

Municipal Separate Storm Sewer Systems – MS4

Why do you want to do it all
yourself?

Partnerships Produce Results



History of MS4

- Municipal Separate Storm Sewer System
- 1987 Clean Water Act Amendments
- Phase I MS4s for places with populations greater than 100,000
- Certain industrial and construction sites
- In Pennsylvania – Erie and Pittsburgh have combined sewer systems
- Allentown and part of Philadelphia are included in MS4 Phase I

Berks County's Cooperative Approach to MS4 Requirements

- 2002
 - What is MS4, confusion reigns
 - Who does it affect
- 2003 – 2008 **HELP!!!!**
 - How do we coordinate our approach
- 2009 – 2012 **HOW DO WE MOVE FORWARD!!!!**
 - What are we going to do when the new permit is approved
- 2012 **and BEYOND!!!!**
 - Let's make sure that we are covering all of our bases

2012 – New Permits Due

- All MS4 Municipalities are invited to join the Berks County MS4 Steering Committee and participate with the Berks County Cooperative Education Program
- Multiple Solicitor input into Intergovernmental Agreement
- 36 Municipalities sign the IGA

Berks County MS4 Steering Committee & Cooperative Education Participants

- Alsace
- Amity
- Bechtelsville
- Berks County
- Birdsboro
- Boyertown
- Colebrookdale
- Cumru
- Earl
- Exeter
- Fleetwood
- Heidelberg
- Kenhorst
- Laureldale
- Leesport
- Lower Alsace
- L. Heidelberg
- Maiden creek
- Mohnton
- Mt. Penn
- Muhlenberg
- Ontelaunee
- Reading
- Richmond
- Robeson
- Robesonia
- Shillington
- Sinking Spring
- S. Heidelberg
- Spring
- St. Lawrence
- Washington
- Wernersville
- West Reading
- Wyomissing
- Womelsdorf
- Berks County Conservancy
- Berks County Conservation District

Berks County MS4 Steering Committee

- Adopted By-Laws January 2013
- Meets Quarterly (January, April, July, October)
- Municipal Representative from each participating Municipality – one vote per Municipality
- Engineers and Solicitors of participating municipalities may attend
- Chairman – Mark Kitzmiller, Systems Design
- Vice Chairman – Bob May, St. Lawrence Boro.
- Secretary – BCPC (Ashley & Shannon)
- Treasurer – Kate Keppen, BCCD

Who are the Berks County Cooperative Education Program Providers

- Berks County Planning Commission Staff
- Berks County Conservation District Staff
- Berks County Conservancy

Cooperative Efforts for New Permit

- Berks County MS4 Steering Committee
 - Berks County Cooperative Education Program
- Berks County Conservation District MOUs
 - --- Municipal Agreements Adopted 2012
- Wyomissing Creek Watershed Coalition
 - Seven Municipal Members
- Pennsylvania Stormwater Coalition
 - Legal & Technical

What's New for the 2013-2018 Permit

- Beyond the six MCMs
 - Stream Impairments
 - Total Maximum Daily Loads for MS4s (TMDLs)
 - Maiden Creek/Lake Ontelaunee – Sediment
 - Schuylkill River – Polychlorinated Biphenyls (PCBs)
 - Wyomissing Creek - Sediment
- New requirements for six MCMs
 - Increased Vigilance
 - Documentation

Meeting New MCM Permit Requirements Cooperatively

MCMs

1. Public Education and Outreach
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Runoff Control
5. Post-Construction Stormwater Management (New and Redevelopment)
6. Pollution Prevention and Good Housekeeping for Municipal Operations and Maintenance

MCM Cooperative Approach

1. Berks County MS4 Steering Committee & BCCEP/Municipality
2. Berks County MS4 Steering Committee & BCCEP/Municipality
3. Municipality (guidance provided by BCCEP)
4. Berks County Conservation District Adopted Agreements
5. Municipality/BCCD/Guidance provided by BCCEP
6. Berks County MS4 Steering Committee & BCCEP/Municipality

