



STORMWATER MANAGEMENT

Understanding the MS4 Program



MISSION STATEMENT

- To protect and promote the health, safety and welfare of Lancaster County citizens by preventing the pollution, impairment or destruction of its natural resources.





Stormwater: Precious and Powerful

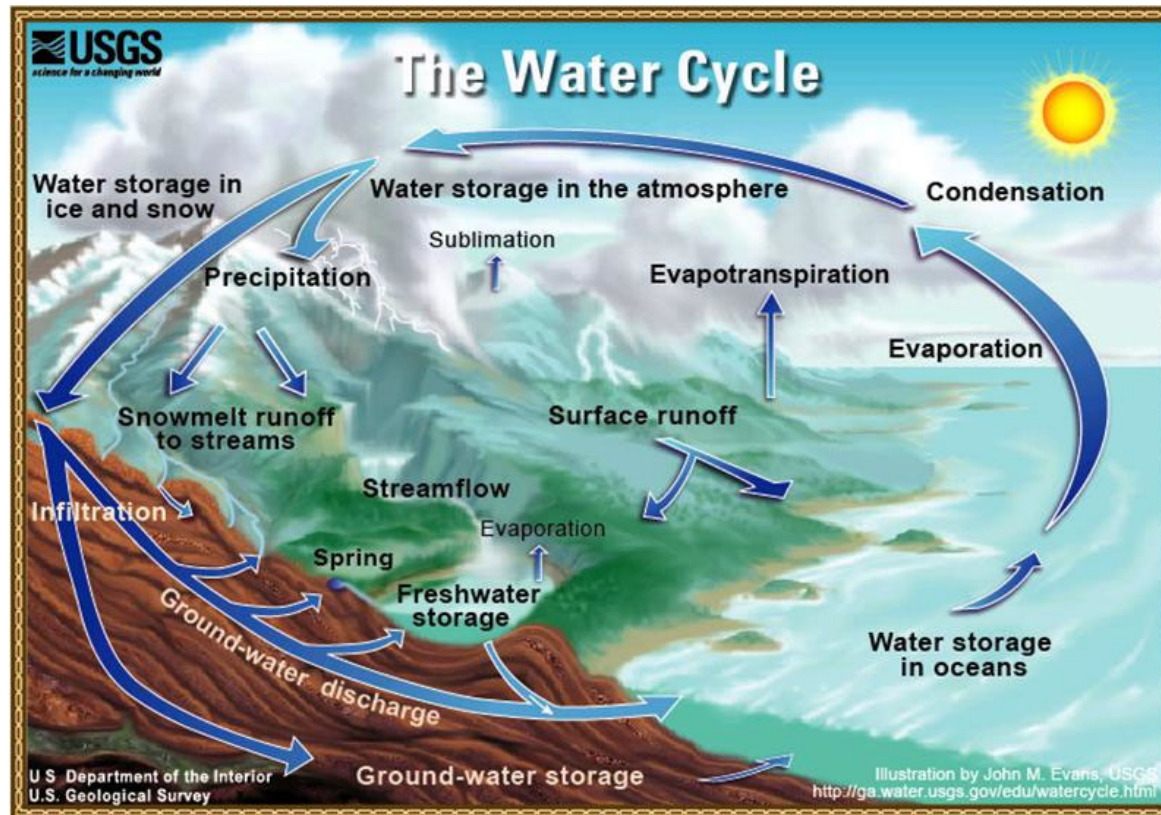
An inch of rain on an
acre of land is
equivalent to 27,000
gallons of water and
weighs 113 tons

STORMWATER

- Stormwater is runoff from rain or snowmelt that flows over land or impervious surfaces but does not soak into the ground



