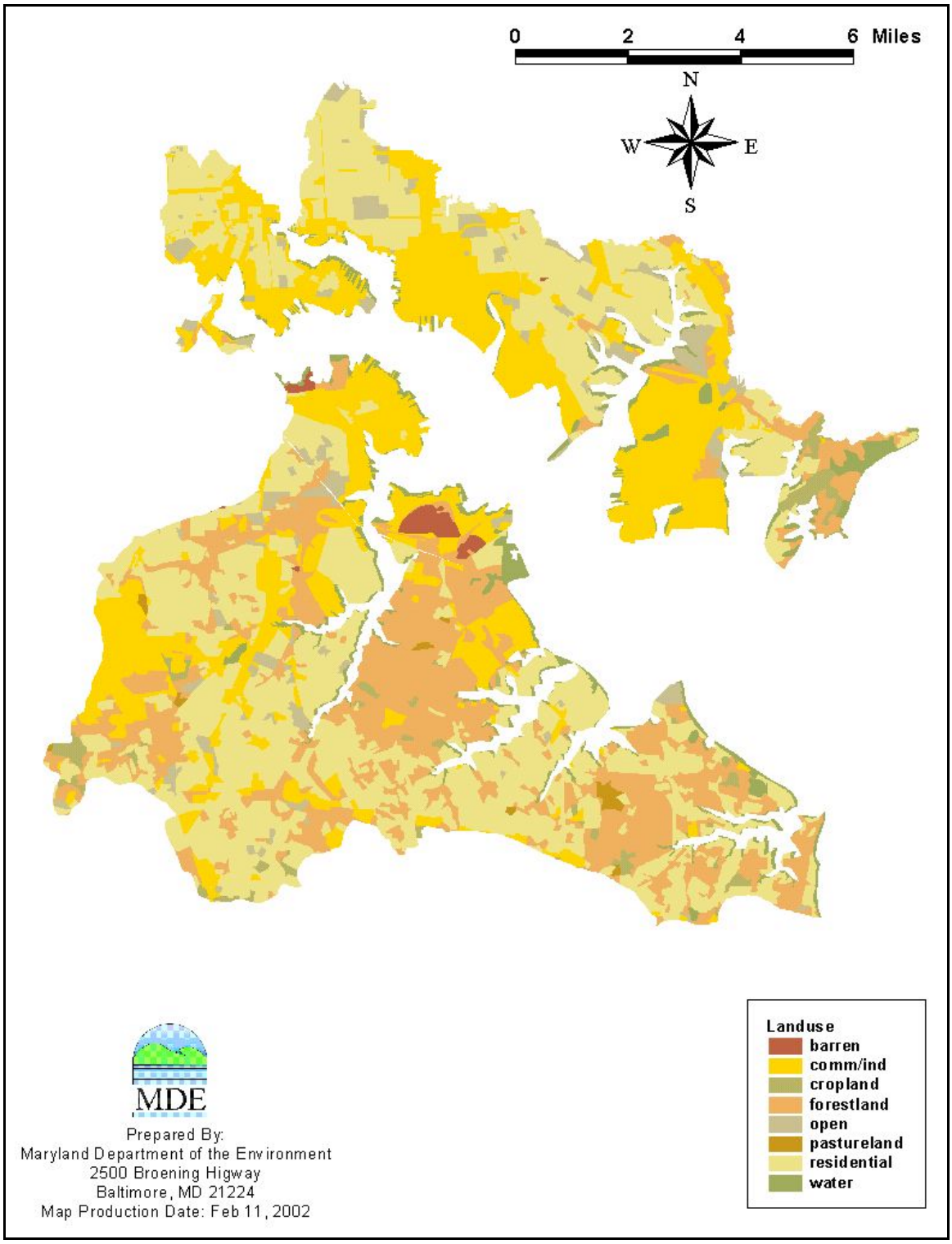

Figure 3.4-5: Baltimore Harbor Land Use Coverage

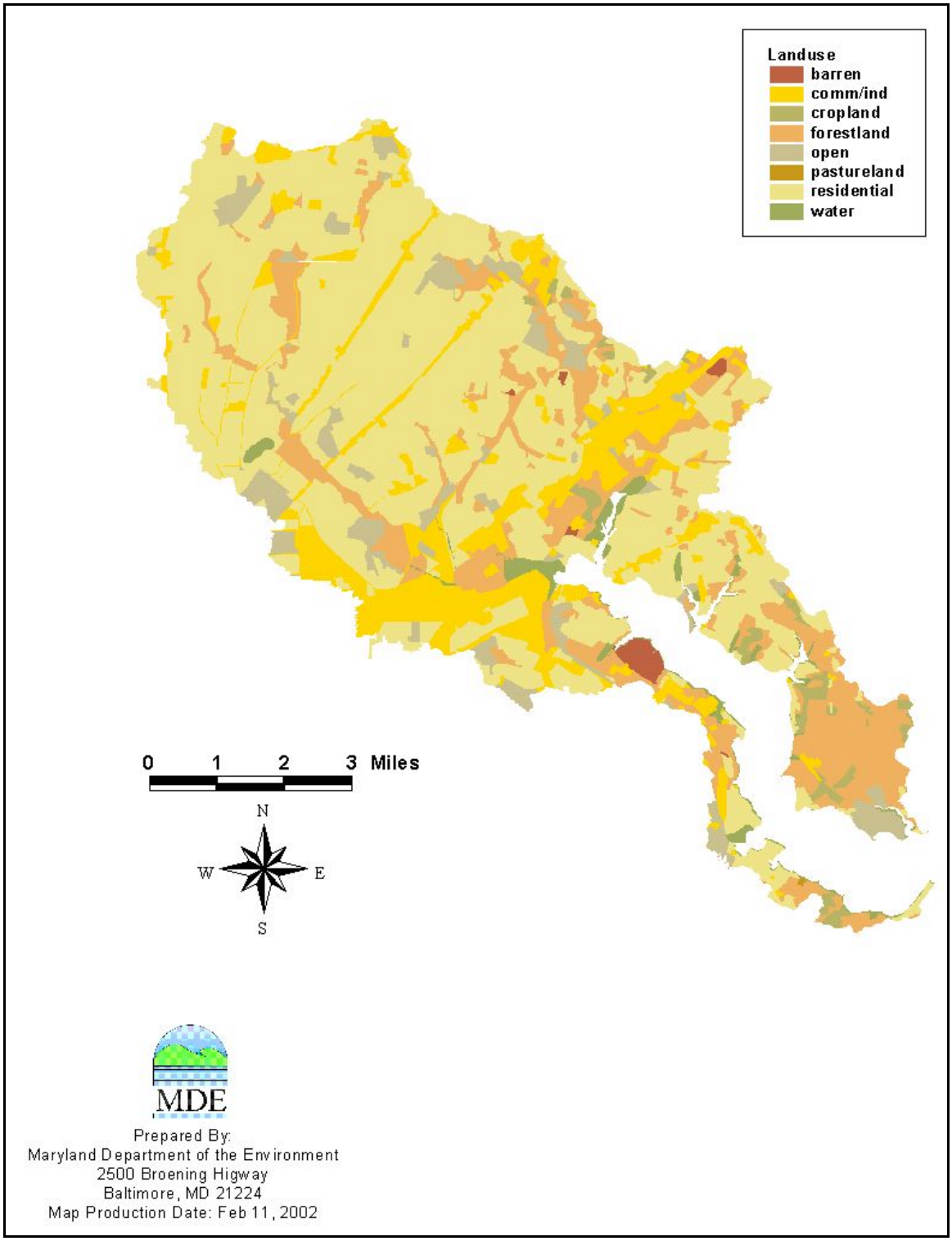

Figure 3.4-6: Back River Land Use Coverage

Appendix C
Model Segmentation Land Use

Table 3.4-3: Jones Falls Watershed Segmentation Land Use

Watershed	Segment	Area (acres)	C/I	HDR	MDR	LDR	Water	Open	CL	PL	FL	Barren
Jones Falls	350	3378	27%	49%	12%	0%	2%	9%	0%	0%	1%	0%
Jones Falls	360	3637	17%	22%	29%	4%	0%	8%	0%	0%	20%	0%
Jones Falls	370	2511	6%	16%	65%	4%	0%	4%	0%	0%	5%	0%
Jones Falls	380	3586	5%	15%	53%	8%	0%	12%	0%	0%	7%	0%
Jones Falls	390	651	7%	5%	10%	41%	0%	9%	0%	0%	23%	5%
Jones Falls	410	3169	9%	10%	40%	22%	3%	6%	0%	0%	10%	0%
Jones Falls	420	1397	1%	5%	31%	20%	0%	0%	1%	3%	29%	10%
Jones Falls	430	1274	0%	3%	8%	49%	0%	0%	12%	3%	25%	0%
Jones Falls	440	1734	5%	10%	13%	24%	0%	6%	2%	2%	38%	0%
Jones Falls	450	3822	14%	7%	38%	20%	0%	9%	2%	0%	10%	0%
Jones Falls	460	4802	1%	3%	6%	39%	0%	3%	17%	7%	24%	0%
Jones Falls	470	4545	0%	0%	1%	38%	0%	10%	22%	2%	27%	0%
Jones Falls	480	1758	0%	0%	3%	24%	0%	12%	18%	12%	31%	0%
Jones Falls	490	1437	4%	4%	3%	42%	0%	11%	12%	3%	21%	0%

Table 3.4-4: Gwynns Falls Watershed Segmentation Land Use

Watershed	Segment	Area (acres)	C/I	HDR	MDR	LDR	Water	Open	CL	PL	FL	Barren
GwynnsFalls	930	8684	22%	35%	24%	0%	1%	10%	0%	0%	8%	0%
GwynnsFalls	940	10831	16%	15%	43%	1%	1%	6%	1%	0%	17%	0%
GwynnsFalls	950	9428	8%	8%	47%	5%	0%	4%	2%	3%	23%	0%
GwynnsFalls	960	11385	11%	11%	22%	12%	0%	4%	11%	1%	27%	1%

Table 3.4-5: Patapsco River Watershed Segmentation Land Use

Watershed	Segment	Area (acres)	C/I	HDR	MDR	LDR	Water	Open	CL	PL	FL	Barren
Patapsco River	100	2251	0%	0%	0%	22%	0%	0%	56%	3%	19%	0%
Patapsco River	110	5953	0%	0%	1%	16%	0%	0%	19%	12%	52%	0%
Patapsco River	120	4827	4%	1%	6%	15%	0%	1%	32%	4%	37%	0%
Patapsco River	130	4929	1%	2%	7%	18%	0%	0%	33%	8%	31%	0%
Patapsco River	140	2288	0%	0%	11%	11%	0%	0%	23%	2%	53%	0%
Patapsco River	150	8898	4%	0%	0%	16%	0%	0%	43%	8%	29%	0%
Patapsco River	160	1443	6%	6%	37%	6%	0%	0%	10%	12%	23%	0%
Patapsco River	170	5142	0%	0%	1%	23%	0%	0%	47%	9%	20%	0%
Patapsco River	180	3798	0%	1%	0%	23%	0%	0%	49%	3%	24%	0%
Patapsco River	190	4245	0%	0%	0%	8%	0%	0%	57%	6%	29%	0%
Patapsco River	200	3088	1%	0%	1%	37%	0%	0%	31%	15%	15%	0%
Patapsco River	210	8074	1%	0%	5%	18%	4%	0%	39%	12%	21%	0%
Patapsco River	530	8601	23%	8%	28%	2%	9%	5%	0%	0%	22%	3%
Patapsco River	540	393	47%	0%	30%	0%	0%	0%	0%	0%	23%	0%
Patapsco River	550	1629	22%	12%	44%	1%	0%	13%	0%	0%	8%	0%
Patapsco River	560	8970	2%	1%	21%	12%	0%	0%	5%	2%	57%	0%
Patapsco River	570	2223	2%	12%	48%	5%	0%	11%	0%	0%	22%	0%
Patapsco River	580	1094	10%	25%	52%	2%	0%	5%	0%	0%	6%	0%
Patapsco River	590	1184	6%	4%	38%	6%	0%	2%	0%	8%	35%	1%
Patapsco River	600	8863	4%	4%	18%	18%	0%	1%	1%	7%	47%	0%
Patapsco River	610	505	0%	0%	40%	15%	0%	0%	0%	0%	45%	0%
Patapsco River	620	913	27%	13%	32%	2%	0%	0%	2%	0%	24%	0%
Patapsco River	630	1086	0%	13%	38%	9%	0%	2%	1%	2%	32%	3%
Patapsco River	640	988	0%	20%	4%	3%	0%	9%	30%	6%	28%	0%
Patapsco River	650	7666	0%	0%	6%	14%	0%	0%	18%	7%	55%	0%
Patapsco River	660	3550	4%	4%	12%	10%	0%	8%	9%	12%	40%	1%
Patapsco River	670	2716	2%	2%	4%	10%	0%	0%	18%	14%	49%	1%
Patapsco River	680	1330	1%	0%	0%	12%	0%	0%	33%	6%	48%	0%
Patapsco River	690	2161	2%	2%	12%	17%	0%	0%	30%	3%	32%	2%
Patapsco River	700	2115	0%	0%	0%	3%	0%	0%	6%	9%	77%	5%
Patapsco River	710	1642	1%	0%	4%	11%	0%	0%	25%	4%	40%	15%
Patapsco River	720	421	2%	0%	1%	24%	0%	0%	15%	11%	37%	10%
Patapsco River	730	6205	28%	2%	10%	9%	0%	1%	5%	1%	43%	1%
Patapsco River	740	2683	4%	3%	1%	9%	0%	0%	6%	4%	72%	1%
Patapsco River	750	5449	18%	8%	14%	14%	0%	1%	8%	2%	35%	0%
Patapsco River	760	3308	16%	5%	15%	7%	0%	4%	3%	5%	44%	1%

Table 3.4-6: Baltimore Harbor Watershed Segmentation Land Use

Watershed	Segment	Area (acres)	C/I	HDR	MDR	LDR	Water	Open	CL	PL	FL	Barren
Baltimore Harbor	770	554	46%	17%	2%	0%	5%	19%	0%	0%	11%	0%
Baltimore Harbor	780	585	76%	6%	2%	0%	5%	11%	0%	0%	0%	0%
Baltimore Harbor	790	2178	36%	47%	11%	0%	1%	5%	0%	0%	0%	0%
Baltimore Harbor	800	884	55%	21%	9%	0%	11%	4%	0%	0%	0%	0%
Baltimore Harbor	810	3267	28%	54%	8%	0%	1%	9%	0%	0%	0%	0%
Baltimore Harbor	820	4886	56%	20%	17%	0%	2%	5%	0%	0%	0%	0%
Baltimore Harbor	830	5922	40%	18%	16%	1%	7%	11%	0%	0%	7%	0%
Baltimore Harbor	840	2568	48%	1%	24%	1%	5%	4%	6%	0%	11%	0%
Baltimore Harbor	850	466	0%	0%	14%	0%	17%	0%	34%	0%	35%	0%
Baltimore Harbor	860	728	0%	0%	6%	0%	39%	0%	5%	0%	50%	0%
Baltimore Harbor	870	5911	3%	0%	23%	15%	8%	1%	4%	1%	45%	0%
Baltimore Harbor	880	7099	4%	12%	31%	14%	4%	1%	1%	1%	32%	0%
Baltimore Harbor	890	2034	35%	1%	9%	0%	14%	2%	0%	0%	36%	3%
Baltimore Harbor	900	23541	22%	5%	33%	5%	2%	4%	2%	0%	26%	1%
Baltimore Harbor	910	575	85%	1%	0%	0%	14%	0%	0%	0%	0%	0%
Baltimore Harbor	920	1302	31%	21%	20%	0%	6%	7%	0%	0%	10%	5%

Table 3.4-7: Back River Watershed Segmentation Land Use

Watershed	Segment	Area (acres)	C/I	HDR	MDR	LDR	Water	Open	CL	PL	FL	Barren
Back River	100	7091	25%	25%	29%	0%	2%	9%	0%	0%	10%	0%
Back River	110	1674	6%	45%	40%	0%	0%	1%	0%	0%	8%	0%
Back River	120	4085	9%	30%	46%	0%	0%	4%	0%	0%	11%	0%
Back River	125	1296	10%	14%	51%	7%	0%	13%	0%	0%	5%	0%
Back River	130	921	23%	30%	23%	0%	1%	9%	0%	0%	14%	0%
Back River	135	2273	7%	8%	79%	1%	0%	3%	0%	0%	2%	0%
Back River	140	2508	10%	2%	71%	2%	0%	2%	0%	0%	13%	0%
Back River	150	3720	18%	9%	35%	3%	0%	12%	2%	0%	21%	0%
Back River	160	1637	28%	20%	24%	4%	0%	1%	2%	0%	19%	2%
Back River	170	822	13%	4%	47%	8%	9%	3%	0%	0%	16%	0%
Back River	180	789	34%	0%	15%	0%	9%	1%	10%	0%	30%	1%
Back River	190	599	11%	7%	64%	0%	6%	5%	0%	0%	7%	0%
Back River	200	999	11%	40%	31%	0%	2%	2%	0%	0%	14%	0%
Back River	210	232	23%	24%	47%	0%	0%	4%	0%	0%	2%	0%
Back River	220	334	0%	14%	18%	14%	9%	0%	19%	0%	26%	0%
Back River	230	686	3%	3%	11%	25%	4%	0%	12%	0%	42%	0%
Back River	240	628	0%	0%	7%	2%	1%	0%	14%	0%	76%	0%
Back River	250	315	8%	0%	12%	6%	3%	20%	5%	0%	46%	0%
Back River	260	1114	1%	0%	1%	1%	1%	14%	11%	0%	71%	0%
Back River	270	5	0%	0%	91%	0%	9%	0%	0%	0%	0%	0%
Back River	280	435	1%	2%	19%	2%	9%	0%	18%	1%	48%	0%
Back River	290	95	2%	0%	93%	0%	3%	0%	0%	0%	2%	0%
Back River	300	19	0%	0%	79%	0%	21%	0%	0%	0%	0%	0%
Back River	310	225	3%	4%	38%	0%	20%	35%	0%	0%	0%	0%
Back River	320	970	23%	0%	15%	4%	7%	4%	0%	0%	32%	15%
Back River	330	1173	15%	12%	34%	0%	2%	17%	0%	0%	17%	3%
Back River	340	979	33%	10%	30%	0%	6%	7%	0%	0%	14%	0%

Appendix D
Model Segmentation Soil Percentages

Table 3.6-2: Jones Falls Watershed Segmentation Soil Percentages

Watershed	Segment	Area (acres)	Soil-A	Soil-B	Soil-C	Soil-D
Jones Falls	350	3378	2.0%	11.4%	6.4%	80.3%
Jones Falls	360	3637	2.1%	68.0%	6.8%	23.2%
Jones Falls	370	2511	0.8%	74.7%	14.2%	10.5%
Jones Falls	380	3586	0.0%	42.9%	29.4%	27.7%
Jones Falls	390	651	1.9%	62.3%	26.9%	8.9%
Jones Falls	410	3169	0.0%	57.4%	33.0%	9.6%
Jones Falls	420	1397	0.0%	74.7%	9.8%	15.5%
Jones Falls	430	1274	0.0%	83.0%	7.7%	9.3%
Jones Falls	440	1734	0.0%	63.8%	8.2%	28.1%
Jones Falls	450	3822	9.8%	63.7%	16.2%	10.3%
Jones Falls	460	4802	0.0%	76.3%	15.9%	7.8%
Jones Falls	470	4545	0.0%	78.3%	12.5%	9.2%
Jones Falls	480	1758	0.0%	82.5%	11.7%	5.9%
Jones Falls	490	1437	0.0%	84.0%	9.0%	7.0%

Table 3.6-3: Gwynns Falls Watershed Segmentation Soil Percentages

Watershed	Segment	Area (acres)	Soil-A	Soil-B	Soil-C	Soil-D
GwynnsFalls	930	8684	0.3%	48.1%	10.9%	40.7%
GwynnsFalls	940	10831	0.4%	24.3%	39.7%	35.5%
GwynnsFalls	950	9428	0.0%	48.3%	33.9%	17.8%
GwynnsFalls	960	11385	0.0%	76.5%	11.9%	11.6%

Table 3.6-4-Patapsco River Watershed Segmentation Soil Percentages

Watershed	Segment	Area (acres)	Soil-A	Soil-B	Soil-C	Soil-D
Patapsco River	100	2251	7.7%	87.4%	4.1%	0.8%
Patapsco River	110	5953	3.5%	89.4%	3.2%	3.8%
Patapsco River	120	4827	63.0%	28.0%	7.8%	1.2%
Patapsco River	130	4929	4.9%	88.6%	3.8%	2.7%
Patapsco River	140	2288	3.1%	88.1%	7.1%	1.7%
Patapsco River	150	8898	17.7%	76.0%	1.9%	4.5%
Patapsco River	160	1443	19.4%	73.8%	3.7%	3.1%
Patapsco River	170	5142	21.8%	65.1%	6.4%	6.7%
Patapsco River	180	3798	38.2%	51.4%	6.9%	3.6%
Patapsco River	190	4245	58.3%	29.5%	6.7%	5.5%
Patapsco River	200	3088	38.8%	54.5%	3.2%	3.6%
Patapsco River	210	8074	17.0%	70.9%	7.2%	4.9%
Patapsco River	530	8601	6.7%	26.3%	43.5%	23.4%
Patapsco River	540	393	9.2%	10.0%	80.3%	0.5%
Patapsco River	550	1629	7.9%	20.5%	62.7%	8.8%
Patapsco River	560	8970	1.6%	33.3%	55.9%	9.2%
Patapsco River	570	2223	7.0%	18.4%	59.7%	14.9%
Patapsco River	580	1094	3.6%	23.4%	54.3%	18.8%
Patapsco River	590	1184	6.5%	42.1%	39.4%	11.1%
Patapsco River	600	8863	0.0%	53.2%	37.5%	9.4%
Patapsco River	610	505	0.0%	42.4%	26.0%	31.6%
Patapsco River	620	913	3.0%	8.8%	49.8%	38.4%
Patapsco River	630	1086	1.6%	5.2%	23.6%	69.6%
Patapsco River	640	988	0.0%	8.7%	40.5%	50.8%
Patapsco River	650	7666	0.0%	68.2%	28.6%	3.2%
Patapsco River	660	3550	0.0%	43.1%	37.1%	19.8%
Patapsco River	670	2716	0.0%	74.2%	18.8%	7.0%
Patapsco River	680	1330	0.0%	67.4%	23.7%	8.9%
Patapsco River	690	2161	0.0%	76.2%	17.5%	6.3%
Patapsco River	700	2115	0.4%	82.3%	13.1%	4.2%
Patapsco River	710	1642	0.0%	77.2%	12.6%	10.2%
Patapsco River	720	421	0.0%	91.4%	8.5%	0.1%
Patapsco River	730	6205	29.4%	29.3%	39.3%	2.0%
Patapsco River	740	2683	16.7%	34.9%	43.9%	4.6%
Patapsco River	750	5449	3.2%	26.5%	57.0%	13.4%
Patapsco River	760	3308	5.3%	23.8%	58.4%	12.5%

Table 3.6-5-Baltimore Harbor Watershed Segmentation Soil Percentages

Watershed	Segment	Area (acres)	Soil-A	Soil-B	Soil-C	Soil-D
Baltimore Harbor	770	554	1.8%	18.5%	23.3%	56.4%
Baltimore Harbor	780	585	0.0%	0.0%	7.4%	92.6%
Baltimore Harbor	790	2178	0.0%	3.9%	4.2%	91.9%
Baltimore Harbor	800	884	0.0%	0.1%	8.2%	91.7%
Baltimore Harbor	810	3267	0.3%	3.8%	5.2%	90.6%
Baltimore Harbor	820	4886	2.1%	30.0%	19.8%	48.1%
Baltimore Harbor	830	5922	0.2%	47.6%	36.7%	15.5%
Baltimore Harbor	840	2568	0.0%	29.0%	58.0%	12.9%
Baltimore Harbor	850	466	0.0%	1.4%	66.9%	31.7%
Baltimore Harbor	860	728	0.0%	6.9%	47.9%	45.2%
Baltimore Harbor	870	5911	42.3%	40.2%	10.2%	7.4%
Baltimore Harbor	880	7099	55.4%	19.8%	21.7%	3.1%
Baltimore Harbor	890	2034	5.8%	10.3%	62.1%	21.8%
Baltimore Harbor	900	23541	37.4%	20.8%	34.5%	7.3%
Baltimore Harbor	910	575	0.0%	0.0%	2.1%	97.9%
Baltimore Harbor	920	1302	0.3%	25.2%	28.0%	46.5%

Table 3.6-4-Back River Watershed Segmentation Soil Percentages

Watershed	Segment	Area (acres)	Soil-A	Soil-B	Soil-C	Soil-D
Back River	100	7091	0.4%	37.9%	25.1%	36.6%
Back River	110	1674	1.7%	69.9%	23.0%	4.9%
Back River	120	4085	6.5%	42.1%	35.9%	15.5%
Back River	125	1296	6.5%	42.1%	35.9%	15.5%
Back River	130	921	0.1%	22.2%	38.6%	39.2%
Back River	135	2273	0.9%	24.2%	36.6%	38.3%
Back River	140	2508	0.2%	10.2%	74.2%	15.5%
Back River	150	3720	3.1%	13.5%	65.9%	17.3%
Back River	160	1637	1.8%	27.8%	53.7%	16.8%
Back River	170	822	4.2%	33.5%	46.4%	15.5%
Back River	180	789	0.6%	29.8%	51.4%	17.6%
Back River	190	599	2.2%	57.1%	28.8%	9.4%
Back River	200	999	0.0%	21.8%	60.1%	17.1%
Back River	210	232	0.0%	68.4%	21.2%	10.2%
Back River	220	334	0.0%	9.1%	36.9%	52.8%
Back River	230	686	0.0%	0.5%	65.7%	33.8%
Back River	240	628	0.0%	2.4%	64.4%	33.3%
Back River	250	315	0.8%	67.2%	21.9%	9.8%
Back River	260	1114	0.0%	13.9%	56.2%	29.8%
Back River	270	5	0.0%	96.2%	0.0%	3.8%
Back River	280	435	0.0%	20.6%	37.8%	35.8%
Back River	290	95	0.0%	53.5%	31.0%	11.5%
Back River	300	19	0.0%	83.7%	0.8%	15.5%
Back River	310	225	0.0%	63.6%	24.2%	12.2%
Back River	320	970	0.0%	23.0%	48.1%	26.8%
Back River	330	1173	11.8%	40.1%	24.6%	23.5%
Back River	340	979	1.9%	50.9%	28.4%	18.8%