The “Target Audience” of the Cooperative Education Program

Residents

Businesses

Developers

Schools

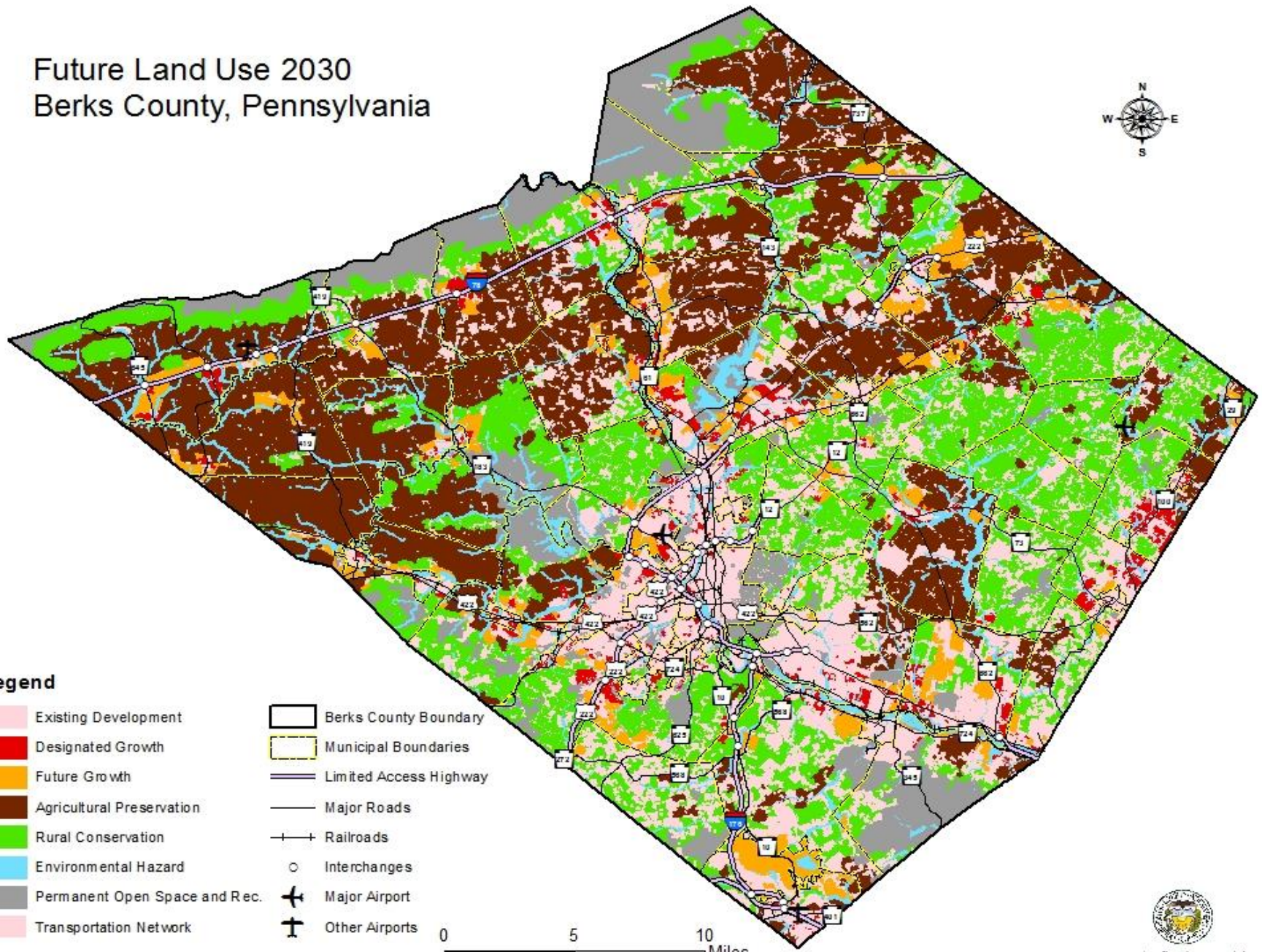
Municipal Employees

MS4 Cooperative Education Program

General Education Plan

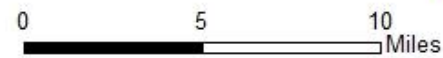
- **MCM #1 – Public Education**
 - BMP #1: Develop, implement and maintain a written Public Education and Outreach Program (PEOP)
 - BMP #2: Develop and maintain lists of target audiences in area
 - BMP #3: Annual Publication – general stormwater information, description of program and information about activities along with annual updates
 - BMP #4: Distribute stormwater educational materials to target audiences

