Appendix A: Outreach and Marketing Timeline

Lancaster County Municipal Stormwater Financing Initiative

Outreach & Marketing Strategy: Timeline

December 4, 2012

Where: Lancaster County, Pennsylvania

When: October 1st, 2012 – September 31st, 2013

Partners: UMD Environmental Finance Center, Lancaster County Clean Water Consortium (LCCWC), East Cocalico Township, Lititz Borough, Manheim Township, Mount Joy Borough, Warwick Township, and West Lampeter Township, Lancaster City

What: A public outreach, education and marketing plan that communicates stormwater issues in a collaborative manner, including water quality/quantity, infrastructure problems, and solutions for sustainable financing across municipalities in Lancaster County, PA.

Why: To improve stormwater and water quality conditions in across municipalities, comply with Municipal Separate Storm Sewer Systems (MS4) permit and create a dedicated, reliable funding source for infrastructure, operations, maintenance, and compliance needs.

Audience: Citizens, businesses, elected officials

Ongoing Activities

- Marketing activities listed below may be on-going throughout the project as appropriate or opportunities arise:
    - TV, radio, newspaper ads or announcements
    - Magazine articles regarding stormwater efforts in Lancaster County
    - Include stormwater project and information on individual municipality and county website and/or other web-based media
    - Presentations to HOAs, nonprofits, and other groups
    - Highlighting projects spanning the County
    - Provide fliers or other information on stormwater at library, Farmers Market, town meetings, and other locations as appropriate
    - Organize collaborative meetings that include all municipalities
    - Disseminate outreach materials (second Fridays in Lititz Borough, bi-annual public outreach event in West Lampeter Township, any other events specific to municipalities)
    - Distribute stormwater materials at LCCD meetings as well as Lancaster Inter-Municipal Committee (LIMC)
    - Maintain presence at LCCWC meetings as appropriate – present all updated materials (presence at education events such as envirothon?)
    - Disseminate materials at municipal-level conservation organizations:
        - West Lampeter Township: Recycling Committee, Pequea Creek Watershed Association
        - East Cocalico Township: Cocalico Creek Watershed Association

- Warwick Township: Lititz Run Watershed Association, Boy Scouts
- Mount Joy Borough: Main Street Mount Joy, Chiques Creek Watershed Alliance, Donegal Chapter of Trout Unlimited
- Manheim Township: Little Conestoga Watershed Alliance, Lancaster Area Sewer Authority, Habitat Manheim Township
- Lititz Borough: Lititz Run Watershed Association

October 2012

- Create factsheet to distribute to each municipality, West Lampeter Fair, Lebanon/Lancaster Watershed Forum, and LCCWC

November 2012

- Develop logo for municipal outreach materials
- Develop overall outreach and education messaging and marketing strategy for the public and events, to include multi-purpose two-pager on this project
- Meet with all municipalities & LCCWC (November 20th) to finalize outreach and marketing strategy timeline and brainstorm outreach opportunities and materials

December 2012

- Develop finalized list of key stakeholders in community – collect list of individuals from each municipality (this list is already being developed based on initial one-on-one meetings, see last page of this document)
- Reach out to Lancaster City & other key organizations conducting public outreach in community already (Live Green, LIMC, etc.)
- Finalize logo

January – July 2013

- Present stormwater project to key stakeholders (target audience based on municipality feedback)
- Brief municipalities on progress and outreach efforts as appropriate (bi-monthly)
- Have presence at local events – disseminate outreach materials, educate community about stormwater project and general issues
- Meet with elected officials as municipalities see appropriate
- Develop magnet w/ SW logo for public works trucks
    - Develop materials or hold education session for truck drivers
- Meet with Superintendent or Cynthia Burkhart to incorporate SW education into schools
- Present SW education material at Lancaster Farmland Trust meeting

August 2013

- Send draft recommendations to stakeholders for review

September 2013

- Deliver final report

Outreach List, by municipality

West Lampeter Township:

- Pequea Creek Watershed Association (contact: Kara Kalupson)
- Recycling Committee (contact: Ken Kulakowsky)
- Farmers (contact: Donald Herr)
- Willow Valley
- Lampeter-Strasburg School District
- YMCA

East Cocalico Township:

- Cocalico Creek Watershed Association (contact: Jay Synder)
- Conservation District (contact: Rebecca Buchanan)
- Ag Commission
- Zoning Board
- Cocalico School District

