



City of Kings Mountain, North Carolina

**STORMWATER MANAGEMENT PLAN & ANNUAL NPDES PERMIT REPORT**

**Prepared by:**

City of Kings Mountain, NC  
Stormwater Services  
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NPDES Permit No: NC S000529

Reporting Year 4

December 1, 2014- November 30, 2015

**REPORTING CERTIFICATION**

I certify, Under penalty of Law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.



Rickey E. Putnam  
Stormwater Administrator

12-4-15

Date

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## INTRODUCTION

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### **STORMWATER MANAGEMENT PLAN OVERVIEW**

The North Carolina Division of Water Quality issued NPDES Phase II Permit NC S000529 to the City of Kings Mountain effective December 1, 2011. The Stormwater Management Plan is the City of Kings Mountain's program to comply with NPDES Phase II Permit NC S000529 for stormwater discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The plan includes the Best Management Practices included in the City's application plan narrative as well as guidelines and strategies necessary for protecting water quality and reducing pollutant discharges to the maximum extent practicable. The plan also includes reporting results for the current yearly reporting period from December 1, 2013 to November 30, 2014.

This plan is a guidance document to be used by City staff and the general public. The plan is evolving and will address priorities and needs that will be reflected in compliance programs, policies, operating manuals and revised ordinances over the five (5) year implementation period.

As required by the EPA regulations for the NPDES Phase II stormwater programs, the following are the six minimum measures that are addressed in the plan:

1. PUBLIC EDUCATION AND OUTREACH
2. PUBLIC PARTICIPATION AND INVOLVEMENT
3. ILLICIT DISCHARGE DETECTION AND ELIMINATION
4. CONSTRUCTION SITE RUNOFF CONTROL
5. POST-CONSTRUCTION SITE RUNOFF CONTROL
6. POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

### **STATUS OF IMPLEMENTATION**

The City of Kings Mountain is pleased to report excellent progress for year four (4) compliance with requirements of NPDES Phase II Permit NC S000529. Primary areas of work include:

- Continued implementation of:
  - Stormwater Permit Requirements
  - Stormwater Permit Review and Approvals
- Public Outreach events to educate the public and encourage public participation and involvement.

**CHANGES/JUSTIFICATIONS**

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None at this time.

## **CITY OF KINGS MOUNTAIN STORMWATER SERVICES OVERVIEW**

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### **COMPREHENSIVE STORMWATER MANAGEMENT**

Comprehensive stormwater management takes into account both quantity and quality of stormwater runoff and is reflected in the five (5) major components of the City of Kings Mountain's Stormwater Services program:

#### **ADMINISTRATION AND PLANNING**

Planning utilized the watershed approach to develop long range plans to improve drainage and water quality within each watershed. The City has been divided into four main watersheds. The eastern watersheds drain into the Catawba River Basin and the western watersheds drain into the Broad River Basin. This approach seemed most appropriate considering our municipal limits incorporates two separate river basins.

#### **REGULATORY AUTHORITY AND ENFORCEMENT**

The City of Kings Mountain's current stormwater ordinance has been created in order to meet required comprehensive stormwater management and create technical standards for design and maintenance of private stormwater facilities. The City currently has one staff member who is BMP inspection certified. The city has approved Post-Construction runoff BMP measures, the plan is to have staff educated in maintenance practices in order to ensure compliance with the City's maintenance standards. All NPDES Phase II stormwater regulations fall into this category.

#### **CAPITAL IMPROVEMENT PLAN**

The City has determined the lot size and the impervious areas for the City properties. This information along with the inventory of our drainage system and our capital improvement needs was a large part of determining an appropriate residential unit for the development of stormwater utility fees. A portion of the utility fee will go toward identified capital improvement projects that have been prioritized to provide the most effective water quantity as well as quality improvements.

#### **OPERATIONS AND MAINTENANCE**

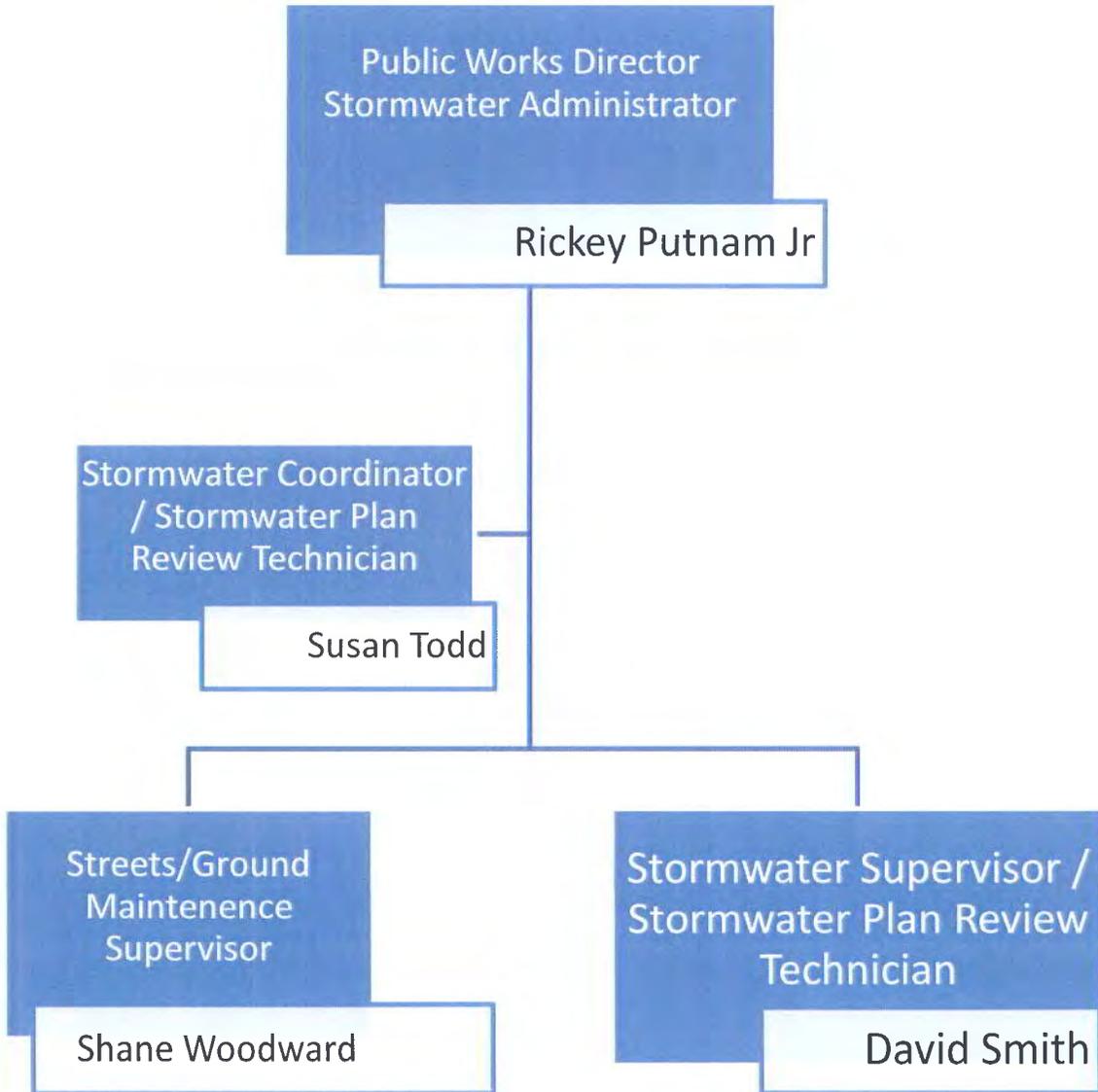
The City of Kings Mountain's Stormwater Services Department is responsible for maintaining the public drainage system. With the implementation of the City's NPDES Phase II BMP for Pollution Prevention and Good Housekeeping this division will continue to maintain the City's open and closed drainage systems, street sweeping, and maintenance of public parking areas. The City has completed an O & M for catch basins and conveyance systems which will include reporting mechanisms.

#### **WATER QUALITY**

Currently there are not TMDL's on any of the streams that the permittee is permitted to discharge into. The permittee will continue to monitor information regarding the water quality of these streams and make revisions to the stormwater plan if needed.

ORGANIZATIONAL CHART

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CITY OF KINGS MT  
 BUDGET REPORT BY ACCOUNT  
 CURRENT PERIOD: 11/01/2015 TO 11/30/2015

58 %

<u>BUDGET FOR 2014/2015 FISCAL YEAR</u>	<u>BUDGETED</u>		<u>CURRENT</u>			
Expenditure						
62-01-4010-000 SALARIES	215,327.00	0.00	66,625.34	0.00	148,701.66	69
62-01-4100-000 FICA TAX	16,472.00	0.00	4,449.63	0.00	12,022.37	73
62-01-4110-000 RETIREMENT	15,073.00	0.00	4,421.25	0.00	10,651.75	71
62-01-4120-000 HEALTH INSURANCE	51,846.00	0.00	17,935.25	0.00	33,910.75	65
62-01-4125-000 401 K	10,766.00	0.00	3,331.28	0.00	7,434.72	69
62-01-4135-000 WORKERS COMPENSATION	2,520.00	0.00	0.00	0.00	2,520.00	100
62-01-4140-000 PROESSIONAL SERVICES	8,000.00	0.00	1,018.33	36.49	6,945.18	87
62-01-4400-000 SUPPLIES	30,233.00	0.00	14,331.58	1,728.05	14,173.37	47
62-01-4455-000 GAS AND OIL	8,000.00	0.00	771.86	0.00	7,228.14	90
62-01-4525-000 EDUCATIONAL MATERIAL	2,500.00	0.00	0.00	0.00	2,500.00	100
62-01-4530-000 TRAVEL AND TRAINING	2,500.00	0.00	245.25	0.00	2,254.75	90
62-01-4550-000 TELEPHONE	3,500.00	0.00	575.25	0.00	2,924.75	84
62-01-4555-000 POSTAGE	500.00	0.00	0.00	0.00	500.00	100
62-01-4675-000 REPAIR & MAINT VEH	10,000.00	0.00	994.03	0.00	9,005.97	90
62-01-4735-000 ADVERTISING	1,000.00	0.00	0.00	0.00	1,000.00	100
62-01-4855-000 UNIFORMS	1,000.00	0.00	-55.22	0.00	1,055.22	106
62-01-4860-000 LIABILITY INSURANCE	500.00	0.00	0.00	0.00	500.00	100
62-01-4880-000 ADMINISTRATIVE SERVICES	4,000.00	0.00	999.99	0.00	3,000.01	75
62-01-4920-000 BAD DEBTS	200.00	0.00	0.00	0.00	200.00	100
62-01-5001-000 C/O MAPPING	25,000.00	0.00	14,250.00	0.00	10,750.00	43
62-01-5011-000 C/O NEW HOLLAND BACKHOE	0.00	0.00	90,765.90	0.00	-90,765.90	0
62-01-7001-000 LPA EQUIPMENT	15,986.00	0.00	15,985.65	0.00	0.35	0
62-01-7002-000 LPA BACKHOE	13,374.00	0.00	18,780.24	0.00	-5,406.24	-40
 Total Expenditure	 438,297.00	 0.00	 255,425.61	 1,764.54	 181,106.85	 41.00
<b>Report Total Expenditure</b>	<b>438,297.00</b>	<b>0.00</b>	<b>255,425.61</b>	<b>1,764.54</b>	<b>181,106.85</b>	

## **REGULATORY AUTHORITY AND ENFORCEMENT**

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### **Stormwater Services Department**

The City of Kings Mountain's Stormwater Services Department has enforcement authority and will issue future stormwater permits within the City. This department will also be responsible for handling stormwater complaints from the public and the City's Street Maintenance Department pertaining to stormwater issues. Actions supported by the City's current ordinances pertaining to stormwater are investigated and documented as either violations or not founded. All stormwater complaints bring an opportunity for public education and awareness. This department will be responsible for these same duties.

The City's Stormwater Services Department also has permitting and enforcement authority for all commercial construction projects in regards to grading and erosion control measures.

### **Water Resources Department**

The Water Resources Department is responsible for the City of Kings Mountain's NPDES Wastewater Discharge Permit, the City's Collection System Permit and all supporting ordinances and policies such as the City's Illicit Discharge Policy. As part of these responsibilities this group regulated sanitary sewer overflows; documents all overflows; and works to ensure that no wastewater is discharged into natural outlets. They also respond to customer complaints and assist in monitoring streams adjacent to their sewer outfalls.

### **North Carolina Department of Environmental Health and Natural Resources**

The NC DEMLR will be responsible for the erosion control for projects of more than one acre. The City of Kings Mountain Erosion Control Ordinance was passed on November 26, 2013, however permits are not issued by the City therefore the contractor will be required to acquire his soil and erosion permit from NC DEMLR. All projects that are less than one acre will be required to obtain a grading permit from the City of Kings Mountain and comply with development erosion control such as silt fencing, gravel construction entrances, etc.

**CAPITAL IMPROVEMENTS**

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The City is currently working to map all of the major outfalls within the primary water sheds. Each watershed will have a priority listing of capital improvements that will need to be made for the remainder of this permit. The City will also be using this Capital Improvement Plan to assist in implementation of the stormwater fee.

**2014 Proposed Projects**

<b>Location</b>	<b>Description</b>	<b>Est. Total Cost</b>
1013 N Piedmont Avenue	Canopy and Renovation of Vehicle Washing Bay	\$ 100,000.00 (not funded)
	Planning Budget for Downtown Parking Lots/Bio retention Designs	\$ 20,000.00 (not funded)
1013 N Piedmont Ave	Salt Storage Building Constructed	\$ 25,000.00
1013 N Piedmont Ave	Brine Machine Purchased	\$ 26,044.00
	Mapping Project Bid and Contracted (1/3 annually for 3 years)	\$ 26,073.00

**2015 Proposed Projects**

1013 N Piedmont Avenue	Canopy and Renovation of Vehicle Washing Bay	\$ 100,000.00 (not funded)
	Planning Budget for Downtown Parking Lots/Bio retention Designs	\$ 20,000.00 (not funded)
1013 N Piedmont Avenue	Storage Shed converted (insulated, for Ram Jet)	\$ 22,000.00
1013 N Piedmont Avenue	Plan, Locate, Design, and Price detention pond for Public Works	\$ 20,000.00 (not funded)
	Mapping Project (1/3 annually) (year 2)	\$ 26,073.00

**2016 Proposed Projects**

1013 N Piedmont Avenue	Canopy and Renovation of Vehicle Washing Bay	\$ 100,000.00 (not funded)
1013 N Piedmont Avenue	Get engineering design for detention pond for Public Works	\$ 20,000.00
	Planning Budget for Downtown Parking Lots/Bio retention Designs	\$ 20,000.00
	Mapping Project (1/3 annually) (year 3)	\$ 26,073.00

**OPERATIONS AND MAINTENANCE**

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**2013 Accomplishments**

*In-House Repairs*

Location	Description	Total Cost
1013 N Piedmont Ave	Canopy over Gas Pumps installed	\$ 17,963.98

**2014 Accomplishments**

*In-House Repairs*

Location	Description	Total Cost
1013 N Piedmont Ave	Salt Storage Building Constructed	\$ 25,000.00
1013 N Piedmont Ave	Brine Machine Purchased	\$ 26,044.00
1013 N Piedmont Ave.	Construction of Cover for Brine Machine	\$ 1,722.10
Mapping Project Bid and Contracted (1/3 annually for 3 years)		\$ 26,073.00

**2015 Accomplishments**

*In-House Repairs*

Location	Description	Total Cost
Mapping Project Contracted (1/3 annually for 3 years) (year 2)		\$ 26,073.00
1013 N Piedmont Ave.	Construction of Cover for Brine Machine	\$ 1,722.10
1013 N Piedmont Ave.	Expansion of Cover for Brine Machine	\$ 2,200.00
1013 N Piedmont Ave.	Converted storage shed to insulated building for the Ram Jet	\$ 22,000.00
1013 N Piedmont Ave.	Requested Engineering recommendations for detention Pond @ Public Works complex	\$

## NPDES STORMWATER PERMIT BMPs 2015 REPORTING

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### 2012 PLAN HIGHLIGHTS

#### Public Education & Outreach

- Identified target pollutants and the target audience.
- Kicked off the “Clean Water is Everybody’s Business” Campaign the in October / coinciding with the City’s Gateway Festival.

#### Public Involvement & Participation

- Gave presentation to the rotary Club on how they as citizens may participate in our plan.
- Distributed a stormwater survey to this year’s Gateway Festival visitors to help identify baseline and demographic information and solicited for individuals to become in our program.
- Held our first Public Meeting at the City’s Budget Workshop to discuss the direction of our program.

#### Illicit Discharge Detection and Elimination

- Work with the Water Resources Department to create a new IDDE policy and implemented a Fats, Oils, and Grease (FOG) Policy. Restaurant and Apartment Complex cooking grease being identified as the major cause of sewage overflows.
- Work on identifying and mapping major outfalls within each watershed.

#### Construction Site Runoff Controls

- Require that all development projects of more than one acre of disturbed land had the appropriate NCDENR permit for land disturbing activity.
- Monitor construction sites to make sure that all erosion control measures are in place and have not been damaged.
- Investigate erosion concerns from the public and document source and contact the State if necessary.

#### Post Construction Site Runoff Controls

- Encourage all new development projects to implement onsite BMP’s to eliminate 85% TSS.
- Monitored private BMP’s and made phone calls if they appeared to be operating below design standards.

#### Pollution Prevention and Good Housekeeping

- Began employee training using RainCheck employee training for MS4s.
- Development of spill prevention policies for City Facilities
- Budgeted for Canopy for gas and diesel pumps

#### Other

- Established preliminary locations of outfall point locations based on overland flow patterns and best available current inventory mapping.

## **NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

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### **2013 PLAN HIGHLIGHTS**

#### **Public Education & Outreach**

- Continued to identified target pollutants and the target audience.

#### **Public Involvement & Participation**

- Gave presentation to the Life Enrichment Center how they as citizens may participate in our plan.
- Created and enacted an online stormwater survey on the City's web site to determine the level of interest and knowledge about stormwater issues.

#### **Illicit Discharge Detection and Elimination**

- Work with the Water Resources Department to implement the IDDE policy and monitor the stormwater system. There were no complaints of illicit discharge this year.
- Continued to work on identifying and mapping major outfalls within each watershed.

#### **Construction Site Runoff Controls**

- Require that all development projects which disturbed land had the appropriate KINGS MOUNTAIN STORMWATER MANAGEMENT permit for land disturbing activity.
- Monitor construction sites to make sure that all erosion control measures are in place and have not been damaged.
- Investigate erosion concerns from the public and document source and contact the State if necessary.

#### **Post Construction Site Runoff Controls**

- Required all new development projects to implement onsite BMP's to eliminate 85% TSS per the City's Ordinance.
- Monitored private BMP's and made phone calls if they appeared to be operating below design standards.

#### **Pollution Prevention and Good Housekeeping**

- Continued employee training.
- Completed development of spill prevention policies for City Facilities
- Completed construction of Canopy for gas and diesel pumps

#### **Other**

- Continued working to establish preliminary locations of outfall point locations based on overland flow patterns and best available current inventory mapping.

## **NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

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### **2014 PLAN HIGHLIGHTS**

#### **Public Education & Outreach**

- Continued to identified target pollutants and the target audience.

#### **Public Involvement & Participation**

- Gave presentation to East Elementary School Kindergarten, The Mayor's Breakfast for Commercial & Industrial Customers, and The Gateway Festival attendees, on how they as citizens may participate in our plan.
- Continued the online stormwater survey on the City's web site to determine the level of interest and knowledge about stormwater issues.

#### **Illicit Discharge Detection and Elimination**

- Monitor the stormwater system and enforce the IDDE policy.
- There was one unfounded complaint of illicit discharge this year which was investigated.
- Continued to work on identifying and mapping major outfalls within each watershed.

#### **Construction Site Runoff Controls**

- Require that all development projects which disturbed land had the appropriate KINGS MOUNTAIN STORMWATER MANAGEMENT permit for land disturbing activity.
- Require that all developments have the appropriate NCDENR permit for land disturbing activity.
- Monitor construction sites to make sure that all erosion control measures are in place and have not been damaged.
- Investigate erosion concerns from the public and document source and contact the State if necessary.

#### **Post Construction Site Runoff Controls**

- Require all new development projects to implement onsite BMP's to eliminate 85% TSS per the City's Ordinance.
- Monitor private BMP's and made phone calls if they appeared to be operating below design standards.

#### **Pollution Prevention and Good Housekeeping**

- Continued employee training.
- Continued to implement spill prevention policies for City Facilities.

#### **Other**

- Continued working to establish preliminary locations of outfall point locations based on overland flow patterns and best available current inventory mapping.

## NPDES STORMWATER PERMIT BMPs 2015 REPORTING

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### 2015 PLAN HIGHLIGHTS

#### Public Education & Outreach

- Continued to identify target pollutants and the target audience.
- Gave presentation to Bethware Elementary School Fourth Grade, The Mayor's Breakfast for Commercial & Industrial Customers, on how they as citizens may participate in our plan.

#### Public Involvement & Participation

- Continued the online stormwater survey on the City's web site to determine the level of interest and knowledge about stormwater issues.

#### Illicit Discharge Detection and Elimination

- Monitor the stormwater system and enforce the IDDE policy.
- Created a computer generated illicit discharge log for calls, investigations, findings, and notes.
- There were six illicit discharge calls logged and investigated.
- Wrote SOP of illicit discharge calls.
- Continued to work on identifying and mapping major outfalls within each watershed.

#### Construction Site Runoff Controls

- Require that all development projects had the appropriate KINGS MOUNTAIN STORMWATER MANAGEMENT permit.
- Require that all developments have the appropriate NCDENR permit for land disturbing activity, and have their approval certificate from NCDENR posted.
- Monitor construction sites to make sure that all erosion control measures are in place and have not been damaged.
- Investigate erosion concerns from the public and document source and contact the State if necessary.

#### Post Construction Site Runoff Controls

- Require all new development projects to implement onsite BMP's to eliminate 85% TSS per the City's Ordinance.
- Monitor private BMP's and made phone calls if they appeared to be operating below design standards.

#### Pollution Prevention and Good Housekeeping

- Continued employee training.
- Continued to implement spill prevention policies for City Facilities.

#### Other

- Continued working to establish preliminary locations of outfall point locations based on overland flow patterns and best available current inventory mapping.

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**BMPs for Public Education and Outreach**

The permit holder shall implement the minimum measures no later than 12 months from the date of permit issuance. The following BMPs shall be implemented to meet the objectives of Public Education and Outreach.