Appendix E
USGS Flow Gauge Stations

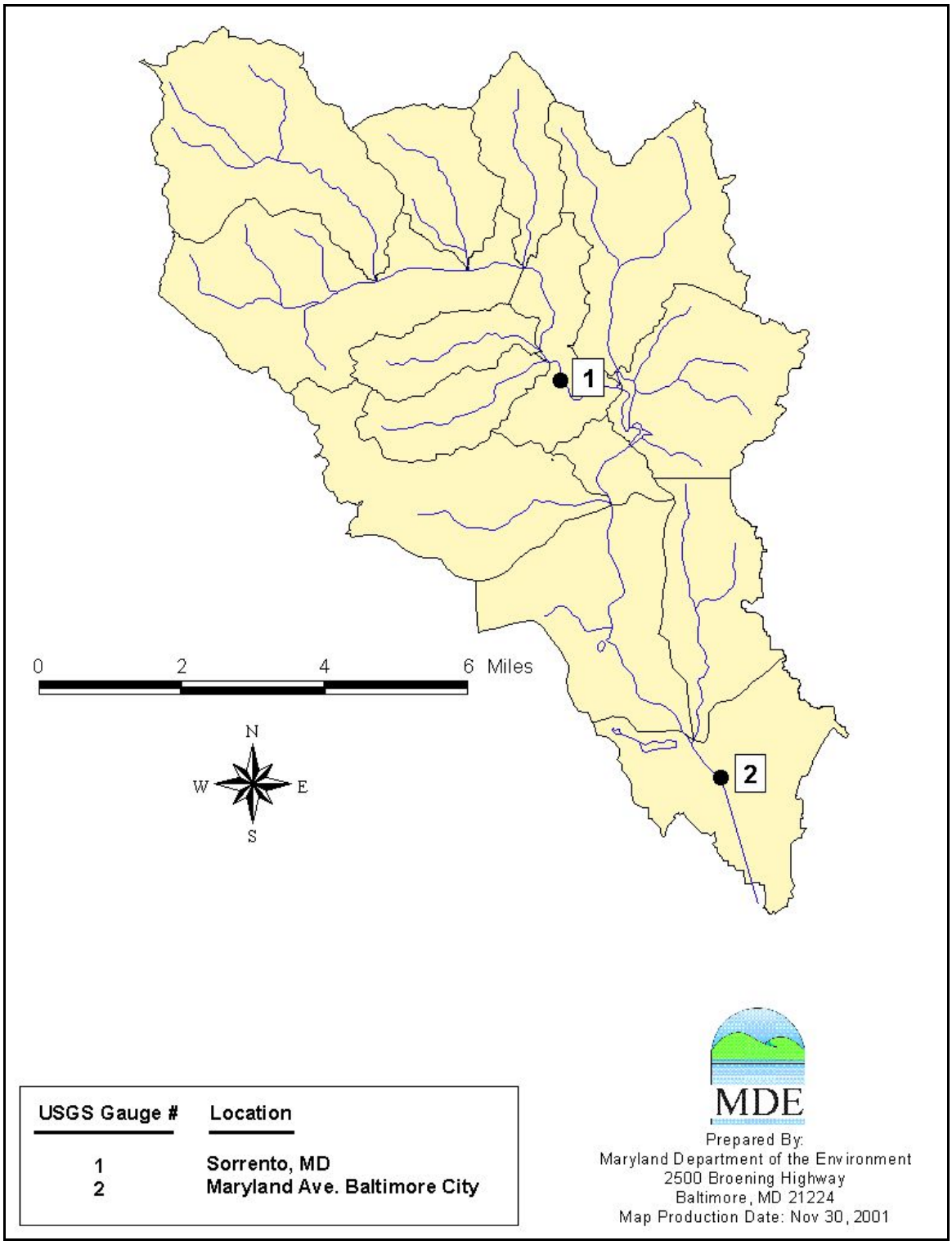

Figure 3.7.1-2-Jones Falls USGS Flow Gauge Locations

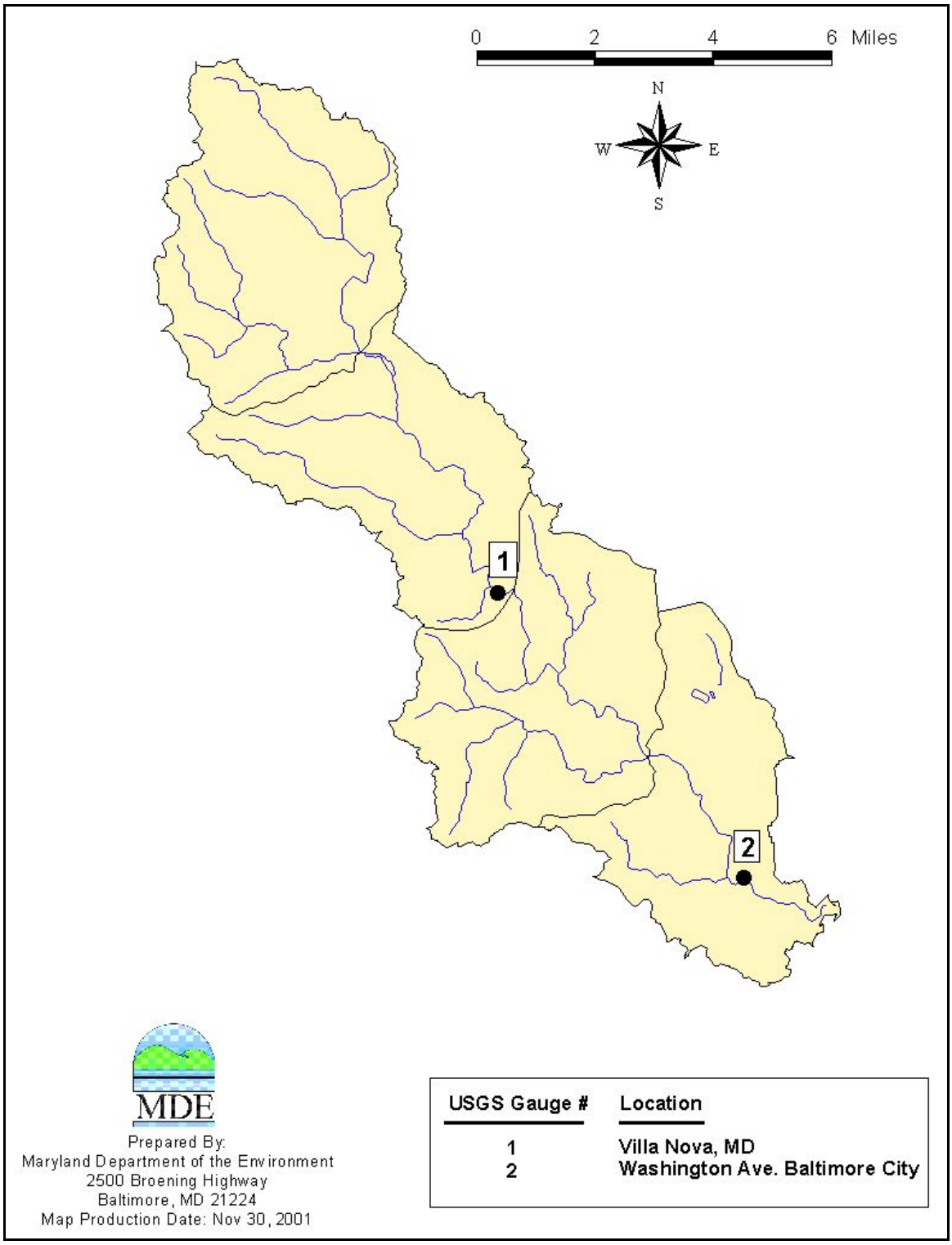

Figure 3.7.1-3-Gwynns Falls USGS Flow Gauge Locations

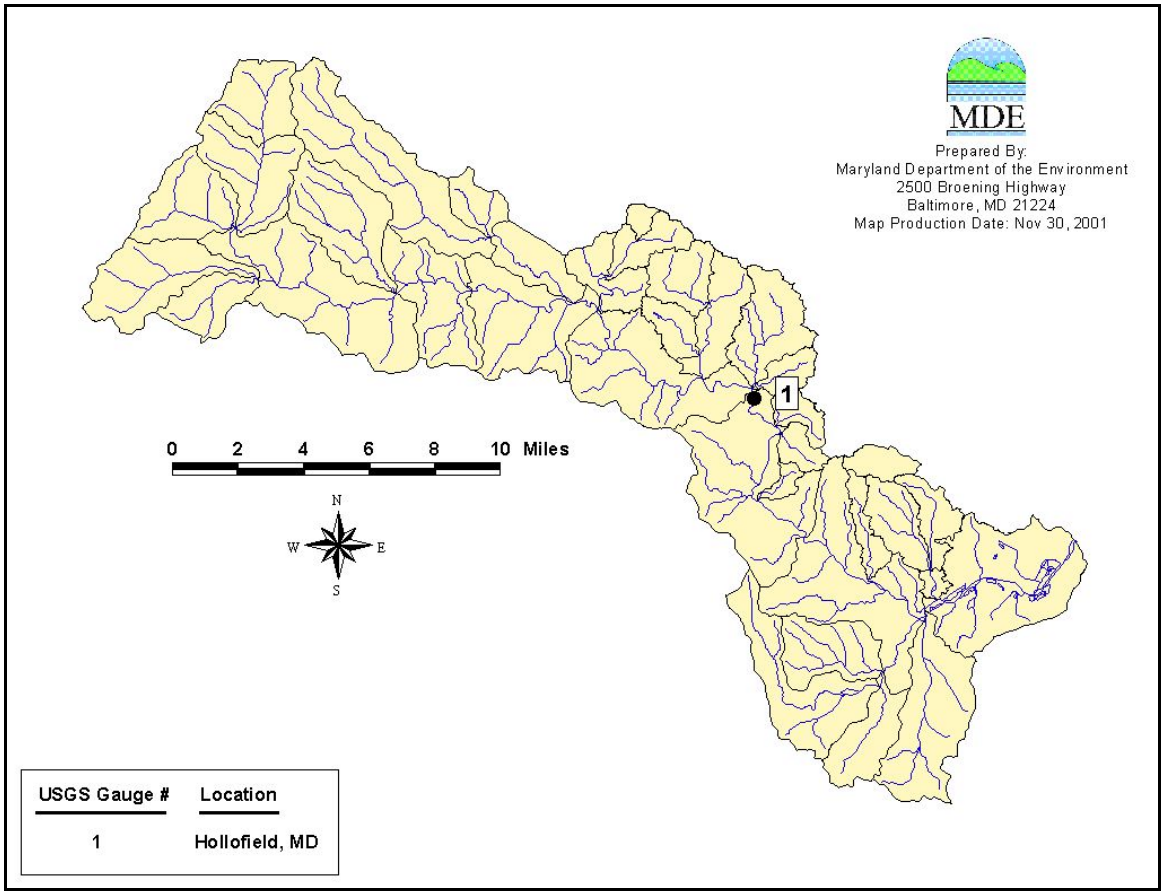

Figure 3.7.1-4-Patapsco River USGS Flow Gauge Locations

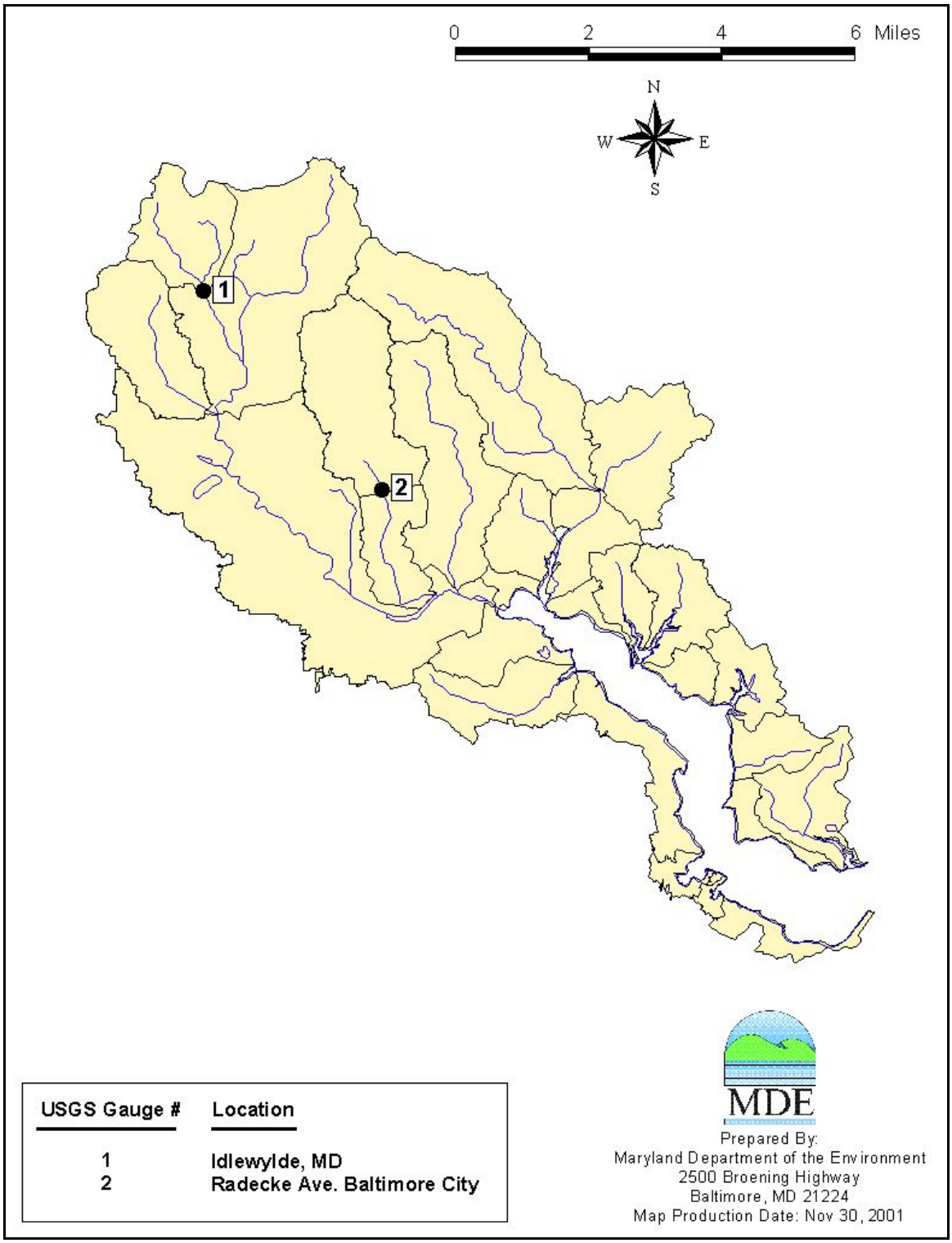

Figure 3.7.1-5-Back River USGS Flow Gauge Locations

Appendix F
EMC & Unit Load Data

EMC
TSS
Units: **mg/L**

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1		95.0	95.0	95.0						
2		91.5	91.5	91.5						
3		87.5	87.5	87.5						
4			34.6	34.6						
5			53.5	53.5						
6							218.0			
7		29.9	29.9	29.9						
8		28.0	28.0	28.0						
9	***70.0***	***56.1***	***56.1***	***56.1***						
10	***58.4***	***63.0***	***63.0***	***63.0***						
11		101.0	101.0	101.0						
12							895.0			
13		78.0	78.0	78.0						
14	94.5	68.1	43.7	40.5						
15	130.2	68.1	43.7	40.4			63.2		65.1	
16	20.1	29.6	36.7	29.6						
17	20.1	35.7	36.5	35.7						
18	20.6	27.7	22.7	27.7						
19										
20										

Average	57.1	61.7	55.9	55.2			392.1		65.1	
Min	20.1	27.7	22.7	27.7			63.2		65.1	
Max	130.2	101.0	101.0	101.0			895.0		65.1	

Refernces

1 Baltimore City NPDES 1998
2 Baltimore City NPDES 1999
3 Baltimore City NPDES 2000
4 Harford County NPDES 1999
5 Harford County NPDES 2000
6 Fredrick County NPDES 1999-2000
7 Howard County NDPES 1999
8 Howard County NDPES 2000
9 NPDES Monitoring 1992-1995
10 NPDES Monitoring 1995-2000
11 NURP Residential
12 Urbonas and Stahre (1993) - after Howard County NPDES
13 Howard County (1998) - Font Hill Tributary
14 Baltimore County SW Monitoring Data (CDM, 1996)
15 Baltimore County NPDES Monitoring (1990-1995)
16 Baltimore County NPDES (1998)
17 Baltimore County NPDES (1999)
18 Baltimore County NPDES (2000)

Note: 1. Values in itallics not inlcuded in average

Unit Loading Rates
TSS
units: lb/acre/year

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1	29.5	88.5	147.5	147.5	14.7	147.5	147.5	147.5	88.5	206.5
2			18.8							
3			59.1							
4	716.4	286.6	395.2	178.0				305.3	76.5	
5	446.3	279.3	213.3	158.1		140.3	366.4	243.8	48.2	136.3
6 (1997)			84.8							
6 (1998)			96.4							
6 (1999)			165.1							
7	402.7	189.4	150.0	118.7		101.9	175.6	195.7	50.5	
8								491.0	333.0	
9								305.0	77.0	
10							247.0	247.0	97.0	
11			***287.0***				***1514.0***	***710.0***	***145.0***	
12			***309.0***				1834.0	829.0	284.0	
13			***382.0***				***2383.0***	***1087.0***	***685.0***	
11										

Average	398.7	211.0	147.8	150.6	14.7	129.9	554.1	345.5	131.8	171.4
Min	29.5	88.5	18.8	118.7	14.7	101.9	147.5	147.5	48.2	136.3
Max	716.4	286.6	213.3	158.1	14.7	147.5	2383.0	1087.0	685.0	206.5

References

1 Jones Falls Water Quality Management Plan (1997)
2 Harford County 2000 NPDES
3 Harford County 1999 NPDES
4 Water Quality Management Plan for Loch Raven Watershed
5 Water Quality Management Plan for Loch Raven Watershed - modeled
6 City of Baltimore 1999 NPDES (Halmilton/Radecke)
7 Baltimore County 2000 NPDES
8 Corsi et al., 1997
9 Horner et al., 1994
10 Smith et al., 1991
11 CBP Patapsco/Back River (1984-1994)
12 CBP Patapsco/Back River (1984-1997)
13 CBP Patapsco/Back River (1993-1997)

Note: 1. Values in itallics not inlcuded in average

EMC Copper Units: **mg/L**

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1		0.0440	0.0440	0.0440						
2		0.0410	0.0410	0.0410						
3		0.0100	0.0100	0.0100						
4		0.0060	0.0060	0.0060						
5		0.0090	0.0090	0.0090						
6							0.0165			
7		0.0080	0.0080	0.0080						
8										
9	***0.0218***	***0.0141***	***0.0141***	***0.0141***						
10	***0.0169***	***0.0279***	***0.0279***	***0.0279***						
11		0.0330	0.0330	0.0330						
12							0.0090			
13		0.0110	0.0110	0.0110						
14	0.0280	0.0130	0.0140	0.0210						
15	0.0172	0.0131	0.0140	0.0213			0.0000		0.0000	
16	0.0313	0.007767	0.0064	0.0078						
17	0.0482	0.032467	0.0252	0.0325						
18	0.0157	0.021533	0.0271	0.0215						
19										
20										

Average	0.0281	0.0192	0.0191	0.0205			0.0085		0.0000	
Min	0.0157	0.0060	0.0060	0.0060			0.0000		0.0000	
Max	0.0482	0.0440	0.0440	0.0440			0.0165		0.0000	

Refernces

1 Baltimore City NPDES 1998
2 Baltimore City NPDES 1999
3 Baltimore City NPDES 2000
4 Harford County NPDES 1999
5 Harford County NPDES 2000
6 Fredrick County NPDES 1999-2000
7 Howard County NDPES 1999
8 Howard County NDPES 2000
9 NPDES Monitoring 1992-1995
10 NPDES Monitoring 1995-2000
11 NURP Residential
12 Urbonas and Stahre (1993) - after Howard County NPDES
13 Howard County (1998) - Font Hill Tributary
14 Baltimore County SW Monitoring Data (CDM, 1996)
15 Baltimore County NPDES Monitoring (1990-1995)
16 Baltimore County NPDES (1998)
17 Baltimore County NPDES (1999)
18 Baltimore County NPDES (2000)

Note: 1. Values in itallics not inlcuded in average

Unit Loading Rates
Copper
units: lb/acre/year

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1	0.133	0.133	0.020	0.020	0.003	0.020	0.017	0.013	0.003	0.003
2			0.007							
3			0.009							
4		0.267	***0.454***	***0.160***				0.027	0.027	
5	0.110	0.080	0.040	0.030						
6 (1997)			0.062							
6 (1998)			0.050							
6 (1999)			0.080							
7										
8										
9										
10										
11										

Average	0.122	0.160	0.038	0.025	0.003	0.020	0.017	0.020	0.015	0.003
Min	0.110	0.080	0.007	0.020	0.003	0.020	0.017	0.013	0.003	0.003
Max	0.133	0.267	0.454	0.160	0.003	0.020	0.017	0.027	0.027	0.003

References

1 Jones Falls Water Quality Management Plan (1997)
2 Harford County 2000 NPDES
3 Harford County 1999 NPDES
4 Water Quality Management Plan for Loch Raven Watershed
5 Water Quality Management Plan for Loch Raven Watershed - modeled
6 City of Baltimore 1999 NPDES (Halmilton/Radecke)
7 Baltimore County 2000 NPDES
8 Corsi et al., 1997
9 Horner et al., 1994
10 Smith et al., 1991

Note: 1. Values in itallics not inlcuded in average

EMC
Zinc
Units: **mg/L**

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1		0.1385	0.1385	0.1385						
2		0.1400	0.1400	0.1400						
3		0.1250	0.1250	0.1250						
4			0.0377	0.0377						
5			0.0313	0.0313						
6							0.0387			
7		0.0459	0.0459	0.0459						
8		0.0470	0.0470	0.0470						
9	***0.1732***	***0.0916***	***0.0916***	***0.0916***						
10	***0.1218***	***0.0929***	***0.0929***	***0.0929***						
11		0.1350	0.1350	0.1350						
12							0.0660			
13		0.0400	0.0400	0.0400						
14	0.2930	0.1160	0.0610	0.0540						
15	0.2189	0.1163	0.0612	0.0538						
16	0.2395	0.042033	0.0420	0.0358						
17	0.1661	0.074833	0.0748	0.0581						
18	0.0524	0.0452	0.0452	0.0452						
19										
17										

Average	0.1940	0.0888	0.0732	0.0705			0.0524			
Min	0.0524	0.0400	0.0313	0.0313			0.0387			
Max	0.2930	0.1400	0.1400	0.1400			0.0660			

Refernces

1 Baltimore City NPDES 1998
2 Baltimore City NPDES 1999
3 Baltimore City NPDES 2000
4 Harford County NPDES 1999
5 Harford County NPDES 2000
6 Fredrick County NPDES 1999-2000
7 Howard County NDPES 1999
8 Howard County NDPES 2000
9 NPDES Monitoring 1992-1995
10 NPDES Monitoring 1995-2000
11 NURP Residential
12 Urbonas and Stahre (1993) - after Howard County NPDES
13 Howard County (1998) - Font Hill Tributary
14 Baltimore County SW Monitoring Data (CDM, 1996)
15 Baltimore County NPDES Monitoring (1990-1995)
16 Baltimore County NPDES (1998)
17 Baltimore County NPDES (1999)
18 Baltimore County NPDES (2000)

Note: 1. Values in itallics not inlcuded in average

Unit Loading Rates
Zn
units: lb/acre/year

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1	1.2560	1.2560	0.1260	0.0630	0.0130	0.0630	0.0380	0.0380	0.0130	0.0130
2			0.0170							
3			0.0250							
4	2.9370	0.1960	0.3030	0.1160				0.0890	0.0180	
5	1.1700	0.7100	0.4100	0.2000		0.0600	0.0100	0.0200	0.0000	0.0200
6 (1997)			0.1963							
6 (1998)			0.2364							
6 (1999)			0.3569							
7	0.9350	0.7720	0.2190	0.1320		0.0490	0.0240	0.0290	0.0040	
8										
9										
10										
11										

Average	1.5745	0.7335	0.2100	0.1278	0.0130	0.0573	0.0240	0.0440	0.0088	0.0165
Min	0.9350	0.1960	0.0170	0.0630	0.0130	0.0490	0.0100	0.0200	0.0000	0.0130
Max	2.9370	1.2560	0.4100	0.2000	0.0130	0.0630	0.0380	0.0890	0.0180	0.0200

References

1 Jones Falls Water Quality Management Plan (1997)
2 Harford County 2000 NPDES
3 Harford County 1999 NPDES
4 Water Quality Management Plan for Loch Raven Watershed
5 Water Quality Management Plan for Loch Raven Watershed - modeled
6 City of Baltimore 1999 NPDES (Halmilton/Radecke)
7 Baltimore County 2000 NPDES
8 Corsi et al., 1997
9 Horner et al., 1994
10 Smith et al., 1991

EMC
Lead
Units: **mg/L**

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1		0.0415	0.0415	0.0415						
2		0.0395	0.0395	0.0395						
3		0.0350	0.0350	0.0350						
4			0.0014	0.0014						
5			0.0023	0.0023						
6							0.0042			
7										
8		0.0125	0.0125	0.0125						
9	***0.0177***	***0.0057***	***0.0057***	***0.0057***						
10	***0.0167***	***0.0185***	***0.0185***	***0.0185***						
11		0.1440	0.1440	0.1440						
12							0.0140			
13		0.0005	0.0005	0.0005						
14	0.0968	0.0272	0.0140	0.0200						
15	0.0869	0.0272	0.0141	0.0197						
16	0.0052	0.001233	0.0010	0.0012						
17	0.0091	0.005533	0.0034	0.0055						
18	0.0027	0.001833	0.0016	0.0018						
19										
20										

Average	0.0401	0.0305	0.0239	0.0250			0.0091			
Min	0.0027	0.0005	0.0005	0.0005			0.0042			
Max	0.0968	0.1440	0.1440	0.1440			0.0140			

Refernces

1 Baltimore City NPDES 1998
2 Baltimore City NPDES 1999
3 Baltimore City NPDES 2000
4 Harford County NPDES 1999
5 Harford County NPDES 2000
6 Fredrick County NPDES 1999-2000
7 Howard County NDPES 1999
8 Howard County NDPES 2000
9 NPDES Monitoring 1992-1995
10 NPDES Monitoring 1995-2000
11 NURP Residential
12 Urbonas and Stahre (1993) - after Howard County NPDES
13 Howard County (1998) - Font Hill Tributary
14 Baltimore County SW Monitoring Data (CDM, 1996)
15 Baltimore County NPDES Monitoring (1990-1995)
16 Baltimore County NPDES (1998)
17 Baltimore County NPDES (1999)
18 Baltimore County NPDES (2000)

Note: 1. Values in itallics not inlcuded in average

Unit Loading Rates
Lead
units: lb/acre/year

Reference	CI	HDR	MDR	LDR	WATER	OPEN	CL	PAST	FOR	BAR
1	0.1320	0.1320	0.0820	0.0300	0.0200	0.0300	0.0200	0.0200	0.0200	0.0200
2			0.0050							
3			0.0050							
4	***2.7590***	0.0890	***0.6230***	0.0530				0.0090	0.0180	
5	0.1400	0.1100	0.0500	0.0300		0.0000	0.0000	0.0000	0.0000	0.0000
6 (1997)			0.0393							
6 (1998)			0.0353							
6 (1999)			0.0549							
7	0.2810	0.1080	0.0530	0.0290		0.0210	0.0070	0.0070	0.0070	
8										
9										
10										
11										

Average	0.1843	0.1098	0.0406	0.0355	0.0200	0.0170	0.0090	0.0090	0.0113	0.0100
Min	0.1320	0.0890	0.0050	0.0290	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000
Max	2.7590	0.1320	0.6230	0.0530	0.0200	0.0300	0.0200	0.0200	0.0200	0.0200

References

1 Jones Falls Water Quality Management Plan (1997)
2 Harford County 2000 NPDES
3 Harford County 1999 NPDES
4 Water Quality Management Plan for Loch Raven Watershed
5 Water Quality Management Plan for Loch Raven Watershed - modeled
6 City of Baltimore 1999 NPDES (Halmilton/Radecke)
7 Baltimore County 2000 NPDES
8 Corsi et al., 1997
9 Horner et al., 1994
10 Smith et al., 1991

Note: 1. Values in itallics not inlcuded in summary

Appendix G
Model Hydrology Parameters

Table 3.8.1-1-Jones Falls Watershed Segment Widths

Watershed	Segment	Area (acres)	Width(ft)
Jones Falls	350	3378	68457
Jones Falls	360	3637	70782
Jones Falls	370	2511	52736
Jones Falls	380	3586	92965
Jones Falls	390	651	16302
Jones Falls	410	3169	92309
Jones Falls	420	1397	48718
Jones Falls	430	1274	43552
Jones Falls	440	1734	110346
Jones Falls	450	3822	85598
Jones Falls	460	4802	146026
Jones Falls	470	4545	131498
Jones Falls	480	1758	42371
Jones Falls	490	1437	38324

Table 3.8.1-2-Gwynns Falls Watershed Segment Widths

Watershed	Segment	Area (acres)	Width(ft)
GwynnsFalls	930	8684	246298
GwynnsFalls	940	10831	270252
GwynnsFalls	950	9428	231338
GwynnsFalls	960	11385	267963

Table 3.8.1-3-Patapsco River Watershed Segment Widths

Watershed	Segment	Area (acres)	Width(ft)
Patapsco River	100	2251	45969
Patapsco River	110	5953	87792
Patapsco River	120	4827	77664
Patapsco River	130	4929	104684
Patapsco River	140	2288	30363
Patapsco River	150	8898	124322
Patapsco River	160	1443	31934
Patapsco River	170	5142	105016
Patapsco River	180	3798	61116
Patapsco River	190	4245	102461
Patapsco River	200	3088	58561
Patapsco River	210	8074	119084
Patapsco River	530	8601	256568
Patapsco River	540	393	11214
Patapsco River	550	1629	36041
Patapsco River	560	8970	216490
Patapsco River	570	2223	64855
Patapsco River	580	1094	30894
Patapsco River	590	1184	38802
Patapsco River	600	8863	188242
Patapsco River	610	505	15967
Patapsco River	620	913	22875
Patapsco River	630	1086	28828
Patapsco River	640	988	26775
Patapsco River	650	7666	166821
Patapsco River	660	3550	100273
Patapsco River	670	2716	70684
Patapsco River	680	1330	32705
Patapsco River	690	2161	56810
Patapsco River	700	2115	59096
Patapsco River	710	1642	41525
Patapsco River	720	421	9023
Patapsco River	730	6205	198460
Patapsco River	740	2683	58381
Patapsco River	750	5449	180820
Patapsco River	760	3308	93421

Table 3.8.1-4-Baltimore Harbor Watershed Segment Widths

Watershed	Segment	Area (acres)	Width(ft)
Baltimore Harbor	770	554	26276
Baltimore Harbor	780	585	15528
Baltimore Harbor	790	2178	22586
Baltimore Harbor	800	884	39767
Baltimore Harbor	810	3267	48718
Baltimore Harbor	820	4886	92660
Baltimore Harbor	830	5922	172771
Baltimore Harbor	840	2568	92116
Baltimore Harbor	850	466	20598
Baltimore Harbor	860	728	25108
Baltimore Harbor	870	5911	136448
Baltimore Harbor	880	7099	177796
Baltimore Harbor	890	2034	62074
Baltimore Harbor	900	23541	503998
Baltimore Harbor	910	575	13871
Baltimore Harbor	920	1302	37162

Table 3.8.1-5-Back River Watershed Segment Widths

Watershed	Segment	Area (acres)	Width(ft)
Back River	100	7091	54051
Back River	110	1674	23537
Back River	120	4085	52092
Back River	125	1296	16531
Back River	130	921	7574
Back River	135	2273	18732
Back River	140	2508	41853
Back River	150	3720	49594
Back River	160	1637	31429
Back River	170	822	11454
Back River	180	789	17607
Back River	190	599	14111
Back River	200	999	20549
Back River	210	232	16836
Back River	220	334	12116
Back River	230	686	14255
Back River	240	628	15711
Back River	250	315	29569
Back River	260	1114	26132
Back River	270	5	869
Back River	280	435	15032
Back River	290	95	13855
Back River	300	19	2732
Back River	310	225	15308
Back River	320	970	75440
Back River	330	1173	21126
Back River	340	979	10893

Table 3.8.2-1-Jones Falls Watershed Segment Slopes

Watershed	Segment	Area (acres)	Slope (1/100 ft)
Jones Falls	350	3378	2.29
Jones Falls	360	3637	5.30
Jones Falls	370	2511	3.22
Jones Falls	380	3586	2.39
Jones Falls	390	651	6.22
Jones Falls	410	3169	8.31
Jones Falls	420	1397	5.69
Jones Falls	430	1274	4.03
Jones Falls	440	1734	4.89
Jones Falls	450	3822	3.71
Jones Falls	460	4802	4.20
Jones Falls	470	4545	4.35
Jones Falls	480	1758	4.21
Jones Falls	490	1437	4.38

Table 3.8.2-2-Jones Falls Watershed Segment Slopes

Watershed	Segment	Area (acres)	Slope (1/100 ft)
GwynnsFalls	930	8684	3.38
GwynnsFalls	940	10831	3.23
GwynnsFalls	950	9428	3.08
GwynnsFalls	960	11385	3.38

Table 3.8.2-3-Patapsco River Watershed Segment Slopes

Watershed	Segment	Area (acres)	Slope (1/100 ft)
Patapsco River	100	2251	5.62
Patapsco River	110	5953	6.61
Patapsco River	120	4827	6.00
Patapsco River	130	4929	5.29
Patapsco River	140	2288	6.38
Patapsco River	150	8898	5.65
Patapsco River	160	1443	3.97
Patapsco River	170	5142	4.29
Patapsco River	180	3798	4.42
Patapsco River	190	4245	4.91
Patapsco River	200	3088	4.13
Patapsco River	210	8074	4.07
Patapsco River	530	8601	2.87
Patapsco River	540	393	3.30
Patapsco River	550	1629	3.11
Patapsco River	560	8970	4.91
Patapsco River	570	2223	4.42
Patapsco River	580	1094	2.87
Patapsco River	590	1184	5.28
Patapsco River	600	8863	5.41
Patapsco River	610	505	4.28
Patapsco River	620	913	4.20
Patapsco River	630	1086	3.66
Patapsco River	640	988	4.87
Patapsco River	650	7666	5.63
Patapsco River	660	3550	4.37
Patapsco River	670	2716	5.13
Patapsco River	680	1330	4.06
Patapsco River	690	2161	4.27
Patapsco River	700	2115	6.83
Patapsco River	710	1642	6.32
Patapsco River	720	421	5.22
Patapsco River	730	6205	2.43
Patapsco River	740	2683	3.33
Patapsco River	750	5449	3.05
Patapsco River	760	3308	3.44

Table 3.8.2-4-Baltimore Harbor Watershed Segment Slopes

Watershed	Segment	Area (acres)	Slope (1/100 ft)
Baltimore Harbor	920	1302	1.79
Baltimore Harbor	910	575	0.55
Baltimore Harbor	900	23541	1.83
Baltimore Harbor	890	2034	1.73
Baltimore Harbor	880	7099	2.19
Baltimore Harbor	870	5911	1.72
Baltimore Harbor	860	728	0.45
Baltimore Harbor	850	466	0.79
Baltimore Harbor	840	2568	0.84
Baltimore Harbor	830	5922	0.75
Baltimore Harbor	820	4886	1.21
Baltimore Harbor	810	3267	1.75
Baltimore Harbor	800	884	1.42
Baltimore Harbor	790	2178	1.34
Baltimore Harbor	780	585	1.01
Baltimore Harbor	770	554	3.48

Table 3.8.2-5-Back River Watershed Segment Slopes

Watershed	Segment	Area (acres)	Slope (1/100 ft)
Back River	100	7091	2.86
Back River	110	1674	2.76
Back River	120	4085	2.91
Back River	125	1296	2.91
Back River	130	921	2.71
Back River	135	2273	2.71
Back River	140	2508	3.33
Back River	150	3720	3.43
Back River	160	1637	1.98
Back River	170	822	2.19
Back River	180	789	2.23
Back River	190	599	1.07
Back River	200	999	0.96
Back River	210	232	0.98
Back River	220	334	0.98
Back River	230	686	1.22
Back River	240	628	0.51
Back River	250	315	1.17
Back River	260	1114	0.62
Back River	270	5	3.22
Back River	280	435	0.52
Back River	290	95	0.78
Back River	300	19	0.37
Back River	310	225	1.01
Back River	320	970	0.90
Back River	330	1173	1.78
Back River	340	979	1.76