THE WATER CYCLE



WHY IS PROTECTING STORMWATER IMPORTANT



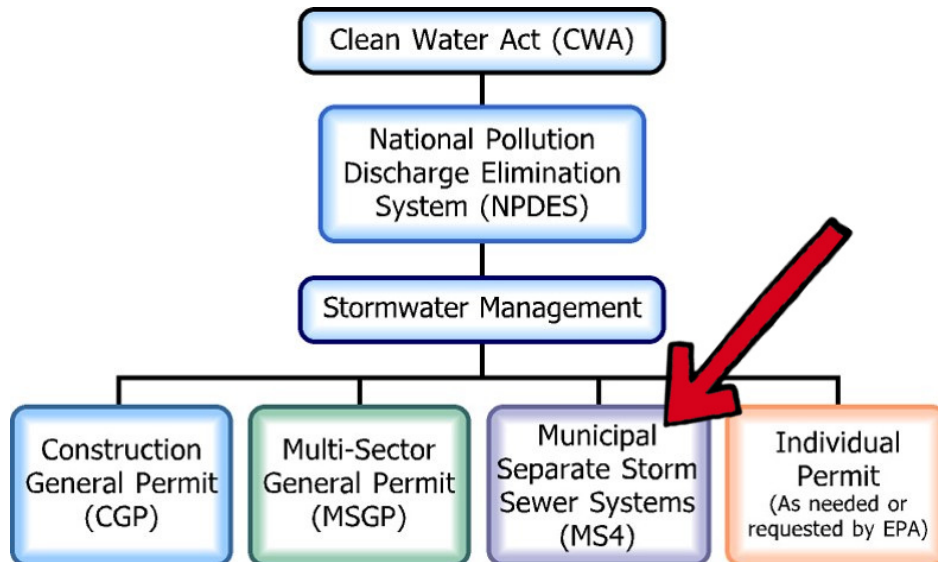
- Planet Earth is about 70% water
- 97% is salt water
- 2% of that is stored in glaciers
- Of that, just 1% is safe for us to consume



THE SPARK THAT STARTED THE REGULATORY FIRE

The Cuyahoga River Fire in Cleveland, Ohio

NPDES

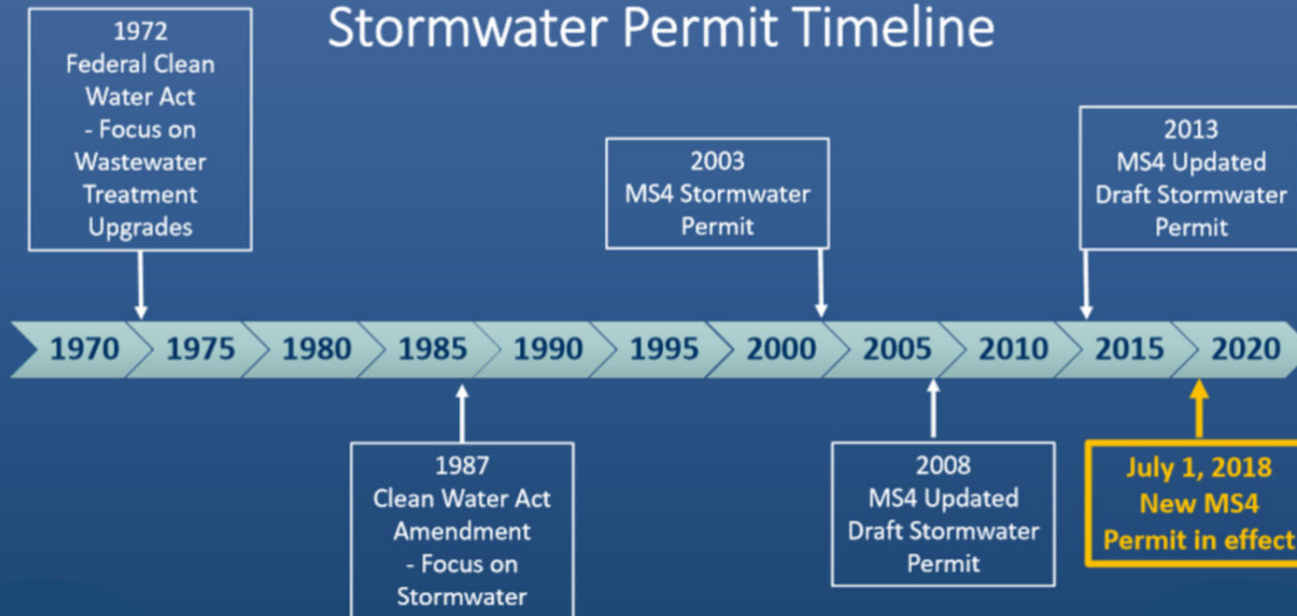


- Created in 1972 by the Clean Water Act (CWA)
- Stormwater was added by amendment in 1987
- Regulations are enforced by the Environmental Protection Agency (EPA) through the State
- Water quality is the primary focus of the program
- Prevention is the key to success