**1. Goals and Objectives for Public Education and Outreach**

- (a) Distribute educational materials to the community
- (b) Conduct outreach activities for civic groups to encourage Public Involvement
- (c) Raise public awareness on the causes and impacts of stormwater pollution
- (d) Inform the public on the steps they can take to prevent or reduce stormwater pollution

<b>BMP</b>	<b>Measurable Goals / Accomplishments YR 1-5</b>
Public Education and Outreach	Define goals and objectives of the Local Public Education and Outreach Program based on community wide issues
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> A stormwater survey was taken at the City of Kings Mountain Gateway Festival to assist in determining the stormwater awareness of participants and their demographic groups. This survey was important to extent that it told just how much knowledge of stormwater pollution or lack thereof that a sample of the public actually has. This survey also told the City how people are likely informed about issues. Thus the Goals and Objectives that are listed above were defined.
YEAR 2 2013	<b>GOALS:</b> Create online survey and monitor Feedback regarding public knowledge of Stormwater issues. <b>Accomplishments:</b> 1. Used "Survey Monkey" to complete online survey and monitor feedback. 2. Created Stormwater Page on City of Kings Mountain Website for public education, awareness, outreach, and information. Created Facebook Page for City of Kings Mountain Stormwater Department. 3. The Stormwater Director held a public meeting at the Kings Mountain Life Enrichment Center to provide information and outreach on Stormwater and Recycling.
YEAR 3 2014	<b>GOALS:</b> Hold additional public meeting. Create (or find) educational materials for distribution to the community. <b>Accomplishments:</b> 1. Found educational materials online at various Stormwater websites. 2. Set up table, distributed educational materials, and displayed a power point presentation at the Mayor's Appreciation Breakfast for local businesses. 3. Distributed educational materials and spoke to citizens attending the annual Gateway Festival downtown, October 11, 2014 about Stormwater issues and information.
YEAR 4 2015	<b>GOALS:</b> Hold additional public meetings. Work on additional educational materials and visuals for public meetings and events. Participate in Christmas Parade for Public Awareness. <b>Accomplishments:</b> 1. Found additional educational materials online at various Stormwater websites. 2. Set up table, distributed educational materials, and displayed a power point presentation at the Mayor's Appreciation Breakfast for local businesses. 3. Spoke to Fourth Grade class @ Bethware Elementary School about stormwater information. 4. Spoke to homeowners regarding oil leaks from cars parked in the street, and regarding oil changing and proper oil disposal procedures.
YEAR 5 2016	<b>GOALS:</b> Continue public education efforts with; information in the citizen newsletter placed in the utility bills. ; hold additional meetings with homeowners regarding residential pollution issues. ; Additional meeting with business owners and business leaders regarding the environmental footprint of the business community.

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**2. Target Pollutants and/or Stressors and Target Audiences**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YR 1-5</b>
Describe target pollutants and target pollutant sources	The permittee shall maintain a description of the target pollutants and/or stressors and likely sources.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Identified several target pollutants and stressors along with target audiences. These are presented in greater detail in Appendix A.
YEAR 2 2013	<b>GOALS:</b> Utilize the list of target pollutants to guide educational and outreach efforts. Identify any additional likely pollutants / stressors / and likely sources as demographics change. <b>Accomplishments:</b> Held public meeting to educate the public on pollutant stressors
YEAR 3 2014	<b>Goals:</b> Continue to educate and inform the public. Continue to identify any additional likely pollutants / stressors / and likely sources as demographics change. <b>Accomplishments:</b> Held additional public meetings and monitored the target pollutants.
YEAR 4 2015	<b>Goals:</b> Reduce pollutants from citizens (leaves, grass, auto fluids).
YEAR 5 2016	
Describe target audiences	The permittee shall maintain a description of the target audiences likely to have significant stormwater impacts and why they were selected.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Identified several target pollutants and stressors along with target audiences. These are presented in greater detail in Appendix A.
YEAR 2 2013	<b>Goals:</b> Utilize the list of target audiences to make contact and educate them regarding their stormwater impact. <b>Accomplishments:</b> Had booth at Gateway Festival to make contact with Citizens, Had table at the Mayor's Industrial breakfast to make contact with Industrial/Commercial customers.
YEAR 3 2014	<b>Goals:</b> Hold meetings to educate the public about pollutants and their impact on our water. <b>Accomplishments:</b> Made contacts at the Gateway Festival regarding citizen's pollutants and their impact. Met with the kindergarten at East Elementary School and business leaders at the Mayor's Breakfast to help educate the public about pollutants and their impact. Promoted "behind the curb" leaf pickup this year. Educational materials listed in Appendix B
YEAR 4 2015	<b>Goals:</b> Hold additional meetings and participate in the Christmas Parade to promote reduction of Household water pollutants. Hold meetings with Restaurants and Businesses to discuss how they can reduce their environmental footprint. <b>Accomplishments:</b> Met with the owners of a Restaurant and a Printing Company to discuss reducing their environmental footprint by recycling and by eliminating water pollution at their sights. Met with a homeowner regarding erosion along a stream which navigates thru her yard. Attempted to educate her regarding erosion and erosion control measures with regards to streams. Promoted leaf pick-up <b>behind the curb</b> in the newspaper and a citizen newsletter included in the City utility bills. Spoke to homeowners regarding oil leaks from cars parked in the street, and regarding oil changing and proper oil disposal procedures.
YEAR 5 2016	<b>Goals:</b> Continue public education efforts with; information in the citizen newsletter placed in the utility bills about specific pollutants. ; hold additional meetings with homeowners regarding residential pollution issues. ; hold additional meetings with business owners and business leaders regarding the environmental footprint of the business community.

**Specific Identified Pollutants and their target audience:**

<b>Sediment</b>	<b>Residential and Commercial Building Contractors</b>
<b>Yard Waste</b>	<b>Lawn Care Services and Homeowners</b>
<b>Litter</b>	<b>Entire Community with emphasis on Restaurants</b>
<b>Auto Fluids</b>	<b>Auto Parts Stores for the DIY car enthusiast</b>
<b>Fertilizers</b>	<b>Lawn Care Services and Local Hardware Stores (DIY)</b>
<b>Pet Waste</b>	<b>Park visitors, Pet owners</b>

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

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**PUBLIC EDUCATION AND OUTREACH**

**3. Residential and Industrial/Commercial Issues**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YR 1-5</b>
Describe residential and industrial/commercial issues	The permittee shall describe issues, such as pollutants, likely sources of those pollutants, impacts, and the physical attributes of the stormwater runoff, in their education/outreach program.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Through meetings with the Stormwater Advisory Panel, it was determined that sediment from construction sites was our number one pollutant. Standards were implemented in order to ensure that every development followed specific steps in order to prevent sediment from entering the City's storm water system.
YEAR 2 2013	<b>Goals:</b> Implement a local Soil and Erosion Control Ordinance. <b>Accomplishments:</b> Council Approval and beginning Implementation of <b>Phase II Stormwater Ordinance</b> and <b>Soil Erosion and Sedimentation Control Ordinance</b>
YEAR 3 2014	<b>Goals:</b> Continue implementation of Ordinances and Continue education/outreach program. <b>Accomplishments:</b> Have had contact with several new businesses coming to town regarding Stormwater issues and BMPs. Answered calls from residents regarding stormwater issues.
YEAR 4 2015	<b>Goals:</b> Continue to help Businesses maintain their BMPs <b>Accomplishments:</b> Met with business owner at Kings Mountain Rescue Squad about maintaining their detention pond. Have had contact with several new and existing businesses regarding development and maintenance of their stormwater BMPs.
YEAR 5 2016	<b>Goals:</b> Find a new way to promote "behind the curb" limb and leaf pick-up for residential customers and lawn care companies.

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**4. Informational Web Site**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YR 1-5</b>
Informational Web Site	The permittee shall promote and maintain an internet web site designed to convey the program's message.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> The City launched a new page on the City's Web site at <a href="http://www.cityofkm.com">www.cityofkm.com</a> . This page is dedicated to stormwater issues and the City' "Clean Water is Everybody's Business" campaign.
YEAR 2 2013	<b>Goals:</b> To continue to maintain the web page site and research the potential of developing a Facebook page and/or using other Social Media to further get the message out. <b>Accomplishments:</b> Added contact information to the web page along with a stormwater survey to get feedback on citizens' knowledge of stormwater issues and their demographics. Posting of 2013 Annual report to the web site.
YEAR 3 2014	<b>Goals:</b> To continue to maintain the web page site and research the potential of developing a Facebook page and/or using other Social Media to further get the message out. <b>Accomplishments:</b> Set up a direct email address <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> for citizens to ask questions or report problems without knowing a person to contact. This email is directed to all the management team members of the stormwater department simultaneously. Were advised that we needed to use the City Facebook page which is dominated by the Library daily information.
YEAR 4 2015	<b>Goals:</b> Create Stormwater Facebook Page (separate from the City Page) and explore other avenues of contact and promotion with citizens. <b>Accomplishments:</b> Maintained the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for stormwater complaints and questions. Maintained the Stormwater Department page on the City of Kings Mountain website. The stormwater page averaged 108 hits per month over the last 11 months with the lowest month being 79 hits and the highest month being 146 hits. The City's main website averaged approx. 10,000 hits per month during the same time frame.
YEAR 5 2016	<b>Goals:</b> Continue to try to develop a Stormwater Facebook page. Work to get stormwater information onto the informational TV in the Lobby of City Hall

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**5. Distribute Public Education Materials to identified target audiences and user groups.**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Distribute public education materials to identified target audiences and user groups.	The permittee shall distribute stormwater educational material to appropriate target groups. Instead of developing its own materials, the permittee may rely on Public Education and Outreach materials supplied by the state, and/or other entities through a cooperative agreement, as available, when implementing its own program.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Launched an Educational Program “Clean Water is Everybody’s Business” to begin the education of the targeted audiences. The kick-off event was held for one week at City Hall with an informational display and educational materials. Appendix B details the materials.
YEAR 2 2013	<b>Goals:</b> To continue to develop materials for our Educational and Outreach Program. The emphases will be on schools and target certain age groups. <b>Accomplishments:</b> Put educational information on the City of KM / Stormwater Web Site. Held meeting at the Life Enrichment Center to help educate Seniors and employees about what their responsibilities are in our stormwater system.
YEAR 3 2014	<b>Goals:</b> Develop educational and outreach materials and attend meetings to promote Stormwater issues. <b>Accomplishments:</b> Attended Meeting at East School Kindergarten, the Mayors Commercial/Industrial Breakfast, and Gateway Festival. Found and used educational and informational materials to promote environmentally friendly solutions to keep pollutants out of the stormwater system. Materials are shown in Appendix B
YEAR 4 2015	<b>Goals:</b> Have stormwater info on TV in Lobby of City Hall, do inserts for bills and newspaper articles w/helpful information about litter, pollution, etc. <b>Accomplishments:</b> Attended Meeting at Bethware School Fourth Grade, and the Mayors Commercial/Industrial Breakfast. Found and used educational and informational materials to promote environmentally friendly solutions to keep pollutants out of the stormwater system. Materials are shown in Appendix B. Included stormwater “behind the curb” leaf and limb collection information in the new “CITY OF KINGS MOUNTAIN NEWSLETTER” sent out in the utility bills. (October) (See Appendix B.) Purchased “Stormwater Pollution Found” door hangers to advise residents of specific problems. (See Appendix B.)
YEAR 5 2016	<b>Goals:</b> Add stormwater information on the TV in the Lobby of City Hall.

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**6. Hotline/Help Line**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Maintain Hotline/Help Line	The permittee shall promote and maintain a stormwater hotline/help line for the purpose of education and outreach.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> The City's Codes and Engineering Standards department fielded all complaint calls for the City. This number is 704-734-4599 and is listed for complaints. Numerous calls were fielded and information was given concerning stormwater issues.
YEAR 2 2013	<b>Goals:</b> The City will have an email hotline/help line specifically for stormwater issues while continuing to maintain the complaint hotline/help line. <b>Accomplishments:</b> The City's Public Works Department fielded all complaint calls for the City. This number is 704-734-0735 or 704-734-4501 and is listed on the City of Kings Mountain's Web Site on the Public Works Page and a Stormwater page which was added to the website <a href="http://www.cityofkm.com">www.cityofkm.com</a> . An email address specifically for stormwater <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> was also added. Numerous calls were fielded regarding stormwater ditches and storm drain issues, these complaints were checked and information given concerning stormwater issues.
YEAR 3 2014	<b>Goals:</b> To continue to maintain the web page site and research the potential of developing a Facebook page and/or using other Social Media to further get the message out. <b>Accomplishments:</b> Set up a direct email address <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> for citizens to ask questions or report problems without knowing a person to contact. This email is directed to all the management team members of the stormwater department simultaneously. Were advised that we needed to use the City Facebook page which is dominated by the Library daily information.
YEAR 4 2015	<b>Goals:</b> Maintain email and web page with current and up to date information and tips. Develop a separate Facebook Page for Stormwater Department. <b>Accomplishments:</b> Maintained the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for stormwater complaints and questions. Maintained the Stormwater Department page on the City of Kings Mountain website. The stormwater page averaged 108 hits per month over the last 11 months with the lowest month being 79 hits and the highest month being 146 hits. The City's main website averaged approx. 10,000 hits per month during the same time frame.
YEAR 5 2016	<b>Goals:</b> Maintain email and web page with current and up to date information and tips. Develop a separate Facebook Page for Stormwater Department. Have info available for people to answer questions and concerns at Public Outings.

**NPDES STORMWATER PERMIT BMPs 2015 REPORTING**

**PUBLIC EDUCATION AND OUTREACH**

**7. Implement a Public Education and Outreach Program.**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Implement a Public Education and Outreach Program	The permittee’s outreach program, including those implemented locally or through a cooperative agreement, shall include a combination of approaches designed to reach target audiences. For each media, event or activity, including those elements implemented locally or through a cooperative agreement the permittee shall estimate and record the extent of exposure.
YEAR 1 DEC ’11 – NOV. 2012	<b>Accomplishments:</b> The City launched their program called “Clean Water is Everybody’s Business”. This program targets pollutants and their target audiences and includes educational materials, giveaways and media print for each activity and pollutant.
YEAR 2 thru NOV. 2013	<b>Goals:</b> The City will continue to expand their program and record the extent of exposure. <b>Accomplishments:</b> Attended the Mayor’s Commercial/Industrial Breakfast, & Gateway Festival.
YEAR 3 THRU NOV. 2014	<b>Goals:</b> Web page development, public meetings, <b>Accomplishments:</b> Developed a separate Stormwater Department Web Page on the City of Kings Mountain website. Attended public meetings to promote stormwater pollutant reduction/elimination and to answer questions about Stormwater issues. The Mayor’s Industrial/Commercial Breakfast, and The Gateway Festival. The average hits to the Stormwater page is 110 per month over the last 10 months.
YEAR 4 THRU NOV. 2015	<b>Goals:</b> Add additional Public Meetings to the Gateway Festival and Mayor’s Breakfast. Begin Drain Marking Program with Public involvement. Begin stream cleaning program w/”Adopt-a-Stream” public involvement. Do newspaper and mail articles with pollutant reduction and environmentally friendly measure recommendations. <b>Accomplishments:</b> Maintained the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for stormwater complaints and questions. Maintained the Stormwater Department page on the City of Kings Mountain website. Submitted “behind the curb” leaf pick-up letter to the newspaper and put “behind the curb” information in the City Newsletter to Citizens billing insert.
YEAR 5 THRU NOV. 2016	<b>Goals:</b> Add additional Public Meetings to the Gateway Festival and Mayor’s Breakfast. Begin Drain Marking Program with Public involvement. Begin stream cleaning program w/”Adopt-a-Stream” public involvement. Do newspaper and mail articles with pollutant reduction and environmentally friendly measure recommendations. Talk to Rotary Club about involvement with Stream Cleanup and Drain Marking Programs.

**PUBLIC INVOLVEMENT AND PARTICIPATION**

**BMPs for Public Involvement and Participation**

The permittee shall implement the following BMPs to meet the objectives of the Public Involvement and Participation Program within the schedule submitted on the Permittee’s application so that the Permittee fully implements its permitted program within five years from permit issuance and shall notify the Division prior to modification of any goals.

**1. Public Hearing/Meetings**

- (a) Comply with State and local public notice requirements when implementing a public involvement and participation program.

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Allow the public an opportunity to review and comment on the Stormwater Plan	The permittee shall conduct at least one public meeting during the term of the permit to allow the public an opportunity to review and comment on the Stormwater Plan.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> The city held a Public Hearing on August 26 <sup>th</sup> 2008 to gain public input on the City’s Stormwater Application and Narrative, which included BMP’s for each minimum measure. Citizens were given the opportunity to speak on the application and proposed BMPs. The public hearing was advertised in the local newspaper for two successive weeks prior to the meeting. No one spoke or commented at the hearing. The Stormwater Advisory committee met monthly prior to this meeting with members of our targeted audiences to develop the BMPs listed in the application.
YEAR 2 2013	<b>Goals:</b> Develop a new Stormwater Ordinance and hold a public hearing for comment and discussion. Use the Advisory committee to assist in development of this ordinance. <b>Accomplishments:</b> The <b>Phase II Stormwater Ordinance</b> was passed following a public hearing held November 26, 2013. The <b>Soil Erosion and Sedimentation Control Ordinance</b> was also passed on this date.
YEAR 3 2014	<b>Goals:</b> Additional Public Meetings. <b>Accomplishments:</b> Implemented “behind the curb” leaf pickup and requested public participation by mailers and newspaper announcements.
YEAR 4 2015	<b>Goals:</b> Further promote public participation in the “Behind the Curb” Leaf pickup with additional newspaper articles and mailer information. Suggest bagged leaves as a quicker turn around solution for leaf pick-up. Contact lawn care companies working in town with “behind the curb” information. Hold public meeting if response merits it. Use the current Stormwater survey in the utility bill and reference that it is available online. Re-establish a Stormwater Advisory Committee with the backgrounds noted below. <b>Accomplishments:</b> Submitted “behind the curb” leaf pick-up letter to the newspaper and put “behind the curb” information in the City Newsletter to Citizens billing insert. Began research for bulk mailing to lawn maintenance companies, or homeowners to share with their lawn maintenance companies regarding “behind the curb” leaf and limb pick-up and “bagged leaves as a quicker turn around solution” for leaf pickup.
YEAR 5 2016	<b>Goals:</b> Further promote public participation in the “Behind the Curb” Leaf pickup with additional newspaper articles and mailer information. Suggest bagged leaves as a quicker turn around solution for leaf pick-up. Contact lawn care companies working in town with “behind the curb” information. Hold public meeting if response merits it. Use the current Stormwater survey in the utility bill and reference that it is available online. Re-establish a Stormwater Advisory Committee with the backgrounds noted below.

Stormwater Advisory Committee Backgrounds:

- Civil Engineer
- Attorney/Golf Club Board Member
- Lawn Care Service Provider
- School System Grounds and Maintenance Director
- City Public Works Director

**PUBLIC INVOLVEMENT AND PARTICIPATION**

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**2. Volunteer Programs**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Volunteer community involvement program	The permittee shall include and promote volunteer opportunities designed to promote ongoing citizen participation
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Stenciled roughly 10% of the City's storm drains with "Drains to Creek". Sent letters to homeowners associations to ask that they do the same for private drainage systems within the jurisdiction.
YEAR 2 2013	<b>Goals:</b> Require that all new storm drains be permanently stamped with "Drains to Creek" or "Drains to Waterway". Prepare additional programs for Volunteers. Set up meetings with the Keep Kings Mountain Beautiful Group to organize a Spring Clean-up event. Begin preparations for "Adopt-a-Stream" program. Identify watersheds and get signage in place where streams and streets are in close proximity. <b>Accomplishments:</b> Purchased and placed signage where streams and streets are in close proximity. Organized a spring clean-up of streets, stream banks, and ditches.
YEAR 3 2014	<b>Goals:</b> Implement Drain Marking Program <b>Accomplishments:</b> Researched Drain Marking Program and got forms and plans ready to institute drain marking program. Ordered Drain Markers to have citizens install on drains. Example noted in Appendix B.
YEAR 4 2015	<b>Goals:</b> Begin drain marking program and "adopt-a-stream" program. Mail letters to Homeowners associations to ask them to mark all private drains within the jurisdiction that are not already marked. Offer to include them in the drain marking program participation. <b>Accomplishments:</b> Started getting info about how other cities are using volunteers in their programs.
YEAR 5 2016	<b>Goals:</b> Get with the Rotary and other citizen groups to get their input and interest in helping with programs.

**PUBLIC INVOLVEMENT AND PARTICIPATION**

**3. Mechanism for Public Involvement**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Mechanism for Public Involvement	The permittee shall provide and promote a mechanism for public involvement that provides for input on stormwater issues and the stormwater program.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Conducted a Citizen Survey and gave out ball caps for each survey submitted with the “Clean Water is Everybody’s Business” Logo. Each survey gave the participant an opportunity to sign up with their contact information to learn more about upcoming volunteer programs.
YEAR 2 2013	<b>Goals:</b> Set up an email address <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> where citizens may email and request information, file a complaint or report illicit discharge. Look into social media for additional ways to connect with volunteers. Meet with Civic groups to see how they would like to participate in our program. <b>Accomplishments:</b> Created an email address for stormwater information requests, reports, and questions. Created a stormwater Facebook page to provide information to the public about the stormwater program.
YEAR 3 2014	<b>Goals:</b> Monitor the above listed email address and respond to any questions, issues, or complaints reported. <b>Accomplishments:</b> took comments and questions about stormwater issues via the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address. Kept the Stormwater web page up to date with information about seasonal issues.
YEAR 4 2015	<b>Goals:</b> Continue to monitor the email and keep the stormwater web page up to date. Create a Stormwater Facebook page to provide further stormwater information to the target audience that would be more likely to use that medium. <b>Accomplishments:</b> Maintained the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for stormwater complaints and questions. Maintained the Stormwater Department page on the City of Kings Mountain website. The stormwater page averaged 108 hits per month over the last 11 months with the lowest month being 79 hits and the highest month being 146 hits. The City’s main website averaged approx. 10,000 hits per month during the same time frame.
YEAR 5 2016	<b>Goals:</b> Continue to monitor the email and keep the stormwater web page up to date. Create a Stormwater Facebook page to provide further stormwater information to the target audience that would be more likely to use that medium. Check into having articles in local paper at key times of the year. (lawn clippings in the spring)(leaves in the fall.)

