

Financing Green Infrastructure in Blair County, Pennsylvania

APPENDICES

Appendix A: Stormwater Finance Office Hours – Triggers to Spark Conversation

The EFC shared the following information with the municipalities in preparation for the initial office hours.

The week of May 18th, the EFC will host conference calls with each MS4 municipality interested in having Office Hours with our staff. This call is intended to more clearly identify the stormwater management challenges and opportunities within the community. Topics of conversation are likely to include MS4 permit compliance, asset management, green infrastructure, regionalization, community outreach, decision making, and fiscal resources.

The following list of “triggers” will be used as a guide to spark conversation on the initial phone call. Some of these may seem familiar, and many are similar to issues addressed in the survey you responded to earlier in this project. While we very much appreciated your responses and have reviewed this material, we would like to get into a deeper conversation in these areas.

Please note: We are not asking for you to respond to these in written form, but we would like you to give these some thought prior to our call. These will guide our conversation, and we would like to make the most of our time with you.

- Are you satisfied with your existing stormwater management program?
- Are you in compliance with your MS4 permit?
- If you are not satisfied with your existing program, what gets in the way of having the program you want to have? What are the main obstacles that exist within your community? What are your most viable opportunities?
- How do you budget for **staffing** to support your MS4 program, **capital projects** to ensure water quality improvements, and **operations and maintenance** of your existing system (stormwater conveyance and treatment)? Is this adequate?
- If financing were not a limiting factor, would your stormwater program be any different? How?
- What are the most immediate opportunities (low hanging fruit)?
- What do you envision your program to look like in the long term?
- Is stormwater visible to the community? What are the major citizen concerns? Flooding issues?
- How are you collaborating with neighboring municipalities? (Examples: sharing street sweepers, sharing resources, staff, watershed organizations, etc.)
- What is the level of political will in your community around advancing stormwater management and utilizing a green infrastructure approach?
- Is the community, either residential or commercial sector, actively engaged on these issues? What is their motivation?

Appendix B: Total Annual Program Costs

Total Annual Program Costs (20-Year Projection)

Assumption: 11 MS4-Designated Municipalities opting in; Newry and Juniata opting out

	20 Year Program Implementation
Annual CBPRP Program Costs	\$192,350
Annual MS4 Administrative Program Costs	\$134,431
Total Annual Program Costs	\$326,781

What's included in the CBPRP Program Costs?

Total project costs from CWP's BMP List \$2,675,290
Estimated BMP O&M Costs \$9,320 per year

What's included in the MS4 Administrative Program Costs?

MS4 Program Coordinator, housed at the Blair County Conservation District \$75,000 per year
MS4 Regional Support Services \$25,000 per year

Total Annual Program Costs (20-, 15-, 10-Year Projections)

Assumption: All MS4-Designated Municipalities opting in

	20 Year Program Implementation	15 Year Program Implementation	10 Year Program Implementation
Annual CBPRP Program Costs	\$192,886	\$236,442	\$325,385
Annual MS4 Administrative Program Costs	\$134,431	\$125,650	\$117,231
Total Annual Program Costs	\$327,318	\$362,092	\$442,616

What's included in the CBPRP Program Costs?

Total project costs from CWP's BMP List \$2,681,544
Estimated BMP O&M Costs \$9,406 per year

What's included in the MS4 Administrative Program Costs?

MS4 Program Coordinator \$75,000 per year
MS4 Regional Support Services \$25,000 per year

**All program costs are assumed to be implemented over 20, 15, or 10 years with 3% interest*

Appendix C: Four Financing Scenarios for Blair County

Adapted from York County's Approach to Financing the Regional Chesapeake Bay Pollution Reduction Plan (CBPRP)