NPDESTIMELINE

Municipal Separate Stormwater Sewer System (MS4) Permit

Stormwater Permit Timeline



THEN AND NOW



NPDES MS4 PERMITTING

- The National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Program is mandated under the federal Clean Water Act.
- In South Carolina, the EPA has delegated MS4 Program oversight to South Carolina Department of Health and Environmental Control (SCDHEC) .

WHY CREATE A STORMWATER UTILITY?

Growth in the panhandle



Federal Mandate

- A municipality is bound by Federal (US EPA) regulations when all or a portion of the municipality lies within an urbanized area as determined by the US Census Bureau.

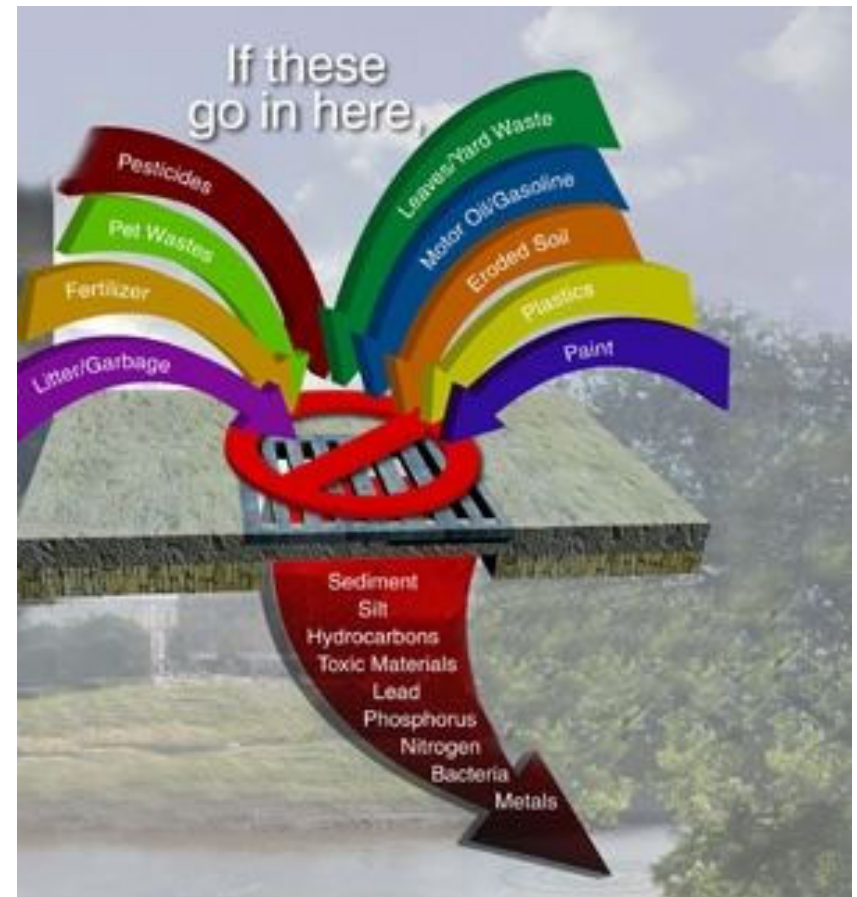
NPDES MS4 PERMITTING

- An MS4 (Municipal Separate Storm Sewer System) refers to a collection of structures designed to gather stormwater and discharge it into local streams and rivers.



STORMWATER DISCHARGES

- The MS4 Permit was developed to minimize the environmental impact of stormwater discharges such as these.



