Stormwater Pollution Prevention Plan

Borough of Harrington Park
Bergen County
NJG0151718
Annual Review Date: *December 22, 2023*

Stormwater Program Coordinator: *Steven Nappi, Superintendent of Public Works*

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Form 1 – Team Members

Stormwater Program Coordinator (SPC)			
Name and Title	Steven Nappi, Superintendent of Public Works		
Phone	201-768-0944	Email	hpdpw@harringtonparknj.gov
Individual(s) Responsible for Major Development Project Stormwater Management Review			
Name and Title	Gregory J. Polyniak, P.E., P.P., C.M.E., C.P.W.M., Neglia Group - Borough Engineering Representative		
Phone	201-939-8805, ext. 167	Email	gpolyniak@negliagroup.com
Name and Title	Anthony Kurus, P.E., P.P., C.M.E., Neglia Group – Borough Engineering Representative		
Phone	201-939-8805, ext. 125	Email	akurus@negliagroup.com
Name and Title	John Dunlea, P.E., Neglia Group – Borough Engineering Representative		
Phone	201-939-8805, ext. 119	Email	jdunlea@negliagroup.com
Other Municipal Stormwater Team Members			
Name and Title	Paul A. Hoelscher - Mayor		
Phone	201-768-1700	Email	mayorhoelscher@harringtonparknj.gov
Name and Title	Leena Abaza, R.M.C., C.M.C., C.M.R. - Borough Clerk		
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Name and Title	Kunjesh Trivedi - Borough Administrator/Chief Financial Officer		
Phone	201-768-8185	Email	administratorcfo@harringtonparknj.gov
Name and Title	Scott Wickersheim - Construction Official		
Phone	201-768-2585	Email	constructionofficial@harringtonparknj.gov

Shared/Contracted Service Providers		
Provider Name	Service Provided	Term of Service

Form 2 – Revision History

Revision Date	Form # Changed	Reason for Revision (Updates to staff, policy, webpage, etc.)
03-25-2005	All	Initial Plan Preparation
03-16-2010	All	Revisions per NJDEP Requirements
09-21-2018	All	Revisions per NJDEP Requirements
06-23-2020	All	Revisions per NJDEP Requirements
12-22-2023	All	Revisions per NJDEP Requirements

Form 3 – Public Announcements

Part IV.B. and C.

1. Provide the link to the dedicated stormwater webpage for your municipality.
https://www.harringtonparknj.gov/departments/stormwater
2. List the name and title of person(s) responsible for stormwater webpage postings/updates.
Steven Nappi, Superintendent of Public Works Leena Abaza, Borough Clerk
3. List the newspapers, social media outlets, websites, direct mailings (Email or postal), and other communication approaches typically used to inform/educate the public on stormwater program information and related events/activities.
Public Notices: https://www.harringtonparknj.gov/government/news https://www.harringtonparknj.gov/government/documents/newsletters Meeting Documents: https://www.harringtonparknj.gov/government/documents/meeting-documents

Form 4 – Post-Construction Stormwater Management in New Development and Redevelopment

Part IV.E.

1. How does the municipality define "major development"? If it is different from the definition in N.J.A.C. 7:8, explain the difference.
"Major Development" is defined by the Borough as any development that provides for ultimately disturbing one or more acres of land or increasing impervious surface by one-quarter acre or more. Disturbance, for the purpose of this rule, is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cuffing, or removing of vegetation. Projects undertaken by any government agency which otherwise meet the definition of "major development" but which do not require approval under the Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq., are also considered major development.
2. Is the municipality's stormwater control ordinance (SCO) the same as or more stringent than NJDEP's model SCO? If more stringent, explain the difference.
The Borough of Harrington Park's stormwater control ordinance is the same as the NJDEP's model SCO.
3. Describe the process for reviewing major development project applications for compliance with the SCO and Residential Site Improvement Standards (RSIS).
All applications for Major Development projects are submitted to the Planning Board and Zoning Board Secretaries. Once received, the submission is forwarded to the Planning Board / Zoning Board of Adjustment Engineers and Planners. The Engineer reviews the plans to confirm compliance with the Stormwater Control Ordinance and Residential Site Improvement Standards. The Planning Board and Zoning Board of Adjustment will not approve any applications that are not in compliance with the SCO and RSIS unless there is a Condition of Approval requiring compliance. If the Condition is included within the Resolution, the Applicant will not be permitted to secure a building permit until compliance is satisfied.

4. Does your municipality have a mitigation plan included in your Municipal Stormwater Management Plan and Stormwater Control Ordinance? Indicate the location of records of all variances granted.
Yes. Borough Hall maintains all approved applications for major development projects. Address: Borough Hall, 85 Harriot Avenue, Harrington Park, New Jersey, 07640 Stormwater Management Plan: https://www.harringtonparknj.gov/government/forms/public-works/178-stormwater-management-plan-2020/file Stormwater Control Ordinance: https://ecode360.com/13392785
5. Indicate the dates of each iteration of the township's Stormwater Control Ordinance, starting with the initial adoption and including revisions.
Adopted: June 19, 2006
6. Indicate the dates of each iteration of the township's Municipal Stormwater Management Plan, starting with the initial adoption and including revisions.
Date: October 26, 2006 Revised: August 17, 2020

Form 5 – Ordinances

Part IV.F.1.

Ordinance	Date Adopted	Was the DEP model adopted without change? If not, explain how the municipality's is more stringent.	Entity Responsible for Enforcement	Fees & Fines
1. Pet Waste	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
2. Wildlife Feeding	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
3. Litter Control	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
4. Improper Disposal of Waste	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
5. Yard Waste	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
6. Private Storm Drain Inlet Retrofitting	*08/09/2010*	*Yes*	*Code Enforcement Office, Borough Police, and Borough Engineer*	*$2000 Max*
7. Illicit Connections	*03/20/2006*	*Yes*	*Code Enforcement Officer and Borough Police*	*$2000 Max*
8. Privately-Owned Salt Storage			*Code Enforcement Officer and Borough Police*	
9. Tree Removal-Replacement			*Code Enforcement Officer and Borough Police*	

List any additional stormwater-related ordinances the municipality has adopted that address issues beyond the scope of the MS4 permit. Include adoption date, entity responsible for enforcement, and related fees and fines.

No additional stormwater related ordinances beyond the scope of the MS4 permit.

Indicate the location of records associated with ordinances and related violations and enforcement actions below.

All records will be kept at the Borough's Administrative Office and / or Borough Police Department at Borough Hall, 85 Harriot Avenue, Harrington Park, New Jersey.

The Borough of Harrington Park code enforcement officers and local police will enforce these ordinances. If someone is found to be in violation of an ordinance, they will be issued a written warning for first time offenses, and penalties will be issued for subsequent offenses.

Form 6 – Street Sweeping

Part IV.F.2.a.i. and ii.

1. Provide a written description and/or attach a map outlining the sweeping schedule for the following:
   - Segments of municipal roads with storm drain inlets that discharge to surface water (required at least 3 times each year)
   - Segments of municipal roads that do not have storm drain inlets but do discharge to surface water (required at least 1 times each year)

   Note: Only asphalt and concrete roads need to be swept. Roads that do not have storm drain inlets and do not discharge to surface water do not need to be swept.

The Borough of Harrington Park sweeps all municipal curbed roads with inlets, with posted speed limits of 35 mph or less in all areas, with weather and street surface conditions permitting, at least once per month.

All records are kept at the Department of Public Works Office, 66 Schraalenburgh Road, Harrington Park, New Jersey, 07640

2. Indicate if sweeping work is outsourced and if so, describe the arrangement.

The Borough does not provide street sweeping services for other municipalities and does not outsource sweeping.

Form 7 – MS4 Infrastructure

Part IV.F.2-4. and Part IV.G.2-3.

1. Municipal Storm Drain Inlets

a. Describe how you ensure that municipal inlets without permanent wording cast into the design have been properly labelled.
b. Describe how you ensure that municipal and private storm drain inlets have been retrofitted.
c. Describe how you ensure that newly installed storm drain inlets include corresponding catch basins or other BMPs to collect solids.
d. Describe when and how you conduct inspections of storm drain inlets and the criteria used to determine when they need to be cleaned.

a.) The Borough periodically inspects all of the storm drains to see if the inlet labels are still affixed. If not, they are replaced as needed. This occurs at a minimum of once per year.

b.) For almost all inlet locations, the Borough will utilize the NJDOT bicycle safe grate style and (if needed) an Eco-Piece inlet head with a clear space no bigger than two inches across the smallest dimension. Additionally, the Borough has been retrofitting grates during all paving projects with NJDOT bicycle safe grates. All road improvement projects specify compliant storm drain inlets. For any project requiring privately owned storm drains to be retrofitted, the Borough Engineer and the Construction Official inspect the site and to ensure that the inlets are properly retrofitted prior to issuing a final approval and/or Certificate of Occupancy at the end of the project.

c.) Prior to the construction of a new storm inlet, design plans and specifications will be prepared to ensure that the intended stormwater drainage system effectively captures solids. Throughout the building process, there will be frequent inspections to confirm that the storm inlets or other BMPs are being installed correctly and in compliance with the project plans. After the storm drain inlet is built, the system will be checked to confirm it is functioning properly and collecting solids. There will be annual inspections.

d.) The Borough of Harrington Park has implemented an annual storm drain inlet cleaning program to maintain storm drain inlet function and efficiency. All storm drain inlets will be inspected and cleaned as necessary at least once each year. Storm Drain Inlets with no debris will not be cleaned. At the time of cleaning, the storm drain inlets will also be inspected for proper function. Maintenance will be scheduled for those inlets that require improvements.

2. Municipal Catch Basins

a. Describe when and how you conduct inspections of catch basins.
b. Describe the criteria used to determine when catch basins need to be cleaned.

a.) The Borough of Harrington Park has implemented an annual catch basin cleaning program to maintain catch basin function and efficiency. All catch basins will be inspected and cleaned as necessary at least once each year.

b.) Catch basins with no debris will not be cleaned. At the time of cleaning, the catch basins will also be inspected for proper function. Maintenance will be scheduled for those catch basins that require improvements.

3. Municipal Conveyance System

Describe when and how inspections of MS4 conveyance systems are conducted, and the criteria used to determine when they need to be cleaned. Include a description of the equipment and techniques used.

The amount of rainfall, system size, and other variables all affect MS4 conveyance system inspections. Inspections are carried out on a regular basis and following significant rainfall occurrences. The MS4 conveyance system, comprising pipes, culverts, and other structures, will typically be visually inspected as part of the inspection process. To determine whether the system needs to be cleaned depends on its accumulated debris and sediments levels (leaves, branches, etc.).

Equipment and Techniques:
CCTV cameras are used to see into pipelines and channels to identify any obstructions and other problems.

High pressure water is used to flush out debris and sediment from the system. This is done with specialized trucks with water tanks.

Specialized Vacuum trucks are used to clean the debris and sediment.

4. Municipal Outfall Inspections – Stream Scouring

Describe the program in place to detect, investigate, and control localized stream scouring from stormwater outfalls. Include a description of the equipment and techniques used.

The Borough inspects MS4 outfall pipes for scour as needed during times when they are not submerged. The Borough will inspect them a minimum of once a year.

Harrington Park inspects outfalls for signs of scouring. All sites in which scouring is identified will be placed on a prioritized list and repairs will be made in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey. In addition, repairs that do not need NJDEP permits will be addressed first. Harrington Park will follow up each repair with an annual inspection of the site to ensure that scouring has not resumed.

Wherever possible, outfall pipe stream scouring inspections will occur in conjunction with the outfall pipe mapping and/or illicit connection elimination program inspections. All outfall pipes in which scouring had been detected and addressed in the past, should be inspected annually thereafter to ensure the associated stabilization projects were successful. Once it is determined that the scouring repairs have adequately mitigated any subsequent scouring, those outfalls can again be inspected only once during each 5-year permit iteration. The Pipe stream scouring inspection log has been included with this Form.

The Borough maintains inspection logs at the Department of Public Works office, 66 Schraalenburgh Road, Harrington Park, New Jersey, 07640

5. Municipal Outfall Inspections – Illicit Discharge Detection and Elimination

Describe the program in place for conducting visual dry weather inspections of municipally owned or operated outfalls. Include a description of the equipment and techniques used. Record cases of illicit discharges using the DEP's Illicit Connection Inspection Report Form from the Department's main stormwater webpage.

The Borough inspects MS4 outfall pipes for dry weather flows, as needed. during times when they are not submerged.

The Borough inspects for dry weather flows during routine inspections and maintenance of the MS4's. Harrington Park utilizes the NJDEP Illicit Connection Inspection Report Form to conduct these inspections. Each of these forms will be included with Form 12 of the SPPP.

Outfall pipes that are found to have a dry weather flow or evidence of an intermittent non-stormwater flow will be investigated. If Harrington Park or its agents are able to locate the illicit connection / dry weather flow source (and the connection is within the boundaries of the Borough of Harrington Park), Harrington Park will cite the responsible party for being in violation of Harrington Park's municipal code detailing the Illicit Connection Ordinance, if the source is in fact an illicit connection. The Borough will order the responsible party to eliminate the illicit connection via mailed letter.

After the appropriate amount of investigation, if the Borough of Harrington Park is unable to locate the source of the illicit connection, Harrington Park will submit the Closeout Investigation Form with our Annual Inspection and Recertification. If an illicit connection is found to originate from another public entity, the Borough of Harrington Park will report the illicit connection to the Department.

The Borough maintains inspection logs at the Department of Public Works office.

The Borough of Harrington Park has available to residents a non-emergency Public Works telephone number: 201-768-0944.

Residents will be informed during a potential educational material mailing and annual educational events that this number is available for dry weather sightings. The Borough responds to complaints and reports of illicit connections within three (3) months of receipt.

6. Other Municipal Infrastructure

List the types of MS4 infrastructure in your town that require inspection but are not noted above in items 1-5. Describe when and how you conduct inspections of this infrastructure and the criteria used to determine when they need to be maintained and/or cleaned.

N/A

7. Stormwater Facilities Not Owned or Operated by the Municipality

Describe your program for ensuring adequate long-term cleaning, operation, and maintenance of stormwater facilities not owned or operated by the municipality. This should include your plan for ensuring annual inspections are being done on these private properties and describe how you record the locations and logs associated with private infrastructure.

The Borough of Harrington Park has implemented a stormwater facility maintenance program to ensure that all stormwater facilities owned and operated by the Borough function properly. Harrington Park currently operates the following stormwater facilities: storm drain inlets, catch basins, and culverts.

These stormwater facilities will be inspected at least annually to ensure that they are functioning properly. In high-risk areas, preventative maintenance will be performed on all stormwater facilities to ensure proper functioning. Harrington Park's stormwater facility maintenance program will coincide with the catch basin cleaning schedule.

The Borough of Harrington Park ensures adequate long-term cleaning, operation, and preventative and corrective maintenance (including replacement) of installed BMPs through the Stormwater Management Ordinance.

For BMPs on private property that the Borough does not own or operate, the Borough of Harrington Park has adopted and enforces a provision in the ordinance that requires the private entity to perform the operation and maintenance, with penalties if the private entity does not comply. If, for example, the private entity does not perform the required maintenance, the Borough can perform the maintenance and charge the private entity.

8. Infrastructure Records

Indicate the location of records related to stormwater infrastructure inspection, cleaning, maintenance, and repair activities.

The Borough maintains inspection and maintenance logs at the Department of Public Works office for facilities owned or operated by the municipality. A log indicating actions taken to enforce compliance with long term cleaning, operation and maintenance for facilities not owned or operated by the Borough is provided at the Borough Building Department’s office.

Copies of maintenance plans approved by the Borough are maintained at Borough Building Department’s office.

Form 8 – Community-wide Measures

Part IV.F.2.

1. Herbicide Application Management Describe your program for preventing herbicides from being washed into the waters of the State and to prevent erosion caused by de-vegetation.
There will be several actions taken to prevent erosion brought on by de-vegetation as well as the washing of herbicides into state waters. The terrain, soil types, and proximity to waterways will be thoroughly identified to pinpoint the most vulnerable locations. The next phase will include steps to avoid erosion, like managing pesticides to reduce environmental effect and stabilizing the soil with vegetation and other natural methods. The efficacy of the erosion control and herbicide management plan will be regularly monitored to ensure that herbicides are not washed into state waters.
2. Excess Deicing Material Management Describe your program for ensuring that excess salt piles are removed in a timely manner after storm events.
This program will have teams and individuals remove excess salt piles after storm events. The program will include monthly inspections of salt storage facilities to ensure proper storage and handling of salt.
3. Roadside Vegetative Waste Describe your program for ensuring proper pickup, handling, storage, and disposal of wood waste and yard trimmings generated by the permittee along municipal roads or on municipal properties (trimming trees, mowing, etc.).
The Borough will perform regular inspections to ensure compliance with regulations and provide education and training to permittees on proper handling and disposal methods.
4. Roadside Erosion Control Describe your program to detect and repair erosion along municipal roadways.
The Borough conducts regular inspections along roadways to identify areas of erosion along municipal roadways.

Form 9 – Municipal Maintenance Yards & Other Ancillary Operations

Part IV.F.5.

Please complete a separate Form 9 for each yard or site. Indicate the number of yards/sites the municipality owns or operates: 1

1. Site Name and Address

Public Works Department Office
66 Schraalenburgh Road,
Harrington Park, New Jersey, 07640

2. Monthly Site Inspections
Describe the nature of inspections conducted at this site and the location of inspection logs.

Monthly inspections will be conducted to ensure compliance with the SOP.

Inspection logs and tracking forms are located at the Department of Public Works office.

3. Inventory List
List all materials and machinery that are potentially exposed to stormwater.

Materials	**Machinery/Equipment**
Road Salt	DPW / Utility Trucks
Wood Chips	Street Sweeper

4. Discharge of Stormwater from Secondary Containment
Describe the process in place for discharging stormwater from secondary containment areas where outdoor containers are stored.

The Borough does not have secondary containment tanks that discharge stormwater.

5. Fueling Operations
Does fueling occur on site? If so, describe the BMPs in place to minimize contamination of stormwater from fueling activities. If not, explain where fueling takes place.

The Borough does not fuel vehicles on-site. Vehicles are fueled off-site.

6. Vehicle/Equipment Maintenance and Repair
Do you perform maintenance and repair on site? Is this conducted indoors or outdoors? If outdoors, describe the BMPs in place to minimize contamination of stormwater from maintenance and repair activities.

The Borough has a fleet inventory and maintenance management program that tracks repairs made to the vehicles and equipment. Vehicle maintenance is performed indoors. Waste oil and materials are properly disposed of or recycled. Non-chlorinated solvents and environmentally friendly products are used, if possible.

7. Wash Wastewater Containment Do you wash vehicles on site? If so, describe the BMPs in place to minimize contamination of stormwater from these activities. Note that on site containment structures require annual inspections by a NJ licensed professional engineer. If not, explain where vehicle washing takes place.
The Borough washes vehicles within its garage. The Borough constructed floor drains, oil water separators, etc. to connect to the existing sanitary main within Schraalenburgh Road. The necessary and required NJDEP Permits were secured to permit this discharge connection.
8. Salt and Other Granular De-icing Materials Do you store salt and other granular deicing materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
The Borough currently stores its de-icing salt within a permanent salt shed located at the DPW building. At the completion of loading and unloading activities, the Borough DPW inspects for spilled salt with all materials being cleaned up as soon as practical. The Borough does not utilize sand.
9. Aggregate Material, Wood Chips, and Finished Leaf Compost Do you store these materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
The Borough does not store aggregate material or construction debris at its DPW complex.
10. Cold Patch Asphalt Do you store these materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
The Borough stores cold patch asphalt in lid-sealed 5-gallon buckets that are kept inside a garage.
11. Street Sweepings and Storm Sewer Cleanout Materials Do you store these materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
The Borough streets are swept a minimum of once a month. Street sweepings and catch basin clean outs are dumped on a pad and promptly loaded into a dumpster. That dumpster is regularly transported to a private disposal facility.
12. Construction and Demolition Waste, Wood Waste, and Yard Trimmings Do you store these materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
Yard trimmings and wood waste are collected weekly at curbside. They are packed into a truck and transported regularly. They are disposed of at private disposal facility.

13. Scrap Tires Do you store these materials on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater from these materials. If not, explain where these materials are stored.
The Borough does not collect or store scrap tires.
14. Inoperable Vehicles and Equipment Do you store inoperable vehicles or equipment on site? If so, describe how they are stored and the BMPs in place to minimize contamination of stormwater. If not, explain where they are stored.
The Borough does not currently possess any inoperable vehicles or equipment. If a vehicle or equipment becomes inoperable, the Borough has it repaired immediately. If the inoperable vehicle/equipment is at the end of its useful life span, it goes to auction.

Form 10 – Training

Part IV.F.6-10.

Stormwater Program Coordinators
Describe the training provided for the municipal Stormwater Program Coordinator.
To guarantee the municipal Stormwater Program Coordinator (MS4 Coordinator) is provided with the appropriate education and services to perform their duties, NJDEP provides training and resources on stormwater management and related topics. *https://dep.nj.gov/stormwater/stormwater-training/#dpw-training*

Topic	**Municipal Employees** Examples: in-person or virtual group sessions, e-Learning, field trainings, and videos
Describe the training provided for municipal staff.	
SPPP	Per Videos
Construction Site Stormwater Runoff	Per Videos
Post-Construction Stormwater Management in New and Redevelopment	Per Videos
Community-wide Ordinances	Per Videos
Community-wide Measures	Per Videos

Stormwater Facilities Maintenance	Per Videos
Municipal Maintenance Yards and Other Ancillary Operations	Per Videos
MS4 Mapping	Per Videos
Outfall Stream Scouring	Per Videos
Illicit Discharge Detection and Elimination	Per Videos

Stormwater Management Design Reviewers
Describe the training provided for individuals responsible for reviews and approvals of stormwater management designs.
All individuals responsible for reviews and approvals of stormwater management designs must attend the first available class upon assignment as a review and every five years thereafter. This is a two-day training conducted by DEP staff. Training dates and locations are posted at www.nj.gov/dep/stormwater/training.htm.

Municipal Board and Governing Body Members
Describe the training provided for members of the planning/zoning board and municipal council.
Training is in the form of online videos, posted at www.nj.gov/dep/stormwater/training.htm. Within 6 months of commencing duties, the video - *Asking the Right Questions in Stormwater Review Training Tool* will be watched. Once per term thereafter, at least one of the online DEP videos in the series available under Post-Construction Stormwater Management will be watched.

Training Records
Indicate the location of training records for the above required training.
All training records are located at the DPW office. Training records for Department of Public Works Employees are maintained at the Department of Public Works. All other Departments maintain their own training records.

Form 11 – MS4 Mapping

Part IV.G.1.

1. Provide a link to the most current MS4 outfall/infrastructure map.	
https://www.harringtonparknj.gov/government/forms/public-works/180-stormwater-outfall-map/file	
2. Indicate the total of each type of MS4 infrastructure listed below (due 01 Jan 2026).	
a. MS4 outfalls	*70*
b. MS4 ground water discharge points (basins or overland flow infiltration areas)	*On-Going*
c. MS4 interconnections	*On-Going*
d. MS4 storm drain inlets	*On-Going*
e. MS4 manholes	*On-Going*
f. Length of conveyance (channels, pipes, ditches, etc.)	*On-Going*
g. MS4 pump stations	*On-Going*
h. MS4 stormwater facilities (any that are not listed above)	*On-Going*
i. Maintenance yard(s) and other ancillary operations	*On-Going*
3. Describe how the municipality's outfall/infrastructure map is reviewed and updated to reflect any new or newly identified MS4 infrastructure (e.g., an outfall is closed, a new basin is constructed, ownership of an outfall has changed, etc.).	
Reviewed yearly based upon new municipal infrastructure projects and any approved major developments. The MS4 Outfalls data was last submitted to the NJDEP on July 6, 2020.	
4. Describe how the municipality will create and update its MS4 Infrastructure Map.	
MS4 Infrastructure Map is in the process of being created in GIS and will be updated on a regular and as-needed basis.	

Form 12 – Watershed Improvement Plan

Part IV.H.

1. Describe how your municipality is developing its Watershed Improvement Plan.
The Borough of Harrington Park is collecting the appropriate data to meet the requirements of the Phase 1, Watershed Inventory Report due on January 1, 2026. In the Borough of Harrington Park, there is a total maximum daily loads for fecal coliform to address 32 streams in the Northeast Water Region: https://www.nj.gov/dep/wms/bears/docs/Northeast%20FC_adoption.pdf https://www.nj.gov/dep/wms/bears/docs/Hackensack_TMDL%20_nickel.pdf (as per https://www.nj.gov/dep/dwq/msrp-tmdl-rh.htm). Within the Borough of Harrington Park there are no waterways that have water quality impairments as per the Department's Integrated Report (as per the 303(d) list portion of the Department's Integrated Report at https://www.epa.gov/sites/default/files/2020-01/documents/2016_final_integrated_report_appendix_b.pdf). To reduce stormwater flooding, the Borough ensures the prioritization of areas of flooding for corrective actions based on human health, safety, environmental impacts, and frequency of occurrence.
2. Describe any regional projects or collaboration efforts with other municipalities.
The Borough does not have any projects or collaborations with other municipalities.
3. Indicate the location of records related to all public information sessions and meetings for discussions of the Watershed Improvement Plan.
All records related to public information sessions and meetings for discussions of the Watershed Improvement Plan will be kept on file at the Harrington Park Borough Hall.

Attachment E – Best Management Practices for Municipal Maintenance Yards and Other Ancillary Operations

The Tier A Municipality shall implement the following practices at municipal maintenance yards and other ancillary operations owned or operated by the municipality. Inventory of Materials and Machinery, and Inspections and Good Housekeeping shall be conducted at all municipal maintenance yards and other ancillary operations. All other Best Management Practices shall be conducted whenever activities described below occur. Ancillary operations include but are not limited to impound yards, permanent and mobile fueling locations, and yard trimmings and wood waste management sites.

Inventory of Materials and Machinery

The SPPP shall include a list of all materials and machinery located at municipal maintenance yards and ancillary operations which could be a source of pollutants in a stormwater discharge. The materials in question include, but are not limited to: raw materials; intermediate products; final products; waste materials; by-products; machinery and fuels; and lubricants, solvents, and detergents that are related to the municipal maintenance yard operations and ancillary operations. Materials or machinery that are not exposed to stormwater at the municipal maintenance yard or related to its operations do not need to be included.

Inspections and Good Housekeeping

1. Inspect the entire site, including the site periphery, monthly (under both dry and wet conditions, when possible). Identify conditions that would contribute to stormwater contamination, illicit discharges or negative impacts to the Tier A Municipality's MS4. Maintain an inspection log detailing conditions requiring attention and remedial actions taken for all activities occurring at Municipal Maintenance Yards and Other Ancillary Operations. This log must contain, at a minimum, a record of inspections of all operations listed in Part IV.B.5.c. of this permit including dates and times of the inspections, and the name of the person conducting the inspection and relevant findings. This log must be kept on-site with the SPPP and made available to the Department upon request. See the Tier A Municipal Guidance document (www.nj.gov/dep/dwq/tier_a_guidance.htm) for additional information.

2. Conduct cleanups of spills of liquids or dry materials immediately after discovery. All spills shall be cleaned using dry cleaning methods only. Clean up spills with a dry, absorbent material (i.e., kitty litter, sawdust, etc.) and sweep the rest of the area. Dispose of collected waste properly. Store clean-up materials, spill kits and drip pans near all liquid transfer areas, protected from rainfall.

3. Properly label all containers. Labels shall be legible, clean and visible. Keep containers in good condition, protected from damage and spillage, and tightly closed when not in use. When practical, store containers indoors. If indoor storage is not practical, containers may be stored outside if covered and placed on spill platforms or clean pallets. An area that is graded and/or bermed to prevent run-through of stormwater may be used in place of spill platforms or clean pallets. Outdoor storage locations shall be regularly maintained.