Warwick Township:

- Lititz Run Watershed Association (contact: Dan Zimmerman)
- Boy Scouts
- Water & Sewer Authority
- Donegal Chapter of Trout Unlimited (contact: Greg Wilson)
- Warwick School District

Mount Joy Borough:

- Main Street Mount Joy
- Chiques Creek Watershed Alliance
- Donegal Chapter of Trout Unlimited (contact: Wayne Boggs)
- Donegal School District

Manheim Township:

- Little Conestoga Watershed Alliance (contact: Don Nazario)
- Lancaster Area Sewer Authority (contact: Mike Kyle)
- Lancaster County Solid Waste Management Authority (LCSWMA) (contact: Jim Warner)
- Habitat Manheim Township
- Press (contact: Dave O'Conner)
- Manheim Township School District

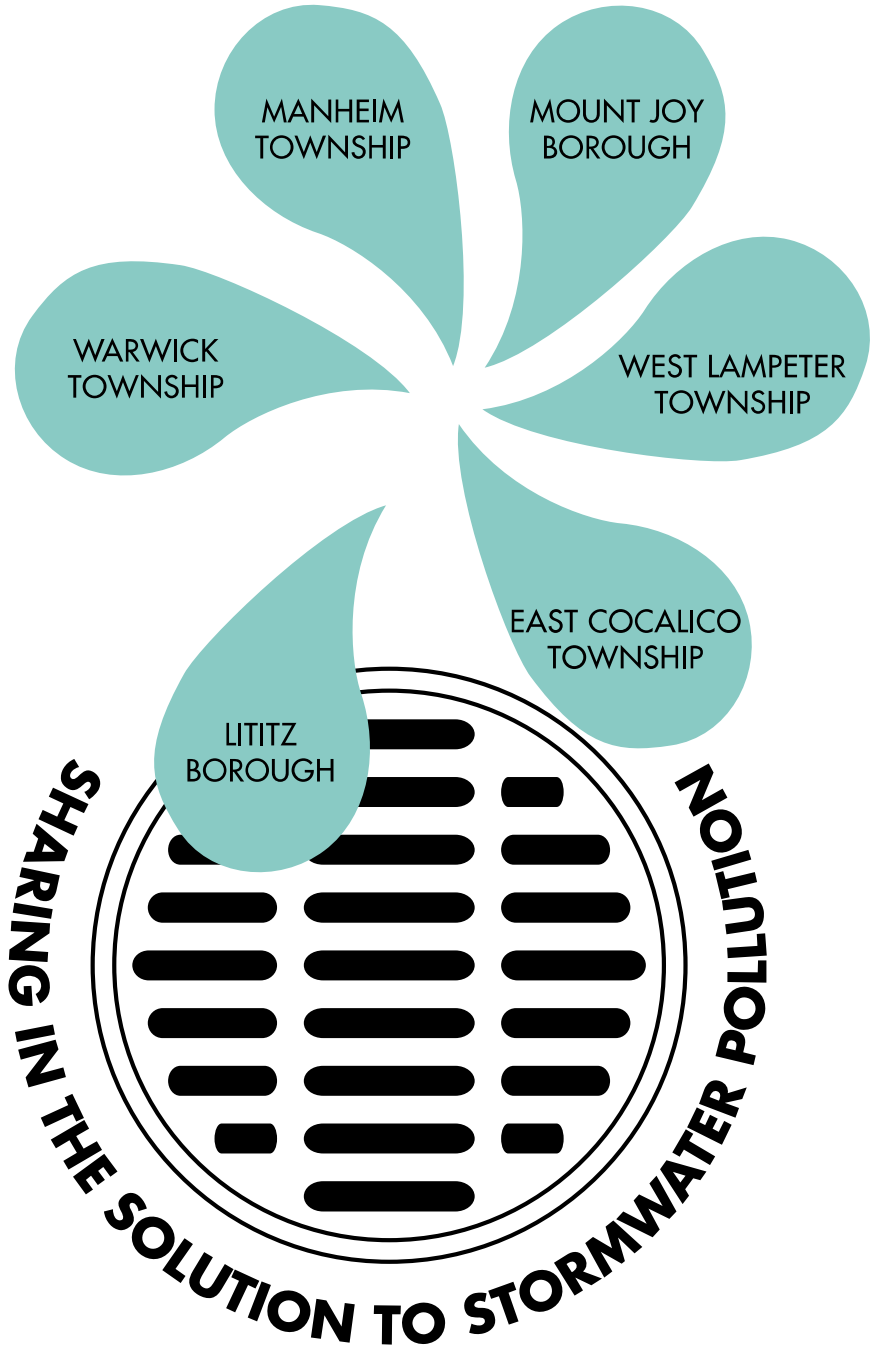
Lititz Borough:

