

---

# **APPENDIX A**

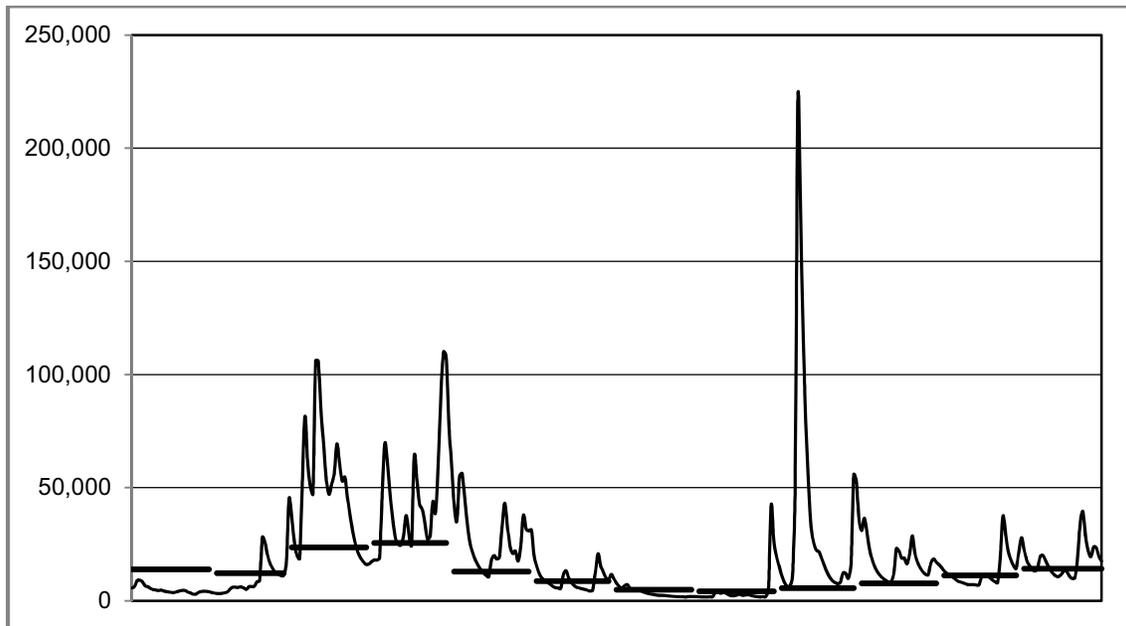
## **Individual Site Data**

---

## INDIVIDUAL SITES: TOWANDA

*Table A1. 2011 Annual and Seasonal Precipitation and Discharge at Towanda*

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	9.10	7.64	1.46	21,058	16,712	126%
April-June (Spring)	16.04	10.80	5.24	27,652	15,720	176%
July-September (Summer)	15.48	11.34	4.14	14,963	4,973	301%
October-December (Fall)	9.50	9.28	0.22	16,454	11,056	149%
Annual Total	50.11	39.07	11.04	20,005	12,083	166%



*Figure A1. 2011 Daily Average Flow and Monthly LTM at Towanda*

**Table A2. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Towanda**

Parameter	Load	Load % of LTM	Error %	Yield	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	34,683	127%	4%	6.95	5.49	0.88	76%
TON	17,793	174%	8%	3.57	2.05	0.45	105%
TNH <sub>3</sub>	1,639	122%	13%	0.33	0.27	0.04	74%
TNO <sub>23</sub>	17,444	108%	4%	3.50	3.24	0.44	65%
DN	30,302	126%	4%	6.07	4.80	0.77	76%
DON	11,364	159%	9%	2.28	1.43	0.29	96%
DNH <sub>3</sub>	1,557	146%	11%	0.31	0.21	0.04	88%
DNO <sub>23</sub>	17,515	109%	5%	3.51	3.21	0.44	66%
TP	4,135	174%	10%	0.829	0.475	0.105	105%
DP	796	100%	9%	0.160	0.160	0.020	60%
DOP	584	129%	11%	0.117	0.091	0.015	78%
TOC	142,028	169%	3%	28.46	16.83	3.61	102%
SS	13,697,320	412%	21%	2,745	666	348	249%

**Table A3. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acre) at Towanda**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	10,146	2.03	12,122	2.43	5,755	1.15	6,660	1.33
TON	3,707	0.74	6,051	1.21	5,846	1.17	2,189	0.44
TNH <sub>3</sub>	432	0.09	519	0.10	407	0.08	281	0.06
TNO <sub>23</sub>	5,722	1.15	5,711	1.14	2,022	0.41	3,989	0.80
DN	9,117	1.83	10,343	2.07	4,281	0.86	6,561	1.31
DON	2,641	0.53	4,041	0.81	2,735	0.55	1,947	0.39
DNH <sub>3</sub>	428	0.09	525	0.11	347	0.07	257	0.05
DNO <sub>23</sub>	5,747	1.15	5,728	1.15	1,995	0.40	4,045	0.81
TP	802	0.161	1,258	0.252	1,724	0.345	351	0.070
DP	193	0.039	288	0.058	188	0.038	127	0.026
DOP	146	0.029	209	0.042	132	0.027	97	0.020
TOC	28,652	5.74	45,312	9.08	43,043	8.63	25,021	5.01
SS	1,177,770	236	2,152,025	431	10,115,399	2,027	252,126	51

**Table A4. 2011 Monthly Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Towanda**

Month	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	4,860	35%	731	0.15	24%	21	0.004	9%	3,386	0.7	1%
February	9,460	77%	1,348	0.27	55%	47	0.009	35%	18,114	3.6	19%
March	47,732	202%	8,067	1.62	166%	734	0.147	189%	1,156,270	232	251%
April	45,037	176%	6,894	1.38	137%	799	0.160	170%	1,637,954	328	222%
May	28,406	219%	4,075	0.82	170%	380	0.076	215%	470,622	94	215%
June	9,488	109%	1,153	0.23	83%	79	0.016	53%	43,449	8.7	17%
July	3,697	74%	431	0.09	57%	29	0.006	36%	8,448	1.7	10%
August	5,112	120%	603	0.12	95%	62	0.012	88%	65,610	13	106%
September	36,785	647%	4,721	0.95	580%	1,633	0.327	1,058%	10,041,341	2,012	1,697%
October	18,220	235%	2,314	0.46	179%	168	0.034	127%	141,943	28	114%
November	12,918	114%	1,694	0.34	83%	78	0.016	45%	45,206	9	28%
December	18,109	128%	2,652	0.53	96%	105	0.021	52%	64,977	13	39%
Annual <sup>#</sup>	20,005	166%	34,683	6.95	127%	4,135	0.343	174%	13,697,318	2,745	412%

**Table A5. 2011 Annual Comparison to Baselines at Towanda**

Parameter	2011	Period	Y'	Q ratio	R <sup>2</sup>
TN	6.95	89-93	11.62	1.73	0.86
		89-99	11.24	1.80	0.89
		00-10	7.66	1.63	0.85
		89-10	8.98	1.71	0.62
TP	0.828	89-93	1.173	1.73	0.70
		89-99	1.154	1.80	0.89
		00-10	0.838	1.63	0.82
		89-10	0.976	1.71	0.83
SS	2,745	89-93	1,094	1.73	0.38
		89-99	2,215	1.80	0.71
		00-10	1,266	1.63	0.60
		89-10	1,536	1.71	0.60