Fueling Operations

1. Establish, maintain and implement standard operating procedures to address vehicle fueling; receipt of bulk fuel deliveries; and inspection and maintenance of storage tanks, including the associated piping and fuel pumps.

   a. Place drip pans under all hose and pipe connections and other leak-prone areas during bulk transfer of fuels.

   b. Block storm sewer inlets, or contain tank trucks used for bulk transfer, with temporary berms or temporary absorbent booms during the transfer process. If temporary berms or booms are being used instead of blocking the storm sewer inlets, all hose connection points associated with the transfer of fuel shall be within the temporarily bermed or boomed area during the loading/unloading of bulk fuels. A trained employee shall be present to supervise the bulk transfer of fuel.

   c. Clearly post, in a prominent area of the facility, instructions for safe operation of fueling equipment. Include all of the following:
      - "Topping off of vehicles, mobile fuel tanks, and storage tanks is strictly prohibited"
      - "Stay in view of fueling nozzle during dispensing"
      - Contact information for the person(s) responsible for spill response.

   d. Immediately repair or replace any equipment, tanks, pumps, piping and fuel dispensing equipment found to be leaking or in disrepair.

Discharge of Stormwater from Secondary Containment

The discharge pipe/outfall from a secondary containment area (e.g. fuel storage, de-icing solution storage, brine solution) shall have a valve and the valve shall remain closed at all times except as described below. A municipality may discharge stormwater accumulated in a secondary containment area if a visual inspection is performed to ensure that the contents of aboveground storage tank have not come in contact with the stormwater to be discharged. Visual inspections are only effective when dealing with materials that can be observed, like petroleum. If the contents of the tank are not visible in stormwater, the municipality shall rely on previous tank inspections to determine with some degree of certainty that the tank has not leaked. If the municipality cannot make a determination with reasonable certainty that the stormwater in the secondary containment area is uncontaminated by the contents of the tank, then the stormwater shall be hauled for proper disposal.

Vehicle Maintenance

1. Operate and maintain equipment to prevent the exposure of pollutants to stormwater.

2. Whenever possible, conduct vehicle and equipment maintenance activities indoors. For projects that must be conducted outdoors, and that last more than one day, portable tents or covers shall be placed over the equipment being serviced when not being worked on, and drip pans shall be used at all times. Use designated areas away from storm drains or block storm drain inlets when vehicle and equipment maintenance is being conducted outdoors.

On-Site Equipment and Vehicle Washing and Wash Wastewater Containment

1. Manage any equipment and vehicle washing activities so that there are no unpermitted discharges of wash wastewater to storm sewer inlets or to waters of the State.

2. Tier A Municipalities which cannot discharge wash wastewater to a sanitary sewer or which cannot otherwise comply with 1, above, may temporarily contain wash wastewater prior to proper disposal under the following conditions:

   a. Containment structures shall not leak. Any underground tanks and associated piping shall be tested for integrity every 3 years using appropriate methods determined by "*The List of Leak Detection Evaluations for Storage Tank Systems*" created by the National Work Group on Leak Detection Evaluations (NWGLDE) or as determined appropriate and certified by a professional engineer for the site specific containment structure(s).

   b. For any cathodically protected containment system, provide a passing cathodic protection survey every three years.

   c. Operate containment structures to prevent overfilling resulting from normal or abnormal operations, overfilling, malfunctions of equipment, and human error. Overfill prevention shall include manual sticking/gauging of the tank before each use unless system design prevents such measurement. Tank shall no longer accept wash wastewater when determined to be at 95% capacity. Record each measurement to the nearest ½ inch.

   d. Before each use, perform inspections of all visible portions of containment structures to ensure that they are structurally sound, and to detect deterioration of the wash pad, catch basin, sump, tank, piping, risers, walls, floors, joints, seams, pumps and pipe connections or other containment devices. The wash pad, catch basin, sump and associated drains should be kept free of debris before each use. Log dates of inspection; inspector's name, and conditions. This inspection is not required if system design prevents such inspection.

   e. Containment structures shall be emptied and taken out of service immediately upon detection of a leak. Complete all necessary repairs to ensure structural integrity prior to placing the containment structure back into service. Any spills or suspected release of hazardous substances shall be immediately reported to the NJDEP Hotline (1-877-927-6337) followed by a site investigation in accordance with N.J.A.C. 7:26C and N.J.A.C 7:26E if the discharge is confirmed.

   f. All equipment and vehicle wash wastewater placed into storage must be disposed of in a legally permitted manner (e.g. pumped out and delivered to a duly permitted and/or approved wastewater treatment facility).

   g. Maintain a log of equipment and vehicle wash wastewater containment structure clean-outs including date and method of removal, mode of transportation (including name of hauler if applicable) and the location of disposal. See Underground Vehicle Wash Water Storage Tank Use Log at end of this attachment.

   h. Containment structures shall be inspected annually by a NJ licensed professional engineer. The engineer shall certify the condition of all structures including: wash pad, catch basin,

sump, tank, piping, risers to detect deterioration in the, walls, floors, joints, seams, pumps and pipe connections or other containment devices using the attached Engineer's Certification of Annual Inspection of Equipment and Vehicle Wash Wastewater Containment Structure. This certification may be waived for self-contained systems on a case-by-case basis. Any such waiver would be issued in writing by the Department.

3. Maintain all logs, inspection records, and certifications on-site. Such records shall be made available to the Department upon request.

Salt and De-icing Material Storage and Handling

1. Store material in a permanent structure.
2. Perform regular inspections and maintenance of storage structure and surrounding area.
3. Minimize tracking of material from loading and unloading operations.
4. During loading and unloading:
   a. Conduct during dry weather, if possible;
   b. Prevent and/or minimize spillage; and
   c. Minimize loader travel distance between storage area and spreading vehicle.
5. Sweep (or clean using other dry cleaning methods):
   a. Storage areas on a regular basis;
   b. Material tracked away from storage areas;
   c. Immediately after loading and unloading is complete.
6. Reuse or properly discard materials collected during cleanup.
7. Temporary outdoor storage is permitted only under the following conditions:
   a. A permanent structure is under construction, repair or replacement;
   b. Stormwater run-on and de-icing material run-off is minimized;
   c. Materials in temporary storage are tarped when not in use;
   d. The requirements of 2 through 6, above are met; and
   e. Temporary outdoor storage shall not exceed 30 days unless otherwise approved in writing by the Department;
8. Sand must be stored in accordance with Aggregate Material and Construction Debris Storage below.

Aggregate Material and Construction Debris Storage

1. Store materials such as sand, gravel, stone, top soil, road millings, waste concrete, asphalt, brick, block and asphalt based roofing scrap and processed aggregate in such a manner as to minimize stormwater run-on and aggregate run-off via surface grading, dikes and/or berms (which may include sand bags, hay bales and curbing, among others) or three sided storage bays. Where possible the open side of storage bays shall be situated on the upslope. The area in front of storage bays and adjacent to storage areas shall be swept clean after loading/unloading.

2. Sand, top soil, road millings and processed aggregate may only be stored outside and uncovered if in compliance with item 1 above and a 50-foot setback is maintained from surface water bodies, storm sewer inlets, and/or ditches or other stormwater conveyance channels.

3. Road millings must be managed in conformance with the "Recycled Asphalt Pavement and Asphalt Millings (RAP) Reuse Guidance" (see www.nj.gov/dep/dshw/rrtp/asphaltguidance.pdf) or properly disposed of as solid waste pursuant to N.J.A.C. 7:26-1 et seq.

4. The stockpiling of materials and construction of storage bays on certain land (including but not limited to coastal areas, wetlands and floodplains) may be subject to regulation by the Division of Land Use Regulation (see www.nj.gov/dep/landuse/ for more information).

Street Sweepings, Catch Basin Clean Out, and Other Material Storage

1. For the purposes of this permit, this BMP is intended for road cleanup materials as well as other similar materials. Road cleanup materials may include but are not limited to street sweepings, storm sewer clean out materials, stormwater basin clean out materials and other similar materials that may be collected during road cleanup operations. These BMPs do not cover materials such as liquids, wastes which are removed from municipal sanitary sewer systems or material which constitutes hazardous waste in accordance with N.J.A.C. 7:26G-1.1 et seq.

2. Road cleanup materials must be ultimately disposed of in accordance with N.J.A.C. 7:26-1.1 et seq. See the "Guidance Document for the Management of Street Sweepings and Other Road Cleanup Materials" (www.nj.gov/dep/dshw/rrtp/sweeping.htm).

3. Road cleanup materials placed into storage must be, at a minimum:

   a. Stored in leak-proof containers or on an impervious surface that is contained (e.g. bermed) to control leachate and litter; and

   b. Removed for disposal (in accordance with 2, above) within six (6) months of placement into storage.

Yard Trimmings and Wood Waste Management Sites

1. These practices are applicable to any yard trimmings or wood waste management site:

   a. Owned and operated by the Tier A Municipality;
      i. For staging, storing, composting or otherwise managing yard trimmings, or
      ii. For staging, storing or otherwise managing wood waste, and

   b. Operated in compliance with the Recycling Rules found at N.J.A.C. 7:26A.

2. Yard trimmings or wood waste management sites must be operated in a manner that:

   a. Diverts stormwater away from yard trimmings and wood waste management operations; and
   b. Minimizes or eliminates the exposure of yard trimmings, wood waste and related materials to stormwater.

3. Yard trimmings and wood waste management site specific practices:

   a. Construct windrows, staging and storage piles:
      i. In such a manner that materials contained in the windrows, staging and storage piles (processed and unprocessed) do not enter waterways of the State;
      ii. On ground which is not susceptible to seasonal flooding;
      iii. In such a manner that prevents stormwater run-on and leachate run-off (e.g. use of covered areas, diversion swales, ditches or other designs to divert stormwater from contacting yard trimmings and wood waste).

   b. Maintain perimeter controls such as curbs, berms, hay bales, silt fences, jersey barriers or setbacks, to eliminate the discharge of stormwater runoff carrying leachate or litter from the site to storm sewer inlets or to surface waters of the State.

   c. Prevent on-site storm drain inlets from siltation using controls such as hay bales, silt fences, or filter fabric inlet protection.

   d. Dry weather run-off that reaches a municipal stormwater sewer system is an illicit discharge. Possible sources of dry weather run-off include wetting of piles by the site operator; uncontrolled pile leachate or uncontrolled leachate from other materials stored at the site.

   e. Remove trash from yard trimmings and wood waste upon receipt.

   f. Monitor site for trash on a routine basis.

   g. Store trash in leak-proof containers or on an impervious surface that is contained (e.g. bermed) to control leachate and litter;

   h. Dispose of collected trash at a permitted solid waste facility.

   i. Employ preventative tracking measures, such as gravel, quarry blend, or rumble strips at exits.

Roadside Vegetation Management

1. Tier A Municipalities shall restrict the application of herbicides along roadsides in order to prevent it from being washed by stormwater into the waters of the State and to prevent erosion caused by de-vegetation, as follows: Tier A Municipalities shall not apply herbicides on or adjacent to storm drain inlets, on steeply sloping ground, along curb lines, and along unobstructed shoulders. Tier A Municipalities shall only apply herbicides within a 2 foot radius around structures where overgrowth presents a safety hazard and where it is unsafe to mow.

Illicit Connection Inspection Report Form

Highway Agency Information

Highway Agency: _____

NJPDES # :NJG _____ PI ID #: _____

Team Member: _____

Date _____ Effective Date of Permit Authorization (EDPA): _____

Outfall #: _____ Location: _____

Receiving Waterbody: _____

1. Is there a dry weather flow? Y ( ) N ( )
2. If "YES", what is the outfall flow estimate? _____ gpm
   (flow sample should be kept for further testing, and this form will need to be submitted with the Annual Report and Certification)
3. Are there any indications of an intermittent flow? Y ( ) N ( )
4. If you answered "**NO**" to BOTH question #1 and #3, there is probably not an illicit connection and you can skip to question #7.
   (NOTE: This form **does not** need to be submitted to the Department, but should be kept with your SPPP.)

   If you answered "**YES**" to either question, please continue on to question #5.
   (NOTE: This form will need to be submitted to the Department with the Annual Report and Certification.)

5. **PHYSICAL OBSERVATIONS**:

(a) **ODOR**: none sewage sulfide oil gas rancid/sour other: _____

(b) **COLOR**: none yellow brown green red gray other: _____

(c) **TURBIDITY**: none cloudy opaque

(d) **FLOATABLES**: none petroleum sheen sewage other: _____

(e) **DEPOSITS/STAINS**: none sediment oily other: _____

(f) **VEGETATION CONDITIONS**: normal excessive growth inhibited growth

(g) **DAMAGE TO OUTFALL STRUCTURES**:

IDENTIFY STRUCTURE: _____

DAMAGE: none concrete spalling/cracking peeling paint
metal corrosion other damage _____

6. **ANALYSES OF OUTFALL FLOW SAMPLE:**
   * field calibrate instruments in accordance with manufacturer's instructions prior to testing.

(a) **DETERGENTS**: _____ mg/L

(if sample is greater than 0.06 mg/L, the sample is contaminated with detergents [which may be from sanitary wastewater or other sources]. Further testing is required and this outfall should be given the highest priority.)

(if the sample is not greater than 0.06 mg/L and it does not show physical characteristics of sanitary wastewater [e.g., odor, floatables, and/or color] it is unlikely that it is from sanitary wastewater sources, yet there may still be an illicit connection of industrial wastewater, rinse water, backwash or cooling water. Skip to question #6c.)

(b) **AMMONIA (as N) TO POTASSIUM RATIO**: _____

(if the Ammonia to Potassium Ratio is greater than 0.6:1, then it is likely that the pollutant is sanitary sewage)

(if the Ammonia to Potassium Ratio is less than or equal to 0.06:1, then the pollutant is from another washwater source.)

(c) **FLUORIDE**: _____ mg/L

(if the fluoride levels are between 1.0 and 2.5 mg/L, then the flow is most likely from fluoride treated potable water.)

(if the sample tests below a detection limit of 0.1 mg/L for fluoride, it is likely to be from groundwater infiltration, springs or streams. In some cases, however, it is possible that the discharge could originate from an onsite well used for industrial cooling water which will test non-detect for both detergents and fluoride. To differentiate between these cooling water discharges and ground water infiltration, you will have to rely on temperature.)

(d) **TEMPERATURE**: _____ °F

(if the temperature of the sample is over 70°F, it is most likely cooling water)

(if the temperature of the sample is under 70°F, it is most likely from ground water infiltration)

7. Is there a suspected illicit connection? Y ( ) N ( )

   If "**YES**", what is the suspected source? _____

   If "**NO**", skip to signature block on the bottom of this page.

8. Has the investigation of the suspected illicit connection been completed? Y ( ) N ( )

   If "**YES**", proceed to question #9.

   If "**NO**", skip to signature block on the bottom of this page.

9. Was the source of the illicit connection found? Y ( ) N ( )

   If "**YES**", identify the source (including whether source is from Highway Agency or another entity). _____

   What plan of action will follow to eliminate the illicit connection or report the illicit connection to the NJDEP?

   Resolution: _____

   _____

   _____

   If "**NO**", complete the Closeout Investigation Form and attach it to this Illicit Connection Inspection Report Form.

Inspector's Name: _____

Title: _____

Signature: _____

Date: _____

If there is a dry weather flow or evidence of an intermittent flow, be sure to include this form with your Annual Report and Certification.

Closeout Investigation Form

Municipality Information

Municipality:____ County ____

NJPDES # : **NJG**____PI ID #: ____

Team Member / Title: ____

Outfall #: ____Location: ____

Receiving Waterbody: ____

Basis for Submittal:

(☐) A non-stormwater discharge was found, but no source was located within six months.

(☐) An intermittent non-stormwater discharge was observed, and three unsuccessful investigations were conducted to investigate the discharge while it was flowing.

Describe each phase of your investigation, including dates. Attach additional pages as necessary:

Inspector's Name: ____

Title: ____

Signature: _____

Date: ____

Complete and attach this form to the appropriate Illicit Connection Inspection Report Form and submit with the Annual Report and Certification.

Illicit Connection Inspection Report Form

Highway Agency Information

Highway Agency: _____

NJPDES # :NJG _____ PI ID #: _____

Team Member: _____

Date _____ Effective Date of Permit Authorization (EDPA): _____

Outfall #: _____ Location: _____

Receiving Waterbody: _____

1. Is there a dry weather flow? Y ( ) N ( )
2. If "YES", what is the outfall flow estimate? _____ gpm
   (flow sample should be kept for further testing, and this form will need to be submitted with the Annual Report and Certification)
3. Are there any indications of an intermittent flow? Y ( ) N ( )
4. If you answered "**NO**" to BOTH question #1 and #3, there is probably not an illicit connection and you can skip to question #7.
   (NOTE: This form **does not** need to be submitted to the Department, but should be kept with your SPPP.)

   If you answered "**YES**" to either question, please continue on to question #5.
   (NOTE: This form will need to be submitted to the Department with the Annual Report and Certification.)

5. **PHYSICAL OBSERVATIONS**:

(a) **ODOR**: none sewage sulfide oil gas rancid/sour other: _____

(b) **COLOR**: none yellow brown green red gray other: _____

(c) **TURBIDITY**: none cloudy opaque

(d) **FLOATABLES**: none petroleum sheen sewage other: _____

(e) **DEPOSITS/STAINS**: none sediment oily other: _____

(f) **VEGETATION CONDITIONS**: normal excessive growth inhibited growth

(g) **DAMAGE TO OUTFALL STRUCTURES**:

IDENTIFY STRUCTURE: _____

DAMAGE: none concrete spalling/cracking peeling paint
metal corrosion other damage _____

6. **ANALYSES OF OUTFALL FLOW SAMPLE:**
   * field calibrate instruments in accordance with manufacturer's instructions prior to testing.

(a) **DETERGENTS**: _____ mg/L

(if sample is greater than 0.06 mg/L, the sample is contaminated with detergents [which may be from sanitary wastewater or other sources]. Further testing is required and this outfall should be given the highest priority.)

(if the sample is not greater than 0.06 mg/L and it does not show physical characteristics of sanitary wastewater [e.g., odor, floatables, and/or color] it is unlikely that it is from sanitary wastewater sources, yet there may still be an illicit connection of industrial wastewater, rinse water, backwash or cooling water. Skip to question #6c.)

(b) **AMMONIA (as N) TO POTASSIUM RATIO**: _____

(if the Ammonia to Potassium Ratio is greater than 0.6:1, then it is likely that the pollutant is sanitary sewage)

(if the Ammonia to Potassium Ratio is less than or equal to 0.06:1, then the pollutant is from another washwater source.)

(c) **FLUORIDE**: _____ mg/L

(if the fluoride levels are between 1.0 and 2.5 mg/L, then the flow is most likely from fluoride treated potable water.)

(if the sample tests below a detection limit of 0.1 mg/L for fluoride, it is likely to be from groundwater infiltration, springs or streams. In some cases, however, it is possible that the discharge could originate from an onsite well used for industrial cooling water which will test non-detect for both detergents and fluoride. To differentiate between these cooling water discharges and ground water infiltration, you will have to rely on temperature.)

(d) **TEMPERATURE**: _____ °F

(if the temperature of the sample is over 70°F, it is most likely cooling water)

(if the temperature of the sample is under 70°F, it is most likely from ground water infiltration)

7. Is there a suspected illicit connection? Y ( ) N ( )

   If "**YES**", what is the suspected source? _____

   If "**NO**", skip to signature block on the bottom of this page.

8. Has the investigation of the suspected illicit connection been completed? Y ( ) N ( )

   If "**YES**", proceed to question #9.

   If "**NO**", skip to signature block on the bottom of this page.

9. Was the source of the illicit connection found? Y ( ) N ( )

   If "**YES**", identify the source (including whether source is from Highway Agency or another entity). _____

   What plan of action will follow to eliminate the illicit connection or report the illicit connection to the NJDEP?

   Resolution: _____

   _____

   _____

   If "**NO**", complete the Closeout Investigation Form and attach it to this Illicit Connection Inspection Report Form.

Inspector's Name: _____

Title: _____

Signature: _____

Date: _____

If there is a dry weather flow or evidence of an intermittent flow, be sure to include this form with your Annual Report and Certification.

Closeout Investigation Form

Municipality Information

Municipality:____ County ____

NJPDES # : **NJG**____PI ID #: ____

Team Member / Title: ____

Outfall #: ____Location: ____

Receiving Waterbody: ____

Basis for Submittal:

(☐) A non-stormwater discharge was found, but no source was located within six months.

(☐) An intermittent non-stormwater discharge was observed, and three unsuccessful investigations were conducted to investigate the discharge while it was flowing.

Describe each phase of your investigation, including dates. Attach additional pages as necessary:

Inspector's Name: ____

Title: ____

Signature: _____

Date: ____

Complete and attach this form to the appropriate Illicit Connection Inspection Report Form and submit with the Annual Report and Certification.

Illicit Connection Inspection Report Form

Highway Agency Information

Highway Agency: _____

NJPDES # :NJG _____ PI ID #: _____

Team Member: _____

Date _____ Effective Date of Permit Authorization (EDPA): _____

Outfall #: _____ Location: _____

Receiving Waterbody: _____

1. Is there a dry weather flow? Y ( ) N ( )
2. If "YES", what is the outfall flow estimate? _____ gpm
   (flow sample should be kept for further testing, and this form will need to be submitted with the Annual Report and Certification)
3. Are there any indications of an intermittent flow? Y ( ) N ( )
4. If you answered "**NO**" to BOTH question #1 and #3, there is probably not an illicit connection and you can skip to question #7.
   (NOTE: This form **does not** need to be submitted to the Department, but should be kept with your SPPP.)

   If you answered "**YES**" to either question, please continue on to question #5.
   (NOTE: This form will need to be submitted to the Department with the Annual Report and Certification.)

5. **PHYSICAL OBSERVATIONS**:

(a) **ODOR**: none sewage sulfide oil gas rancid/sour other: _____

(b) **COLOR**: none yellow brown green red gray other: _____

(c) **TURBIDITY**: none cloudy opaque

(d) **FLOATABLES**: none petroleum sheen sewage other: _____

(e) **DEPOSITS/STAINS**: none sediment oily other: _____

(f) **VEGETATION CONDITIONS**: normal excessive growth inhibited growth

(g) **DAMAGE TO OUTFALL STRUCTURES**:

IDENTIFY STRUCTURE: _____

DAMAGE: none concrete spalling/cracking peeling paint
metal corrosion other damage _____

6. **ANALYSES OF OUTFALL FLOW SAMPLE:**
   * field calibrate instruments in accordance with manufacturer's instructions prior to testing.

(a) **DETERGENTS**: _____ mg/L

(if sample is greater than 0.06 mg/L, the sample is contaminated with detergents [which may be from sanitary wastewater or other sources]. Further testing is required and this outfall should be given the highest priority.)

(if the sample is not greater than 0.06 mg/L and it does not show physical characteristics of sanitary wastewater [e.g., odor, floatables, and/or color] it is unlikely that it is from sanitary wastewater sources, yet there may still be an illicit connection of industrial wastewater, rinse water, backwash or cooling water. Skip to question #6c.)

(b) **AMMONIA (as N) TO POTASSIUM RATIO**: _____

(if the Ammonia to Potassium Ratio is greater than 0.6:1, then it is likely that the pollutant is sanitary sewage)

(if the Ammonia to Potassium Ratio is less than or equal to 0.06:1, then the pollutant is from another washwater source.)

(c) **FLUORIDE**: _____ mg/L

(if the fluoride levels are between 1.0 and 2.5 mg/L, then the flow is most likely from fluoride treated potable water.)

(if the sample tests below a detection limit of 0.1 mg/L for fluoride, it is likely to be from groundwater infiltration, springs or streams. In some cases, however, it is possible that the discharge could originate from an onsite well used for industrial cooling water which will test non-detect for both detergents and fluoride. To differentiate between these cooling water discharges and ground water infiltration, you will have to rely on temperature.)

(d) **TEMPERATURE**: _____ °F

(if the temperature of the sample is over 70°F, it is most likely cooling water)

(if the temperature of the sample is under 70°F, it is most likely from ground water infiltration)

7. Is there a suspected illicit connection? Y ( ) N ( )

   If "**YES**", what is the suspected source? _____

   If "**NO**", skip to signature block on the bottom of this page.

8. Has the investigation of the suspected illicit connection been completed? Y ( ) N ( )

   If "**YES**", proceed to question #9.

   If "**NO**", skip to signature block on the bottom of this page.

9. Was the source of the illicit connection found? Y ( ) N ( )

   If "**YES**", identify the source (including whether source is from Highway Agency or another entity). _____

   What plan of action will follow to eliminate the illicit connection or report the illicit connection to the NJDEP?

   Resolution: _____

   _____

   _____

   If "**NO**", complete the Closeout Investigation Form and attach it to this Illicit Connection Inspection Report Form.

Inspector's Name: _____

Title: _____

Signature: _____

Date: _____

If there is a dry weather flow or evidence of an intermittent flow, be sure to include this form with your Annual Report and Certification.

Closeout Investigation Form

Municipality Information

Municipality:____ County ____

NJPDES # : **NJG**____PI ID #: ____

Team Member / Title: ____

Outfall #: ____Location: ____

Receiving Waterbody: ____

Basis for Submittal:

(☐) A non-stormwater discharge was found, but no source was located within six months.

(☐) An intermittent non-stormwater discharge was observed, and three unsuccessful investigations were conducted to investigate the discharge while it was flowing.

Describe each phase of your investigation, including dates. Attach additional pages as necessary:

Inspector's Name: ____

Title: ____

Signature: _____

Date: ____

Complete and attach this form to the appropriate Illicit Connection Inspection Report Form and submit with the Annual Report and Certification.

Illicit Connection Inspection Report Form

Highway Agency Information

Highway Agency: _____

NJPDES # :NJG _____ PI ID #: _____

Team Member: _____

Date _____ Effective Date of Permit Authorization (EDPA): _____

Outfall #: _____ Location: _____

Receiving Waterbody: _____

1. Is there a dry weather flow? Y ( ) N ( )
2. If "YES", what is the outfall flow estimate? _____ gpm
   (flow sample should be kept for further testing, and this form will need to be submitted with the Annual Report and Certification)
3. Are there any indications of an intermittent flow? Y ( ) N ( )
4. If you answered "**NO**" to BOTH question #1 and #3, there is probably not an illicit connection and you can skip to question #7.
   (NOTE: This form **does not** need to be submitted to the Department, but should be kept with your SPPP.)

   If you answered "**YES**" to either question, please continue on to question #5.
   (NOTE: This form will need to be submitted to the Department with the Annual Report and Certification.)

5. **PHYSICAL OBSERVATIONS**:

(a) **ODOR**: none sewage sulfide oil gas rancid/sour other: _____

(b) **COLOR**: none yellow brown green red gray other: _____

(c) **TURBIDITY**: none cloudy opaque

(d) **FLOATABLES**: none petroleum sheen sewage other: _____

(e) **DEPOSITS/STAINS**: none sediment oily other: _____

(f) **VEGETATION CONDITIONS**: normal excessive growth inhibited growth

(g) **DAMAGE TO OUTFALL STRUCTURES**:

IDENTIFY STRUCTURE: _____

DAMAGE: none concrete spalling/cracking peeling paint
metal corrosion other damage _____

6. **ANALYSES OF OUTFALL FLOW SAMPLE:**
   * field calibrate instruments in accordance with manufacturer's instructions prior to testing.

(a) **DETERGENTS**: _____ mg/L

(if sample is greater than 0.06 mg/L, the sample is contaminated with detergents [which may be from sanitary wastewater or other sources]. Further testing is required and this outfall should be given the highest priority.)

(if the sample is not greater than 0.06 mg/L and it does not show physical characteristics of sanitary wastewater [e.g., odor, floatables, and/or color] it is unlikely that it is from sanitary wastewater sources, yet there may still be an illicit connection of industrial wastewater, rinse water, backwash or cooling water. Skip to question #6c.)

(b) **AMMONIA (as N) TO POTASSIUM RATIO**: _____

(if the Ammonia to Potassium Ratio is greater than 0.6:1, then it is likely that the pollutant is sanitary sewage)

(if the Ammonia to Potassium Ratio is less than or equal to 0.06:1, then the pollutant is from another washwater source.)