**PUBLIC INVOLVEMENT AND PARTICIPATION**

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**4. Hotline/Help Line**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Maintain Hotline/Help Line	The permittee shall promote and maintain a stormwater hotline/help line for the purpose of public involvement and participation.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> The City's Codes and Engineering Standards department fielded all complaint calls for the City. This number is 704-734-4599 and is listed for complaints. Numerous calls were fielded and information was given concerning stormwater issues.
YEAR 2 2013	<b>Goals:</b> The City will have an email hotline/help line specifically for stormwater issues while continuing to maintain the complaint hotline/help line. <b>Accomplishments:</b> The City's Public Works Department fielded all complaint calls for the City. This number is 704-734-0735 or 704-734-4501 and is listed on the City of Kings Mountain's Web Site on the Public Works Page and a Stormwater page which was added to the website <a href="http://www.cityofkm.com">www.cityofkm.com</a> . An email address specifically for stormwater <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> was also added. Numerous calls were fielded regarding stormwater ditches and storm drain issues, these complaints were checked and information given concerning stormwater issues.
YEAR 3 2014	<b>Goals:</b> To continue to maintain the web page site and research the potential of developing a Facebook page and/or using other Social Media to further provide an option for public participation. <b>Accomplishments:</b> Maintain Stormwater Web Page in the City of Kings Mountain Web Site by keeping the information up to date and providing information about seasonal issues.
YEAR 4 2015	<b>Goals:</b> Get more seasonal information on the Stormwater web page and create a separate Kings Mountain Stormwater Facebook page with lots of information about stormwater issues and seasonal information aimed at users most likely to use the Facebook medium for information and contact. <b>Accomplishments:</b> Maintained the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for stormwater complaints and questions. Maintained the Stormwater Department page on the City of Kings Mountain website. The stormwater page averaged 108 hits per month over the last 11 months with the lowest month being 79 hits and the highest month being 146 hits. The City's main website averaged approx. 10,000 hits per month during the same time frame.
YEAR 5 2016	<b>Goals:</b> Get more seasonal information on the Stormwater web page and create a separate Kings Mountain Stormwater Facebook page with lots of information about stormwater issues and seasonal information aimed at users most likely to use the Facebook medium for information and contact. Maintain the <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> email address for reporting stormwater issues.

## **ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

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### **1. Objectives for Illicit Discharge Detection and Elimination**

- (a) Implement and enforce a program to detect and eliminate illicit discharges in the MS4.
- (b) Maintain a storm sewer system map, showing the location of all major outfalls and the names and locations of all waters of the United States that receive discharges from those outfalls;
- (c) Prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges except as allowed in this permit and implement appropriate enforcement procedures and actions.
- (d) Implement a plan to detect and address non-storm water discharges, including illegal dumping, to the MS4.
- (e) Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
- (f) Address the following categories of non-storm water discharges or flows (i.e., illicit discharges) only if you identify them as significant contributors of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, individual residential car washing, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, and street wash water (discharges or flows from firefighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the United States).

### **2. BMPs for Illicit Discharge Detection and Elimination**

The permittee shall implement the following BMPs to meet the objectives of the Illicit Discharge Detection and Elimination Program within the schedule submitted on the Permittee's application so that the Permittee fully implements its permitted program within five years from permit issuance and shall notify the division prior to modification of any goals.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

**3. Legal Authority**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Maintain adequate legal authorities	The permittee shall annually review the permittee’s IDDE ordinances or other regulatory mechanisms, or adopt any new ordinances or other regulatory mechanisms that provide the permittee with the adequate legal authority to prohibit illicit connections and discharges and enforce the approved IDDE Program.
YEAR 1 DEC ’11 – NOV. 2012	<b>Accomplishments:</b> Stormwater Services works closely with the City’s Water Resources Department. It was determined that one of our biggest concerns of illicit discharge was sewer back-up and overflow due to grease. The City developed a Fats, Oils and Grease Program (FOG), this program required that restaurants that were identified as having documented grease problems would have to install proper grease interceptors if none were found to be in place and/or increase their pumping and supply the City with a copy of this contract. The City’s Sewer Use Ordinance gives both, the Water Resources Department as well as the Codes and Engineering Department authority to enforce this ordinance. Litter and the accumulation of junk is another identified source of illicit discharge. Currently the City’s Community Appearance Standard regulates and gives authority to the Codes and Engineering department to abate the accumulation of junk as well as disposal of auto fluids into the City’ Storm Sewer.
YEAR 2 2013	<b>Goals:</b> The City will continue to be aggressive in identifying sources of illicit discharge and amend our ordinances appropriately to address any newly significant discharges. <b>Accomplishments:</b> The City continues to be aggressive in identifying sources of illicit discharge. The City has begun to review the current IDDE Program.
YEAR 3 2014	<b>Goals:</b> Review IDDE and other regulatory mechanisms to insure the Stormwater Department has authority to address significant discharge issues. <b>Accomplishments:</b> Reviewed our Stormwater Ordinance which grants us authority to address significant discharge issues.
YEAR 4 2015	<b>Goals:</b> Continue to aggressively identify sources of illicit discharge address significant discharge issues. <b>Accomplishments:</b> Set up illicit discharge spreadsheet to track illicit discharge calls. Have had direct contact with two residents regarding oil contaminating the storm drain. Have investigated several possible illicit discharge reports which were unfounded.
YEAR 5 2016	<b>Goals:</b> Continue to review IDDE and other regulatory mechanisms to insure the Stormwater Department has authority to enforce the Ordinances and IDDE. Aggressively identify sources of illicit discharge address significant discharge issues.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

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**4. Storm Sewer System Base Map of Major Outfalls and Testing**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Maintain a Storm Sewer System Base Map of Major Outfalls	The permittee shall maintain a current map showing major outfalls and receiving streams.
Detect dry weather flows	The permittee shall develop and implement a program for conducting dry weather flow field observations in accordance with a written procedure for detecting and removing sources of illicit discharges.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> The City has identified a minimum of 10% of our major outfalls into receiving streams. Major pollutants at this time are sediment, litter, and yard waste. The City has determined that after a 72 hour dry period the major pollutants are sediment and auto fluid from roadways and parking lots. It has not been shown that during these periods we are having problems with illegal discharges such as direct runoff or contamination. At this time restaurant grease is the largest culprit when it comes to creating a hazardous illicit discharge and the City has a mechanism of authority in place to abate these issues.
YEAR 2 2013	<b>Goals:</b> Continue mapping of outfalls into receiving streams until they have all been identified. Begin chemical testing of major outfalls to determine if in fact there are any additional significant illicit discharges that have not been readily identified. <b>Accomplishments:</b> The mapping process has begun with contours and blue line stream mapping.
YEAR 3 2014	<b>Goals:</b> Continue mapping of outfalls and receiving streams until they have all been identified. Begin mapping project to create database map of stormwater system. <b>Accomplishments:</b> Contracted with Joel Wood Engineering to begin 3-year mapping project to create database updatable map of the City Stormwater System
YEAR 4 2015	<b>Goals:</b> Continue the mapping system project. Continue identifying and mapping outfalls and streams. Look into purchase of testing devices or create contacts with testing labs. <b>Accomplishments:</b> Successfully completed phase II of the mapping project with the outfalls all mapped and the majority of the catch basins mapped. Purchased core sample tool and infiltrometer.
YEAR 5 2016	<b>Goals:</b> Continue the system mapping project. Complete the catch basin mapping and work on pipes and ditches, with materials and condition.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

**5. Intake, Investigate, Document and Abate Identified Illicit Discharges**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Investigations into the source of all identified illicit discharges.	The permittee shall maintain, and evaluate annually, written procedures for conducting investigations of identified illicit discharges.
Track investigation and document illicit discharges	The permittee shall track all investigations and document the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.
Public reporting mechanism	The permittee shall promote, publicize, and facilitate a reporting mechanism for the public and staff to report illicit discharges and establish and implement citizen request response procedures.
Enforcement	The permittee shall implement a mechanism to track the issuance of notices of violation and enforcement actions as administered by the permittee. This mechanism shall include the ability to identify chronic violators for initiation of actions to reduce noncompliance.
YEAR 1 DEC '11 – NOV. 2012	NOTHING REQUIRED
YEAR 2 2013	<b>Goals:</b> Establish SOP for permitting, record keeping, and enforcement. Create and pass the Stormwater Ordinance. <b>Accomplishments:</b> Have created a filing process to address violations and enforcement actions. Stormwater Ordinance was passed by City Council following a public hearing on November 26 <sup>th</sup> , 2013.
YEAR 3 2014	<b>Goals:</b> Continue to address and track violation and enforcement actions. <b>Accomplishments:</b> There were no recorded reports of illicit discharge this year.
YEAR 4 2015	<b>Goals:</b> Continue to monitor for illicit discharge and maintain the SOP for tracking, record keeping and enforcement. Review SOP for record keeping and enforcement. <b>Accomplishments:</b> Set up illicit discharge spreadsheet to track illicit discharge calls. Have had direct contact with two residents regarding oil contaminating the storm drain. Have investigated several possible illicit discharge reports which were unfounded.
YEAR 5 2016	<b>Goals:</b> Continue spreadsheet and track illicit discharges.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

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**6. Employee Training**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Employee Training	The permittee shall implement and document a training program for appropriate municipal staff who as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> General training for the codes and the Sewer Departments has taken place. A more intense program for training is being developed for other employees such as street maintenance, sanitation, and police.
YEAR 2 2013	<b>Goals:</b> Develop an employee training program for each area that is relative to their daily interactions with the public and their daily routine in the City. <b>Accomplishments:</b> Did some training with employees relative to their daily interactions with the public.
YEAR 3 2014	<b>Goals:</b> Develop an employee training program for each Department that is relative to their daily interactions with the public and their daily routine in the City in regards to their environmental footprint especially in regards to stormwater. <b>Accomplishments:</b> Did some additional training with Stormwater employees. The Garage assisted us in beginning spill response protocols. Touched base with the Sanitation and Street Departments regarding daily vehicle monitoring for auto fluid contamination of the environment.
YEAR 4 2015	<b>Goals:</b> Develop an employee training program for each Department that is relative to their daily interactions with the public and their daily routine in the City with regards to their environmental footprint. Especially spill prevention and monitoring. <b>Accomplishments:</b> Started setting up training program requirement with fleet management superintendent and spoke with individuals involved with some discharges during the year.
YEAR 5 2016	<b>Goals:</b> Do additional employee training across all departments. Specifically drivers of City vehicles and those who handle chemicals etc.

**ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)**

**7. Public Education**

<b>BMP</b>	<b>Measurable Goals / Accomplishments YRS. 1-5</b>
Provide Public Education	The permittee shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.
YEAR 1 DEC '11 – NOV. 2012	<b>Accomplishments:</b> Since 2009 the City of Kings Mountain has been informing our employees, businesses and the community about our expected stormwater permit. The City started a single sort curbside recycling program which has over 70% participation. The county has adopted a tarp requirement for all vehicles transporting trash to their disposal sites. All trucks hauling dirt, stone, etc., are required by ordinance to cover their loads prior to entering the City or leaving their site of business. Both of the recycling businesses in town have received their NPDES Phase II permits and have made major changes to improving and securing their sites.
YEAR 2 2013	<b>Goals:</b> The City will begin to target specific businesses and employees as will be outlined in the Stormwater Administrator’s SOP Manual. <b>Accomplishments:</b> Participated in a litter sweep to exemplify the program of keeping our streets litter free. Continued to monitor the local businesses for illicit discharge, litter, and recycling routines.
YEAR 3 2014	<b>Goals:</b> Continue to promote recycling and monitor our local businesses and residential neighborhoods for litter and discharges. <b>Accomplishments:</b> Attended two public events to promote recycling and stormwater issues with businesses and the public.
YEAR 4 2015	<b>Goals:</b> Hold meetings to further promote recycling, litter reduction, and environmental footprint reduction. <b>Accomplishments:</b> Gave presentation to Bethware Elementary School Fourth Grade, The Mayor’s Breakfast for Commercial & Industrial Customers, on how they as citizens may participate in our plan. Met with the owners of a Restaurant and a Print Shop to discuss ways to reduce their environmental footprint.
YEAR 5 2016	<b>Goals:</b> Hold meetings to further promote recycling, litter reduction, and environmental footprint reduction.

## CONSTRUCTION SITE RUNOFF CONTROLS

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1. Pursuant to 40CFR 122.35 (b) and the maximum extent practicable (MEP) standard, the permittee may rely on the NCDENR Division of Land Resources (DLR) Sediment and Erosion Control Program to comply with this minimum measure. The NCDENR Division of Land Resources Sediment and Erosion Control Program effectively meets the MEP standard for Construction Site Runoff controls by permitting and controlling development activities disturbing one or more acres of land surface and those activities less than one acre that are part of a larger common plan of development as authorized under the Sediment Pollution Control Act of 1973 and Chapter 4 of Title 15A of the North Carolina Administrative Code. The NCDENR Division of Land Resources (DLR) Sediment and Erosion control Program continues to be monitored by the EPA to ensure the State effectively meets the MEP standard established by the Sediment Pollution Control Act of 1973 and Chapter 4 of Title 15A of the North Carolina Administrative Code.
2. The NCG010000 permit establishes requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality.
3. The permittee shall provide and promote a means for the public to notify the appropriate authorities of observed erosion and sedimentation problems. The permittee may implement a plan promoting the existence of NCDENR, Division of Land Resources "Stop Mud" hotline to meet the requirements of this paragraph.

**CONSTRUCTION SITE RUNOFF CONTROLS**

<p>YEAR 1 DEC '11 – NOV. 2012</p>	<p><b>Accomplishments:</b> The permittee relies on NCDENR (DLR) to comply with these minimum measures. No development permits are issued by the Codes and Engineering Department without the applicant first providing their NCDENR (DLS) permit. The City Codes Enforcement Inspectors are trained to recognize issues with improper silt fencing, proper sanitary waste, and litter at construction sites.</p>
<p>YEAR 2 2013</p>	<p><b>Goals:</b> Continue to utilize the NCDENR, add the “Stop Mud” hotline to our website and do a utility billing mailer to our utility customers informing them of the “Stop Mud” hotline.  <b>Accomplishments:</b> Added the “Stop Mud” hotline to the website. The permittee relies on NCDENR (DLR) to comply with these minimum measures. No development permits are issued by the City Stormwater Department without the applicant first providing their NCDENR (DLS) permit. The City Stormwater Department Employees are trained to recognize issues with improper silt fencing, proper sanitary waste, and litter at construction sites.</p>
<p>YEAR 3 2014</p>	<p><b>Goals:</b> Continue to utilize the NCDENR, and do a utility billing mailer to our utility customers informing them of the “Stop Mud” hotline.  <b>Accomplishments:</b> The permittee relies on NCDENR (DLR) to comply with these minimum measures. No development permits are issued by the City Stormwater Department without the applicant first providing their NCDENR (DLS) permit. The City Stormwater Department Employees are trained to recognize issues with improper silt fencing, proper sanitary waste, and litter at construction sites.</p>
<p>YEAR 4 2015</p>	<p><b>Goals:</b> Continue to utilize the NCDENR, and do a utility billing mailer to our utility customers informing them of the “Stop Mud” hotline.  <b>Accomplishments:</b> The permittee relies on NCDENR (DLR) to comply with these minimum measures. No development permits are issued by the City Stormwater Department without the applicant first providing their NCDENR (DLS) permit. The City Stormwater Department Employees are trained to recognize issues with improper silt fencing, proper sanitary waste, and litter at construction sites. Provided <a href="mailto:stormwater@cityofkm.com">stormwater@cityofkm.com</a> for the public to notify us of observed erosion and/or sedimentation problems.</p>
<p>YEAR 5 2016</p>	<p><b>Goals:</b> Continue to utilize the NCDENR to comply with these minimum measures.</p>

**POST-CONSTRUCTION SITE RUNOFF CONTROLS**

**1. Objectives for Post-Construction Site Runoff Controls**

- a. Implement and enforce a program to address stormwater runoff from new development and redevelopment projects that discharges into the small MS4. The program shall ensure that controls are in place that would prevent or minimize water quality impacts.
- b. Implement strategies which include a combination of structural and/or non-structural best management practices (BMPs) appropriate for the community;
- c. Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects; and
- d. Ensure adequate long-term operation and maintenance of BMPs.

**2. BMPs for Post-Construction Site Runoff Controls**

The Permittee shall implement its post-construction program no later than 24 months from the date the permit is issued. The permittee shall implement the following BMP to meet the objectives of the Post-Construction Stormwater Management Program.

BMP	MEASUREABLE GOALS
(a) Adequate legal authorities	Maintain through an ordinance, or other regulatory mechanism, adequate legal authorities to meet the objectives of the Post-Construction Site Runoff Controls Stormwater Management Program.
	The permittee shall have the authority to review designs and proposals for new development and redevelopment to determine whether adequate stormwater control measures will be installed, implemented, and maintained.
	The permittee shall have the authority to request information such as stormwater plans, inspection reports, monitoring results, and other information deemed necessary to evaluate compliance with the Post-Construction Stormwater Management Program.
	The permittee shall have the authority to enter private property for the purpose of inspecting at reasonable times and facilities, equipment, practices, or operations related to stormwater compliance with the Post-Construction Stormwater Management Program.
	Proposed Objectives
YEAR 1 DEC '11 – NOV. 2012	<b>NOTHING REQUIRED</b>
YEAR 2 2013	<b>Accomplishments:</b> A public hearing was held on Tuesday, November 26 during which time the public was given the opportunity to comment on the ordinance prior to the Council Meeting. The Stormwater Ordinance was passed at City Council Meeting on November 26, 2013. The Soil Erosion and Sedimentation Control Ordinance was passed by City Council on November 26, 2013.
YEAR 3 2014	<b>Goals:</b> Issue permits and enforce the Stormwater Ordinance <b>Accomplishments:</b> Reviewed plans for 5 businesses. Issued two (2) stormwater permits for new construction. Contacted two businesses to maintenance retention ponds that were out of code. Codes department is advising when a building permit is issued.
YEAR 4 2015	<b>Goals:</b> Continue to issue permits and enforce the Stormwater Ordinance. Make better arrangements with Codes to advise when building permits are requested. <b>Accomplishments:</b> Reviewed plans for several business construction and renovations. Answered multiple questions regarding the stormwater ordinance and policy. Advised Codes that we will need a copy of the "PLAN REVIEW ACTION" sheet for each building permit issued to determine if a stormwater permit is required or if review is needed during construction phase. See APPENDIX B.
YEAR 5 2016	<b>Goals:</b> Continue to work with Codes Department to make sure that we are aware of all building permits applications and have input prior to the permit being issued. Continue to review plans for business construction and renovations inside the City Limits of Kings Mountain.

**POST-CONSTRUCTION SITE RUNOFF CONTROLS**

**3. Strategies Appropriate for the MS4**

BMP	Measurable Goals
(b) Strategies which include BMPs appropriate for the MS4	The permittee shall adopt the DWQ BMP Design Manual or certify that the local BMP Design Manual meets or exceeds the requirements in the DWQ BMP Design Manual.
YEAR 1 DEC '11 – NOV. 2012	<b>NOTHING REQUIRED</b>
YEAR 2 2013	<b>Accomplishments:</b> A public hearing was held on Tuesday, November 26 during which time the public was given the opportunity to comment on the ordinance prior to the Council Meeting. The Stormwater Ordinance was passed at City Council Meeting on November 26, 2013. The Soil Erosion and Sedimentation Control Ordinance was passed by City Council on November 26, 2013.
YEAR 3 2014	<b>Goals:</b> Issue permits and enforce the Stormwater Ordinance <b>Accomplishments:</b> Reviewed plans for 5 businesses. Issued two (2) stormwater permits for new construction. Contacted two businesses to maintenance retention ponds that were out of code.
YEAR 4 2015	<b>Goals:</b> Continue to issue permits, review plans, and enforce the Stormwater Ordinance. Continue to check on existing businesses BMPs. <b>Accomplishments:</b> City Council Passed a Revised Stormwater Ordinance January 15, 2015 which established a \$500.00 stormwater permit fee. Worked with the Cleveland County Rescue and with Cleveland Ridge Apts. to bring their BMPs, located on Shelby Rd. and off of Ruppe St., up to code. Issued (3) Approval letters following review of stormwater permit and plans. Still in review of one permit applicant.
YEAR 5 2016	<b>Goals:</b> Continue to issue permits, review plans, and enforce the Stormwater Ordinance. Continue to check on BMPs for existing businesses.

**POST-CONSTRUCTION SITE RUNOFF CONTROLS**

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**4. Plan Reviews**

BMP	Measurable Goals
(c) Plan Reviews	The permittee shall conduct site plan reviews of all new development and redevelopment sites. The site plan review shall address how the project applicant meets the performance standards and how the project will ensure long-term maintenance.
(d) Deed Restrictions and Protective Covenants	The permittee shall provide mechanisms such as recorded deed restrictions and protective covenants that ensure development activities will maintain the project consistent with the approved plans.
YEAR 1	NOTHING REQUIRED
YEAR 2 2013	<b>Accomplishments:</b> The permittee has one Stormwater staff member that is certified in plan review for this minimum measure. The permittee has an additional staff member that is certified in plan review.
YEAR 3 2014	<b>Goals:</b> Look at sending additional staff for certification in plan review, should the project load begin to justify such cost. All development projects will follow approved plans; deviation from the plan shall constitute a violation. <b>Accomplishments:</b> Reviewed plans for 5 businesses. Issued two (2) stormwater permits for new construction. Contacted two businesses to maintenance retention ponds that were out of code.
YEAR 4 2015	<b>Goals:</b> Determine how the applicant plans to meet long term performance and maintenance standards. Continue to review plans, issue permits, and inspect BMPs. Set up to follow new SL 2014-120 Section 29. Continue to find additional training for employees in plan review and BMP maintenance. <b>Accomplishments:</b> Reviewed plans for 4 businesses. Issued two (2) stormwater permit approval letters for new construction. Contacted two businesses to maintenance retention ponds that were out of code. Sent O & M agreement form to businesses which have completed a successful stormwater permit application to be completed and returned with contact information of the party responsible for the ongoing maintenance of their BMP.
YEAR 5 2016	<b>Goals:</b> Continue to get info for responsible parties for the ongoing maintenance of BMPs throughout the City of Kings Mountain's corporate limits.

**POST-CONSTRUCTION SITE RUNOFF CONTROLS**

**5. Inventory, O & M, Inspections and Enforcement of Structural BMPs**

BMP	Measurable Goals
(d) Inventory of projects with post-construction structural stormwater control measures	The permittee shall maintain an inventory of projects with post-construction stormwater control measures installed and implemented in the new development and redeveloped sites, including both public and private sector sites located within the permittee's corporate limits that are covered by its post-construction ordinance requirements.
(f) Provide a mechanism to require long-term operation and maintenance of structural BMPs	The permittee shall implement or require an operation and maintenance plan for the long-term operation of the structural BMPs required by this program. The operation and maintenance plan shall require the owner of each structural BMP to perform and maintain a record of annual inspections of each structural BMP. Annual inspection of permitted structural BMPs shall be performed by qualified personnel.
(g) Inspections	To ensure that all stormwater control measures meet the permittee's performance standards and are being maintained pursuant to the maintenance agreement, the permittee shall develop and implement a written inspection program for structural stormwater controls installed pursuant to the permittee's post-construction program.  The permittee shall document and maintain records of inspections, findings, and enforcement actions and make them available for review by the permitting authority.
(i) Enforcement	The permittee shall track the issuance of notices of violation and enforcement actions. This mechanism shall include the ability to identify chronic violators for initiation of actions to reduce noncompliance.
YEAR 1	NOTHING REQUIRED
YEAR 2 2013	<b>Accomplishments:</b> The permittee passed its Stormwater Ordinance and Soil Erosion and Sedimentation Control Ordinance on November 26, 2013. The permittee has begun an inventory of projects with post-construction stormwater control measures, and will begin inspections and enforcement of these projects.
YEAR 3 2014	<b>Goals:</b> Develop an Inventory Spreadsheet of structural BMPs that will track permits, inspections, violations and any other enforcement information that may be necessary to meet these minimum measures. <b>Accomplishments:</b> Started a Spreadsheet of structural BMPs that will track permits, inspections, violations and any other enforcement information that may be necessary to meet these minimum measures.
YEAR 4 2015	<b>Goals:</b> Maintain the Spreadsheet of structural BMPs listed above. Require an operation and maintenance plan for the long-term operations of structural BMPs. Continue training for employees on plan review and BMP inspection. Develop and implement a written inspection program for structural stormwater controls installed. <b>Accomplishments:</b> Continued the Spreadsheet of structural BMPs to track permits, inspections, violations and any other enforcement information. Mailing O & M agreements for all current known BMPs to gain responsible party information. Started an inspection tracking spreadsheet for structural stormwater controls installed.
YEAR 5 2016	<b>Goals:</b> Maintain Spreadsheets and continue to locate and identify existing BMPs at businesses built prior to Stormwater Ordinance.