Scenario 1	Flat Fee: MS4 permit holders pay 90% of the total annual cost, and MS4 waivers pay 10% of the total annual cost	Individual Municipal Cost Equation: 90% of annual total cost/11 municipalities 10% of annual total cost/2 municipalities
Scenario 2	Impervious Coverage: Based on total acres of impervious coverage within the UA in each municipality	Individual Municipal Cost Equation: 100% of annual total cost/total impervious cover within UA (3,745 acres)
Scenario 3*	Weighted Cost: 20% of cost based on linear feet of impaired streams in UA or total linear feet of streams in UA; 30% of cost based on population; 50% of cost based on impervious coverage within the UA in each municipality	Individual Municipal Cost Equation: 20% of annual total cost/total LF of impaired streams (or total streams) within UA (448,138 LF of total streams within the UA not including Newry and Juniata; 132,719 LF of impaired streams within the UA) + 30% of annual total cost/total population in MS4 municipalities (96,031 not including Newry and Juniata) + 50% of annual total cost/total impervious cover within UA (3,734 acres not including Newry and Juniata)
Scenario 4	Population: All municipalities pay based on total population, based on current financing system at BCPC	Individual Municipal Cost Equation: 100% of total annual cost/total population within all 12 MS4 municipalities (97,413)

**The EFC ran all scenarios listed above with the assumption all MS4-designated municipalities and Blair County would opt into the program. In the final stages of the project, the MS4 Workgroup made the decision to use scenario 3 with total feet of streams for its financing strategy, with Newry and Juniata opting out of the initial program. Thus the final numbers for scenario 3 removed data from Newry and Juniata, whereas the final numbers for scenarios 1, 2, and 4 include all 12 MS4 municipalities and Blair County.*

Appendix D: Scenario 1 – Flat Fee

MS4s pay 90% total annual cost, MS4 Waivers pay 10% total annual cost

Assumption: All MS4-Designated Municipalities opting in

	20 Year Flat Fee		15 Year Flat Fee		10 Year Flat Fee	
	Total Annual Cost	Flat Fee Per Municipality	Total Annual Cost	Flat Fee Per Municipality	Total Annual Cost	Flat Fee Per Municipality
MS4 Cost	\$294,586	\$26,781	\$325,883	\$29,626	\$398,354	\$36,214
MS4 Waiver Cost	\$32,732	\$16,366	\$36,209	\$18,105	\$44,262	\$22,131

Municipality	Cost per municipality (20 year)	Cost per capita (20 year)	Cost per municipality (15 year)	Cost per capita (15 year)	Cost per municipality (10 year)	Cost per capita (10 year)
Allegheny Township	\$26,781	\$3.97	\$29,626	\$4.40	\$36,214	\$5.37
Altoona City	\$26,781	\$0.58	\$29,626	\$0.64	\$36,214	\$0.78
Antis Township	\$26,781	\$4.12	\$29,626	\$4.56	\$36,214	\$5.57
Bellwood Borough	\$26,781	\$14.65	\$29,626	\$16.21	\$36,214	\$19.81
Blair County	\$26,781	\$0.90	\$29,626	\$1.00	\$36,214	\$1.22
Blair Township	\$26,781	\$5.96	\$29,626	\$6.59	\$36,214	\$8.06
Duncansville Borough	\$26,781	\$21.72	\$29,626	\$24.03	\$36,214	\$29.37
Frankstown Township	\$26,781	\$3.63	\$29,626	\$4.01	\$36,214	\$4.91
Freedom Township	\$26,781	\$7.74	\$29,626	\$8.57	\$36,214	\$10.47
Hollidaysburg Borough	\$26,781	\$4.62	\$29,626	\$5.12	\$36,214	\$6.25
Juniata Township	\$16,366	\$14.72	\$18,105	\$16.28	\$22,131	\$19.90
Logan Township	\$26,781	\$2.18	\$29,626	\$2.41	\$36,214	\$2.95
Newry Borough	\$16,366	\$60.61	\$18,105	\$67.05	\$22,131	\$81.97
		\$327,318		\$362,092		\$442,616