SEPARATE STORM SEWER SYSTEM



Basin
captures stormwater



Ditch
moves stormwater above
ground



Inlet
moves stormwater
below ground



Discharge
dumps stormwater

WASTEWATER

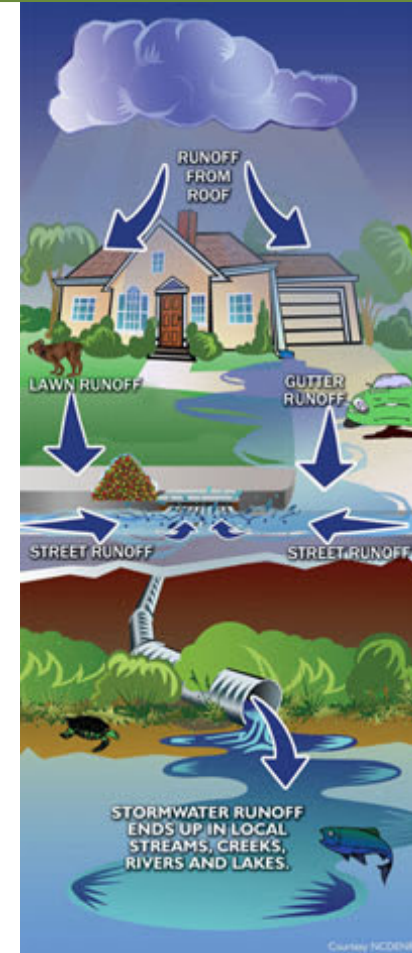


STORMWATER



WHERE DOES THAT DRAIN GO?

- In Lancaster County storm drains DISCHARGE DIRECTLY to waterways WITHOUT filtration or treatment.



STORMWATER DOESN'T TRAVEL ALONE

As it flows over urban or impervious surfaces, it carries pollutants to the nearest stream or waterway.



STORMWATER - CLASSIFIED TWO WAYS

Point Source



Non-Point Source



STORMWATER FEE

- All properties are subject to the stormwater utility fee except the road right-of-way.
- Streets are typically designed to be part of the stormwater system



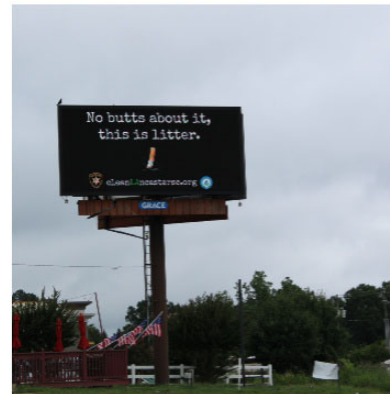
SIX MINIMUM CONTROL MEASURES

1. Public Outreach/Education
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post-Construction Runoff Control
6. Good Housekeeping/Pollution Prevention



MCM I: PUBLIC EDUCATION AND OUTREACH

- Educational presentations at Indian Land Middle School and the Library STEAM after-school program
- Meetings with HOA representatives to educate about retention and detention ponds, etc.
- Provide tools to minimize waste and water quality reminder promotional items



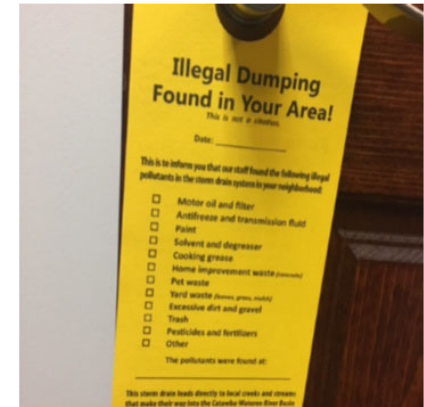
MCM 2 PUBLIC INVOLVEMENT AND PARTICIPATION



- Participation in community cleanup events
- Provide tools for community groups to pick up litter
 - *If it's on the ground, it's in the water*
- Pursuing grants to maximize our impact for the least costs

MCM 3: ILLICIT DISCHARGE AND ELIMINATION

- Draft Water Sampling Monitoring and Assessment Plan.
 - To measure and monitor Impaired Waters in the SMS4 and surrounding area.
- Field tests will be conducted by staff at 32 sites, once a month.
 - Data collected will be analyzed and kept on record for reporting and baseline determination.
- Testing will aid in the detection and elimination of illicit discharges.