- Lititz Run Watershed Association (contact: Dan Zimmerman)
- Main Street Lititz (contact: Kelly Withum)
- Lititz Borough Flood Control Committee
- Warwick School District

Appendix B: Logos

Original Lancaster City Stormwater Logo

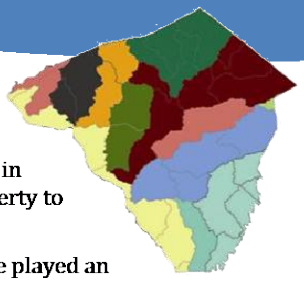
Project logo developed from Lancaster City's "Save It" stormwater campaign



Appendix C: Fact Sheets

General Stormwater Factsheet

STORMWATER MANAGEMENT IN LANCASTER COUNTY



Why is stormwater management important in Lancaster County?

- Heavy rains have in the past, and will continue in the future to endanger livelihoods – from property to crops to lives.
- The Susquehanna River and its tributaries have played an important part in Lancaster County's economy and culture; badly managed stormwater runoff pollutes the water and threatens the communities utilizing these waterways.

What can WE do to minimize stormwater?

- Limit the amount of solid surfaces or use permeable materials.
- Allow buffers of vegetation alongside waterways to filter and slow runoff, and plant native trees, shrubs and groundcover to absorb rainwater.
- Consider a rain garden or rain barrel to manage runoff on your property.
- Find ways to reduce the amount of litter, sediment, and other debris entering waterways.
- Use natural alternatives to chemical fertilizers and pesticides.

What are the efforts of the Lancaster County Municipal Stormwater Financing Initiative?

- The National Fish & Wildlife Foundation (NFWF) provides resources to communities engaged in developing and enhancing their sustainable stormwater management program. Through NFWF, the Lancaster County Clean Water Consortium (LCCWC) is sponsoring six municipalities in Lancaster County – **Lititz and Mount Joy Boroughs and East Cocalico, Manheim, Warwick, and West Lampeter Townships** – to work with the Environmental Finance Center (EFC) at the University of Maryland to find long-term solutions to managing stormwater.
- The EFC is working with municipal staff to ensure each municipality has a stormwater program that addresses local infrastructure and regulatory needs in a long-term and sustainable manner.
- The EFC will provide financing recommendations designed to support stormwater program needs in a way that reflects the nature and characteristics of each municipality.

Want to learn more or share your thoughts on the Lancaster County Municipal Stormwater Financing Initiative?

CONTACT: Monica Billig
Environmental Finance Center, Pennsylvania Satellite Office
mbillig@umd.edu; 240-786-8664

Detailed Residential Handout

Example shown below is for Manheim Township. Each municipality received an individualized handout

HOMEOWNER HANDOUT: RESIDENTIAL STORMWATER BEST MANAGEMENT PRACTICES

Manheim Township
Lancaster · 1729 · County
A Healthy Community

How do residential areas contribute to stormwater?

- Residential areas are composed of impervious areas—from roofs to driveways—that prevent stormwater from infiltrating the soil
- Many lawn care practices such as fertilizing and bagging clippings add to the pollution found in stormwater

SHARING IN THE SOLUTION TO STORMWATER POLLUTION

What can homeowners in Manheim Township do to help?

Install a Rain Barrel

In a typical rain event (1 inch in 24 hours), over 700 gallons of water can run off the roof of an average home. Rain barrels help intercept and store rain water from roofs. The captured rainwater may then be used to water your lawn.

Rain barrels are easy to install and are an inexpensive way to help manage stormwater in your community. Residents simply connect their rooftop downspout to a barrel and can install a garden hose for irrigation. Rain barrel costs generally range between $100-$200. Barrel costs can be greatly offset by purchasing recycled barrels.