Appendix H
Model Hydrology Calibration Results

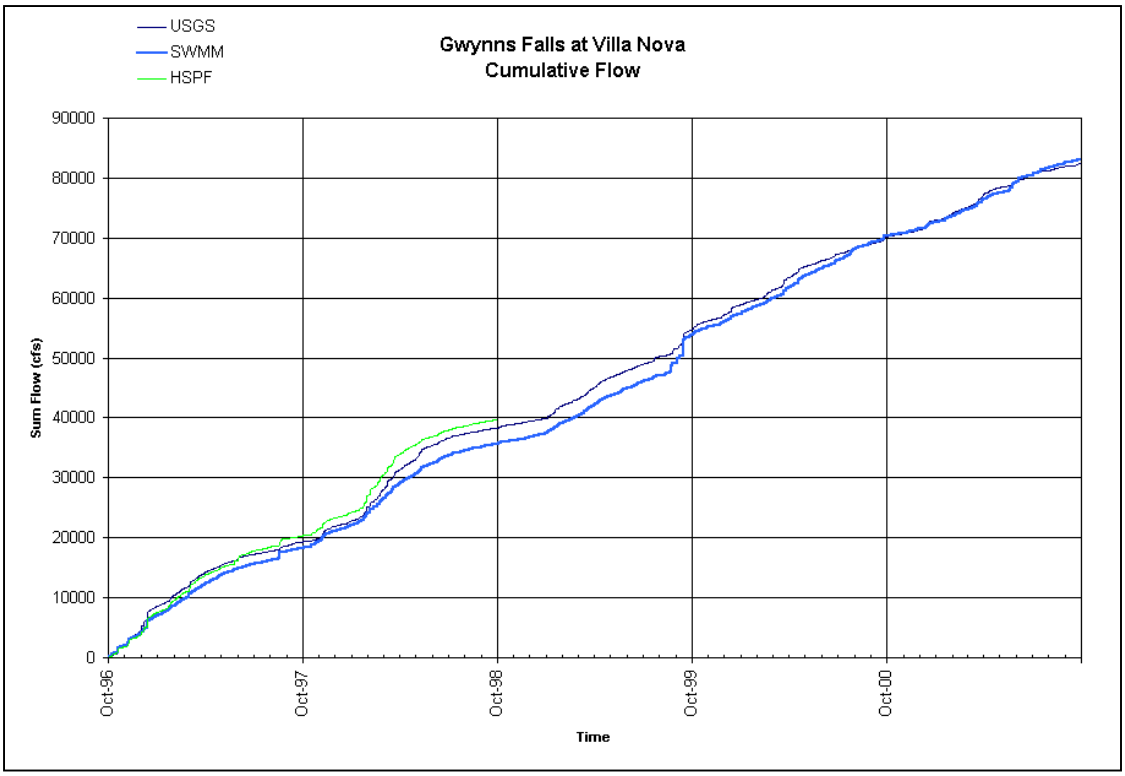

Figure 4.2.2-1: Gwynns Falls Cumulative Flow (Villa Nova USGS Flow Gauge)

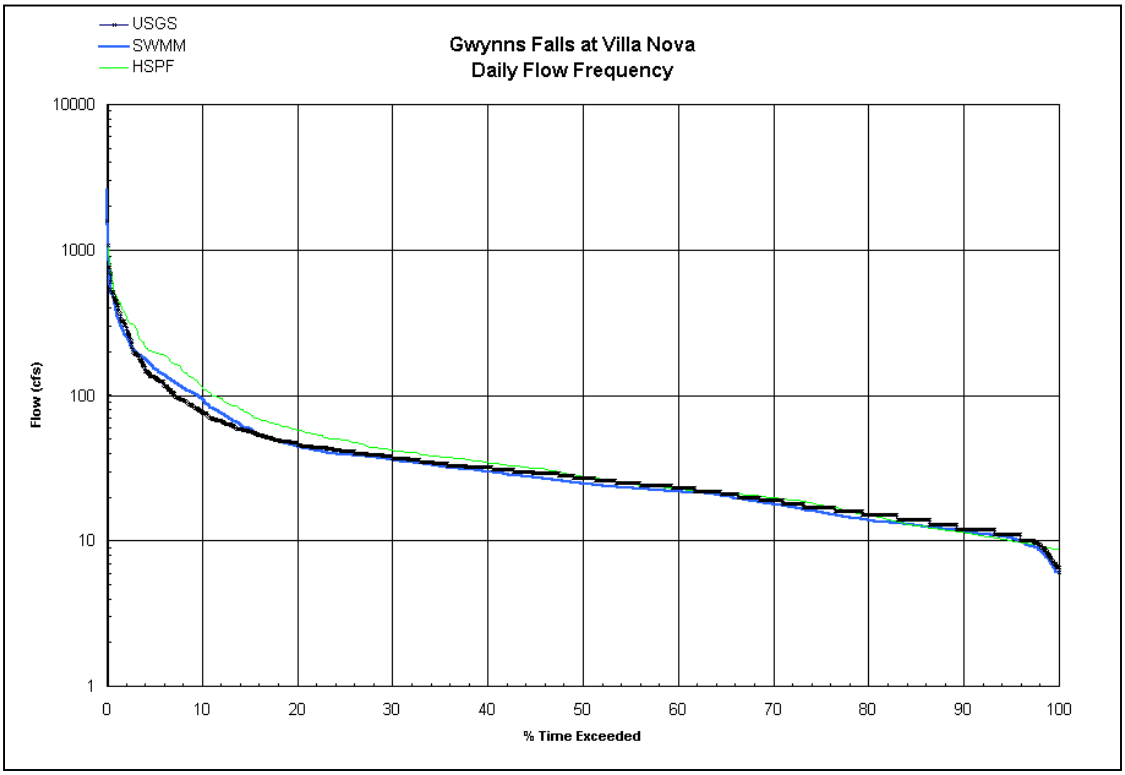

Figure 4.2.2-2: Gwynns Falls Daily Flow Frequency (Villa Nova USGS Flow Gauge)

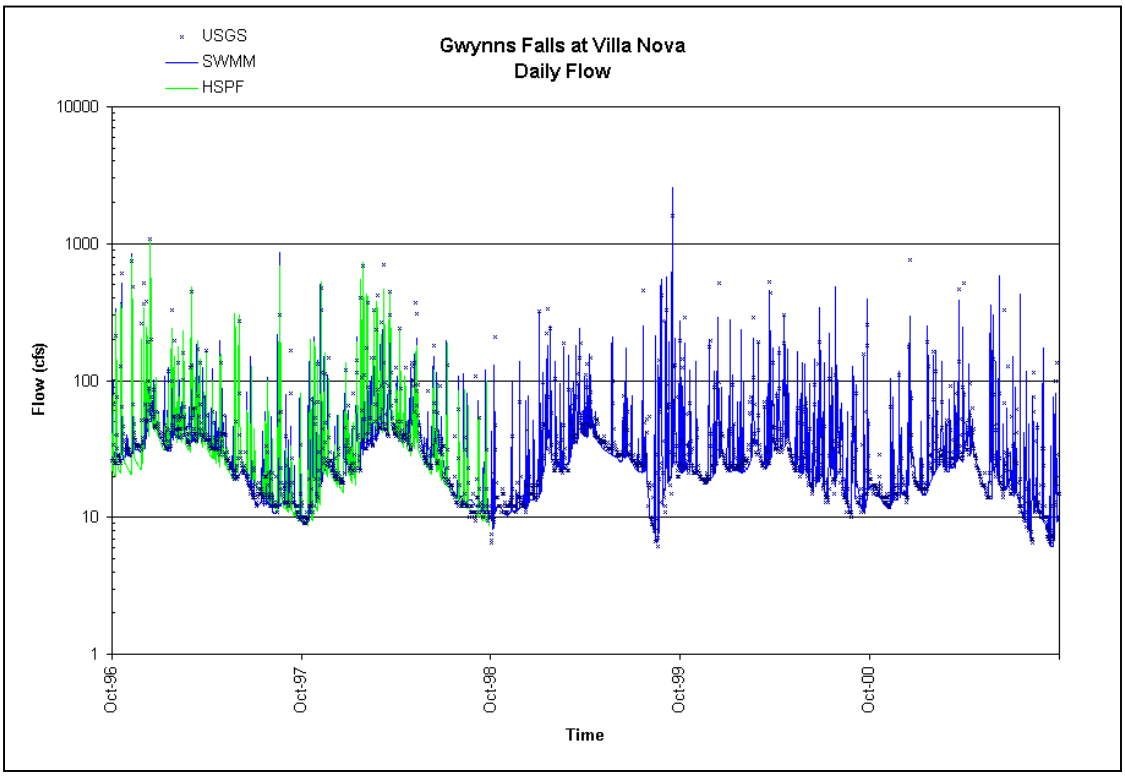

Figure 4.2.2-3: Gwynns Falls Daily Flow (Villa Nova USGS Flow Gauge)

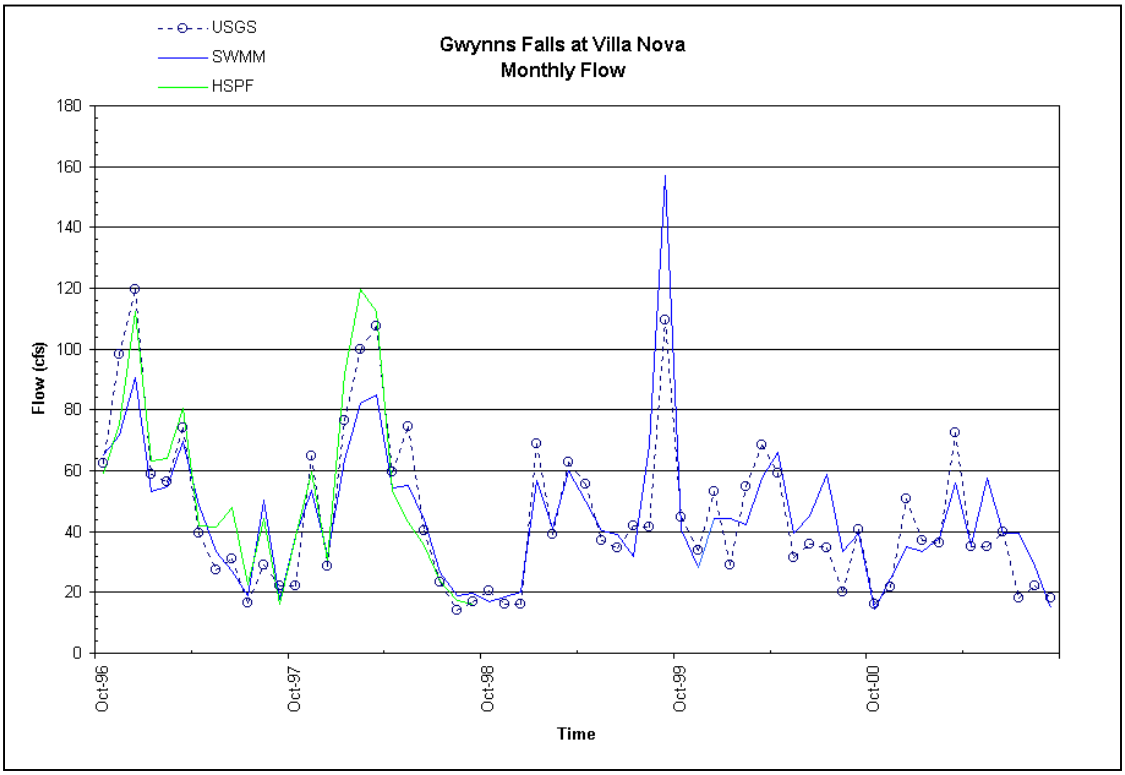

Figure 4.2.2-4: Gwynns Falls Monthly Flow Frequency (Villa Nova USGS Flow Gauge)

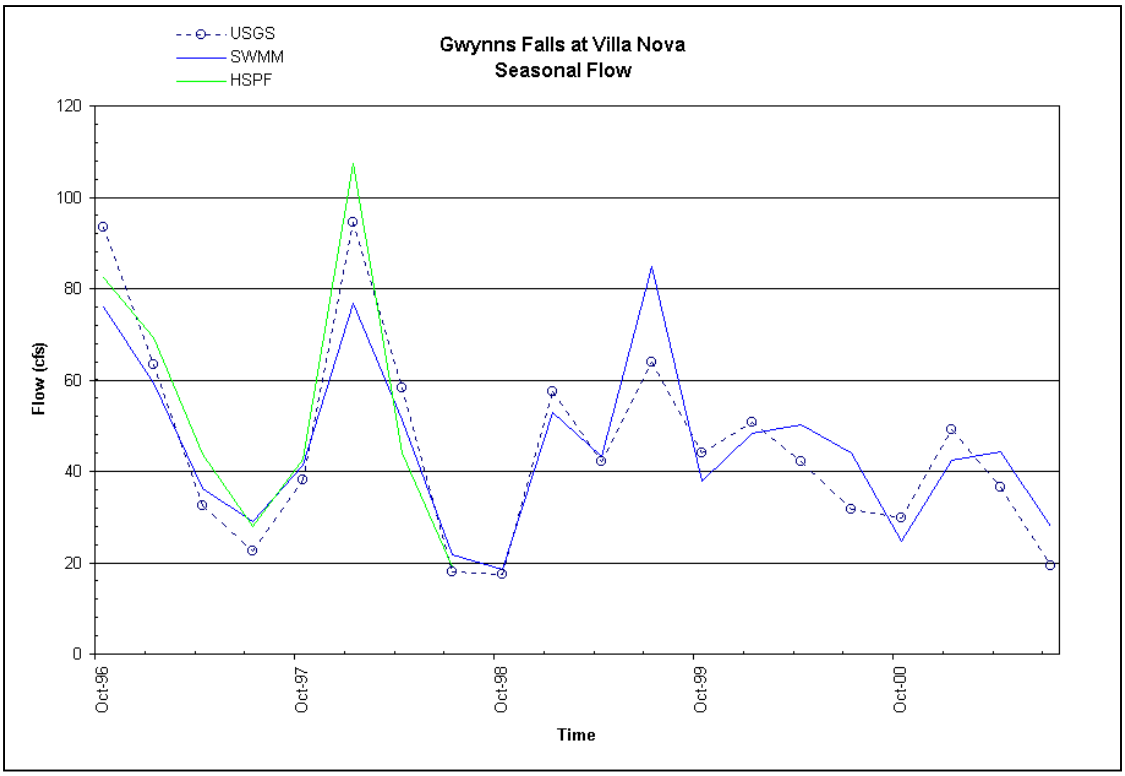

Figure 4.2.2-5: Gwynns Falls Daily Flow Frequency (Villa Nova USGS Flow Gauge)

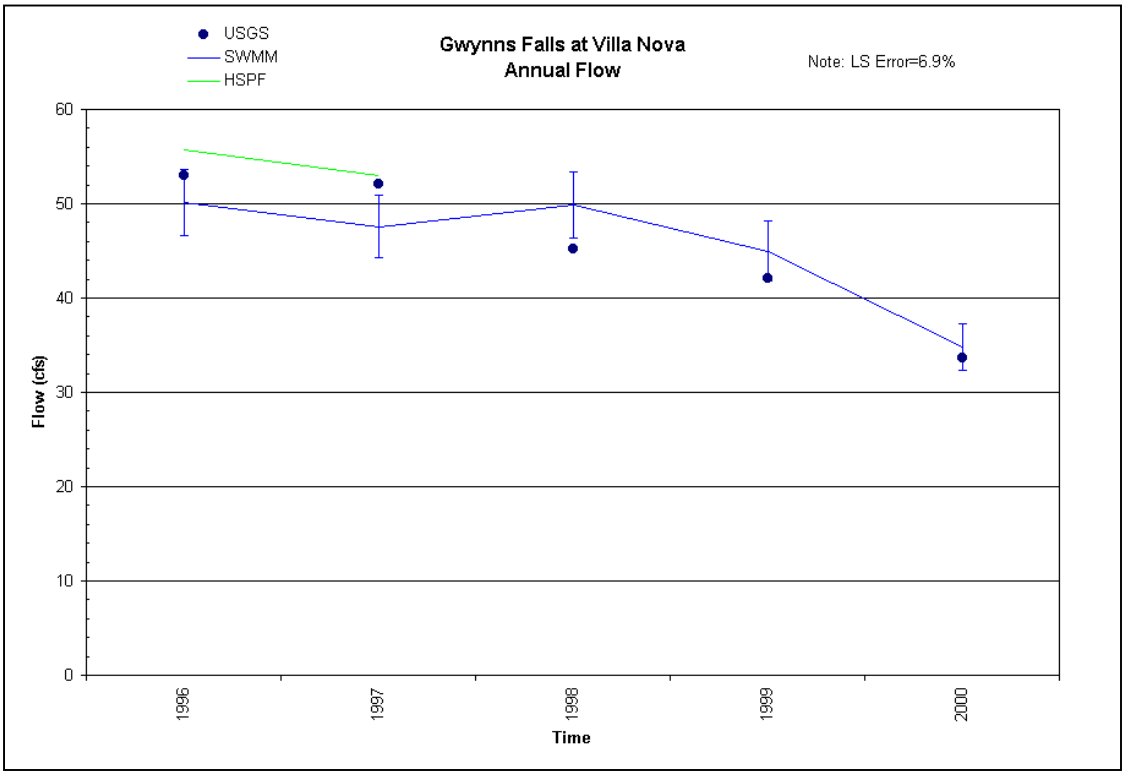

Figure 4.2.2-6: Gwynns Falls Annual Flow Frequency (Villa Nova USGS Flow Gauge)

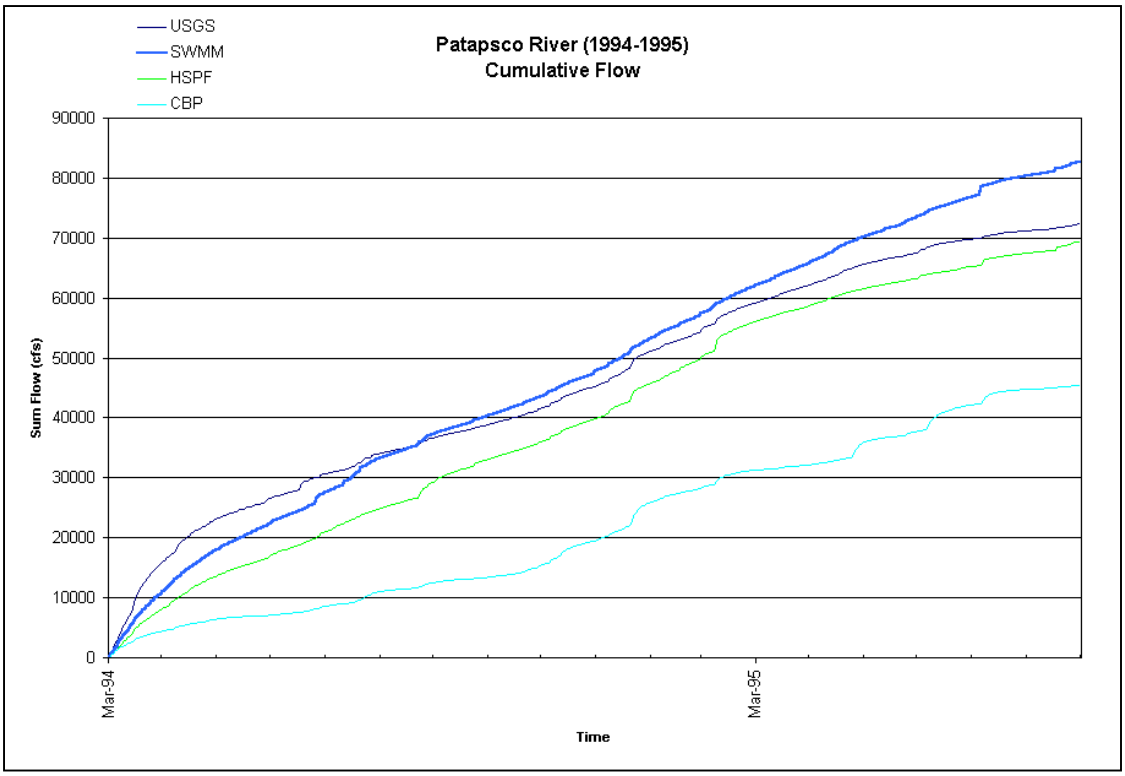

Figure 4.2.3-1: Patapsco River Cumulative Flow (Hollofield Flow Gauge, 94-95)

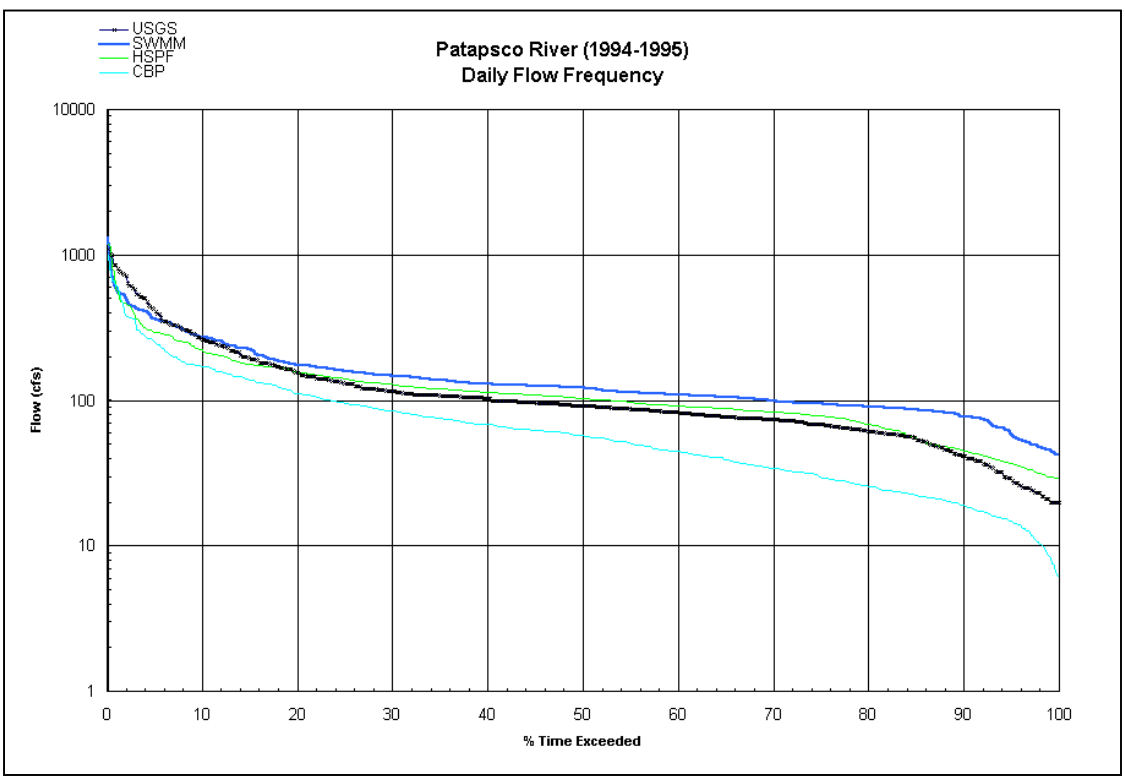

Figure 4.2.3-2: Patapsco River Daily Flow Frequncy (Hollofield Flow Gauge, 94-95)

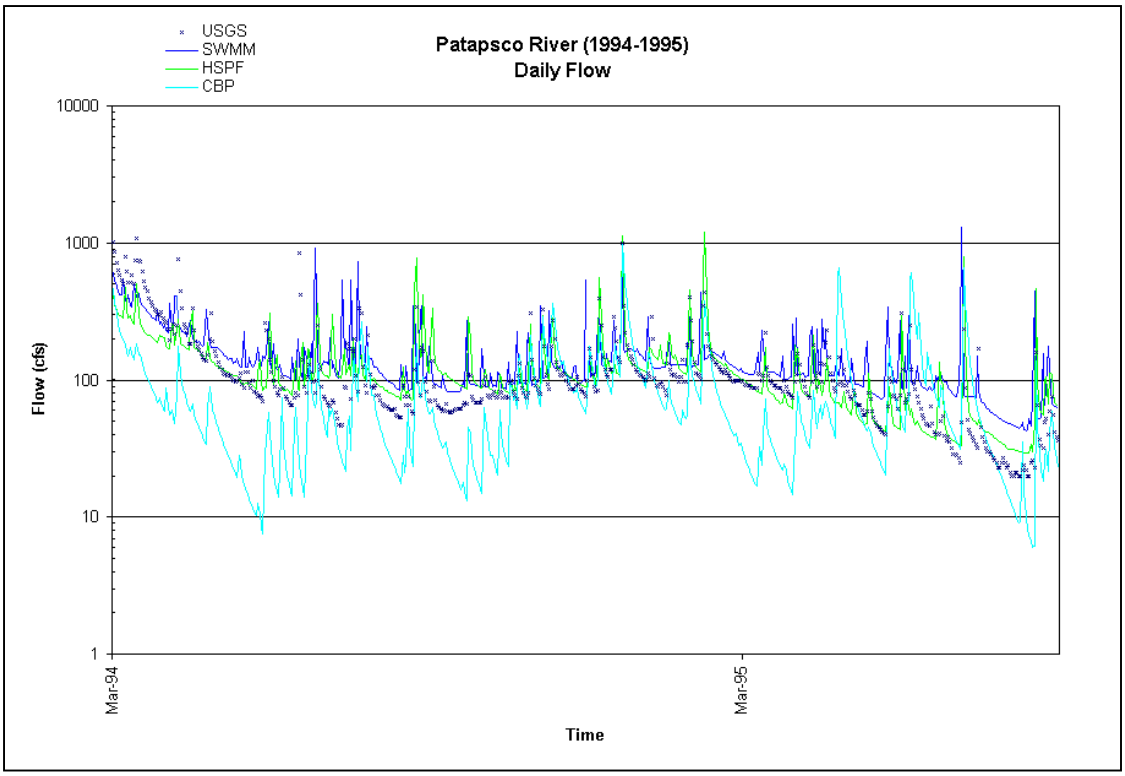

Figure 4.2.3-3: Patapsco River Daily Flow (Hollofield Flow Gauge, 94-95)

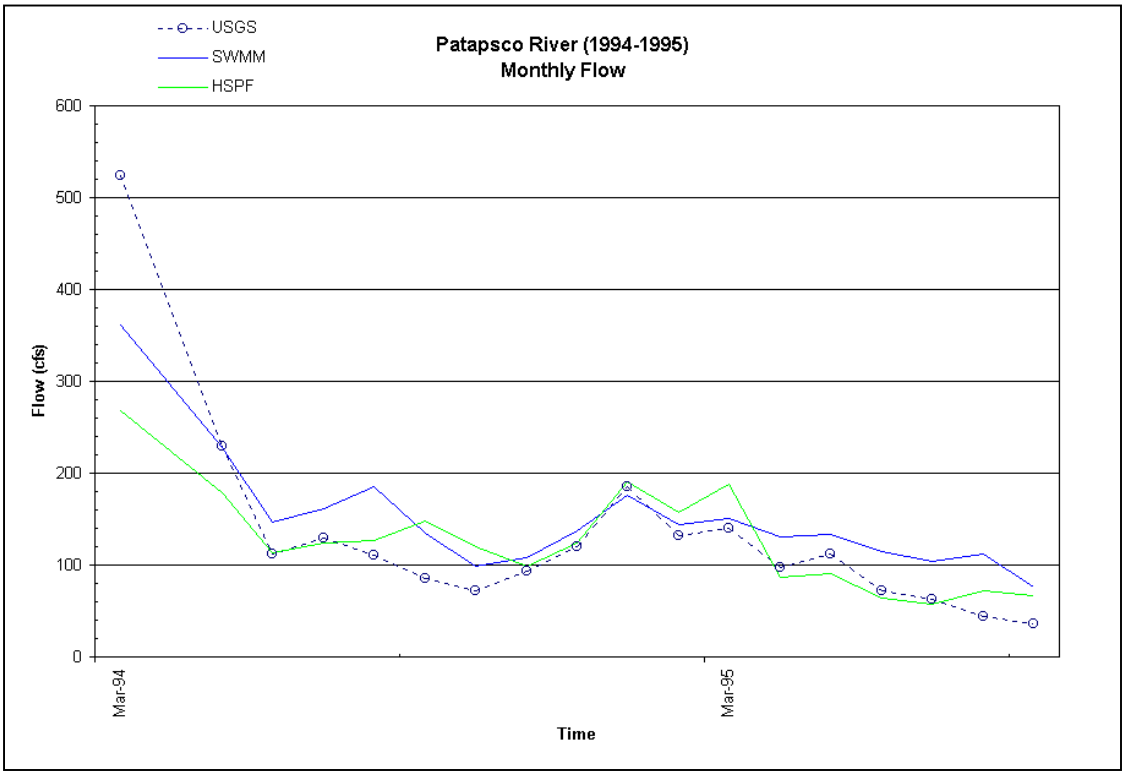

Figure 4.2.3-4: Patapsco River Monthly Flow (Hollofield Flow Gauge, 94-95)

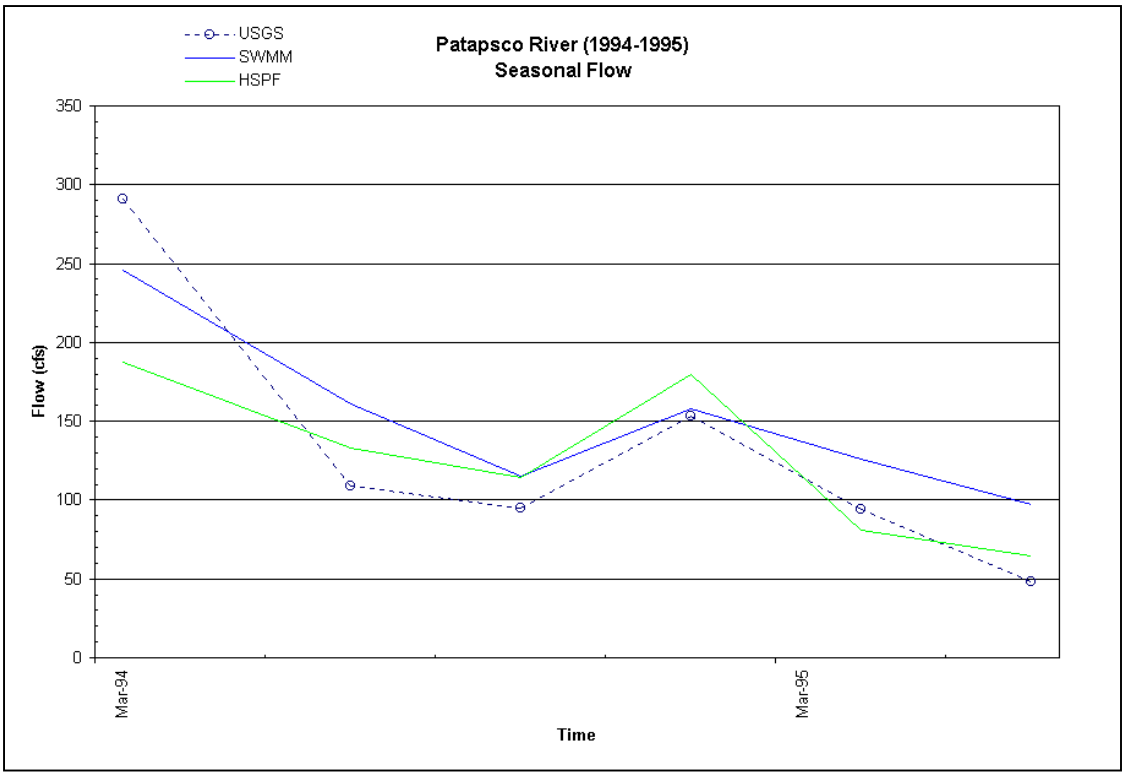

Figure 4.2.3-5: Patapsco River Seasonal Flow (Hollofield Flow Gauge, 94-95)