(c) **FLUORIDE**: _____ mg/L

(if the fluoride levels are between 1.0 and 2.5 mg/L, then the flow is most likely from fluoride treated potable water.)

(if the sample tests below a detection limit of 0.1 mg/L for fluoride, it is likely to be from groundwater infiltration, springs or streams. In some cases, however, it is possible that the discharge could originate from an onsite well used for industrial cooling water which will test non-detect for both detergents and fluoride. To differentiate between these cooling water discharges and ground water infiltration, you will have to rely on temperature.)

(d) **TEMPERATURE**: _____ °F

(if the temperature of the sample is over 70°F, it is most likely cooling water)

(if the temperature of the sample is under 70°F, it is most likely from ground water infiltration)

7. Is there a suspected illicit connection? Y ( ) N ( )

   If "**YES**", what is the suspected source? _____

   If "**NO**", skip to signature block on the bottom of this page.

8. Has the investigation of the suspected illicit connection been completed? Y ( ) N ( )

   If "**YES**", proceed to question #9.

   If "**NO**", skip to signature block on the bottom of this page.

9. Was the source of the illicit connection found? Y ( ) N ( )

   If "**YES**", identify the source (including whether source is from Highway Agency or another entity). _____

   What plan of action will follow to eliminate the illicit connection or report the illicit connection to the NJDEP?

   Resolution: _____

   _____

   _____

   If "**NO**", complete the Closeout Investigation Form and attach it to this Illicit Connection Inspection Report Form.

Inspector's Name: _____

Title: _____

Signature: _____

Date: _____

If there is a dry weather flow or evidence of an intermittent flow, be sure to include this form with your Annual Report and Certification.

Closeout Investigation Form

Municipality Information

Municipality:____ County ____

NJPDES # : **NJG**____PI ID #: ____

Team Member / Title: ____

Outfall #: ____Location: ____

Receiving Waterbody: ____

Basis for Submittal:

(☐) A non-stormwater discharge was found, but no source was located within six months.

(☐) An intermittent non-stormwater discharge was observed, and three unsuccessful investigations were conducted to investigate the discharge while it was flowing.

Describe each phase of your investigation, including dates. Attach additional pages as necessary:

Inspector's Name: ____

Title: ____

Signature: _____

Date: ____

Complete and attach this form to the appropriate Illicit Connection Inspection Report Form and submit with the Annual Report and Certification.

Stormwater Management Measures
Maintenance Plan

Maintenance Logs and Inspection Records

NOTE

This Maintenance Logs and Inspection Records are intended to be editable and adjustable in accordance with the design of stormwater management measures, the site conditions, and the special needs of responsible party. The Engineer should supplement information and best management practice to assist the responsible party to perform maintenance.

Blue text indicates information may be deleted and or replaced as necessary.

Inspection Checklist Log

1. **The responsible party shall report issues to the local authority and mosquito commission as required by local ordinances and regulatory authorities.**
2. The maintenance crew should fill out the checklist in the field manual when performing each inspection/maintenance task.
3. After the maintenance task is performed, the checklist should be filed in the Maintenance Plan and recorded in the log below.

Cycle of Inspection	Stormwater Management Measure No.	Checklist No.	Date(s) of Inspection
(1st Quarter) MM/DD/YYYY	(Basin #1, GS #1, GS#2 ….)		
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter)			

Cycle of Inspection	Stormwater Management Measure No.	Checklist No.	Date(s) of Inspection
MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			

Continue the table when necessary.

Inspection Checklist Log

1. **The responsible party shall report issues to the local authority and mosquito commission as required by local ordinances and regulatory authorities.**
2. The maintenance crew should fill out the checklist in the field manual when performing each inspection/maintenance task.
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Cycle of Inspection	Stormwater Management Measure No.	Checklist No.	Date(s) of Inspection
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(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter)			

Cycle of Inspection	Stormwater Management Measure No.	Checklist No.	Date(s) of Inspection
MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1" rain) MM/DD/YYYY			

Continue the table when necessary.

Attach the Inspection Checklist after each inspection

Preventative Maintenance Log

Maintenance Schedule	Stormwater Management Measure No.	Preventative Maintenance Record No.	Date(s) of Maintenance
(1st Quarter) MM/DD/YYYY	(Basin #1, GS #1, GS#2 ….)		
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Maintenance work; e.g., after 1” rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1” rain) MM/DD/YYYY			

Continue the table when necessary.

Preventative Maintenance Log

Maintenance Schedule	Stormwater Management Measure No.	Preventative Maintenance Record No.	Date(s) of Maintenance
(1st Quarter) MM/DD/YYYY	(Basin #1, GS #1, GS#2 ….)		
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Maintenance work; e.g., after 1” rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1” rain) MM/DD/YYYY			

Continue the table when necessary.

Attach the Preventative Maintenance Record after each maintenance task performed

Corrective Maintenance Log

Maintenance Schedule	Stormwater Management Measure No.	Corrective Maintenance Record No.	Date(s) of Maintenance
(1st Quarter) MM/DD/YYYY	(Basin #1, GS #1, GS#2 ….)		
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Maintenance work; e.g., after 1” rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1” rain) MM/DD/YYYY			

Continue the table when necessary

Corrective Maintenance Log

Maintenance Schedule	Stormwater Management Measure No.	Corrective Maintenance Record No.	Date(s) of Maintenance
(1st Quarter) MM/DD/YYYY	(Basin #1, GS #1, GS#2 ….)		
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Maintenance work; e.g., after 1” rain) MM/DD/YYYY			
(1st Quarter) MM/DD/YYYY			
(2nd Quarter) MM/DD/YYYY			
(3rd Quarter) MM/DD/YYYY			
(4th Quarter) MM/DD/YYYY			
(Unscheduled Inspection; e.g., after 1” rain) MM/DD/YYYY			

Continue the table when necessary

Attach the Corrective Maintenance Record after each maintenance task performed

Local Public Education Program

_____, New Jersey
Year: _____

Annual Mailing

Date	To All Residents and Businesses	Mailed:
	☐ YES ☐ NO	☐ ALONE ☐ WITH: _____
	☐ YES ☐ NO	☐ ALONE ☐ WITH: _____

If NO, list locations:

Date: _____ Mailed to: _____
Date: _____ Mailed to: _____

Annual Event

Date	Event	Location

Year: _____

Annual Mailing

Date	To All Residents and Businesses	Mailed:
	☐ YES ☐ NO	☐ ALONE ☐ WITH: _____
	☐ YES ☐ NO	☐ ALONE ☐ WITH: _____

If NO, list locations:

Date: _____ Mailed to: _____
Date: _____ Mailed to: _____

Annual Event

Date	Event	Location

Year: _____

Annual Mailing

Date	To All Residents and Businesses		Mailed:	
	☐ YES ☐ NO		☐ ALONE ☐	WITH: _____
	☐ YES ☐ NO		☐ ALONE ☐	WITH: _____

If NO, list locations:

Date: _____ Mailed to: _____
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Annual Event

Date	Event	Location

Year: _____

Annual Mailing

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Annual Event

Date	Event	Location

Year: _____

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Annual Event

Date	Event	Location

Local Public Education Program

_____, New Jersey
Year: _____

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Year: _____

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Year: _____

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Local Public Education Program

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	☐ YES ☐ NO		☐ ALONE ☐	WITH: _____

If NO, list locations:

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Annual Event

Date	Event	Location

Year: _____

Annual Mailing

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If NO, list locations:

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Annual Event

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Year: _____

Annual Mailing

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If NO, list locations:

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Annual Event

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Local Public Education Program

_____, New Jersey
Year: _____

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Year: _____

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Year: _____

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Annual Event

Date	Event	Location

Year: _____

Annual Mailing

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If NO, list locations:

Date: _____ Mailed to: _____
Date: _____ Mailed to: _____

Annual Event

Date	Event	Location

Year: _____

Annual Mailing

Date	To All Residents and Businesses		Mailed:	
	☐ YES ☐ NO		☐ ALONE ☐	WITH: _____
	☐ YES ☐ NO		☐ ALONE ☐	WITH: _____

If NO, list locations:

Date: _____ Mailed to: _____
Date: _____ Mailed to: _____

Annual Event

Date	Event	Location

Street Sweeping

Borough / Township of _____

Date	Sweepings		# of Street Swept	Approx. Amount Debris Collected
	Location(s)	Swept By:		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		

Additional Information regarding shared services and outside contractors:

_____

_____

_____

Street Sweeping

Borough / Township of _____

Date	Sweepings		# of Street Swept	Approx. Amount Debris Collected
	Location(s)	Swept By:		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		

Additional information regarding shared services and outside contractors:

_____

_____

_____

Street Sweeping

Borough / Township of _____

Date	Sweepings		# of Street Swept	Approx. Amount Debris Collected
	Location(s)	Swept By:		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		

Additional Information regarding shared services and outside contractors:

_____

_____

_____

Street Sweeping

Borough / Township of _____

Date	Sweepings		# of Street Swept	Approx. Amount Debris Collected
	Location(s)	Swept By:		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		
		☐ Sweeper ☐ By Hand		

Additional information regarding shared services and outside contractors:

_____

_____

_____

Road Erosion Control Maintenance
Borough / Township of _____, New Jersey

Date Located	Location	Surface Waterbody Impacted	Repairs To Be Made	Dated Completed

Additional Notes / Suggestions: _____

Road Erosion Control Maintenance
Borough / Township of _____, New Jersey

Date Located	Location	Surface Waterbody Impacted	Repairs To Be Made	Dated Completed

Additional Notes / Suggestions: _____

Road Erosion Control Maintenance
Borough / Township of _____, New Jersey

Date Located	Location	Surface Waterbody Impacted	Repairs To Be Made	Dated Completed

Additional Notes / Suggestions: _____

Road Erosion Control Maintenance
Borough / Township of _____, New Jersey

Date Located	Location	Surface Waterbody Impacted	Repairs To Be Made	Dated Completed

Additional Notes / Suggestions: _____

Borough / Township
Department of Public Works
Catch Basin Cleaning Log

Date Last Updated:

Location	Initials	Cleaned	Repaired	Inspected	Other	Labels Visible	Comment
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
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		☐	☐	☐	☐	☐ Yes ☐ No	
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		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	

Borough / Township
Department of Public Works
Catch Basin Cleaning Log

Date Last Updated:

Location	Initials	Cleaned	Repaired	Inspected	Other	Labels Visible	Comment
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
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		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	

Borough / Township
Department of Public Works
Catch Basin Cleaning Log

Date Last Updated:

Location	Initials	Cleaned	Repaired	Inspected	Other	Labels Visible	Comment
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
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		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	

Borough / Township
Department of Public Works
Catch Basin Cleaning Log

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		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	
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		☐	☐	☐	☐	☐ Yes ☐ No	
		☐	☐	☐	☐	☐ Yes ☐ No	

Borough / Township
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Catch Basin Cleaning Log

Date Last Updated:

Location	Initials	Cleaned	Repaired	Inspected	Other	Labels Visible	Comment
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Borough / Township
Department of Public Works
Catch Basin Cleaning Log

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Outfall Pipe Stream and Stream Bank Scouring
Borough/Town of _____, New Jersey

Site Location	Anticipate Date of Repair	Method of Repair	Date Completed

Additional Notes/Suggestions: _____

Outfall Pipe Stream and Stream Bank Scouring
Borough/Town of _____, New Jersey

Site Location	Anticipate Date of Repair	Method of Repair	Date Completed

Additional Notes/Suggestions: _____

Outfall Pipe Stream and Stream Bank Scouring
Borough/Town of _____, New Jersey

Site Location	Anticipate Date of Repair	Method of Repair	Date Completed

Additional Notes/Suggestions: _____

Outfall Pipe Stream and Stream Bank Scouring
Borough/Town of _____, New Jersey

Site Location	Anticipate Date of Repair	Method of Repair	Date Completed

Additional Notes/Suggestions: _____

Municipal Stormwater Regulation Program
Maintenance Yard Inventory

Site: _____
Inspector: _____
Date: _____

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Raw Materials		
	Sand		Inlet _____ft. away Drains Directly to _____
	Salt/De-icing Materials		Inlet _____ft. away Drains Directly to _____
	Other		Inlet _____ft. away Drains Directly to _____
	Organic Material		
	Leaves & Brush		Inlet _____ft. away Drains Directly to _____
	Grass Clippings		Inlet _____ft. away Drains Directly to _____
	Street Sweepings		Inlet _____ft. away Drains Directly to _____
	Mulch Storage		Inlet _____ft. away Drains Directly to _____
	Topsoil Storage		Inlet _____ft. away Drains Directly to _____
	Drum & Tank Storage		
	Drums		Inlet _____ft. away Drains Directly to _____
	Waste Oil Containers		Inlet _____ft. away Drains Directly to _____
	Motorized Vehicles		
	Leaf Vacs		Inlet _____ft. away Drains Directly to _____
	Front End Loaders		Inlet _____ft. away Drains Directly to _____
	Fork Lifts		Inlet _____ft. away Drains Directly to _____
	Garbage Trucks		Inlet _____ft. away Drains Directly to _____
	Light/Heavy Trucks		Inlet _____ft. away Drains Directly to _____
	Paving Vehicles		Inlet _____ft. away Drains Directly to _____
	Other		Inlet _____ft. away Drains Directly to _____

Quantity			Pervious/Impervious Surface	Impact to Stormwater
	Equipment and Attachments			
	Snow Plow Attachments			Inlet _____ft. away Drains Directly to _____
	Hydraulic Tailgates			Inlet _____ft. away Drains Directly to _____
	Hoppers/Spreaders			Inlet _____ft. away Drains Directly to _____
	Fork Lift Attachments			Inlet _____ft. away Drains Directly to _____
	Line Painting Equipment			Inlet _____ft. away Drains Directly to _____
	Landscaping Equipment			Inlet _____ft. away Drains Directly to _____
	Trailers			Inlet _____ft. away Drains Directly to _____
	Misc. Metal Storate Parts			
	Scrap Metal			Inlet _____ft. away Drains Directly to _____
	Car/Truck Parts			Inlet _____ft. away Drains Directly to _____
	Household Hazardouw Wastes			
	Acs & Refrigerators			Inlet _____ft. away Drains Directly to _____
	Electronics			Inlet _____ft. away Drains Directly to _____
	Appliances			Inlet _____ft. away Drains Directly to _____
	Other			
	Lead Acid Batteries			Inlet _____ft. away Drains Directly to _____
	Used Tires			Inlet _____ft. away Drains Directly to _____
	Covered Dumpster			Inlet _____ft. away Drains Directly to _____
	Uncovered Dumpsters			Inlet _____ft. away Drains Directly to _____
	Paint			Inlet _____ft. away Drains Directly to _____

Municipal Source Operations		
	Where does it take place?	
Street Sweeping		
Garbage Collection		
Vehicle Maintenance		
Vehicle & Equipment Washing		How often?
Garbage Trucks		
Street Sweepers		
Fertilizer Spreaders		
Asphalt Pavers		
De-icing Vehicles		
Beach Maintenance Vehicles		
Police Cars & Others		
Small Engines (lawn mowers, etc.)		
	How is it stored?	How is it disposed of?
Street Sweeping		
Clean Oil		
Waste Oil		
	Rain Shield or Covered?	SOPs in place?
Bulk Fuel Delivery		Yes No
Vehicle & Equipment Fueling		Yes No

Additional Notes:

* Describe storm sewer locations and where they drain.
* Describe site topography and site drainage patterns.

Municipal Stormwater Regulation Program
Maintenance Yard Inventory

Site: _____
Inspector: _____
Date: _____

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Raw Materials		
	Sand		Inlet _____ ft. away Drains Directly to _____
	Salt/De-icing Materials		Inlet _____ ft. away Drains Directly to _____
	Other		Inlet _____ ft. away Drains Directly to _____
	Organic Material		
	Leaves & Brush		Inlet _____ ft. away Drains Directly to _____
	Grass Clippings		Inlet _____ ft. away Drains Directly to _____
	Street Sweepings		Inlet _____ ft. away Drains Directly to _____
	Mulch Storage		Inlet _____ ft. away Drains Directly to _____
	Topsoil Storage		Inlet _____ ft. away Drains Directly to _____
	Drum & Tank Storage		
	Drums		Inlet _____ ft. away Drains Directly to _____
	Waste Oil Containers		Inlet _____ ft. away Drains Directly to _____
	Motorized Vehicles		
	Leaf Vacs		Inlet _____ ft. away Drains Directly to _____
	Front End Loaders		Inlet _____ ft. away Drains Directly to _____
	Fork Lifts		Inlet _____ ft. away Drains Directly to _____
	Garbage Trucks		Inlet _____ ft. away Drains Directly to _____
	Light/Heavy Trucks		Inlet _____ ft. away Drains Directly to _____
	Paving Vehicles		Inlet _____ ft. away Drains Directly to _____
	Other		Inlet _____ ft. away Drains Directly to _____

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Equipment and Attachments		
	Snow Plow Attachments		Inlet _____ft. away Drains Directly to _____
	Hydraulic Tailgates		Inlet _____ft. away Drains Directly to _____
	Hoppers/Spreaders		Inlet _____ft. away Drains Directly to _____
	Fork Lift Attachments		Inlet _____ft. away Drains Directly to _____
	Line Painting Equipment		Inlet _____ft. away Drains Directly to _____
	Landscaping Equipment		Inlet _____ft. away Drains Directly to _____
	Trailers		Inlet _____ft. away Drains Directly to _____
	Misc. Metal Storate Parts		
	Scrap Metal		Inlet _____ft. away Drains Directly to _____
	Car/Truck Parts		Inlet _____ft. away Drains Directly to _____
	Household Hazardouw Wastes		
	Acs & Refrigerators		Inlet _____ft. away Drains Directly to _____
	Electronics		Inlet _____ft. away Drains Directly to _____
	Appliances		Inlet _____ft. away Drains Directly to _____
	Other		
	Lead Acid Batteries		Inlet _____ft. away Drains Directly to _____
	Used Tires		Inlet _____ft. away Drains Directly to _____
	Covered Dumpster		Inlet _____ft. away Drains Directly to _____
	Uncovered Dumpsters		Inlet _____ft. away Drains Directly to _____
	Paint		Inlet _____ft. away Drains Directly to

Municipal Source Operations		
Street Sweeping	Where does it take place?	
Garbage Collection		
Vehicle Maintenance		
Vehicle & Equipment Washing		How often?
Garbage Trucks		
Street Sweepers		
Fertilizer Spreaders		
Asphalt Pavers		
De-icing Vehicles		
Beach Maintenance Vehicles		
Police Cars & Others		
Small Engines (lawn mowers, etc.)		
Street Sweeping	How is it stored?	How is it disposed of?
Clean Oil		
Waste Oil		
Bulk Fuel Delivery	Rain Shield or Covered?	SOPs in place?
Vehicle & Equipment Fueling		Yes No
		Yes No

Additional Notes:

* Describe storm sewer locations and where they drain.
* Describe site topography and site drainage patterns.

Municipal Stormwater Regulation Program
Maintenance Yard Inventory

Site: _____
Inspector: _____
Date: _____

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Raw Materials		
	Sand		Inlet _____ft. away Drains Directly to _____
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	Organic Material		
	Leaves & Brush		Inlet _____ft. away Drains Directly to _____
	Grass Clippings		Inlet _____ft. away Drains Directly to _____
	Street Sweepings		Inlet _____ft. away Drains Directly to _____
	Mulch Storage		Inlet _____ft. away Drains Directly to _____
	Topsoil Storage		Inlet _____ft. away Drains Directly to _____
	Drum & Tank Storage		
	Drums		Inlet _____ft. away Drains Directly to _____
	Waste Oil Containers		Inlet _____ft. away Drains Directly to _____
	Motorized Vehicles		
	Leaf Vacs		Inlet _____ft. away Drains Directly to _____
	Front End Loaders		Inlet _____ft. away Drains Directly to _____
	Fork Lifts		Inlet _____ft. away Drains Directly to _____
	Garbage Trucks		Inlet _____ft. away Drains Directly to _____
	Light/Heavy Trucks		Inlet _____ft. away Drains Directly to _____
	Paving Vehicles		Inlet _____ft. away Drains Directly to _____
	Other		Inlet _____ft. away Drains Directly to

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Equipment and Attachments		
	Snow Plow Attachments		Inlet _____ft. away Drains Directly to _____
	Hydraulic Tailgates		Inlet _____ft. away Drains Directly to _____
	Hoppers/Spreaders		Inlet _____ft. away Drains Directly to _____
	Fork Lift Attachments		Inlet _____ft. away Drains Directly to _____
	Line Painting Equipment		Inlet _____ft. away Drains Directly to _____
	Landscaping Equipment		Inlet _____ft. away Drains Directly to _____
	Trailers		Inlet _____ft. away Drains Directly to _____
	Misc. Metal Storate Parts		
	Scrap Metal		Inlet _____ft. away Drains Directly to _____
	Car/Truck Parts		Inlet _____ft. away Drains Directly to _____
	Household Hazardouw Wastes		
	Acs & Refrigerators		Inlet _____ft. away Drains Directly to _____
	Electronics		Inlet _____ft. away Drains Directly to _____
	Appliances		Inlet _____ft. away Drains Directly to _____
	Other		
	Lead Acid Batteries		Inlet _____ft. away Drains Directly to _____
	Used Tires		Inlet _____ft. away Drains Directly to _____
	Covered Dumpster		Inlet _____ft. away Drains Directly to _____
	Uncovered Dumpsters		Inlet _____ft. away Drains Directly to _____
	Paint		Inlet _____ft. away Drains Directly to _____

Municipal Source Operations		
	Where does it take place?	
Street Sweeping		
Garbage Collection		
Vehicle Maintenance		
Vehicle & Equipment Washing		How often?
Garbage Trucks		
Street Sweepers		
Fertilizer Spreaders		
Asphalt Pavers		
De-icing Vehicles		
Beach Maintenance Vehicles		
Police Cars & Others		
Small Engines (lawn mowers, etc.)		
	How is it stored?	How is it disposed of?
Street Sweeping		
Clean Oil		
Waste Oil		
	Rain Shield or Covered?	SOPs in place?
Bulk Fuel Delivery		Yes No
Vehicle & Equipment Fueling		Yes No

Additional Notes:

* Describe storm sewer locations and where they drain.
* Describe site topography and site drainage patterns.

Municipal Stormwater Regulation Program
Maintenance Yard Inventory

Site: _____
Inspector: _____
Date: _____

Quantity		Pervious/Impervious Surface	Impact to Stormwater
	Raw Materials		
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	Organic Material		
	Leaves & Brush		Inlet _____ft. away Drains Directly to _____
	Grass Clippings		Inlet _____ft. away Drains Directly to _____
	Street Sweepings		Inlet _____ft. away Drains Directly to _____
	Mulch Storage		Inlet _____ft. away Drains Directly to _____
	Topsoil Storage		Inlet _____ft. away Drains Directly to _____
	Drum & Tank Storage		
	Drums		Inlet _____ft. away Drains Directly to _____
	Waste Oil Containers		Inlet _____ft. away Drains Directly to _____
	Motorized Vehicles		
	Leaf Vacs		Inlet _____ft. away Drains Directly to _____
	Front End Loaders		Inlet _____ft. away Drains Directly to _____
	Fork Lifts		Inlet _____ft. away Drains Directly to _____
	Garbage Trucks		Inlet _____ft. away Drains Directly to _____
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	Paving Vehicles		Inlet _____ft. away Drains Directly to _____
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	Paint		Inlet _____ft. away Drains Directly to _____

Municipal Source Operations		
	Where does it take place?	
Street Sweeping		
Garbage Collection		
Vehicle Maintenance		
Vehicle & Equipment Washing		How often?
Garbage Trucks		
Street Sweepers		
Fertilizer Spreaders		
Asphalt Pavers		
De-icing Vehicles		
Beach Maintenance Vehicles		
Police Cars & Others		
Small Engines (lawn mowers, etc.)		
	How is it stored?	How is it disposed of?
Street Sweeping		
Clean Oil		
Waste Oil		
	Rain Shield or Covered?	SOPs in place?
Bulk Fuel Delivery		Yes No
Vehicle & Equipment Fueling		Yes No

Additional Notes:

* Describe storm sewer locations and where they drain.
* Describe site topography and site drainage patterns.

Employee Training

Borough / Township of _____, New Jersey

Course Topics	Date(s)			Employees Trained
Waste Disposal Education				Public Works Employees
Municipal Ordinances				Code enforcement Local Police Authorities Public Works Employees
Yard Waste Collection Program				Public Works Employees
Illicit Connection Elimination and Outfall Pipe Mapping				Public Works Employees
Street Sweeping				Public Works Employees
Stormwater Facility Maintenance				Public Works Employees
Road Erosion Control and Outfall Pipe Stream Scouring Remediation				Public Works Employees
Maintenance Yard Operations				Public Works Employees
Construction Activity / Post-Construction Storm-water Management in (Re-) Development				Public Works Employees

Sign-in sheets have been attached for each course given.

Employee Training
Borough / Township of _____, New Jersey

Course Topics	Date(s)			Employees Trained
Waste Disposal Education				Public Works Employees
Municipal Ordinances				Code enforcement Local Police Authorities Public Works Employees
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Illicit Connection Elimination and Outfall Pipe Mapping				Public Works Employees
Street Sweeping				Public Works Employees
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Road Erosion Control and Outfall Pipe Stream Scouring Remediation				Public Works Employees
Maintenance Yard Operations				Public Works Employees
Construction Activity / Post-Construction Storm-water Management in (Re-) Development				Public Works Employees

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Employee Training
Borough / Township of _____, New Jersey

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Maintenance Yard Operations				Public Works Employees
Construction Activity / Post-Construction Storm-water Management in (Re-) Development				Public Works Employees

Sign-in sheets have been attached for each course given.

Employee Training
Borough / Township of _____, New Jersey

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Street Sweeping				Public Works Employees
Stormwater Facility Maintenance				Public Works Employees
Road Erosion Control and Outfall Pipe Stream Scouring Remediation				Public Works Employees
Maintenance Yard Operations				Public Works Employees
Construction Activity / Post-Construction Storm-water Management in (Re-) Development				Public Works Employees

Sign-in sheets have been attached for each course given.

State of New Jersey

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Mail Code - 501-02A
Bureau of NJPDES Stormwater Permitting and Water Quality Management
P.O. Box 420 – 501 E State St., 1st Flr.
Trenton, NJ 08625-0420
Phone: (609) 633-7021 / Fax: (609) 777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

SHAWN M. LATOURETTE
Commissioner

December 01, 2022

Re: R9 - Tier A Municipal Stormwater General Permit
NJPDES: NJ0141852 PI ID #: 50577
NJPDES Master General Permit Program Interest
501 East State Street
Trenton, NJ 08625

Dear Interested Party,

Enclosed is a **final** New Jersey Pollutant Discharge Elimination System (NJPDES) permit action identified above which has been issued in accordance with N.J.A.C. 7:14A. The Tier A Municipal Stormwater General Permit authorizes the discharge of stormwater from small municipal separate storm sewer systems (MS4). The permit was issued in response to USEPA's Phase II rules. The Tier A permit addresses stormwater quality issues related to both new and existing development.

A summary of the significant and relevant comments received on the draft action during the public comment period, the Department's responses, and an explanation of any changes from the draft action have been included in the Response to Comments document attached hereto as per N.J.A.C. 7:14A-15.16.

The final Tier A MS4 NJPDES permit and supporting documents are also posted at https://www.nj.gov/dep/dwq/tier_a.htm. Questions or comments regarding the final action should be addressed to Dan Kuti at Daniel.Kuti@dep.nj.gov.

Sincerely,

Gabriel Mahon, Bureau Chief
Bureau of NJPDES Stormwater Permitting and Water Quality Management

Enclosures
c: Permit Authorization
Response to Comments Document
Final Permit Document

NEW JERSEY POLLUTANT DISCHARGE ELIMINATION SYSTEM

The New Jersey Department of Environmental Protection hereby grants you a NJPDES permit for the facility/activity named in this document. This permit is the regulatory mechanism used by the Department to help ensure your discharge will not harm the environment. By complying with the terms and conditions specified, you are assuming an important role in protecting New Jersey's valuable water resources. Your acceptance of this permit is an agreement to conform with all of its provisions when constructing, installing, modifying, or operating any facility for the collection, treatment, or discharge of pollutants to waters of the state. If you have any questions about this document, please feel free to contact the Department representative listed in the permit cover letter. Your cooperation in helping us protect and safeguard our state's environment is appreciated.