Take care of your lawn

When rain runs off of lawns and into the storm sewer, it is also taking pesticides, fertilizers and sediment along with it. These harmful substances then flow directly into local waterways and diminish water quality. Some simple practices for homeowners that decreases the amount of lawn-related contaminates in stormwater include:

- Do not apply fertilizer or pesticides to dormant lawns, frozen ground, or before heavy rain
- Test your soil to see what nutrients are needed and how much
- Use slow-release organic fertilizers that are less likely to enter stormwater
- Mulch your grass clippings in order to reduce the need for additional fertilizer

For more information, visit stormwaterpa.org or contact your local municipal office

EFC

Want to learn more about the Lancaster County Municipal Stormwater Financing Initiative?

Contact Monica Billig at 240-786-8664 or mbillig@umd.edu *or* contact your local municipal office at 717-569-6408 or visit www.manheimtownship.org/

Project partners include:

Environmental Finance Center
Lancaster County Clean Water Consortium
National Fish & Wildlife Foundation
West Lampeter Township
Mount Joy Borough
East Cocalico Township
Warwick Township
Lititz Borough
Manheim Township

Detailed Soil and Lawn care Handout

Document was created at the request of Manheim Township's Commissioners.

HOMEOWNER HANDOUT: LAWNCARE BEST MANAGEMENT PRACTICES

Manheim Township
Lancaster -1729- County
A Healthy Community

Having a lawn that is green in terms of aesthetics and environmental stewardship is possible by implementing certain best management practices for lawn care.

MANHEIM TOWNSHIP · MOUNT JOY BOROUGH · WARWICK TOWNSHIP · WEST LAMPETER TOWNSHIP · EAST COCALICO TOWNSHIP · LITITZ BOROUGH

SHARING IN THE SOLUTION TO STORMWATER POLLUTION

Test your soil

In order to know what nutrient is needed for your lawn and to avoid the addition of excess nutrients, it is important to have your soil tested. Soil testing is available through the Pennsylvania State University Agricultural Analytical Services Laboratory (http://www.aasl.psu.edu/) and other private labs. A mail-in soil testing kit may be picked up at the Lancaster County Cooperative Extension office located at 1383 Arcadia Rd, Room 140, Lancaster, PA 17601 for $9 per test.

Understanding the numbers

Once you understand what your soil needs, it is important to choose a fertilizer with the correct amount of nutrients. Fertilizers come in different ratios of nitrogen, phosphorus, and potassium indicated on the label as N-P-K. For example, if your soil tests indicate high phosphorus, look for a fertilizer that has no or low phosphorus such as a 1-0-1.

Choose the right fertilizer

There are two main types of fertilizers that homeowners may choose from: water soluble and water insoluble. Solubility corresponds to the form of nitrogen and how it is released.

Water soluble fertilizer or *fast-release* fertilizer readily dissolves in water and is taken up immediately by grass. Fast-release fertilizer is completely released within 2 weeks and requires subsequent reapplication of fertilizer.

Water insoluble fertilizer or *slow-release* fertilizer does not dissolve in water and releases nitrogen slowly over an 8 to 10 week period. While slow-release fertilizer is more expensive, it saves time in terms of reapplication over the growing season. In addition, slow-release fertilizer is less likely to be washed away from a lawn during a storm event and end up in a local waterway. Common fertilizer brands such as Scotts, Osmocote, Schultz, Miracle-Gro and Vigoro all offer slow-release versions and may be found in your local home gardening retailer.

All about timing

For cooler climates, the best time to apply is in the spring and fall and approximately 1-2 lbs of nitrogen per 1000 square feet for slow-release fertilizer. Focus on the fall fertilization to encourage strong root growth and spring feedings may not be needed. A strong, healthy lawn will discourage the growth of weeds, minimizing the need for pesticides and herbicides.

For more information, visit stormwaterpa.org or contact your local municipal office

EFC

Want to learn more about the Lancaster County Municipal Stormwater Financing Initiative?

Contact Monica Billig at 240-786-8664 or mbillig@umd.edu *or* contact your local municipal office at 717-569-6408 or visit www.manheimtownship.org/

Project partners include:

Environmental Finance Center
Lancaster County Clean Water Consortium
National Fish & Wildlife Foundation
West Lampeter Township
Mount Joy Borough
East Cocalico Township
Warwick Township
Lititz Borough
Manheim Township

Appendix D: Public Works Department Script

Stormwater Talking Points for PWD Employees

Developed by the Environmental Finance Center (EFC) at the University of Maryland

December 5, 2012

What does the decal represent?