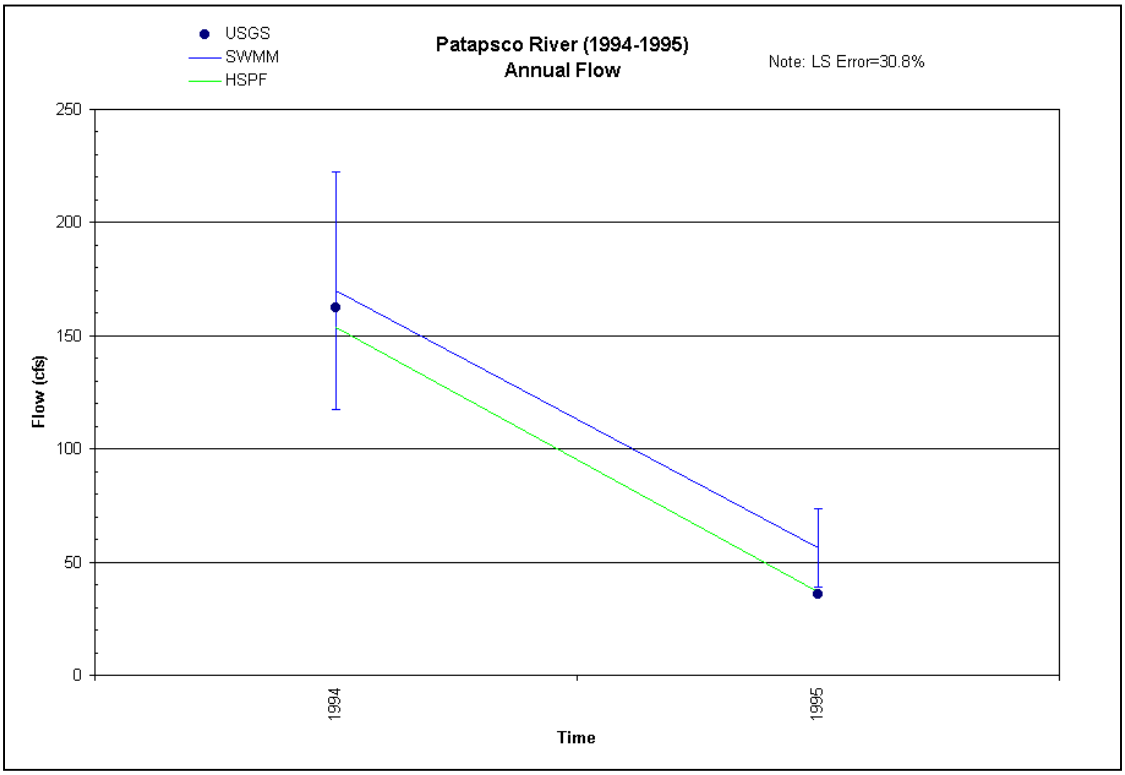

Figure 4.2.3-6: Patapsco River Annual Flow (Hollofield USGS Flow Gauge, 94-95)

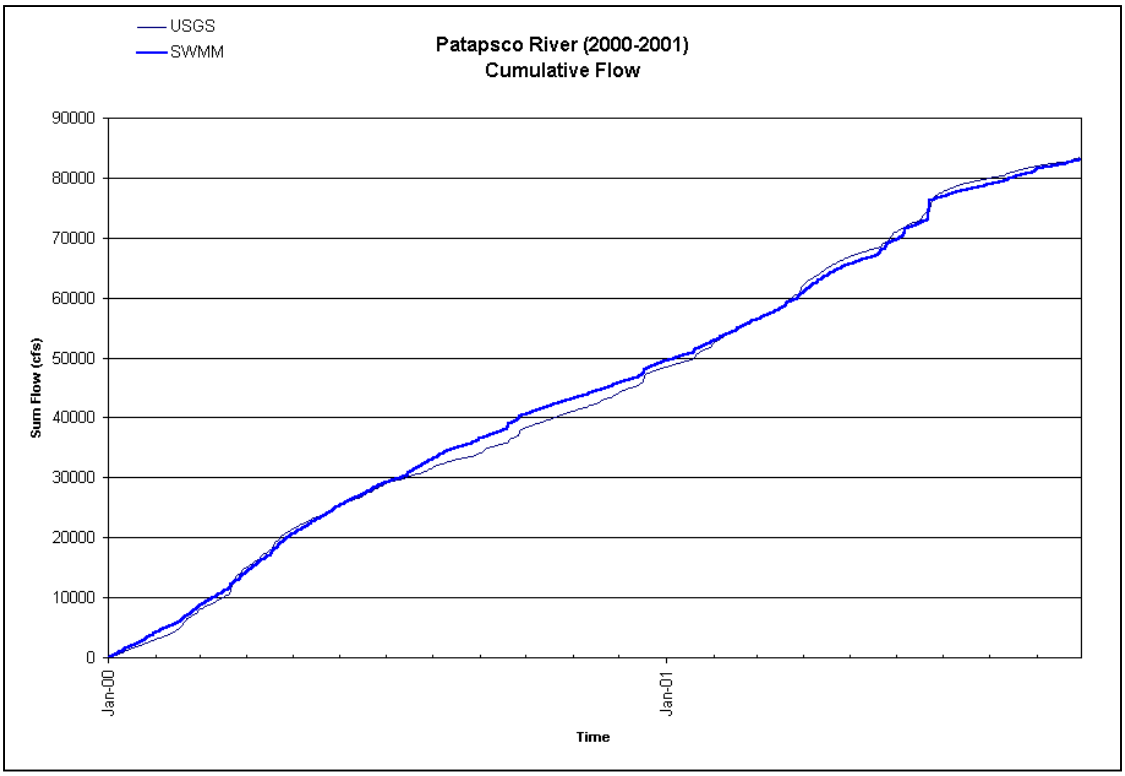

Figure 4.2.4-1: Patapsco River Cumulative Flow (Hollofield Flow Gauge, 00-01)

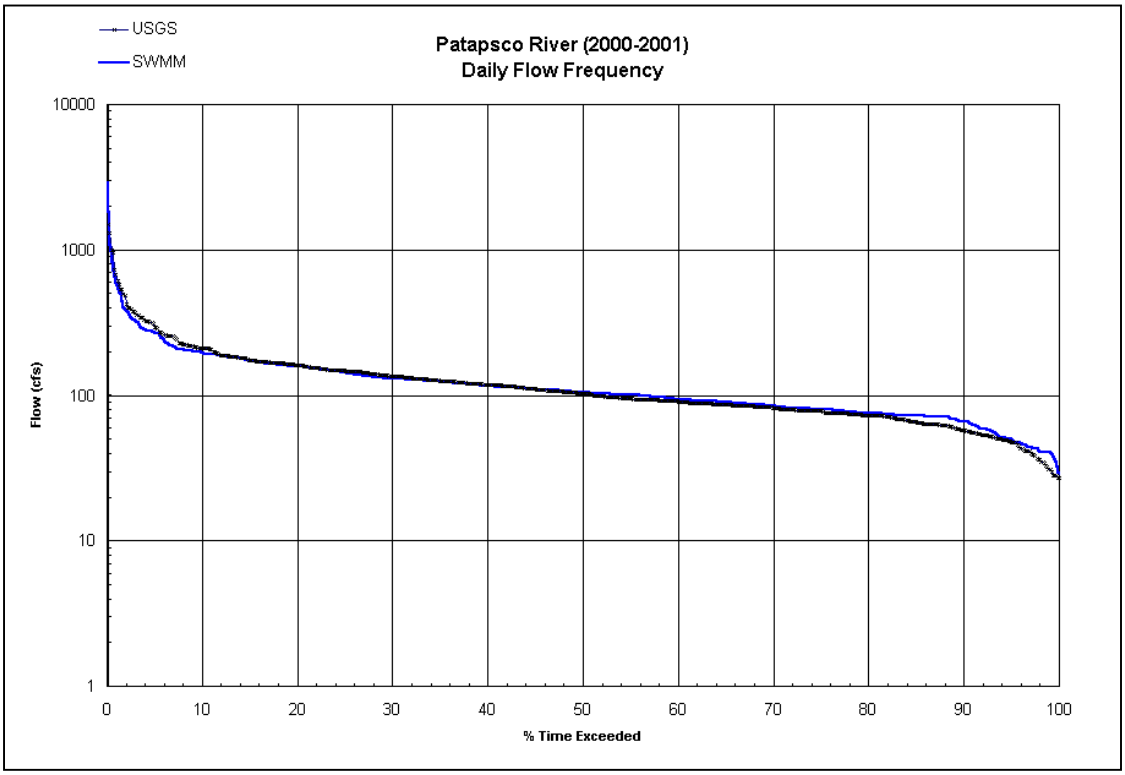

Figure 4.2.4-2: Patapsco River Daily Flow Frequency (Hollofield Flow Gauge, 00-01)

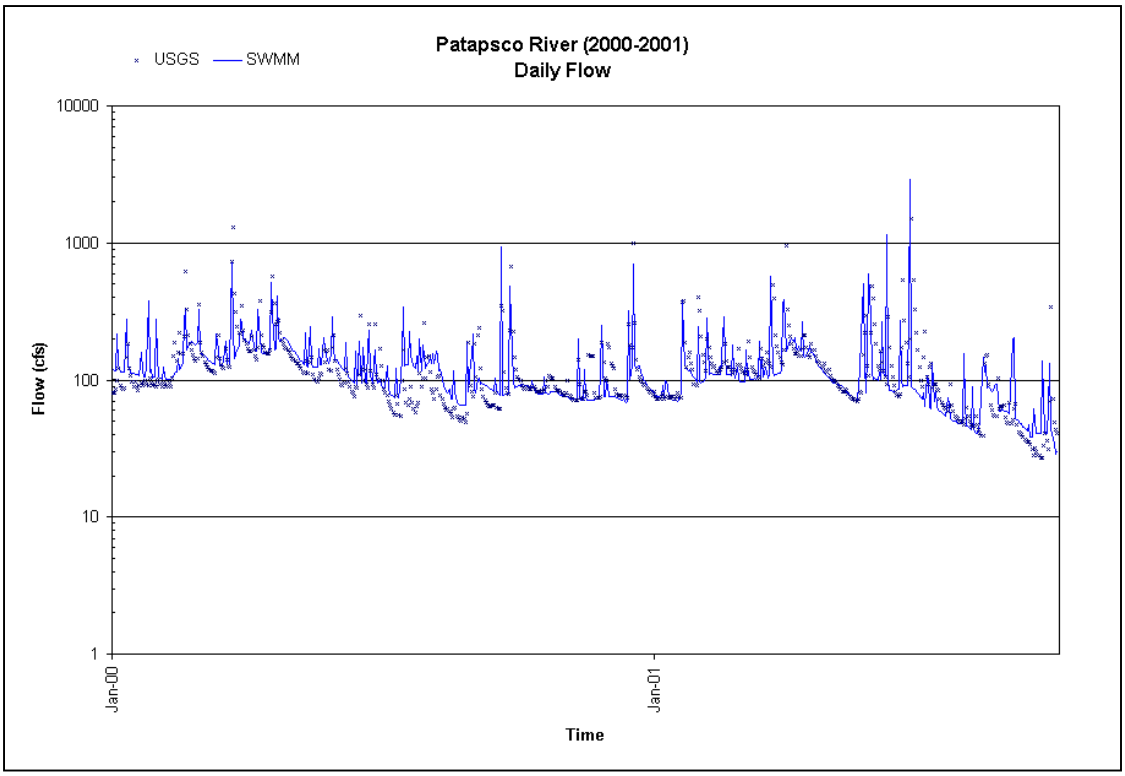

Figure 4.2.4-3: Patapsco River Daily Flow (Hollofield Flow Gauge, 00-01)

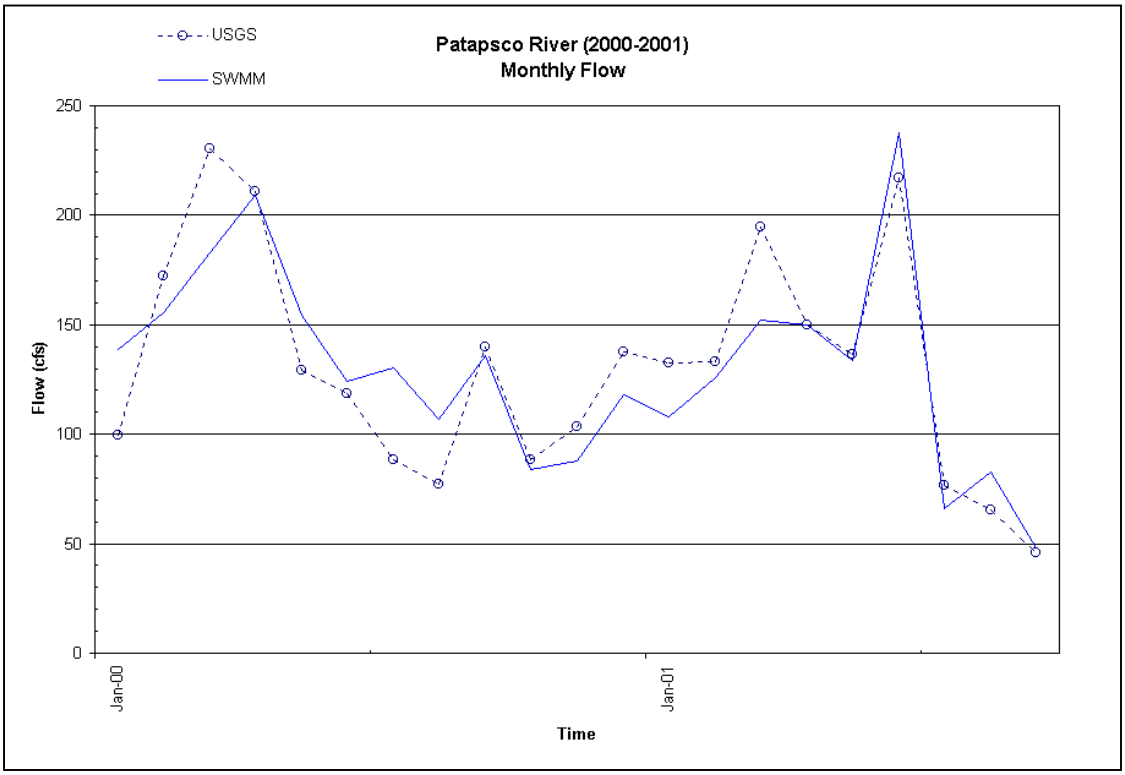

Figure 4.2.4-4: Patapsco River Monthly Flow (Hollofield Flow Gauge, 00-01)

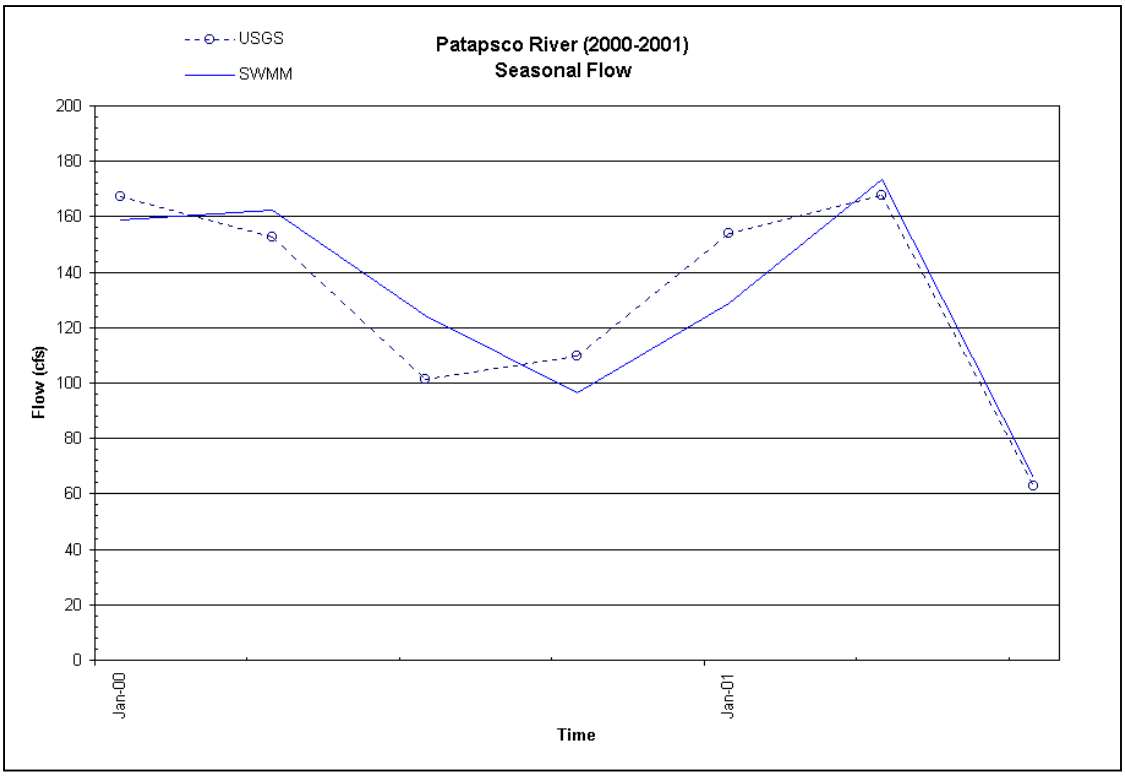

Figure 4.2.4-5: Patapsco River Seasonal Flow (Hollofield Flow Gauge, 00-01)

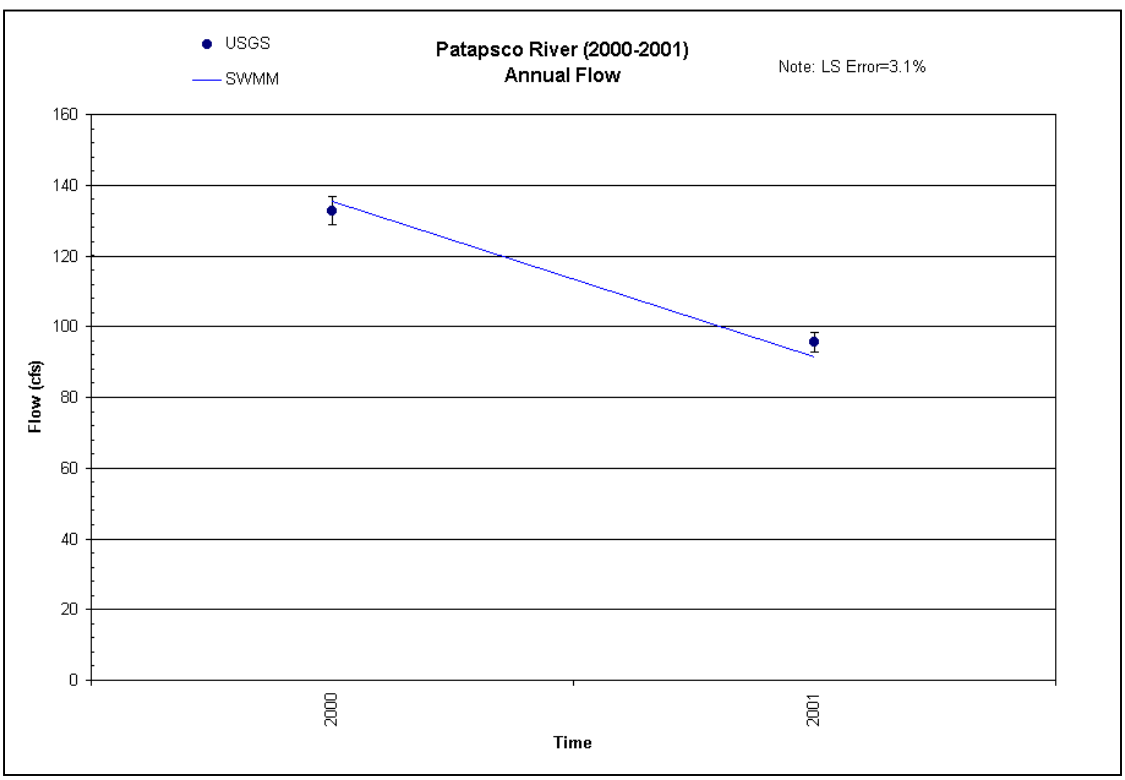

Figure 4.2.4-6: Patapsco River Annual Flow (Hollofield Flow Gauge, 00-01)

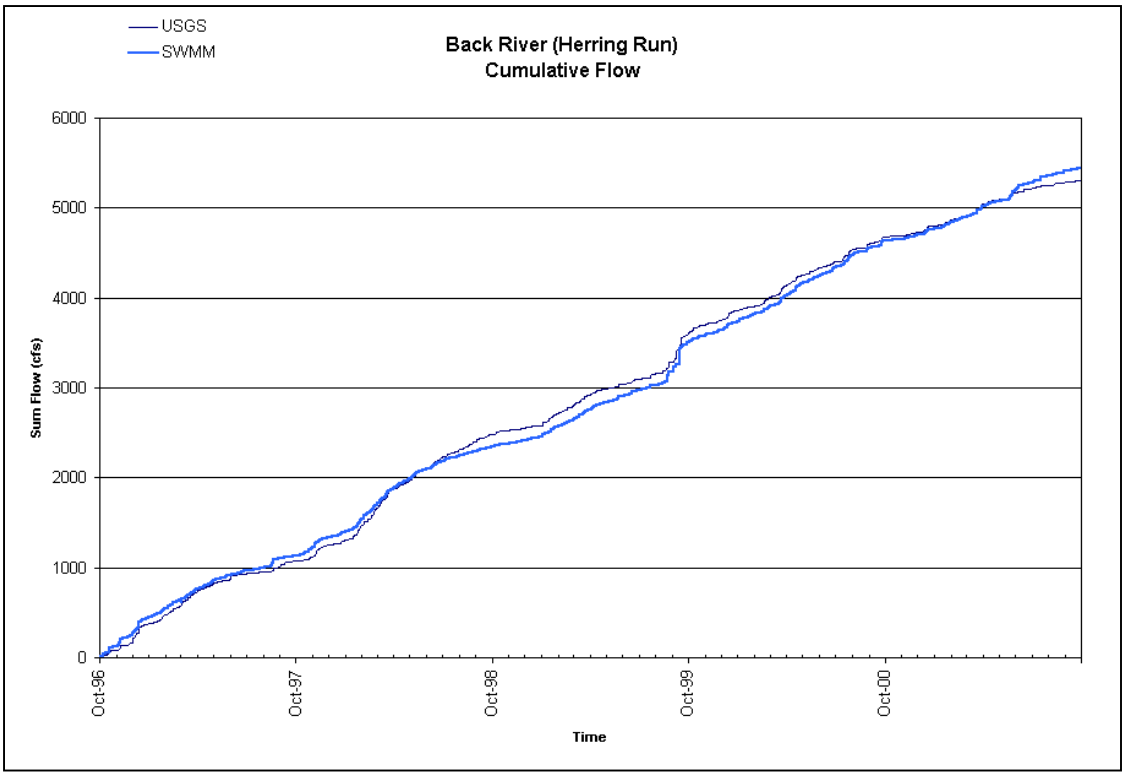

Figure 4.2.5-1: Back River Cumulative Flow (Herring Run USGS Flow Gauge)

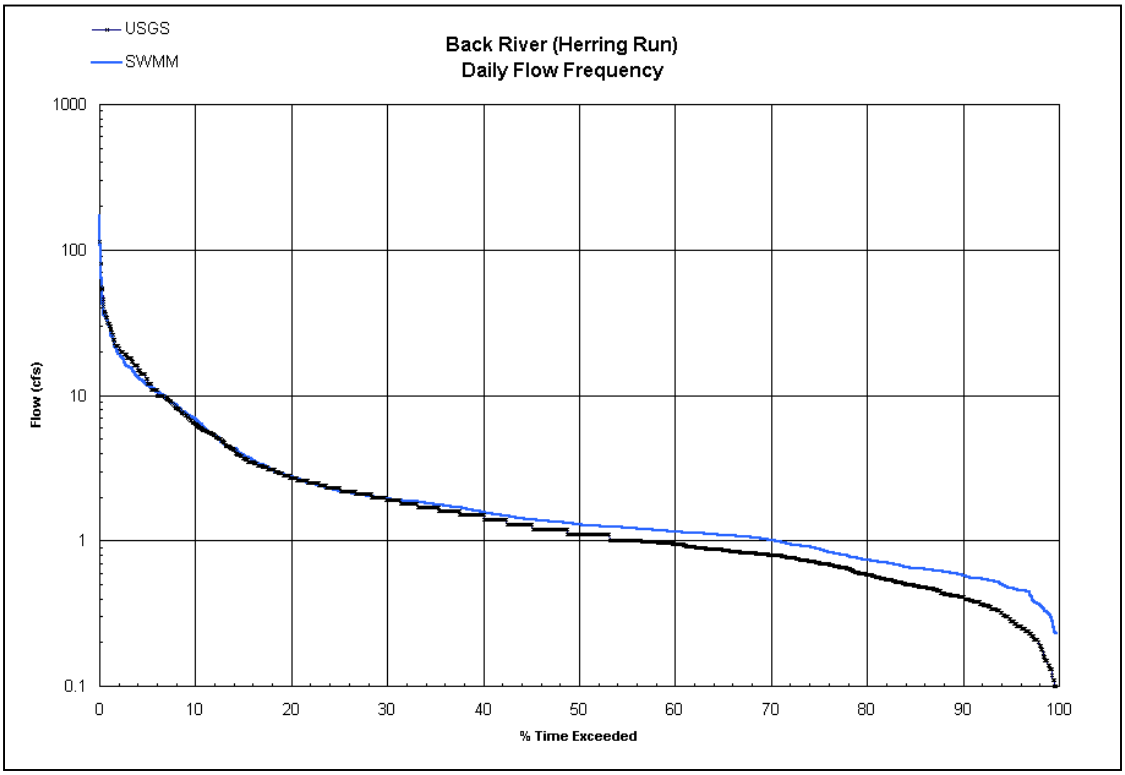

Figure 4.2.5-2: Back River Daily Flow Frequency (Herring Run USGS Flow Gauge)

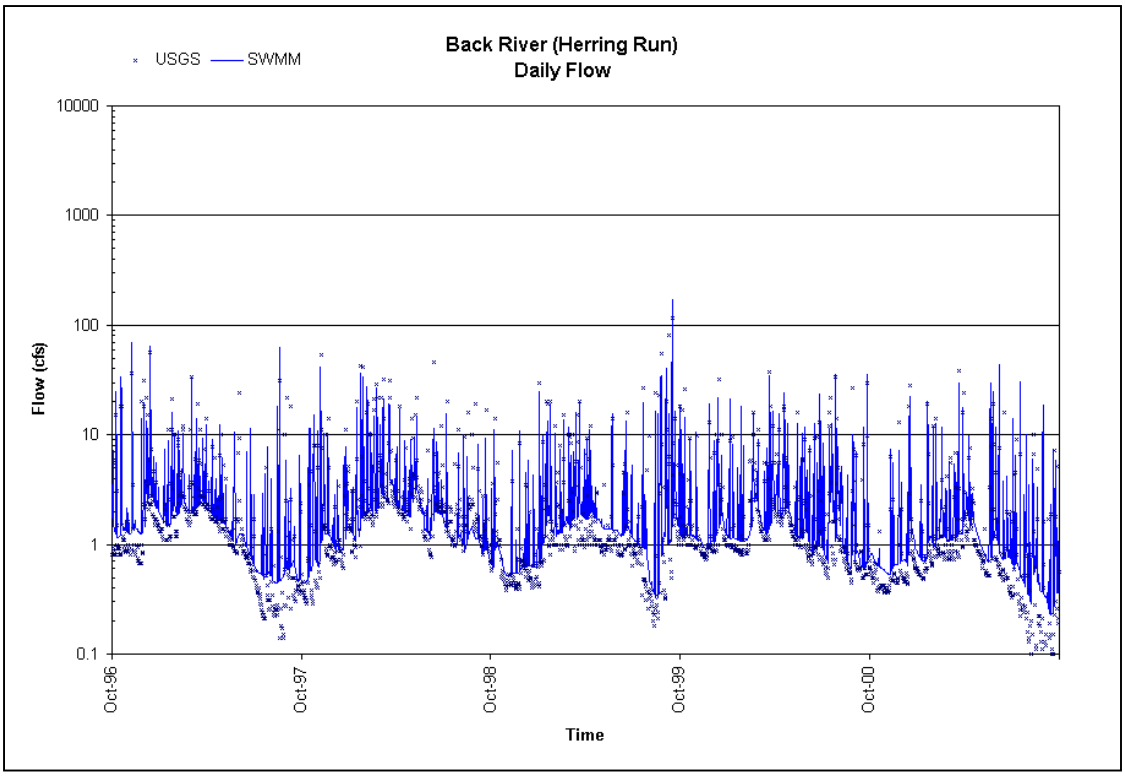

Figure 4.2.5-3: Back River Daily Flow (Herring Run USGS Flow Gauge)

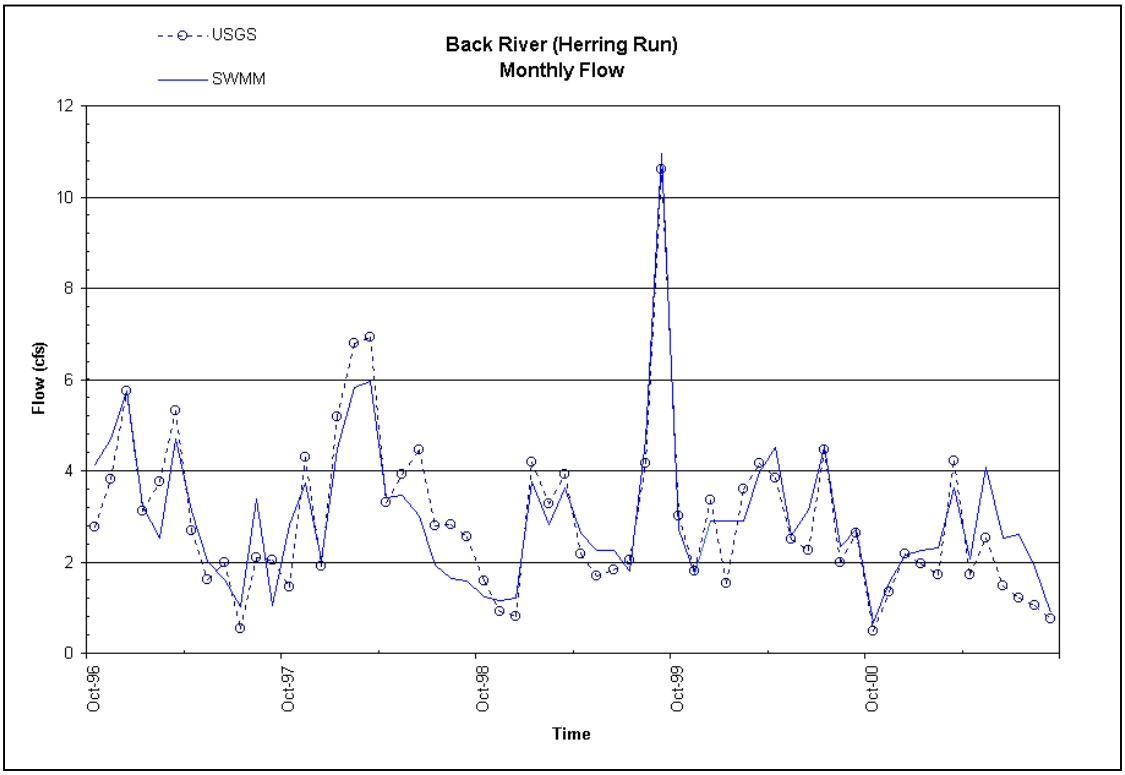

Figure 4.2.5-4: Back River Monthly Flow (Herring Run USGS Flow Gauge)