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A6. 2011 Annual and Seasonal Comparison to Initial Five-Year Baselines at Towanda**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.50	0.95	3.33	2.03	0.61	0.188	0.161	0.02*	138	236
Spring	1.55	0.97	4.02	2.43	0.93	0.442	0.252	0.89	895	431
Summer	4.78	0.99	1.64	1.15	0.99	0.126	0.345	0.94	73	2,027
Fall	1.46	0.98	2.40	1.33	0.96	0.207	0.070	0.85	311	51
Annual	1.73	0.86	11.62	6.95	0.70	1.173	0.828	0.38	1,094	2,745

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A7. Trend Statistics for the Susquehanna River at Towanda, Pa., October 1988 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	0.198	-	-	-	-	NS
TN	600	FAC	-0.025	<0.001	-47	-44	-41	41-47	Down
TON	605	FAC	-0.027	<0.001	-53	-47	-40	40-53	Down
TNH <sub>3</sub>	610	FAC	-0.027	<0.001	-55	-47	-37	37-55	Down
TKN	625	FAC	-0.028	<0.001	-54	-48	-42	42-54	Down
TNOx	630	FAC	-0.024	<0.001	-46	-42	-38	38-46	Down
DN	602	FAC	-0.022	<0.001	-44	-40	-37	37-44	Down
DON	607	FAC	-0.021	<0.001	-46	-39	-31	31-46	Down
DNH <sub>3</sub>	608	FAC	-0.017	<0.001	-43	-33	-20	N/A	BMDL
DKN	623	FAC	-0.020	<0.001	-44	-37	-29	29-44	Down
DNOx	631	FAC	-0.023	<0.001	-46	-41	-37	37-46	Down
TP	665	FAC	-0.005	0.067	-23	-12	1	N/A	NS
DP	666	FAC	-0.008	0.008	-29	-18	-5	5-29	Down
DOP	671	FAC	0.081	<0.001	373	496	650	373-650	Up
TOC	680	FAC	-0.006	<0.001	-17	-13	-8	8-17	Down
SS	80154	FAC	-0.017	<0.001	-46	-33	-16	16-46	Down

Down = downward/improving trend

Up = Upward/degrading trend

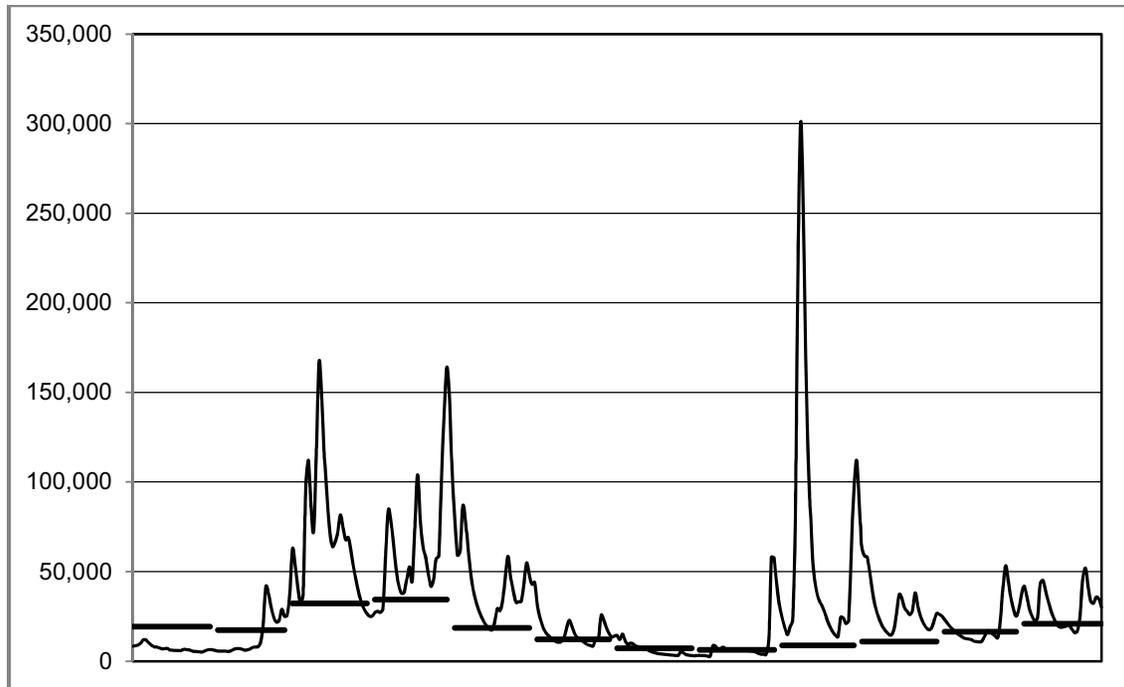
BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend

### INDIVIDUAL SITES: DANVILLE

**Table A8. 2011 Annual and Seasonal Precipitation and Discharge at Danville**

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	9.27	7.80	1.47	30,765	23,113	133%
April-June (Spring)	16.05	10.92	5.13	41,646	21,673	192%
July-September (Summer)	16.49	11.57	4.92	26,793	7,374	363%
October-December (Fall)	9.54	9.38	0.16	27,361	16,081	170%
Annual Total	51.35	39.67	11.68	31,619	17,018	186%



**Figure A2. 2011 Daily Average Flow and Monthly LTM at Danville**

**Table A9. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Danville**

Parameter	Load	Load % of LTM	Error %	Yield lbs	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	63,147	145%	4%	8.79	6.05	1.01	78%
TON	28,397	175%	8%	3.95	2.25	0.46	94%
TNH <sub>3</sub>	3,438	159%	14%	0.48	0.30	0.06	85%
TNO <sub>23</sub>	32,252	127%	5%	4.49	3.54	0.52	68%
DN	53,035	143%	4%	7.39	5.15	0.85	77%
DON	15,642	156%	8%	2.18	1.40	0.25	84%
DNH <sub>3</sub>	3,268	171%	14%	0.46	0.27	0.05	92%
DNO <sub>23</sub>	32,270	128%	5%	4.49	3.51	0.52	69%
TP	8,186	218%	11%	1.140	0.522	0.132	117%
DP	1,505	140%	12%	0.210	0.150	0.024	75%
DOP	955	156%	16%	0.133	0.085	0.015	84%
TOC	238,667	201%	4%	33.24	16.50	3.83	108%
SS	24,497,398	606%	23%	3,412	563	394	326%

**Table A10. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acre) at Danville**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	17,266	3.95	20,765	2.89	11,884	1.65	13,232	1.84
TON	5,916	0.82	9,606	1.34	9,123	1.27	3,752	0.52
TNH <sub>3</sub>	922	0.13	1,057	0.15	724	0.10	735	0.10
TNO <sub>23</sub>	9,610	1.34	9,728	1.35	4,615	0.64	8,299	1.16
DN	14,966	2.08	16,966	2.36	8,500	1.18	12,603	1.76
DON	3,630	0.51	5,269	0.73	3,847	0.54	2,896	0.40
DNH <sub>3</sub>	902	0.13	989	0.14	673	0.09	704	0.10
DNO <sub>23</sub>	9,633	1.34	9,700	1.35	4,567	0.64	8,370	1.17
TP	1,523	0.212	2,383	0.332	3,401	0.474	879	0.122
DP	331	0.046	518	0.072	384	0.053	272	0.038
DOP	209	0.029	320	0.045	244	0.034	182	0.025
TOC	43,903	6.11	71,196	9.91	79,516	11.07	44,052	6.13
SS	2,157,626	300	3,689,698	514	17,755,145	2,473	894,929	125