This logo represents the six different municipalities in Lancaster County – East Cocalico Township, Lititz Borough, Manheim Township, Mount Joy Borough, Warwick Township, and West Lampeter Township – who are working collaboratively on a stormwater feasibility study. This study is being conducted by the Environmental Finance Center, and will result in recommendations to each municipality on ways to more effectively manage and finance stormwater.

What is stormwater?

Stormwater (commonly known as runoff) is precipitation caused from storm or snowmelt events that flows over impervious surfaces (i.e. pavement, sidewalks, tennis courts, etc.), picks up pollutants, and is not allowed to penetrate into the ground.

Why should we care?

Untreated stormwater carries pollutants into waterways, such as the Susquehanna River, and can also cause flooding issues. By effectively managing stormwater we can help protect properties and water quality.

How can you get more involved?

Talk to your councilperson or local municipal staff, consider installing a rain barrel or rain garden on your property, and check out the local resources within your community that address stormwater.

If you are interested in learning more about the specific study being undertaken in your community, contact Monica Billig at the Environmental Finance Center. Ms. Billig's contact information is: 240-786-8664 (phone); mbillig@umd.edu (email).

Appendix E: Outreach Event Pictures

Warwick Township Watershed Day

May 14th, 2013

Students learning about stream health from a LCCD representative

Students engaging in discussion with an environmentalist

Students planting trees

Lititz Borough 2nd Friday

June 14th, 2013

PWD truck with project logo and banner

Children playing fishing game

PWD staff explaining their new truck to the public

Chiques Creek Watershed Expo

June 19th, 2013

EFC's booth at the event

The LCCD conducting outreach, and receiving some local media attention

A Liederkranz representative sharing information with attendees about the site's improvement project

Mount Joy Borough Rain Garden Volunteer Planting Day

August 10th, 2013

Appendix F: Manheim Township Budget Documents

Manheim Township Stormwater Budget, Years 1-5

Total Expenditures	Year 1	Year 2	Year 3	Year 4	Year 5
Total Operating Expenditures	$872,695	$894,482	$916,814	$939,705	$963,167
Total Capital Expenditures	$1,168,250	$770,250	$1,160,250	$754,750	$1,644,873
Total Expenditures	**$2,040,945**	**$1,664,732**	**$2,077,064**	**$1,694,455**	**$2,608,040**

Operating Expenditures							
G/L Acct No.	**Account Description**	**Notes**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Salaries:							
01-431-103.00	Director (25%)	Existing position	$22,294	$22,851	$23,422	$24,008	$24,608
01-431-105.00	Clerical (25%)	Existing position	$10,763	$11,032	$11,307	$11,590	$11,880
01-431-115.00	Superintendent	New position	$68,000	$69,700	$71,443	$73,229	$75,059
01-431-116.00	Engineer (25%)	Existing position	$24,344	$24,952	$25,576	$26,216	$26,871
01-431-117.00	Maintenance	New position -- includes 4 maintenance + crew leader	$225,000	$230,625	$236,391	$242,300	$248,358
01-431-120.00	Overtime		$5,125	$5,253	$5,384	$5,519	$5,657
		Sub-Total	$355,525	$364,413	$373,523	$382,862	$392,433
Benefits:							
01-431-201.00	FICA/Medicare		$28,000	$28,700	$29,418	$30,153	$30,907
01-431-202.00	Workers Compensation		$8,800	$9,020	$9,246	$9,477	$9,714
01-431-203.00	Unemployment		$1,400	$1,435	$1,471	$1,508	$1,545
01-431-204.00	Health Insurance		$91,100	$93,378	$95,712	$98,105	$100,557
01-431-204.20	Disability Insurance		$2,650	$2,716	$2,784	$2,854	$2,925
01-431-205.00	Life Insurance		$530	$543	$557	$571	$585
01-431-206.00	Retirement		$59,000	$60,475	$61,987	$63,537	$65,125
01-431-207.00	Uniform Allowance		$1,200	$1,200	$1,200	$1,200	$1,200
01-431-209.00	Education		$1,000	$1,025	$1,051	$1,077	$1,104
		Sub-Total	$193,680	$198,492	$203,424	$208,480	$213,662
Materials & Supplies:							