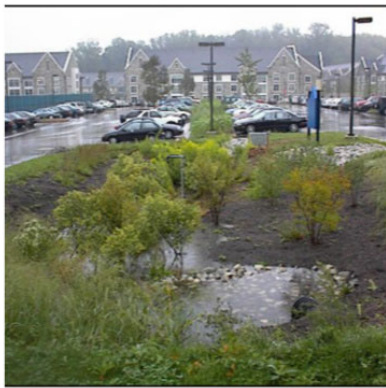


MCM 4: CONSTRUCTION SITE RUNOFF CONTROL



- Bi-weekly inspections of 60 active sites
- 85 Requests for service
- Multiple inspection holds issued
- Multiple CO holds issued

MCM 5: POST CONSTRUCTION SITE RUNOFF



- Inspection of long-term stormwater controls on new development and redevelopment
- Develop an enforcement strategy to urge compliance
- Develop plan for retrofitting existing sites that may be adversely impacting water quality

MCM 6: POLLUTION PREVENTION/GOOD HOUSEKEEPING

- Lancaster County facility inventory
- Municipal operations inspections
- Ongoing employee training



WHAT CAN WE ALL DO?

- Never dump anything down the storm drains
- Use pesticides, fertilizers and herbicides sparingly or not at all
- Use a car wash instead of washing your car in the street
- Pick up dog waste
- Throw your trash in the garbage can

AND MORE ...

- Throw your cigarette butts away in the trash
- Fix any auto leaks
- Consider a rain barrel
- Direct your downspouts back onto your garden
- Sweep your sidewalks and driveways

WE'LL SAY IT AGAIN “PICK UP AFTER YOUR DOG”