Future Land Use 2030 Berks County, Pennsylvania

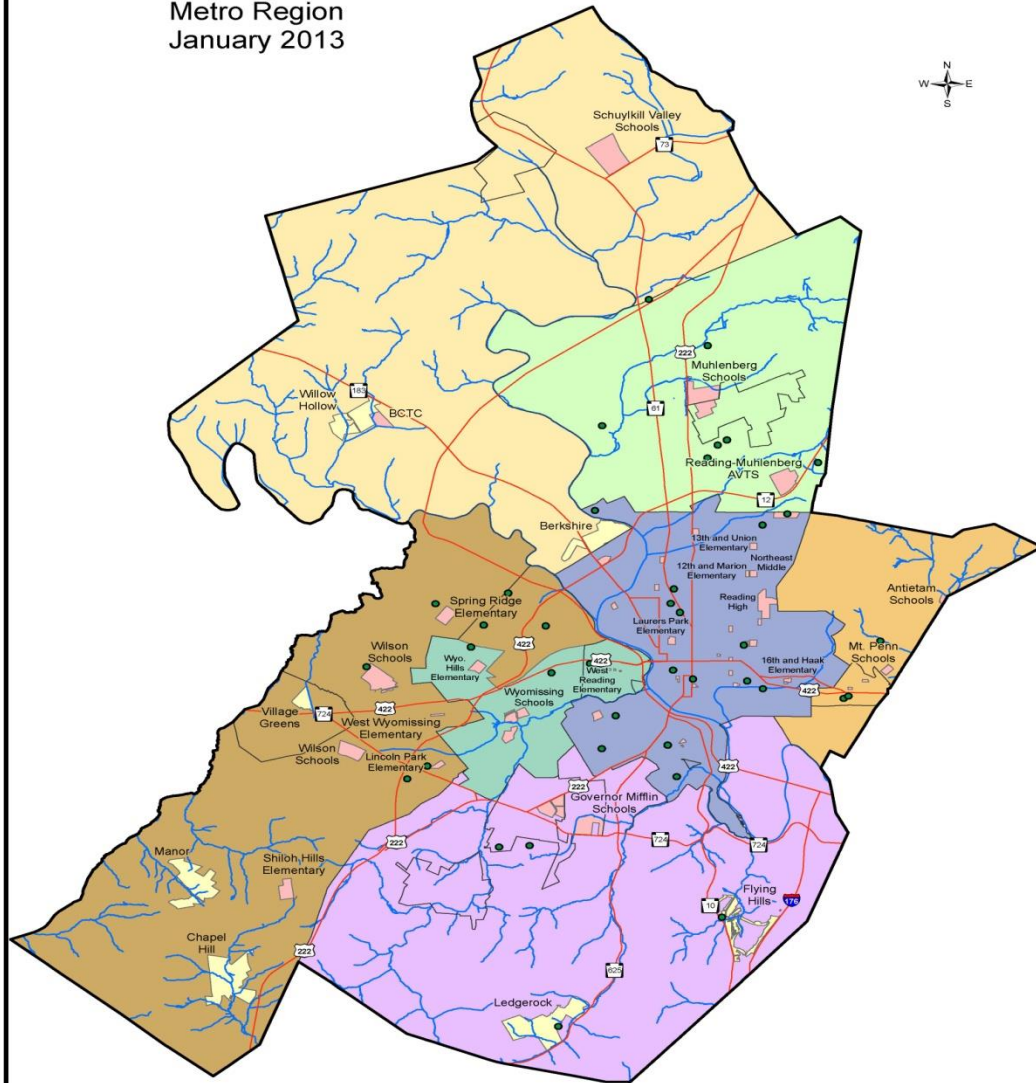


Legend

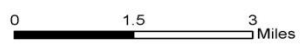
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|-------------------------------|------------------------|
| Existing Development | Berks County Boundary |
| Designated Growth | Municipal Boundaries |
| Future Growth | Limited Access Highway |
| Agricultural Preservation | Major Roads |
| Rural Conservation | Railroads |
| Environmental Hazard | Interchanges |
| Permanent Open Space and Rec. | Major Airport |
| Transportation Network | Other Airports |



Berks County MS4
 School Properties and Golf Courses
 Metro Region
 January 2013



- | | | |
|-----------------------|-------------------------|------------------|
| Metro Planning Region | School Districts | Wyomissing |
| Municipal Boundaries | Schuylkill Valley | Reading |
| Golf Courses | Muhlenberg | Antietam |
| Public Schools | Wilson | Governor Mifflin |
| Private Schools | | |
| Highways | | |
| Streams | | |



BC MS4 CEP Partners

- Schedule Public Meetings with all BC MS4 Steering Committee Municipalities
- Involve Multiple Target Audiences
- Invite feedback for future presentations
 - Topics
 - Questions from public, municipalities, schools...