Operating Expenditures							
G/L Acct No.	**Account Description**	**Notes**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
01-431-301.00	Postage		$256	$263	$269	$276	$283
01-431-302.00	Office Supplies		$513	$525	$538	$552	$566
01-431-303.00	Computer Supplies		$461	$473	$485	$497	$509
01-431-304.00	Photographic Supplies		$205	$210	$215	$221	$226
01-431-305.00	Subscriptions & Publications		$513	$525	$538	$552	$566
01-431-307.00	Storm Drain Repair Material		$15,375	$15,759	$16,153	$16,557	$16,971
01-431-308.00	Tools & Safety Equipment		$7,688	$7,880	$8,077	$8,279	$8,486
01-431-319.00	Uniforms		$820	$841	$862	$883	$905
01-431-320.00	Minor Equipment Purchases		$10,250	$10,506	$10,769	$11,038	$11,314
		Sub-Total	$36,080	$36,982	$37,907	$38,854	$39,826
Contracted Services:							
01-431-406.00	Engineering Fees	CS Davidson contract	$61,500	$63,038	$64,613	$66,229	$67,884
01-431-409.00	Printing	Educational materials	$1,538	$1,576	$1,615	$1,656	$1,697
01-431-410.00	Contracted Services	Sink hole repairs based on historical average	$51,250	$52,531	$53,845	$55,191	$56,570
01-431-413.00	One Call Systems Fees		$4,613	$4,728	$4,846	$4,967	$5,091
01-431-414.00	Street Sweeping	Twice per year	$51,250	$52,531	$53,845	$55,191	$56,570
		Sub-Total	$170,150	$174,404	$178,764	$183,233	$187,814
General Expenses:							
01-431-501.00	Advertising		$2,563	$2,627	$2,692	$2,760	$2,829
01-431-502.00	Dues, Conference, Train & Cert		$1,538	$1,576	$1,615	$1,656	$1,697
01-431-510.00	Telephone		$2,050	$2,101	$2,154	$2,208	$2,263
01-431-518.00	Equipment Rental		$2,563	$2,627	$2,692	$2,760	$2,829
01-431-520.00	Miscellaneous		$2,563	$2,627	$2,692	$2,760	$2,829
		Sub-Total	$11,275	$11,557	$11,846	$12,142	$12,445
Vehicle Operations:							
01-431-601.01	Gas & Oil		$25,625	$26,266	$26,922	$27,595	$28,285

Operating Expenditures							
G/L Acct No.	**Account Description**	**Notes**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
01-431-601.02	Tires & Tubes		$10,250	$10,506	$10,769	$11,038	$11,314
01-431-601.03	Vehicle Maintenance		$30,750	$31,519	$32,307	$33,114	$33,942
01-431-605.00	Minor Parts		$7,688	$7,880	$8,077	$8,279	$8,486
01-431-608.00	Attachment Repairs		$2,563	$2,627	$2,692	$2,760	$2,829
		Sub-Total	$76,875	$78,797	$80,767	$82,786	$84,856
Facilities Maintenance:							
01-431-701.00	Electric		$2,563	$2,627	$2,692	$2,760	$2,829
01-431-702.00	Heating		$8,713	$8,930	$9,154	$9,382	$9,617
01-431-703.00	Water/Sewer		$1,230	$1,261	$1,292	$1,325	$1,358
01-431-704.00	Trash Removal		$1,538	$1,576	$1,615	$1,656	$1,697
01-431-706.00	Building Maintenance		$3,588	$3,677	$3,769	$3,863	$3,960
01-431-707.00	Grounds Maintenance		$2,563	$2,627	$2,692	$2,760	$2,829
		Sub-Total	$20,193	$20,697	$21,215	$21,745	$22,289
Equipment Maintenance:							
01-431-801.00	Radio Maintenance		$513	$525	$538	$552	$566
01-431-802.00	Computer Operations/Maintenance		$1,025	$1,051	$1,077	$1,104	$1,131
01-431-806.00	Shop Equipment & Tool Repairs		$3,588	$3,677	$3,769	$3,863	$3,960
01-431-807.00	Barriers & Rails		$1,230	$1,261	$1,292	$1,325	$1,358
01-431-812.00	Minor Equipment		$2,563	$2,627	$2,692	$2,760	$2,829
		Sub-Total	$8,918	$9,140	$9,369	$9,603	$9,843
		Total Operating Expenditures	**$872,695**	**$894,482**	**$916,814**	**$939,705**	**$963,167**