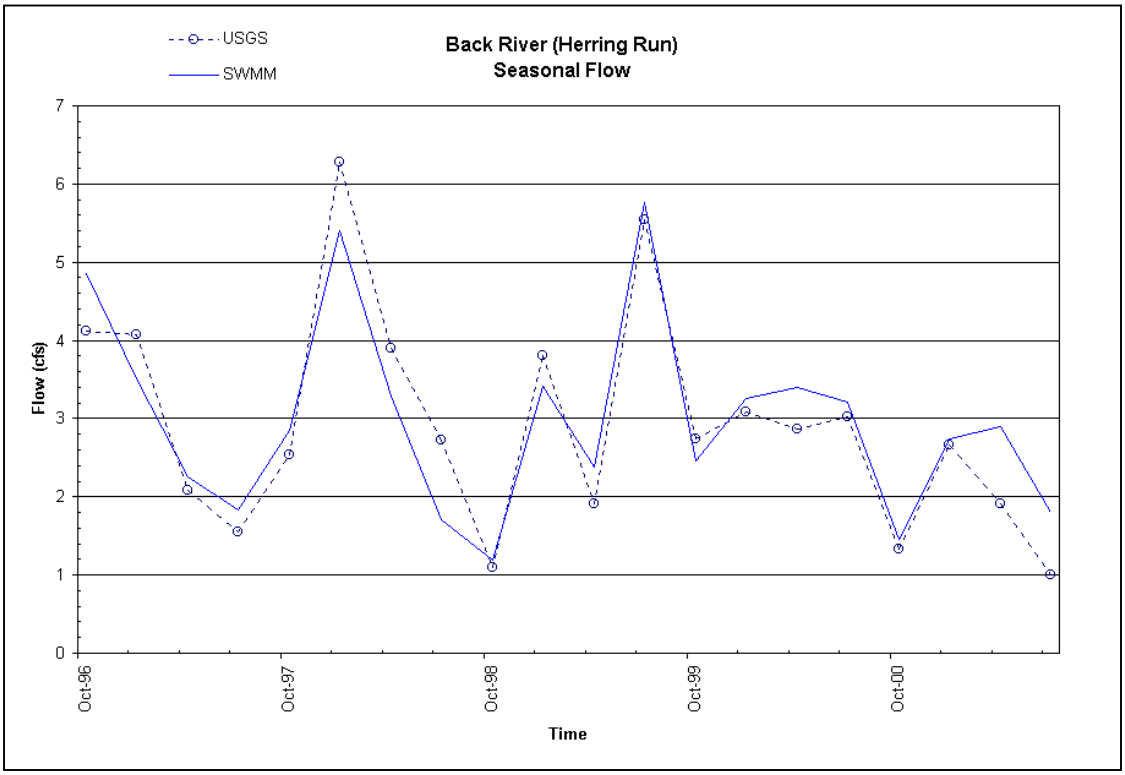

Figure 4.2.5-5: Back River Seasonal Flow (Herring Run USGS Flow Gauge)

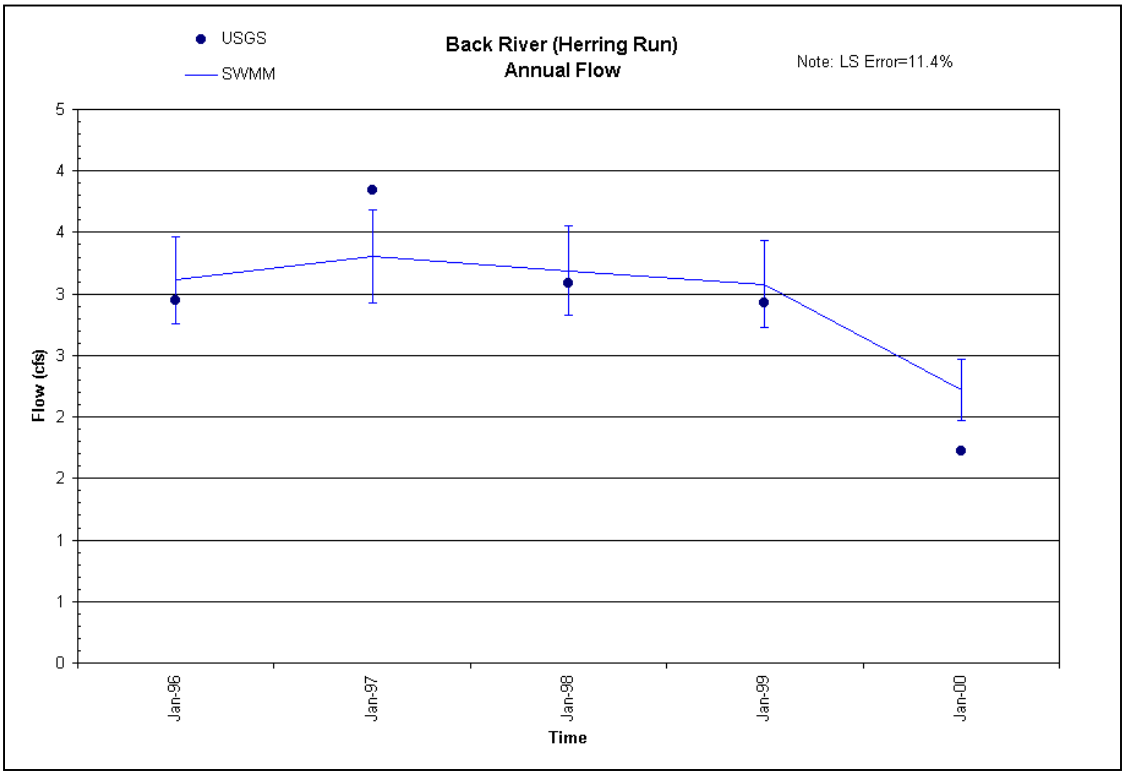

Figure 4.2.5-6: Back River Annual Flow (Herring Run USGS Flow Gauge)

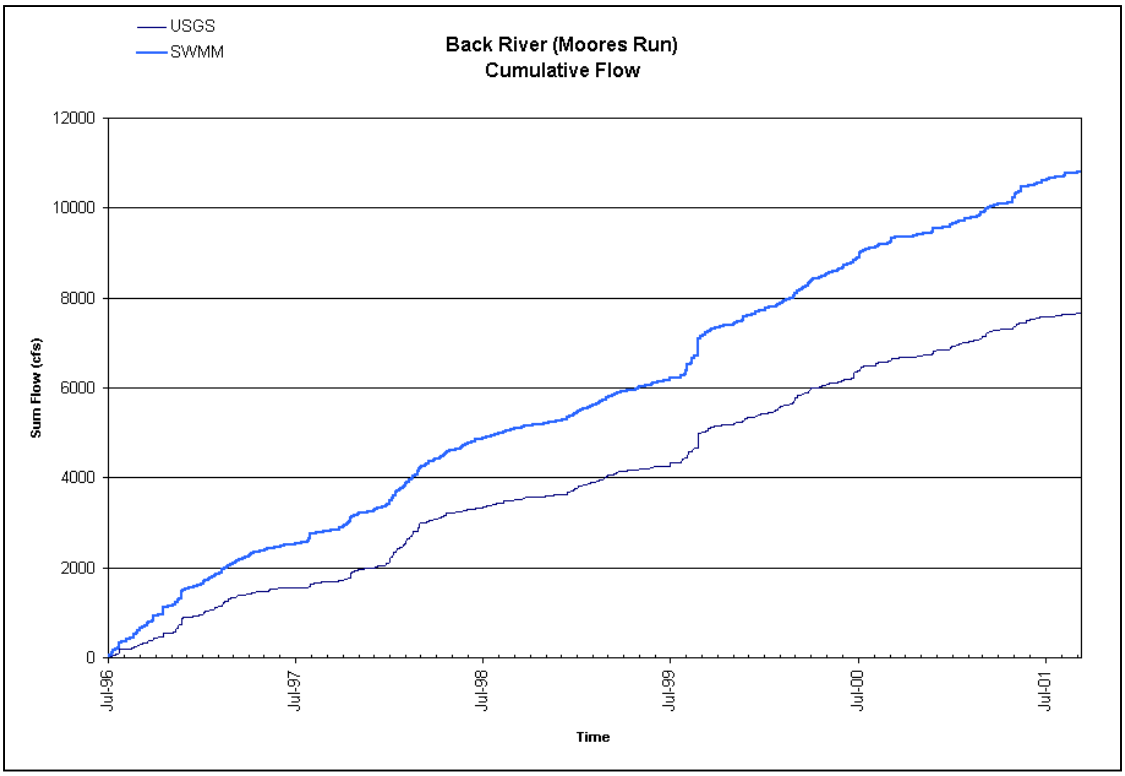

Figure 4.2.6-1: Back River Cumulative Flow (Moores Run USGS Flow Gauge)

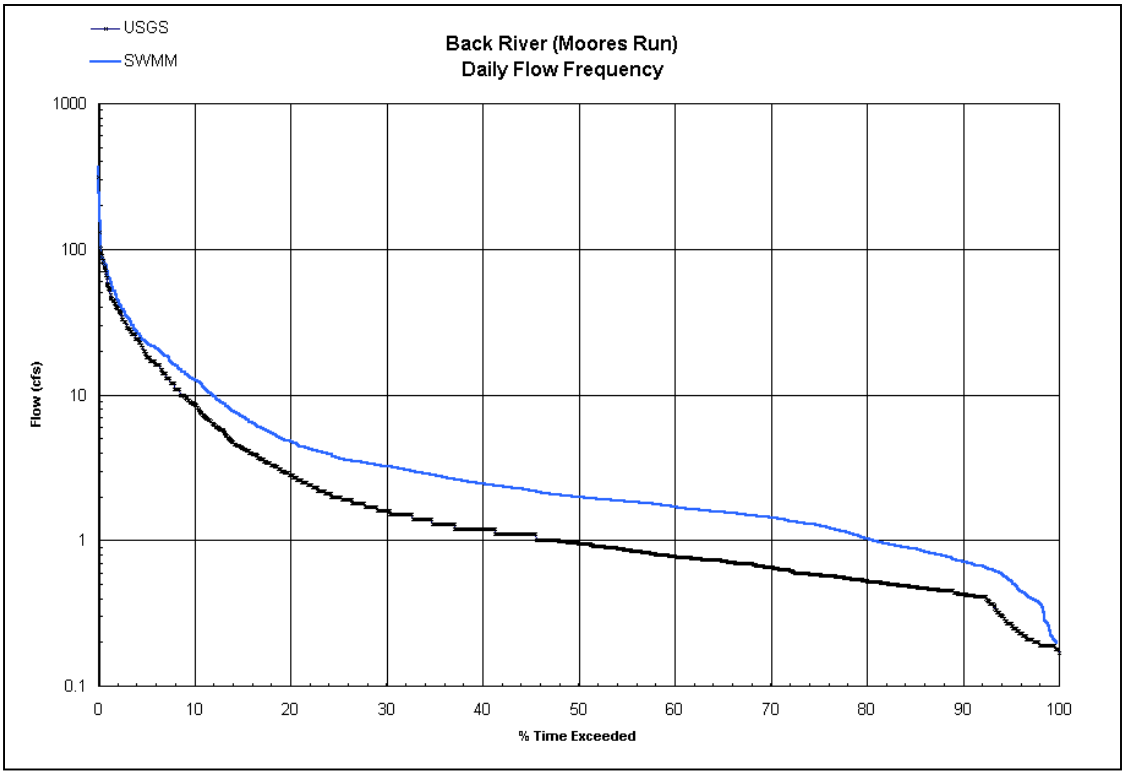

Figure 4.2.6-2: Back River Daily Flow Frequency (Moores Run USGS Flow Gauge)

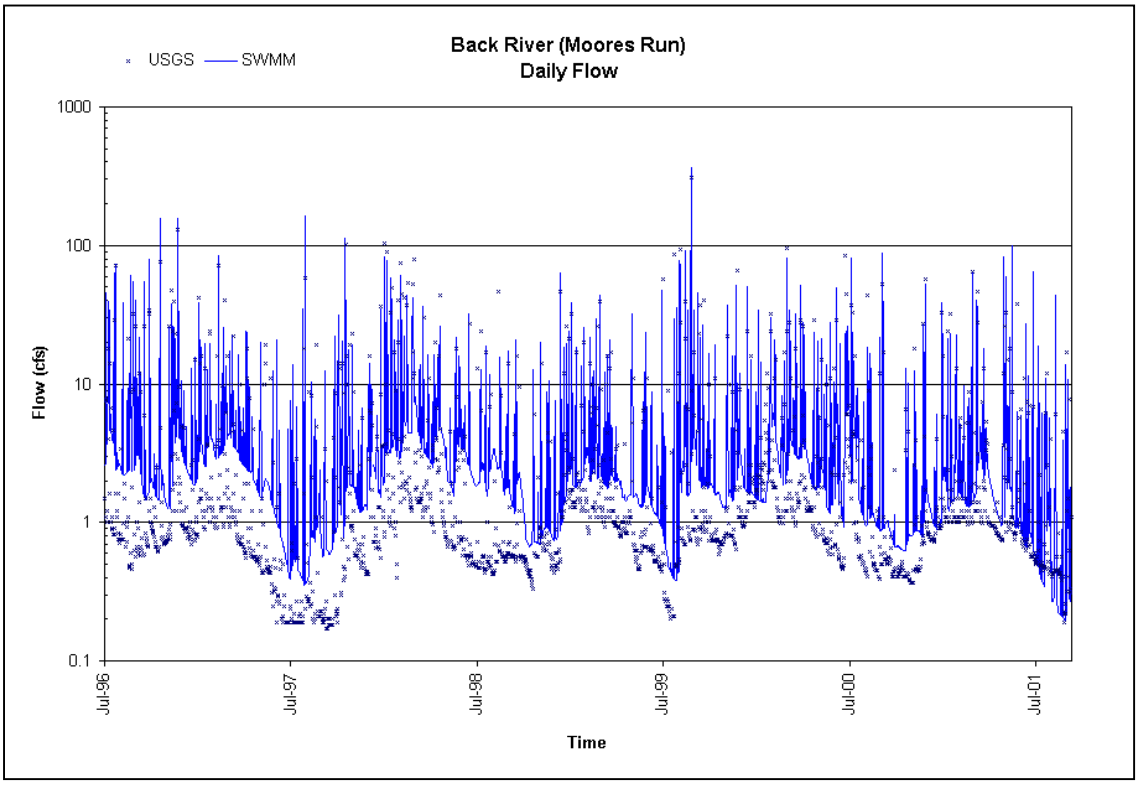

Figure 4.2.6-3: Back River Daily Flow (Moores Run USGS Flow Gauge)

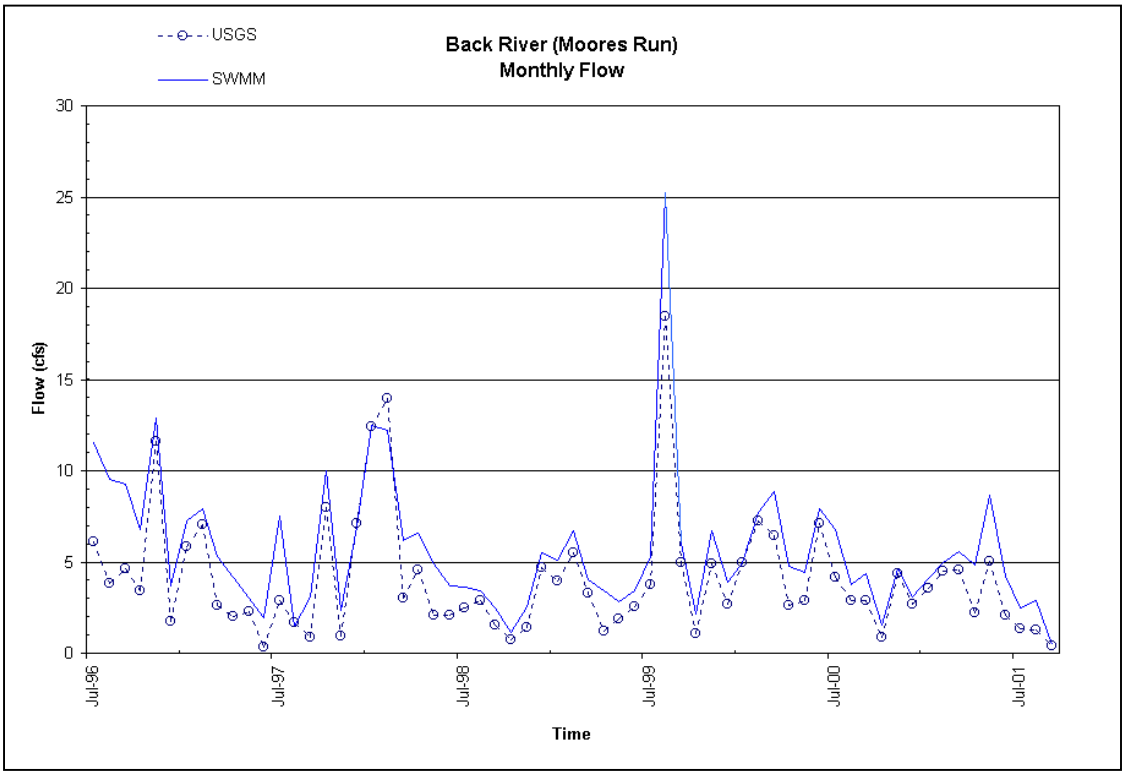

Figure 4.2.6-4: Back River Monthly Flow (Moores Run USGS Flow Gauge)

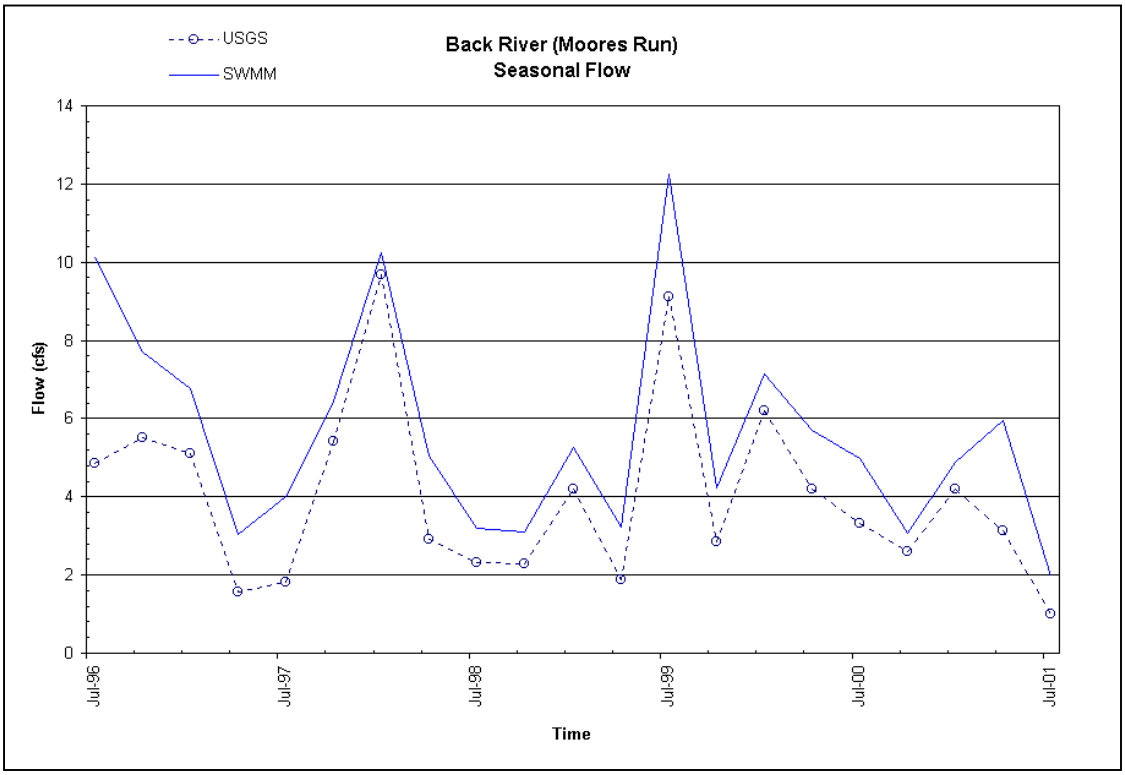

Figure 4.2.6-5: Back River Seasonal Flow (Moores Run USGS Flow Gauge)

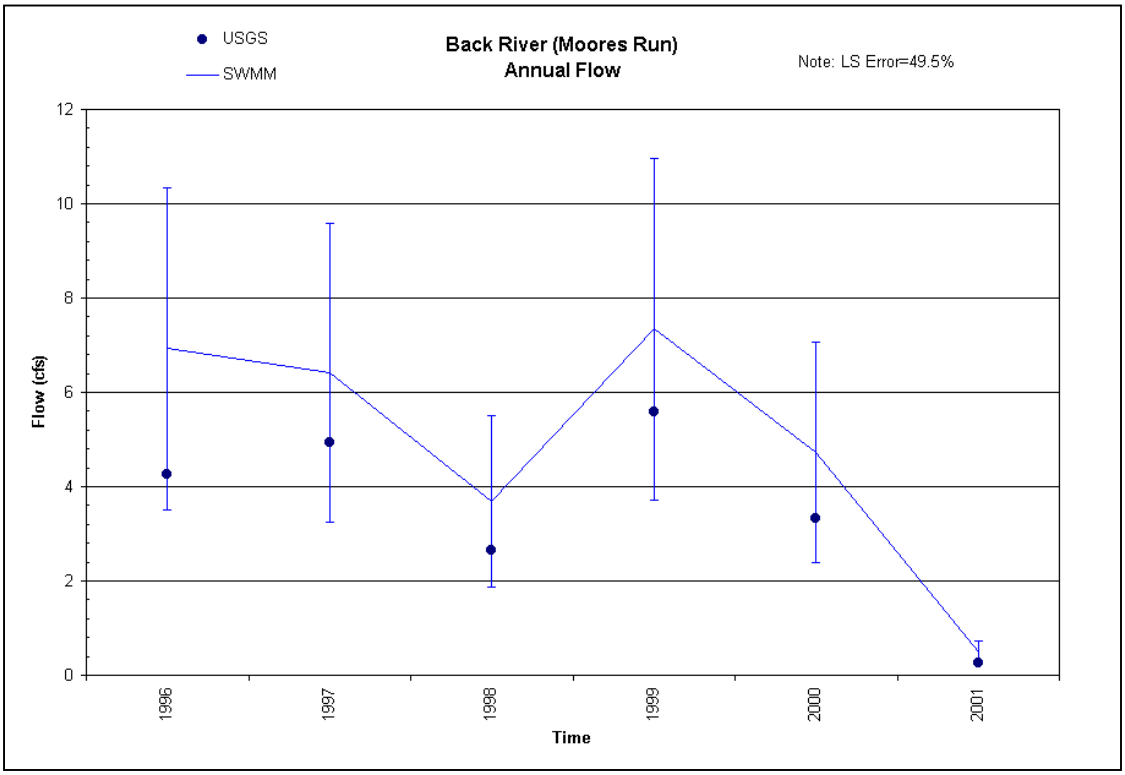

Figure 4.2.6-6: Back River Annual Flow (Moores Run USGS Flow Gauge)

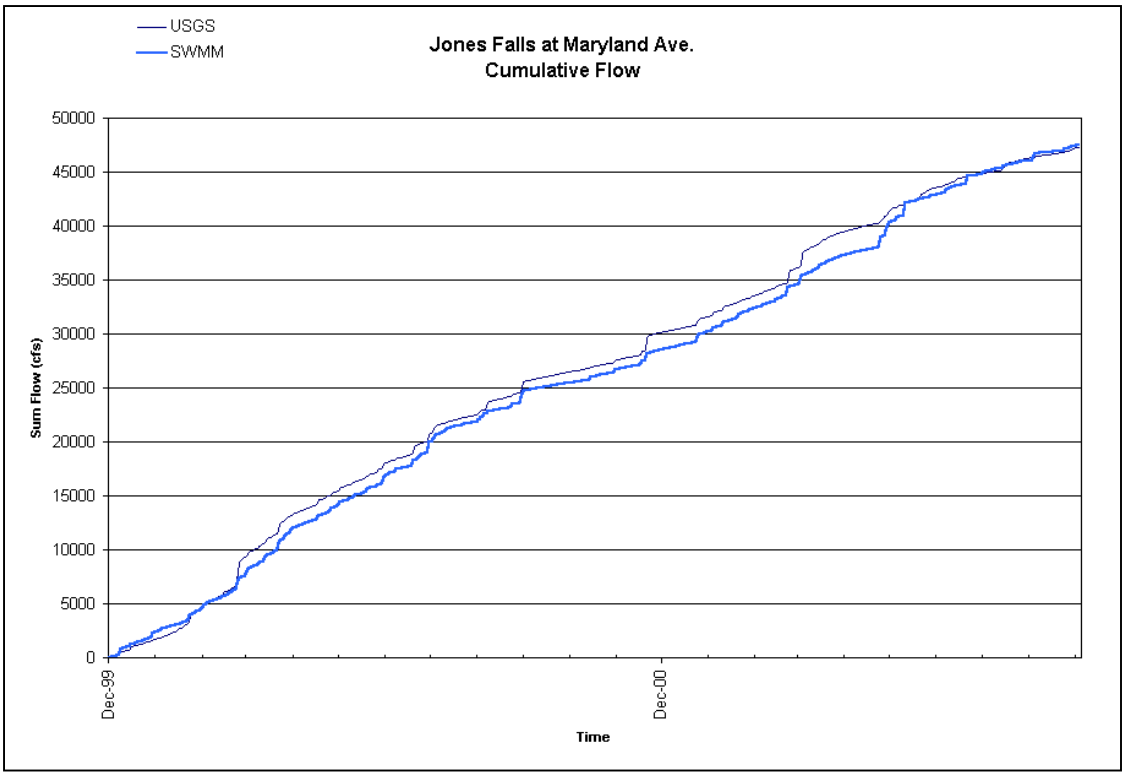

Figure 4.2.7-1: Jones Falls Cumulative Flow (Maryland Ave. USGS Flow Gauge)

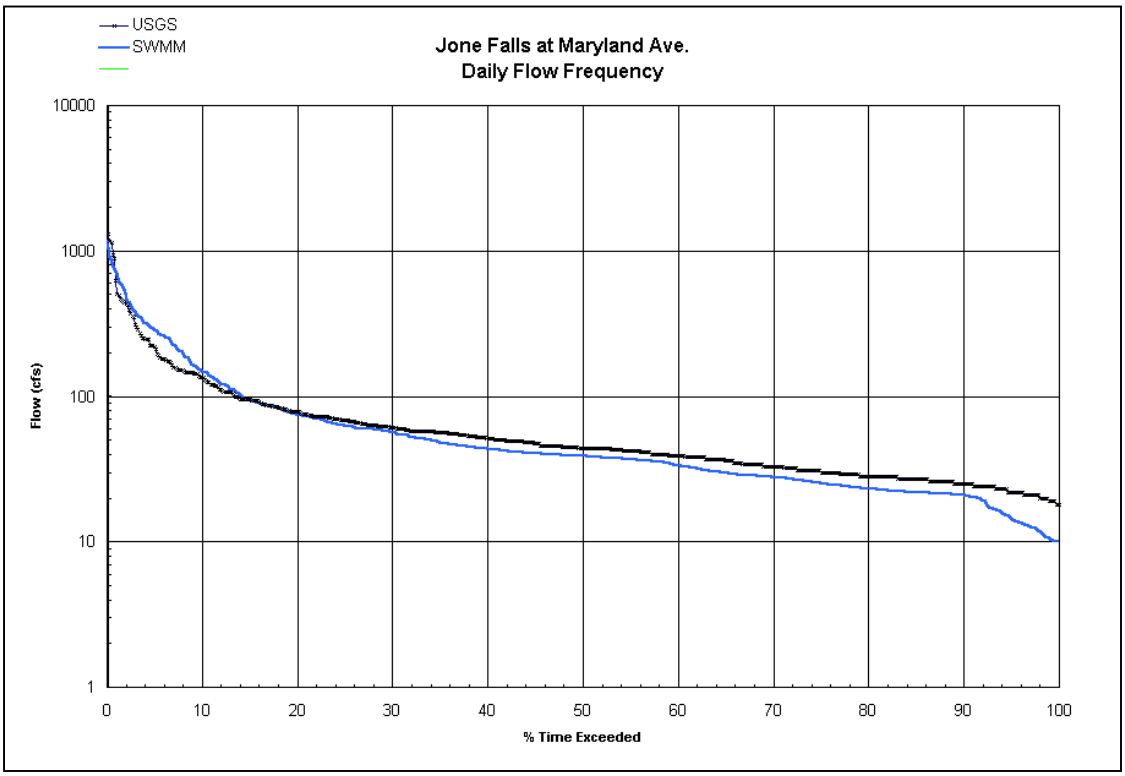

Figure 4.2.7-2: Jones Falls Daily Flow Frequency (Maryland Ave. USGS Flow Gauge)

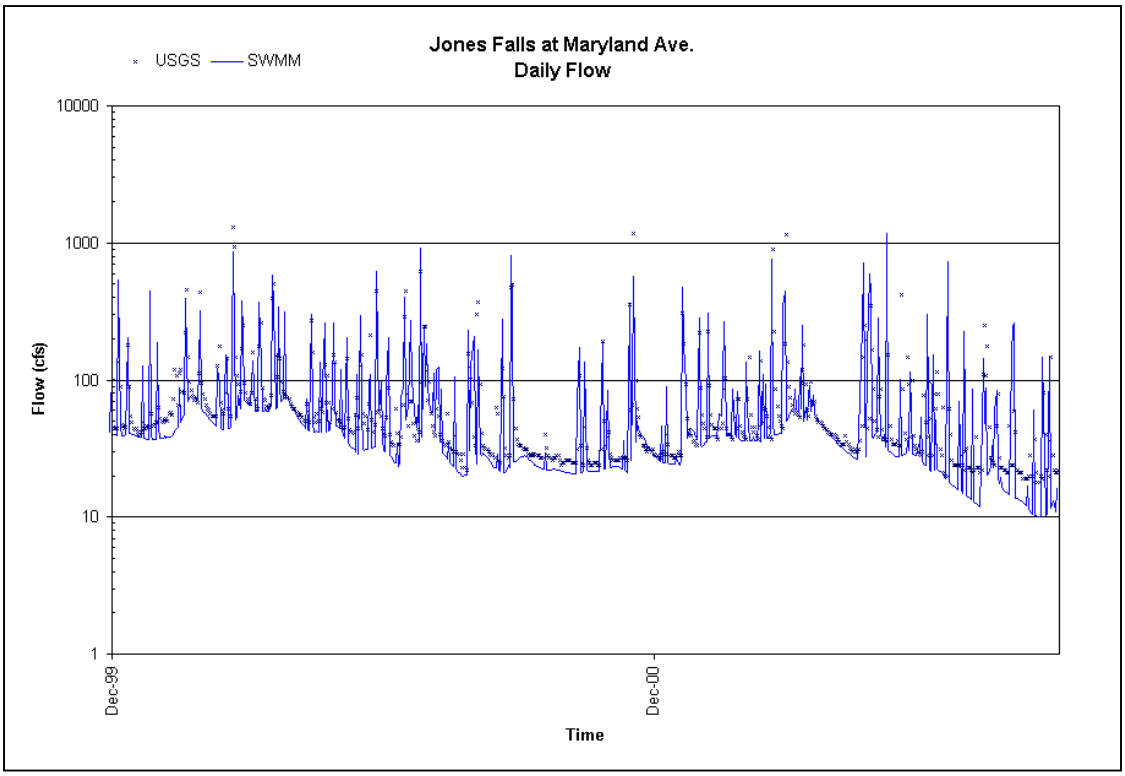

Figure 4.2.7-3: Jones Falls Daily Flow (Maryland Ave. USGS Flow Gauge)