FOLLOW THE FLOW

Storm Water In Berks County



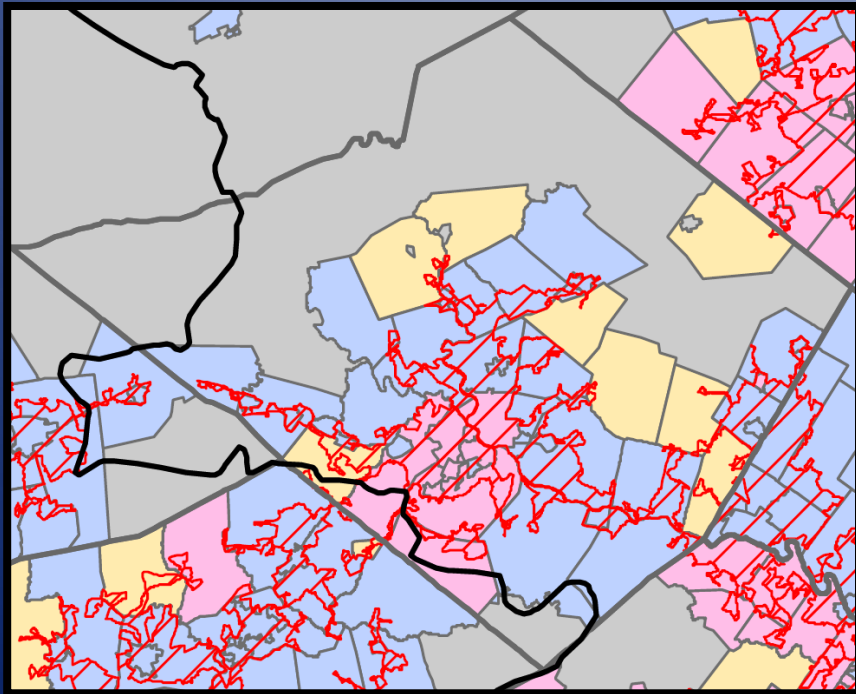
**BERKS COUNTY
CONSERVATION DISTRICT**

Where does water go?

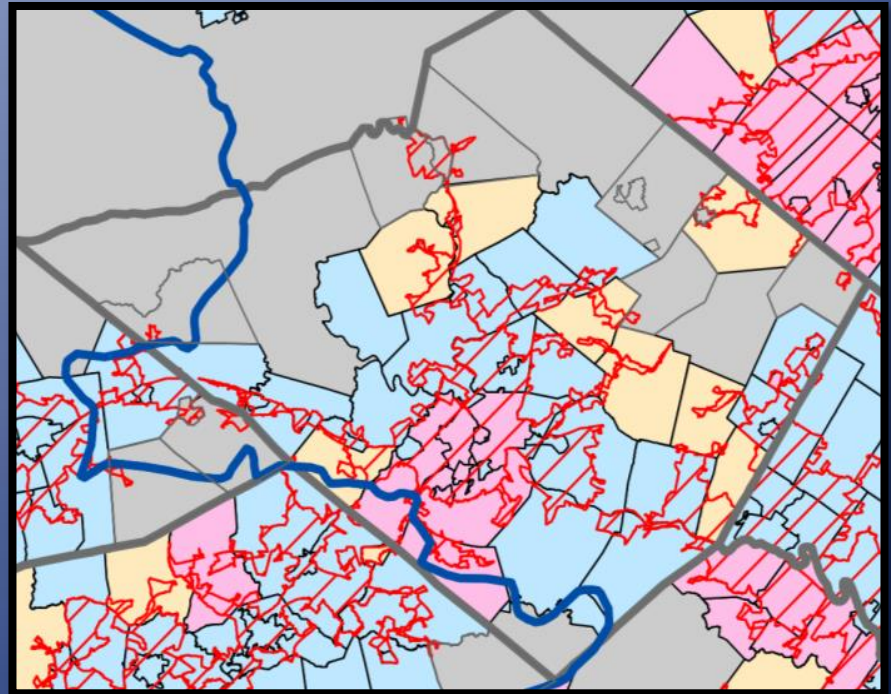
HOW ARE AREAS DETERMINED TO BE IN AN MS4?