DON'T BE NAUGHTY

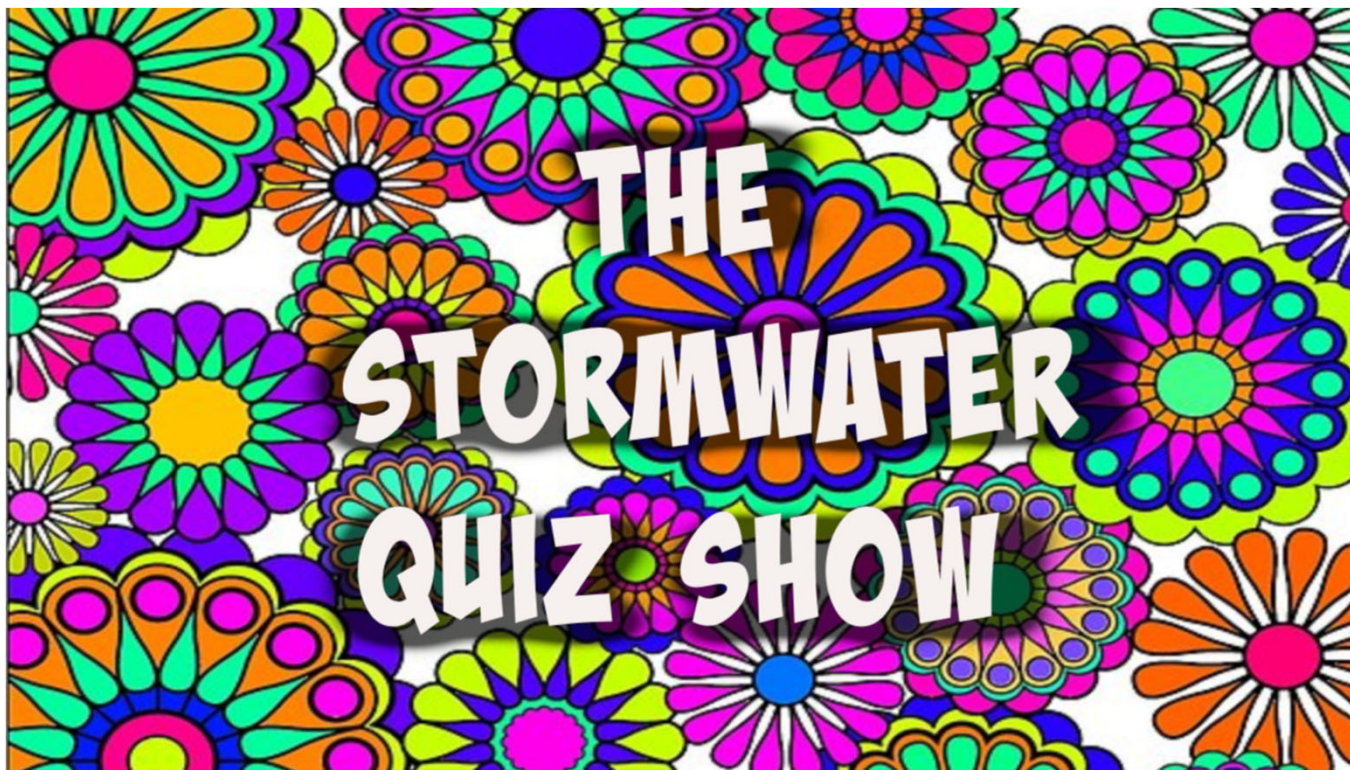


HAPPY HOLIDAYS!

PICK UP AFTER YOUR PET

- According to the SC DHEC 303 D list, all of our creeks and streams are impaired to some degree with E.coli.

STORMWATER QUIZ



NO. 1

- Stormwater runoff is rain or snow melt that runs off surfaces such as rooftops, lawns, paved streets, graveled roads, driveways and parking lots.
- True or False

ANSWER

■ True



NO. 2

- What is the best place to wash your car
 - A. near a river
 - B. at a car wash or on the lawn
 - C. on your driveway

ANSWER

- B. At the car wash or on the lawn



NO. 3

- Which of these are sources of stormwater pollution?
 - A. Leaky fluids
 - B. Washing vehicles and equipment on the street or driveway
 - C. Pesticide, herbicide and fertilizer runoff
 - D. All of the above

ANSWER

- D. All of the above



ALL OF
THE
ABOVE

NO.4

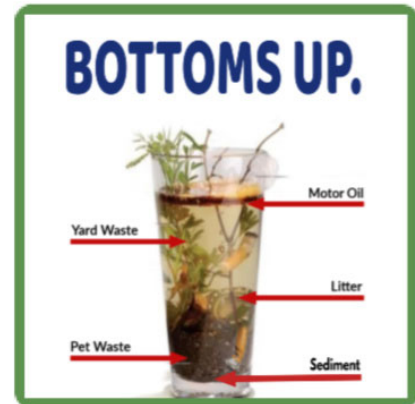
- Why is stormwater runoff a problem?
 - A. Harms wildlife habitats
 - B. Creates dangerous flooding
 - C. Degrades drinking water quality
 - D. All of the above