Permit Number: NJ0141852

Final: Stormwater Discharge Master General Permit Renewal

Permittee:
NJPDES Master General Permit
Program Interest Group R9
501 East State Street
Trenton, NJ 08625

Co-Permittee:

Property Owner:
NJPDES Master General Permit
Program Interest Group R9
501 East State Street
Trenton, NJ 08625

Location Of Activity:
NJPDES Master General Permit
Program Interest Group R9
501 East State Street
Trenton, NJ 08625

Authorization(s) Covered Under This Approval	Issuance Date	Effective Date	Expiration Date
R9 - Tier A MS4 Permit (GP)	12/01/2022	01/01/2023	12/31/2027

By Authority of:
Commissioner's Office

Gabriel Mahon

Gabriel Mahon, Bureau Chief
Bureau of NJPDES Stormwater Permitting and Water Quality Management

(Terms, conditions and provisions attached hereto)

PART I
GENERAL REQUIREMENTS: NJPDES

A. General Requirements of all NJPDES Permits

1. Requirements Incorporated by Reference

a. The permittee shall comply with all conditions set forth in this permit and with all the applicable requirements incorporated into this permit by reference. The permittee is required to comply with the regulations, including those cited in paragraphs b. through e. following, which are in effect as of the effective date of the final permit.

b. General Conditions

Penalties for Violations	N.J.A.C. 7:14-8.1 et seq.
Incorporation by Reference	N.J.A.C. 7:14A-2.3
Toxic Pollutants	N.J.A.C. 7:14A-6.2(a)4i
Duty to Comply	N.J.A.C. 7:14A-6.2(a)1 & 4
Duty to Mitigate	N.J.A.C. 7:14A-6.2(a)5 & 11
Inspection and Entry	N.J.A.C. 7:14A-2.11(e)
Enforcement Action	N.J.A.C. 7:14A-2.9
Duty to Reapply	N.J.A.C. 7:14A-4.2(e)3
Signatory Requirements for Applications and Reports	N.J.A.C. 7:14A-4.9
Effect of Permit/Other Laws	N.J.A.C. 7:14A-6.2(a)6 & 7 & 2.9(c)
Severability	N.J.A.C. 7:14A-2.2
Administrative Continuation of Permits	N.J.A.C. 7:14A-2.8
Permit Actions	N.J.A.C. 7:14A-2.7(c)
Reopener Clause	N.J.A.C. 7:14A-6.2(a)10
Permit Duration and Renewal	N.J.A.C. 7:14A-2.7(a) & (b)
Consolidation of Permit Process	N.J.A.C. 7:14A-15.5
Confidentiality	N.J.A.C. 7:14A-18.2 & 2.11(g)
Fee Schedule	N.J.A.C. 7:14A-3.1
Treatment Works Approval	N.J.A.C. 7:14A-22 & 23

c. Operation And Maintenance

Need to Halt or Reduce not a Defense	N.J.A.C. 7:14A-2.9(b)
Proper Operation and Maintenance	N.J.A.C. 7:14A-6.12

d. Monitoring And Records

Monitoring	N.J.A.C. 7:14A-6.5
Recordkeeping	N.J.A.C. 7:14A-6.6
Signatory Requirements for Monitoring Reports	N.J.A.C. 7:14A-6.9

e. Reporting Requirements

Planned Changes	N.J.A.C. 7:14A-6.7
Reporting of Monitoring Results	N.J.A.C. 7:14A-6.8
Noncompliance Reporting	N.J.A.C. 7:14A-6.10 & 6.8(h)
Hotline/Two Hour & Twenty-four Hour Reporting	N.J.A.C. 7:14A-6.10(c) & (d)
Written Reporting	N.J.A.C. 7:14A-6.10(e) &(f) & 6.8(h)
Duty to Provide Information	N.J.A.C. 7:14A-2.11, 6.2(a)14 & 18.1
Schedules of Compliance	N.J.A.C. 7:14A-6.4
Transfer	N.J.A.C. 7:14A-6.2(a)8 & 16.2

PART II

GENERAL REQUIREMENTS: DISCHARGE CATEGORIES

A. Additional Requirements Incorporated by Reference

1. Additional Requirements

a. In addition to the requirements in Part I of this permit, the permittee is required to comply with the following requirements which are in effect as of the effective date of the final permit.

i. The Stormwater Management rules at N.J.A.C. 7:8.

ii. Conditions for General Permits at N.J.A.C. 7:14A-6.13.

iii. Additional Conditions applicable to UIC permits at N.J.A.C. 7:14A-8.9, UIC Corrective Action (N.J.A.C. 7:14A-8.11) and UIC Operating Criteria (N.J.A.C. 7:14A-8.16).

iv. Conditions for reopening and modification of small MS4 permits at N.J.A.C. 7:14A-16.4(b)21 and N.J.A.C. 7:14A-25.7(b).

v. Requirements for Discharges to Ground Water at N.J.A.C. 7:14A-7.

vi. National Pollutant Discharge Elimination System (NPDES) Electronic Reporting rule at 40 CFR Part 127.

B. General Conditions

1. Notification of Non-Compliance

a. The permittee shall notify the Department of any non-compliance when required by N.J.A.C. 7:14A-6.10 by contacting the DEP Hotline at 1-877-WARN-DEP.

2. Discharge of Pollutants

a. For discharges authorized by this permit, the permittee is exempt from N.J.A.C. 7:14A-6.2(a)2. This exemption means that the discharge of any pollutant not specifically regulated in this NJPDES permit or listed and quantified in the RFA shall not constitute a violation of the permit.

3. Standard Reporting Requirements – Electronic Reporting of NJPDES Information

a. The following documents and reports shall be electronically submitted via the Department's designated electronic submission service:

i. General permit authorization requests (i.e., RFAs);

ii. General permit termination/revocation requests; and

iii. Municipal separate storm sewer system (MS4) program reports (see Part IV.K).

4. Other Regulatory Requirements

a. Permit conditions remain in effect and enforceable until and unless the permit is modified, renewed, or revoked by the Department.

b. The issuance of this permit shall not be considered as a waiver of any applicable federal, State, or local rules, regulations, and ordinances.

c. In accordance with N.J.A.C. 7:14A-6.2(a)7, this permit does not authorize any infringement of State or local law or regulations, including, but not limited to, N.J.A.C. 7:50 (the Pinelands rules), N.J.A.C. 7:1-E (Discharges of Petroleum and other Hazardous Substances), regulations concerning threatened and endangered species and their designated critical habitat, and other Department rules. No discharge of hazardous substances (as defined in N.J.A.C. 7:1E-1.6) resulting from an onsite spill shall be deemed to be "pursuant to and in compliance with this permit" within the meaning of the Spill Compensation and Control Act at N.J.S.A. 58:10-23.11c.

d. While the permittee is required to comply with applicable operation and maintenance requirements of N.J.A.C. 7:14A-6.12(a), the permittee is exempt from the operations and maintenance manual requirements of N.J.A.C. 7:14A-6.12(c). This exemption applies only to discharges authorized under this permit and does not alter the operation and maintenance requirements for municipally or privately-owned stormwater facilities specified in this permit or N.J.A.C. 7:8.

C. Eligibility

1. Permit Scope

a. This permit applies to all municipalities assigned to Tier A under N.J.A.C. 7:14A-25.3(a)1.

b. This permit applies to the owner or operator of the Municipal Separate Storm Sewer System (MS4) meaning the permittee. The owner or operator is responsible for ensuring compliance with this permit.

2. Authorized Discharges

a. Authorized Stormwater Discharges – Except as provided in Part II.C.3 below, this permit authorizes all new and existing stormwater discharges to surface water and groundwater from:

i. Small MS4s (as defined at N.J.A.C. 7:14A-1.2) owned or operated by the permittee; and

ii. Municipal maintenance yards and other ancillary operations, excluding wood waste recycling and leaf composting operations, owned or operated by the permittee. (See definition of "municipal maintenance yards and other ancillary operations" in Part IV, Notes and Definitions).

b. Authorized Non-Stormwater Discharges – Except as identified in Part II.C.3.e below, the following new and existing non-stormwater discharges from small MS4s owned or operated

by the permittee and from municipal maintenance yards and other ancillary operations owned or operated by the permittee are authorized under this permit:

i. Potable water line flushing and discharges from potable water sources, excluding the discharge of filter backwash and first flush water from potable well development/redevelopment activities utilizing chemicals in accordance with N.J.A.C. 7:9D. The volume of first flush water, which is a minimum of three times the volume of the well water column, shall be handled and disposed of properly;

ii. Uncontaminated ground water (e.g., infiltration, crawl space or basement sump pumps, foundation or footing drains, rising ground waters);

iii. Air conditioning condensate (excluding contact and non-contact cooling water; and industrial refrigerant condensate);

iv. Irrigation water (including landscape and lawn watering runoff);

v. Flows from springs, riparian habitats, wetlands, water reservoir discharges and diverted stream flows;

vi. Residential car washing water; and dechlorinated swimming pool discharges from single family residential homes;

vii. Sidewalk, driveway, and street wash water;

viii. Flows from firefighting activities including the washing of fire fighting vehicles;

ix. Flows from clean water rinsing of beach maintenance equipment immediately following use and only if the equipment is used for its intended purpose;

x. Flows from clean water rinsing of equipment and vehicles used in the application of salt and de-icing materials. Prior to rinsing, all equipment shall be cleaned using dry methods such as shoveling and sweeping. Recovered materials are to be returned to storage or properly discarded; and

xi. Rinsing of equipment in Part II.C.2.b.ix and x, above is limited to exterior, undercarriage, and exposed parts and does not apply to engines or other enclosed machinery.

3. Discharges Not Authorized

a. This permit does not authorize "stormwater discharge associated with industrial activity" as defined in N.J.A.C. 7:14A-1.2 except as otherwise specifically provided in this permit:

i. Types of facilities that the permittee might operate and that are considered to be engaging in "industrial activity" include but are not limited to certain: 1) landfills; 2) transportation facilities (including certain local passenger transit and air transportation facilities); 3) facilities handling domestic sewage or sewage sludge; 4) steam electric power generating facilities; and 5) facilities processing and/or composting recyclable materials as defined in N.J.A.C. 7:26A (Recycling Rules) including wood waste recycling and leaf composting facilities; and

ii. Any permittee that operates an industrial facility with such a discharge must submit a separate Request for Authorization (RFA) or individual permit application for that discharge. An RFA submitted for this permit does not qualify as an RFA for such a discharge.

b. This permit does not authorize "stormwater discharges associated with construction activity" as described in N.J.A.C. 7:14A-24.10(a) which is defined as the discharge to surface water of stormwater from construction activity that disturbs at least one acre:

i. Any permittee that operates a construction site with such a discharge shall submit a separate RFA under NJPDES Permit No. NJ0088323 (General Stormwater Permit Construction Activity, see www.nj.gov/dep/dwq/5g3.htm), or an application for an individual permit for that discharge (see www.nj.gov/dep/dwq/bnpc_home.htm). An RFA submitted for this permit does not qualify as an RFA for such a discharge (see Part IV.B.3).

c. This permit does not authorize any stormwater discharge that is authorized under another NJPDES permit. The permittee does not have to implement measures contained in this NJPDES permit for stormwater discharges at facilities owned or operated by that permittee that are regulated under a separate NJPDES stormwater permit authorizing those discharges.

d. This permit does not authorize stormwater discharges from projects or activities that conflict with an adopted Areawide Water Quality Management Plan.

e. This permit does not authorize stormwater discharges listed in Part II.C.2.b above that are determined to be a significant contributor of pollutants to or from the MS4, which must be addressed as an illicit connection as specified in Part IV.G.3 of this permit, or as an improper disposal of waste.

4. Exclusions

a. Any owner, operator, and/or discharger authorized by this general permit may request to be excluded from the coverage of the general NJPDES permit by applying for an individual permit. The owner, operator, and/or discharger shall submit an application in accordance with N.J.A.C. 7:14A-4, with reasons supporting the request, to the NJDEP. The request shall be processed under N.J.A.C. 7:14A-15, 16 and 17. The request shall be granted by the issuance of an individual permit if the reasons cited by the owner, operator and/or discharger are adequate to support the request.

b. An owner, operator, and/or discharger excluded from this general NJPDES permit solely because of an existing individual permit may request that the individual permit be revoked or modified, as appropriate, and that the discharge be authorized by the general NJPDES permit. Upon revocation or modification of the individual permit, the permittee shall be authorized under the general permit.

D. Administrative Process

1. Automatic Renewal of Authorizations

a. Upon reissuance of this general permit, existing authorizations shall be automatically renewed as provided by N.J.A.C. 7:14A-6.13(d)9 and 25.4(a)3 using the information provided in the permittee's most recently submitted RFA.

2. Notification of Changes

a. The permittee shall provide an updated RFA to the Department within 90 days of the effective date of a renewed authorization under this general permit if any information in its most recently submitted RFA is no longer true, accurate, and/or complete.

b. The permittee shall notify the Department of any changes of its Municipal Stormwater Program Coordinator information as specified in Part IV.A.1.e.

3. Requests for Authorization

a. A single RFA is required for the entire eligible discharge from the small MS4 owned or operated by, and located within, a single municipality. Multiple RFAs are not required for multiple municipal operations (e.g., municipally owned and operated maintenance yards or other ancillary operations), however these municipal operations shall be included in the RFA as applicable.

b. An RFA under this general permit shall include the following: A completed Checklist and Request for MS4 Stormwater Permits (located at https://nj.gov/dep/dwq/forms_storm.htm) and any other information as required by the Department.

c. Upon receipt of an RFA the Department may, in accordance with N.J.A.C. 7:14A-6.13, do one of the following:

   i. Issue notification of authorization under this permit;

   ii. Deny authorization under this permit and require submittal of an application for an individual permit; or

   iii. Deny authorization under this permit and require submittal of an RFA for another general permit.

d. The Department may notify a person that the discharge is authorized by a general permit, even if the person has not submitted an RFA. A person so notified may nonetheless request an individual permit under C.4 above.

PART III

Recordkeeping and Reporting

The permittee shall keep records necessary to document the status of compliance with the conditions of this permit. The requirement to keep records and to submit an Annual Report and Certification is found at Part IV.J and K of this permit, respectively.

PART IV

SPECIFIC REQUIREMENTS: NARRATIVE

Notes and Definitions

A. Footnotes

1. Acronyms

a. Stormwater acronyms included in this permit are as follows:

i. "BMP" - Best Management Practice
ii. "CFR" - Code of Federal Regulations
iii. "EDPA" - Effective Date of Permit Authorization
iv. “GI” - Green Infrastructure
v. “MMY” – Municipal Maintenance Yard
vi. "MS4" - Municipal Separate Storm Sewer System
vii. "MSWMP" - Municipal Stormwater Management Plan
viii. "MSRP" - Municipal Stormwater Regulation Program
ix. "MTD" - Manufactured Treatment Device
x. "N.J.A.C." - New Jersey Administrative Code
xi. "NJPDES" - New Jersey Pollutant Discharge Elimination System
xii. "N.J.S.A." - New Jersey Statutes Annotated
xiii. "RSIS" - Residential Site Improvement Standards
xiv. “SPC” – Stormwater Program Coordinator
xv. "SPPP" - Stormwater Pollution Prevention Plan
xvi. "TMDL" - Total Maximum Daily Load

2. Internal Cross References

a. For the purposes of this permit:

i. References to Part IV Notes and Definitions are preceded with the words "Notes and Definitions" (e.g., Notes and Definitions Part IV.A.1 refers to Acronyms).

ii. References to Part IV Tier A MS4 NJPDES Permit are not preceded by descriptive text (e.g., Part IV.A.1 refers to Stormwater Program Requirements).

3. MS4 Tier A Permit Resources

a. The MS4 Tier A webpage (www.nj.gov/dep/dwq/tier_a.htm) has links to guidance and related stormwater resources including, but not limited to, the following:
i. Tier A Permit and Supporting Documents;

ii. Tier A Guidance Document;
iii. SPPP Template;
iv. Model Ordinances;
v. Sample MSWMP;
vi. Outfall Inspection, Illicit Connection Inspection, and Stream Scouring Forms;
vii. Annual Report Online Submittal Links and Tutorials;
viii. MS4 Case Manager List;
ix. Stormwater Coordinator Contact Update Form;
x. Total Maximum Daily Load (TMDL) Look-up Tool;
xi. Snow Removal and Disposal Policy;
xii. Stormwater Training;
xiii. Clean Water NJ;
xiv. Outreach Materials;
xv. MSRP Archive; and
xvi. MS4 Mapping and Inventory Assistance.

b. Stormwater Management website (www.njstormwater.org/) and related documents:
i. Stormwater Management Rules N.J.A.C. 7:8;
ii. Stormwater management information and training tools;
iii. New Jersey Stormwater Best Management Manual; and
iv. Green Infrastructure and related links.

c. Construction Site Stormwater Runoff: www.nj.gov/dep/dwq/5g3.htm

d. Clean Communities, a statewide litter abatement program: www.njclean.org

4. EPA Resources for Guidance Relating to MS4 Issues

a. EPA's MS4 website and related links: www.epa.gov/npdes/stormwater-discharges-municipal-sources
b. EPA's National Menu of Stormwater Best Management Practices: www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater
c. EPA's guidance for Green Infrastructure: www.epa.gov/green-infrastructure
d. EPA's Trash Free Waters resource page: www.epa.gov/trash-free-waters
e. Illicit Discharge Detection and Elimination Guidance: https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf

B. Definitions

1. Definitions

a. All words and terms used in this permit shall have meanings as defined in the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A), unless otherwise stated or unless the context clearly requires a different meaning.

i. "Catch Basin" means a cistern, vault, chamber or well that is typically built along a street and below an inlet grate as part of the storm sewer system that is designed to capture and retain sediment, debris, and pollutants so those particles do not pass on to the stormwater sewer system.

ii. "Effective Date of Permit Authorization" means the date the permittee's authorization to discharge under this permit becomes effective. This date may be found on the permittee's Authorization to Discharge page.

iii. "Existing permittee" means a permittee that held an authorization to discharge under the Tier A MS4 permit the day before the effective date of this permit.

iv. "Green infrastructure" (N.J.A.C. 7:8) means a stormwater management measure that manages stormwater close to its source by: 1. Treating stormwater runoff through infiltration into subsoil; 2. Treating stormwater runoff through filtration by vegetation or soil; or 3. Storing stormwater runoff for reuse.

v. “Ground water discharge point” means the lowest invert elevation of any stormwater facility where stormwater discharges into the surficial ground water aquifer.

vi. "Illicit connection" means any physical or non-physical connection that discharges the following to a municipal separate storm sewer system (unless that discharge is authorized under a NJPDES permit other than the NJPDES permit for discharges from that system): 1. Domestic sewage; 2. Non-contact cooling water, process wastewater, or other industrial waste (other than stormwater); or 3. Any category of non-stormwater discharges that a permittee for the MS4 identifies as a source or significant contributor of pollutants pursuant to 40 C.F.R. 122.26(d)(2)(iv)(B)(1) or 122.34(b)(3)(iii).

vii. "Maintenance plan" means a maintenance plan pursuant to N.J.A.C. 7:8-5.2(b) and 5.8 prepared by the design engineer for the stormwater management measures incorporated into the design of a major development.

viii. “Major Development” means a “major development as defined in N.J.A.C. 7:8

ix. “Manufactured treatment device" means a pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff.

x. “MS4 interconnection” means any point at which an MS4 flows into or from another MS4.

xi. “Municipal maintenance yard and ancillary operation” means a municipally owned or operated maintenance and storage yard, including but not limited to, fleet or maintenance shop with outdoor storage areas, impound yard, permanent and mobile fueling location, salt/sand storage location, and snow disposal area.

xii. "Municipal separate storm sewer" (or MS4 conveyance) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) as defined in more detail at N.J.A.C. 7:14A-1.2.

xiii. "Municipality" means a municipality as defined in the Municipal Land Use Law at N.J.S.A. 40:55D-5, that is, any city, borough, town, township, or village.

xiv. "New permittee" means a permittee that obtains its first authorization to discharge under this permit on or after the effective date of this permit.

xv. “Outfall” means any point source which discharges directly to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

xvi. "Permanent structure" means a permanent building or permanent structure that is anchored to a permanent foundation with an impermeable floor, and that is completely roofed and walled (new structures require a door or other means of sealing the access way from wind driven rainfall).

A fabric frame structure is a permanent structure if it meets the following specifications:

1. Concrete blocks, jersey barriers or other similar material shall be placed around the interior of the structure to protect the side walls during loading and unloading of de-icing materials;
2. The design shall prevent stormwater run-on and run through, and the fabric cannot leak;
3. The structure shall be erected on an impermeable slab;
4. The structure cannot be open sided; and
5. The structure shall have a roll up door or other means of sealing the access way from wind driven rainfall.

xvii. “Point source” means any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

xviii. "Small MS4" means all municipal separate storm sewers (other than "large" or "medium" municipal separate storm sewer systems as defined in N.J.A.C. 7:14A-1.2) that are:

1. Owned or operated by municipalities described under N.J.A.C. 7:14A-25.1(b);
2. Owned or operated by county, State, interstate, or Federal agencies, and located at public complexes as described under N.J.A.C. 7:14A-25.2(a)2;
3. Owned or operated by county, State, interstate, or Federal agencies, and located at highways and other thoroughfares as described under N.J.A.C. 7:14A-25.2(a)3; or
4. Owned or operated by county, State, interstate, Federal, or other agencies, and receive special designation under N.J.A.C. 7:14A-25.2(a)4.

xix. "Solid and floatable materials" means sediment, debris, trash, and other floating, suspended, or settleable solids.

xx. "Storm drain inlet" means the point of entry into the storm sewer system.

xxi. "Stormwater" means water resulting from precipitation (including rain and snow) that runs off the land's surface; is transmitted to the subsurface; is captured by separate storm sewers or other sewerage or drainage facilities; or is conveyed by snow removal equipment.

xxii. "Stormwater facility" means stormwater infrastructure including, but not limited to, catch basins, infiltration basins, detention basins, green infrastructure, filter strips, riparian buffers, infiltration trenches, sand filters, constructed wetlands, wet basins, bioretention systems, low flow bypasses, and stormwater conveyances.

xxiii. "Stormwater management measure" (N.J.A.C. 7:8-1.2) means any practice, technology, process, program, or other method intended to control or reduce stormwater runoff and associated pollutants, or to induce or control the infiltration or groundwater recharge of stormwater or to eliminate illicit or illegal non-stormwater discharges into stormwater conveyances.

xxiv. "Stream scouring" means the erosion or removal of streambed or bank material by the physical action of flowing water and the sediment that it carries.

xxv. “Total maximum daily load” or “TMDL” means a total maximum daily load formally established pursuant to Section 7 of the Water Quality Planning Act (N.J.S.A. 58:11A-7) and Section 303(d) of the Clean Water Act, 33 U.S.C. §§12512 et seq. A TMDL is the sum of individual wasteload allocations for point sources, load allocations for nonpoint sources of pollution, other sources such as tributaries or adjacent segments, and allocations to a reserve or margin of safety for an individual pollutant.

xxvi. “Wasteload allocation” means the portion of a receiving water's total maximum daily load for a specific pollutant that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation.

xxvii. “Waters of the State” means the ocean and its estuaries, all springs, streams and bodies of surface or ground water, whether natural or artificial, within the boundaries of the State of New Jersey or subject to its jurisdiction.

xxviii. "Wood waste" means source separated whole trees, tree trunks, tree parts, tree stumps, brush, and lumber (non-chemically treated, glued, dyed, or painted).

xxix. "Yard trimmings" (N.J.A.C. 7:26A-1.3) means grass clippings, leaves, wood chips from tree parts, and brush.

xxx. "Yard waste" means loose leaves and grass clippings.

Tier A Municipal Stormwater General Permit

A. Stormwater Management Program

1. Stormwater Program Requirements

a. The permittee shall develop, update, implement and enforce an MS4 stormwater program. A primary objective of the MS4 stormwater program shall be to implement best management practices and other measures that are designed to reduce the discharge of pollutants from the permittee's MS4, municipal maintenance yards and other ancillary operations, to the maximum extent practicable pursuant to N.J.A.C. 7:14A-25.6(a)1 and 40 CFR 122.34(a), to protect water quality, and to satisfy the applicable water quality requirements of the Clean Water Act.

b. The permittee shall modify and update its MS4 stormwater program (including applicable plans and ordinances) to conform with applicable new legislation or new or amended regulations. Such modification and update shall be completed and effective within 12 months of written notification by the Department of the need for modification and update.

c. The permittee shall develop, update, implement and maintain a written Stormwater Pollution Prevention Plan (SPPP) that documents the permittee's MS4 stormwater program and describes the measures necessary for compliance with all permit conditions.

d. A principal executive officer or a ranking elected official shall designate a duly authorized Stormwater Program Coordinator (SPC) who has the knowledge to manage the implementation and compliance of the permittee's MS4 stormwater program and shall be responsible for the following:

   i. Coordinating the permittee's implementation of its MS4 stormwater program, permit conditions, and SPPP;

   ii. Signing and dating the SPPP; and

   iii. The completion and submittal of the Municipal Stormwater Regulation Program (MSRP) Annual Report, consistent with Part IV.K.

e. The permittee shall notify the Department of any designated SPC change within thirty (30) days of the change through the completion of a NJPDES Contact Information Update Form, which can be found on the MS4 Tier A webpage, or through the online MSRP Annual Report submission. See Part IV.K.

f. The MS4 stormwater program and the SPPP shall be consistent with the Municipal Stormwater Management Plan (MSWMP). The MSWMP is also a component of the municipal master plan (N.J.S.A. 40:55D-94) and 28b(5). The MSWMP describes the municipality's strategy, structure, and process for addressing stormwater runoff from new development and redevelopment to ensure compliance with the Stormwater Management

rules (N.J.A.C. 7:8). This strategy, structure and process also constitutes much of the post construction stormwater management program in this permit. See Part IV.B.4.

2. **Stormwater Pollution Prevention Plan (SPPP) Requirements**

a. The permittee shall include in the SPPP, at a minimum, information that:

i. Identifies the person designated as the SPC per Part IV.A.1.d above, and the members of the SPPP Team, which is comprised of the person(s) responsible for implementing or coordinating the stormwater program activities;

ii. Describes the measures the permittee has established to ensure compliance with all components of this permit with details regarding how each element of the stormwater program is implemented. The permittee shall tailor their SPPP to describe the specific measures applicable to their municipality;

iii. Identifies each individual municipal maintenance yard and ancillary operation, including the site-specific details of each yard or ancillary operation. At a minimum, the SPPP for permittees with multiple yards must include individual forms for each yard or ancillary operation, as well as any other site specific SPPP Forms for each yard or ancillary operation, where applicable;

iv. Documents all shared or contracted services as allowed under Part IV.A.3, below;

v. Notes the location of all records/documentation required by this permit; and

vi. Reflects the measurable goals, implementation schedules, recordkeeping, and other requirements of this permit.

b. The permittee's SPPP shall be submitted electronically to the Department by Existing Permittees on or before EDPA + 6 months and by New Permittees on or before EDPA + 12 months. The SPPP shall also be posted on the permittee's dedicated stormwater webpage (See Part IV.B.2).

c. The permittee shall review the SPPP at least annually and update it as often as necessary to reflect changes related to the permittee's MS4 stormwater program. Any amendments to the SPPP:

i. Shall continue to meet the requirements of this permit;

ii. Shall be incorporated into the SPPP and recorded on the SPPP revisions page;

iii. Shall be signed and dated by the SPC; and

iv. Shall be submitted electronically to the Department within thirty (30) days of the amendments.

d. The permittee shall amend the SPPP to adequately address any deficiencies identified by the Department within thirty (30) days of notice, unless otherwise specified by the Department.