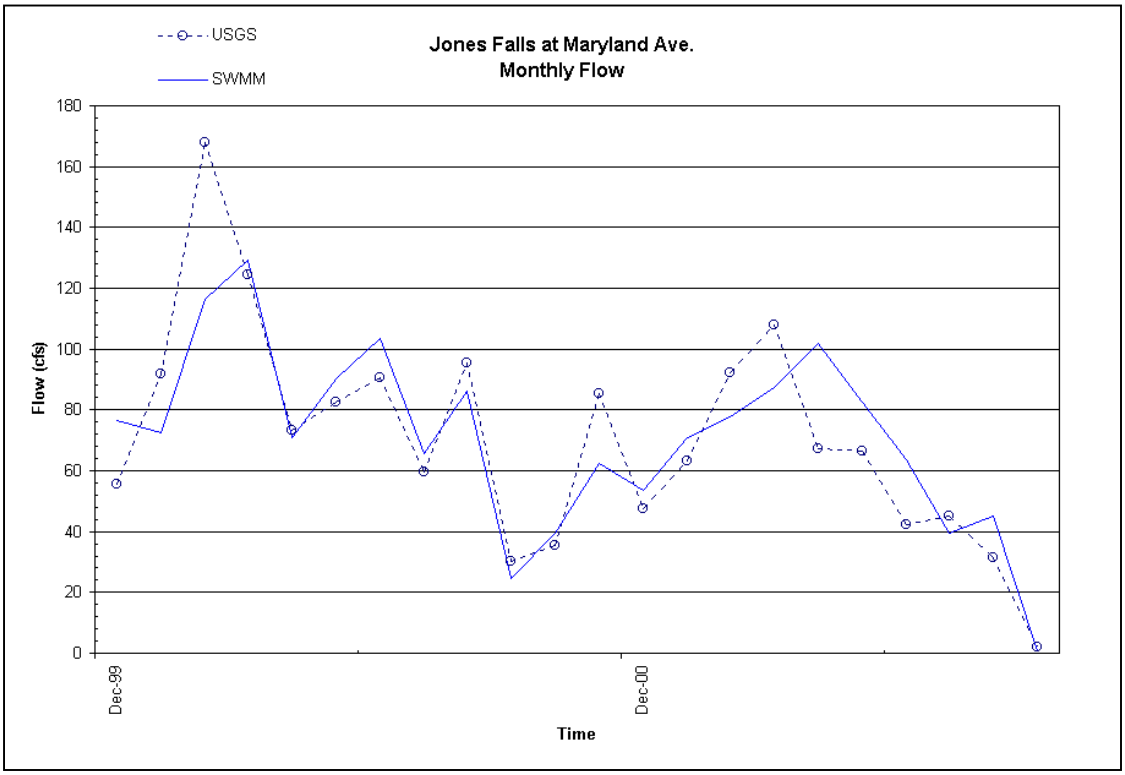

Figure 4.2.7-4: Jones Falls Monthly Flow (Maryland Ave. USGS Flow Gauge)

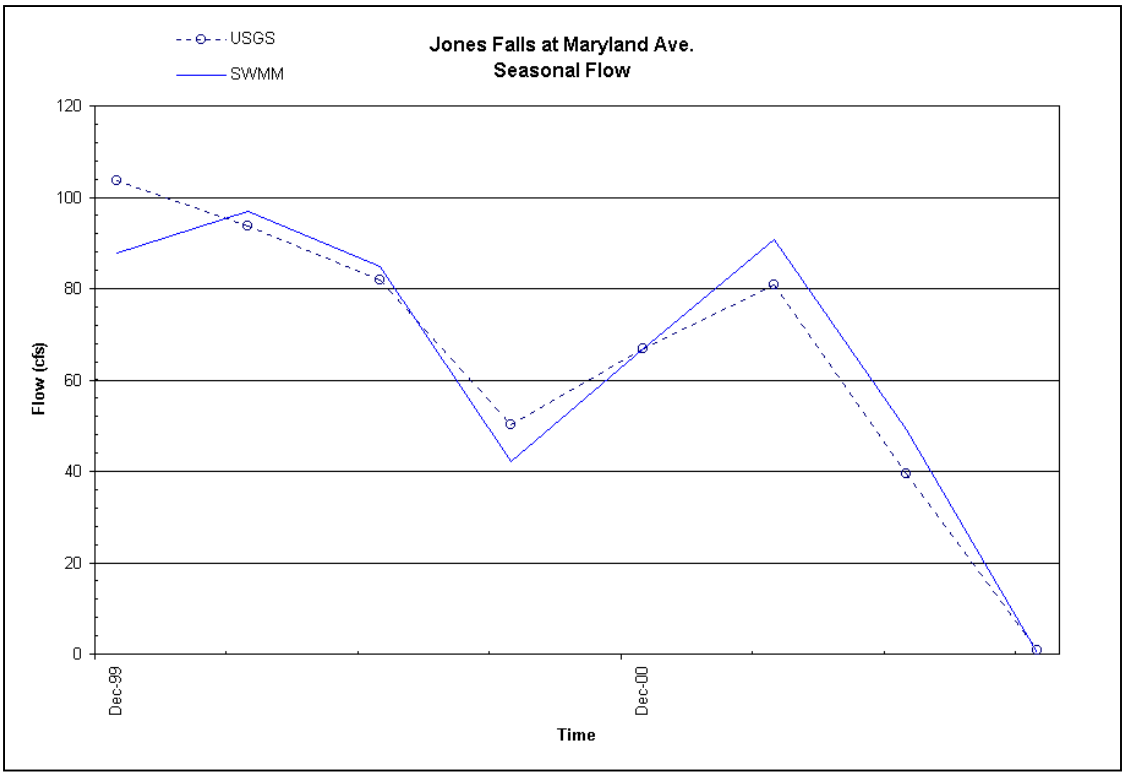

Figure 4.2.7-5: Jones Falls Seasonal Flow (Maryland Ave. USGS Flow Gauge)

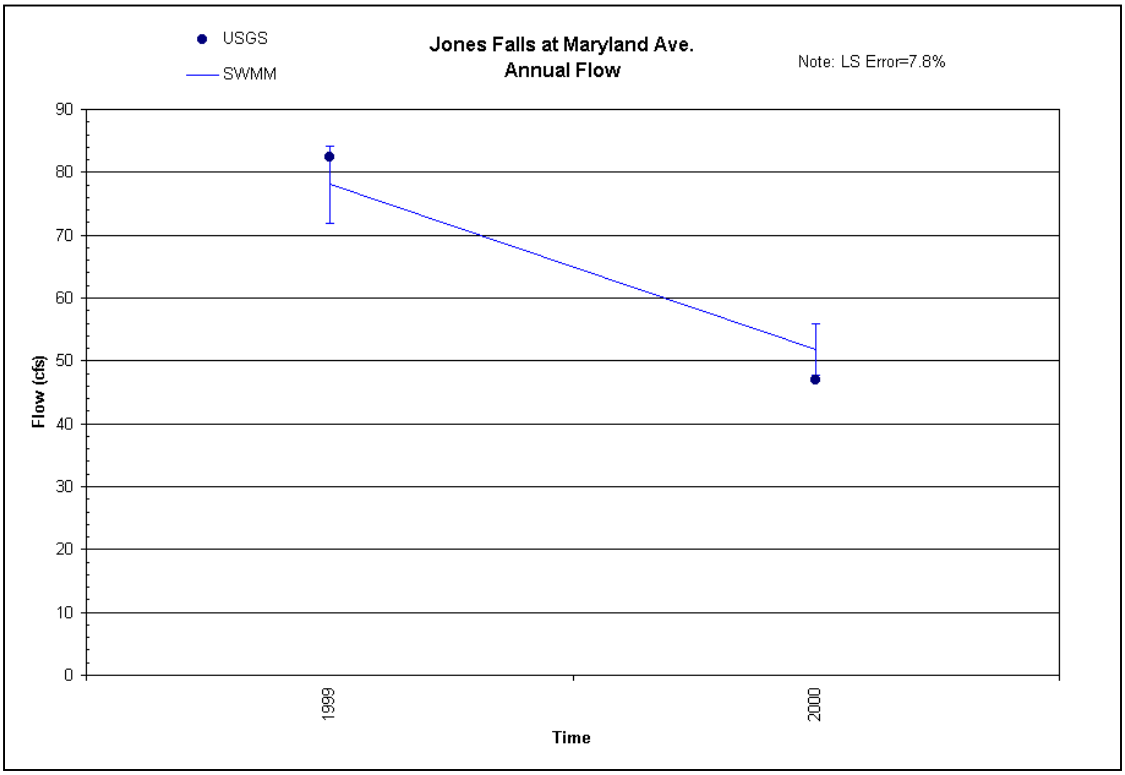

Figure 4.2.7-6: Jones Falls Annual Flow (Maryland Ave. USGS Flow Gauge)

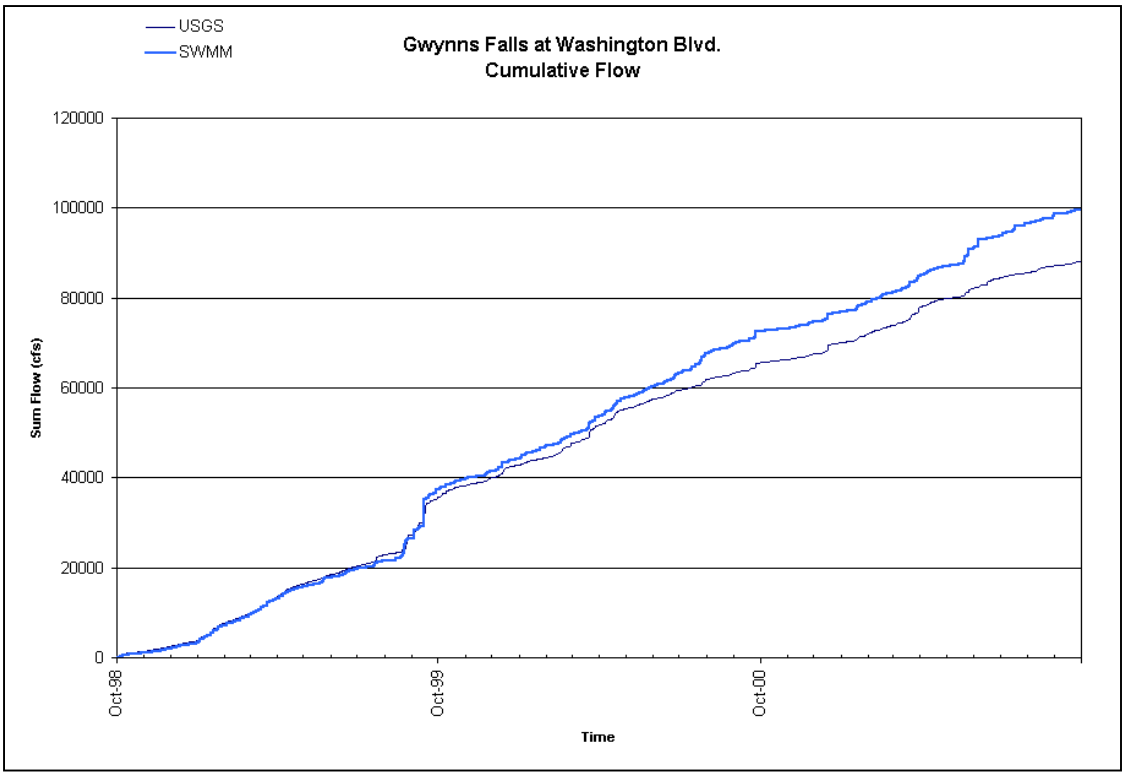

Figure 4.2.8-1: Gwynns Falls Cumulative Flow (Washington Ave. Flow Gauge)

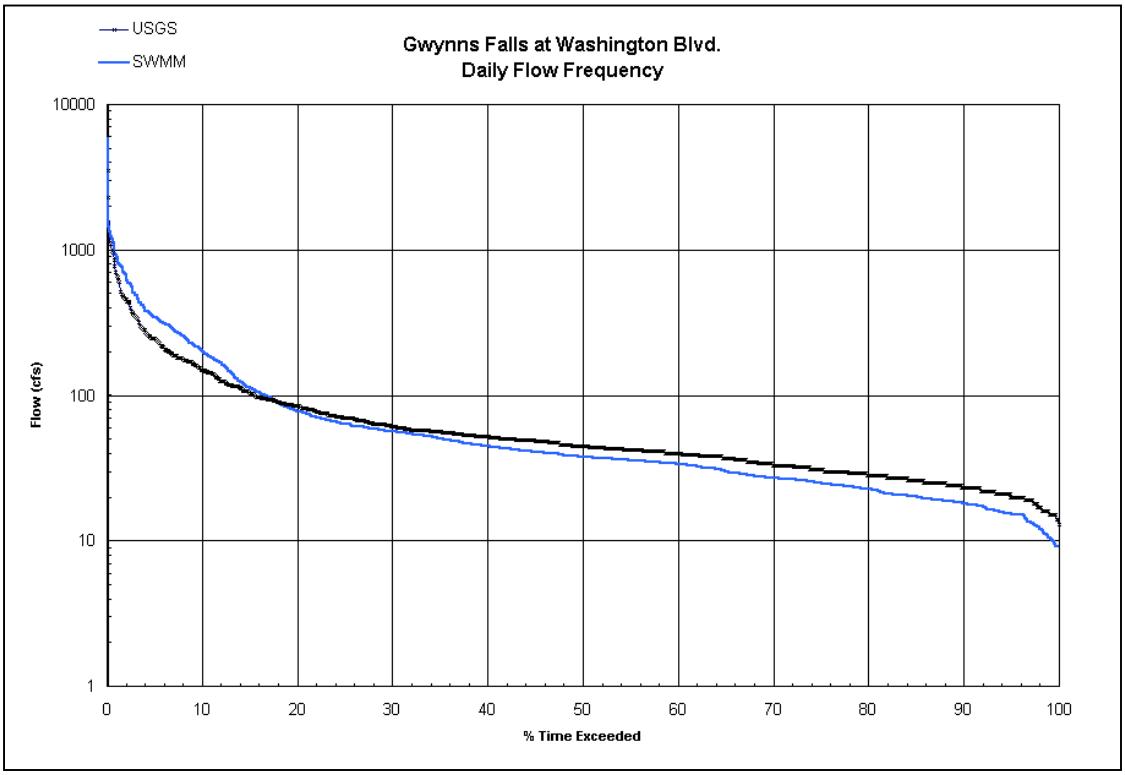

Figure 4.2.8-2: Gwynns Falls Daily Flow Frequency (Washington Ave. Flow Gauge)

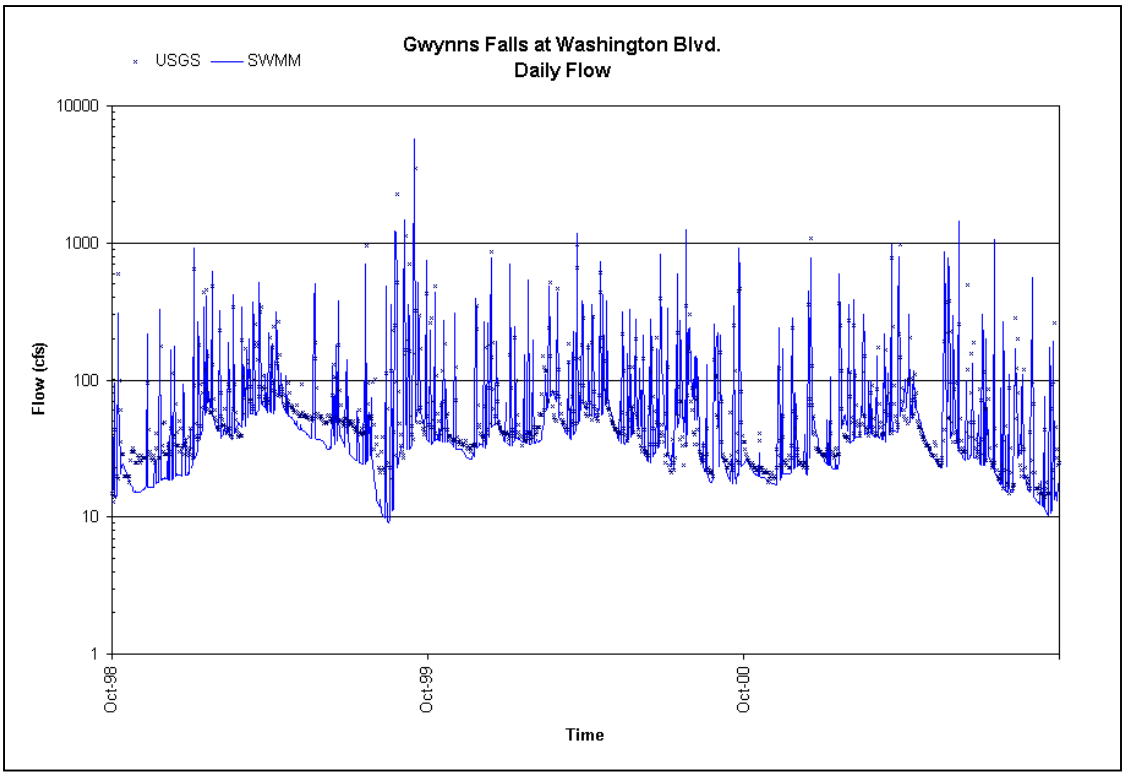

Figure 4.2.8-3: Gwynns Falls Daily Flow (Washington Ave. Flow Gauge)

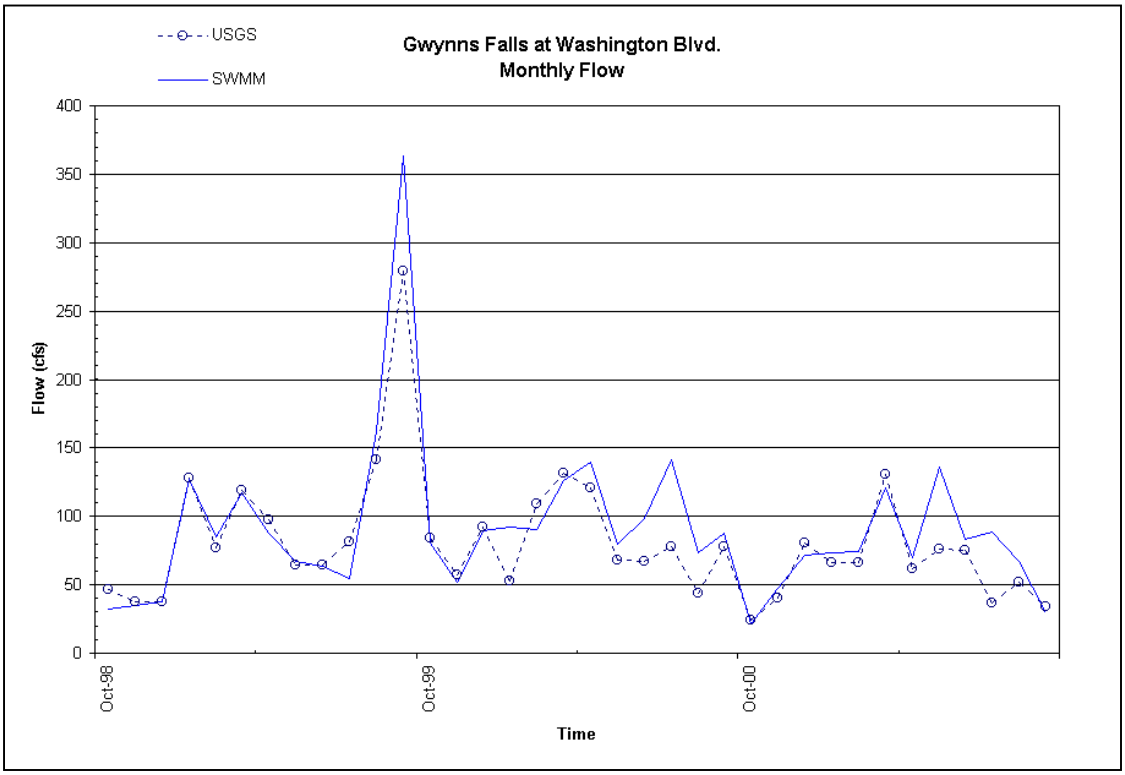

Figure 4.2.8-4: Gwynns Falls Monthly Flow (Washington Ave. Flow Gauge)

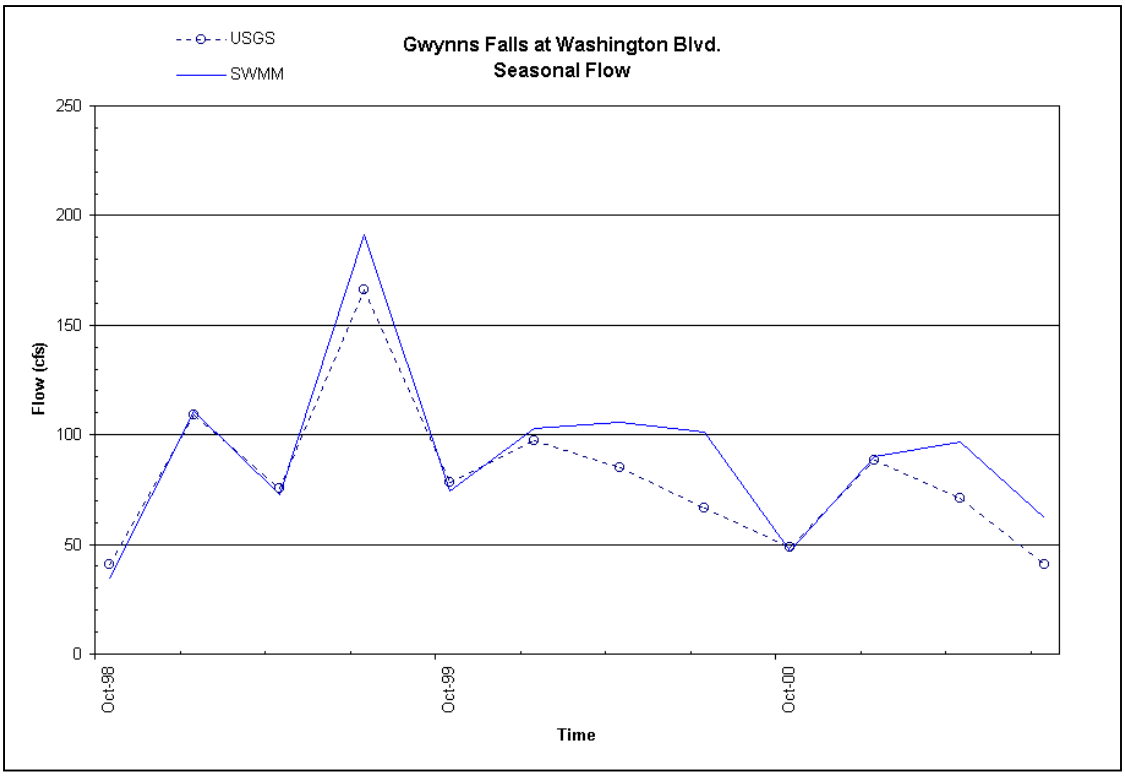

Figure 4.2.8-5: Gwynns Falls Seasonal Flow (Washington Ave. Flow Gauge)

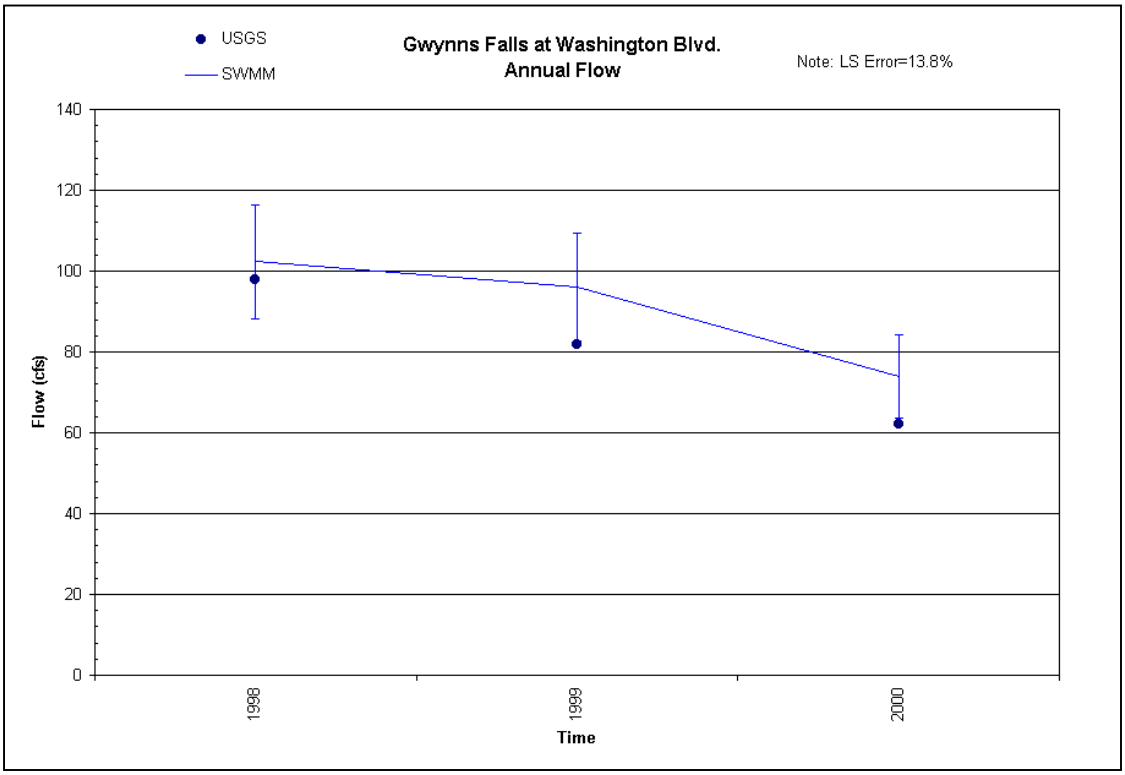

Figure 4.2.8-6: Gwynns Falls Annual Flow (Washington Ave. Flow Gauge)

Appendix I
Stream Concentration Time Series

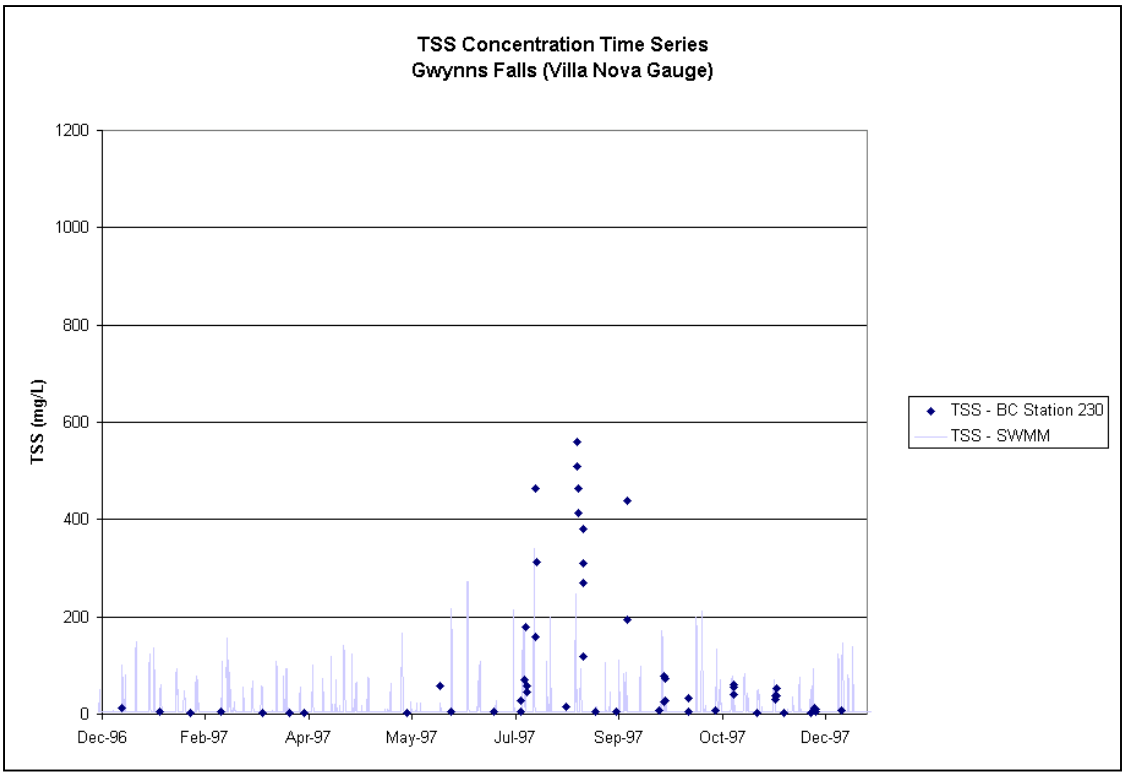

Figure 5.2.3-1: Gwynns Falls TSS concentration time series (Villa Nova Gauge)

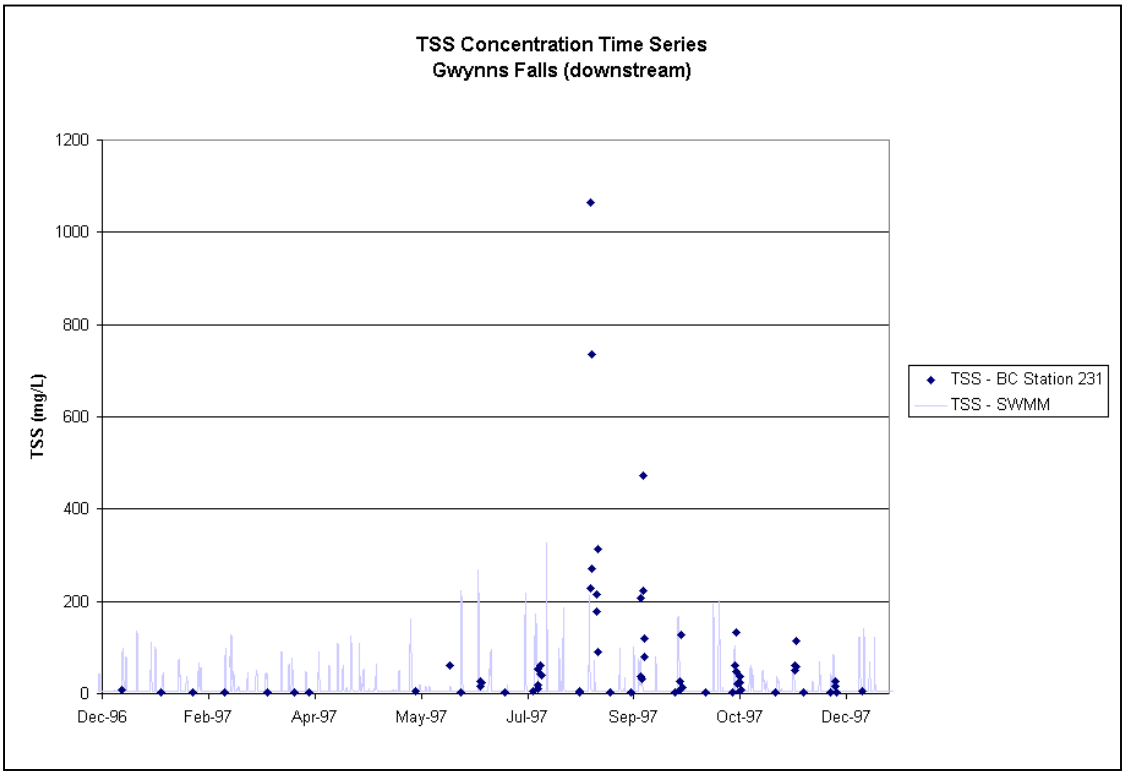

Figure 5.2.3-2: Gwynns Falls TSS concentration time series (Downstream)