ANSWER

- D. All of the above



ALL OF
THE
ABOVE



NO. 5

- Stormwater gets treated at a facility.
 - True or False

ANSWER

■ False

Unfiltered runoff is carried to streams and wetlands



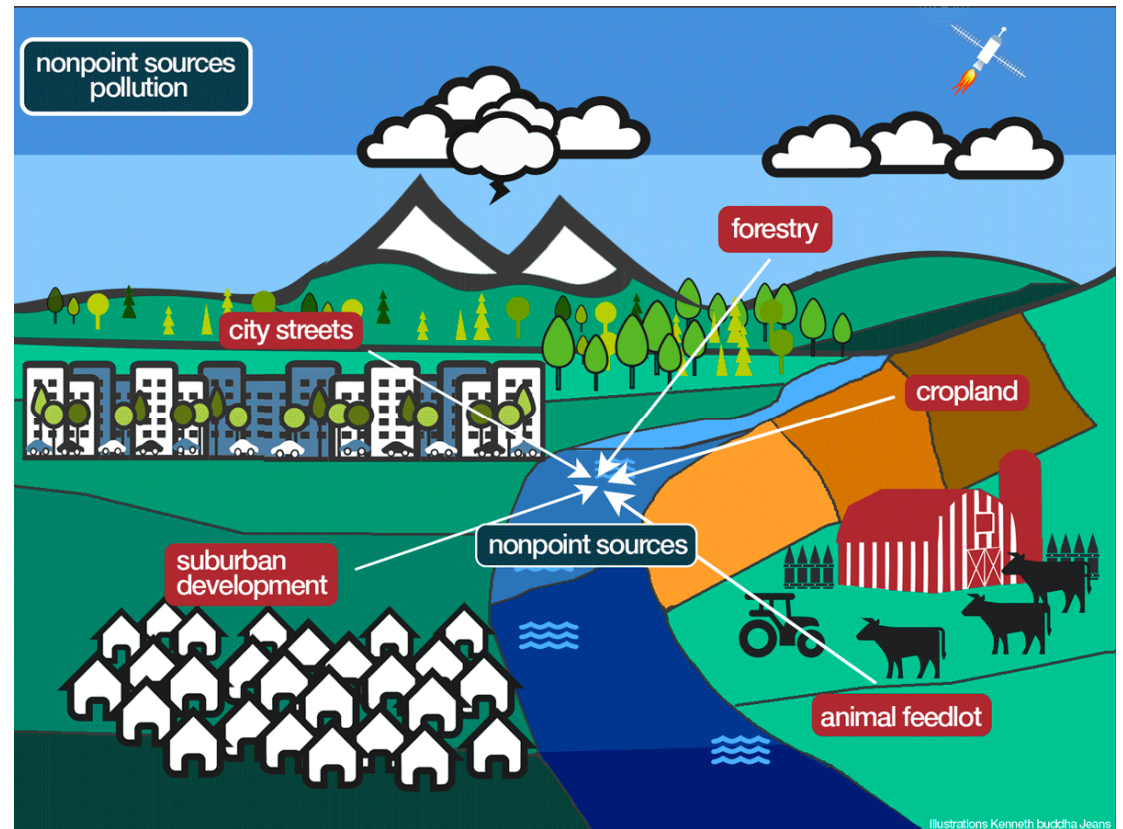


NO. 6

- Which is the leading cause of water pollution in the U.S.?
 - Point Source
 - Non-Point Source

ANSWER

- Non-point source



NO.7

- Rain is the only thing that SHOULD go in a storm drain
 - True or False

ANSWER

- True



NO. 8

- What is the best advise when applying fertilizers?
 - A. Right before a heavy rain
 - B. Apply more that is recommended
 - C. Apply according to package directions

ANSWER

- C. According to package directions



NO. 9

- How many fecal coliform bacteria are produced by the average sized dog dropping?
 - A. 4900
 - B. 1200
 - C. 3 Billion

ANSWER

- C. 3 Billion



NO. 10

- Who contributes to stormwater pollution?
 - A. Your neighbors
 - B. Your pets
 - C. Developers
 - D. You
 - E. All of the above

ANSWER

- E. All of these



FOLLOW US ON SOCIAL MEDIA



After the mysterious impairment of our creeks and streams, a county begins to uncover the clues leading to this grisly discovery.



ONLY RAIN DOWN THE STORM DRAIN



LANCASTERCOUNTYSTORMWATER



LANCASTER COUNTY
STORMWATER MANAGEMENT

IT'S TOXIC



HELLO STORMWATER,
I NEED TO REPORT
SOMETHING...
IT'S TOXIC



REAL LITTERBUGS

the Real Litterbugs OF LANCASTER COUNTY

Don't just watch, report it!
1-877-7LITTER



EWW

cleanlanaster.org

BILLBOARDS



Clean Water
Starts with
Clean Highways



cleanLancastersc.org

WE ALL FLOAT DOWN HERE



— LANCASTER COUNTY —
WE FIGHT DIRTY



REPORT A LITTERER

1-877-754-8837



Thank You

www.cleanlancastersc.org
www.mylancaster.org