Appendix E: Scenario 2 – Impervious Coverage within UA

Assumption: All MS4-Designated Municipalities opting in

Municipality	Impervious Cover (acres)	Cost per municipality (20 year)	Cost per capita (20 year)	Cost per municipality (15 year)	Cost per capita (15 year)	Cost per municipality (10 year)	Cost per capita (10 year)	Population
Allegheny Township	510.59	\$44,627	\$6.62	\$49,369	\$7.33	\$60,347	\$8.96	6,738
Altoona City	1478.1	\$129,191	\$2.79	\$142,917	\$3.09	\$174,699	\$3.77	46,320
Antis Township	64.31	\$5,621	\$0.86	\$6,218	\$0.96	\$7,601	\$1.17	6,499
Bellwood Borough	73.23	\$6,401	\$3.50	\$7,081	\$3.87	\$8,655	\$4.73	1,828
Blair County	41.90	\$3,662	\$0.12	\$4,051	\$0.14	\$4,952	\$0.17	29,676
Blair Township	229.29	\$20,041	\$4.46	\$22,170	\$4.93	\$27,100	\$6.03	4,494
Duncansville Borough	83.18	\$7,270	\$5.90	\$8,043	\$6.52	\$9,831	\$7.97	1,233
Frankstown Township	151.12	\$13,208	\$1.79	\$14,612	\$1.98	\$17,861	\$2.42	7,381
Freedom Township	83.61	\$7,308	\$2.11	\$8,084	\$2.34	\$9,882	\$2.86	3,458
Hollidaysburg Borough	364.8	\$31,885	\$5.51	\$35,272	\$6.09	\$43,116	\$7.45	5,791
Juniata Township	1.25	\$109	\$0.10	\$121	\$0.11	\$148	\$0.13	1,112
Logan Township	653.54	\$57,122	\$4.65	\$63,190	\$5.14	\$77,243	\$6.29	12,289
Newry Borough	9.98	\$872	\$3.23	\$965	\$3.57	\$1,180	\$4.37	270
	3,745	\$327,318		\$362,092		\$442,616		

**Blair County population is the difference between total County population minus the population within MS4 municipalities*

***Impervious area of Blair County facilities subtracted from appropriate municipality (see Appendix I)*

Appendix F: Scenario 3 – Weighted Cost (with total stream length in UA)

A + B + C = Municipal Contribution

Final Scenario 3 – Weighted Cost (with total stream length in UA)

Assumption: 11 MS4-Designated Municipalities opting in; Newry and Juniata opting out

Municipality	A. Total Stream Length in UA (feet)	B. Population (2010)	C. Impervious Cover in UA (acres)	Cost per municipality (20 year)	Cost per capita (20 year)
Allegheny Township	91,869	6,738	510.59	\$42,621	\$6.33
Altoona City	67,447	46,320	1478.1	\$121,806	\$2.63
Antis Township	52,222	6,499	64.31	\$17,065	\$2.63
Bellwood Borough	1,764	1,828	73.23	\$5,328	\$2.91
Blair County	--	--	41.90	\$1,834	\$0.06
Blair Township	31,340	4,494	229.29	\$19,192	\$4.27
Duncansville Borough	10,289	1,233	83.18	\$6,399	\$5.19
Frankstown Township	45,800	7,381	151.12	\$20,828	\$2.82
Freedom Township	8,178	3,458	83.61	\$8,382	\$2.42
Hollidaysburg Borough	25,707	5,791	364.8	\$25,625	\$4.42
Logan Township	113,522	12,289	653.54	\$57,701	\$4.70
	448,138	96,031	3,734	\$326,781	

***Impervious area of Blair County facilities subtracted from appropriate municipality (see Appendix I)*

Scenario 3 – Weighted Cost (with total stream length in UA)