**Table A11. 2011 Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Danville**

MONTH	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	7,232	37%	1,243	0.17	26%	36	0.005	10%	6,641	0.9	2%
February	14,227	82%	2,356	0.33	62%	97	0.013	46%	43,224	6.0	37%
March	69,235	215%	13,667	1.90	181%	1,390	0.194	228%	2,107,761	294	353%
April	64,007	186%	11,245	1.57	150%	1,412	0.197	204%	2,592,732	361	316%
May	44,452	239%	7,288	1.01	197%	797	0.111	277%	990,685	138	381%
June	16,387	135%	2,232	0.31	109%	174	0.024	72%	106,281	15	28%
July	6,610	92%	843	0.12	72%	56	0.008	45%	19,566	2.7	19%
August	10,076	162%	1,338	0.19	131%	148	0.021	139%	181,059	25	280%
September	64,923	742%	9,703	1.35	675%	3,197	0.445	1,232%	17,554,520	2,445	2,083%
October	31,281	287%	4,700	0.65	224%	449	0.063	226%	575,853	80	412%
November	20,577	125%	3,215	0.45	91%	172	0.024	58%	123,071	17	67%
December	30,006	144%	5,317	0.74	111%	258	0.036	71%	196,005	27	88%
Annual <sup>#</sup>	31,619	186%	74,247	10.34	145%	8,186	0.343	218%	24,497,398	3,412	606%

**Table A12. 2011 Annual Comparison to Baselines at Danville**

Parameter	2011	Period	Y'	Q ratio	R <sup>2</sup>
TN	8.79	85-89	18.65	2.36	0.95
		85-97	13.31	2.03	0.88
		98-10	8.483	1.83	0.71
		85-10	10.26	1.92	0.55
TP	1.14	85-89	4.25	2.36	0.97
		85-97	1.345	2.03	0.87
		98-10	1.15	1.83	0.84
		85-10	1.225	1.92	0.75
SS	3,412	85-89	2015	2.36	0.99
		85-97	1699	2.03	0.77
		98-10	1405	1.83	0.52
		85-10	1511	1.92	0.62

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A13. 2011 Annual and Seasonal Comparison to Initial Five-Year Baselines at Danville**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.85	1.00	4.00	2.40	0.97	0.299	0.212	0.90	401	301
Spring	2.24	1.00	4.52	2.89	1.00	0.398	0.332	0.98	494	514
Summer	4.94	0.99	2.73	1.65	0.93	0.233	0.474	0.79	117	2,473
Fall	2.08	1.00	3.59	1.84	0.98	0.265	0.122	0.95	181	125
Annual	2.36	0.95	18.65	8.79	0.97	4.25	1.14	0.99	2,015	3,412

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A14. Trend Statistics for the Susquehanna River at Danville, Pa., October 1984 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	0.101	-	-	-	-	NS
TN	600	FAC	-0.023	<0.001	-50	-47	-44	44-50	Down
TON	605	FAC	-0.031	<0.001	-62	-57	-51	51-62	Down
TNH <sub>3</sub>	610	FAC	-0.026	<0.001	-58	-50	-41	41-58	Down
TKN	625	FAC	-0.030	<0.001	-61	-56	-51	51-61	Down
TNO <sub>x</sub>	630	FAC	-0.020	<0.001	-45	-41	-37	37-45	Down
DN	602	FAC	-0.019	<0.001	-44	-41	-37	37-44	Down
DON	607	FAC	-0.022	<0.001	-52	-46	-39	39-52	Down
DNH <sub>3</sub>	608	FAC	-0.020	<0.001	-52	-42	-31	31-52	BMDL
DKN	623	FAC	-0.020	<0.001	-49	-43	-36	36-49	Down
DNO <sub>x</sub>	631	FAC	-0.019	<0.001	-45	-41	-36	36-45	Down
TP	665	FAC	-0.012	<0.001	-37	-28	-17	17-37	Down
DP	666	FAC	-0.003	0.376	-21	-7	10	N/A	NS
DOP	671	FAC	0.081	<0.001	524	713	959	N/A	BMDL
TOC	680	FAC	-0.009	<0.001	-26	-21	-17	17-26	Down
SS	80154	FAC	-0.028	<0.001	-61	-53	-43	43-61	Down

Down = downward/improving trend

Up = Upward/degrading trend

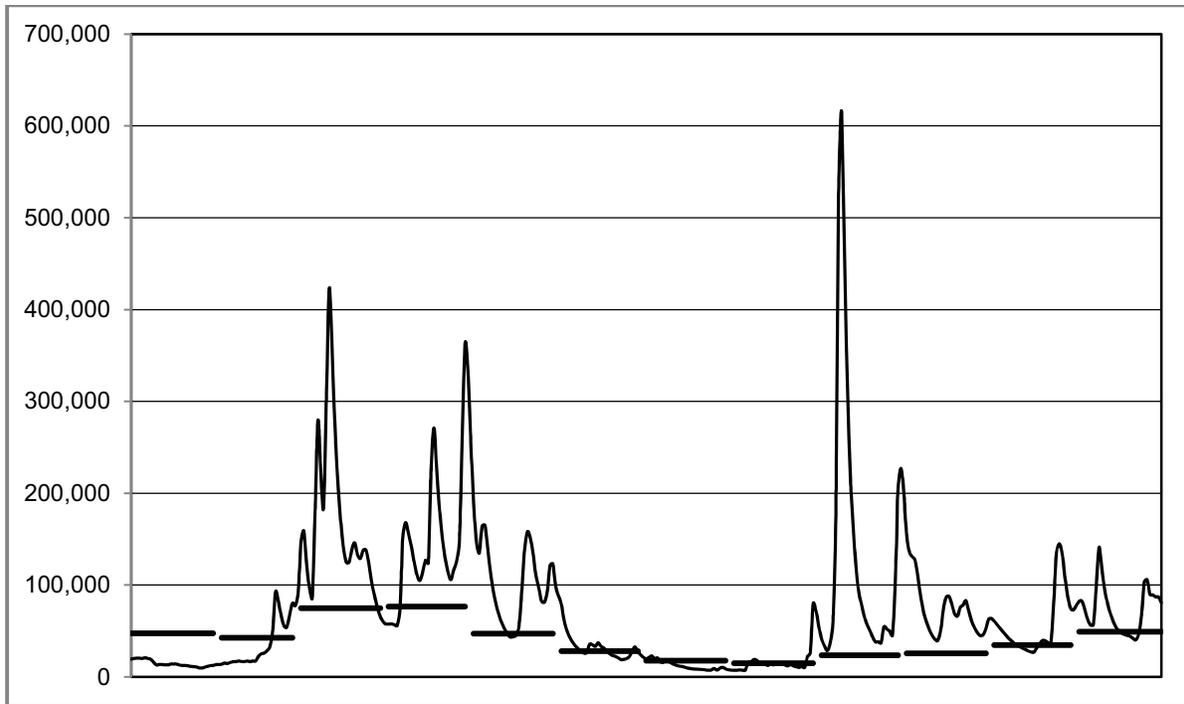
BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend

### INDIVIDUAL SITES: MARIETTA

**Table A15. 2011 Annual and Seasonal Precipitation and Discharge at Marietta**

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	10.3	8.21	2.09	71,997	55,412	130%
April-June (Spring)	17.05	10.99	6.06	97,148	50,703	192%
July-September (Summer)	20.75	11.88	8.87	55,042	18,716	294%
October-December (Fall)	11.5	9.65	1.85	70,047	36,598	191%
Annual Total	59.6	40.73	18.87	73,502	40,256	183%