**POST-CONSTRUCTION SITE RUNOFF CONTROLS**

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**6. Educational Materials and Training for Developers**

(h) Educational materials and training for developers	The permittee shall make available through paper or electronic means, ordinances, post-construction requirements, design standards checklist, and other materials appropriate for developers. New materials may be developed by the permittee, or the permittee may use materials adopted from other programs and adapted to the permittee's new development and redevelopment program.
YEAR 1	NOTHING REQUIRED
YEAR 2 2013	<b>Accomplishments:</b> The permittee has developed a Stormwater page attached to the City website and linked also to a Facebook page for the City which will provide copies of the ordinances, and other materials.
YEAR 3 2014	<b>Goals:</b> To further develop the web-page and Facebook page links with additional information and materials. To have paper forms available for developers who require those. The permittee will be looking at special workshops for developers and/or builders to attend as possible prerequisites to working within the jurisdiction. The permittee will further develop its webpage and Facebook page to assist the developers and/or builders as much as possible to meet and exceed the post-construction requirements. <b>Accomplishments:</b> Ordinances and post construction requirements etc. are available on the City of Kings Mountain web-site on the Stormwater Page. Paper copies are available from the Stormwater office.
YEAR 4 2015	<b>Goals:</b> To further develop the web-page and Facebook page links with additional information and materials. To develop new materials to help the communications between this permittee and the developers. <b>Accomplishments:</b> Ordinances and post construction requirements etc. are available on the City of Kings Mountain web-site on the Stormwater Page. Paper copies are available from the Stormwater office. Had Communications with several businesses prior to and during the building permit and stormwater permit phase of development.
YEAR 5 2016	<b>Goals:</b> To further develop the web-page and Facebook page links with additional information and materials. To have paper forms available for developers who require those. The permittee will be looking at special workshops for developers and/or builders to attend as possible prerequisites to working within the jurisdiction. The permittee will further develop its webpage and Facebook page to assist the developers and/or builders as much as possible to meet and exceed the post-construction requirements.

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

**1. Objectives for Pollution Prevention and good Housekeeping for Municipal Operations**

- a. Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.
- b. Provide employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance and stormwater system maintenance.

**2. BMPs for the Pollution Prevention and Good Housekeeping for Municipal Operations**

The permittee shall implement the following BMPs to meet the objectives of the Pollution Prevention and Good Housekeeping Program within the schedule submitted on the permittee’s application so that the permittee fully implements its permitted program within five years from the permit issuance and shall notify the Division prior to modification of any goals.

**3. Inventory and O & M for Municipally Owned Facilities**

(a) Inventory of municipally owned or operated facilities	The permittee shall maintain a current inventory of facilities and operations owned and operated by the permittee with the potential for generating polluted stormwater runoff.
(b) Operation and Maintenance (O & M) for municipally owned or operated facilities	The permittee shall maintain and implement, evaluate annually and update as necessary an O & M program for municipal owned and operated facilities with the potential for generating polluted stormwater runoff. The O & M program shall specify the frequency of inspections and routine maintenance requirements.
YEAR 1	NOTHING REQUIRED
YEAR 2 2013	<b>Accomplishments:</b> The permittee has an inventory of all facilities and operations. The following are those facilities that have the most potential for stormwater pollution: Citizen Service Center; Sewer Pump Stations; Jake Early Park; Municipal Parking Facility Downtown.
YEAR 3 2014	<b>Goals:</b> The permittee is working on an O & M program for pollution prevention and housekeeping for each of these facilities. <b>Accomplishments:</b> The permittee has developed an inventory of facilities and operations owned and operated by the permittee with the potential for generating polluted stormwater runoff. We are working on an O & M program for pollution prevention and housekeeping for each of these facilities.
YEAR 4 2015	<b>Goals:</b> Complete the O & M program for the municipal owned and operated facilities, including the frequency of inspections and routine maintenance requirements. Complete detention pond for Public Works and the downtown municipal parking lots. Complete BMP for roof water runoff at P/W. <b>Accomplishments:</b> Discuss location for Detention Pond at the Public Works Location. Have requested recommendations from P.E. on location and design of Detention Pond.
YEAR 5 2016	<b>Goals:</b> Complete the O & M program for the municipal owned and operated facilities, including the frequency of inspections and routine maintenance requirements. Complete detention pond for Public Works and the downtown municipal parking lots. Complete BMP for roof water runoff at P/W.

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

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**4. Spill Response Procedures**

(c) Spill Response Procedures	The permittee shall have written spill response procedures for municipally owned or operated facilities.
YEAR 1	NOTHING REQUIRED
YEAR 2 2013	<b>Accomplishments:</b> The permittee has developed spill response procedures for both activities and facilities that have the potential to cause pollution to enter the stormwater system. Each procedural document is located within the area of concern and employees have been trained on how to use the document.
YEAR 3 2014	<b>Goals:</b> The permittee will continue to train employees, monitor, and update our spill response procedures as facilities grow and/or processes change. <b>Accomplishments:</b> We have continued to train our employees regarding spill prevention and response procedures. Have maintained a written spill response procedure.
YEAR 4 2015	<b>Goals:</b> The permittee will continue to train employees, monitor, and update our spill response procedures as facilities grow and/or processes change. <b>Accomplishments:</b> The permittee has established a spill response procedure. Have done some training of employees. Two additional employees have been certified by Sigma Consulting and Training, Inc. in accordance with training standards established by the OSHA 29 CFR 1910.120 (q).
YEAR 5 2016	<b>Goals:</b> The permittee will continue to train employees, monitor, and update our spill response procedures as facilities grow and/or processes change.

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

**5. Streets, Roads and Public Parking Lot maintenance**

(d) Streets, roads, and public parking lot maintenance	The permittee shall evaluate BMPs to reduce polluted stormwater runoff from municipally-owned streets, roads, and public parking lots within the corporate limits. Within 12 months, the permittee must update its Stormwater Plan to include the BMPs selected.
(e) Streets, roads, and public parking lots maintenance	Within 24 months, the permittee must implement BMPs selected to reduce polluted stormwater runoff from municipally-owned streets, roads, and public parking lots.
YEAR 1	<b>Accomplishments:</b> The permittee has an aggressive street sweeping program; sweeping fifty-three (53) miles of municipally owned streets each week. The permittee also has an eight member grounds maintenance crew that is responsible for curbside clean-up of limbs, leaves, and grass clippings, as well as the grounds maintenance of the majority of the permittee’s facilities. The permittee has adopted an ordinance to prevent dog waste from being left on publically owned property as well as on public streets.
YEAR 2 2013	<b>Accomplishments:</b> The permittee continues with the programs noted above and is working on design changes for the municipally-owned public parking lot to include improved tree island rain gardens.
YEAR 3 2014	<b>Goals:</b> The permittee will begin work with the NCDOT to address the streets and roads owned by the State which run through our corporate limits and have potential to facilitate pollution in entering the permittee’s storm drainage system. The permittee is looking to improve the curbside waste policy. <b>Accomplishments:</b> The permittee has continued an aggressive street sweeping program; sweeping fifty nine point fifty five (59.55) miles of municipally owned streets each week. The permittee also has an eight member grounds maintenance crew that is responsible for curbside clean-up of limbs, leaves, and grass clippings, as well as the grounds maintenance of the majority of the permittee’s facilities. The permittee has adopted an ordinance to prevent dog waste from being left on publically owned property as well as on public streets. Have been in contact with the state regarding several NCDOT (Cleveland County) owned storm drains which were stopped up or damaged.
YEAR 4 2015	<b>Goals:</b> Continue with the street sweeping program. Continue to develop BMPs to reduce polluted stormwater runoff. Continue to develop BMPs for the downtown parking lots including a detention pond. <b>Accomplishments:</b> The permittee has continued an aggressive street sweeping program; sweeping fifty nine point fifty five (59.55) miles of municipally owned streets each week. Worked with NCDOT to unstop catch basin and ditch line on Second Street. Began a “behind the curb” information campaign for limbs and leaves to reduce polluted stormwater runoff through our stormwater system into the waters of the state.
YEAR 5 2016	<b>Goals:</b> The permittee will begin work with the NCDOT to address the streets and roads owned by the State which run through our corporate limits and have potential to facilitate pollution in entering the permittee’s storm drainage system. The permittee is looking to improve the curbside waste policy.

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

**6. Operation and Maintenance (O & M)**

(f) Operation and Maintenance (O & M) for municipally-owned or maintained catch basins and conveyance systems	Within 12 months, the permittee shall develop and implement an O & M program for the stormwater sewer system including catch basins and conveyance systems that it owns and maintains.
YEAR 1	<b>Accomplishments:</b> The permittee currently has an O & M policy for the stormwater sewer system, and we are in the process of reevaluating the policy to ensure it meets all permit requirements.
YEAR 2 2013	<b>Accomplishments:</b> The permittee has begun an inventory of non-publically owned conveyance systems to determine the best management of these systems. One example of a third party conveyance is the NCDOT system which discharges into our system prior to the outfalls.
YEAR 3 2014	<b>Goals:</b> The permittee will continue to inventory non-publically owned conveyance systems and determine the best management of these systems. It may prove to be beneficial to obtain easements to include some of these in our own O & M. <b>Accomplishments:</b> We have cleaned numerous ditch lines throughout town which were on our priority list.
YEAR 4 2015	<b>Goals:</b> The permittee will continue to inventory non-publically owned conveyance systems and determine the best management of these systems. It may prove to be beneficial to obtain easements to include some of these in our own O & M. Continue with the priority list of ditches and storm drain maintenance and repair. <b>Accomplishments:</b> Continued the Spreadsheet of structural BMPs to track permits, inspections, violations and any other enforcement information. Mailing O & M agreements for all current known BMPs to gain responsible party information. Started an inspection tracking spreadsheet for structural stormwater controls installed.
YEAR 5 2016	<b>Goals:</b> The permittee will continue to inventory non-publically owned conveyance systems and determine the best management of these systems. It may prove to be beneficial to obtain easements to include some of these in our own O & M. Continue with the priority list of ditches and storm drain maintenance and repair.

**POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS**

**7. Inventory and O & M of Municipally-owned/maintained Structural BMPs**

(g) Identify structural stormwater controls	The permittee shall maintain a current inventory of municipally-owned or operated structural controls installed for compliance with the permittee’s post-construction ordinance.
(h) Operation and Maintenance (O & M) for municipally owned or maintained structural stormwater controls	The permittee shall maintain and implement an O & M program for municipally-owned or maintained structural stormwater controls installed for compliance with the permittee’s post construction ordinance. The O & M shall specify the frequency of inspections and routine maintenance requirements. The permittee shall inspect and maintain municipally-owned or maintained structural stormwater controls in accordance with the schedule developed by the permittee. The permittee shall document inspections and maintenance of all municipally-owned or maintained structural stormwater controls.
(i) Pesticide, Herbicide, and Fertilizer Application Management	The permittee shall ensure municipal employees and contractors are properly trained and all permits, certifications and other measures for applicators are followed.
(k) Prevent or Minimize Contamination of Stormwater runoff from all areas used for vehicle and equipment cleaning	The permittee shall describe and implement measures to prevent or minimize contamination of the stormwater runoff from all area used for vehicle and equipment cleaning.
YEAR 1	<b>NOTHING REQUIRED</b>
YEAR 2 2013	<b>Accomplishments:</b> Post-construction schedules are currently being researched. The permittee has installed a canopy over our fueling pumps. All fuel pumps have been replaced with new pumps within the last two years. (i) only trained staff and contractors are permitted to apply herbicide and/or fertilizer and measures are taken to prevent or minimize the contamination of stormwater runoff. (k) the permittee has implemented changes to its vehicle and equipment washing procedures to be within compliance with its stormwater permit.
YEAR 3 2014	<b>Goals:</b> The permittee will be implementing changes to its vehicle and equipment washing site to bring it within compliance with the stormwater permit. <b>Accomplishments:</b> (g) We have gotten pricing for putting a roof on the vehicle washing area. (h) We are inspecting and cleaning stormdrains as needed (weekly) And are repairing stormdrains and ditches from our priority list. (i) only trained staff and contractors are permitted to apply herbicide and/or fertilizer and measures are taken to prevent or minimize the contamination of stormwater runoff. (k) the permittee has continued implementing changes to its vehicle and equipment washing procedures to be within compliance with its stormwater permit.
YEAR 4 2015	<b>Goals:</b> Continue to implement an O & M program for municipally-owned stormwater controls. Complete upgrades to wash-pit and downtown parking lots. Continue weekly cleaning of stormdrains and begin sectional inspections of drains and ditches and BMPs beginning with 1 <sup>st</sup> quarter of the city system. <b>Accomplishments:</b> (g) Maintain a current inventory of municipally-owned or operated structural controls installed for compliance with the permittee’s post-construction ordinance. (h) We are inspecting and cleaning stormdrains as needed (weekly and before and during rain events). And are repairing stormdrains and ditches from our priority list. (i) only trained staff and contractors are permitted to apply herbicide and/or fertilizer and measures are taken to prevent or minimize the contamination of stormwater runoff. (k) the permittee has continued implementing changes to its vehicle and equipment washing procedures to be within compliance with its stormwater permit.

YEAR 5 2016	<p><b>Goals:</b> Continue to implement an O &amp; M program for municipally-owned stormwater controls. Complete upgrades to wash-pit and downtown parking lots. Continue weekly cleaning of stormdrains and continue inspections of drains and ditches and BMPs in the city system.</p> <p><b>Accomplishments:</b></p>
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**8. Staff Training**

(j) Staff Training	The permittee shall implement an employee training program for employees involved in implementing pollution prevention and good housekeeping practices.
YEAR 1	<b>NOTHING REQUIRED</b>
YEAR 2 2013	<p><b>Accomplishments:</b> The permittee has done general training of the staff so that they are aware of our permit and certain requirements for compliance. Currently each department is responsible for staff training. The permittee has purchased a training aide entitled "Raincheck" to be used to train staff.</p>
YEAR 3 2014	<p><b>Goals:</b> More specific staff training is scheduled for early in the year. Specifically written O &amp; M's for each job that has potential for stormwater pollution, or is required for part of the permit, will be given to each employee that has that job description.</p> <p><b>Accomplishments:</b> Have acquired training materials and begun training of employees. Written O &amp; M program for some of the City owned buildings.</p>
YEAR 4 2015	<p><b>Goals:</b> Complete O &amp; M programs for the remaining City owned buildings. Continue with employee training.</p> <p><b>Accomplishments:</b> Have continued training of employees with training materials acquired. Continued using written O &amp; M program for some of the City owned buildings.</p>
YEAR 5 2016	<p><b>Goals:</b> Continue O &amp; M programs for the City owned buildings including employee training.</p>

**TOTAL MAXIMUM DAILY LOADS (TMDLs)**

---

**1. Objectives**

- a. Determine whether a TMDL has been developed and approved or established by EPA for the receiving water(s) for the MS4 stormwater discharge and/or downstream waters into which the receiving water directly flows.
- b. Develop and implement BMPs to reduce non-point source pollutant loading to the maximum extent practicable (MEP) if the Permittee is or becomes subject to an approved TMDL with an approved Waste Load Allocation (WLAs) assigned to stormwater.
- c. If subject to an approved TMDL, the Permittee is in compliance with the TMDL if the permittee complies with the conditions of this permit, including developing and implementing appropriate BMPs to reduce non-point source pollutant loading to the maximum extent practicable (MEP). While improved water quality is the expected outcome, the NPDES MS4 permit obligation is to reduce non-point source pollutant loading to the maximum extent practicable (MEP). The MS4 Permittee is not responsible for attaining water quality standards (WQS) at the ambient monitoring stations. The Division expects attaining WQS will only be achieved through reduction from the MS4, along with reductions from other non-point source contributors.

**TOTAL MAXIMUM DAILY LOADS (TMDLs)**

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**2. Best Management Practices (BMPS)**

At any time during the effective dates of this permit, if the Permittee is or becomes subject to an approved TMDL with and approved Waste Load Allocation (WLAs) assigned to stormwater, the permittee shall implement the following BMPs to reduce non-point source pollutant loading to the maximum extent practicable (MEP):

(a) Identify, describe and map watershed outfalls, and streams	Within 12 months the Permittee shall prepare a plan that: Identifies the watershed(s) subject to an approved TMDL with an approved Waste Load Allocation (WSL) assigned to stormwater, . . .
YEAR 1	<b>NOTHING REQUIRED</b>
YEAR 2 2013	<b>Accomplishments:</b> According to the EPA and DWQ Broad and Catawba River Basinwide Water Quality Plans there are currently no TMDLs on any of the permittee’s receiving streams or the downstream waters into which these streams directly flow. See Appendix C Map from Catawba River Basinwide Study.
YEAR 3 2014	<b>Goals:</b> The permittee will continue to monitor the EPA and DWQ websites to ensure that if such TMDLs are placed on any of the receiving streams the above schedule of the BMPs will be implemented. <b>Accomplishments:</b> According to the EPA and DWQ Broad and Catawba River Basinwide Water Quality Plans there are currently no TMDLs on any of the permittee’s receiving streams or the downstream waters into which these streams directly flow. See Appendix C Map from Catawba River Basinwide Study.
YEAR 4 2015	<b>Goals:</b> The permittee will continue to monitor the EPA and DWQ websites to ensure that if such TMDLs are placed on any of the receiving streams the above schedule of the BMPs will be implemented. <b>Accomplishments:</b> According to the EPA and DWQ Broad and Catawba River Basinwide Water Quality Plans there are currently no TMDLs on any of the permittee’s receiving streams or the downstream waters into which these streams directly flow. See Appendix C Map from Catawba River Basinwide Study.
YEAR 5 2016	<b>Goals:</b> The permittee will continue to monitor the EPA and DWQ websites to ensure that if such TMDLs are placed on any of the receiving streams the above schedule of the BMPs will be implemented. <b>Accomplishments:</b>

**APPENDICES**

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**APPENDIX A – TARGET POLLUTANTS**

**APPENDIX B – PUBLIC EDUCATION & OUTREACH**

**APPENDIX C – BASIN MAPS**

## APPENDIX A

### Identification of Target Pollutants, Sources and Target Audiences

The following pollutants have been identified as significant sources of pollution in our waterways. Many of these pollutants also negatively impact the proper function of the storm drainage system. Therefore, the following pollutants are the focus of our outreach and education program:

<u>Target Pollutant</u>	<u>Source of Pollutant</u>	<u>Target Audience(s)</u>
Sand, dirt, gravel, clay, soil etc.	Sediment	-Contractors (Building) -Developers -Lawn Care Professionals -General Public
Organic materials including leaves, grass clippings, pine straw, sticks, limbs and other yard trimmings	Yard Waste and Debris	-Homeowners -Lawn Care Professionals -General Public
Plastics, paper, cigarette butts	Litter	-General Public -Smokers
Motor Oil, antifreeze, grease, gas and other vehicle fluids	Auto Fluids	-DIY Car Mechanics -Auto Parts Stores
Toxic chemicals including herbicides, fungicides, and insecticides	Pesticides	-Homeowners/Residents -Lawn Care Professionals
Bacteria, viruses, parasites and nutrients	Pet Waste	-Pet Owners -Pet Industry Professionals -General Public

## **Target Pollutant: Sediment**

*Sediment includes particles of sand, dust, dirt, gravel and soil*

### **Target Pollutant Source**

Sediment is generated by the processes of natural and accelerated erosion. Natural erosion is the process of weathering that forms soils. Accelerated erosion is a result of land-disturbing activities by humans that loosens topsoil and makes it more prone to erode; construction and development related activities are examples of accelerated erosion. Another type of erosion is streambank erosion due to lack of a vegetated buffer.

Some natural erosion is expected however, it can be minimized with the adoption of buffer requirements. The most prevalent cause of erosion comes from areas where development has occurred. There are some smaller issues of occurrence due to poorly vegetated lawns at both commercial and residential properties.

### **Problems and Issues**

Problems with erosion and sediment occur when stormwater runoff carries soil particles from areas such as construction sites to waterways. This sediment can fill in water bodies and clog storm conveyance systems such as pipes and ditches, which can lead to flooding of streets and properties.

Starting the cycle all over again and possibly collecting other pollutants such as litter, yard debris and automobile fluids.

Excessive amounts of sediment clouds the water, this is a condition known as turbidity. Increased turbidity causes problems for aquatic life. Aquatic plant life requires sunlight for photosynthesis. If turbidity is high then sunlight cannot penetrate through the water column and reach the plants. Turbidity is also damaging to aquatic life such as fish. It impairs their vision and thus prevents them from hunting prey. It also reduces their ability to filter oxygen by clogging their gills. Then as the turbidity settles it can cover fish eggs and prevent them from hatching. Enough amounts of sediment can alter water depths and force fish out of an area of a stream; this can ultimately affect recreational activities like fishing.

Sediment also can serve as a vehicle for other pollutants such as phosphorus, pathogens and heavy metals to end up in surface waters, which is a whole different set of problems to the aquatic environment.

### **Target Audience**

Developers and construction contractors make up the majority of this target audience. Land disturbing activities from construction are the major cause of sediment pollution and are not widely understood by citizens. An effective education and outreach campaign needs to convey the key message to this target audience.

### **Key Outreach and Education**

The message to this target audience must be conveyed in messages that will reach them. Since this audience is primarily made up of contractors and landscaping professionals' traditional avenues of getting this message out may not prove effective. The target audience should be made aware of the following key points:

- There is a direct link between sediment and poor water quality
- Sedimentation impacts aquatic life and habitat

- CC
- Buffers are important in helping to prevent sediment from reaching the streams
  - Establishing ground cover and maintaining proper ground cover holds soil in place and helps to reduce erosion
  - Sediment needs to be cleaned from streets, driveways and other hard surfaces

#### **Message Distribution**

- Require erosion control efforts be in place prior to land disturbing activities
- Promote the NC Division of Land Resources "Stop Mud" hotline
- Distribute sediment educational materials with development permits
- Contact the local paper and other print media outlets to suggest articles regarding the problems that sediment causes if allowed to enter our storm drainage system.