Answer: The United States Census categorizes areas as “urban areas” based on population

2000 Urbanized Areas



2010 Urbanized Areas



MOWING

- How close are you mowing to a stream?
- Are you mowing areas, regularly that could be let to grow back to meadow?
- Do your drains get clogged with grass/debris?



- **MCM #2 – Public Involvement and Participation**
 - BMP #1: Develop, implement and maintain a written Public Involvement and Participation Program (PIPP)
 - BMP #2: Prior to any adoption of ordinances with regard to the Permit provide notice and opportunities for review, input and feedback
 - BMP #3: Solicit public involvement and participation from the target audience groups



Playground Programs



is totally tubu-
 cludes two
 Ninja Turtles.
 the turtles used
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 ly, the Spanish
 e a pipe, hollow
 chalk on a con-
 the design, pho-
 it to the Berks
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 and the phrase,
 ny water."
 h will be held
 the first events
 operative MS4
 said county in-
 nner Shannon



Shannon L. Rossman, county intergovernmental planner, with the top entries in a playground contest to create a design appropriate for the area around a stormwater drain. At left is the first-place winner from a Cumru Township program. The other is from Pandora Park.

ows communi-
 ir stormwater
 ty into public
 te requirement
 y or organiza-
 mwater permit
 nt of the com-
 o lives, works
 ut preventing
 ing into storm
 into the water
 municipalities

have permits, so they got together with the conservancy and the Berks County Conservation District to plan joint efforts to meet the requirements, she said.

"The target audience is everybody — businesses, residents, schools, municipal officials," Rossman said. "We need to make sure everybody understands why stormwater needs to stay clean."

Rossman announced the winners of the playground contest at a county commissioner's meeting Thursday. Because playground season is near-

ing an end, the children won't receive their rewards until the first day of the next season.

Other activities planned include a rain barrel decorating contest, information on rain gardens for residents and educational programs with municipalities.

Having the children involved is good, Commissioner Kevin S. Barnhardt said. "If we teach the kids, everybody learns from them," he said.

Contact Mary Young: 610-478-6292 or myoung@readingeagle.com.



- **MCM #3 – Illicit Discharge Detection and Elimination (IDD&E)**
 - BMP #6: Provide educational outreach to public employees, business owners and their employees, property owners, the general public and elected officials about IDD&E

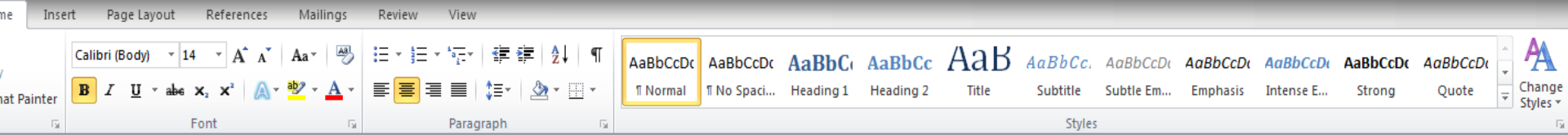


- **MCM #4 – Construction Site Stormwater Runoff Control (BCCD)**
 - BMP #3: Education of construction site operators regarding pollutants
 - BMP #4: Consideration of public inquiries regarding local construction activities

- **MCM #5 – Post Construction Stormwater Management (PCSM) in New and Re-Development Activities**
 - BMP #5: Encourage the use of Low Impact Development (LID) in new, re-development and retrofits
 - BMP #6: Education regarding maintenance of BMPs