Capital Expenditures						
Account Description	**Notes**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Equipment Start-up Costs:						
Superintendent Vehicle		$28,000	-	-	-	-
Pickup Truck		$22,000	-	-	-	-
Utility Truck		$60,000	-	-	-	-
Vactor Truck	in CIP	-	-	$275,000	-	-
Television Truck	Could set up contractual, pay-as-you-go to share with neighboring municipalities	$135,000	-	-	-	-
Street Sweeper	in CIP	-	-	-	$165,000	-
Utility building	$7 million for new building; estimate $650,000 to convert building 2 in interim	$650,000	-	-	-	-
Computers	Assume purchase every 5th year	$5,000	-	-	-	$5,519
Cameras	Assume purchase every 5th year	$1,000	-	-	-	$1,104
	Sub-Total	$901,000	$0	$275,000	$165,000	$6,623
Capital Improvement Plan (CIP) Projects:						
Community Park	Tree Planting	-	-	-	$10,000	-
Landis Woods	Tree Planting	$10,000	-	-	-	-
Destination Playground	Tree Planting	-	$15,000	-	-	-
Overlook Community Campus	Tree Planting	-	-	$10,000	-	-
Habitat improvements at Landis Woods		-	$58,000	-	-	-
Annual inlet repairs	Annual cost	$55,250	$55,250	$55,250	$55,250	$55,250
Annual BMP inspection	Annual cost	$30,000	$30,000	$30,000	$30,000	$30,000
Annual MS4 reporting	Annual cost	$50,000	$50,000	$50,000	$50,000	$50,000
Habitat MT collaboration	Educational materials	$5,000	$5,000	$5,000	$5,000	$5,000
Eden Road swale restoration		-	-	$98,000	-	-
Grandview Heights South - SW improvements	Pending CSO jurisdiction; future year costs: $1,336,000	-	-	-	$177,500	$1,336,000
Grandview Heights South - study	Pushed to future, pending CSO	-	-	$50,000	-	-

Capital Expenditures						
Account Description	**Notes**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Hampton Lane/Echo Velley Road swale improvements		-	-	-	-	$50,000
Lititz Run TMDL implementation		$50,000	$50,000	$150,000	$150,000	-
SW TMDL Plan implementation	Will come out of TMDL study; future year costs: $1,000,000; includes CBPRP preparation	$50,000	$100,000	$100,000	$50,000	$50,000
Rain garden creation/wetland restoration		$15,000	$12,000	$12,000	$12,000	$12,000
EFC program evaluation	Current	$2,000	-	-	-	-
Implementing SW grant program - study	Current & will be annual cost	-	$50,000	$50,000	$50,000	$50,000
Land acquisition - shed relocation	Depends on EPA; future year costs: $972,500	-	-	-	-	-
Shed		-	-	$275,000	-	-
Construct new shed	Future year costs: $6,190,000	-	-	-	-	-
Salt shed replacement	Pushed to future	-	$345,000	-	-	-
	Sub-Total	$267,250	$770,250	$885,250	$589,750	$1,638,250
	Total Capital Expenditures	**$1,168,250**	**$770,250**	**$1,160,250**	**$754,750**	**$1,644,873**

Appendix G: Warwick Township Analysis Documents

Warwick Township Stormwater Budget, Years 1-5

Total Costs	Year 1	Year 2	Year 3	Year 4	Year 5
Storm Sewer Replacement Program	$71,651	$73,442	$75,278	$77,160	$79,089
BMP Replacement	$95,425	$38,899	$74,400	$10,661	$10,928
BMP Required Maintenance	$4,510	$9,738	$6,178	$6,757	$5,153
Total Costs	**$171,586**	**$122,079**	**$155,856**	**$94,578**	**$95,170**

Storm Sewer System Replacement Program -- Total Cost (30 year) = $1,954,100; Annual Cost = $65,137 (w/o inflation)						
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Notes**
Pipe replacement	$65,137	$66,765	$68,435	$70,145	$71,899	Since the average useful life of the pipes in the Township is 30 years, the total budget was divided by 30. This figure represents the straight line reserves the Township should generate each year. This assumes that 1/30 of the pipes will be replaced each year.
10% contingency	$6,514	$6,677	$6,843	$7,015	$7,190	
Total Storm Sewer Pipe Costs	**$71,651**	**$73,442**	**$75,278**	**$77,160**	**$79,089**	