**Figure A3. 2011 Daily Average Flow and Monthly LTM at Marietta**

**Table A16. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Marietta**

Parameter	Load	Load % of LTM	Error %	Yield	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	194,879	150%	4%	11.72	7.83	1.35	82%
TON	72,584	206%	10%	4.36	2.12	0.50	113%
TNH <sub>3</sub>	6,582	144%	12%	0.40	0.28	0.05	79%
TNO <sub>23</sub>	124,135	135%	5%	7.46	5.52	0.86	74%
DN	157,333	139%	4%	9.46	6.81	1.09	76%
DON	24,975	130%	11%	1.50	1.16	0.17	71%
DNH <sub>3</sub>	5,384	136%	12%	0.32	0.24	0.04	75%
DNO <sub>23</sub>	124,184	136%	5%	7.47	5.49	0.86	75%
TP	21,202	265%	9%	1.275	0.481	0.147	145%
DP	2,843	126%	9%	0.171	0.135	0.020	69%
DOP	1,951	156%	10%	0.117	0.075	0.013	85%
TOC	506,677	206%	4%	30.46	14.80	3.50	113%
SS	38,143,676	491%	16%	2,293	468	264	269%

**Table A17. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acre) at Marietta**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	48,284	2.90	58,900	3.54	36,019	2.17	51,676	3.11
TON	15,109	0.91	23,189	1.39	21,927	1.32	12,359	0.74
TNH <sub>3</sub>	1,688	0.10	1,871	0.11	1,418	0.09	1,605	0.10
TNO <sub>23</sub>	31,912	1.92	36,128	2.17	19,757	1.19	36,338	2.18
DN	39,740	2.39	45,897	2.76	26,561	1.60	45,135	2.71
DON	5,685	0.34	7,548	0.45	5,604	0.34	6,138	0.37
DNH <sub>3</sub>	1,395	0.08	1,536	0.09	1,104	0.07	1,349	0.08
DNO <sub>23</sub>	31,927	1.92	36,092	2.17	19,656	1.18	36,509	2.19
TP	3,536	0.213	5,246	0.315	9,666	0.581	2,754	0.166
DP	491	0.030	694	0.042	899	0.054	759	0.046
DOP	317	0.019	447	0.027	634	0.038	553	0.033
TOC	98,095	5.90	154,036	9.26	146,160	8.79	108,386	6.52
SS	4,792,423	288	7,064,468	425	24,138,561	1,451	2,148,224	129

**Table A18. 2011 Monthly Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Marietta**

Month	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	14,455	30%	3,248	0.20	22%	49	0.003	6%	10,174	0.6	1%
February	35,268	83%	7,329	0.44	64%	187	0.011	44%	96,771	5.8	36%
March	162,713	217%	37,707	2.27	184%	3,300	0.198	268%	4,685,478	282	397%
April	148,010	193%	30,568	1.84	154%	3,108	0.187	229%	4,726,378	284	359%
May	108,923	230%	22,144	1.33	191%	1,860	0.112	264%	2,176,598	131	333%
June	34,120	121%	6,188	0.37	99%	278	0.017	63%	161,492	9.7	38%
July	12,731	71%	2,205	0.13	55%	78	0.005	32%	23,183	1.4	15%
August	17,199	116%	3,331	0.20	97%	164	0.010	74%	87,006	5.2	62%
September	137,867	584%	30,483	1.83	530%	9,424	0.567	1,092%	24,028,372	1,445	1,446%
October	78,894	308%	19,025	1.14	262%	1,404	0.084	323%	1,269,306	76	389%
November	57,323	165%	13,885	0.83	137%	627	0.038	118%	421,439	25	121%
December	73,513	149%	18,766	1.13	123%	723	0.043	93%	457,479	28	79%
Annual	73,502	183%	194,879	11.72	150%	21,202	0.343	265%	38,143,676	2,293	491%

**Table A19. 2011 Annual Comparison to Baselines at Marietta**

Parameter	2011	Period	Y'	Q ratio	R <sup>2</sup>
TN	11.72	87-91	20.73	2.20	1.00
		85-98	15.44	1.90	0.94
		99-10	13.94	1.88	0.96
		87-10	14.67	1.89	0.90
TP	1.274	87-91	1.041	2.20	0.79
		85-98	1.119	1.90	0.90
		99-10	1.045	1.88	0.79
		87-10	1.082	1.89	0.85
SS	2,293	87-91	1,004	2.20	0.70
		85-98	1,170	1.90	0.88
		99-10	1,191	1.88	0.67
		87-10	1,178	1.89	0.77

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A20. 2011 Annual and Seasonal Comparison to Initial Five-Year Baselines at Marietta**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.65	1.00	4.33	2.90	0.87	0.163	0.213	0.97	115	288
Spring	2.09	1.00	5.75	3.54	0.91	0.388	0.315	0.92	488	425
Summer	3.76	1.00	2.92	2.17	0.89	0.174	0.581	0.88	111	1451
Fall	2.40	1.00	4.63	3.11	1.00	0.252	0.166	0.98	240	129
Annual	2.20	1.00	20.73	11.72	0.79	1.041	1.274	0.70	1,004	2,293

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A21. Trend Statistics for the Susquehanna River at Marietta, Pa., October 1986 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	0.431	-	-	-	-	NS
TN	600	FAC	-0.015	<0.001	-35	-31	-27	27-35	Down
TON	605	FAC	-0.027	<0.001	-56	-49	-42	42-56	Down
TNH <sub>3</sub>	610	FAC	-0.016	<0.001	-43	-33	-21	21-43	Down
TKN	625	FAC	-0.025	<0.001	-54	-48	-41	41-54	Down
TNO <sub>23</sub>	630	FAC	-0.009	<0.001	-25	-20	-14	14-25	Down
DN	602	FAC	-0.022	<0.001	-47	-43	-39	39-47	Down
DON	607	FAC	-0.027	<0.001	-56	-49	-41	41-56	Down
DNH <sub>3</sub>	608	FAC	-0.014	<0.001	-40	-30	-18	N/A	BMDL
DKN	623	FAC	-0.023	<0.001	-52	-44	-36	36-52	Down
DNO <sub>23</sub>	631	FAC	-0.009	<0.001	-25	-20	-14	14-25	Down
TP	665	FAC	-0.015	<0.001	-40	-32	-23	23-40	Down
DP	666	FAC	-0.024	<0.001	-52	-45	-37	37-52	Down
DOP	671	FAC	0.073	<0.001	360	487	650	N/A	BMDL
TOC	680	FAC	-0.007	<0.001	-20	-16	-11	11-20	Down
SS	80154	FAC	-0.020	<0.001	-50	-39	-27	27-50	Down