Educational Events

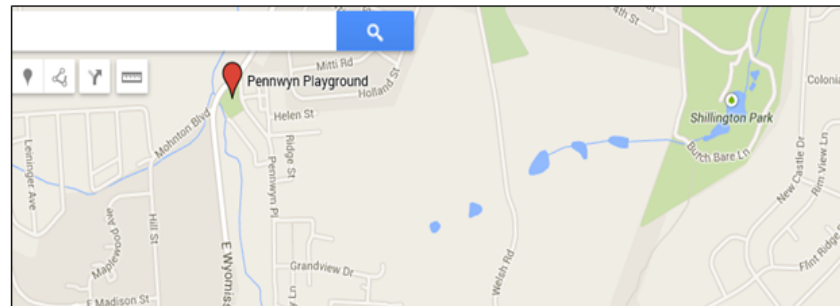
Oct. 24 Training Agenda - Microsoft Word



Agenda

Developing a TMDL Plan: BMP Identification and Pollutant Load Reduction **Friday, October 24, 2014 8:30am – 12:00pm**

- 8:30 – 8:45 Registration
- 8:45 – 9:10 Training Introduction/Overview
- 9:10 – 9:15 Break into groups
- 9:15 – 10:30 Conduct field work to identify BMPs at park
- 10:30 – 11:00 Drive to classroom at Warren Recreation Center/ Break
 - Location: Intersection of Welsh and Church Roads (see map)
- 11:00 – 12:00 Classroom exercises using field data



- **MCM #6 – Pollution Prevention/Good Housekeeping for Municipal Operations**
 - BMP #1: Identify and document all facilities and activities that are owned or operated by the permittee and have a pollution potential to stormwater
 - BMP #2: Develop, implement and maintain a written O & M program for all municipal operations and facilities Identified in #1.
 - BMP #3: Develop and Implement Employee Training Program

MS-4 Stormwater Management Program Protocol

**Pollution Prevention and Good
Housekeeping for Municipal
Operations and Maintenance**

IDD&E

- Where are your Outfalls?
- Are you inspecting annually?
- What happens if there is flowing water/inspection issue?
- Documentation for annual report?
- Updating maps with stormwater facilities?

**[LLICIT DISCHARGE FIELD SCREENING PROGRAM
Data Collection Form "O"]**

MUNICIPALITY: _____

OUTFALL #: _____ Date: _____ Time: _____

TIME SINCE LAST RAIN WAS ≥ 72 hours: YES Days since last rain _____
QUANTITY OF LAST RAIN: ≤ 0.1 inches > 0.1 inches _____
INSPECTION TEAM: _____

SITE DESCRIPTION:
LOCATION (Narrative Description): _____

STRUCTURE TYPE: OPEN CHANNEL MANHOLE OUTFALL (Pipe) OTHER: _____
DOMINANT WATER SHED LAND USES: INDUSTRIAL COMMERCIAL RESIDENTIAL UNKNOWN OTHER: _____

OUTFALL (PIPE) DATA:
PIPE DIAMETER (INCHES): _____ DEPTH OF FLOW (INCHES): _____

CHANNEL DATA:
CHANNEL DEPTH OR HEIGHT (FT): _____ CHANNEL TOP WIDTH: _____
CHANNEL BOTTOM WIDTH: _____ CHANNEL SIDE SLOPE: _____
CHANNEL TYPE (CIRCLE ONE): RECTANGULAR TRAPEZOIDAL
DESCRIBE: _____

VISUAL OBSERVATIONS:
WAS A PHOTO TAKEN? _____
ODOR: NONE MUSTY SEWAGE OTHER: _____ YES (Roll and Photo Number: _____) ROTTEN EGGS SOUR MILK
COLOR: CLEAR RED YELLOW BROWN GREEN GREY OTHER: _____
CLARITY: CLEAR CLOUDY OPAQUE
FLOATABLES: NONE OILY SHEEN GARBAGE/SEWAGE OTHER: _____
DEPOSITS/STAINS: NONE SEDIMENTS OILY OTHER: _____
VEGETATION CONDITION: NONE NORMAL EXCESSIVE GROWTH INHIBITED GROWTH
STRUCTURAL CONDITION: NORMAL CONCRETE CRACKING METAL CORROSION OTHER: _____
BIOLOGICAL: MOSQUITO LARVAE BACTERIA/ALGAE OTHER: _____

WAS A LABORATORY SAMPLE COLLECTED? (if yes, attach copy of chain-of-custody record) NO YES