Assumption: All MS4-Designated Municipalities opting in

Municipality	A. Total Stream Length in UA (feet)	B. Population (2010)	C. Impervious Cover in UA (acres)	Cost per municipality (20 year)	Cost per capita (20 year)	Cost per municipality (15 year)	Cost per capita (15 year)	Cost per municipality (10 year)	Cost per capita (10 year)
Allegheny Township	91,869	6,738	510.59	\$42,403	\$6.29	\$46,908	\$6.96	\$57,340	\$8.51
Altoona City	67,447	46,320	1478.1	\$121,050	\$2.61	\$133,911	\$2.89	\$163,690	\$3.53
Antis Township	52,222	6,499	64.31	\$16,920	\$2.60	\$18,718	\$2.88	\$22,881	\$3.52
Bellwood Borough	1,764	1,828	73.23	\$5,298	\$2.90	\$5,861	\$3.21	\$7,165	\$3.92
Blair County	--	--	41.90	\$1,831	\$0.06	\$2,026	\$0.07	\$2,476	\$0.08
Blair Township	31,340	4,494	229.29	\$19,087	\$4.25	\$21,114	\$4.70	\$25,810	\$5.74
Duncansville Borough	10,289	1,233	83.18	\$6,367	\$5.16	\$7,044	\$5.71	\$8,610	\$6.98
Frankstown Township	45,800	7,381	151.12	\$20,674	\$2.80	\$22,870	\$3.10	\$27,956	\$3.79
Freedom Township	8,178	3,458	83.61	\$8,323	\$2.41	\$9,208	\$2.66	\$11,255	\$3.25
Hollidaysburg Borough	25,707	5,791	364.8	\$25,501	\$4.40	\$28,210	\$4.87	\$34,484	\$5.95
Juniata Township	3,233	1,112	1.25	\$1,644	\$1.48	\$1,818	\$1.63	\$2,222	\$2.00
Logan Township	113,522	12,289	653.54	\$57,380	\$4.67	\$63,476	\$5.17	\$77,592	\$6.31
Newry Borough	905	270	9.98	\$839	\$3.11	\$928	\$3.44	\$1,135	\$4.20
	452,276	97,413	3,745	\$327,318		\$362,092		\$442,616	

***Impervious area of Blair County facilities subtracted from appropriate municipality (see Appendix I)*

Appendix G: Scenario 3 – Weighted Cost (with total impaired stream length in UA)

A + B + C = Municipal Contribution

Assumption: All MS4-Designated Municipalities opting in

Municipality	A. Impaired Stream Length in UA (feet)	B. Population (2010)	C. Impervious Cover in UA (acres)	Cost per municipality (20 year)	Cost per capita (20 year)	Cost per municipality (15 year)	Cost per capita (15 year)	Cost per municipality (10 year)	Cost per capita (10 year)
Allegheny Township	23,744	6,738	510.59	\$40,747	\$6.05	\$45,076	\$6.69	\$55,100	\$8.18
Altoona City	23,941	46,320	1478.1	\$123,025	\$2.66	\$136,096	\$2.94	\$166,361	\$3.59
Antis Township	6,485	6,499	64.31	\$12,541	\$1.93	\$13,873	\$2.13	\$16,959	\$2.61
Bellwood Borough	0	1,828	73.23	\$5,043	\$2.76	\$5,579	\$3.05	\$6,819	\$3.73
Blair County	0	--	41.90	\$1,831	\$0.06	\$2,026	\$0.07	\$2,476	\$0.08
Blair Township	12,387	4,494	229.29	\$20,624	\$4.59	\$22,815	\$5.08	\$27,888	\$6.21
Duncansville Borough	0	1,233	83.18	\$4,878	\$3.96	\$5,396	\$4.38	\$6,596	\$5.35
Frankstown Township	11,637	7,381	151.12	\$19,750	\$2.68	\$21,848	\$2.96	\$26,707	\$3.62
Freedom Township	0	3,458	83.61	\$7,140	\$2.06	\$7,898	\$2.28	\$9,655	\$2.79
Hollidaysburg Borough	11,998	5,791	364.8	\$27,662	\$4.78	\$30,601	\$5.28	\$37,406	\$6.46
Juniata Township	0	1,112	1.25	\$1,176	\$1.06	\$1,300	\$1.17	\$1,590	\$1.43
Logan Township	43,332	12,289	653.54	\$62,193	\$5.06	\$68,801	\$5.60	\$84,101	\$6.84
Newry Borough	0	270	9.98	\$708	\$2.62	\$784	\$2.90	\$958	\$3.55
	133,524	97,413	3,745	\$327,318		\$362,092		\$442,616	