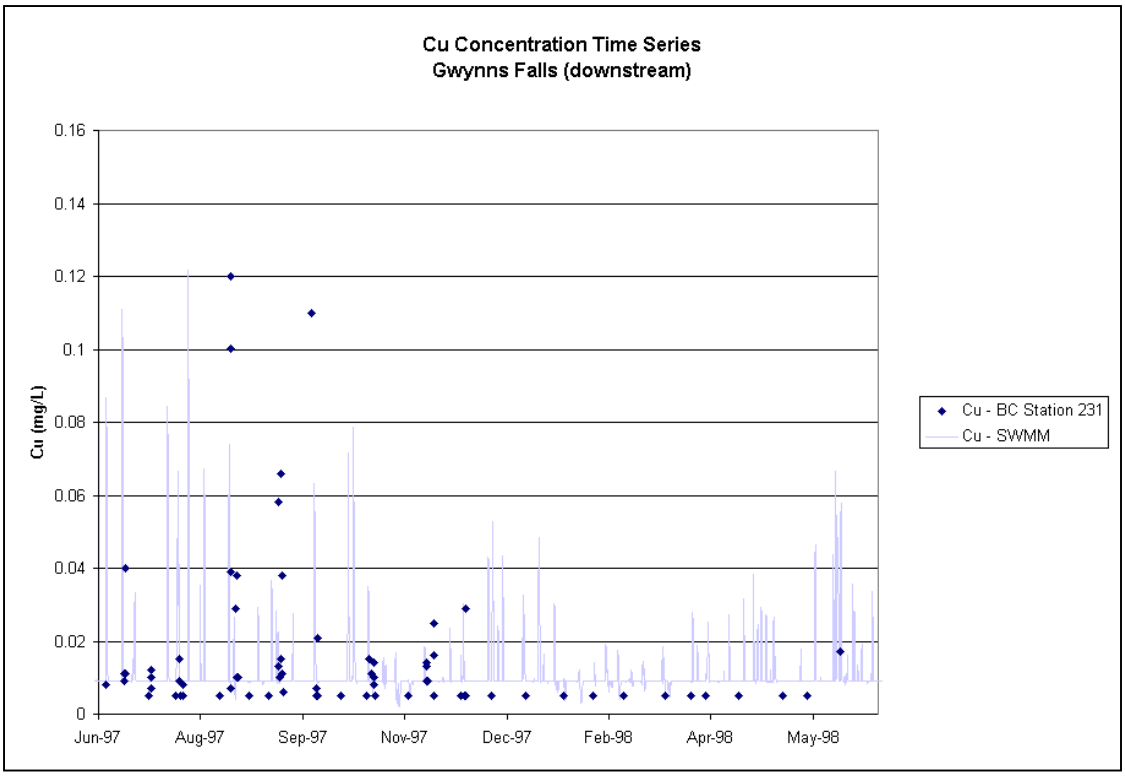

Figure 5.2.3-3: Gwynns Falls Cu concentration time series (Downstream)

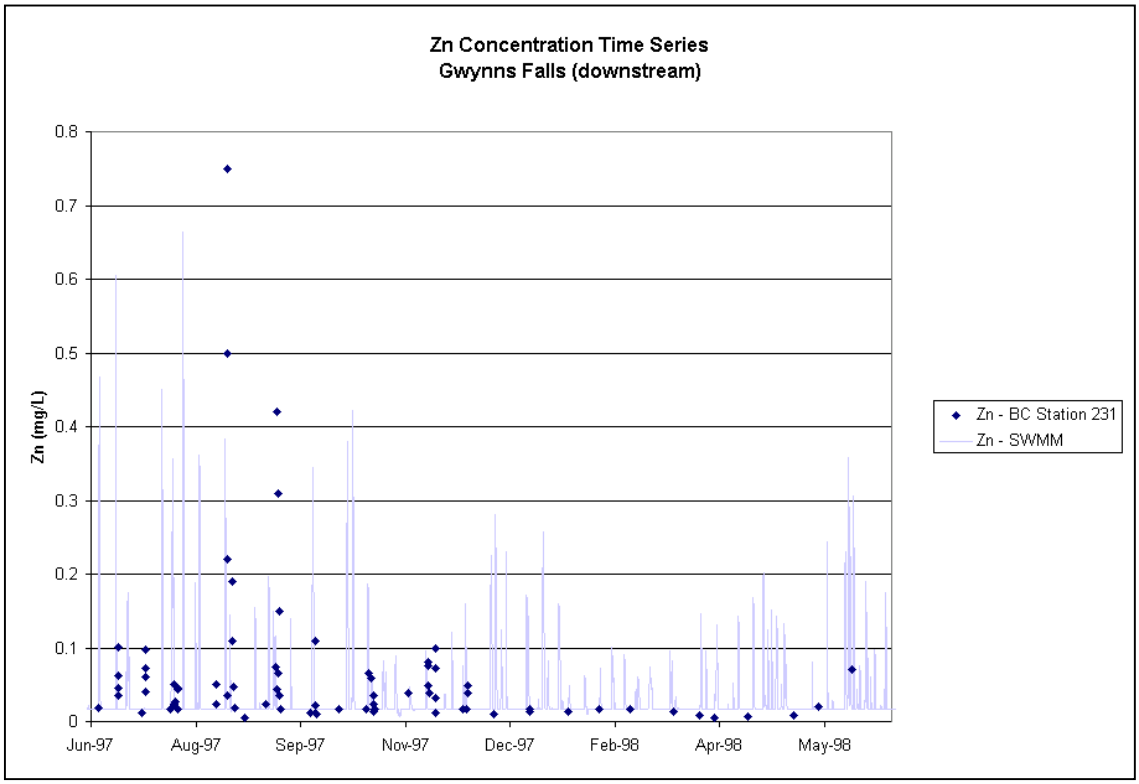

Figure 5.2.3-4: Gwynns Falls Zn concentration time series (Downstream)

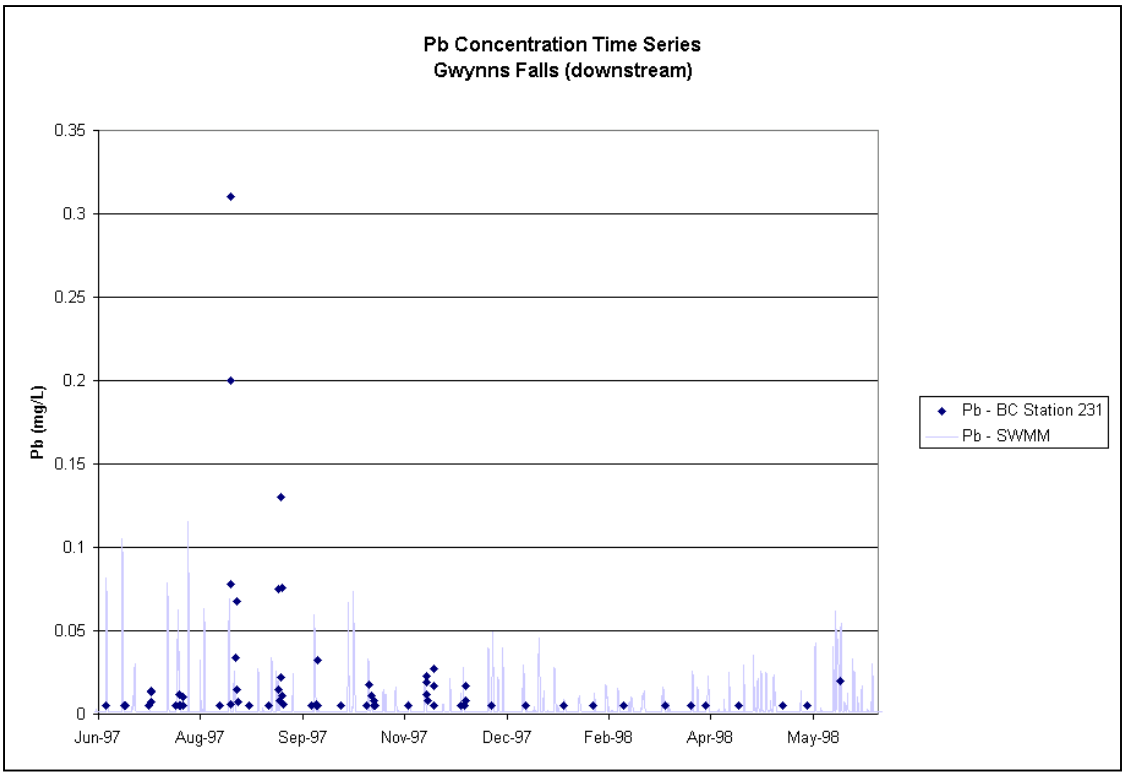

Figure 5.2.3-5: Gwynns Falls Pb concentration time series (Downstream)

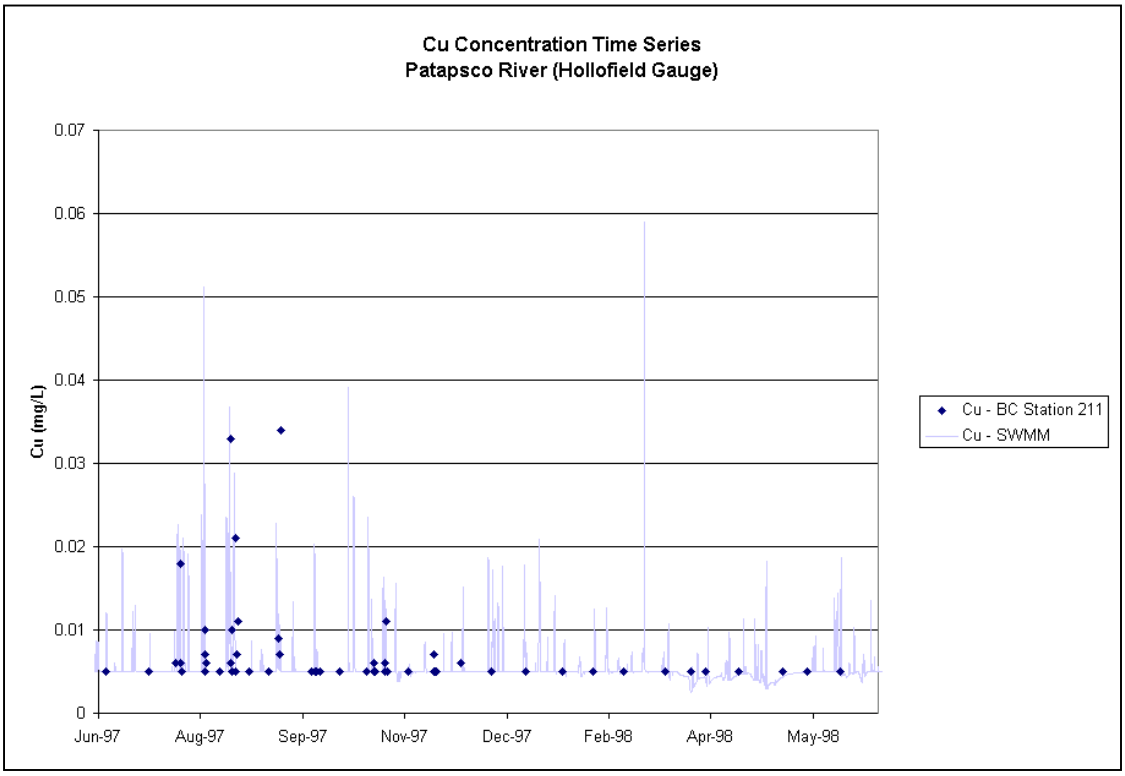

Figure 5.2.4-1: Patapsco River Cu concentration time series (Hollofield Gauge)

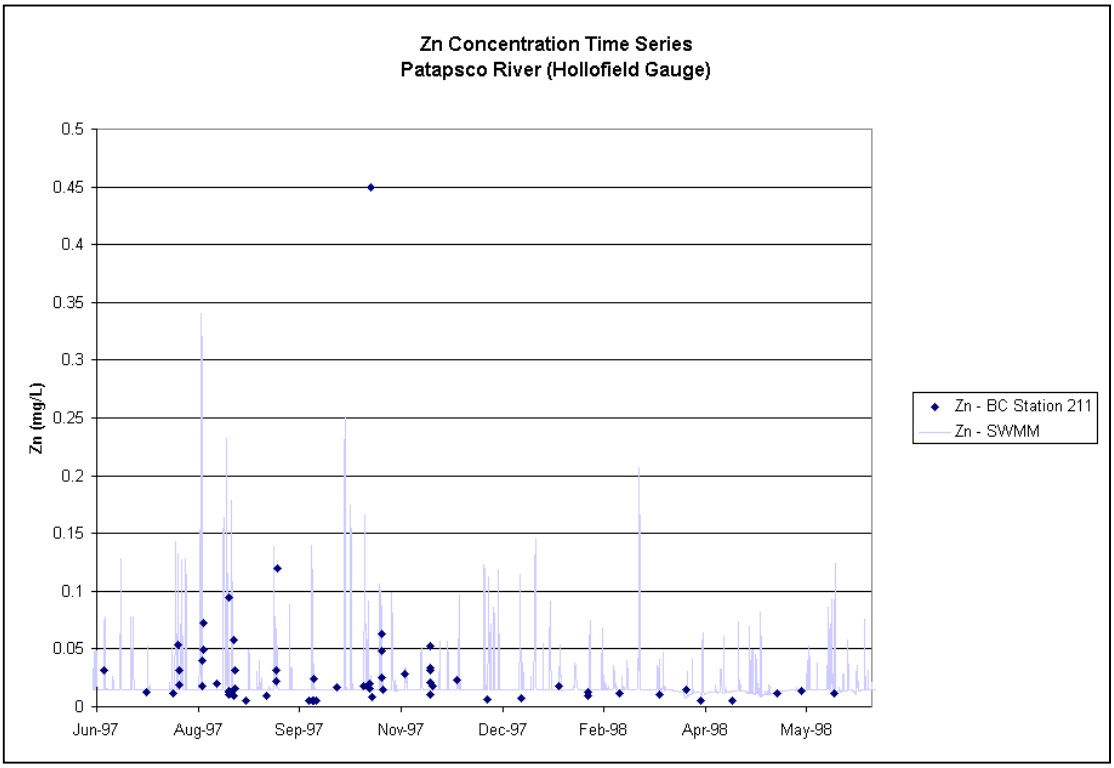

Figure 5.2.4-2: Patapsco River Zn concentration time series (Hollofield Gauge)

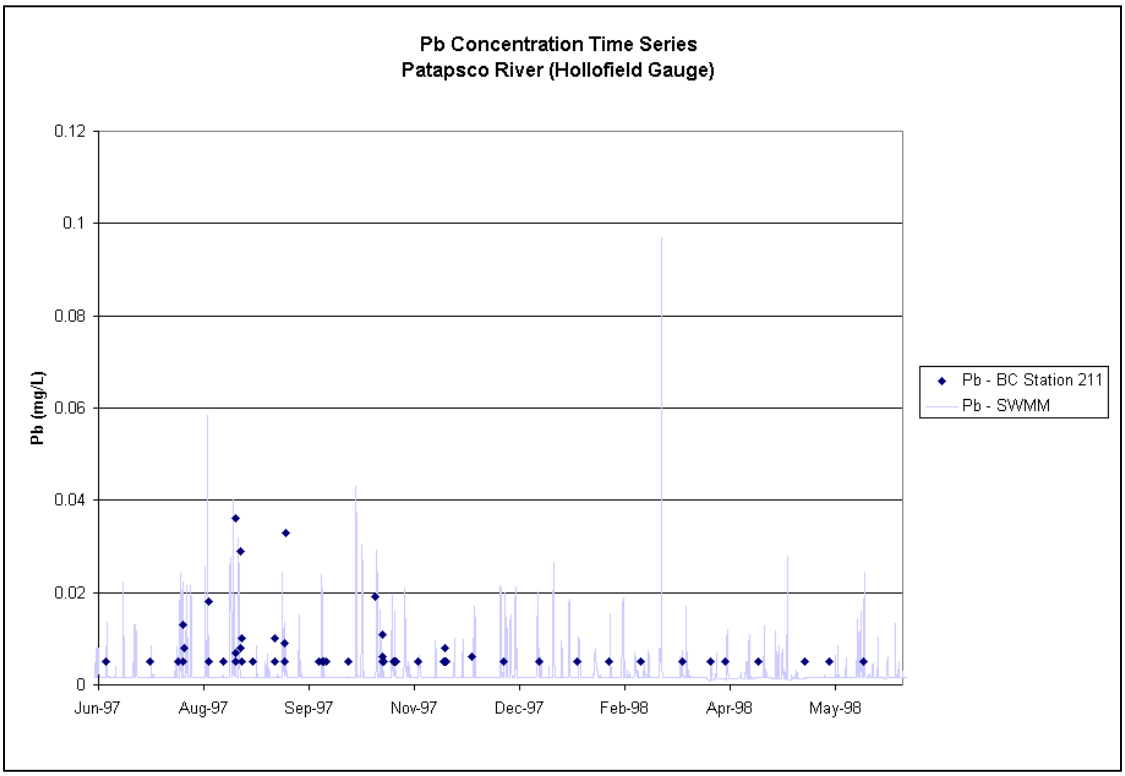

Figure 5.2.4-3: Patapsco River Pb concentration time series (Hollofield Gauge)

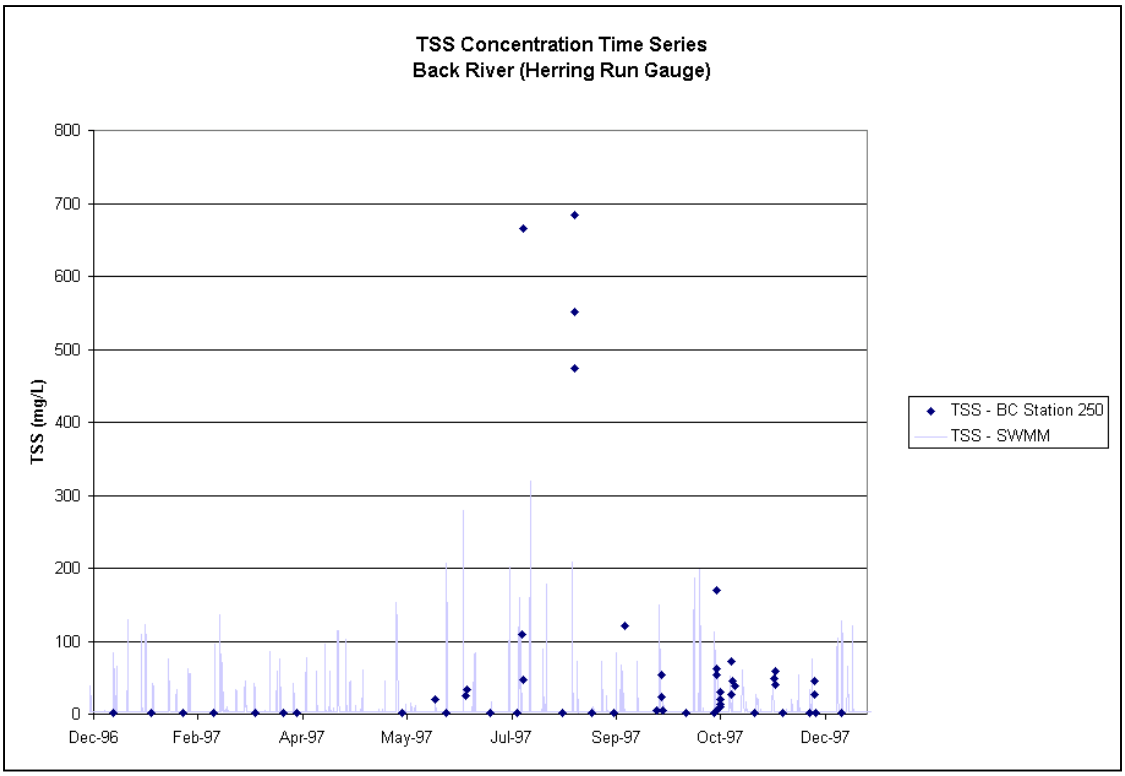

Figure 5.2.5-1: Back River TSS concentration time series (Herring Run Gauge)

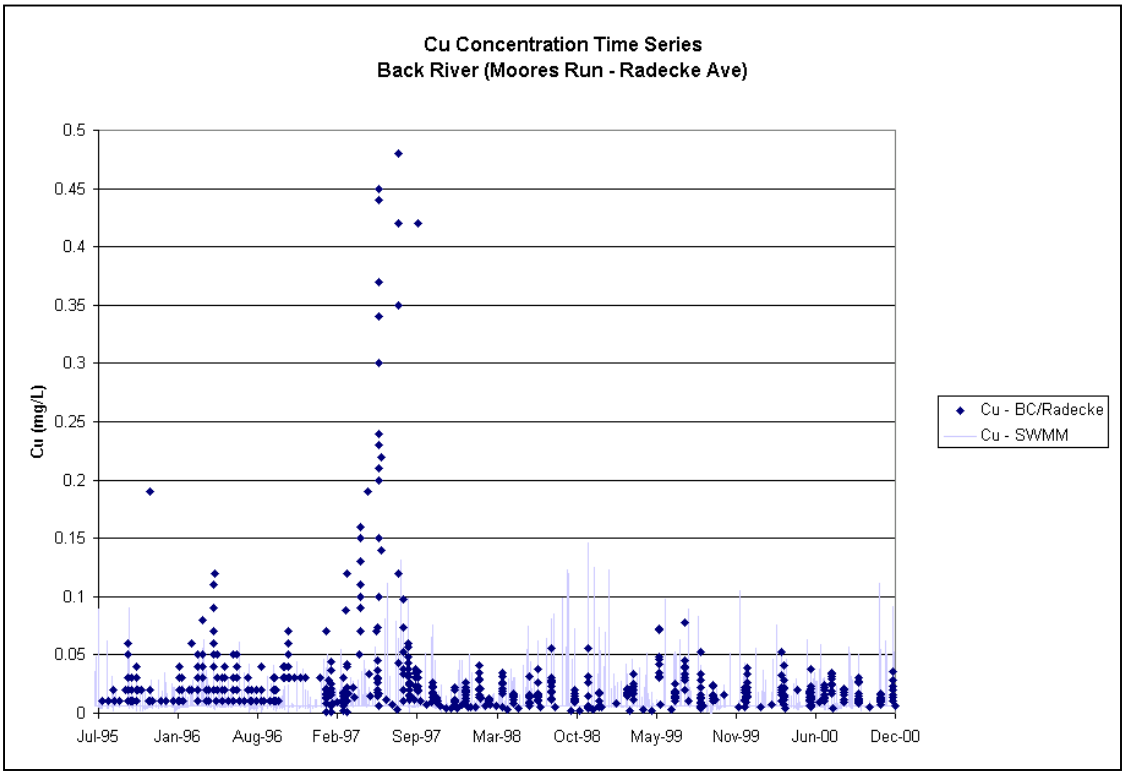

Figure 5.2.5-2: Back River Cu concentration time series (Radecke Ave)

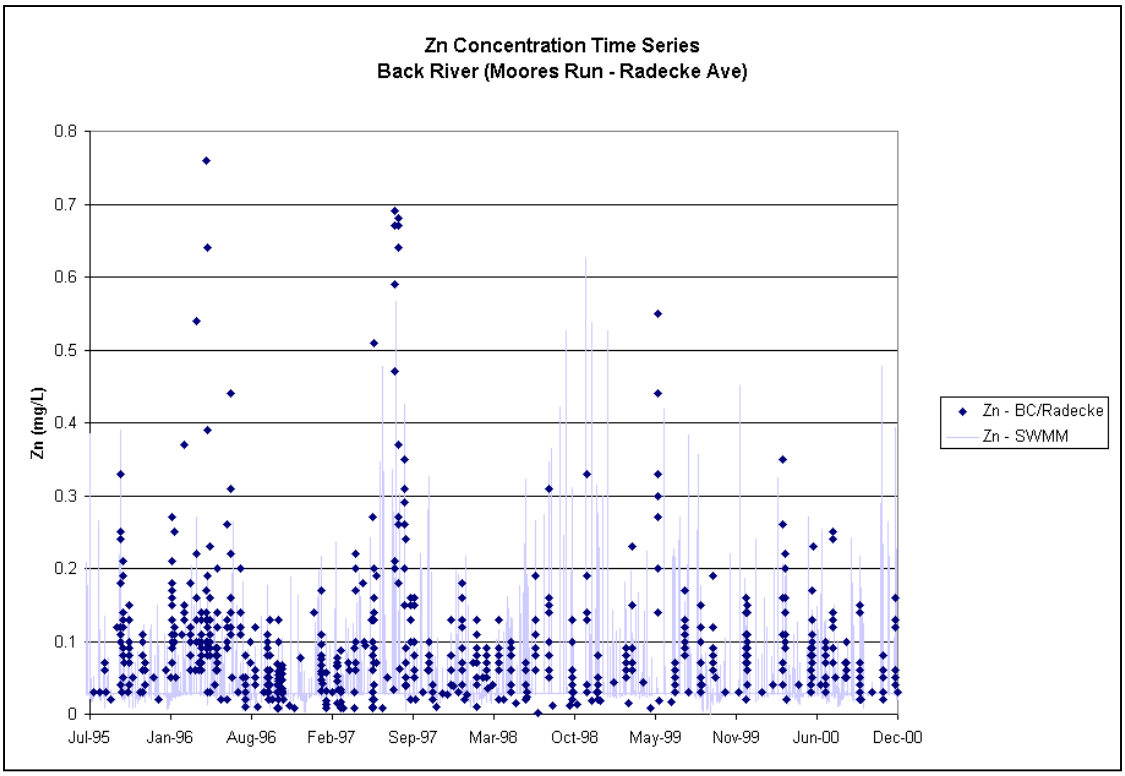

Figure 5.2.5-3: Back River Zn concentration time series (Radecke Ave)

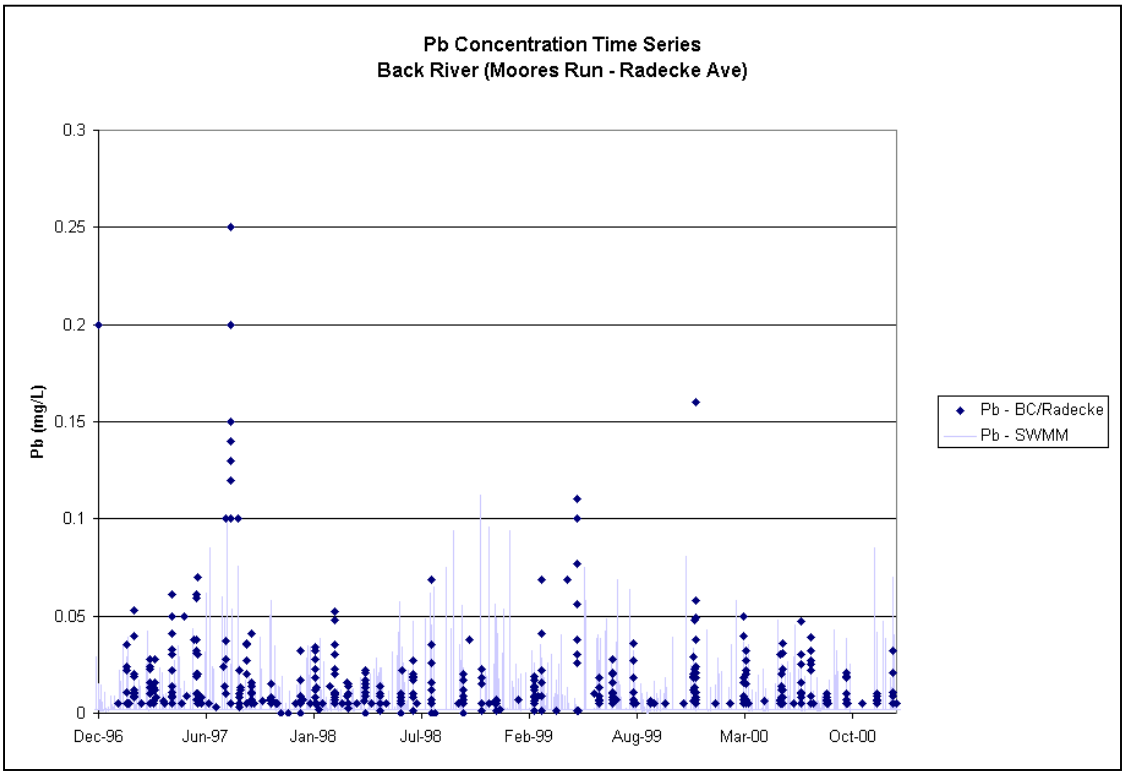

Figure 5.2.5-4: Back River Pb concentration time series (Radecke Ave)

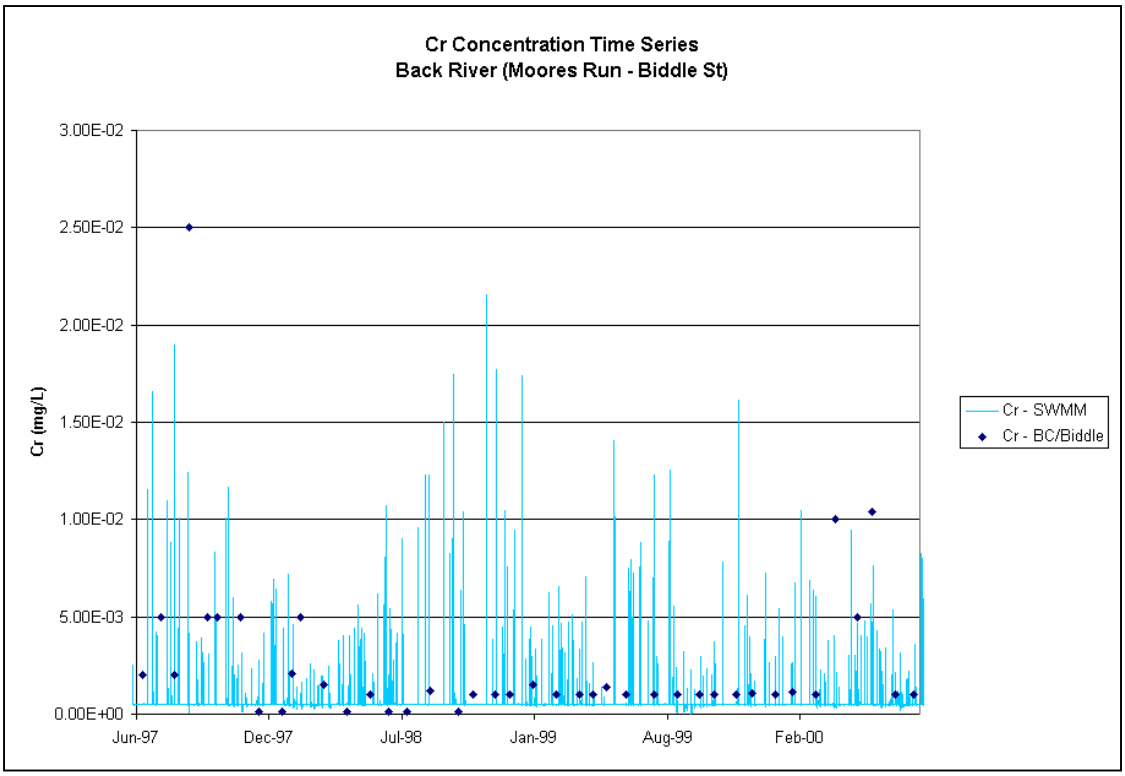

Figure 5.2.6-1: Back River Cr concentration time series (Biddle St.)