3. Implementation of SPPP Conditions through Shared or Contracted Services

a. The permittee may rely on another entity (e.g., governmental, stormwater utility, private, or nonprofit organization such as a watershed association) to satisfy one or more of the permit conditions, or component thereof, through the implementation of best management practices or control measures, provided that:

i. The other entity implements best management practice(s), control measure(s), or component(s) thereof, which are at least as stringent and as frequent as the corresponding permit requirement;

ii. The other entity agrees in writing or is required by law to implement the measure(s), or component(s) thereof, in such a manner that complies with the permit on the permittee's behalf; and

iii. The permittee specifies in its SPPP (1) which permit conditions will be implemented by another entity and (2) the name of the responsible entity.

b. The permittee is responsible for compliance with this permit if the other entity fails to implement the measure(s) or component(s), thereof.

B. Minimum Standards for Public Involvement and Participation Including Public Notice

1. Public Involvement and Participation Including Public Notice

a. The permittee shall comply with applicable State and local public notice requirements when providing for public participation in the development and implementation of the MS4 stormwater program. Requirements include, but are not limited to:

i. The Open Public Meetings Act ("Sunshine Law," N.J.S.A. 10:4-6 et seq.);

ii. Statutory procedures for the enactment of ordinances (N.J.S.A. 40:49-2); and

iii. The Municipal Land Use Law concerning the adoption or amendment of the MSWMP (N.J.S.A. 40:55D-13, 28 and 94), and the review of applications for development (N.J.S.A. 40:55D-12).

b. The permittee shall maintain records necessary to demonstrate compliance with the public participation requirements of a, above.

c. All permittees shall comply with this requirement on EDPA.

2. Municipal Stormwater Webpage

a. The permittee shall develop and maintain a dedicated stormwater webpage on its municipal website (see example stormwater webpage at www.nj.gov/dep/dwq/msrp_outreach_material.htm). This webpage shall at a minimum, make elements of the permittee's MS4 stormwater program available to the public by providing links to the latest version of each of the following:

i. Stormwater Pollution Prevention Plan (SPPP) (excluding inspection logs and other recordkeeping documents);

ii. Municipal Stormwater Management Plan (MSWMP);

iii. Stormwater Control Ordinance (SCO);

iv. Pet Waste Ordinance;

v. Wildlife Feeding Ordinance;

vi. Litter Control Ordinance;

vii. Improper Disposal of Waste Ordinance;

viii. Containerized Yard Waste/Yard Waste Collection Program Ordinances;

ix. Private Storm Drain Inlet Retrofitting Ordinance;

x. Illicit Connection Ordinance;

xi. Tree Removal/Replacement Ordinance (due on or before EDPA + 12 months as per Part IV.F);

xii. Privately-Owned Salt Storage Ordinance (due on or before EDPA + 12 months as per Part IV.F);

xiii. MS4 Outfall Pipe Map;

xiv. MS4 Infrastructure Map (due on or before EDPA + 36 months as per Part IV.G); and

xv. Watershed Improvement Plan (due in accordance with the phases identified in Part IV.H).

b. The permittee shall develop a dedicated stormwater webpage on its municipal website that contains links to the minimum elements in a. above on or before EDPA + 3 months for

existing permittees, and EDPA + 12 months for new permittees, unless a later date is specified above.

C. Minimum Standards for Local Public Education and Outreach

1. Local Public Education and Outreach

a. The permittee shall implement a Public Education and Outreach Program that focuses on educational and pollution prevention activities about the impacts of stormwater discharges on surface water and ground water and involves the public in reducing pollutants in stormwater and mitigating flow. The permittee shall:

i. Annually conduct activities that total at least 12 points and include activities from at least three of the five categories as set forth in Attachment A;

ii. At a minimum, at least one of the activities shall involve educating businesses and the general public of hazards associated with illicit connections and improper disposal of waste; and

iii. Keep records necessary to demonstrate compliance, including date of activities and any other relevant documentation.

b. All permittees shall comply with this requirement on EDPA.

D. Minimum Standards for Construction Site Stormwater Runoff

1. Construction Site Stormwater Runoff

a. Construction site stormwater runoff activities are authorized under a separate NJPDES permit, which is typically the Construction Activity NJPDES Stormwater General Permit No. NJ0088323 pursuant to N.J.A.C. 7:14A-25.6(b)2, or an individual permit pursuant to N.J.A.C. 7:14A-24.7(a)2. See Part II.C.3.b and www.nj.gov/dep/dwq/5g3.htm.

b. Pursuant to N.J.A.C. 7:14A-25.7(b), the permittee is not required to reference construction site stormwater runoff control in its SPPP.

c. All permittees shall comply with this requirement on EDPA.

E. Minimum Standards for Post Construction Stormwater Management in New Development and Redevelopment

1. Stormwater Management Program to Address Post Construction Stormwater Management in New Development and Redevelopment

a. The permittee shall develop, update, implement and enforce its stormwater management program to address post construction stormwater runoff in new development and redevelopment and to ensure compliance with the Stormwater Management rules at N.J.A.C. 7:8.

b. The post construction stormwater management program established by the permittee shall address stormwater runoff from "major development" as defined in the Stormwater Management rules at N.J.A.C. 7:8 unless any additional development is defined as "major development" by the permittee's Stormwater Control Ordinance.

c. The post construction stormwater management program established by the permittee shall require compliance with the applicable design, performance and maintenance standards established under N.J.A.C. 7:8 for "major development".

d. The permittee shall review and analyze development plans for compliance with N.J.A.C. 7:8 and the permittee's SCO or RSIS as applicable, even if a permit is required by the Department for the same or similar activity (e.g., a Land Use permit).

e. The permittee shall ensure that "major development" projects are constructed in accordance with the approved development plans.

f. The permittee's review engineer for compliance with N.J.A.C. 7:8 shall be independent from the design engineer, shall not have been involved in the design of the development plans, and shall have completed the Department's Stormwater Management Design Review Course within the last 5 years, and the Stormwater Management Rule Amendment Training if required, as per Part IV.F.8 and 9

g. The permittee shall ensure that the post construction stormwater management program requires that any residential development and redevelopment projects that are subject to the Residential Site Improvement Standards (RSIS) for stormwater management (N.J.A.C. 5:21-7) comply with those standards, including any exception, waiver, or special area standard that was approved under N.J.A.C. 5:21.

h. The permittee shall include each approved major development on the Major Development Project List and submit the Major Development Project List to the Department annually with the MSRP Annual Report.

i. The Stormwater Management rules (N.J.A.C. 7:8) and the Residential Site Improvement Standards for stormwater management (N.J.A.C. 5:21-7), independently and as implemented in this permit, apply to all areas of the municipality.

j. All permittees shall comply with this requirement on EDPA.

2. Municipal Stormwater Management Plan (MSWMP)

a. The permittee shall adopt, amend, and implement a written MSWMP, pursuant to N.J.A.C. 7:8, to describe the framework of the permittee's strategy, structure, and process for its post construction stormwater management program according to the following:

   i. Conduct a re-examination of its MSWMP as part of the re-examination of its municipal master plan in accordance with N.J.A.C. 7:8-4.3(c) and (d), at least every 10 years, or more often as necessary to reflect changes related to the permittee's stormwater management program (e.g., if required due to amendments to the Stormwater Management rules at N.J.A.C. 7:8);

   ii. Submit the adopted MSWMP to the county review agency for review and approval at least 20 days prior to public hearing pursuant to the requirements at N.J.A.C. 7:8-4.4. This includes MSWMP re-examinations without change;

   iii. Electronically submit the county approved MSWMP and any amendments to the Department within thirty (30) days of the effective date of the plan;

   iv. Post the county approved MSWMP and any amendments on the permittee's website (see Part IV.B.2) within thirty (30) days of the effective date of the plan; and

   v. The date on the MSWMP shall reflect the most recent re-examination/revision date approved by the county review agency.

3. Municipal Stormwater Control Ordinance (SCO)

a. The permittee shall develop, adopt, amend, implement, and enforce a municipal SCO (see example at www.nj.gov/dep/dwq/example_ordinance.htm) in accordance with N.J.A.C. 7:8, which shall, at a minimum:

   i. Control aspects of residential development and redevelopment projects that are not pre-empted by the RSIS;

   ii. Control stormwater from non-residential development and redevelopment projects, in accordance with the requirements at N.J.A.C. 7:8; and

   iii. Set forth special area standards approved by the Site Improvement Advisory Board for residential development or redevelopment projects under N.J.A.C. 5:21-3.5.

b. Additional requirements of the SCO include:

   i. Submit SCO to permittee's county planning board for approval.

   ii. If all or part of the municipality is located within the Pinelands, the SCO for that portion of the municipality must follow the Pinelands model SCO and be approved by the Pinelands Commission.

4. Mitigation Plan

a. The permittee shall only grant a variance from the design and performance standards for stormwater management measures if the permittee has a mitigation plan included in an approved MSWMP and SCO(s) which meets the following requirements:

i. The mitigation plan shall identify measures that are necessary to offset the deficit created by granting the variance. The mitigation plan must satisfy the criteria in the Stormwater Management rules at N.J.A.C. 7:8-4.2(c)11 and 4.6. (See Chapter 3 of the NJ Stormwater BMP Manual at https://www.njstormwater.org for guidance); and

ii. The permittee submits, within (30) days after approving a variance, a written report to the county review agency and to the Department via email (dwq-bnpc-stormwatermanagement@dep.nj.gov) describing the variance and the required mitigation in accordance with N.J.A.C. 7:8-4.6(a)3.

F. Minimum Standards for Pollution Prevention / Good Housekeeping for Municipal Operators

1. Community-wide Ordinances

a. The permittee shall adopt and enforce the following community-wide ordinances (New Permittee: shall adopt and enforce the following community-wide ordinances on or before EDPA + 12 months):

i. Pet Waste Ordinance: The permittee shall adopt and enforce an ordinance that requires pet owners or their keepers to immediately and properly dispose of their pet's solid waste deposited on any property, public or private, not owned or possessed by that person. Information on the Pet Waste Ordinance, the website address where it can be located, and the benefits of proper disposal of pet solid waste shall be distributed with pet licenses;

ii. Wildlife Feeding Ordinance: The permittee shall adopt and enforce an ordinance that prohibits the feeding of any wildlife (e.g., Canada Geese) in any public park or on any other property owned or operated by the permittee. Exclusions include wildlife confined in zoos, parks, or rehabilitation centers as well the following unconfined animals: (1) wildlife at environmental education centers; (2) feral cats as part of an approved Trap-Neuter-Release program; and (3) other kinds of unconfined animals, if any, that the ordinance specifically lists and excludes for reasons set forth in the ordinance;

iii. Litter Control Ordinance: The permittee shall adopt and enforce a litter ordinance or enforce the existing State litter statute at N.J.S.A 13:1E-99.3;

iv. Improper Disposal of Waste Ordinance: The permittee shall adopt and enforce an ordinance prohibiting the improper spilling, dumping, or disposal of materials other than

stormwater into the MS4 system excluding those discharges as allowable under Part II.C.2.b;

v. Yard Waste Ordinance: The permittee shall adopt and enforce one of the following yard waste ordinances: 1) An ordinance that prohibits placing non-containerized yard wastes (defined as leaves and/or grass clippings) into the street; or 2) An ordinance that prohibits placing non-containerized yard waste at the curb or along the street within 10 feet of any storm drain inlet and no sooner than seven (7) days prior to a scheduled and announced collection. The frequency of yard waste pickups shall be determined at the discretion of the permittee but shall be part of a set yard waste collection schedule which is noticed to all municipal residents and businesses; and

vi. Private Storm Drain Inlet Retrofitting Ordinance: The permittee shall adopt and enforce an ordinance requiring the retrofitting of existing storm drain inlets on private property to meet the standard in Attachment B (Design Standard for Storm Drain Inlets). Specifically, this ordinance: 1) shall apply to storm drain inlets, on property not owned or operated by the Permittee (e.g., condominium associations), that are in direct contact (i.e., contiguous) to repaving; repairing (excluding individual pothole repair); resurfacing (including top coating or chip sealing with asphalt emulsion or a thin base of hot bitumen); and reconstruction or alteration of facilities; and 2) shall not apply to a residential lot with one single family house.

b. The permittee shall adopt and enforce the following community-wide ordinances on or before EDPA + 12 months:

i. Privately-Owned Salt Storage Ordinance: Adopt and enforce an ordinance requiring that piles of salt and other solid (granular) de-icing materials which are not stored in a permanent structure be covered by tarping when not in use and secured in a way to prevent its exposure to rain, snow, or stormwater run-on; and

ii. Tree Removal/Replacement Ordinance: Adopt and enforce an ordinance to control tree removal and replacement to reduce stormwater runoff and pollutants, and to promote infiltration of rainwater into the soil.

c. Additional ordinance requirements of this permit are found at Part IV.E.3 (Stormwater Control Ordinance) above and Part IV.G.3.c (Illicit Connection Ordinance) below.

d. Optional Privately-Owned Refuse Container/Dumpster Ordinance: Permittees have the option of adopting and enforcing an ordinance requiring privately-owned dumpsters and other refuse containers that are outdoors or exposed to stormwater to be covered at all times. This ordinance is not intended for litter receptacles; individual homeowner trash and recycling containers; containers that hold large bulky items (e.g., furniture, bound carpet, and padding); permitted temporary demolition containers; and refuse containers at industrial facilities authorized to discharge stormwater under a valid NJPDES permit.

i. This ordinance serves to prevent the spilling, dumping, leaking, or otherwise discharge of liquids, semi-liquids, or solids from refuse containers.

ii. Discharges of liquids, semi-liquids, or solids from these dumpsters or refuse containers into the MS4, or the surface or ground waters of the state, are illegal discharges not authorized under this permit and must be reported to the NJDEP Hotline at 1-877-WARNDEP (1-877-927-6337).

e. Model ordinances can be found at www.nj.gov/dep/dwq/example_ordinance.htm.

2. Community-wide Measures

a. The permittee shall develop and implement the following community-wide pollution prevention measures, and good housekeeping measures to control solid and floatable materials, which shall be described in the written SPPP:

i. Triannual Street Sweeping: The permittee shall sweep, at a minimum of once every four months, or more frequently as necessary to eliminate recurring problems, all segments of concrete and/ or asphalt roads that are owned or operated by the permittee and have storm drain inlets that discharge to surface water. Sweeping is not required for gravel, dirt, or tar and chip roads. Existing Permittees shall continue with the current street sweeping schedule until the new triannual sweeping program is implemented on or before EDPA + 36 months. New Permittees shall begin this sweeping program on or before EDPA + 36 months.

ii. Annual Street Sweeping: The permittee shall sweep, at a minimum of once per year, or more frequently as necessary to eliminate recurring problems, all segments of roads that are owned or operated by the permittee, that do not have storm drain inlets, that discharge to surface water. Existing Permittees shall continue with the current street sweeping schedule until the new annual sweeping program is implemented on or before EDPA + 36 months. New Permittees shall begin this sweeping program on or before EDPA + 36 months

iii. Storm Drain Inlet Labeling: The permittee shall label all permittee owned or operated storm drain inlets that do not have permanent wording cast into the structure of the inlet to indicate that it empties directly into a local waterway. This applies to inlets that are located along sidewalks that are adjacent to municipal streets, and within plazas, parking areas, maintenance yards or other ancillary activities that are operated by the permittee. The permittee shall maintain records of which inlets have been labeled. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

iv. Storm Drain Inlet Retrofitting: The permittee shall comply with the standards set forth in Attachment B (Design Standards for Storm Drain Inlets) of this permit to control passage of solid and floatable materials through storm drain inlets installed by

the permittee. The permittee shall retrofit all permittee owned or operated storm drain inlets with the standards set forth in Attachment B on or before EDPA + 59 months.

v. Storm Drain Installation: The permittee shall not install storm drains that do not include a catch basin or other BMP designed for solids collection in areas which drain to surface waters and that do not have any other downstream BMPS prior to the surface water discharge. Storm drains installed on bridges or culverts are exempt from this requirement. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

vi. Herbicide Application Management: The permittee shall restrict the application of herbicides to prevent herbicides from being washed into the waters of the State and to prevent erosion caused by de-vegetation. At a minimum, the permittee shall: (1) not apply herbicides on or adjacent to storm drain inlets, or on steeply sloping ground; (2) only apply herbicides along curb lines and unobstructed shoulders that contain unwanted vegetation; and (3) only apply herbicides within a 2-foot radius around structures where overgrowth presents a safety hazard and where it is unsafe to mow. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

vii. Excess De-Icing Material Management: The permittee shall remove, within 72 hours after the end of the storm event, conditions permitting, piles of excess salt and de-icing materials that have been deposited during spreading operations (e.g., piles resulting from accidental spillage or when spreading equipment is started or stopped) on all streets and parking areas owned or operated by the permittee. Excess de-icing material removed from streets and parking areas may be returned to storage or properly managed if unsuitable for reuse. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

viii. Roadside Vegetative Waste Management: The permittee shall ensure the proper pickup, handling, storage and disposal of wood waste and yard trimmings generated by the permittee. Wood waste and yard trimmings shall be managed to minimize the impact of vegetative maintenance activities on stormwater discharge quality and shall be prohibited from being blown or deposited into storm drain inlets and stormwater facilities. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

ix. Roadside Erosion Control: The permittee shall develop a program to detect and repair erosion along the roads owned or operated by the permittee and to inspect and maintain the stability of shoulders, embankments, ditches, and soils along these roads to ensure that they are not eroding and contributing to the sedimentation of receiving waters or stormwater infrastructure. Inspections of municipal roads shall occur at least once per year, and any repairs shall be completed as soon as practicable, but no later than 90 days from discovery, unless the Department is notified with an alternative schedule of completion, and be made in accordance with Standards for Soil Erosion and Sediment Control in New Jersey, N.J.A.C. 2:90-1, as applicable.

Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA + 12 months.

x. The permittee shall maintain a log sufficient to demonstrate compliance with this section. Example Maintenance Logs and Inspection Records forms are available at www.njstormwater.org.

3. Inspection and Maintenance of Stormwater Facilities Owned or Operated by the Permittee

a. The permittee shall develop, update, and implement a program to ensure adequate long-term cleaning, operation, and maintenance of all municipally owned or operated stormwater facilities, which includes but is not limited to:

i. Storm Drain Inlet Inspection: The permittee shall inspect, at a minimum of once per year, all storm drain inlets that it owns or operates;

ii. Storm Drain Inlet Cleaning and Maintenance: The permittee shall develop, update, and implement a storm drain inlet cleaning and maintenance program. The program shall establish the conditions under which a storm drain inlet must be cleaned, and maintenance performed. Cleaning and maintenance shall be conducted, at a minimum, as frequently as necessary to ensure that sediment, trash, or other debris is removed as necessary to restrict it from entering the waters of the State; to eliminate recurring problems; and maintain proper function;

iii. Catch Basin Inspection: The permittee shall inspect all catch basins that it owns or operates. At a minimum, permittees shall inspect a minimum of 20% of the total per year, rotating the schedule in such a way that all catch basins are inspected at least once every five years on approximately the same frequency;

iv. Catch Basin Cleaning: The permittee shall develop, update, and implement a catch basin cleaning and maintenance program. The program shall establish when a catch basin must be cleaned and maintained and include procedures for cleaning and maintenance. Cleaning and maintenance shall be implemented as frequently as necessary to ensure, at a minimum, that sediment, trash, or other debris is removed as necessary to control it from entering the waters of the State; to eliminate recurring problems; and maintain proper function. For guidance related to catch basin cleaning, refer to the EPA Catch Basin Technology Overview and Assessment found at: (https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300002QL.TXT);

v. MS4 Conveyance Inspection and Cleaning: The permittee shall develop, update, and implement a MS4 conveyance inspection, cleaning, and maintenance program. The program shall establish when the MS4 conveyance must be cleaned and maintained to ensure proper function and operation;

vi. Stormwater Infrastructure Inspection (excluding i. – v. above and outfalls): The permittee shall inspect all stormwater infrastructure that it owns or operates pursuant to approved

maintenance plans. If there are no approved maintenance plans for certain stormwater infrastructure, the permittee shall inspect that infrastructure at least 4 times annually, and after each rainstorm exceeding 1 inch of total rainfall, unless the NJ Stormwater BMP Manual recommends a less frequent schedule;

vii. Stormwater Infrastructure Maintenance (excluding i. – v. above and outfalls): The permittee shall perform maintenance pursuant to approved maintenance plans, or more frequently as needed, to ensure the proper function and operation. See www.njstormwater.org; for maintenance guidance;

viii. The permittee shall maintain a log sufficient to demonstrate compliance with this section, including but not limited to the type of stormwater facility; location information of the facility with geographic coordinates; name of inspector; date of inspection; observations of the structural integrity; history of complaints; evidence of current or previous flooding; any preventative and corrective maintenance performed; and any additional information or findings. Example Maintenance Logs and Inspection Records forms are available at www.njstormwater.org under the maintenance guidance link;

ix. If stormwater facilities are found not to be functioning properly, corrective maintenance and repairs shall be completed as soon as practicable, but no later than 90 days from discovery, unless another timeframe is authorized by the Department. The permittee shall prioritize these activities based upon environmental, health and safety concerns; and

x. The permittee shall certify in the MSRP Annual Report whether or not municipally owned or operated stormwater facilities have been inspected, are properly maintained, and are properly functioning.

xi. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

4. Inspection and Maintenance of Stormwater Facilities Not Owned or Operated by the Permittee

a. The permittee shall develop, update, implement and enforce a program to ensure adequate long-term cleaning, operation and maintenance of stormwater facilities not owned or operated by the permittee, not subject to the conditions of another NJPDES stormwater permit and which were constructed after February 7, 1984.

b. The permittee shall ensure that stormwater facilities not owned or operated by the permittee are inspected and maintained pursuant to approved maintenance plans, or more frequently as needed to ensure the proper function and operation of the stormwater facility, but at a frequency of not less than once per year.

c. The permittee shall ensure that proper maintenance includes cleaning and removal of solid and floatable materials, including trash/litter, excess leaves or grass clippings, branches, logs, any other debris, or excess growth. These materials have the potential to impede the proper

function and/or restrict flow causing flooding or excessive discharge velocity or may be discharged to the receiving waters. The permittee may require the owners or operators of these facilities to take measures to prevent the accumulation, discharge, or other hazards caused by such debris in the stormwater facilities (e.g., catch basins along roads and parking areas, and detention basins).

d. The permittee shall maintain a log sufficient to demonstrate compliance with this section, including but not limited to the actions taken by the permittee to enforce compliance with the long-term cleaning, operation, and maintenance program; the stormwater facility that was the subject of the action; location information of the facility with geographic coordinates; the name and title of person responsible for enforcement; the date of the action; and the findings. Example Maintenance Logs and Inspection Records forms are available at www.njstormwater.org under the maintenance guidance link;

e. The permittee shall maintain copies of all maintenance plans, as defined in Notes and Definitions, Part IV.B.1.a.vi, of this permit, for stormwater facilities approved by the municipality. The permittee shall provide copies of these maintenance plans to the Department upon request.

f. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

5. Municipal Maintenance Yards and Other Ancillary Operations

a. Documenting Best Management Practices at all MMYs: The permittee shall implement Best Management Practices (BMPs) at each individual municipal maintenance yard (MMY) and ancillary operation owned or operated by the permittee. Each MMY and ancillary operation shall be identified by its own form in the SPPP which shall include a description of the site-specific activities and associated BMPs. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement upon EDPA + 12 months.

b. Site Inspections: The permittee shall inspect the entire site, including the site periphery, monthly (under both dry and wet conditions, when possible), and identify conditions that would contribute to stormwater contamination, illicit discharges, or negative impacts to the permittee's MS4. The permittee shall maintain a log sufficient to demonstrate compliance with this section, including but not limited to dates and times of the inspections; the name of the person conducting the inspection; and conditions requiring attention and remedial actions taken for all activities occurring. This log must be kept on-site, with a copy kept with the SPPP and made available to the Department upon request. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement upon EDPA + 12 months.

c. Inventory List: The permittee shall maintain a list of all materials and machinery which could be a source of pollutants in a stormwater discharge. The materials in question include but are not limited to raw materials, intermediate products, final products, waste materials, by-

products, machinery and fuels, lubricants, solvents, and detergents. Materials or machinery that are stored in a permanent structure and therefore not exposed to stormwater do not need to be included. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement upon EDPA + 12 months.

d. Container Labels: The permittee shall properly label all containers. Labels shall be legible, clean, and visible. Containers shall be kept in good condition, protected from damage and spillage, and tightly closed when not in use. When practical, store containers indoors. If indoor storage is not practical, containers may be stored outside if covered and placed on spill platforms or clean pallets. An area that is graded and/or bermed to prevent run-through of stormwater may be used in place of spill platforms or clean pallets. Outdoor storage locations shall be regularly maintained. Existing Tier A permittees shall implement this requirement upon EDPA. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement upon EDPA + 12 months.

e. Spill Kits: The permittee shall conduct cleanups of spills of liquids or dry materials immediately after discovery. Spills that are suspected to be a threat to human health or the environment shall be immediately reported to the NJDEP Hotline at 1-877-WARNDEP (1-877-927-6337). All spills shall be cleaned using dry cleaning methods only. Clean up spills with a dry, absorbent material (i.e., kitty litter, sawdust, etc.) and sweep the rest of the area. Dispose of collected waste properly. Store clean-up materials, spill kits and drip pans near all liquid transfer areas, protected from rainfall. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement upon EDPA + 12 months.

f. Bulk Liquid Storage: The permittee shall have secondary containment (e.g., spill containment dikes, double walled tanks, etc.) for all aboveground storage tanks containing bulk liquid (including but not limited to gasoline, diesel fuel, heating oil, hydraulic oil, used oil and liquid de-icing materials). The containment area must be impervious and be able to contain the volumetric capacity of at least 110% of the largest tank's capacity within the containment area. The containment area must be constructed so that no volume of bulk liquid can escape through drains, storm sewer systems, or to the surface waters or ground waters of the state. All accessory pipes, hoses, valves, and pumps must also be located within the containment area. It is recommended that the tank be protected to prevent stormwater from accumulating in the containment structure. Existing and new Tier A permittees shall implement this requirement by EDPA + 12 months.

g. Fueling Operations: The permittee shall establish, maintain, and implement standard BMPs to address vehicle fueling; receipt of bulk fuel deliveries; and inspection and maintenance of storage tanks, including the associated piping and fuel pumps. At a minimum, these include:

   i. Place drip pans under all hose and pipe connections and other leak-prone areas during bulk transfer of fuels;

   ii. Block storm sewer inlets, or contain tank trucks used for bulk transfer, with temporary berms or temporary absorbent booms during the transfer process. If temporary berms or

booms are being used instead of blocking the storm sewer inlets, all hose connection points associated with the transfer of fuel shall be within the temporarily bermed or boomed area during the loading/unloading of bulk fuels. A trained employee shall be present to supervise the bulk transfer of fuel;

iii. Clearly post, in a prominent area of the facility, instructions for safe operation of fueling equipment that include all the following: "Topping off of vehicles, mobile fuel tanks, and storage tanks is strictly prohibited"; "Stay in view of fueling nozzle during dispensing"; and the contact information for the person(s) responsible for spill response; and

iv. Immediately repair or replace any equipment, tanks, pumps, piping, and fuel dispensing equipment found to be leaking or in disrepair.

v. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement by EDPA + 12 months.

h. Discharge of Stormwater from Secondary Containment: The permittee may discharge stormwater accumulated in a secondary containment area (e.g., fuel storage, de-icing solution storage, brine solution) provided a visual inspection is performed to ensure that the contents of aboveground storage tank have not come into contact with the stormwater to be discharged. Visual inspections are only effective when dealing with materials that can be observed, like petroleum. If the contents of the tank are not visible in stormwater, the permittee shall rely on previous tank inspections to determine with some degree of certainty that the tank has not leaked. If the permittee cannot determine with reasonable certainty that the stormwater in the secondary containment area is uncontaminated, then the stormwater shall be hauled offsite for proper disposal. If the secondary containment area contains a valve, this valve shall remain closed at all times except as described above. Existing and new permittees shall implement this requirement upon EDPA.