Appendix H: Scenario 4 – Population

Assumption: All MS4-Designated Municipalities opting in

Municipality	Population (2010)	Cost per municipality (20 year)	Cost per municipality (15 year)	Cost per municipality (10 year)
Allegheny Township	6,738	\$22,640	\$25,046	\$30,615
Altoona City	46,320	\$155,640	\$172,175	\$210,464
Antis Township	6,499	\$21,837	\$24,157	\$29,530
Bellwood Borough	1,828	\$6,142	\$6,795	\$8,306
Blair County		\$0	\$0	\$0
Blair Township	4,494	\$15,100	\$16,705	\$20,419
Duncansville Borough	1,233	\$4,143	\$4,583	\$5,602
Frankstown Township	7,381	\$24,801	\$27,436	\$33,537
Freedom Township	3,458	\$11,619	\$12,854	\$15,712
Hollidaysburg Borough	5,791	\$19,458	\$21,526	\$26,313
Juniata Township	1,112	\$3,736	\$4,133	\$5,053
Logan Township	12,289	\$41,292	\$45,679	\$55,838
Newry Borough	270	\$907	\$1,004	\$1,227
	97,413	\$327,318	\$362,092	\$442,616

	Total cost	Cost per capita
20 year program	\$327,318	\$3.36
15 year program	\$362,092	\$3.72
10 year program	\$442,616	\$4.54

Appendix I: Blair County Facilities' Impervious Area

Data Source: Provided by Teddie Kreitz, Keller Engineers + County GIS Analysis

Facility	Location	Total Area (acres)	Impervious Area (acres)
Convention Center Boulevard	Allegheny Township	33.1	9.30
County Garage	Hollidaysburg Borough	5.6	3.80
Lakemont	Logan Township	63.9	26.50
Valley View	City of Altoona	36.7	2.30
			41.90
2 County-maintained roads	<i>Not included in impervious surface calculations</i>		
County Road 105			
County Road 102			

Appendix J: Alternative Final Scenario 3 – Weighted Cost (with total stream length in UA)

A + B + C = Municipal Contribution

Assumption: 10 MS4-Designated Municipalities opting in; Newry, Juniata, and Blair County opting out

Municipality	A. Total Stream Length in UA (feet)	B. Population (2010)	C. Impervious Cover in UA (acres)	Cost per municipality (20 year)	Cost per capita (20 year)
Allegheny Township	91,869	6,738	519.89	\$43,028	\$6.39
Altoona City	67,447	46,320	1480.4	\$121,907	\$2.63
Antis Township	52,222	6,499	64.31	\$17,065	\$2.63
Bellwood Borough	1,764	1,828	73.23	\$5,328	\$2.91
Blair Township	31,340	4,494	229.29	\$19,192	\$4.27
Duncansville Borough	10,289	1,233	83.18	\$6,399	\$5.19
Frankstown Township	45,800	7,381	151.12	\$20,828	\$2.82
Freedom Township	8,178	3,458	83.61	\$8,382	\$2.42
Hollidaysburg Borough	25,707	5,791	368.6	\$25,791	\$4.45
Logan Township	113,522	12,289	680.04	\$58,861	\$4.79
	448,138	96,031	3,734	\$326,781	

Appendix K: Alternative Final Scenario 3 – Weighted Cost (with total stream length in UA)

A + B + C = Municipal Contribution

Assumption: 11 MS4-Designated Municipalities opting in; Newry and Juniata opting out; Altoona population does not include estimated population within the Combined Sewer Overflow (CSO)

Municipality	A. Total Stream Length in UA (feet)	B. Population (2010)	C. Impervious Cover in UA (acres)	Cost per municipality (20 year)	Cost per capita (20 year)
Allegheny Township	91,869	6,738	510.59	\$44,072	\$6.54
Altoona City*	67,447	29,594	1478.1	\$111,103	\$3.75
Antis Township	52,222	6,499	64.31	\$18,464	\$2.84
Bellwood Borough	1,764	1,828	73.23	\$5,722	\$3.13
Blair County	--	--	41.90	\$1,834	\$0.06
Blair Township	31,340	4,494	229.29	\$20,160	\$4.49
Duncansville Borough	10,289	1,233	83.18	\$6,665	\$5.41
Frankstown Township	45,800	7,381	151.12	\$22,417	\$3.04
Freedom Township	8,178	3,458	83.61	\$9,126	\$2.64
Hollidaysburg Borough	25,707	5,791	364.8	\$26,872	\$4.64
Logan Township	113,522	12,289	653.54	\$60,347	\$4.91
	448,138	79,305	3,734	\$326,781	

*Altoona population in CSO was estimated by Altoona municipal staff using GIS and Census Tract data

**Impervious area of Blair County facilities subtracted from appropriate municipality (see Appendix I)