Down = downward/improving trend

Up = Upward/degrading trend

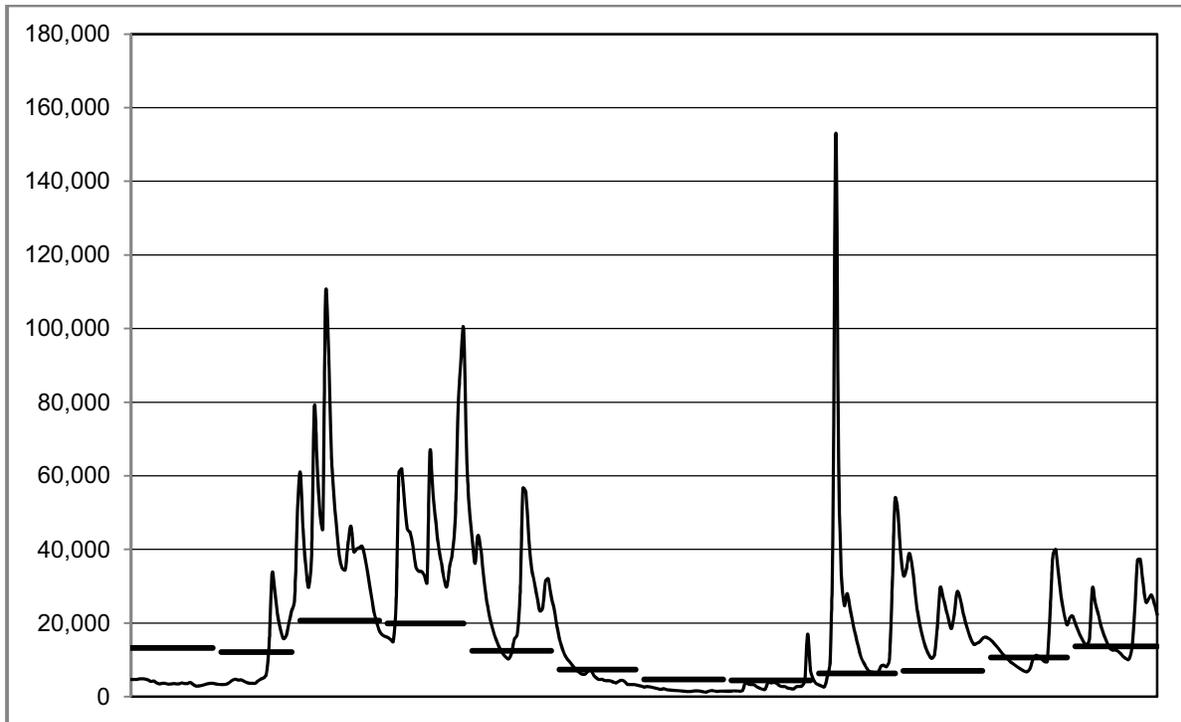
BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend

## INDIVIDUAL SITES: LEWISBURG

*Table A22. 2011 Annual and Seasonal Precipitation and Discharge at Lewisburg*

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	11.76	8.42	3.34	20,148	15,442	130%
April-June (Spring)	17.9	11.23	6.67	26,424	13,228	200%
July-September (Summer)	22.44	12.77	9.67	9,070	5,146	176%
October-December (Fall)	12.57	9.92	2.65	19,029	10,458	182%
Annual Total	64.67	42.34	22.33	18,638	11,041	169%



*Figure A4. 2011 Daily Average Flow and Monthly LTM at Lewisburg*

**Table A23. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Lewisburg**

Parameter	Load	Load % of LTM	Error %	Yield	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	29,066	125%	5%	6.63	5.29	0.79	74%
TON	8,819	121%	13%	2.01	1.66	0.24	72%
TNH <sub>3</sub>	1,279	123%	12%	0.29	0.24	0.03	73%
TNO <sub>23</sub>	19,416	129%	4%	4.43	3.43	0.53	76%
DN	26,121	127%	4%	5.96	4.69	0.71	75%
DON	5,620	114%	11%	1.28	1.12	0.15	68%
DNH <sub>3</sub>	1,217	134%	11%	0.28	0.21	0.03	80%
DNO <sub>23</sub>	19,327	129%	4%	4.41	3.41	0.53	77%
TP	1,399	113%	11%	0.319	0.282	0.038	67%
DP	273	59%	17%	0.062	0.106	0.007	35%
DOP	158	70%	24%	0.036	0.051	0.004	42%
TOC	82,456	178%	5%	18.82	10.56	2.25	106%
SS	1,921,672	164%	17%	439	267	52	97%

**Table A24. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acres) at Lewisburg**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	8,451	1.93	9,611	2.19	3,259	0.74	7,745	1.77
TON	2,440	0.56	3,369	0.77	1,308	0.30	1,702	0.39
TNH <sub>3</sub>	366	0.08	402	0.09	141	0.03	370	0.08
TNO <sub>23</sub>	5,670	1.29	5,961	1.36	2,044	0.47	5,741	1.31
DN	7,615	1.74	8,369	1.91	2,815	0.64	7,322	1.67
DON	1,579	0.36	2,032	0.46	702	0.16	1,307	0.30
DNH <sub>3</sub>	369	0.08	388	0.09	121	0.03	339	0.08
DNO <sub>23</sub>	5,660	1.29	5,915	1.35	2,028	0.46	5,724	1.31
TP	361	0.082	570	0.130	236	0.054	232	0.053
DP	68	0.016	113	0.026	37	0.009	55	0.012
DOP	42	0.010	67	0.015	19	0.004	30	0.007
TOC	18,999	4.34	28,478	6.50	14,825	3.38	20,154	4.60
SS	475,976	109	698,866	159	503,500	115	243,330	56

**Table A25. 2011 Monthly Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Lewisburg**

Monthly	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	3,798	29%	673	0.15	25%	8	0.002	6%	2,175	0.5	1%
February	10,484	86%	1,457	0.33	67%	35	0.008	39%	24,135	5.5	40%
March	45,226	219%	6,321	1.44	166%	318	0.073	154%	449,666	102.6	209%
April	44,343	223%	5,468	1.25	158%	348	0.079	168%	488,055	111.4	205%
May	28,294	228%	3,362	0.77	171%	196	0.045	189%	199,611	45.6	232%
June	6,573	89%	781	0.18	71%	26	0.006	45%	11,200	2.6	37%
July	1,803	38%	256	0.06	35%	6	0.001	14%	1,036	0.2	6%
August	3,379	76%	441	0.10	64%	12	0.003	29%	4,763	1.1	16%
September	22,459	356%	2,562	0.58	276%	218	0.050	326%	497,701	113.6	529%
October	22,052	313%	2,777	0.63	236%	114	0.026	183%	121,844	27.8	272%
November	15,161	142%	2,066	0.47	107%	53	0.012	54%	53,279	12.2	66%
December	19,748	144%	2,902	0.66	113%	65	0.015	54%	68,207	15.6	75%
Annual <sup>#</sup>	18,638	169%	29,066	6.63	125%	1,399	0.343	113%	1,921,672	438.5	164%

**Table A26. 2011 Annual Comparison to Baselines at Lewisburg**

Parameter	2011	Period	Y'	Q ratio	R <sup>2</sup>
TN	6.63	85-89	11.95	1.89	0.91
		85-97	9.78	1.68	0.94
		98-10	8.18	1.80	0.94
		85-10	9.29	1.73	0.81
TP	0.319	85-89	0.591	1.89	0.92
		85-97	0.651	1.68	0.87
		98-10	0.534	1.80	0.91
		85-10	0.603	1.73	0.83
SS	439	85-89	522	1.89	0.71
		85-97	962	1.68	0.76
		98-10	575	1.80	0.63
		85-10	823	1.73	0.65

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A27. 2011 Annual and Seasonal Comparison to Initial Five-Year Baselines at Lewisburg**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.58	0.99	3.21	1.93	0.98	0.133	0.082	0.89	139	109
Spring	1.96	1.00	3.46	2.19	0.99	0.226	0.130	0.96	228	160
Summer	2.19	0.99	1.12	0.74	0.97	0.066	0.054	0.41*	20	115
Fall	2.06	1.00	2.94	1.77	0.99	0.129	0.053	0.95	92	56
Annual	1.89	0.91	11.95	6.63	0.92	0.591	0.319	0.71	522	439