#### **Assessment and Evaluation**

- CC
- Track number of complaint calls received due to erosion and evaluate contractor response to action
  - Evaluate developer and contractor knowledge of proper erosion control methods
  - Annually evaluate stream banks for erosion problems
- CC

### **Target Pollutant: Yard Waste**

*Yard waste includes organic vegetative material such as grass clippings, leaves, pine straw, weeds and branches. Sediment is often attached to this material.*

#### **Target Pollutant Source**

Yard waste is produced as a result of landscaping, mowing, clipping, pruning, and gardening around homes and businesses. Yard waste consists of organic matter such as grass clippings, leaves, and branches, etc., and is produced by landscape maintenance performed by homeowners and commercial landscapers.

#### **Problems & Issues**

Yard waste can clog the storm drainage system causing flooding of streets, homes and businesses.

Yard waste that ends up traveling all the way through the drainage system ends up in local surface waters, which impacts aquatic life and habitat by introducing excess nitrogen and phosphorus to the water. This overabundance of nutrients is called eutrophication and can lead to severe algae blooms. As the algae blooms decompose it uses up the dissolved oxygen in the water that aquatic organisms, like fish, need to survive. In addition, yard waste often carries fertilizers, pesticides and sediment attached to it that compounds the problem eutrophication and threatens the flora and fauna in our waterways.

#### **Target Audience**

1. Homeowners: Based upon visual observations 90% of residents either mow their own lawn and of this 90% a good 80% blow their grass clippings, leaves and debris into the street gutter. They are by far the greatest contributor to introduce yard waste into the storm drainage system.
2. Lawn Care Professional: Lawn care professionals are better at not blowing yard waste into the street because they work in neighboring municipalities they have implemented requirements that do not allow yard waste to be blown into the streets. However, they are still a target audience and attention needs to be given to their education on proper procedures.
3. General Public: Education of the General Public on notifying officials when they witness debris being blown into the street should be a major goal, since it is difficult to monitor the entire jurisdiction.

#### **Key Outreach and Education Messages for Yard Waste**

- A direct link exists between flooding of streets and property as a result of improper yard waste disposal habits.
- Encourage citizens and lawn care professionals to practice proper disposal habits.
- Encourage citizens to employ a sense of responsibility and environmental stewardship to dispose of yard waste properly.

CC

### **Message Distribution**

- Establish a rapport with lawn care professionals that work in the area to send education materials to.
- Use billing inserts to remind homeowners of environmental stewardship and to dispose of their waste properly.
- Encourage composting by holding DIY clinics.

### **Assessment and Evaluation**

- Gather information from the Street Maintenance and Grounds Department responses to clogged stormwater system as a result of yard waste.
  - Monitor yard waste disposal habits of homeowners and lawn care professionals by direct observations through the codes department.
- CC
- CC

## **Target Pollutant: Litter**

*Litter includes plastics, paper, cigarette butts, and any other trash not properly disposed of*

### **Target Pollutant Source**

Litter is generated as a result of the intentional or unintentional disposal of trash, cigarette butts, paper scrapes, food wrappers, etc. onto the open ground or anywhere other than a trash can, dumpster or recycling bin.

### **Problems & Issues**

Litter is carried by stormwater runoff into the drainage system where it can clog storm drains and drainage routes, causing street and property flooding.

Litter that makes it through the drainage systems ends up in the local surface waters where it causes many problems such as:

- Fish, birds and other wildlife often mistake litter for food and become sick or die from ingesting it.
- Fish, birds and other wildlife may become entangled in litter which may result in death from strangulation or starvation.
- Litter may also introduce chemical pollutants into the waterways. Cigarette butts can leach chemicals such as cadmium, lead and arsenic into the marine environment within one hour of contact with the water.
- Litter is extremely costly to clean up, yet very easy to prevent. NCDOT spent almost \$15 million in 2011 for roadside cleanup. Adopt-a-Highway programs save taxpayers approximately \$4 million on average per year performing roadside clean up.

### **Target Audience**

It would be safe to say that everyone is included in this audience in some fashion. However smokers are a primary target since research has shown that cigarette butts are one of the largest sources of litter.

1. General Public: It has been shown that there is no stereotypical litterbug and cannot be confined to a particular demographic, so educational outreach should target every citizen and visitor.
2. Smokers: Cigarette butts are largest environmental litter problem locally and worldwide. Smokers should be educated that their cigarette butts are a major source of litter and have a negative impact on the environment.

### **Key Outreach and Education Messages**

- Litter has a direct link to habitat destruction, water quality and animal kills
- Flooding of streets and property can also occur due to litter blocking drainage ways
- Encourage recycling, reducing, reusing and the use of trash containers
- Encourage citizens to have a sense of responsibility to the environment and to report violators

### **Message Distribution**

- Work with convenience stores to promote the use of trash receptacles at their locations
- Work with restaurants, especially fast food restaurants to promote the use of trash receptacles
- Work with the City of Kings Mountain Keep Kings Mountain Beautiful to help develop a litter campaign for the City
- Conduct local volunteer litter clean-ups

### **Assessment and Evaluation**

- Have street maintenance department keep track of how often blocked drains are due to litter
- Have street maintenance and codes and engineering departments keep track of litter areas for clean-up
- Directly observe the habits of the community
- Survey High School Students that drive on their methods of litter disposal

## **Target Pollutant: Auto Fluids**

*Chemicals include gas, motor oil, gear oil, grease, antifreeze, cooking oils and greases, etc.*

### **Target Pollutant Source**

Vehicle chemicals and fluids can come from intentional or unintentional disposal of fluids such as motor oil, antifreeze, grease, gas and other vehicle fluids. Sources for these fluids include leaky vehicles or machinery, industrial facilities, repair facilities, storage areas, fuel stations, parking lots and improper disposal of chemicals by homeowners and businesses.

### **Problems & Issues**

The types and origins of this type of pollutant vary considerably. Vehicles have seals and gaskets that may leak or have the potential to leak. Oil, grease and other fluids accumulate on roadways and on parking lots then they are carried away by stormwater runoff. Once the pollutants make their way into the local waterways they form a film which makes oxygen transfer difficult and they are also toxic to aquatic life. A mere single quart of motor oil can contaminate 250,000 gallons of water.

### **Target Audience**

1. DIY Car Mechanics: Citizens who do their car maintenance should be given a high priority for education and outreach. The City of Kings Mountain has five auto parts stores in town and each one cater to the general public. Distribution through these stores of brochures and reminders to use the City's oil recycling program is essential.
2. Auto Parts Stores: Encourage the local auto parts stores to have an oil recycling location that is properly covered and contained.

### **Key Outreach and Education Messages**

- There is a direct link between plant and animal life habitat destruction and water quality degradation as a result of the introduction of vehicle fluids into the stormwater runoff.
- Vehicle owners should be educated on checking for leaks and seek repairs, or make efforts to contain leaks and properly dispose of the fluids.

### **Message Distribution**

- Develop and distribute educational brochures to auto parts stores and ask that staff bags that purchase DIY fluids.
- Develop and distribute educational brochures to the local High School to distribute to teenage drivers.
- Mail brochures in the utility billing at least twice (2) a year.

### **Assessment and Evaluation**

- Periodically assess vehicle fluid disposal habits:  
Direct Observation  
Number of gallons of oil recycled per quarter

## **Target Pollutant: Pesticides**

*Pesticides include herbicides, fungicides and insecticides that contain toxic chemicals.*

### **Target Pollutant Source**

Pesticides are applied by homeowners, business owners, lawn care and turf maintenance professionals, as well as exterminators and pest control professionals.

The EPA defines a pesticide as “any substance or mixture of substances intended for preventing, destroying, repelling, or lessening damage of any pest.” Sources of pesticides include applications to homes, lawns and gardens by home owners, business owners and/or commercial pesticide professionals.

### **Problems & Issues**

Commonly used organophosphate pesticides are present in urban stormwater runoff and are responsible for toxicity to aquatic life in receiving bodies of water.

### **Target Audience**

1. Homeowners: A majority of the target pollutant pesticides are commonly available from hardware store and home improvement stores. These are available to the public without any required training or licensing for purchase. Education and outreach should target this audience in order to educate them on proper application techniques, practices and even more natural ways to rid pests.
2. Lawn Care, Turf Management and Exterminator/Pest Control Professionals: It could be assumed that professionals in this industry have been properly trained and educated in the use and application of pesticides. However due to the frequency that this group performs these applications it should be noted that they are a potential source for this type of contamination. Effort should be made to keep best practices as part of their daily tailgate meetings.

### **Key Outreach and Education Messages**

- Awareness of the impact of pesticides on surface waters via stormwater runoff.
- Homeowners and Lawn Care Professionals should be encouraged to use native plants which do not require pesticides and to use natural controls such as lady bugs and hand weeding. Use pesticides as a last resort and be sure to apply properly during dry spells.
- All citizens should be encourage to employ a sense of environmental responsibility.

### **Message Distribution**

- Contact lawn care professionals to establish a dialog concerning best management practices.
- Distribute pesticide educational materials to lawn care professionals
- Use the utility billing insert program to get educational information in the hands of citizens at least twice per year
- Work with local media primarily local paper to do special water quality stories at different times of the year

CC

### Assessment and Evaluation

- Periodically survey homeowners and lawn care professionals on their pesticide application habits
  - Train employees to observe and report their observations of pesticide applications by citizens and lawn care professionals
- CC
- CC

### **Target Pollutant: Pet Waste**

*Pet Waste includes a host of bacteria, pathogens and nutrients that contribute to surface water pollution and human health risk.*

#### **Target Pollutant Source**

Animal waste is generated from natural biological processes of domesticated and wild animal. Although waste from wild animals contributes to pollutant levels in our waters, the focus of efforts will be to inform the public of the problems and solutions associated with waste from domesticated pets.

#### **Problems & Issues**

Stormwater contamination from pet waste poses potential serious health risks for humans. When pet waste is left on the ground, stormwater runoff can carry viruses, bacteria and parasites from pet waste into local surface waters via the storm drainage system. Humans may become ill by swimming or recreating in waters contaminated by pet waste, coming in direct contact with pet waste, or from flies which spread diseases. Some of which are listed below:

- **Toxoplasmosis-** A parasitic disease by the protozoan *Toxoplasma gondii* and infects most warm-blooded animals including humans. The primary host is the cat family.
- **E. Coli-** One of the main species of bacteria living in the lower intestines of mammals such as dogs and cats. Humans can contact *E. coli* through ingestion of water contaminated with the bacteria through drinking or even contact through recreation.
- **Salmonella-**An infection of the intestines caused by *Salmonella* bacteria which are found in the feces of people and animals infected with *Salmonella*. Humans can contract *Salmonella* infections through contact with infected animals or their feces, including contact recreation or drinking water contamination.
- **Gastroenteritis-**This is a general term referring to inflammation or infection of the gastrointestinal tract, primarily the stomach and intestines. Gastroenteritis is the most common illness associated with swimming in water polluted by sewage and/or pet waste.
- **Roundworm-** Roundworms are a group of invertebrates whose larvae can be found in animal feces. Humans can contact roundworm infections either by ingestion or through the skin.

Pet waste also seriously impacts waterways by contributing nutrients that spur excessive weed and algae growth. When algal biomass decomposes, it consumes large amounts of dissolved oxygen from the water that can lead to dangerously low dissolved oxygen levels and fish kills. This nutrient-rich water impairs aquatic habitat and is unattractive and unhealthy for drinking, swimming, fishing and other recreational activities.

## **Target Audience**

1. **Pet Owners:** Pet owners will be the primary focus for outreach and education. By right of ownership, a pet owner is empowered with the ability to reduce pet waste by cleaning up after his/her pet. Successful and continued education and outreach to pet owners has the potential to significantly reduce bacterial pollution.
2. **Pet Industry Professionals/Events:** Education and outreach to pet industry professionals is extremely important because their regular contact with pet owners. Targeting these professionals and events that cater to pet owners will enable the permittee to educate those in the profession as well as have the serve as a conduit to deliver education and outreach messages.
3. **General Public:** By targeting the general public with outreach and educational messages the permittee hopes to encourage more environmental stewardship of the citizens within the community. Both pet owners and non-pet owners will have a better understanding of the connection between pet waste and poor water quality. As a result pet owners will feel more obligated to pick up after their pets as well as feeling pressure from the general public to do so. As more citizens are aware of the health risk involved with not cleaning up after pets, they will feel more comfortable and more likely to report pet waste violators.

## **Key Messages for Pet Waste Education**

- Uncollected pet waste pollutes the City's waterways and threatens public health
- Bacteria in pet waste can cause diseases and infections in humans and other animals
- Bacteria and nutrients in pet waste can cause serious water quality problems
- Pet owners should always clean up and properly dispose of pet waste by methods such as bagging, burying waste, using a covered litter box outdoors for cats., etc

## **Message Distribution**

- Distribute pet waste brochures to veterinarian offices and pet grooming establishments within the jurisdiction
- Make sure pet waste stations and signs are available at every City Park and Recreation Site, as well as at the Gateway Trail
- Hand out remaining bag waste holders with Kings Mountain logo "Clean Water Everybody's Business"

## **Assessment and Evaluation**

- Periodically assess the habits of pet owners by:
  - Direct observation of habits
  - Count of citations issued for pet waste violations

## APPENDIX B

### Public Education and Outreach

**February 9 2012** - Program for Rotary Club, **65 attendees**, presentation on stormwater quality and how they can be a part of our program. Gave out soil sample kits from the local Cooperative Extension Office and encourage each one to test their soil before applying fertilizers.

**September 20, 2012** – Booth at the City’s Industrial/Commercial Industrial Breakfast, Register to win, Ball Cap give-aways and brochures. **200 attendees**

**October 1, 2012** – Set up at City Hall for a Stormwater Awareness Week, launched the City’s stormwater campaign “Clean Water Everybody’s Business”. Give-aways included, brochures on the City’s recycling program, soil testing kits, pet waste baggie holders. Register to win: Rain Barrel, Composter, Leaf Hand Rakes with Bag Assists, and Kitchen Grease or Compost Under Cabinet Containers.

**October 6, 2012** – Set up at the Kings Mountain Gateway Festival. Took a survey to determine stormwater awareness issues, participants received a free ball cap, gave away recycling pencils, brochures, pet waste baggie holders, and cold bottle water with the City’s slogan. Couple hundred people came by the booth. Not all would take time to take the survey but overall a good kick off.



**NO DUMPING!**

**¡NO CONTAMINE!**



**DRAINS TO CREEK**

**Thirstin's**

**Wacky**

**WATER**

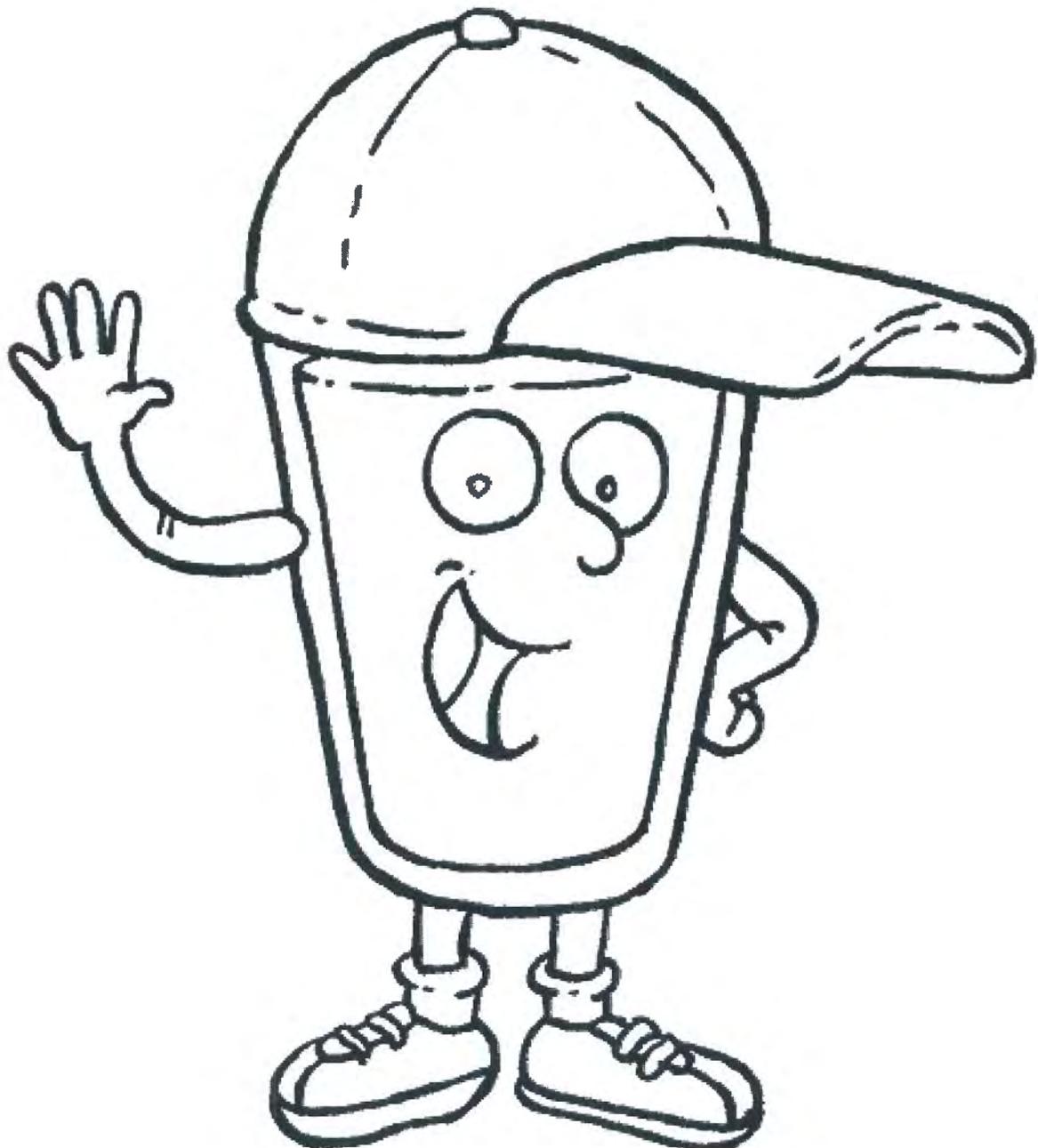
**Adventure**





Hello, my name is Thirstin. I am here  
to talk about protecting and conserving  
**DRINKING WATER.**

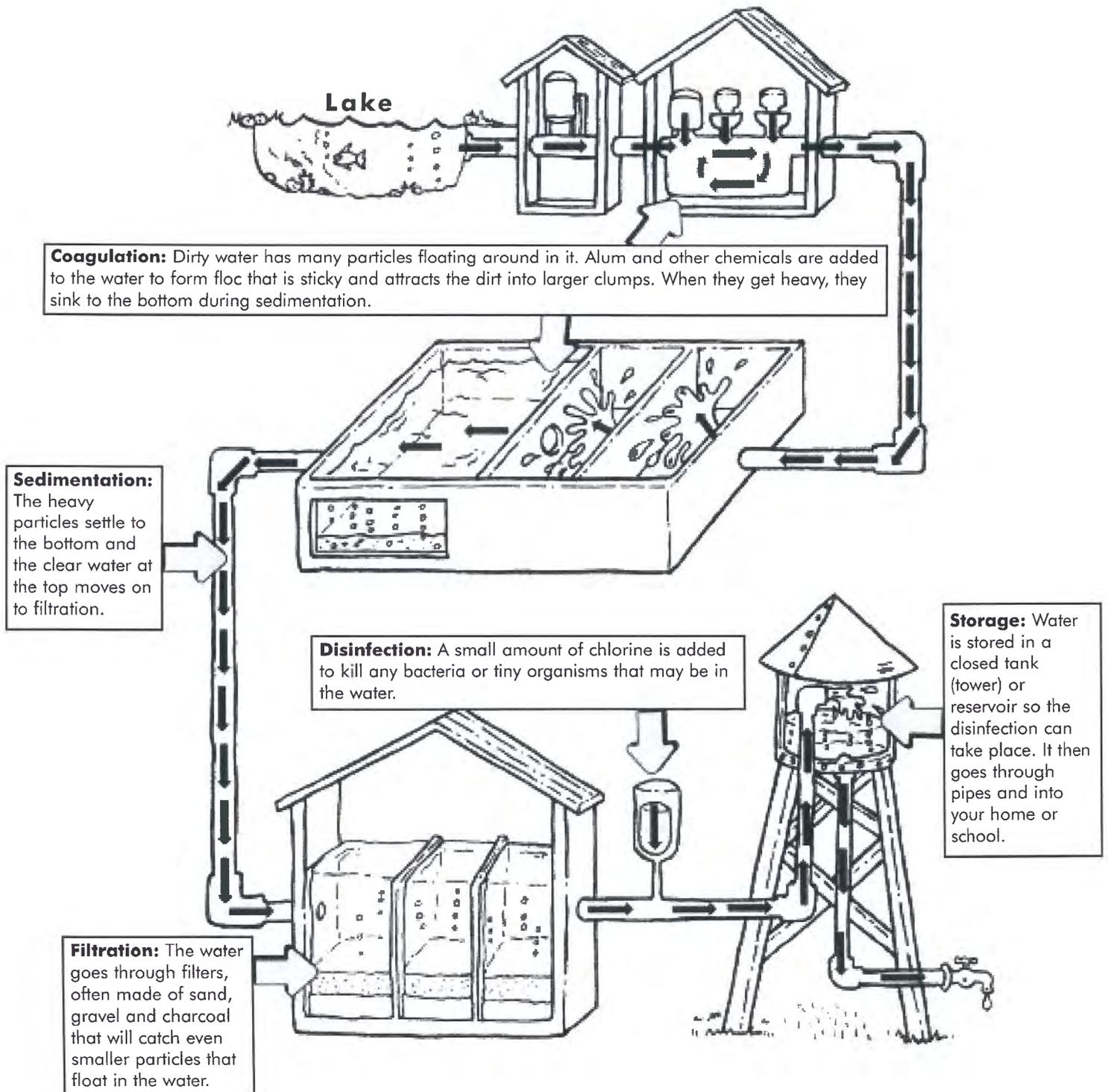
Follow me and I'll show you some fun facts  
and activities about water.