i. Vehicle/Equipment Maintenance and/or Repair: The permittee shall perform vehicle and equipment maintenance in a manner that prevents the exposure of pollutants to stormwater. Whenever possible, the permittee shall conduct vehicle and equipment maintenance and/or repair activities indoors. For projects that must be conducted outdoors, and that last more than one day, portable tents or covers shall be placed over the equipment being serviced when not being worked on, and drip pans shall be used at all times. Use designated areas away from storm drains or block storm drain inlets when vehicle and equipment maintenance is being conducted outdoors. Existing and new permittees shall implement this requirement upon EDPA.

j. Wash Wastewater Containment: The permittee shall manage any equipment and vehicle washing activities so that there are no unpermitted discharges of wash wastewater to storm sewer inlets or to surface or ground waters of the State. A permittee that cannot discharge wash wastewater to a sanitary sewer may temporarily store wash wastewater in a containment structure prior to proper disposal under the following conditions:

i. Structural Inspections: The containment structure(s) does not leak. Any underground tanks and associated piping shall be tested for integrity every three years using appropriate methods determined by "The List of Leak Detection Evaluations for Storage Tank Systems" created by the National Work Group on Leak Detection Evaluations, or as determined appropriate and certified by a professional engineer for the site-specific containment structure(s). For any cathodically protected containment system, provide a passing cathodic protection survey every three years;

ii. Visual Inspections: Before each use, perform inspections of all visible portions of containment structures to ensure that they are structurally sound. Log dates of inspection; inspector's name, and conditions using the attached Underground Vehicle Wash Water Storage Tank Use Log or found at https://www.nj.gov/dep/dwq/tier_a.htm . This visual inspection is not required if system design prevents such inspection;

iii. Overfill Prevention: Operate containment structures to prevent overfilling resulting from normal or abnormal operations, malfunctions of equipment, and human error. Wash wastewater shall no longer be introduced when determined to be at 95% capacity. Record each measurement to the nearest ½ inch. See attached Underground Vehicle Wash Water Storage Tank Use Log or found at https://www.nj.gov/dep/dwq/tier_a.htm ;

iv. Leak Remediation: Containment structures shall be emptied and taken out of service immediately upon detection of deterioration that could result in a leak. Complete all necessary repairs to ensure structural integrity prior to placing the containment structure back into service. Any spills or suspected release of hazardous substances shall be immediately reported to the NJDEP Hotline (1-877-927-6337) followed by a site investigation in accordance with N.J.A.C. 7:26C and N.J.A.C 7:26E if the discharge is confirmed;

v. Pump-outs(including clean-outs): All wash wastewater placed into storage must be disposed of in a legally permitted manner. Maintain a log of equipment and vehicle wash wastewater containment structure pump-outs (removes only water) and clean-outs (removes all water and sludge) including date and method of removal, mode of transportation (including name of hauler if applicable) and the location of disposal. See attached Underground Vehicle Wash Water Storage Tank Pump Out Log or found at https://www.nj.gov/dep/dwq/tier_a.htm;

vi. Annual Engineer's Certification: Containment structures shall be inspected annually by a NJ licensed professional engineer. The engineer shall certify the condition of all structures including wash pad, catch basin, sump, tank, piping, risers to detect deterioration in the walls, floors, joints, seams, pumps and pipe connections or other containment devices using the attached Engineer's Certification of Annual Inspection of Equipment and Vehicle Wash Wastewater Containment Structure or found at https://www.nj.gov/dep/dwq/tier_a.htm . This certification may be waived for self-contained systems on a case-by-case basis. Any such waiver would be issued in writing by the Department; and

vii. Recordkeeping: Maintain all logs, inspection records, and certifications on-site. Such records shall be made available to the Department upon request.

viii. Existing and new Tier A permittees shall implement this requirement upon EDPA.

k. Salt and Other Granular De-icing Material Storage and Handling: The permittee shall store salt and other solid de-icing materials in a permanent structure and establish, maintain, and implement salt and de-icing material storage and handling BMPs. At a minimum, these include:

i. Preventing the exposure of stored salt and other granular de-icing material to rain, snow, or stormwater run-on. Stormwater runoff containing de-icing material from a material storage and handling area is not authorized for discharge under this permit;

ii. Preventing and/or minimizing spillage;

iii. Minimizing tracking of materials from loading and unloading operations, which shall be conducted during dry weather, when possible;

iv. Minimizing loader travel distance between storage area and spreading vehicle;

v. Sweeping (or clean using other dry cleaning methods), after loading and unloading, the areas surrounding the de-icing storage structure to eliminate the contact of de-icing materials with stormwater that were tracked away from storage areas. The permittee may reuse or properly discard materials collected during cleanup; and

vi. Restricting the temporary outdoor storage of salt and other granular de-icing materials. The temporary outdoor storage of salt and other granular de-icing materials is permitted only under the following conditions:

1) A permanent structure is under construction, repair, or replacement;
2) Stormwater run-on and de-icing material run-off is minimized;
3) Materials in temporary storage are tarped when not in use;
4) All the BMPs for de-icing materials in a permanent structure above are met; and
5) Temporary outdoor storage shall not exceed 30 days unless otherwise approved in writing by the Department.

vii. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement by EDPA + 36 months.

l. Aggregate Material, Wood Chips, and Finished Leaf Compost Storage: The permittee may store materials such as sand, gravel, stone, topsoil, wood chips, and finished leaf compost, provided these materials are:

i. Stored a minimum of 50 feet from surface water bodies, storm sewer inlets, and/or ditches or other stormwater conveyance channels;

ii. Stored in a manner as to minimize stormwater run-on and pollutant run-off via surface grading, dikes and/or berms (which may include sandbags, hay bales and curbing, among others) or three-sided storage bays. Where possible, the open side of storage bays shall be situated on the upslope. The area in front of storage bays and adjacent to storage areas shall be swept clean after loading/unloading; and

iii. Not being processed (i.e., composting, chipping, grinding, screening, and/or size reducing). The discharge of stormwater from the processing of these materials is not authorized under this permit. Facilities conducting processing activities shall contact the Industrial Stormwater Permitting Unit at industrialstormwaterpermitting@dep.nj.gov for information regarding obtaining the applicable stormwater permit.

iv. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement by EDPA + 6 months.

m. Cold Patch Asphalt Storage: The permittee shall store cold patch asphalt in a permanent structure or on an impervious surface and covered with a waterproof material (i.e., tarpaulin or 10-mil plastic sheeting) and contained (e.g., contained by berms) to control leachate and stormwater run-on or run through. Existing and new Tier A permittees shall implement this requirement upon EDPA.

n. Street Sweepings and Storm Sewer Clean-out Material Storage: The permittee shall store street sweepings, storm sewer and catch basin clean-out materials, stormwater basin clean-out materials and other similar materials on a temporary basis. These materials shall not include liquids, wastes which are removed from sanitary sewer systems, or material which constitutes hazardous waste in accordance with N.J.A.C. 7:26G. The materials placed into temporary storage must be, at a minimum:

i. Stored in leak-proof containers or on an impervious surface and covered with a waterproof material (i.e., tarpaulin or 10-mil plastic sheeting) and is contained (e.g., contained by berms) to control leachate and stormwater run-on or run-through; and

ii. Removed for disposal within six (6) months of placement into storage.

iii. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement by EDPA + 6 months.

o. Construction and Demolition Waste, Wood Waste, and Yard Trimmings Storage: The permittee may temporarily store construction and demolition waste, wood waste, and yard trimmings, provided these materials are:

i. Stored a minimum of 50 feet from surface water bodies, storm sewer inlets, and/or ditches or other stormwater conveyance channels;

ii. Stored in a manner as to minimize stormwater run-on and pollutant run-off via surface grading, dikes and/or berms (which may include sandbags, hay bales and curbing, among others), or three-sided storage bays. Where possible, the open side of storage bays shall be situated on the upslope. The area in front of storage bays and adjacent to storage areas shall be swept clean after loading/unloading;

iii. Removed within six (6) months of placement into storage; and

iv. Not being processed (i.e., composting, chipping, grinding, screening, and or size reducing). The discharge of stormwater from the processing of these materials is not authorized under this permit. Facilities conducting processing activities shall contact the Industrial Stormwater Permitting Unit at industrialstormwaterpermitting@dep.nj.gov for information regarding obtaining the applicable stormwater permit.

v. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this requirement by EDPA + 6 months.

p. Scrap Tires: The permittee shall store scrap tires in a covered container or enclosure to prevent the exposure to stormwater. If a covered container or enclosure is not available, tires may be stored on an impervious surface and covered with a waterproof material (i.e., tarpaulin or 10-mil plastic sheeting). Existing and new Tier A permittees shall implement this requirement upon EDPA.

q. Inoperable Vehicles or Equipment: The permittee may store inoperable vehicles and equipment provided measures are taken to prevent stormwater runoff of pollutants. Specifically, inoperable vehicles and equipment with intact bodies and exteriors capable of preventing the contact of stormwater with internal components and fluids capable of discharging pollutants and not leaking any fluids may be stored indefinitely. For those that have body damage, rust damage, missing body panels, or broken windows, such that the exterior is no longer impervious to precipitation must have portable tents or covers are placed over vehicles. If any inoperable vehicle is found to be leaking, drip pans must be utilized immediately, and that leak must be repaired or that fluid must be drained from the vehicle. For all inoperable vehicles and equipment in storage, the permittee must ensure that there are designated storage areas are sited away from storm drain inlets, and monthly inspections are conducted for leaks and filled drip pans, as noted in b. above. Existing and new Tier A permittees shall implement this requirement upon EDPA.

r. Outdoor Refuse Containers and Dumpsters: The permittee shall ensure that dumpsters and refuse containers that are outdoors or exposed to stormwater, are covered at all times. This serves to prevent the spilling, dumping, leaking, or otherwise discharge of liquids, semi-liquids, or solids from the containers. Roll-offs and open-top waste containers used to collect and temporarily store municipal trash, garbage and non-recyclables must be kept tarped, or otherwise covered unless actively being filled or emptied. Clean roll-offs or other open top containers used to collect clean household recyclables (such as cans, bottles, or paper, but not including materials such as electronics) must be covered when not in use, at the end of each workday, and before any anticipated storm event. This measure is not intended for temporary

demolition containers (e.g., rubble or construction waste, and wood waste) or containers that hold large bulky items (e.g., furniture), provided they do not contain putrescible waste. Existing and new Tier A permittees shall implement this requirement upon EDPA.

6. Stormwater Program Coordinator (SPC) Training

a. The permittee shall ensure that all individuals who serve as Stormwater Program Coordinators (SPC) complete mandatory Department training regarding their responsibilities to implement the stormwater program in their municipality.

b. The Department will conduct this free training via an interactive webinar which shall be offered approximately twice each year.

c. SPCs are required to attend this training within EDPA + 36 months and once per permit cycle thereafter.

d. In the event of SPC turnover, the permittee shall comply with the conditions set forth in Part IV.A.1.e. and ensure that the new SPC attends the next available Department training session.

e. Previous recordings of SPC training sessions will be posted on the MS4 Tier A webpage.

7. Annual Employee Training

a. The permittee shall develop, update, and implement an employee training program that ensures duty-specific training of all individuals responsible for implementation of the stormwater program. Training shall describe the procedures necessary to ensure compliance with all permit conditions and shall include municipality-specific details described in the SPPP. Training shall be conducted within 3 months of commencement of duties and on an annual basis thereafter. Recipients include municipal board members, governing body members, shared contract service entities and municipal employees in public works, engineering, business administration, clerical, etc. Methods of training may include in-person group training sessions, e-Learning sessions, on-the-job/field training, and instructional videos. The permittee must document and maintain records of the training of each individual, indicating the participant's name/title, signatures, dates of training, agenda or topics discussed, and the instructor's name/title or video title/website link addresses. The location of these records shall be noted in the SPPP.

i. SPPP – The permittee shall provide training on the current SPPP and applicable recordkeeping requirements. See Part IV.A.2.

ii. Construction Site Stormwater Runoff – The permittee shall provide training regarding the need for applicable construction sites to obtain a Construction Site Stormwater Runoff general or individual permit authorization. See Part IV.D.

iii. Post-Construction Stormwater Management in New Development and Redevelopment – The permittee shall provide training on the requirements for Post-Construction Stormwater Management in New Development and Redevelopment. See Part IV.E.

iv. Community-wide Ordinances – The permittee shall provide training on the community-wide ordinances including a review of the requirements, enforcement, and the repercussions of non-compliance. See Part IV.F.1.

v. Community-wide Measures – The permittee shall provide training on the community-wide pollution prevention/good housekeeping measures. See Part IV.F.2.

vi. Stormwater Facility Maintenance – The permittee shall provide training on the maintenance of inventoried stormwater facilities owned or operated by the municipality as well as those not owned or operated by the municipality. See Part IV.F. 3. and IV.F.4.

vii. Municipal Maintenance Yard Operations and Other Ancillary Operations – The permittee shall provide training on implementing BMPs, good housekeeping measures, and conducting and documenting site inspections at municipally owned or operated Maintenance Yard Operations and Other Ancillary Operations. See Part IV.F.5.

viii. MS4 Mapping – The permittee shall provide training on mapping MS4 infrastructure within the municipality. See Part IV.G.1.

ix. Outfall Stream Scouring Detection and Control – The permittee shall provide training on how to inspect, identify, correct, and document outfall pipe stream scouring and contributing factors. See Part IV.G.2.

x. Illicit Connection Elimination – The permittee shall provide training on how to inspect, identify, eliminate, and document the impacts associated with illicit connections and details of the program including investigation techniques, physical observations, and field sampling. See Part IV.G.3.

xi. Watershed Improvement Plan – The permittee shall provide training on the requirements for developing a Watershed Improvement Plan. See Part IV.H.

xii. This requirement applies at EDPA for all existing permittees. New permittees have 12 months to create their SPPP and shall conduct training immediately upon completion. As such, the requirement for new Tier A permittees is EDPA+12 months.

8. Stormwater Management Design Review (SWMDR) Training

a. The permittee shall ensure that all individuals that review and approve stormwater management designs for major development projects on behalf of the permittee for compliance with the Stormwater Management rules at N.J.A.C. 7:8 have completed this mandatory Department provided training. Information regarding this training can be found at www.njstormwater.org/training.htm.

b. This SWMDR training course covers the rule's requirements, calculation methodologies, and how to review a major development. This training must be completed, at a minimum, once every five years.

c. A list of the individuals that completed this training course is posted at the above noted web page, including their five-year expiration date.

d. Existing Tier A permittees shall implement this requirement upon EDPA. New Tier A permittees shall implement this condition within 12 months of EDPA.

9. Stormwater Management Rule Amendment Training

a. Whenever the Stormwater Management rules at N.J.A.C. 7:8 are amended and the Department determines that training is warranted, the permittee shall ensure that all individuals that have completed the SWMDR course in Part IV.B.5.h above also complete this mandatory Department provided training. If training is required, the Department will issue email notification to Stormwater Program Coordinators and individuals listed on the Department's SWMDR certified list.

b. Training must be completed no later than one year after the adoption of the amendments to the Stormwater Management rules at N.J.A.C. 7:8.

10. Municipal Board and Governing Body Member Training

a. The permittee shall ensure that municipal board and governing body members complete the "Asking the Right Questions in Stormwater Review Training Tool" posted at www.njstormwater.org/training.htm. This training is required for planning board members, zoning board members, and governing body members who review and approve applications for development and redevelopment projects on behalf of the permittee.

b. This training must be completed by current municipal board and governing body members and once per term of service thereafter, municipal board and governing body members must also review at least of one of the tools offered under Post-Construction Stormwater Management found at the website above.

c. Existing Tier A permittees shall ensure their current municipal board and governing body members complete this training on or before EDPA. New Tier A permittees shall ensure their current municipal board and governing body members complete this training on or before EDPA + 6 months. All Tier A permittees shall ensure that any new member complete this training within six months of commencing duties.

d. The permittee is required to maintain a list of the dates and names of training program participants in its SPPP.

G. Minimum Standards for MS4 Mapping, and Scouring, and Illicit Discharge Detection and Elimination

1. MS4 Mapping

a. The permittee shall develop, update, and maintain an MS4 Infrastructure Map that delineates the location of the following stormwater features that are owned or operated by the permittee, including their associated attributes noted in parentheses:

i. MS4 outfalls (receiving surface water name, type of outfall);

ii. MS4 ground water discharge points (type);

iii. MS4 interconnections (type into/from, entity);

iv. Storm drain inlets (type, catch basin present, label present, retrofitted);

v. MS4 manholes;

vi. MS4 conveyance (type, direction of flow);

vii. MS4 pump stations;

viii. Stormwater facilities (type); and

ix. Property boundaries of maintenance yard(s) and other ancillary operations (type).

b. The permittee shall ensure that the MS4 Infrastructure map be:

i. Reviewed annually, or more frequently as necessary, and updated to include the location or attributes of any new or newly identified MS4 infrastructure;

ii. Posted on the permittee's stormwater webpage and included as a weblink within the SPPP;

iii. Submitted electronically to the Department as a georeferenced shapefile, geodatabase, or an AutoCAD file (with all other non-applicable data stripped out). If the DEP Mapping Application (https://www.nj.gov/dep/dwq/msrp_map_aid.htm) is used, then no submittal is required as the data is automatically submitted to the Department via the mapping application; and

iv. Provided to the Department on or before EDPA + 36 months. Existing permittees: This time frame does not extend the deadline of December 21, 2020, for the submission of the MS4 outfall pipe map.

2. Stream Scouring

a. The permittee shall develop, update, and implement a program to detect, investigate and control any localized stream scouring from stormwater outfalls owned or operated by the permittee. This program shall be described in the written SPPP, as required in Part IV.A.2. See the Tier A Municipal Guidance document and the Department's Stream Scouring Investigation Recordkeeping Form at https://www.nj.gov/dep/dwq/tier_a.htm for additional information.

b. The permittee shall, at a minimum:

i. Inspect each MS4 outfall that discharges to a stream, and the surrounding area in the vicinity of the MS4 outfall, for localized scouring of the stream banks or bottom caused by the outfall. Each outfall shall be inspected at least once every five years, with a minimum of 20% of the total number of outfalls per year.

ii. Inspect, within 30 days of identification, any new and/or newly identified outfalls as required in i. above for localized scouring of the stream banks or bottom caused by the outfall;

iii. Investigate, within 30 days of receipt, all complaints and reports of stream scouring;

iv. When localized stream scouring is detected, identify sources of stormwater that contribute to the scouring from the outfall within 3 months;

v. Where identified sources are located on property owned or operated by the permittee, corrective action shall be taken by the permittee to reduce stormwater rate or volume when feasible;

vi. Where identified sources are within the jurisdiction of the permittee, but not located on property owned or operated by the permittee, the permittee shall ensure that proper operation and maintenance of stormwater facilities is performed by the entity responsible for the facility as required in Part IV.F.4;

vii. Prioritize, schedule and complete remediation of identified localized stream scouring as soon as possible, taking action based upon the requirements above. If not able to be completed within 12 months, a schedule for completion shall be submitted to the MS4 Case Manager before the 12 month deadline. (See https://www.nj.gov/dep/dwq/msrp_managers.htm). This schedule of completion shall be maintained with updated information and provided to the MS4 Case Manager on a quarterly basis until completion as required in Part IV.F.3 and IV.F.4;

viii. All stream scouring restoration shall be made in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey at N.J.A.C. 2:90-1 (e.g., Conduit Outlet Protection 12-1) and the requirements for bank stabilization and channel restoration found at N.J.A.C. 7:13;

ix. All associated maintenance or repairs to stormwater facilities shall be made in accordance with N.J.A.C 7:8. Any changes to stormwater facilities that were originally approved as part of a major development project must be reviewed for compliance with N.J.A.C. 7:8 and the permittee's SCO or RSIS as applicable, by a design review engineer who has completed the Department's Stormwater Design Review course;

x. Maintain a log and document all investigations and actions taken sufficient to demonstrate compliance with this requirement. Outfall inspections shall include all information requested on the Department's Outfall Inspection Form. Documentation of stream scouring shall include all of the information requested on the Department's Stream Scouring Investigation Recordkeeping Form. (See https://www.nj.gov/dep/dwq/tier_a.htm).

xi. Existing Tier A permittees should already have this program in place, so compliance is required at EDPA. New Tier A permittees must create and implement this program by EDPA + 12 months.

3. Illicit Discharge Detection and Elimination

a. Illicit Discharge Detection and Elimination: The permittee shall develop, update, implement and enforce an ongoing Illicit Discharge Detection and Elimination Program. This program shall be described in the written SPPP, as required in Part IV.A.2. See the Tier A Municipal Guidance document and the Illicit Connection Inspection Report Form (www.nj.gov/dep/dwq/tier_a_guidance.htm) and the USEPA Guidance document (https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf) for additional information.

b. The permittee shall, at a minimum:

i. Conduct visual dry weather inspection of all outfalls owned or operated by the permittee at least once every five years, with a minimum of 20% of the total number of outfalls per year, to determine if dry weather flow (flow occurring 72 hours after a rain event) or other evidence of illicit discharge is present;

ii. Inspect, within 30 days of identification, any new and/or newly identified outfalls, as required in Part IV.G.1.b.i above, to determine if dry weather flow or other evidence of illicit discharge is present;

iii. Investigate, within 30 days of identification, dry weather flows discovered during routine inspection and maintenance of other elements of the MS4;

iv. Investigate, within 30 days of receipt, complaints and reports of illicit connections, including those from operating entities of interconnected MS4s;

v. Investigate, within 30 days, to determine the source if evidence of illicit discharge is found;

vi. Eliminate as soon as possible, but no later than within one year of discovery, non-stormwater discharges that are traced to their source and found to be illicit connections. If unable to eliminate a non-stormwater discharge within one year, the permittee must request an extension from the Department no later than thirty days before the end of the one-year timeframe; and

vii. Document investigations and actions taken using the Department's Illicit Connection Inspection Report Form and attach this form to the MSRP Annual Report. (See https://www.nj.gov/dep/dwq/tier_a.htm).

c. The permittee shall adopt and enforce an ordinance that prohibits illicit connections to the MS4 owned or operated by the permittee (See https://www.nj.gov/dep/dwq/example_ordinance.htm for a model ordinance).

d. Existing Tier A permittees should already have this program in place, so compliance is required at EDPA. New Tier A permittees must create and implement this program by EDPA + 12 months.

H. Watershed Improvement Plan

1. Requirements for the Watershed Improvement Plan

a. The permittee shall develop a Watershed Improvement Plan in the three phases specified below that describes what actions the permittee will take to:

i. Improve water quality by reducing the contribution of pollutant parameters for all receiving waters within and bordering the town that have percent reductions listed for stormwater in the Total Maximum Daily Loads (see the TMDL Look-up Tool at https://www.nj.gov/dep/dwq/msrp-tmdl-rh.htm);

ii. Improve water quality by reducing the contribution of pollutant parameters for all receiving waters within and bordering the town that have water quality impairments as per the Department's Integrated Report.
(See the 303(d) list portion of the Department's Integrated Report at https://www.epa.gov/sites/default/files/2020-01/documents/2016_final_integrated_report_appendix_b.pdf); and

iii. Reduce and/or eliminate stormwater flooding in the municipality, prioritizing the areas of flooding for corrective actions based on threat to human health and safety, environmental impacts, and frequency of occurrence.

b. The permittee shall solicit input from stakeholders, including residents, business owners, owners of private stormwater facilities (as per b.xiii below), and other municipalities and/or dischargers to the subwatershed(s) to be involved in the Plan development process.

c. The permittee shall conduct semi-annual public information sessions (in-person or virtual) beginning on or before EDPA + 36 months, throughout the development of the Plan. These sessions could be included on the agenda for town council (or equivalent) meetings.

d. The permittee shall prepare and submit to the Department, on or before EDPA + 36 months, **the Watershed Inventory Report,** as the first step of the Watershed Improvement Plan,

which shall summarize and include an electronic map of the items listed below. The permittee may use any information available from the Department's GIS database at https://gisdata-njdep.opendata.arcgis.com/ to assist with the preparation of this Report, except for items ii. through vi. For i., existing permittees shall use the outfall pipe map as the base map, which was required to be completed by the permittees by December 21, 2020.

i. All stormwater outfalls owned/operated by the permittee;

ii. The drainage area for each outfall(s);

iii. The receiving waterbodies of those outfalls;

iv. The water quality classification of all receiving waterbody segments;

v. All stormwater interconnections from the municipality into another entities' storm or sanitary sewer system;

vi. The drainage area for each interconnection into another entities' storm or sanitary sewer system;

vii. All stormwater connection points into the municipality from another entities' storm sewer system;

viii. All storm drain inlets owned/operated by the permittee;

ix. Area associated with each TMDL for waters that lie within or bordering the municipality;

x. Area associated with each water quality impairment for waters that lie within or bordering the municipality;

xi. Overburdened communities;

xii. Impervious areas; and

xiii. The location and ownership of all stormwater outfalls and basins/infrastructure not owned/operated by the permittee.

e. The permittee shall prepare and submit to the Department, on or before EDPA + 48 months, **the second phase Watershed Assessment Report**, which shall include, but not be limited to:

i. An assessment of potential water quality improvement projects by sub-watershed and parameter;

ii. An estimate of the percent reduction in loading of the TMDL/impaired parameters due to project(s) in i. above;

iii. A summary of feedback from public information sessions;

iv. An estimate of funding needs for each project, and identification of potential funding sources, including the New Jersey Water Bank (NJWB); the formation of an SWU, using 319 grants, FEMA BRIC grants; and

v. An estimate of an implementation schedule.

f. The permittee shall post the Watershed Assessment Report, along with an announcement of a 60-day comment period for formal public input on its municipal website.

g. The permittee shall prepare and submit to the Department, on or before EDPA + 59 months, the **final Watershed Improvement Plan Report**, which shall include:

i. A summary of proposed locations and load reductions of water quality improvement projects, both public and private, to be implemented;

ii. A summary of the public comments received, and the changes made to the Final Plan;

iii. A summary of how the projects will be coordinated with other regulatory requirements, such as:

- flood protection;
- endangered habitat/species;
- surface & ground drinking water protection;
- climate change/resiliency;
- green infrastructure/SWM requirements;
- wildlife corridors;
- green acres;
- environmental justice;
- Combined Sewer Overflow Long Term Control Plans;
- wetlands;
- riparian buffers;
- forest corridors;
- related ongoing projects;
- Pinelands Commission;
- Highlands Council; and
- Delaware River Basin Commission.

iv. The proposed implementation schedule for the water quality improvement projects;

v. A schedule of the public information sessions to be held;

vi. Problems identified that are outside the jurisdiction of the permittee, if any. These can be related to pollutant loading due to agricultural properties, or other lands not under the jurisdiction of the municipality, and opportunities to address them;

vii. Costs, broken down by project and year, the funding opportunities that will be sought; and

viii. This plan shall describe how stormwater related problems in overburdened communities have been prioritized.

h. The permittee shall begin implementation of the Watershed Improvement Plan in accordance with the schedule set forth in the Plan.

i. The permittee shall update this Plan, when necessary, based upon the biennial (every 2 years) review of the revisions to the impairments of the permittee's waterbodies as per the Department's Integrated Report and newly adopted TMDLs.

I. Additional Measures and Optional Measures

1. Incorporation of Additional Measures

a. Additional Measures are non-numeric (e.g., best management practices) or numeric effluent limitations that are expressly required to be included in a permittee's stormwater program by a TMDL, a regional stormwater management plan, or other elements of an adopted areawide Water Quality Management Plan.

b. The Department will provide written notice of the adoption of any Additional Measure(s) to any affected permittee. The Department will list each adopted Additional Measure in a minor modification to the permit. The required Additional Measure(s) will also specify the implementation schedule.

2. Incorporation of Optional Measures

a. Optional Measures are BMPs, developed by the Permittee, that extend beyond the requirements of the Tier A MS4 NJPDES permit and that prevent or reduce pollution to waters of the State.
b. The Permittee may, at its own discretion, incorporate Optional Measures into its MS4 stormwater program. Such BMPs shall be identified in the SPPP as Optional Measures.
c. Failure to implement an Optional Measure identified in the SPPP shall not be considered a violation of the NJPDES permit.