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A28. Trend Statistics for the West Branch Susquehanna River at Lewisburg, Pa., October 1984 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	1.0	-	-	-	-	NS
TN	600	FAC	-0.017	<0.001	-41	-36	-32	32-41	Down
TON	605	FAC	-0.037	<0.001	-70	-64	-58	58-70	Down
TNH <sub>3</sub>	610	FAC	-0.017	<0.001	-47	-37	-24	N/A	BMDL
TKN	625	FAC	-0.031	<0.001	-63	-57	-51	51-63	Down
TNO <sub>23</sub>	630	FAC	-0.007	<0.001	-23	-18	-12	12-23	Down
DN	602	FAC	-0.014	<0.001	-36	-32	-27	27-36	Down
DON	607	FAC	-0.030	<0.001	-63	-57	-50	50-63	Down
DNH <sub>3</sub>	608	FAC	-0.011	<0.001	-38	-26	-12	N/A	BMDL
DKN	623	FAC	-0.023	<0.001	-53	-46	-39	39-53	Down
DNO <sub>23</sub>	631	FAC	-0.007	<0.001	-23	-18	-12	12-23	Down
TP	665	FAC	-0.020	<0.001	-51	-41	-30	30-51	Down
DP	666	FAC	-0.031	<0.001	-65	-58	-48	N/A	BMDL
DOP	671	FAC	0.055	<0.001	211	325	481	N/A	BMDL
TOC	680	FAC	0.001	0.511	-5	3	11	N/A	NS
SS	80154	FAC	-0.018	<0.001	-51	-38	-22	22-51	Down

Down = downward/improving trend

Up = Upward/degrading trend

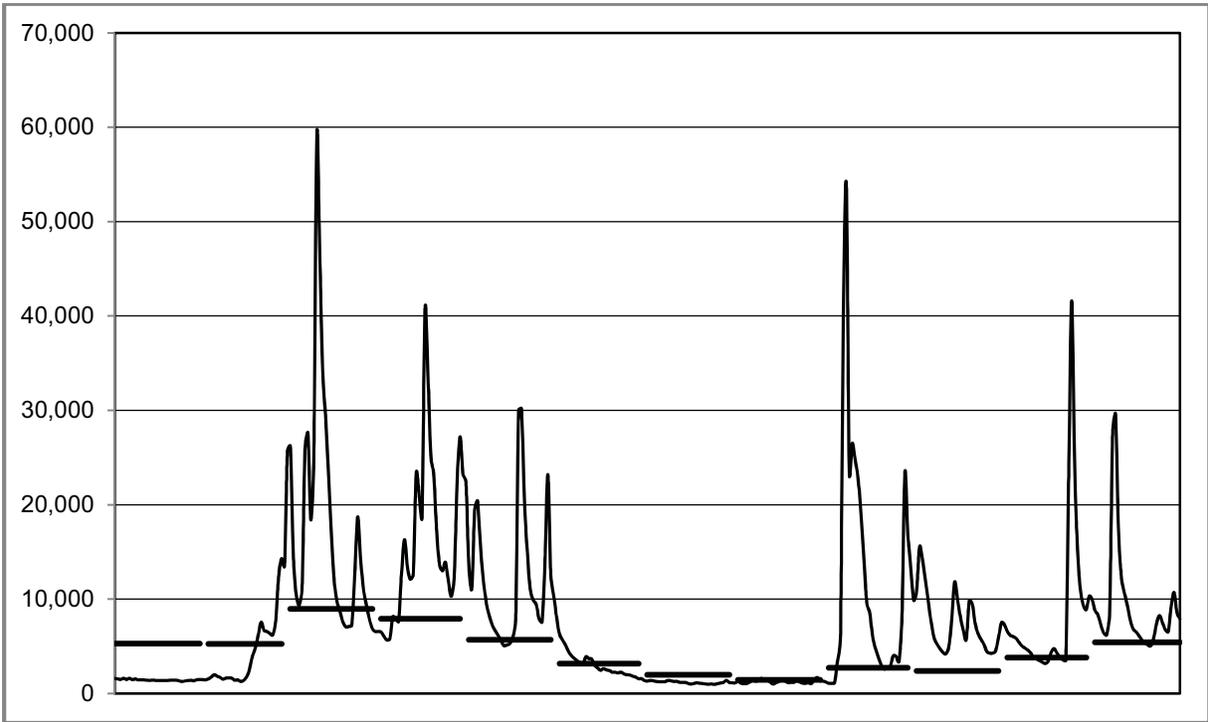
BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend

### INDIVIDUAL SITES: NEWPORT

**Table A29. 2011 Annual and Seasonal Precipitation and Discharge at Newport**

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	8.12	7.69	0.43	7,977	6,547	122%
April-June (Spring)	16.75	10.09	6.66	10,513	5,604	188%
July-September (Summer)	18.97	10.36	8.61	4,695	2,054	229%
October-December (Fall)	11.72	9.26	2.46	8,362	3,865	216%
Annual Total	55.56	37.4	18.16	7,879	4,504	175%



**Figure A5. 2011 Daily Average Flow and Monthly LTM at Newport**

**Table A30. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Newport**

Parameter	Load	Load % of LTM	Error %	Yield	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	24,834	151%	3%	11.57	7.64	1.60	87%
TON	5,996	151%	12%	2.79	1.85	0.39	86%
TNH <sub>3</sub>	512	135%	12%	0.24	0.18	0.03	77%
TNO <sub>23</sub>	18,841	154%	3%	8.78	5.69	1.21	88%
DN	22,116	149%	3%	10.30	6.90	1.43	85%
DON	2,965	119%	10%	1.38	1.16	0.19	68%
DNH <sub>3</sub>	440	135%	12%	0.20	0.15	0.03	77%
DNO <sub>23</sub>	18,921	156%	3%	8.81	5.65	1.22	89%
TP	1,110	143%	10%	0.517	0.362	0.072	82%
DP	327	91%	9%	0.152	0.167	0.021	52%
DOP	251	118%	10%	0.117	0.099	0.016	67%
TOC	48,466	170%	5%	22.58	13.32	3.12	97%
SS	1,056,106	200%	17%	492	245	68	115%

**Table A31. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acre) at Newport**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	6,126	2.85	7,668	3.57	3,647	1.70	7,393	3.44
TON	1,556	0.72	2,062	0.96	1,138	0.53	1,240	0.58
TNH <sub>3</sub>	113	0.05	173	0.08	109	0.05	117	0.05
TNO <sub>23</sub>	4,597	2.14	5,633	2.62	2,592	1.21	6,019	2.80
DN	5,391	2.51	6,732	3.14	3,171	1.48	6,822	3.18
DON	704	0.33	974	0.45	526	0.24	761	0.35
DNH <sub>3</sub>	92	0.04	146	0.07	97	0.05	105	0.05
DNO <sub>23</sub>	4,610	2.15	5,663	2.64	2,597	1.21	6,051	2.82
TP	232	0.108	335	0.156	300	0.140	243	0.113
DP	60	0.028	93	0.043	83	0.039	91	0.042
DOP	43	0.020	67	0.031	68	0.032	73	0.034
TOC	10,747	5.01	15,435	7.19	9,728	4.53	12,556	5.85
SS	235,250	110	312,548	146	341,688	159	166,620	78