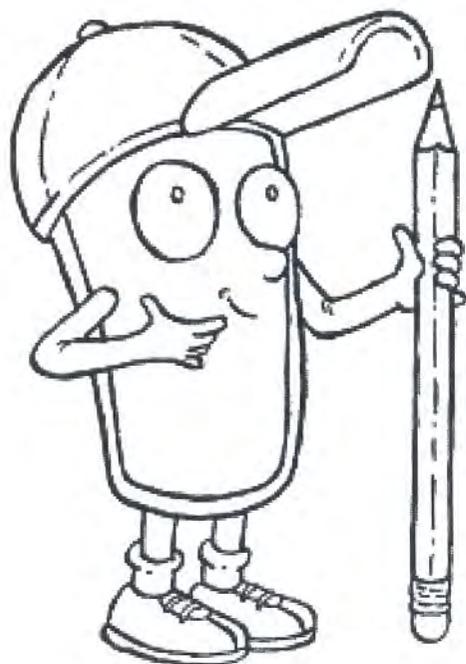
Water comes in three different forms:



Water can get dirty, so before we can drink it, it must be clean. Water is cleaned at a Treatment Plant and then sent to our homes through pipes.



P M A E R T S B G T  
X O B F L A K E H R  
W T L I D J O Q T E  
P A X L L L E W L A  
I N T T U G V P U T  
P F O E Y T D W C M  
E V S R R A I M K E  
S T R Z B N P O Y N  
N E F A S K W A N T



Find and circle these words:

STREAM

WELL

FILTER

TREATMENT

PIPES

TANK

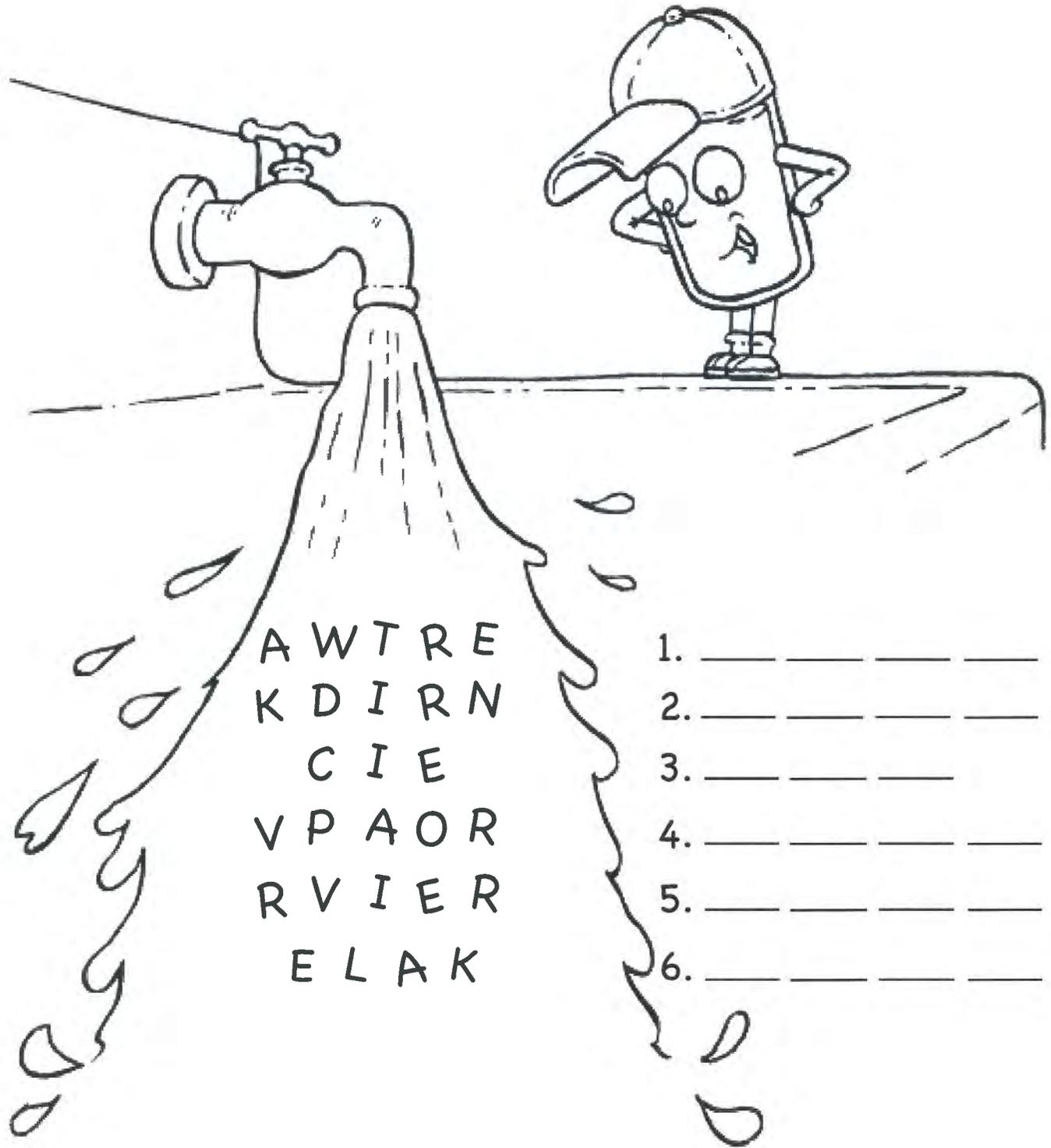
SAFE

POLLUTION

WATER

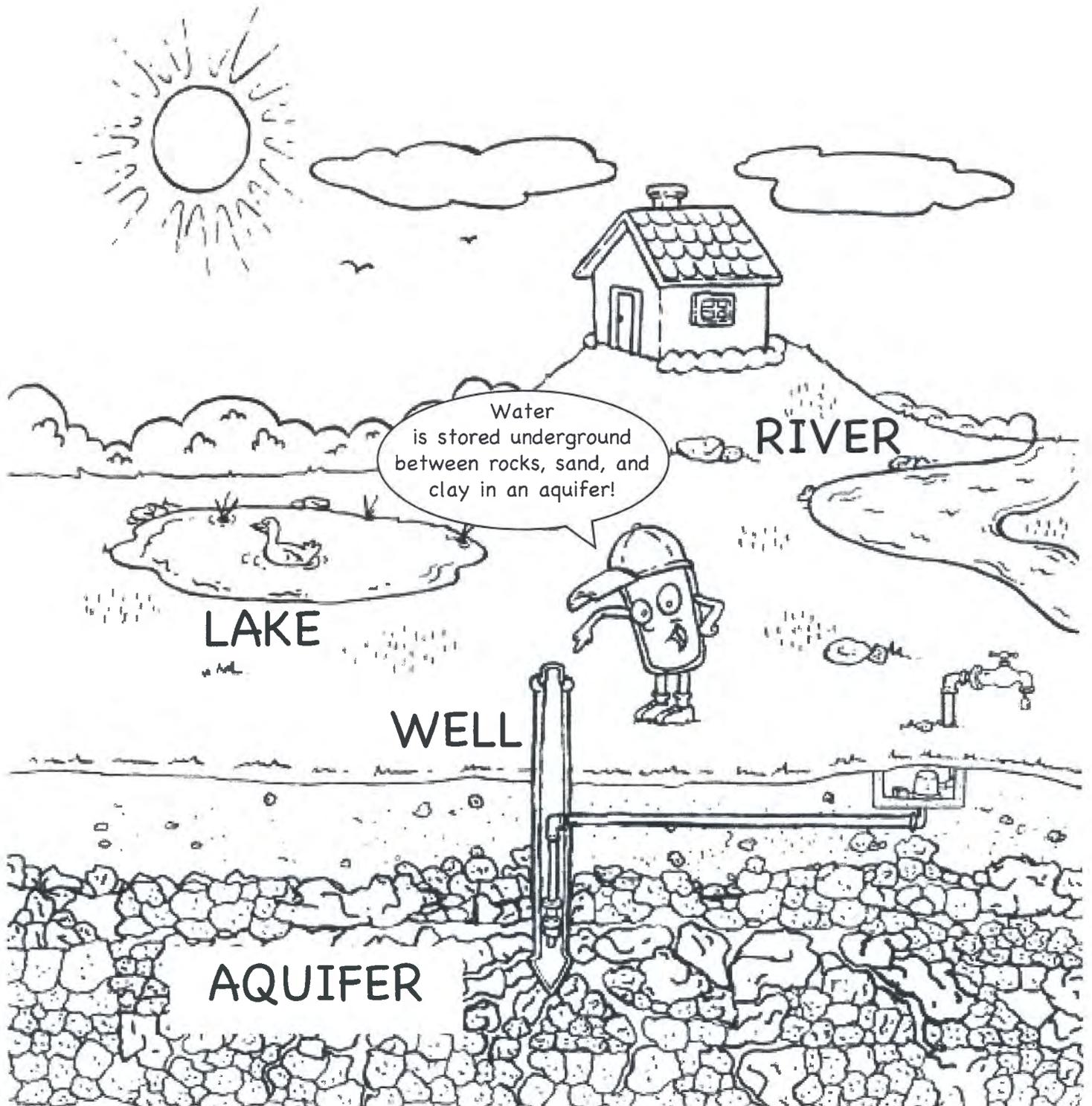
LAKE

Unscramble the letters:

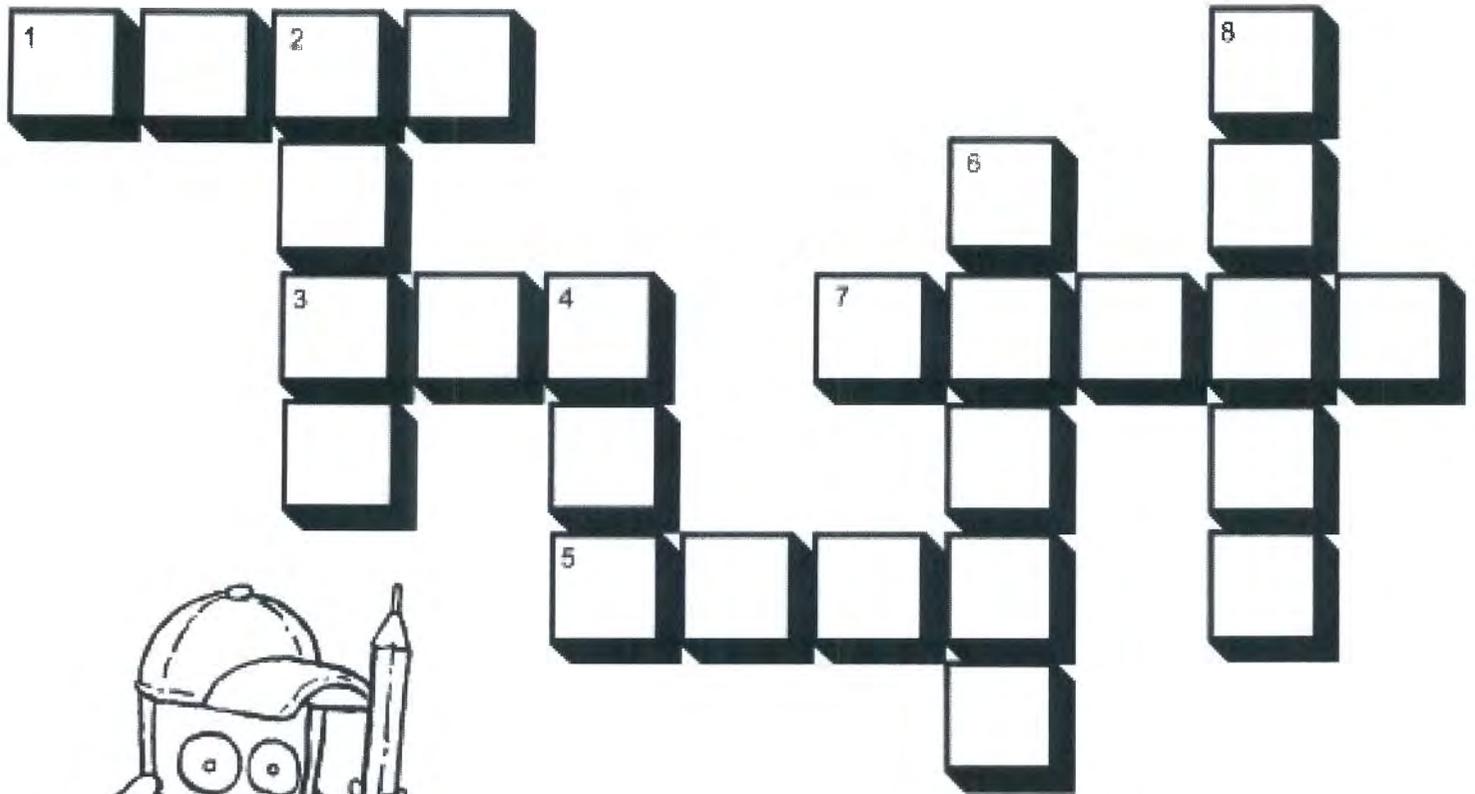




Drinking water comes from lakes, rivers, streams, or under the ground (ground water).



Complete the crossword puzzle to test your knowledge of water.



### ACROSS

1. Always \_\_\_\_\_ your hands before dinner.
3. Add this to water to make it cold.
5. Big body of water.
7. If you have a leaky faucet, get it \_\_\_\_\_.

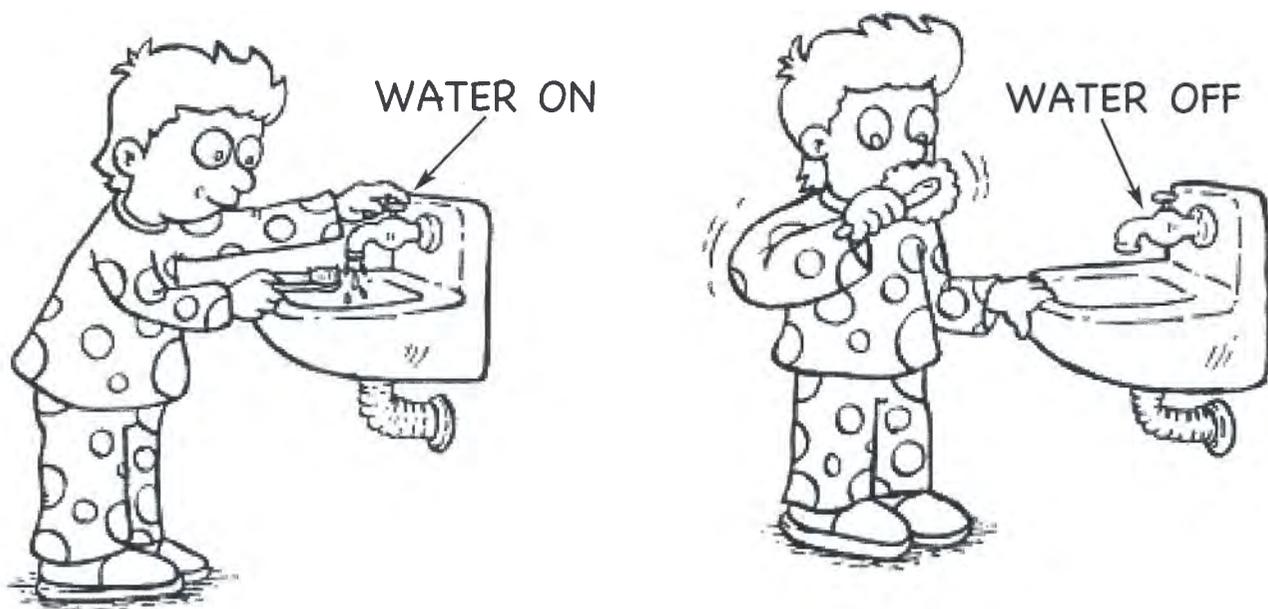
### DOWN

2. People go to the beach to \_\_\_\_\_.
4. Snake-like fish.
6. Water travels through these.
8. When you boil water, \_\_\_\_\_ rises out of the pan.

Because we need water to live, it is important to conserve as much water as we can.

You can help by:

turning off the water when you're not using it, and . . .



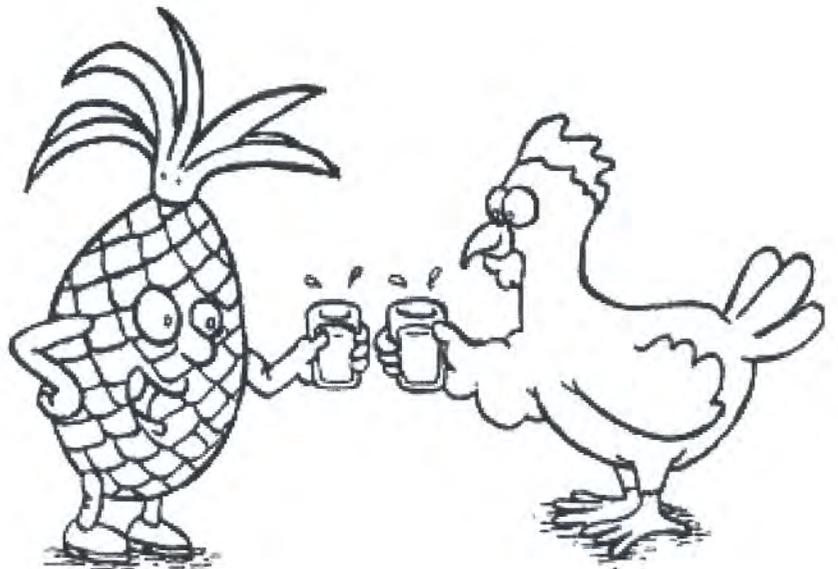
telling an adult when you see a leak.



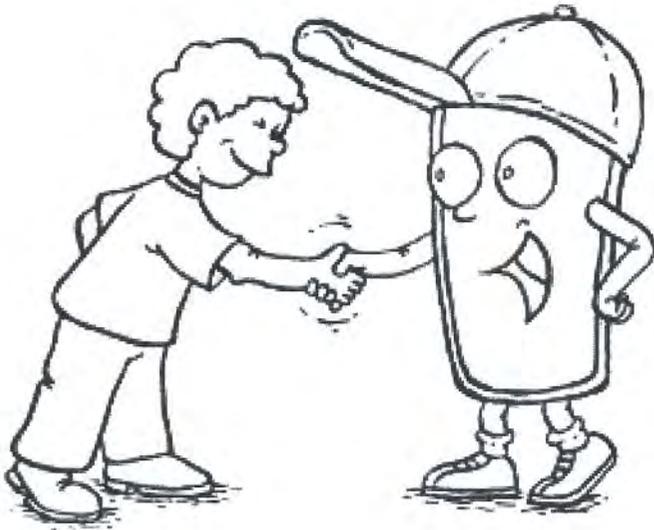
# WATER TRIVIA!

## Fun Facts About Water . . .

1. How much water does it take to cook a Hamburger?  
*Approximately one gallon.*
2. How long can a person live without food?  
*More than a month.*
3. How long can a person live without water?  
*Approximately one week, depending upon conditions.*
4. How much water is used to flush a toilet?  
*2-7 gallons.*
5. How much water is used to brush your teeth?  
*2 gallons.*
6. How much water does an individual use daily?  
*50 gallons.*
7. How much of a chicken is water?  
*75%*
8. How much of a pineapple is water?  
*80%*
9. How much of an elephant is water?  
*70%*
10. How much of an ear of corn is water?  
*80%*



# REMEMBER!



Your help is needed to keep drinking water clean!

Keep rivers, lakes and streams free of trash!

Never allow oil or gasoline to be poured on the ground!

Make a list below of other things you can do to help:

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FOR MORE INFORMATION AND  
ACTIVITIES, VISIT OUR WEBSITE AT:

[www.epa.gov/safewater](http://www.epa.gov/safewater)

Click on Kid's Stuff and submit  
an art project!



# GAME ANSWERS

## Word Search Game



## Word Scramble Game

1. WATER
2. DRINK
3. ICE
4. VAPOR
5. RIVER
6. LAKE

## Crosswords Game

- | ACROSS   | DOWN     |
|----------|----------|
| 1. WASH  | 2. SWIM  |
| 3. ICE   | 4. EEL   |
| 5. LAKE  | 6. PIPES |
| 7. FIXED | 8. STEAM |

This booklet belongs to: \_\_\_\_\_



An activity booklet designed to teach children ways to prevent stormwater pollution.

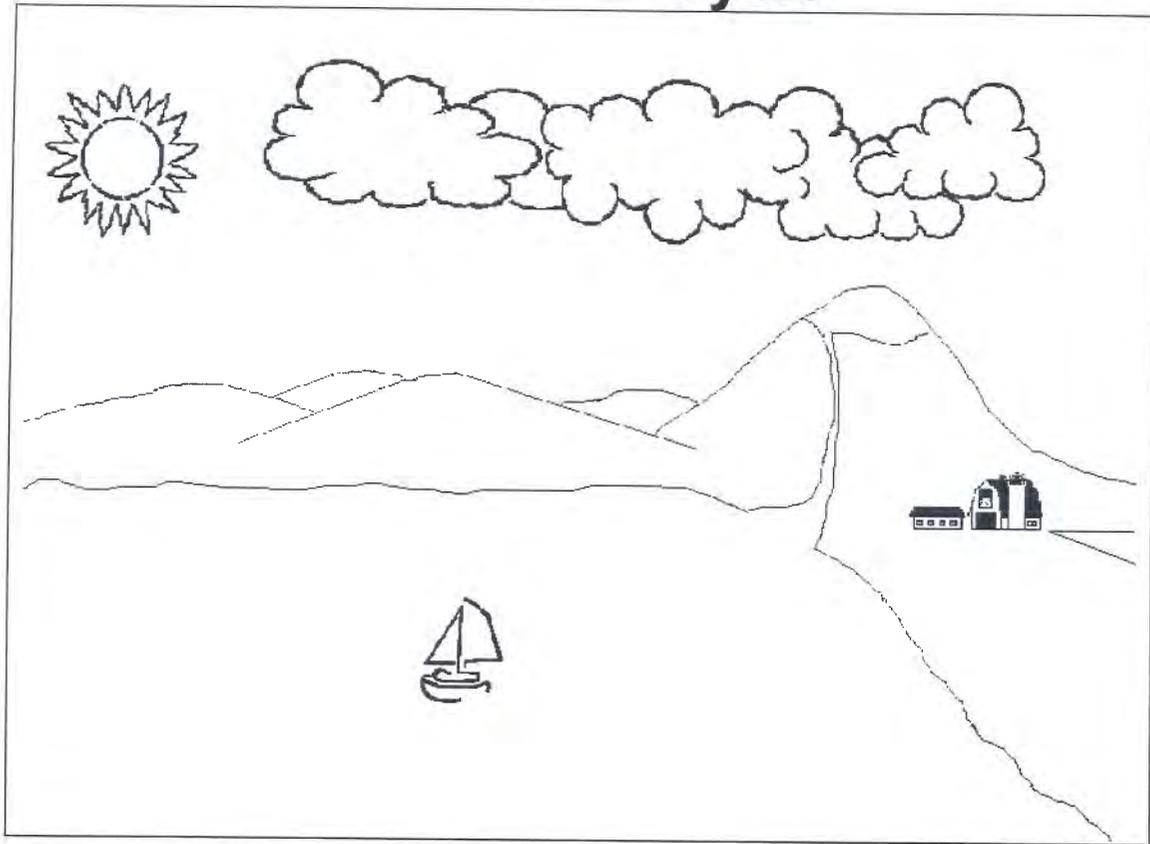


Brought to you by the City of Stockton Stormwater Program.