BMP Replacement and Required Maintenance Costs -- Renovations are completed every 20 years; Maintenance is completed every 5 years						
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Notes**
Renovation Costs (20-year)						
Linear Park Basin Renovation	$55,000	$2,819	$2,889	$2,961	$3,035	Annual reserves should be $2,750 plus inflation after renovation; assume renovation taking place in year 1
Municipal Campus Basin Renovation	$1,750	$1,794	$33,228	$1,885	$1,932	Annual reserves should be $1,750 plus inflation after renovation; assume renovation taking place in year 3

BMP Replacement and Required Maintenance Costs -- Renovations are completed every 20 years; Maintenance is completed every 5 years						
Item	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Notes**
6 Bio-Basin Renovations	$30,000	$30,750	$31,519	$4,846	$4,967	Annual reserves should be $4,500 (for all 6) plus inflation after renovation; assume 2 renovations taking place in each year from years 1-3
10% contingency	$8,675	$3,536	$6,764	$969	$993	
Total BMP Renovation Costs	$95,425	$38,899	$74,400	$10,661	$10,928	
Maintenance Costs (5-year)						
Linear Park Basin Dredging & Cleaning	$1,500	$6,188	$1,576	$1,615	$1,656	Annual reserves should be $1,500 plus inflation; assume maintenance taking place in year 2
Municipal Campus Basin Dredging & Cleaning	$800	$820	$841	$1,848	$883	Annual reserves should be $800 plus inflation; assume maintenance taking place in year 4
Bio-Basin 1 Dredging & Cleaning	$300	$308	$969	$324	$332	Annual reserves should be $300 plus inflation; assume maintenance in year 3
Bio-Basin 2 Dredging & Cleaning	$300	$308	$969	$324	$332	Annual reserves should be $300 plus inflation; assume maintenance in year 3
Bio-Basin 3 Dredging & Cleaning	$300	$308	$316	$692	$332	Annual reserves should be $300 plus inflation; assume maintenance in year 4
Bio-Basin 4 Dredging & Cleaning	$300	$308	$316	$692	$332	Annual reserves should be $300 plus inflation; assume maintenance in year 4
Bio-Basin 5 Dredging & Cleaning	$300	$308	$316	$324	$409	Annual reserves should be $300 plus inflation; assume maintenance in year 5
Bio-Basin 6 Dredging & Cleaning	$300	$308	$316	$324	$409	Annual reserves should be $300 plus inflation; assume maintenance in year 5
10% contingency	$410	$885	$562	$614	$468	
Total BMP Maintenance Costs	$4,510	$9,738	$6,178	$6,757	$5,153	
Total BMP Costs	**$99,935**	**$48,637**	**$80,578**	**$17,418**	**$16,081**	

*Inflation is taken into account for all expenditures (2.5%)

Warwick Township Stormwater BMP Renovation & Maintenance Schedule and Annual Reserve Fund, Years 1-5

Item	Quantity	Unit	Unit Cost	Total Cost	Reserve per year*	Year Project Complete	Year 1	Year 2	Year 3	Year 4	Year 5
20 YEAR RENOVATION COSTS											
Linear Park Basin	1	EA	$55,000	$55,000	$2,750	1	$55,000	$2,819	$2,889	$2,961	$3,035
Municipal Campus Basin	1	EA	$35,000	$35,000	$1,750	3	$1,750	$1,794	$33,228	$1,885	$1,932
Bio-Basins (6)	6	EA	$15,000	$90,000	$4,500	2 in year 1; 2 in year 2; 2 in year 3	$30,000	$30,750	$31,519	$4,846	$4,967
						Total Renovation Costs	$86,750	$35,363	$67,636	$9,692	$9,934
5 YEAR MAINTENANCE COSTS (Dredging and Cleaning)											
Linear Park Basin	1	EA	$7,500	$7,500	$1,500	2	$1,500	$6,188	$1,576	$1,615	$1,656
Municipal Campus Basin	1	EA	$4,000	$4,000	$800	4	$800	$820	$841	$1,848	$883
Bio-Basins (6)	6	EA	$9,000	$9,000	$1,800	2 in year 2; 2 in year 3; 2 in year 4	$1,800	$1,845	$3,200	$2,680	$2,146
						Total Maintenance Costs	$4,100	$8,853	$5,616	$6,143	$4,685
						Total BMP Replacement & Required Maintenance Costs	**$90,850**	**$44,216**	**$73,253**	**$15,835**	**$14,619**