3. Refuse Container / Dumpster Ordinance

a. Permittees have the option of adopting and enforcing an ordinance requiring dumpsters and other refuse containers that are outdoors or exposed to stormwater to be covered at all times. This ordinance serves to prevent the spilling, dumping, leaking, or otherwise discharge of liquids, semi-liquids or solids from the containers. This ordinance is not intended for litter receptacles; individual homeowner trash and recycling containers; containers that hold large bulky items (e.g., furniture, bound carpet and padding); permitted temporary demolition containers; and refuse containers at industrial facilities authorized to discharge stormwater under a valid NJPDES permit. For a sample ordinance see www.nj.gov/dep/dwq/tier_a.htm.

J. Recordkeeping

1. Standard Recordkeeping Requirements

a. The permittee shall retain copies of all records required to be kept by this permit for a period of at least 5 years and be made available to the Department upon request.

b. Existing Tier A permittees and new Tier A permittees shall implement this requirement upon EDPA.

K. Annual Report and Certification

1. Annual Reporting Requirements

a. The permittee shall complete an Annual Report and Certification using the Department's electronic MSRP Annual Report service tool in the Regulatory Services Portal (https://www.njdeponline.com). The Annual Report shall summarize the status of compliance with the permit conditions for the subject year between January 1 and December 31.

b. The permittee shall complete the annual Supplemental Questionnaire, which includes the Major Development Project List, and upload it as an attachment with the Annual Report. The Annual Report and Certification will be considered incomplete if the Supplemental Questionnaire is not included as an attachment when the Annual Report is submitted. The Supplemental Questionnaire is available at www.nj.gov/dep/dwq/tier_a.htm.

c. The Stormwater Program Coordinator shall certify, sign and date the Annual Report.

d. Submit the Annual Report and Certification, including the Supplemental Questionnaire, on or before May 1st annually.

Attachment A – Points System for Public Education and Outreach Activities

The permittee shall implement a Public Education and Outreach Program that focuses on educational and pollution prevention activities about the impacts of stormwater discharges on surface water and groundwater and to involve the public in reducing pollutants in stormwater runoff and mitigating flow.

The permittee shall **annually** conduct educational activities that total at least **12 points** and include activities from **at least three of the five categories** found below.

> At a minimum, at least one of the activities shall involve educating businesses and the general public of hazards associated with illicit connections and improper disposal of waste.

Each approved activity is listed below with an assigned point value. Additional information on how to conduct these Public Education and Outreach activities can be found under Notes and Definitions Part IV.A.3 and 4 of this permit. Records shall be kept necessary to demonstrate compliance with this requirement, including date of activities and any other relevant documentation.

Category 1: General Public Outreach		
Activity	**Description**	**Points**
Social Media	Post relevant stormwater materials on a municipal social media site, such as a Facebook, Instagram, or Twitter page. This information may include links to other stormwater related resources, including the municipality's stormwater webpage and the NJDEP stormwater website (www.njstormwater.org). *One point awarded for each social media platform used. A maximum of 3 points is allowed.	3*
Newspaper Ad	Use Department created and approved stormwater education materials available on www.cleanwaternj.org to publish an ad in a newspaper or newsletter that serves the municipality. *A maximum of 1 point is allowed.	1*
Radio/Television	Broadcast a stormwater-related radio or television public service announcement from www.cleanwaternj.org on a local radio or municipal public service channel. *One point awarded for each media outlet used. A maximum of 2 points is allowed.	2*
Green Infrastructure Signage	Post signs at municipally owned green infrastructure sites that describe the function and importance of the infrastructure, contact phone number, municipal identification number, and/or website for more information. *New signs receive 0.5 points per sign. Existing signs that are maintained or upgraded receive 0.25 points per sign. A maximum of 5 points is allowed.	5*

Billboard/Sign	Post and maintain (for credit in subsequent years) a stormwater-related billboard or sign which can be displayed on a bus, bus stop shelter, recreation field (outfield sign), or other common public location.	2
Mural	Produce and maintain (for credit in subsequent years) the planning and painting of a stormwater pollution themed mural, storm drain art or other artwork at a local downtown/commercial area or other similar public venue.	2
Stormwater Facility Signage	Post signs at municipally owned stormwater management basins or other structural stormwater related facilities that describe the function and importance of the facility, contact phone number, municipal identification number, and/or website for more information. *New signs receive 0.5 points per sign. Existing signs that are maintained or upgraded receive 0.25 points per sign. A maximum of 5 points is allowed.	5*

Category 2: Targeted Audiences Outreach		
Activity	**Description**	**Points**
Stormwater Display	Present a stormwater related display or materials at any municipal event (e.g., Earth Day, town picnic), at the municipal building or other similar public venue.	1
Promotional Item	Distribute an item or items with a stormwater related message (e.g., refrigerator magnets, temporary tattoos, key chains, bookmarks, pet waste bag dispensers, coloring books, and pens or pencils). Municipality must initially have available a minimum number of the items equal to 10% of the municipal population.	2
Private Stormwater Facilities Education	Provide information to all known owners of stormwater facilities not owned or operated by the municipality (i.e., privately-owned) highlighting the importance of proper maintenance of stormwater measures. For assistance, see information at www.nj.gov/dep/stormwater/maintenance_guidance.htm.	3
Mailing or e-Mailing Campaign	Distribute any of the Department's educational brochures, tip cards, or a municipally produced equivalent (e.g., community calendar, newsletter, or recycling schedule) via a mailing to every resident and business in the municipality. *A maximum of 2 points is allowed.	2*
Ordinance Education	Distribute a letter or e-mail from the mayor or municipal official to every resident and business in the municipality highlighting the requirements and environmental benefits of the Pet Waste, Wildlife Feeding, Litter Control, Improper Disposal of Waste, Containerized Waste/Yard Waste Collection, Private Storm Drain Inlet Retrofitting, Illicit Connection, Tree, and Salt Storage ordinances. Provide a link to the municipal website where subject ordinances are posted.	3

Category 3: School/Youth Education and Activities		
Activity	**Description**	**Points**
School Presentations	Provide water-related educational presentation(s) and/or activities to local preschool, elementary, middle, and/or high school classes using municipal staff or local partner organizations. Topics could include stormwater,	5*

	nonpoint source pollution, watersheds, water conservation and water quality. For ideas, see information at www.nj.gov/dep/seeds. *Presentations receive 1 point per presentation, with a maximum of 5 points allowed.	
Water Education Workshops	Provide water-related professional development workshops for local teachers from a registered NJ Department of Education Professional Development Provider	2
Storm Drain Labeling	Organize a project to label and/or maintain storm drain labels (that are not already precast with a message) with a scout troop, local school district, or faith-based group, or other community youth group for a minimum of 40 labels. This project could also include stenciling over precast labels to improve legibility.	3
Educational Contest for Schools	Organize an educational contest with a local school district or a local community organization serving youth to design a poster, magnet, rain stick, rain barrel or other craft/art object. Contest themes shall have an appropriate stormwater message. Winning entries are to be displayed at publicly accessible locations within the municipality such as at the town hall, library, post office, or school. The winning design should be shown on the municipality's website or social media site, if practical.	3
AmeriCorps Event	Coordinate an event (e.g., volunteer stream monitoring, educational presentations, or stormwater awareness project) through AmeriCorps NJ Watershed Ambassador Program.	4
Clean-up	Sponsor or organize a litter clean up for a scout troop, local school district, faith-based group or other community youth group along a local waterway, public park, stormwater facility, or in an area with storm drains that discharge to a local lake or waterway.	3

Category 4: Watershed/Regional Collaboration		
Activity	**Description**	**Points**
Regional Stormwater Collaboration	Participate in a regional stormwater, community collaborative or other watershed-based group on a regular basis to discuss impaired waterbodies, TMDLs, regional stormwater related issues, or watershed restoration plans that address those waterbodies. Evaluate, develop, and implement remedies that resolve stormwater-related issues within the affected waterbody or watershed.	3
Green Infrastructure Workshop	Organize or participate in a rain barrel, rain garden or other green infrastructure workshop on a regional or watershed basis. This could be a partnership exercise with a local watershed organization, utility, university, school, youth/faith-based group, and/or other organization.	3
Community Activity	Organize or participate in the organization of a regional or watershed-based event to carry out stormwater activities such as stormwater facility maintenance or litter clean-up. The municipality may identify and enter into a partnership agreement with a local group such as a watershed organization, utility, university, school, youth/faith-based group, and/or other organization to carry out these activities.	3

Category 5: Community Involvement Activities		
Activity	**Description**	**Points**
Volunteer Stormwater Assessment or Stream Monitoring	Establish a volunteer stormwater facility assessment (inspection, inventory and/or mapping) or stream monitoring program for a waterbody within the municipality to gauge the health of the waterway through chemical, biological or visual monitoring protocols. Contact NJDEP's AmeriCorps NJ Watershed Ambassador Program or review USEPA National Directory of Volunteer Monitoring Programs.	3
Rain Barrel Workshop	Organize or participate in a rain barrel workshop. This could be a partnership exercise with a local watershed organization, university, school, youth/faith-based group, and/or another nonprofit.	3
Rain Garden Workshop	Organize or participate in a rain garden training or installation workshop. This could be a partnership exercise with a local watershed organization, university, school, youth/faith-based group, and/or another nonprofit.	3
Community Event	Organize or participate in the organization of a community event to carry out stormwater activities such as stormwater measure maintenance or a stream buffer restoration. The municipality may identify and enter into a partnership agreement with a local group such as a watershed organization, university, utility, school, youth/faith-based group, and/or other nonprofit to carry out these activities.	3
Community Involvement	Organize a project with a local organization to create and post signs at either green and/or gray stormwater infrastructure sites or facilities that describe the function and importance of the facility, contact phone number, municipal identification number, and/or website for more information. *Signs receive 0.5 points per sign. A maximum of 5 points is allowed.	5*

Attachment B - Design Standards for Storm Drain Inlets

Application of Design Standard
The below design standard applies to the following types of storm drain inlet installation or retrofit projects unless a more stringent standard is specified by the municipality's Stormwater Control Ordinance: • Storm drain inlets installed as part of new development and redevelopment (public or private) that disturb one acre or more; • Storm drain inlets installed as part of new development and redevelopment (public or private) that disturb less than one acre that are part of a larger common plan of development or sale (e.g., phased residential development) that ultimately disturbs one acre or more; • Tier A Municipality owned or operated storm drain inlets must be retrofitted where the storm drains are (1) in direct contact with any repaving, repairing (excluding individual pothole repair), or resurfacing (including top coating or chip sealing with asphalt emulsion or a thin base of hot bitumen); or (2) in direct contact with any reconstruction or alteration of facilities; and • Privately-owned or operated storm drain inlets (e.g., condominium association) must be retrofitted where the storm drains are (1) in direct contact with any repaving, repairing (excluding individual pothole repair), or resurfacing (including top coating or chip sealing with asphalt emulsion or a thin base of hot bitumen); or (2) in direct contact with any reconstruction or alteration of facilities. This does not include single family homes.

Design Standard

Grates in pavement or other ground surfaces shall meet either of the following standards:

- The New Jersey Department of Transportation (NJDOT) bicycle safe grate standards described in Chapter 2.4 of the NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (see www.state.nj.us/transportation/about/publicat/pdf/BikeComp/introtofac.pdf); or

- A grate where each individual clear space in that grate has an area of no more than seven (7.0) square inches or is not greater than 0.5 inches across the smallest dimension. Note that the Residential Site Improvement Standards at N.J.A.C. 5:21 include requirements for bicycle safe grates.

Examples of grates subject to this standard include grates in grate inlets; the grate portion (non-curb opening portion) of combination inlets; grates on storm sewer manholes; ditch grates; trench grates; and grates of spacer bars in slotted drains. Examples of ground surfaces include surfaces of roads, (including bridges), driveways, parking areas, bikeways, plazas, sidewalks, lawns, fields, open channels, and stormwater basin floors used to collect stormwater from the surface into a storm drain or surface water body.

For curb-openings inlets, including curb-opening inlets in combination inlets, the clear space in the curb opening, or each individual clear space if the curb opening has two or more clear spaces, shall have an area of no more than seven (7.0) square inches or be no greater than two (2.0) inches across the smallest dimension.

Exemptions from the Design Standard

- Where each individual clear space in the curb opening in existing curb-opening inlets does not have an area of more than nine (9.0) square inches;

- Where the review agency determines that the standards would cause inadequate hydraulic performance that could not practicably be overcome by using additional or larger storm drain inlets;

- Where flows from the water quality design storm as specified in N.J.A.C. 7:8 are conveyed through any device (e.g., manufactured treatment device, or a catch basin hood) that is designed, at a minimum, to prevent delivery of all solid and floatable materials that could not pass through one of the following:

  A rectangular space four and five-eighths inches long and one and one-half inches wide; or
  A bar screen having a bar spacing of 0.5 inches;

  Note that these exemptions do not authorize any infringement of requirements in the Residential Site Improvement Standards for bicycle safe grates in new residential development (N.J.A.C. 5:21-4.18(b)2 and 7.4(b)1).

- Where flows are conveyed through a trash rack that has parallel bars with one inch (1") spacing between the bars, to the elevation of the water quality design storm as specified in N.J.A.C. 7:8; or

- Where the Department determines, pursuant to the New Jersey Register of Historic Places Rules at N.J.A.C. 7:4-7.2(c), that action to meet the standard is an undertaking that constitutes an encroachment or will damage or destroy the New Jersey Register listed historic property.

ENGINEERS CERTIFICATION OF ANNUAL INSPECTION OF EQUIPMENT AND VEHICLE WASH WASTEWATER CONTAINMENT STRUCTURE

(Complete a separate form for each vehicle wash wastewater containment structure)

Permittee: _____ NJPDES Permit No: _____

Containment Structure Location: _____

The annual inspection of the above referenced vehicle wash wastewater containment structure was conducted on _____ (date). The containment structure and appurtenances have been inspected for:

1. The integrity of the structure including walls, floors, joints, seams, pumps and pipe connections
2. Leakage from the structure's piping, vacuum hose connections, etc.
2 Bursting potential of tank.
3. Transfer equipment
4. Venting
5. Overflow, spill control and maintenance.
6. Corrosion, splits, and perforations to tank, piping and vacuum hoses

The tank and appurtenances have been inspected for all of the above and have been determined to be:

Acceptable _____

Unacceptable _____

Conditionally Acceptable _____

List necessary repairs and other conditions: _____

_____

_____

_____

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (N.J.A.C. 7:14A-2.4(d)).

Name (print): _____ Seal:

Signature: _____

Date: _____

ENGINEERS CERTIFICATION OF ANNUAL INSPECTION OF EQUIPMENT AND VEHICLE WASH WASTEWATER CONTAINMENT STRUCTURE

(Complete a separate form for each vehicle wash wastewater containment structure)

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Signature: _____

Date: _____

ENGINEERS CERTIFICATION OF ANNUAL INSPECTION OF EQUIPMENT AND VEHICLE WASH WASTEWATER CONTAINMENT STRUCTURE

(Complete a separate form for each vehicle wash wastewater containment structure)

Permittee: _____ NJPDES Permit No: _____

Containment Structure Location: _____

The annual inspection of the above referenced vehicle wash wastewater containment structure was conducted on _____ (date). The containment structure and appurtenances have been inspected for:

1. The integrity of the structure including walls, floors, joints, seams, pumps and pipe connections
2. Leakage from the structure's piping, vacuum hose connections, etc.
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Name (print): _____ Seal:

Signature: _____

Date: _____

Underground Vehicle Wash Water Storage Tank Use Log

Name and Address of Facility _____

Facility Permit Number _____

Tank ID Number _____ Tank Location _____

Tank Volume _____ gallons Tank Height _____ inches

95% Volume _____ gallons 95% Volume _____ inches

Date and Time	Inspector	Height of Product Before Introducing Liquid (inches)	Is Tank Less Than 95% Full? (Y/N)	Visual Inspection Pass? (Y/N)	Comments

Notes: The volume of liquid in the tank should be measured **before** each use.

Liquid **should not be introduced** if the tank contains liquid at 95% of the capacity or greater.

A visual inspection of all exposed portions of the collection system should be performed before each use. Use the comments column to document the inspection and any repairs.

Underground Vehicle Wash Water Storage Tank Pump Out Log

Name and Address of Facility _____

Facility Permit Number _____

Tank ID Number _____ Tank Location _____

Tank Volume _____ gallons

Date and Time of Pump Out	Volume of Liquid Removed	Waste Hauler *	Destination of the Liquid Disposal *

*** The Permittee must maintain copies of all hauling and disposal records and make them available for inspection.**

Underground Vehicle Wash Water Storage Tank Pump Out Log

Name and Address of Facility _____

Facility Permit Number _____

Tank ID Number _____ Tank Location _____

Tank Volume _____ gallons

Date and Time of Pump Out	Volume of Liquid Removed	Waste Hauler *	Destination of the Liquid Disposal *

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Facility Permit Number _____

Tank ID Number _____ Tank Location _____

Tank Volume _____ gallons

Date and Time of Pump Out	Volume of Liquid Removed	Waste Hauler *	Destination of the Liquid Disposal *

*** The Permittee must maintain copies of all hauling and disposal records and make them available for inspection.**

Solutions to Stormwater Pollution

Easy Things You Can Do Every Day To Protect Our Water

A Guide to Healthy Habits for Cleaner Water

Pollution on streets, parking lots and lawns is washed by rain into storm drains, then directly to our drinking water supplies and the ocean and lakes our children play in. Fertilizer, oil, pesticides, detergents, pet waste, grass clippings: You name it and it ends up in our water.

Stormwater pollution is one of New Jersey's greatest threats to clean and plentiful water, and that's why we're all doing something about it.

By sharing the responsibility and making small, easy changes in our daily lives, we can keep common pollutants out of stormwater. It all adds up to cleaner water, and it saves the high cost of cleaning up once it's dirty.

As part of New Jersey's initiative to keep our water clean and plentiful and to meet federal requirements, many municipalities and other public agencies including colleges and military bases must adopt ordinances or other rules prohibiting various activities that contribute to stormwater pollution. Breaking these rules can result in fines or other penalties.

As a resident, business, or other member of the New Jersey community, it is important to know these easy things you can do every day to protect our water.

Limit your use of fertilizers and pesticides

- Do a soil test to see if you need a fertilizer.
- Do not apply fertilizers if heavy rain is predicted.
- Look into alternatives for pesticides.
- Maintain a small lawn and keep the rest of your property or yard in a natural state with trees and other native vegetation that requires little or no fertilizer.
- If you use fertilizers and pesticides, follow the instructions on the label on how to correctly apply it.

Make sure you properly store or discard any unused portions.

Properly use and dispose of hazardous products

- Hazardous products include some household or commercial cleaning products, lawn and garden care products, motor oil, antifreeze, and paints.
- Do not pour any hazardous products down a storm drain because storm drains are usually connected to local waterbodies and the water is not treated.

- If you have hazardous products in your home or workplace, make sure you store or dispose of them properly. Read the label for guidance.
- Use natural or less toxic alternatives when possible.
- Recycle used motor oil.
- Contact your municipality, county or facility management office for the locations of hazardous-waste disposal facilities.

Keep pollution out of storm drains

- Municipalities and many other public agencies are required to mark certain storm drain inlets with messages reminding people that storm drains are connected to local waterbodies.
- Do not let sewage or other wastes flow into a stormwater system.

Clean up after your pet

- Many municipalities and public agencies must enact and enforce local pet-waste rules.
- An example is requiring pet owners or their keepers to pick up and properly dispose of pet waste dropped on public or other people's property.
- Make sure you know your town's or agency's requirements and comply with them. It's the law. And remember to:
  - Use newspaper, bags or pooper-scoopers to pick up wastes.
  - Dispose of the wrapped pet waste in the trash or un-wrapped in a toilet.
  - Never discard pet waste in a storm drain.

Don't feed wildlife

- Do not feed wildlife, such as ducks and geese, in public areas.
- Many municipalities and other public agencies must enact and enforce a rule that prohibits wildlife feeding in these areas.

Don't litter

- Place litter in trash receptacles.
- Recycle. Recycle. Recycle.
- Participate in community cleanups.

Dispose of yard waste properly

- Keep leaves and grass out of storm drains.
- If your municipality or agency has yard waste collection rules, follow them.
- Use leaves and grass clippings as a resource for compost.
- Use a mulching mower that recycles grass clippings into the lawn.

Contact information

For more information on stormwater related topics, visit www.njstormwater.org or www.nonpointsource.org

Additional information is also available at U. S. Environmental Protection Agency Web sites www.epa.gov/npdes/stormwater or www.epa.gov/nps

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Nonpoint Pollution Control
Municipal Stormwater Regulation Program
(609) 633-7021

April 2004



What's a watershed?

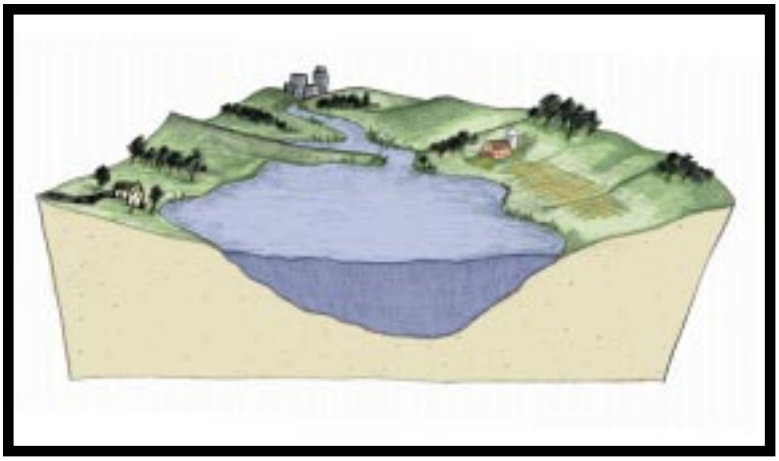
No matter where you are in New Jersey, you are in a watershed. Watersheds are everywhere ... from your front doorstep to the local park to the shopping mall to the creek down the road. Watersheds are the link between our land, our water and our communities because the quality of our water is linked to how we use the watershed surrounding it.

So what is a watershed?





What's a watershed?



A watershed is the area of land that drains into a body of water such as a river, lake, stream or bay. It is separated from other watersheds by high points in the area such as hills or slopes. It includes not only the waterway itself but also the entire land area that drains to it. For example, the watershed of a lake would include not only the streams entering that lake but also the land area that drains into those streams and eventually the lake. Drainage basins generally refer to large watersheds that encompass the watersheds of many smaller rivers and streams.

What's the water cycle?

For millions of years, water has been used. It is constantly being recycled and reused. It is important to understand how water moves through the Earth's water cycle, which is defined as the movement of water from the Earth's surface into the atmosphere and back to the Earth's surface again.

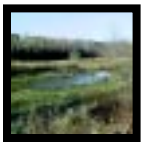
When it rains, the rainwater flows over land into waterways or is absorbed by the ground or plants. Water evaporates from land and water bodies becoming water vapor in the atmosphere. Water is also released from trees and other plants through "transpiration." The water vapor from evaporation and transpiration forms clouds in the atmosphere which in turn provide precipitation (rain, hail, snow, sleet) to start the cycle over again. This process of water recycling, known as the water cycle, repeats itself continuously.

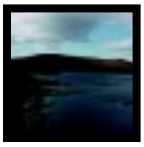
What's your watershed address?

Where does the water that rains on your home go? After it leaves your lawn, street or sidewalk where is it headed? Does it flow downhill straight to a nearby stream or lake? Does it wander into a wetlands? Does it puddle in your backyard? Does it zip down a storm drain to a local creek?

That destination, whether it's a puddle, a pond, a bay or a lake, is your watershed address. It could be Duck Pond, Spring Lake, Millstone River, Barnegat Bay or Beaver Brook. Just like there are towns within counties within states, there are subwatersheds within watersheds within drainage basins. For example, the rain that falls on your driveway might flow into Lake Hopatcong, which flows into the Musconetcong River, which flows into the Delaware River. So your watershed address would be Lake Hopatcong, Musconetcong River, Delaware River even though your mail finds you through Jefferson Township, Morris County, New Jersey.





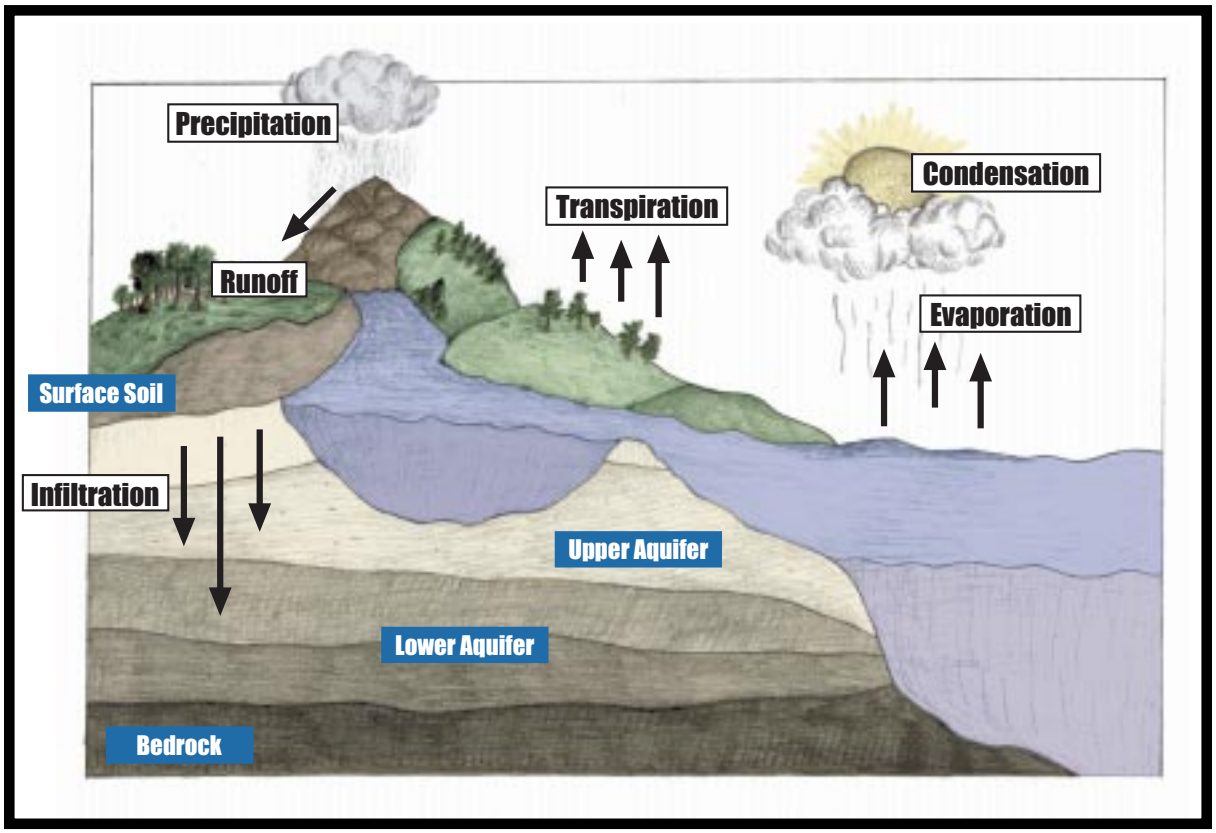



What's ground water?

A sizable amount of rainwater runoff seeps into the ground to become ground water. Ground water moves into water-filled layers of porous geological formations called aquifers. If the aquifer is close to the surface, its ground water can flow into nearby waterways or wetlands, providing a base flow. Depending on your location, aquifers containing ground water can range from a few feet below the surface to several hundred feet underground. Aquifer recharge areas are locations where rainwater and other precipitation seeps into the Earth's surface to enter an aquifer. Contrary to popular belief, aquifers are not flowing underground streams or lakes.

Ground water moves at an irregular pace, seeping from more porous soils, from shallow to deeper areas and from places where it enters the Earth's surface to where it is discharged or withdrawn. A system of more than 100 aquifers is scattered throughout New Jersey, covering 7,500 square miles.