Did you know... that the water you drink is as old as the earth itself? Dinosaurs may have swum in the water from your kitchen sink. The earth's water supply is about the same as it was millions of years ago. That's because every molecule of water is recycled over and over through a process called the **water cycle**. More than 99% of the earth's water is salt water in the ocean or trapped in ice caps. That leaves only 1% of the earth's water for us to use!

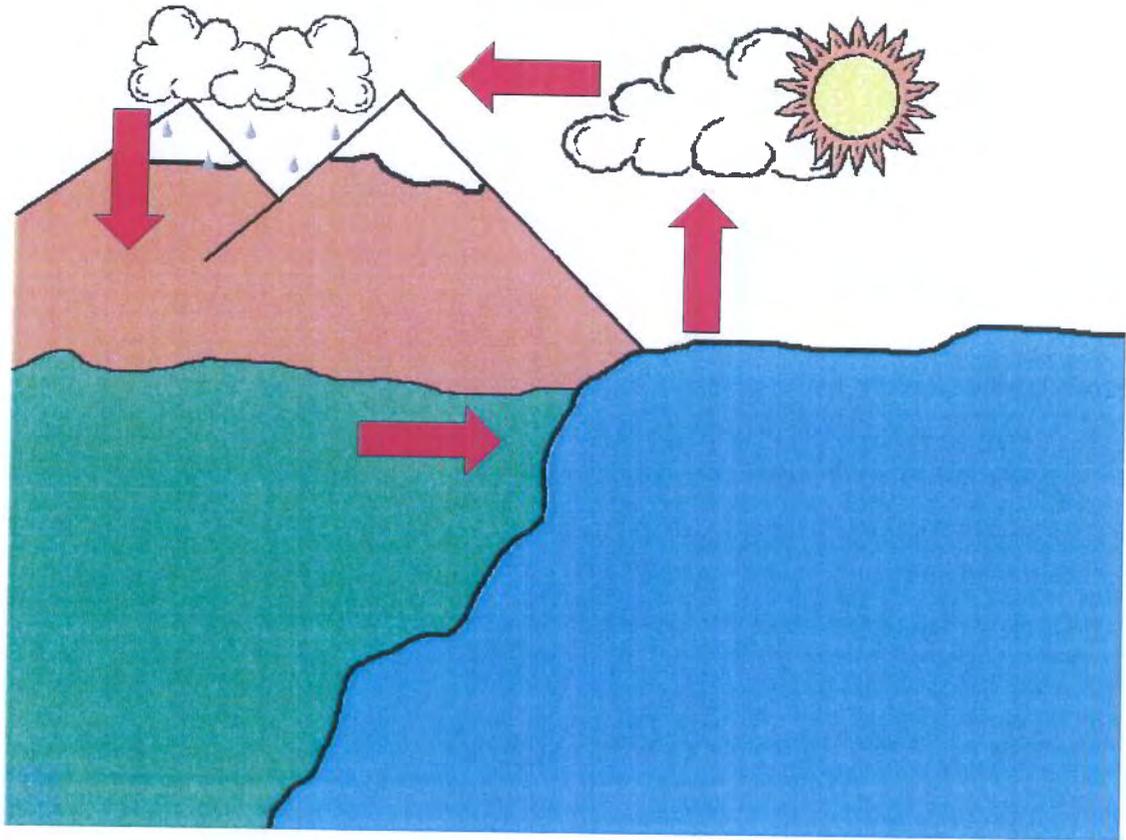


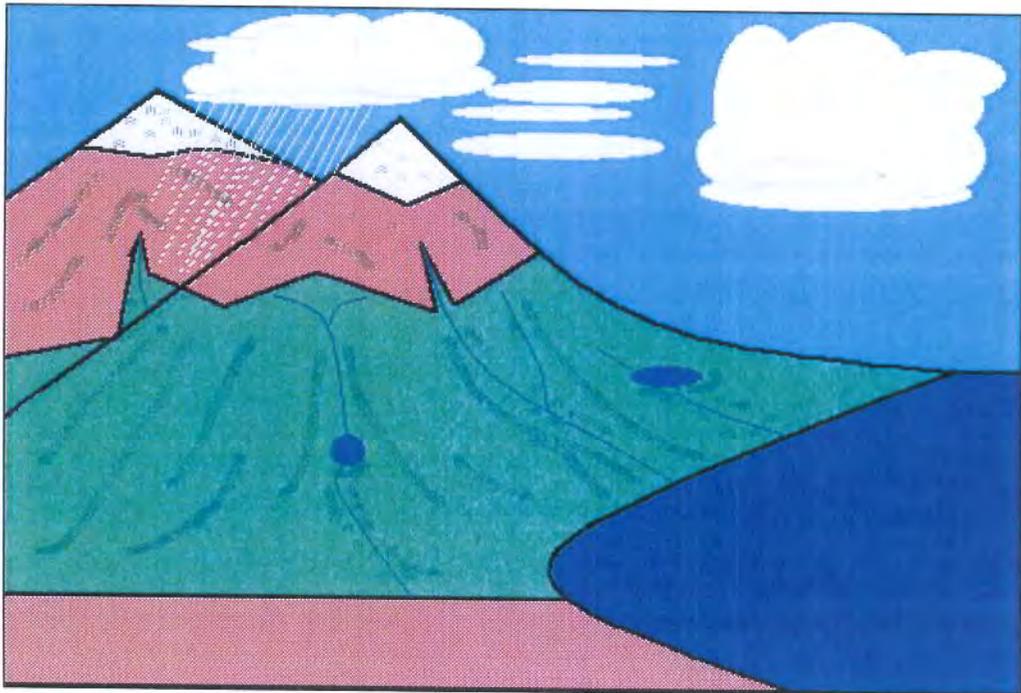
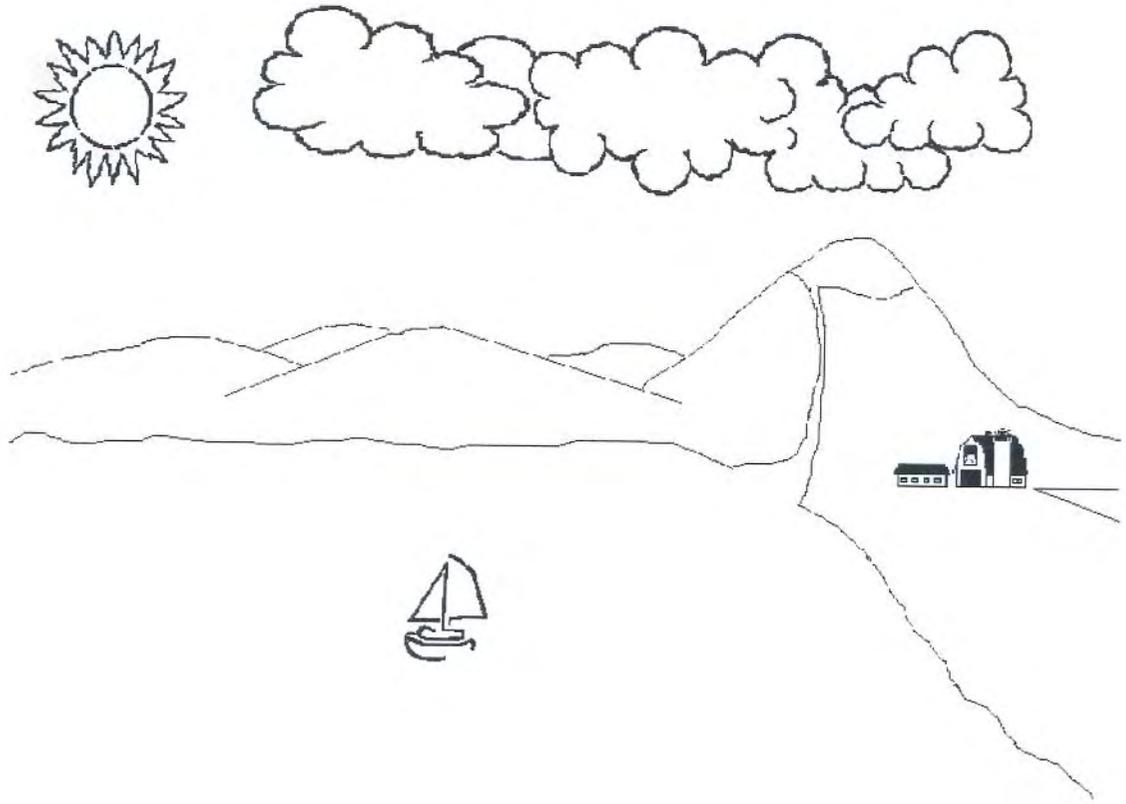
## The Water Cycle



1. **Evaporation:** The water is heated by the sun. This causes the water to turn into **vapor** and rise into the air.
2. **Condensation:** When water vapor cools, it turns into tiny drops of water. These combine to make **clouds**.
3. **Precipitation:** The water in the clouds falls to the earth as rain or snow.
4. **Runoff:** The water falling to the ground through precipitation runs back into the lakes, rivers and oceans.
5. **Infiltration:** Water that doesn't make it's way to a body of water seeps into the ground.

**Then, the cycle starts all over again!**



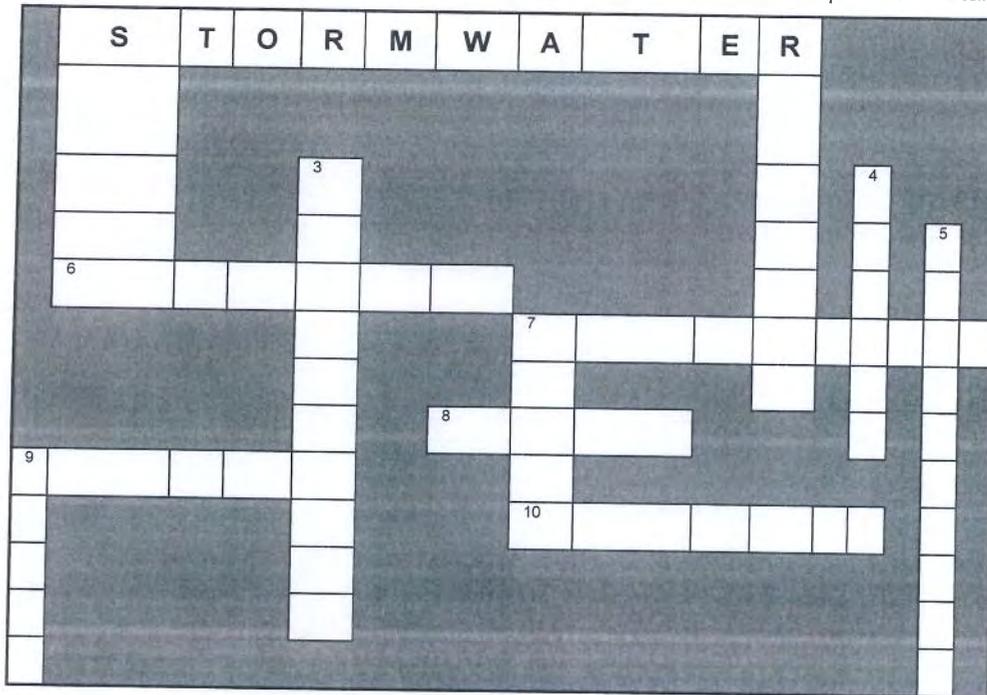


**Directions:** Complete this crossword puzzle by using the words below.

Hint: Not all of these words are in the puzzle!

Stormwater Trash Storm Drain Paint Gutter Street Waste Water Runoff

Pollution Toxins Recycle Sewer Conservation Chemicals Phosphates Rain Oil



Across

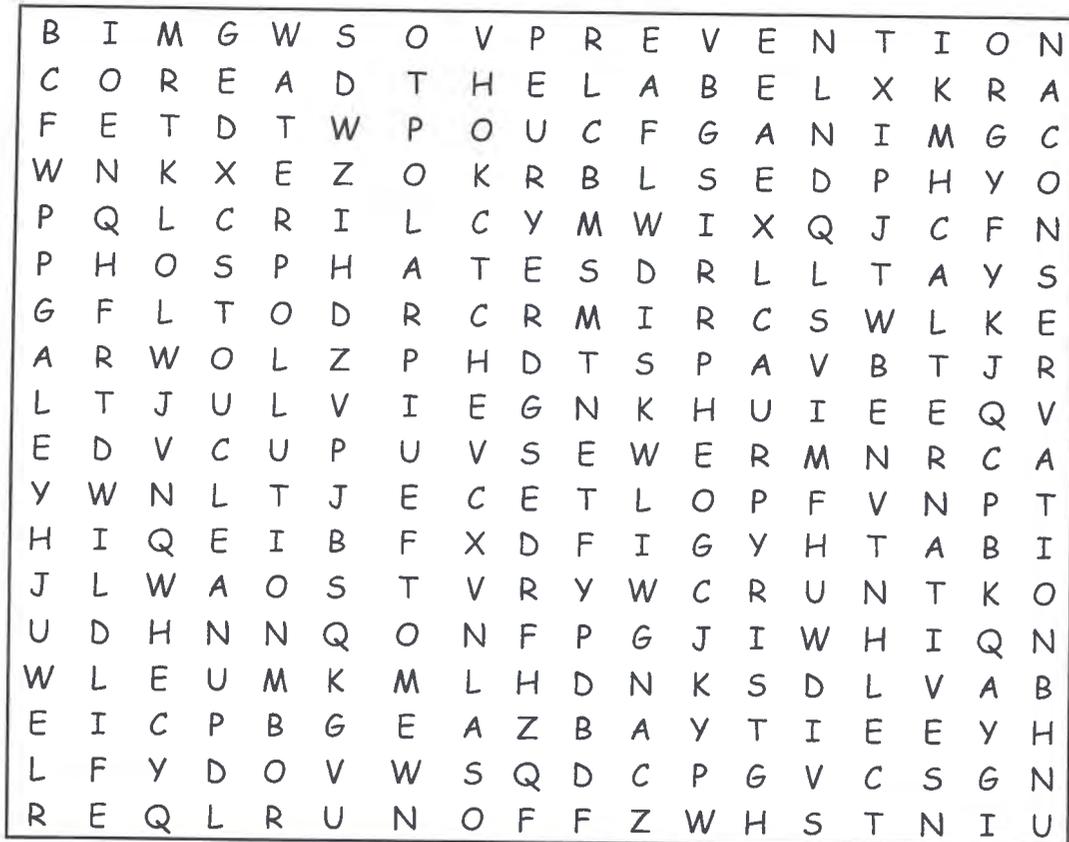
Down

1. \_\_\_\_\_ is the rain or runoff from sprinklers and hoses that flows into the storm drain.
6. \_\_\_\_\_ is another word for the water that flows from rain storms, sprinklers and hoses into the storm drains.
7. Stormwater is the #1 cause of urban water \_\_\_\_\_ in California today.
8. One quart of \_\_\_\_\_ can pollute 250,000 gallons of water.
9. The only thing that should enter a storm drain is \_\_\_\_\_.
10. \_\_\_\_\_ are pollutants or poisonous materials that are often found in our waterways.

1. The water that goes down the drains in our homes goes to the \_\_\_\_\_.
2. It is important for us to \_\_\_\_\_ things like motor oil, car batteries, paint and other materials rather than throwing them away.
3. A \_\_\_\_\_ is a catch basin designed to collect only rain and water.
4. A storm drain can be found in the \_\_\_\_\_.
5. When buying products like soap, read the label first and make sure there are no \_\_\_\_\_ in the ingredients.
7. Never rinse \_\_\_\_\_ brushes off in a storm drain. Clean them in your household sink.
9. To throw away something like used motor oil is to \_\_\_\_\_ it.



## Word Search



Find the following words in this puzzle.

Words may be horizontal (--), vertical (|) or diagonal (\).

Alternatives  
Clean Up  
Conservation

Pesticides  
Phosphates  
Prevention



Read The Label  
Runoff  
Sewer  
Storm  
Drain  
Water Pollution  
Wildlife

# How Does Water Get to Our Homes?

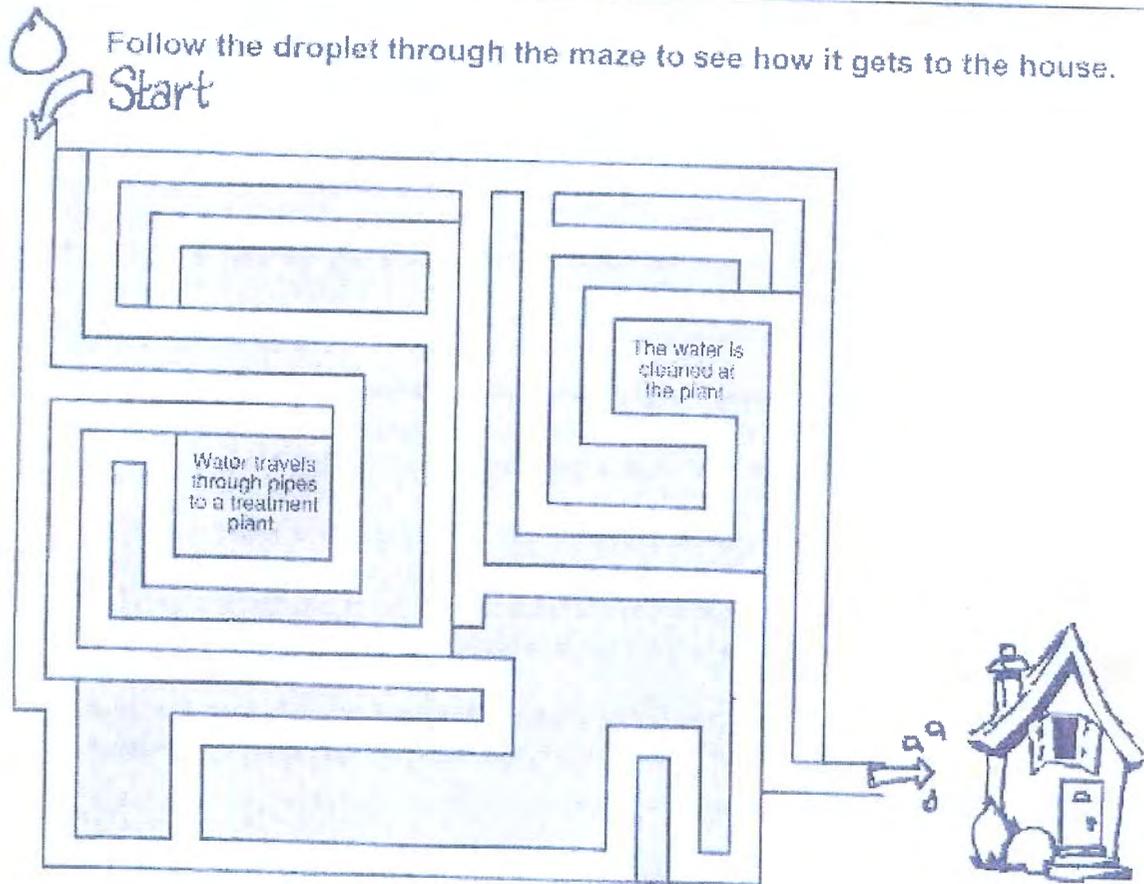
First, water travels to us in large canals and pipes called **aqueducts**. The aqueducts take the water to large man-made lakes called **reservoirs**.

Reservoirs store water until we are ready to use it.



We can also get water from **wells**, which are holes drilled deep in the earth. Wells allow us to get water from under the ground. Water from the wells and reservoirs is cleaned at a treatment plant. Then, pipes take the clean water from the plant and deliver it to homes, schools, businesses and parks.

Follow the droplet through the maze to see how it gets to the house.





# WHY IS WATER IMPORTANT?



## We need it to live.

Did you know our bodies are made up of mostly water? It's important for us to drink water every day. Water carries nutrients to all the cells throughout our bodies. If we don't drink enough, we may become *dehydrated*.

## We need it to grow crops.



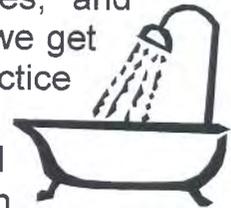
If it weren't for water, we would not be able to enjoy any of our favorite fruits and vegetables. Plants need water just like we do. Without it, they can't grow.

## Our pets and animals need water.

If plants and humans need water to live, then all animals, including our pets, must need it, too! It's important to give our pets plenty of water to drink. Nothing could survive without water! Every living thing needs water to live.

## We need it for bathing and cleaning.

We use water for bathing, cleaning our vehicles, and washing our dishes and clothes. How else would we get clean if it weren't for water? Remember to practice *water conservation* when taking showers and baths or when using it to wash vehicles, clothes and dishes. See page 11 for some water conservation tips!



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### Activity:

Take a moment to think of other ways to use water every day. How many can you come up with?

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## Information for Activity Books

### Tips for Pollution Prevention

- **Pet Waste:** Never leave pet waste on the sidewalk or ground where it might wash into gutters and down storm drains. Dispose of it properly, always using "doggie bags" when walking your pet. Horse and livestock owners should never dump manure into or near-by creeks.
- **Properly Dispose Used Motor Oil and Household Chemicals:** Never pour chemicals on the ground or down the storm drain. Dispose of unwanted paint, solvents, pesticides, antifreeze, motor oil and other household chemicals at the Permanent Household Hazardous Waste Facility located near the Stockton Airport at 7850 So. R.A. Bridgeford St. Call 1-800-449-4840 for more information.
- **Reduce Chemical Runoff From Lawns and Gardens:** Pesticides and fertilizers can be carried into the creeks and storm drains when you over water or when it rains. Consider using organic or lawn and garden products that are not as toxic. Always read the directions on the labels and use the smallest amounts needed. Avoid applying right before expected rainfall. Landscape with native plants that don't require chemical fertilizers and excess water.
- **Maintain Septic Systems:** If you use a septic system, make sure it is functioning properly. Overflowing septic systems release raw sewage that can flow to creeks and ground water, causing serious contamination.
- **Properly Manage Yard Debris and Litter:** Grass clippings, leaves and litter can damage a natural creek habitat by suffocating native plants and aquatic life. In the gutter and storm drains, yard debris and litter promote bacterial growth that will be carried to the ocean when it rains. Use your green waste bin to dispose of yard debris.
- **Get Involved** in the environmental process by understanding the condition of your local watersheds and learn what it takes to improve the environmental health of our creeks and ocean.
- **Urge Local Decision Makers** to continue to make protecting water in our rivers, creek and sloughs a high priority. Ask your City Council member or County Supervisor to support whatever measures are necessary to protect our creeks and ocean environment.
- **Attend Public Forums:** Many governmental and community groups host forums to inform the public and discuss the issues regarding the health of our local waterways. Find out how you can get involved and have your voice heard. Watch for listings in our local newspapers.
- **Volunteer:** Local organizations need volunteers for creek and wetland restoration, beach and creek cleanups, or watershed monitoring.