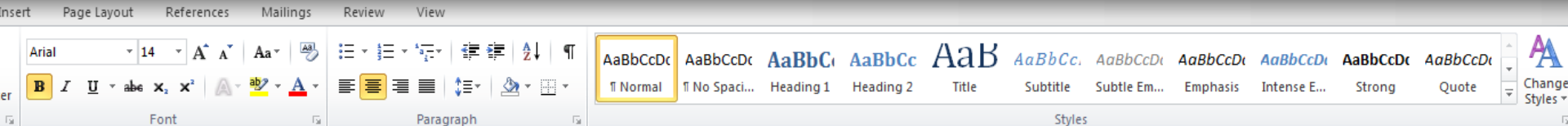
COMMENT: _____

DATA SHEET FILLED OUT BY: (signature) _____ DATE: _____
(print name): _____

© 2013 CDM DEPT. OF PUBLIC WORKS 1000 17th Ave. S. 1000 Atlanta, GA 30334 Form ID: 1000

IDD&E Training

IDDandERegistration Form [Compatibility Mode] - Microsoft Word



IDD&E Program

(Illicit Discharge, Detection & Elimination)

Presented by the Center for Watershed Protection in cooperation with the Berks County MS4 Cooperative Education Program

When: September 24, 2013

Program Time: 8:15 a.m. to noon

Registration: **7:45 a.m. to 8:15 a.m. (morning refreshments provided)**

Location: Berks County Agricultural Center

1238 County Welfare Road, Leesport, PA 19533

Cost: **This program is FREE for those municipalities that are participants with the Berks County MS4 Steering Committee & Cooperative Education Program**

Program Overview:

This program will cover the basics of IDD&E, what types of IDD&E are found in rural and urban areas, what and how to identify IDD&E. Outside classroom examples will be provided to allow for interactive learning and real world scenarios. Also included, tools that will help identify areas with highest likelihood of IDD&E issues.

Who should attend:

Road Crews doing inspections of outfalls, Municipal Engineers, Municipal Managers/Secretaries, Municipal Employees that do outdoor maintenance (including park & recreation staff)

All Attendees will receive a certificate of attendance via e-mail or the municipality that they are employed by. This program may be appropriate for Continuing Education Credits for Engineers.

Please forward the below registration form via email to ashowers@countyofberks.com or via mail at Berks County Planning Commission, 14th Floor Services Center, 633 Court Street Reading, PA 19601 by **September 17, 2013**

Training for Municipalities & Engineers





**Good
Housekeeping**

Operations & Maintenance Tracking Forms

**Pollution Prevention and Good Housekeeping for
Municipal Operations and Maintenance**

Operations and Maintenance Program Development Tracking Form

Municipality: _____

Contact Name: _____

Date: 20__

Storm Water Facility Operation and Maintenance Program Development: Existing Program Information (for Permit Year 1)		
Storm Water Facility Type (check if applicable)	Existing Programs	
	Description of Corrective Maintenance Activities	Description of Preventative Maintenance Activities
Open Channels		
Culverts		
Detention Facilities		
Drainage Swales		
Infiltration Facilities		
Other		

Storm Water Facility Type (check if applicable)	Proposed Program Modifications (for Permit Year 2)	
	Description of Corrective Maintenance Activities	Description of Preventative Maintenance Activities
Open Channels		
Culverts		
Detention Facilities		
Drainage Swales		
Infiltration Facilities		
Other		

Operations & Maintenance Tracking Forms

Vehicle Maintenance, Fueling and Washing Program Development: Existing Program Information (for Permit Year 1)	
Type of Activity	Description of Existing Programs and Procedures (Include information on location, materials, disposal practices)
Vehicle Maintenance	
Vehicle Fueling	
Vehicle Washing	

Vehicle Maintenance, Fueling and Washing Program Development: Proposed Program Changes (for Permit Year 2)	
Type of Activity	Description of Proposed Changes to Existing Programs and Procedures (Include information on location, materials, disposal practices)
Vehicle Maintenance	
Vehicle Fueling	
Vehicle Washing	

WHAT ARE THE BENEFITS?

- Less Duplication
- Same Message
- Reach more Target Audiences
- Phone a “Friend Option”
- Single point of contact for DEP
- 39 Heads are better than 1
- Tracking & Documentation for Reporting