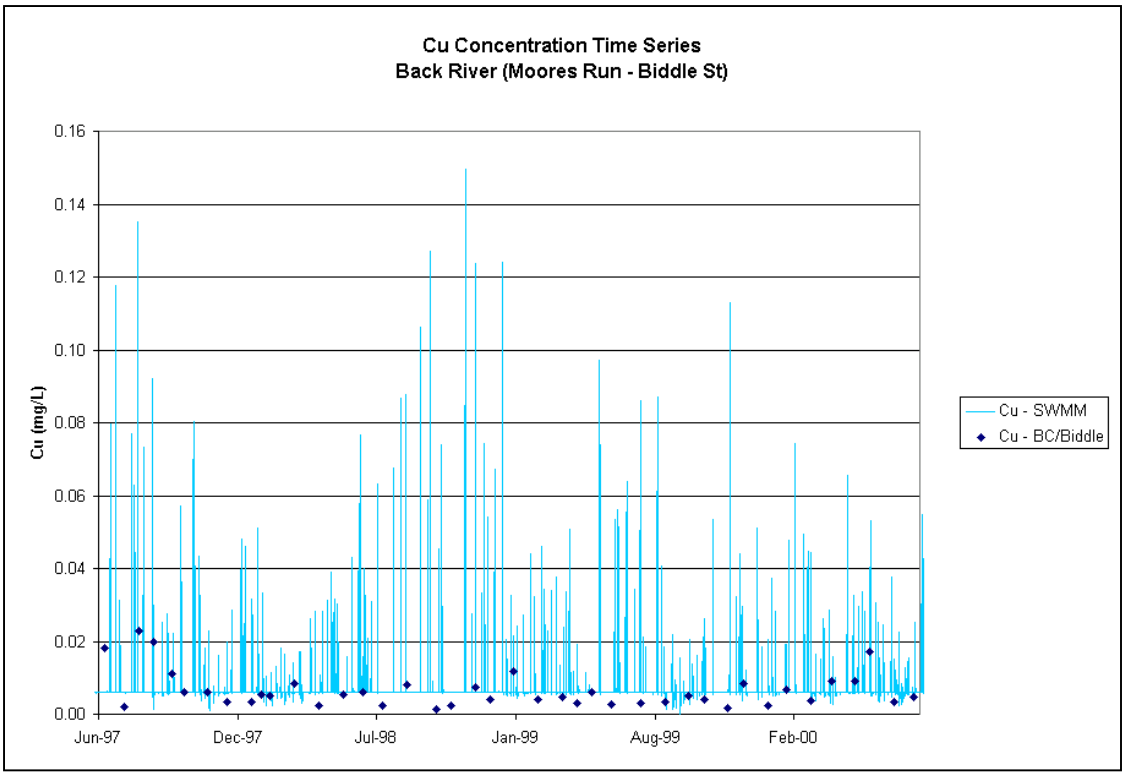

Figure 5.2.6-2: Back River Cu concentration time series (Biddle St.)

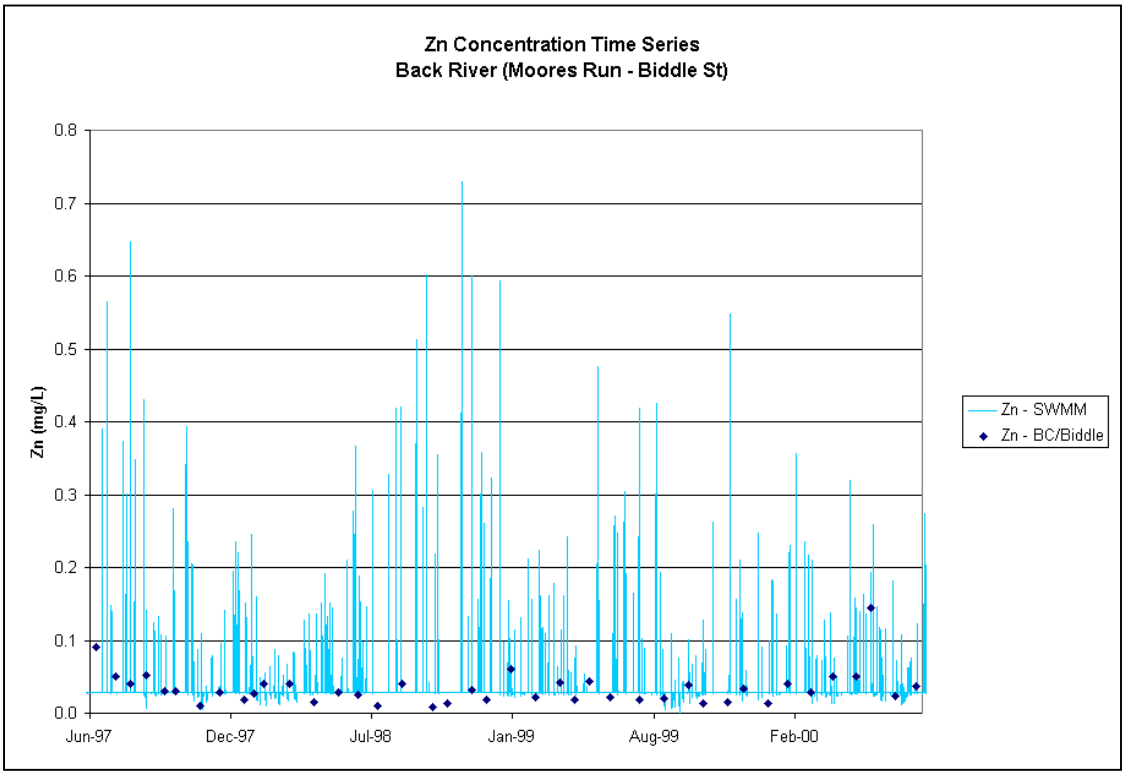

Figure 5.2.6-3: Back River Zn concentration time series (Biddle St.)

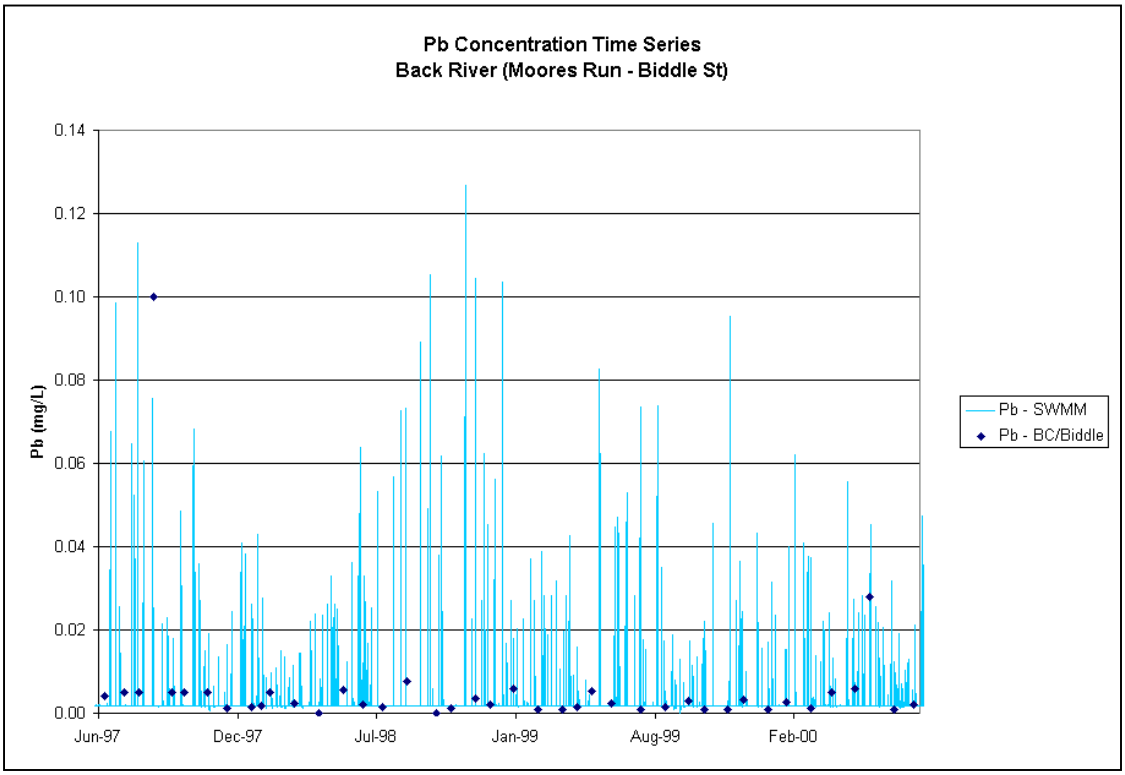

Figure 5.2.6-4: Back River Pb concentration time series (Biddle St.)

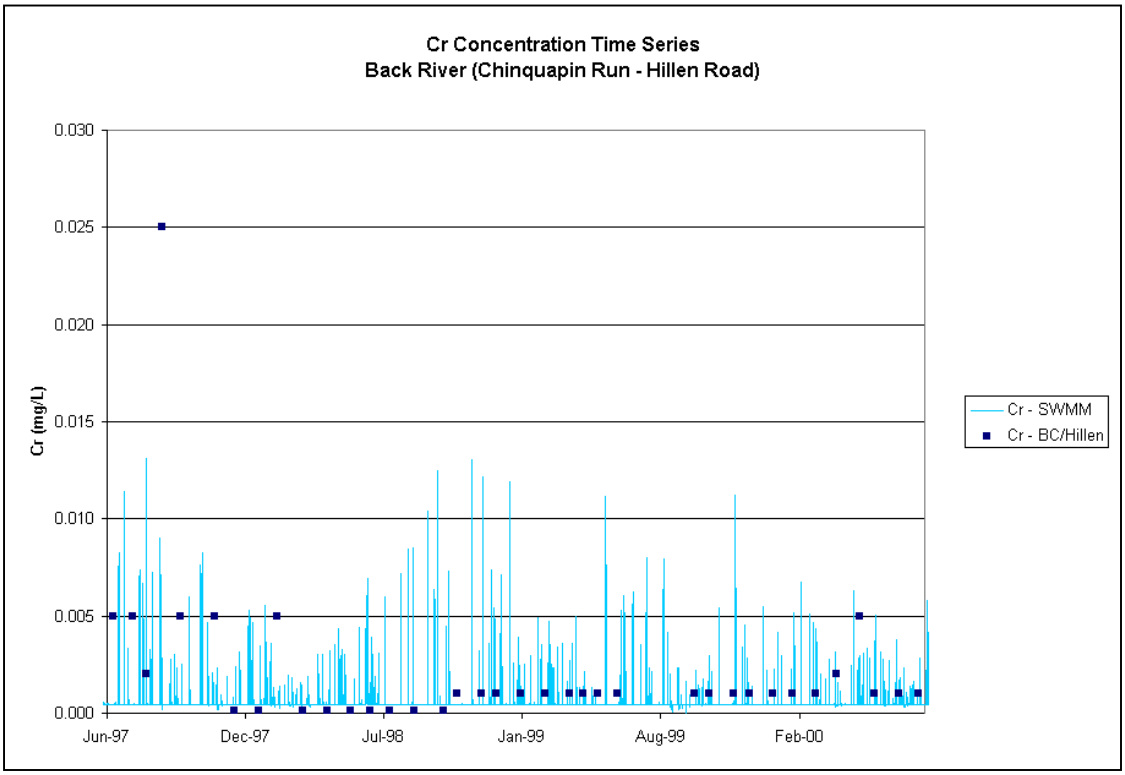

Figure 5.2.7-1: Back River Cr concentration time series (Hillen Rd.)

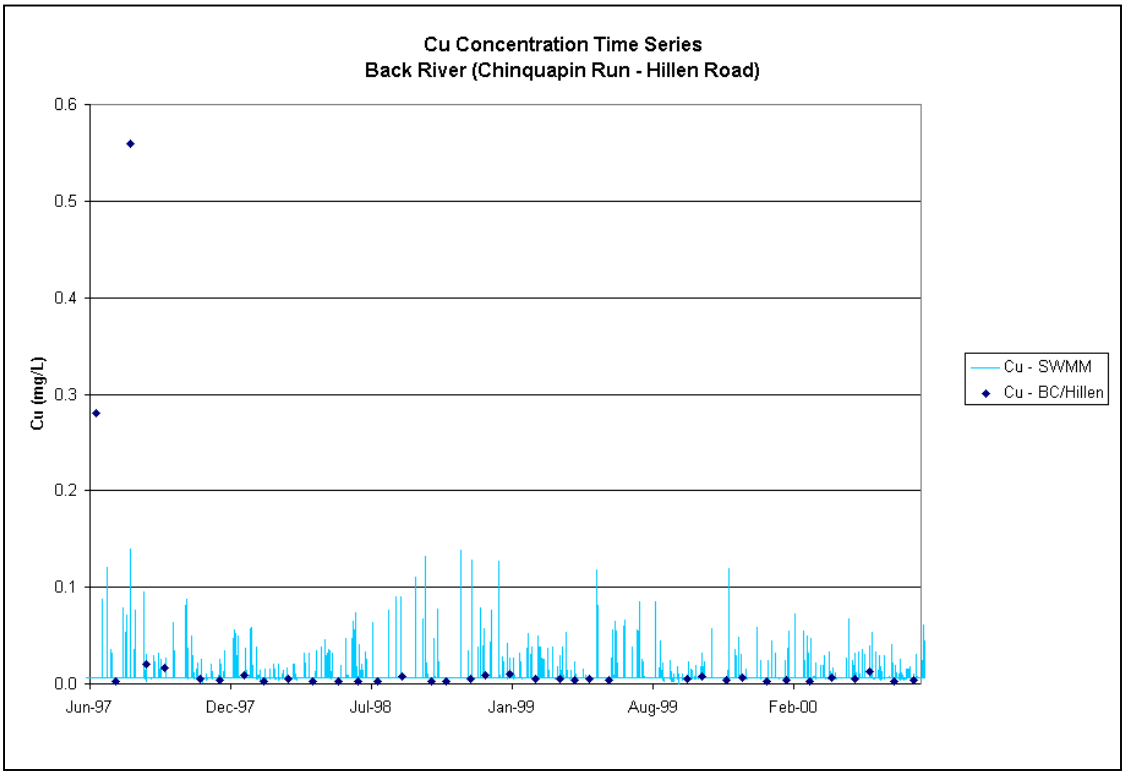

Figure 5.2.7-2: Back River Cu concentration time series (Hillen Rd.)

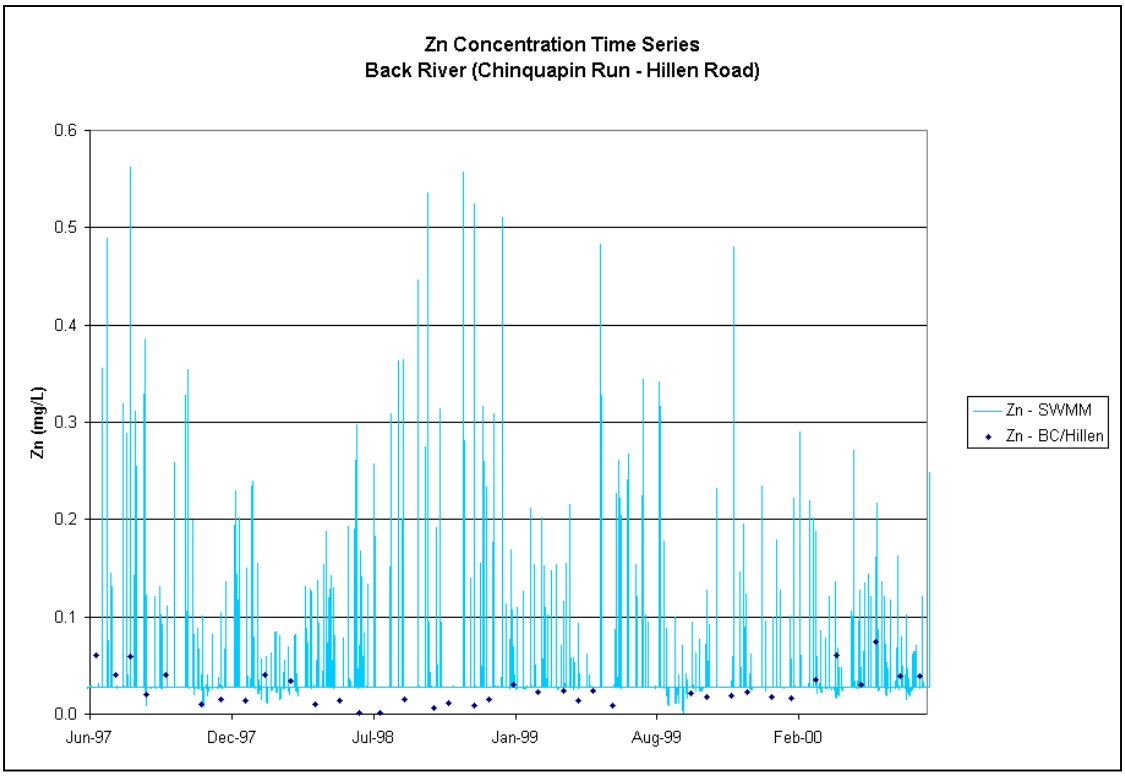

Figure 5.2.7-3: Back River Zn concentration time series (Hillen Rd.)

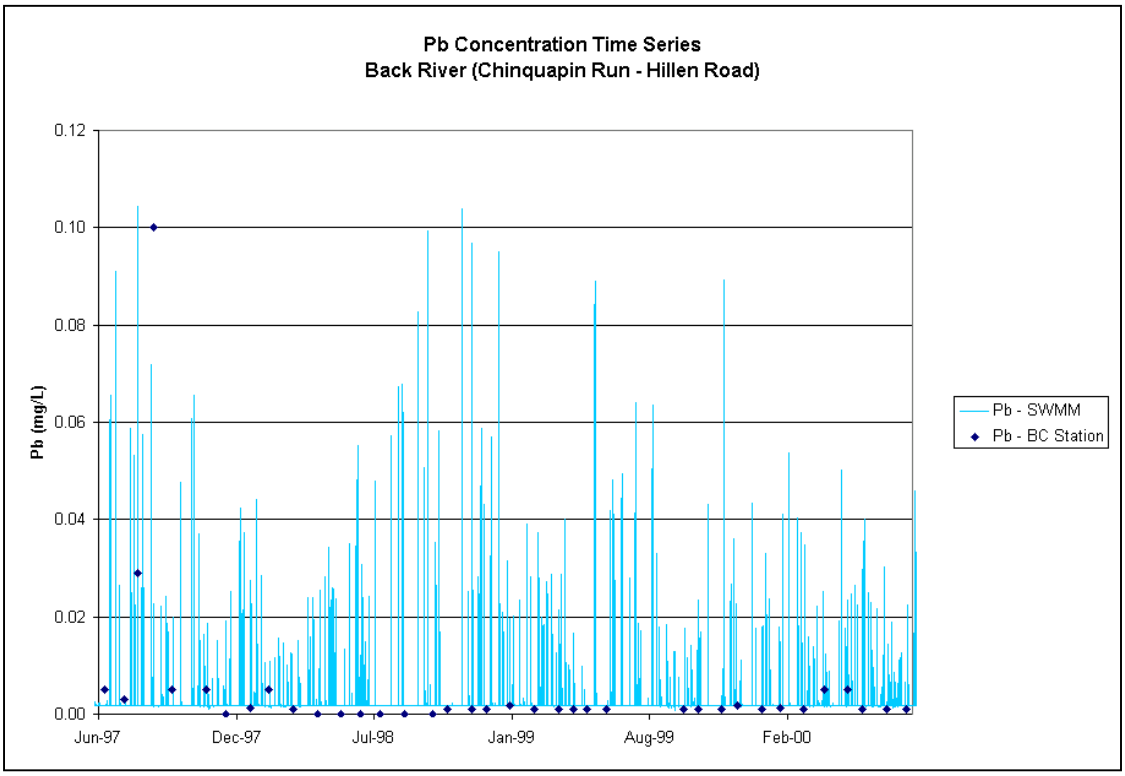

Figure 5.2.7-4: Back River Pb concentration time series (Hillen Rd.)

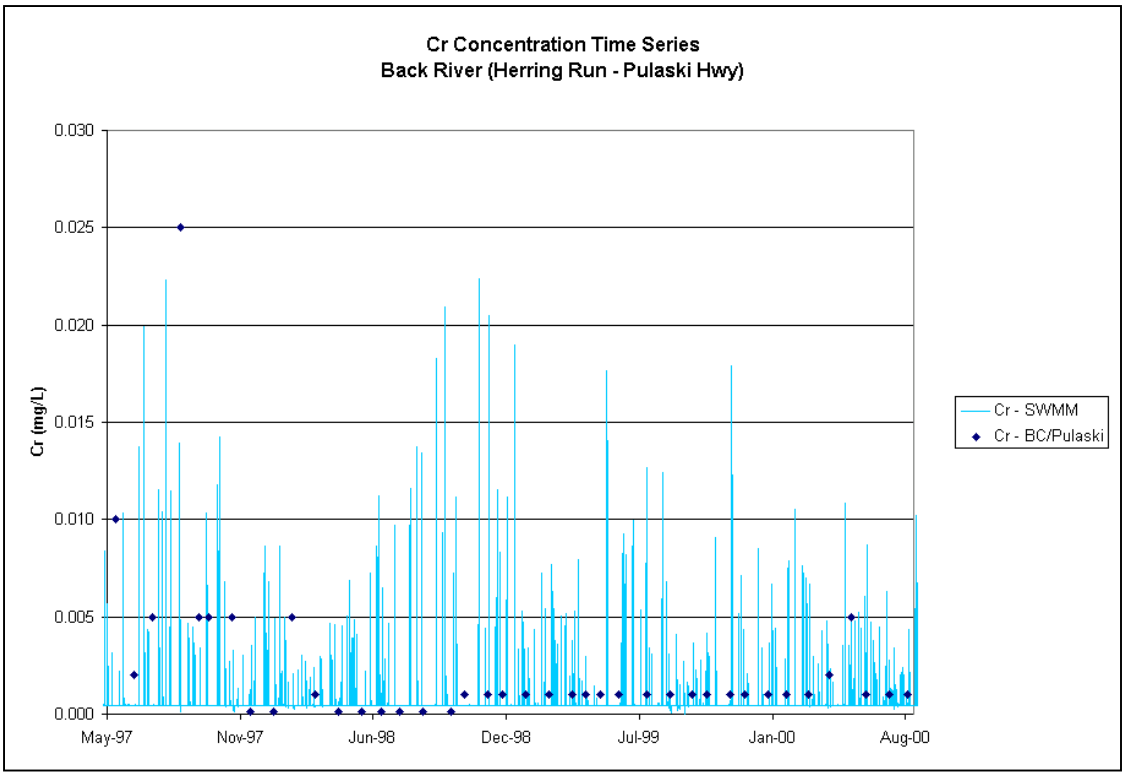

Figure 5.2.8-1: Back River Cr concentration time series (Pulaski Hwy)

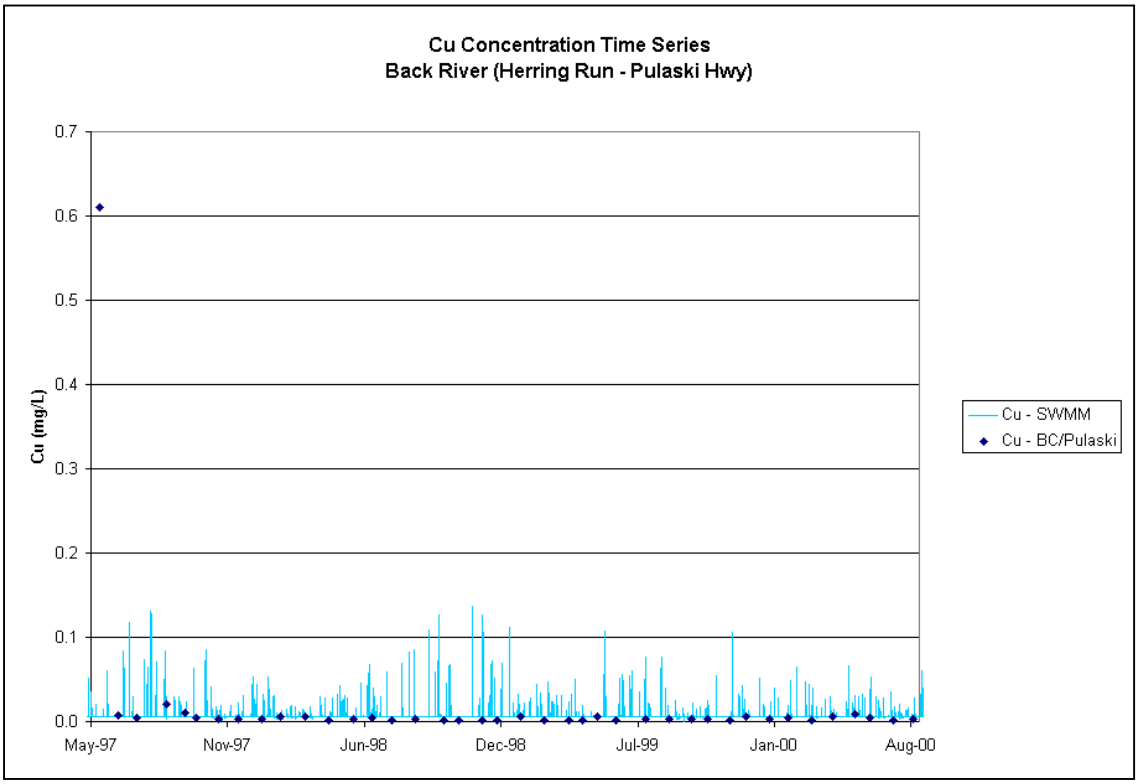

Figure 5.2.8-2: Back River Cu concentration time series (Pulaski Hwy)

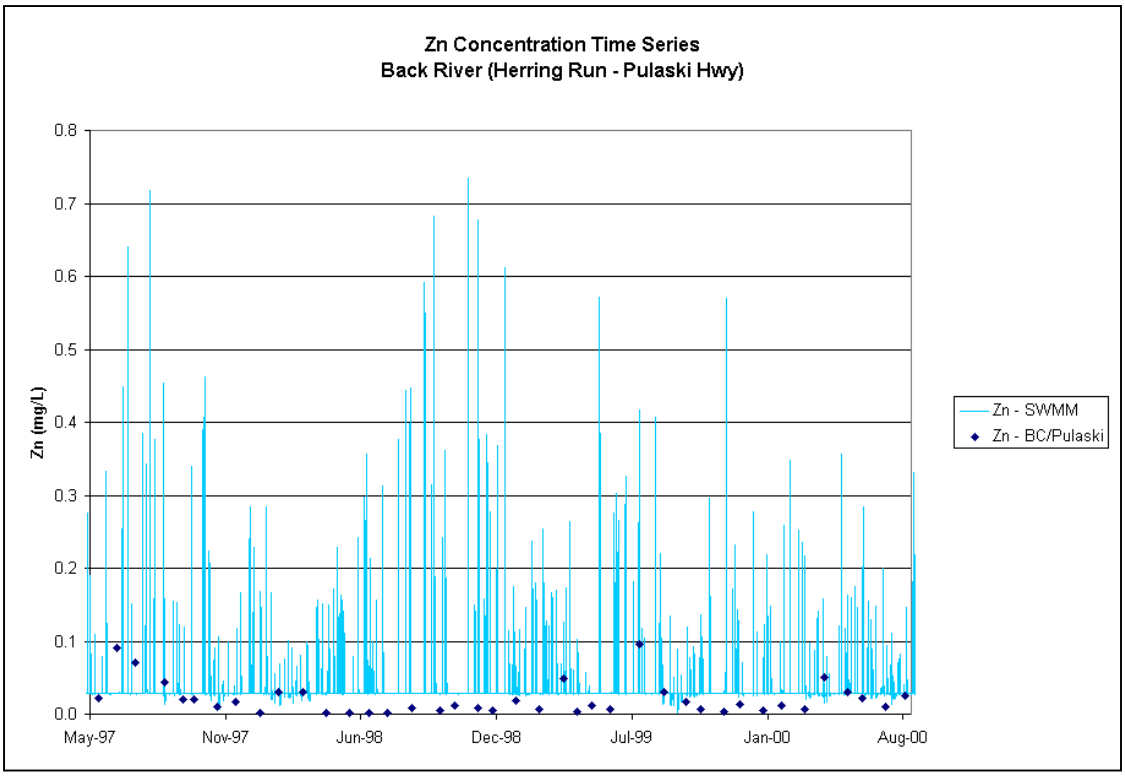

Figure 5.2.8-3: Back River Zn concentration time series (Pulaski Hwy)

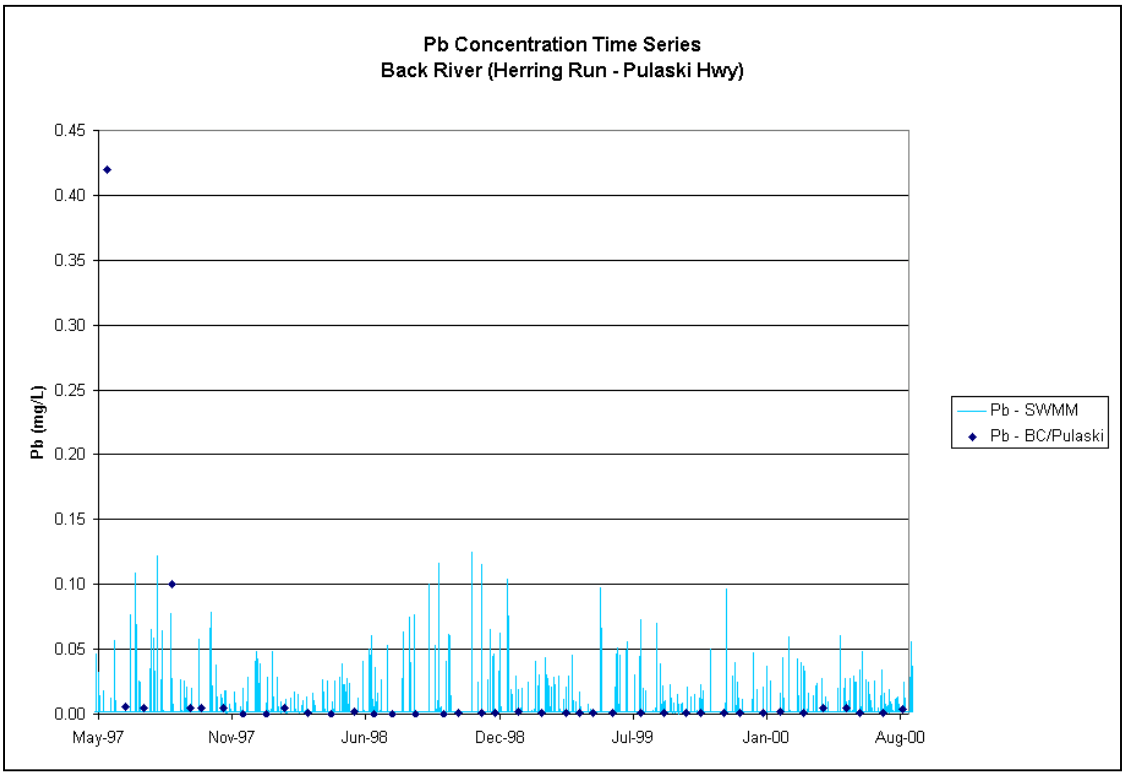

Figure 5.2.8-4: Back River Pb concentration time series (Pulaski Hwy)