Eco-friendly weed killer is often more cost-effective than chemical sprays.

Organic gardeners, or those who are environmentally conscious, are wary of using man-made, chemical weed killers because of the effects they may have on the soil's long-term fertility and because of the fossil fuels that go into creating and transporting the weed killer. Creating your own weed killer at home with ingredients you likely already have can help lower your carbon footprint.

### **Boiling Water Weed Killer**

**1:** Trim the weeds with a pair of garden shears. This helps weaken the plant and makes it vulnerable to the weed killer.

**2:** Cover the plants you don't want to kill with tarp. Secure the tarp with stakes to ensure it doesn't budge while you are working to remove the weeds.

**3:** Fill a pot with water. Turn your stove's burner on, and heat the water until it reaches a rolling boil.

**4:** Carefully pour the boiling water over the weeds you want to remove. This method kills all of the plants the boiling water touches, so be careful to apply it only to the weeds you want to kill.

### **Vinegar-Lemon Weed Killer**

**1:** Trim the weeds with a pair of garden shears. This weakens the plant and makes it vulnerable to the vinegar weed killer.

**2:** Cover the plants you want to keep with tarp, and secure the tarp with stakes. This helps prevent the vinegar solution from blowing on the plants.

**3:** Mix 4 ounces lemon juice with 1 liter white vinegar. Fill a spray bottle with white vinegar solution. White vinegar is a weak acid that lowers the soil's pH enough to kill weeds.

**4:** Spray the vinegar directly on the weed's leaves. Be careful not to spray plants you want to keep, as the vinegar damages everything it comes into contact with.

**5:** Reapply the vinegar until the plant dies. This method does not kill the weed's roots, but it can weaken the weed system so that several applications eventually kill it.

### **Vinegar-Soap Weed Killer**

**1:** Cover desirable plants with tarp, and secure the tarp with a stake. Though the solution is mainly harmful for plants with waxy leaves, it can have a harmful effect on other plants.

**2:** Trim the weeds with a sharp pair of garden shears. This helps open the plant to receive the weed killer.

**3:** Mix 1 gallon white vinegar with 1 cup salt and 1 tablespoon liquid dish soap. The white vinegar lowers the weed's pH, the salt dries out the plant, and the dish soap helps the solution stick to the plant.

**4:** Pour the solution into a spray bottle, and spray it over the weed's stalk and leaves. Apply it liberally.

**5:** Reapply the solution after 24 hours until the weed is completely dead.

## Use these car-washing tips to be a responsible auto-washer.

Letting auto fluids flow down your driveway into storm drains is bad for everyone, and every fish

Save water and the environment by following these car washing tips whether you drive a shiny new hybrid or a dependable old clunker, you can reduce the environmental impact of your car by doing one simple thing: Quit washing it in your driveway! Between the gallons of water you use to soap up your sponges and the freshwater flowing unrestricted from your garden hose, cleaning your car can take between 80 and 140 gallons for every wash. And that water picks up a nasty load of everything that had been stuck to your car—gasoline, oil, heavy metal particles, tar, and particulate matter from exhaust fumes—and sends it down your driveway directly to the nearest lake or river, totally untreated, as many storm drains don't lead to a sewage treatment plant. But giving up washing in the driveway doesn't mean you'll have to just live with a dirty car. After all, excess dirt can scratch your car's finish, which can lead to rust problems if you live in a northern city that salts it's the roads in winter. So here are three simple, green ways to wash your car without wasting any water (or wildlife).

#1: Get off the pavement.

If you change nothing else in your car-care routine, park your vehicle on a flat, permeable surface (lawn, gravel, or dirt) rather than on pavement. Natural microbes in grass, soil, and dirt work as natural filters, breaking down some of the nasty compounds in your wash water and preventing them from running off into the nearest storm drain.

#2: Do it yourself. For those who really relish the hands-on experience of shining up their "babies," head to a self-service car wash where the runoff water is captured and sent to a water-treatment plant. This is often the greenest—and least expensive—option, using about 15 gallons of water. Plus, you can use your own biodegradable dish soap. Those larger commercial drive-through systems use

more water than self-service, about 35 to 50 gallons, depending on the type, but that's still much less than if you washed it at home. Just be sure to pass up the extra treatments and waxes (which are unlikely to offer eco-options) and stick with a plain-Jane wash.

### #3: Go waterless!

While buckets, oversized sponges, a long hose, and soaked clothing are part of DIY car wash tradition, you really don't need any of those things to give your car, truck, motorcycle, boat, or plane—don't laugh, I've washed more small planes than I have cars over the years—a clean, green shine. There are a number of premade, ecofriendly "waterless car wash" products available (one the Rodale.com crew has tested and likes is Eco Touch). Or you can just grab your spray bottle of home-brewed window or Almost Everything cleaner and at least two soft, absorbent, clean rags or microfiber cleaning cloths (more if your car is really grubby). Read the directions if you're using a commercial product. But if using homemade cleaners, mist a small area with the spray-on cleaner, wipe the product and dirt off that area with the first cloth, and then buff the area with the second dry cloth. Replace the cloths as needed.

Now that you've greened your car-washing routine, you may need some extra help getting all the bugs, sap, oil, dirt, dust, and grime that build up on the top and the inside of your car.

- Loosen baked-on bugs first by spraying with cleaner and letting it sit for a couple of minutes before wiping, or use a nonabrasive kitchen scrubby to loosen them. You can also soak a cloth with vinegar or denatured alcohol and use it to soak/rub off dried-on bugs. Rinse with water and re-wax the area (vinegar if left on can strip a car's finish).
- For tree sap or tar on the exterior, dab some peanut butter or solid shortening on the goo, let it sit for a minute or two, and wipe it off with a separate cloth before using your cleaner. Repeat a few times if necessary. Denatured alcohol will also remove tar and sap.

- Wash the windows inside and out, and while you're at it, wash the mirrors and the headlight and taillight glass. Follow my tips for [using a squeegee](#) to get the cleanest windows in the parking lot. Hint: Roll the door windows down slightly and clean the top edge first, then roll them up and clean the remainder of the window. And, since we're heading into cool, dewy mornings and foggy fall evenings, apply an ecofriendly antifogging treatment to the windshield and mirrors. One I like is [Doctor Klear](#).
- Vacuum the interior using a crevice tool to get into the cracks and crannies, and [freshen up your upholstery](#) if it needs it, by sprinkling some odor-absorbing dry baking soda onto the seats, and letting it sit for 30 minutes to two hours before vacuuming it up.
- Make your own "Armor All" by mixing 1 part fresh lemon juice with two parts olive oil in a small bowl. Dab a small amount onto a soft cloth and rub it over the dashboard and other plastic and vinyl surfaces (but not the pedals, the steering wheel, or other surfaces that shouldn't be slippery). Use a retired toothbrush to work the solution into cracks and remove trapped dust and gunk. Buff with a second dry, clean cloth; the mixture will leave a soft shine and a pleasant smell. Discard any unused mixture, or store it in a clearly marked container in the fridge.

### **That Extra Shine**

Most new cars have highly resistant shiny protective finishes, but if you feel the need to shine, or if you used vinegar to get bugs or other gunk off the body, you can revive the shine using a batch of your own green car wax.

#### **Ingredients:**

1 cup linseed oil

4 Tablespoons pure carnauba wax (sold in auto parts stores)

2 Tablespoons beeswax

½ cup apple cider vinegar

**Directions:**

Place ingredients in an old double boiler or in a tin can set in a saucepan of hot water. Heat over low heat, stirring frequently, until the waxes melt and disappear. Pour into a shallow container with a lid and allow to cool.

To use, apply a small dab to a clean surface with a soft cloth, rubbing in a circular motion; then buff with a clean cloth.

**Hint:** Wax your car in the shade so the metal stays reasonably cool, and work on a small section at a time.

This article was originally published on [Rodale.com](http://Rodale.com)

## Taking a Soil Sample

A soil test is only as good as the soil sample!

Use iron or stainless steel tools. Sample dry soil in areas of 10 acres or fewer. Avoid combining soils of different types and/or treatment histories. Avoid fertilizer bands and corners or end-turn areas. For each sample, collect 15-20 cores at the appropriate depth (0-8" for plowed soils; 0-4" for no-fill, sod & lawns). Mix cores in a plastic bucket, then fill the sample box.

**DO NOT PUT SOIL IN PLASTIC BAGS.**

## Filling out the Sample Information Form

EXAMPLE

LAB NUMBER (Leave blank)	SAMPLE IDENTIFICATION	LIME APPLIED WITHIN PAST 12 MONTHS			FIRST CROP	CODE	SECOND CROP	CODE
		Tons/Acre	Month	Year				
1	J J J 1	1	9	2002	Coak	001	Small Grains	004
2	I I S I 1	2	9	2002	clover / Grass, M	050	clover / Grass, M	050
3	I I S I 2	0			Bermuda Hay, E	043	Bermuda Hay, M	044

**SAMPLE & GROWER INFORMATION** — Provide as much information as possible. Print neatly.

**CONSULTANT/OTHER RECIPIENT** — List name & contact information for anyone else who needs to know about the report.

**SAMPLE IDENTIFICATION** — Print an identifier (use numbers and/or letters) for each sample on a separate line. The identifier should help remind you where the sample came from (Example: J1, S1). Make sure the sample identifiers on the boxes and on the information form are the same. Use pencil or waterproof markers.

**FIRST CROP** — List the crop for which you want lime and fertilizer recommendations. Be sure to include the appropriate **CODE** from the list below (e.g., Bermuda hay or pasture establishment, 043).

**A. Use Lawn** (code 026) for all lawn grasses except **Centipede**. Use one of the **Fine Turf** codes only for golf and athletic field turf.

**B. Use Shrubbery** (code 029) for all shrubs, except azalea, camellia, rhododendron and mountain laurel.

**C. For all home garden vegetables**, use code 024.

**LIME APPLIED WITHIN PAST 12 MONTHS** — Provide the amount of lime applied in tons/acre, as well as the year and month of the last application, if made during the past 12 months. (50M is equivalent to one ton per acre.)

**SECOND CROP** — List the name of the crop that will follow the one listed as **FIRST CROP**. Include its **CODE** from the list below. This will enable us to make suggestions for this crop, assuming that the field is treated as suggested the first year. List the second crop even if it will be grown the same year as **FIRST CROP**.

## REQUIRED INFORMATION

The lab **MUST** have this information.

## DESIRABLE INFORMATION

The lab can make better suggestions if this information is provided.

## CROP CODES

**E** = establishment (1st year)

**M** = maintenance

**SG** = small grain

000 No Crop

### Field Crops

001 Corn, grain

002 Corn, silage

003 Cotton

004 Small Grain

006 Milo (Grain Sorghum)

007 Peanut

010 Soybean

011 Sunflower

012 Tobacco, burley

013 Tobacco, flue-cured

014 Tobacco, greenhouse

015 SG silage/ Soybean

016 SG silage/ Corn silage

017 Kenaf

018 SG/ Soybean (double crop)

### Home Lawn & Garden

020 Azalea

021 Camellia

022 Centipede

023 Flower garden

024 Vegetable garden

025 Mountain laurel

026 Lawn

027 Rhododendron

028 Rose

029 Shrubbery

030 Berries/ Fruit/ Nuts

031 Tree, shade

### Christmas Trees

034 Leyland cypress

035 Line-out/ Seed Beds

036 Fir/ N Spruce/ Hemlock, E

037 Fir/ N Spruce/ Hemlock, M

038 Pine, White or Virginia

039 Blue Spruce/ Red Cedar

### Forage & Pasture

040 Alfalfa, E

041 Alfalfa, M

042 Common bermuda/ Bahia

### Forage & Pasture (cont.)

043 Bermuda hay/ pasture, E

044 Bermuda hay/ pasture, M

047 Bluegrass pasture

048 Bluegrass/ White Clover

049 Clover/ Grass, E

050 Clover/ Grass, M

051 Gamagrass

053 Legumes, misc.

054 Fescue/ Orchard/ Timothy, E

055 Fescue/ Orchard/ Timothy, M

056 Prairiegrass

057 Switchgrass

059 Sudan/Sorghum/Millet/Red Crabgrass

060 Sudan/ Sorghum silage

### Roadside Areas

061 Critical area

062 Roadside grass, E

063 Roadside grass, M

### Wildlife Areas / Food Plots

066 Deer / Turkey

067 Upland game

068 Waterfowl

069 Fish pond

### Commercial Hort Crops ONLY

[024 = all Home Vegetables]

070 Asparagus, E

071 Asparagus, M

072 Beans/ Peas

074 Beet

075 Blueberry, E

076 Blueberry, M

077 Broccoli/ B. sprouts/Cauliflower

079 Cabbage

080 Cantaloupe/ Watermelon

084 Corn, sweet

085 Cucumber

088 Grape, E

089 Grape, M

119 Hops

090 Kale/ Mustard/ Spinach

093 Okra

095 Pea, southern

096 Pepper

097 Plant bed, vegetable

098 Potato, Irish

099 Sweetpotato

100 Rانش

101 Rape/ Canola

### Commercial Hort Crops (cont.)

102 Raspberry/ Blackberry, E

103 Raspberry/ Blackberry, M

107 Squash/ Pumpkin

108 Strawberry, E

109 Strawberry, M

118 Strawberry, Plasticulture

110 Tomato

111 Tomato, greenhouse

115 Turnip

116 Vegetables, other

### Commercial Nursery & Flowers

120 Dahlia

121 Gladiolus

122 Greenhouse

123 Gysophylla (Baby's Breath)

124 Flower, bulbs

125 Flower, roots

126 Nursery, container

132 Rhododendron/ Ginseng/ Native ornamentals

136 Nursery/ Trees

### Orchard, Fruit & Nut

130 Apple, E

131 Apple, M

138 Peach, E

139 Peach, M

140 Pecan, E

141 Pecan, M

### Forest Trees & Seed

133 Hardwood, E

134 Hardwood, M

137 Nursery, pine

142 Pine, E

143 Pine, M

144 Hardwood, seed

145 Fir/ Spruce, seed

146 Pine, seed

### Fine Turf

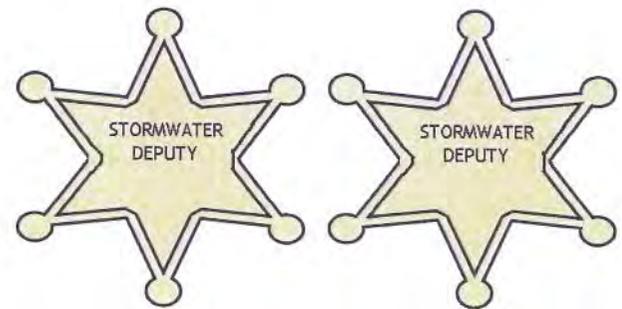
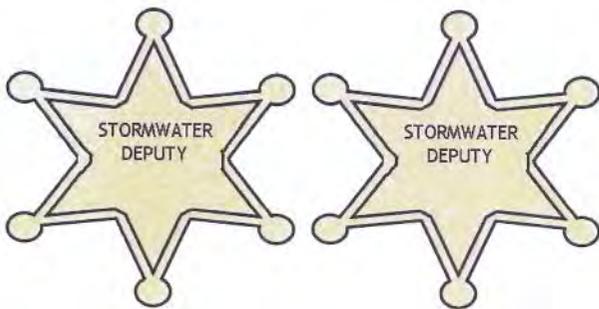
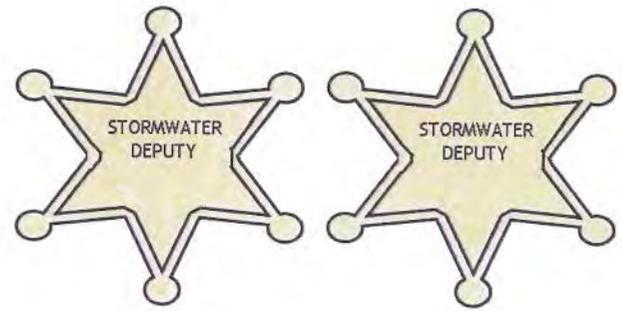
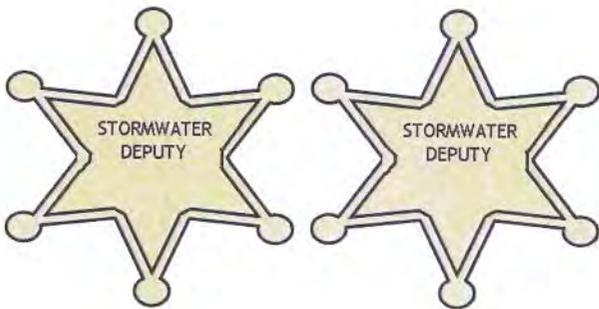
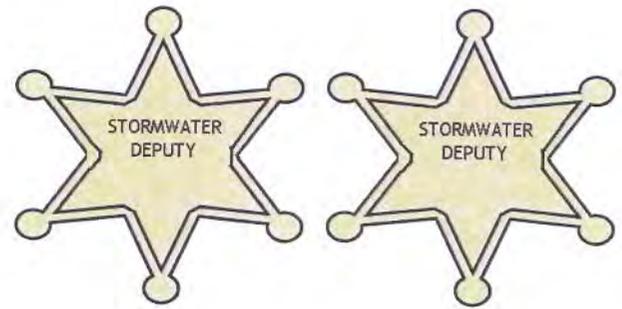
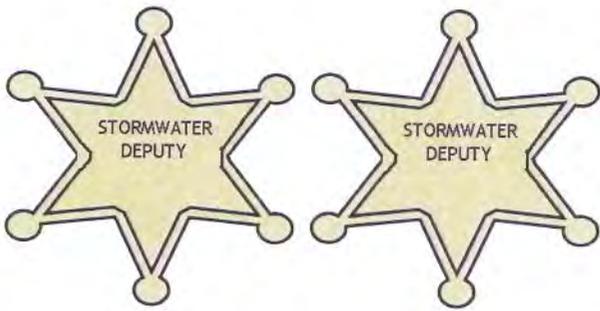
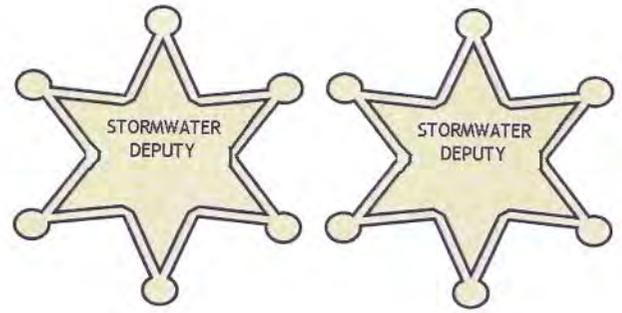
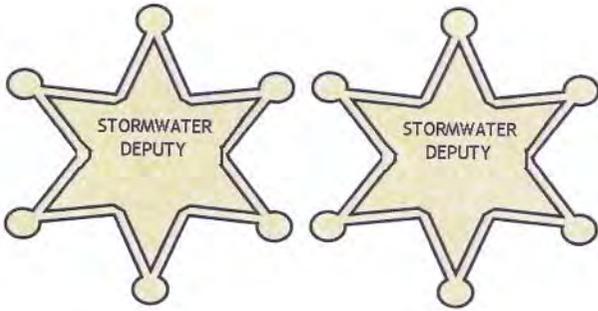
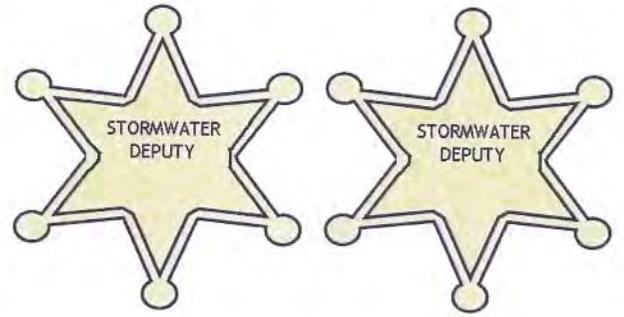
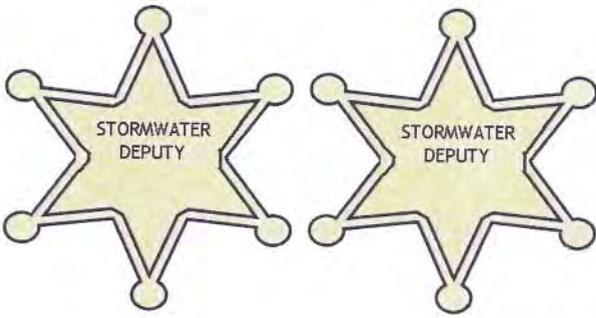
150 Fairway/ Athletic turf

151 Tee

152 Greens

### Stormwater

200 Bioretention cell





QUESTION: What is the connection between  
Water Quality and a Ball Cap?

you!

The City's Stormwater Quality Division is in the process of developing the City of Kings Mountain's Stormwater Management Plan and we need your help. By filling out this survey you are assisting in developing baseline information so that we may tailor the plan for what is best for Kings Mountain. In return for your assistance you will receive a City of Kings Mountain Clean Water Everybody's Business ball cap to wear and remind everyone that it takes all of us to ensure that clean water will be available for the next generations.

DEMOGRAPHIC INFORMATION:

Street Name \_\_\_\_\_ Zip Code \_\_\_\_\_

AGE GROUP: Under 25  Between 25 and 35  Between 35 and 45  Between 45 and 55  Over 55

GENDER: Male  Female  HOUSING: Own  Rent

EDUCATION: High School Diploma  Some College  College Degree  Professional Degree

HOUSEHOLD INCOME: Under 30,000  Between 30,000 and 50,000  Between 50,000 and 100,000  Over 100,000

DO YOU OWN A DOG: Yes  No  DO YOU HAVE AN IRRIGATION SYSTEM: Yes  No

What is your main source of news / information about the City of Kings Mountain \_\_\_\_\_

FLIP OVER FOR SURVEY

STORMWATER BASELINE SURVEY 2012

1. How would you finish this sentence? Rinsing out a paintbrush in the street gutter or washing a car on the street...  is okay, because the water flows into the sewer and to the wastewater treatment plant.

is not a good idea, because the water flows to the nearest stream or pond.

I have no idea.

2. How much of a water quality problem for our local streams do you feel each of the following pose?

	Serious	Moderate	Small	No Problem
Fertilizer run off from yards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides run off from yards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dirt/Silt run off from Construction sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pet Waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automotive items such as oil and antifreeze?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. In the past year have you witness anyone dumping into a storm drain in Kings Mountain? Yes   
No

4. Do you or any of your neighbors blow their grass clippings into the street? Yes  No

5. Would you be willing to bag or compost your grass clipping/leaves if you were aware of the cost to our citizens to clean storm drains not to mention the debris that this puts into our streams? Yes   
No

6. What is the estimated percentage of impervious area ( not grass) of your property?  
10%  20%  30%  40%  50%  60%  70%  80%  90%  100%

*If you would be willing to volunteer for a community stormwater event please put your contact information on our sign up sheet.*