**Table A32. 2011 Monthly Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Newport**

Month	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	1,435	27%	338	0.16	19%	5	0.002	7%	668	0.3	2%
February	4,381	83%	1,068	0.50	70%	20	0.009	38%	9,585	4.5	40%
March	17,765	198%	4,720	2.20	174%	207	0.096	173%	224,997	104.8	252%
April	15,755	199%	3,864	1.80	172%	171	0.079	160%	170,664	79.5	228%
May	12,520	220%	3,104	1.45	194%	144	0.067	176%	134,378	62.6	259%
June	3,197	101%	700	0.33	85%	20	0.009	41%	7,506	3.5	27%
July	1,182	59%	224	0.10	42%	7	0.003	22%	1,243	0.6	6%
August	1,262	87%	256	0.12	68%	8	0.004	39%	1,459	0.7	24%
September	11,873	433%	3,167	1.48	389%	285	0.133	375%	338,986	157.9	354%
October	7,558	317%	2,234	1.04	290%	78	0.036	209%	42,725	19.9	216%
November	8,177	215%	2,349	1.09	180%	90	0.042	149%	73,635	34.3	204%
December	9,345	173%	2,810	1.31	147%	75	0.035	101%	50,260	23.4	120%
Annual	7,879	175%	24,834	11.57	151%	1,110	0.343	143%	1,056,106	492.0	200%

**Table A33. 2011 Annual Comparison to Baselines at Newport**

Parameter	2011	Period	Y'	Flow ratio	R <sup>2</sup>
TN	11.57	85-89	16.04	2.00	0.84
		85-97	13.59	1.76	0.95
		98-10	14.38	1.84	0.98
		85-10	13.98	1.80	0.96
TP	0.517	85-89	1.004	2.00	0.68
		85-97	0.686	1.76	0.75
		98-10	0.789	1.84	0.83
		85-10	0.736	1.80	0.78
SS	492	85-89	867	2.00	0.94
		85-97	580	1.76	0.90
		98-10	766	1.84	0.73
		85-10	667	1.80	0.77

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A34. 2011 Annual and Seasonal Comparison to Initial Five-Year Baselines at Newport**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.54	0.96	4.03	2.85	0.84	0.238	0.108	0.91	163	110
Spring	1.87	0.98	4.562	3.57	0.89	0.284	0.156	0.98	249	146
Summer	2.35	1.00	2.19	1.70	1.00	0.162	0.140	1.00	151	159
Fall	2.76	1.00	5.47	3.44	0.96	0.34	0.113	0.87	204	78
Annual	2.00	0.84	16.04	11.57	0.68	1.004	0.517	0.94	867	492

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A35. Trend Statistics for the Juniata River at Newport, Pa., October 1984 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	0.433	-	-	-	-	NS
TN	600	FAC	-0.007	<0.001	-21	-17	-13	13-21	Down
TON	605	FAC	-0.031	<0.001	-64	-58	-50	50-64	Down
TNH <sub>3</sub>	610	FAC	-0.020	<0.001	-51	-42	-30	N/A	BMDL
TKN	625	FAC	-0.028	<0.001	-60	-54	-47	47-60	Down
TNO <sub>23</sub>	630	FAC	-0.001	0.448	-7	-2	3	N/A	NS
DN	602	FAC	-0.005	<0.001	-17	-13	-8	8-17	Down
DON	607	FAC	-0.027	<0.001	-58	-52	-45	45-58	Down
DNH <sub>3</sub>	608	FAC	-0.020	<0.001	-52	-42	-30	N/A	BMDL
DKN	623	FAC	-0.028	<0.001	-60	-54	-46	46-60	Down
DNO <sub>23</sub>	631	FAC	0.000	0.794	-4	1	6	N/A	NS
TP	665	FAC	-0.024	<0.001	-56	-49	-40	40-56	Down
DP	666	FAC	-0.027	<0.001	-58	-52	-44	44-58	Down
DOP	671	FAC	0.031	<0.001	78	129	195	78-195	Up
TOC	680	FAC	-0.009	<0.001	-28	-21	-14	14-28	Down
SS	80154	FAC	-0.022	<0.001	-56	-45	-30	30-56	Down

Down = downward/improving trend

Up = Upward/degrading trend

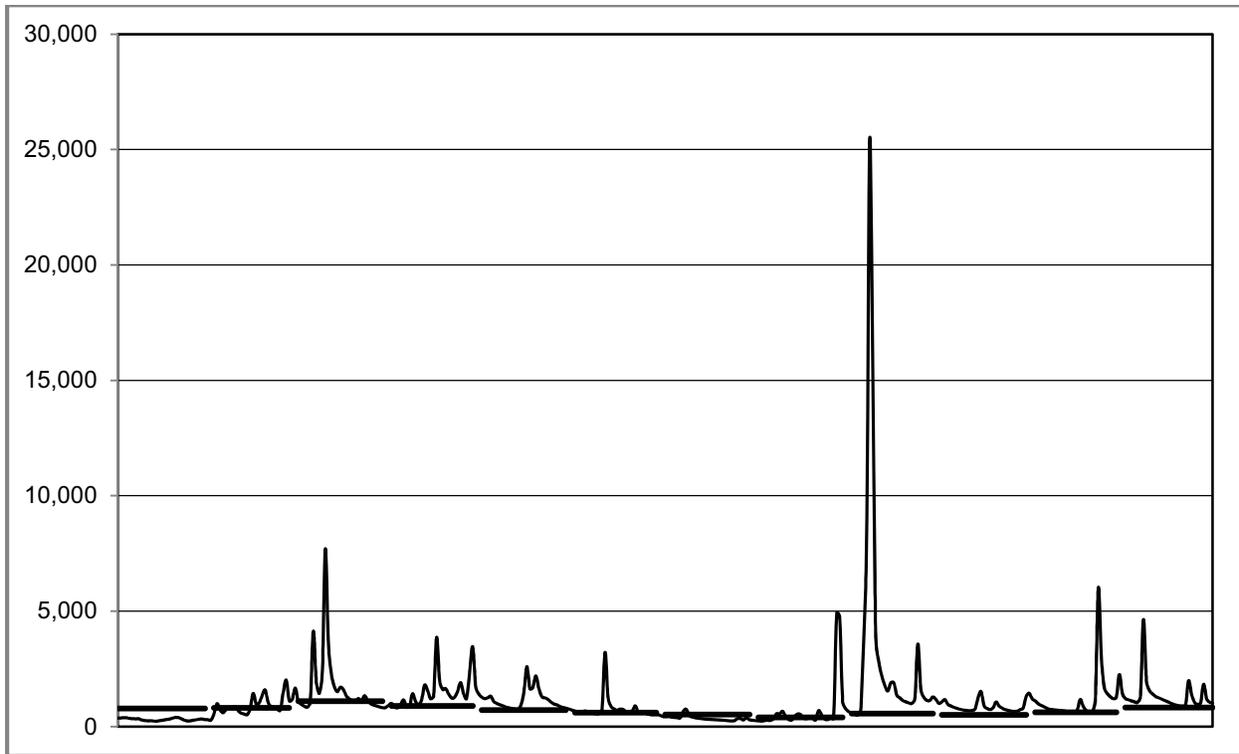
BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend

## INDIVIDUAL SITES: CONESTOGA

*Table A36. 2011 Annual and Seasonal Precipitation and Discharge at Conestoga*

Season	Precipitation (inches)			Discharge (cfs)		
	2011	LTM	LTM Departure	2011	LTM	% LTM
January-March (Winter)	10.45	8.79	1.66	960	897	107%
April-June (Spring)	14.56	10.96	3.6	1,134	736	154%
July-September (Summer)	23.04	12.96	10.08	1,349	491	275%
October-December (Fall)	11.66	10.73	0.93	1,132	649	174%
Annual Total	59.72	43.44	16.28	1,145	692	165%



*Figure A6. 2011 Daily Average Flow and Monthly LTM at Conestoga*

**Table A37. 2011 Annual Loads (1000's lbs), Yields (lbs/acre), and Concentrations (mg/L) at Conestoga**

Parameter	Load	Load % of LTM	Error %	Yield	LTM Yield	Ave. Conc.	Conc. % of LTM
TN	13,720	132%	3%	46	35	6.09	80%
TON	1,963	107%	13%	6.53	6.13	0.87	64%
TNH <sub>3</sub>	293	117%	17%	0.97	0.83	0.13	71%
TNO <sub>23</sub>	11,392	135%	5%	38	28	5.05	82%
DN	12,584	131%	4%	42	32	5.58	79%
DON	869	77%	11%	2.89	3.75	0.39	47%
DNH <sub>3</sub>	263	116%	16%	0.87	0.75	0.12	70%
DNO <sub>23</sub>	11,438	138%	5%	38	28	5.07	83%
TP	1,887	274%	15%	6.273	2.287	0.837	166%
DP	515	199%	10%	1.712	0.861	0.228	120%
DOP	443	206%	10%	1.473	0.714	0.197	125%
TOC	11,411	152%	7%	38	25	5.06	92%
SS	1,684,696	425%	31%	5,601	1,317	747	257%

**Table A38. 2011 Seasonal Loads (1000's lbs) and Yields (lbs/acre) at Conestoga**

Parameter	Winter		Spring		Summer		Fall	
	Load	Yield	Load	Yield	Load	Yield	Load	Yield
TN	3,118	10.37	3,451	11.47	3,343	11.11	3,808	12.66
TON	387	1.29	427	1.42	778	2.59	371	1.23
TNH <sub>3</sub>	52	0.17	55	0.18	127	0.42	59	0.20
TNO <sub>23</sub>	2,633	8.75	2,880	9.57	2,560	8.51	3,319	11.04
DN	2,915	9.69	3,222	10.71	2,884	9.59	3,563	11.84
DON	225	0.75	252	0.84	207	0.69	185	0.61
DNH <sub>3</sub>	49	0.16	52	0.17	107	0.36	55	0.18
DNO <sub>23</sub>	2,624	8.72	2,884	9.59	2,580	8.58	3,350	11.14
TP	108	0.359	133	0.442	1,485	4.937	161	0.535
DP	49	0.162	66	0.218	308	1.025	92	0.306
DOP	39	0.130	54	0.181	272	0.906	78	0.258
TOC	1,678	5.58	2,189	7.28	5,448	18.11	2,096	6.97
SS	56,811	189	52,018	173	1,524,970	5,070	50,897	169

**Table A39. 2011 Monthly Flow (cfs), Loads (1000's lbs), and Yields (lbs/acre) at Conestoga**

Month	Flow		TN			TP			SS		
	2011	% LTM	Load	Yield	% LTM	Load	Yield	% LTM	Load	Yield	% LTM
January	306	39%	386	1.28	36%	6	0.019	11%	499	1.7	2%
February	919	113%	992	3.30	96%	21	0.069	45%	5,563	18.5	30%
March	1,651	151%	1,740	5.78	122%	81	0.268	91%	50,749	168.7	84%
April	1,480	165%	1,492	4.96	132%	58	0.192	106%	26,527	88.2	99%
May	1,172	165%	1,213	4.03	132%	45	0.151	93%	16,112	53.6	55%
June	749	124%	746	2.48	107%	30	0.100	57%	9,379	31.2	28%
July	361	70%	380	1.26	62%	13	0.042	26%	1,463	4.9	5%
August	707	178%	684	2.27	147%	63	0.208	199%	28,684	95.4	261%
September	3,034	541%	2,279	7.58	382%	1,409	4.683	1,313%	1,494,823	4,969	1,613%
October	882	173%	1,005	3.34	164%	37	0.124	77%	6,762	22.5	27%
November	1,197	195%	1,285	4.27	171%	67	0.224	148%	25,857	86.0	152%
December	1,318	160%	1,518	5.05	142%	57	0.189	92%	18,278	60.8	69%
Annual	1,145	165%	13,720	45.61	132%	1,887	0.343	274%	1,684,696	5,601	425%

**Table A40. 2011 Annual Comparison to Baselines at Conestoga**

Parameter	2011	Period	Y'	Q ratio	R <sup>2</sup>
TN	45.61	85-89	65.30	1.83	0.99
		85-97	58.36	1.73	0.98
		98-10	54.40	1.67	0.96
		85-10	56.20	1.70	0.95
TP	6.271	85-89	3.888	1.83	0.67
		85-97	5.377	1.73	0.90
		98-10	3.066	1.67	0.52
		85-10	4.127	1.70	0.61
SS	5,601	85-89	3,180	1.83	0.87
		85-97	3,281	1.73	0.90
		98-10	1,783	1.67	0.27
		85-10	2,478	1.70	0.55

Q = discharge ratio

R<sup>2</sup> = correlation coefficient

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A41. 2011 Annual and Seasonal Comparison to Initial 5-Year Baselines at Conestoga**

Time Period	Flow Ratio	TN			TP			SS		
		R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11	R <sup>2</sup>	Y'	Y11
Winter	1.20	1.00	13.31	10.36	0.45*	0.830	0.357	0.25*	262	189
Spring	1.62	1.00	15.69	11.47	0.99	1.209	0.444	0.98	1,027	173
Summer	2.48	1.00	16.22	11.11	0.21*	1.257	4.933	0.16*	1,430	5,070
Fall	2.19	0.98	15.37	12.66	0.85	1.353	0.537	0.95	404	169
Annual	1.83	0.99	65.30	45.61	0.67	3.888	6.271	0.87	3,180	5,601

\* indicates a R<sup>2</sup> that is low and thus is less accurate at predicting

**Table A42. Trend Statistics for the Conestoga River at Conestoga, Pa., October 1984 Through September 2011**

Parameter	STORET Code	Time Series/Test	Slope	P-Value	Slope Magnitude (%)			Trend % Change	Trend Direction
					Min	Trend	Max		
FLOW	60	SK	-	0.315	-	-	-	-	NS
TN	600	FAC	-0.009	<0.001	-26	-22	-19	19-26	Down
TON	605	FAC	-0.034	<0.001	-65	-60	-55	55-65	Down
TNH <sub>3</sub>	610	FAC	-0.055	<0.001	-81	-78	-74	74-81	Down
TKN	625	FAC	-0.038	<0.001	-69	-65	-61	61-69	Down
TNO <sub>23</sub>	630	FAC	0.000	0.930	-6	0	6	N/A	NS
DN	602	FAC	-0.002	0.012	-10	-6	-1	1-10	Down
DON	607	FAC	-0.012	<0.001	-36	-27	-18	18-36	Down
DNH <sub>3</sub>	608	FAC	-0.053	<0.001	-81	-77	-73	73-81	Down
DKN	623	FAC	-0.019	<0.001	-47	-40	-33	33-47	Down
DNO <sub>23</sub>	631	FAC	0.001	0.559	-4	2	8	N/A	NS
TP	665	FAC	-0.033	<0.001	-64	-59	-54	54-64	Down
DP	666	FAC	-0.025	<0.001	-54	-50	-45	45-54	Down
DOP	671	FAC	-0.012	<0.001	-37	-27	-17	17-37	Down
TOC	680	FAC	-0.026	<0.001	-55	-51	-47	47-55	Down
SS	80154	FAC	-0.051	<0.001	-80	-75	-70	70-80	Down

Down = downward/improving trend

Up = Upward/degrading trend

BMDL = Greater than 20% of values were Below Method Detection Limit

NS = No significant trend