Why is ground water important?
Ground water is the primary drinking water source for half of the state's population. Most of this water is obtained from individual domestic wells or public water supplies which tap into aquifers. New Jersey agriculture also depends on a steady supply of clean ground water for irrigation.



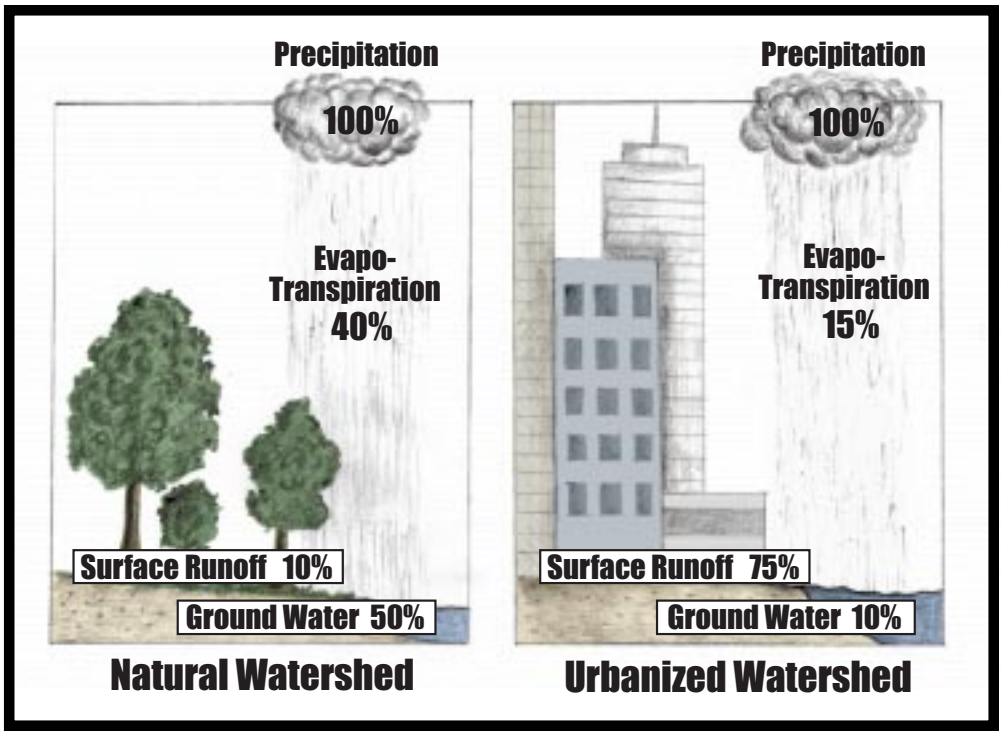
How does urbanization change a watershed?

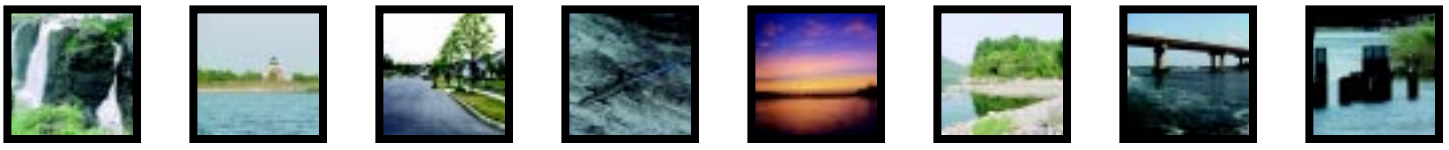
Urbanization (or development) has a great effect on local water resources. It changes how water flows in the watershed and what flows in the water. Both surface and ground water flow are changed.

As a watershed becomes developed, trees, shrubs and other plants are replaced with impervious surfaces (roads, rooftops, parking lots and other hard surfaces that do not allow stormwater to soak into the ground). Without the plants to store and slow the flow of stormwater, the rate of stormwater runoff is increased. Less stormwater soaks into the ground because the sidewalks, roads, parking lots and rooftops block this infiltration. This means a greater volume of water reaches the waterway faster and less water infiltrates to ground water. This in turn leads to more flooding after storms and reduced flow in streams and rivers during dry periods. The reduced amount of infiltrating water can lower ground water levels, which in turn can stress local waterways that depend on steadier flows of water.

In the stream, more erosion of stream banks and scouring of channels will occur due to volume increase. This in turn degrades habitat for plant and animal life that depend on clean water. Sediment from eroded stream banks clogs the gills of fish and blocks light needed for plants. The sediment settles to fill in stream channels, lakes and reservoirs. This also increases flooding and the need for dredging to clear streams or lakes for boating.

In addition to the high flows caused by urbanization, the increased runoff also contains increased contaminants. These include litter, cigarette butts and other debris from sidewalks and streets, motor oil poured into storm sewers, heavy metals from brake linings, settled air pollutants from car exhaust and pesticides and fertilizers from lawn care. These contaminants reach local waterways quickly after a storm.





What's watershed management?

The watershed management approach seeks to effectively protect our water resources by taking into account the entire watershed. Successful watershed management requires the participation and involvement of the entire community within the watershed boundaries, including industry, government, business and citizens. Since everyone may contribute to watershed problems, all should be involved in identifying both the problems and the solutions.

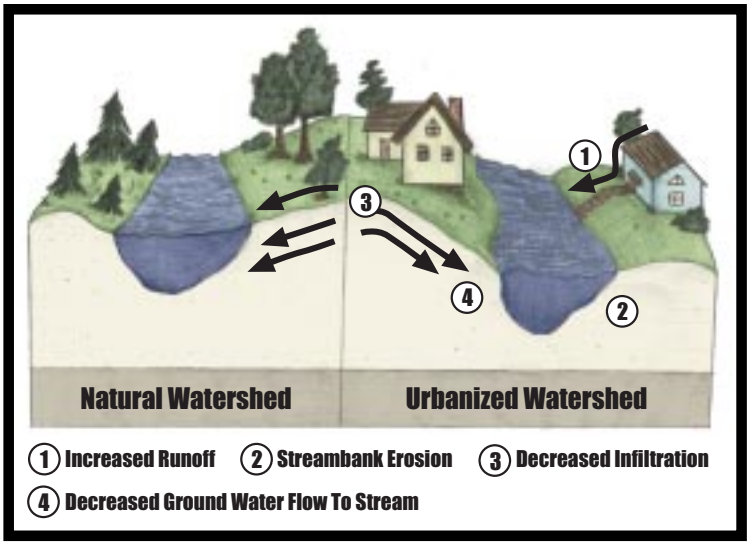
One of the first steps in watershed management is problem identification. Does the local lake choke with weeds in the summer? Are failing septic systems closing shellfish beds? Is increased runoff causing stream banks to erode?

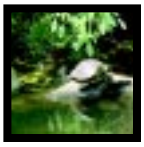
Once the problems and their causes have been identified, practical solutions must be chosen. The watershed community must identify traditional or innovative solutions that will work in their area. These solutions can range from changes to municipal stormwater ordinances to homeowner education about lawn care to stream bank restoration projects.

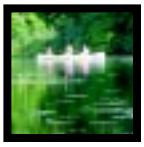
Identifying which solutions are right for a particular watershed is a crucial component of the watershed management process. Different solutions work in different communities. Developed with the watershed community of industry, government, business and citizens, watershed management planning reflects the concerns and priorities of that community.

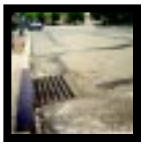
Once solutions have been identified, they must be implemented to be successful. This can be the most difficult part of the process. How can implementation be ensured? Who will carry out the plan? Is the community committed to implementing the plan? Are there resources available to do it?

The advantage of watershed management planning is that it addresses all sources of pollution within the watershed and is developed by the community most affected by it. Nonpoint source pollution is particularly suited to this approach because it is frequently beyond the scope of traditional regulatory programs. The plan can incorporate solutions ranging from change in local land use to integrated pest management. Each plan will uniquely fit the problems and solutions of its watershed.










New Jersey's five watershed bureaus and 20 watershed management areas

Northwest Bureau
(609) 633-3812

1. Upper Delaware River
2. Walkill, Pochuck, Papakating
11. Central Delaware Tributaries

Northeast Bureau
(609) 633-1179

3. Pompton, Pequannock, Wanaque, Ramapo
4. Lower Passaic, Saddle
5. Hackensack, Pascack, Hudson
6. Upper and Mid-Passaic, Whippany, Rockaway

Raritan Bureau
(609) 633-7020

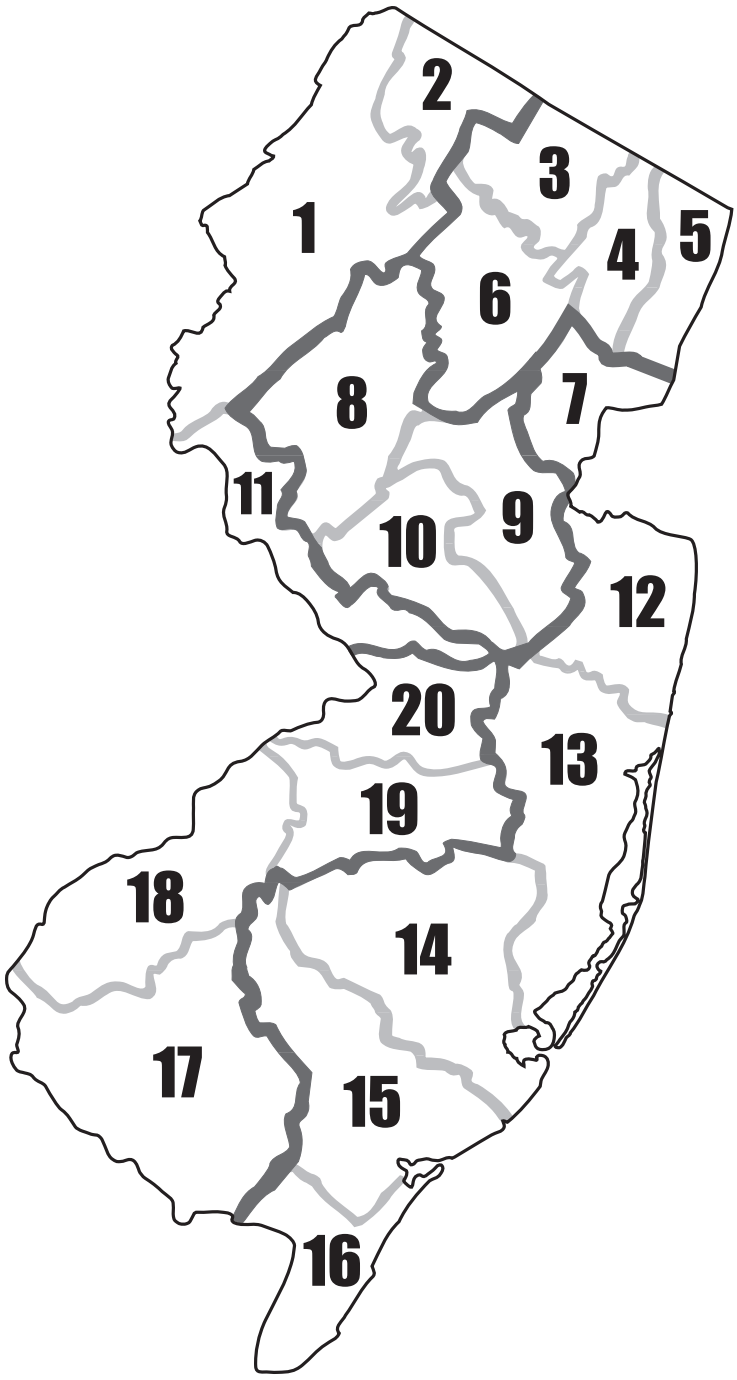
7. Elizabeth, Rahway, Woodbridge
8. North and South Branch Raritan
9. Lower Raritan, South River, Lawrence Brook
10. Millstone River

Atlantic Coastal Bureau
(609) 984-6888

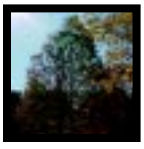
12. Monmouth Watersheds
13. Barnegat Bay Watersheds
14. Mullica, Wading River
15. Great Egg Harbor, Tuckahoe
16. Cape May Watersheds

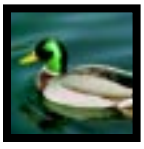
Lower Delaware Bureau
(609) 633-1441

17. Maurice, Salem, Cohansey
18. Lower Delaware Tributaries
19. Rancocas Creek
20. Crosswicks Creek





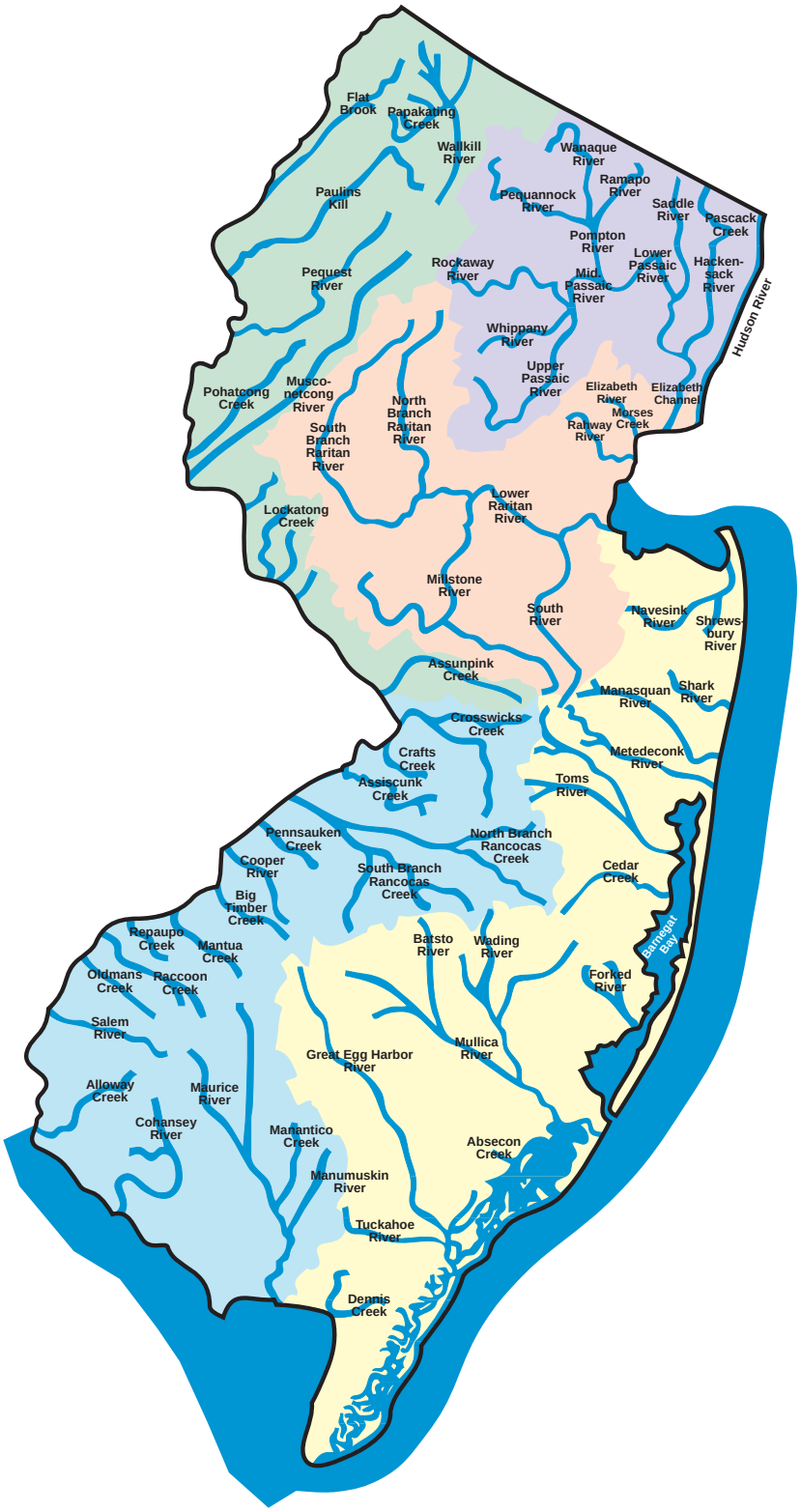



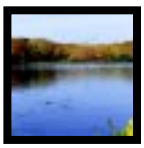
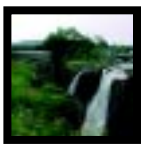
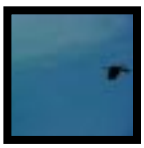
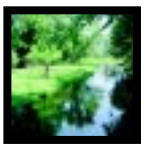




New Jersey's five watershed regions and major waterways

watershed regions

- Atlantic Coastal
- Lower Delaware
- Northeast
- Northwest
- Raritan





Watershed protection and nonpoint source pollution
what you can do today!

One way you can protect your watershed is to reduce nonpoint source pollution. Nonpoint source pollution or "people pollution" is contamination of our watersheds, ground water, waterways and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated by these activities are washed from the entire watershed into local waterways. They can also soak into the ground contaminating the ground water below.

But there is good news - in our everyday activities we can stop nonpoint source pollution and keep our environment clean. Simple changes in your daily lifestyle can make a tremendous difference in the quality of New Jersey's water resources. Here are a few ways that you can reduce nonpoint source pollution:

Place litter in trash receptacles. Never throw litter, including cigarette butts and fast food containers, in streets or down storm drains. Recycle as much as possible.

Avoid the overuse of fertilizers. Do not apply them before a heavy rainfall. Do a soil test to see if fertilizers are necessary. Fertilizers contain nitrates and phosphates that, in abundance, cause blooms of algae that can lead to fish kills.

Use alternative to pesticides whenever possible. If you do use a pesticide, follow the label directions carefully. Many household products made to exterminate pests are also toxic to humans, animals, aquatic organisms and plants.

Pick up after your pet. Pet owners should use newspaper, bags or scoopers to pick up after their pets and dispose of wastes in the garbage or toilet, not the storm drain. Animal wastes contain bacteria and viruses that can contaminate shellfish and cause the closing of bathing beaches. Animal waste also contains nutrients that can cause algae blooms that are unsightly and can lead to fish kills.

Do not feed ducks and geese. Feeding ducks, geese and other waterfowl causes them to concentrate in small areas resulting in concentrated animal waste, causing the same problems as pet waste.

Dispose of household hazardous waste properly. Do not pour household hazardous products down any drain or toilet. Do not discard with the regular household trash. Use natural and less toxic alternatives whenever possible. Contact your County Solid Waste Management Office for information regarding household hazardous waste collection in your area. Many common household products (paint thinners, mothballs, drain and oven cleaners, to name a few) contain toxic ingredients. When improperly used or discarded, these products are a threat to public health and the environment.

Recycle all used motor oil. Do not dump used motor oil down storm drains or on the ground. Take it to a local public or private recycling center. Used motor oil contains toxic chemicals that are harmful to animals, humans and fish.

Wash your car only when necessary. Consider using a commercial car wash that recycles its wash water. Like fertilizers, many car detergents contain phosphate. If you wash your car at home, use a non-phosphate detergent.

Treat your septic system with respect. Avoid adding unnecessary grease, household hazardous products and solids to your septic system. Conserve water. Inspect your tank annually and pump it out every three to five years depending on its use. An improperly working septic system can contaminate ground water and create public health problems.

Use marine sanitation devices and pump-out facilities at marinas when boating. Observe the state's no discharge zones. Dumping boat sewage overboard introduces bacteria and viruses into the water.

For additional information please contact:
New Jersey Department of Environmental Protection · Watershed Management
P.O. Box 418 · 401 East State Street · Trenton · New Jersey · 08625-0418
609-292-2113 · www.state.nj.us/dep/watershedmgt

Pet Waste Pollutes Our Waters

What You Can Do To Help Protect Our Water

Clean and plentiful water is important to our families, our environment, our economy and our quality of life.

Did you know that animal waste from pets can pollute our waters? When left on the ground, pet waste is washed by rain and melting snow and ice into storm drains that carry it to our rivers, lakes, the ocean and drinking water.

Animal waste contains a high concentration of nutrients as well as bacteria and disease-causing microorganisms that can cause problems.

What you can do

Pet owners or anyone who takes your pet for walks must properly dispose of the waste by picking it up, wrapping it and either placing it in the trash or flushing it unwrapped down the toilet.

Your municipality is required to adopt and enforce local pet-waste laws. At a minimum, your community must require that pet owners or their keepers **immediately** and **properly** dispose of their pet's solid waste deposited on **any public or private property not owned or possessed by that person.** People with assistance animals such as Seeing Eye dogs are exempt.

Make sure you know what your municipality requires – and follow it.

Thank you for doing your part to keep New Jersey's waters clean.

For more information, please contact the following:

New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Nonpoint Pollution Control
Municipal Stormwater Regulation Program
(609) 633-7021

Visit www.njstormwater.org or www.nonpointsource.org

Additional information is also available at U. S. Environmental Protection Agency Web sites www.epa.gov/npdes/stormwater or www.epa.gov/nps

Storm Drain Labeling Guidelines for New Jersey

Prepared by
New Jersey Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625
609-984-0058

March 2004

Storm Drain Labeling Guidelines for New Jersey

Table of Contents

Acknowledgements

This guide is compilation of several guides and other materials that are already in existence. Many thanks to the following organizations:

Partnership for the Delaware Estuary
Whippany River Watershed Partnership
United States Environmental Protection Agency

Storm Drain Labeling Guidelines for New Jersey

Why Label Storm Drains?

Storm drain labeling is a great way to make people in your community more aware of nonpoint source pollution and polluted runoff. Nonpoint Source Pollution, or people pollution, is a contamination of our ground water, waterways, and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated by these activities are washed into storm drains that flow into our waterways and ocean. Polluted runoff is stormwater contaminated by nonpoint source pollution. It harms local waterways, which we rely on for recreation and drinking water.

Residents may not be aware that most storm drains empty directly into local waterways, without treatment. Some individuals may view storm drains as trash receptacles for trash, used motor oil, leftover paint, pet waste or other pollutants. Storm drain labeling serves as an educational tool to remind people about the connection between storm drains and local waterbodies.

By labeling storm drains we can make everyone more aware of the nonpoint source pollution and polluted runoff. This is one step in educating people so that they can change their attitudes and behaviors that contribute to the problem.

Storm drain inlet labeling is also a requirement of New Jersey's new municipal stormwater permitting program. All Tier A municipalities are required to establish a storm drain inlet labeling program and label all storm drain inlets that are along municipal streets with sidewalks, and all storm drains within plazas, parking areas, or maintenance yards operated by the municipality. This program establishes a schedule for labeling, develops a long term maintenance plan and when possible coordinates the efforts with watershed groups and volunteer organizations. On an annual basis, these Tier A municipalities must identify the number of storm drains labeled. For more information on this program, visit www.njstormwater.org or call 609-633-7021.

A key factor in the success of a storm drain labeling program is visibility. Publicity in the local media about the event and volunteer participation in the event greatly increases the value of the labeling program as an educational tool. Municipalities are not required to use volunteers or seek media attention, but these activities do greatly improve the overall value of the program. Municipalities may opt to label the storm drains themselves or organize the storm drain labeling activities of local volunteers.

Types of Labeling

There are two types of storm drain labeling that can be done, stenciling with paint or gluing storm drain markers. Stenciling involves using a stencil and paint to label the drain. This type of marking has been used since early 1990s. The paint generally lasts up to 2 years, depending on weather and traffic conditions. Marking involves gluing a purchased marker to the storm drain. This method may last up to 10 years.

In determining which type of labeling to use, consider the cost of materials and how long they will last. Stenciling costs less initially and lasts a shorter time than markers which costs more initially but last longer. Another consideration is the educational value of the actual labeling process for the participants and residents. Since stenciling is done more frequently, it provides a more frequent reminder about polluted runoff.

How to Label Storm Drains

Below we have outlined the various tasks necessary to conduct a successful labeling event. At each event there are unique circumstances that come up and must be addressed by the organizers. A coordinator should be designated to oversee the event.

Preparation before the Event

1. Form an organizing committee and designate tasks.

2. Determine whether or not you will use stencils or markers. Determine what your stencils or markers will say and whether or not you want to include a graphic such as a fish, turtle, heron or crab. Some suggested messages are: "NO DUMPING – DRAINS TO RIVER, "ONLY RAIN DOWN THE STORM DRAIN," and "DUMP NO WASTE – DRAINS LOCAL WATERWAY." These messages can be customized to include the names of local waterbodies. In addition, you may wish to print the message in other languages depending on the community. Spanish is included as a standard on some markers.

3. Determine whether you will be purchasing materials or looking for donations. Include time to manufacture the markers or stencils in your timeline.

4. Identify your targeted area for labeling. Survey the area to locate the storm drains and determine how many there are. This information will determine how many labels you will need to buy and how many people will be involved in the event.

5. Select a date and a rain date for the event. Select the time and meeting location for the event.
    a. Find out if there are any other events planned for that time period that might conflict or compliment your labeling event. A litter clean-up by the local environmental commission or flower planting by the garden club would compliment your labeling.

b. The pavement or storm drain structure must be over 50 degrees for marking so that the adhesives will work properly. The surface must be dry for either stencils or markers.

6. Obtain written permission from your county or municipality to conduct the labeling. Call your county or municipality to find out the appropriate person or department to obtain permission from, usually the public works, highway or sewage authority. Ask them for a map of storm drains that you have permission to label.

7. In order to involve more volunteers, call various groups in your school and neighborhood to find out if they would be interested in participating. Consider involving your local AmeriCorps New Jersey Watershed Ambassador (See Resources Available at NJDEP section).

8. Prepare a promotional flyer to distribute to potential volunteers. You may want to invite friends, family, school clubs, youth groups, community organizations and neighbors. It may be beneficial to call these groups and/or make a presentation at one of their meetings.

9. Request support from local businesses to provide refreshments either before or after the event. Local businesses may also wish to contribute stenciling supplies (garbage bags, paint, brushes, gloves, etc.).

10. Invite community leaders including elected officials to participate in the event.

11. Acquire or prepare an informational flier to hand out during the event. Many materials are available for no or low cost from government agencies such as the NJ Department of Environmental Protection, local environmental groups or watershed associations (See Resource Section at the back of this booklet).

12. Prepare a press alert at least two weeks prior to the event and send it to the local media. Follow-up by calling the reporters and editors before the event.

13. Survey the area before the event to familiarize yourself with it. Note any safety concerns.

Week before the event

14. Make sure all materials are on hand. Prepare packets of supplies and information for each of your teams. Include a map of their area to label. Prepare sign-in sheets, name tags, and copies.

15. Make follow-up phone calls to confirm volunteers. Advise them of who to call in case of inclement weather. Make sure they know the time and location for the event.

16. Confirm refreshments if you are providing them.

17. Make follow up phone calls to the news media and local officials.

Day of the Event

1. Plan to arrive early to allow time to set-up before volunteers arrive.

2. Register volunteers. Allow about 30 minutes for registration and refreshments.

3. Give an overview of the day and why their work is important.

4. Divide volunteers into teams. Assign a team leader. Teams should be composed of 4 to 6 people. Make sure they have enough supplies for the area they will cover. Go over safety considerations.

5. Give volunteers a lesson on how to label the storm drain.

6. Send teams out to different areas, making sure that each team is clear on what area they are to stencil. Give them a specific time to return.

7. Take photographs of the event in order to document it and/or use them in a post-event press release.

8. When they return, collect leftover supplies. Dispose of any collected trash and recyclables properly.

9. Ask volunteers for feedback on the event. Provide refreshments if appropriate.

Follow-up after the Event

1. Send thank you letters to volunteers, businesses, supporters and any others that assisted you in the project.

2. Send a post-event press release to the local media. Include photographs of the actual event. Be sure to mention volunteer groups, sponsors and community leaders that were involved in the event.

3. Put together a summary of the event and provide it to your municipality.

Labeling Tips

All surfaces must be dry for either stenciling or marking.

Remember while working in or near the street, there is inherent risk. Be very cautious of passing cars, especially if you are working with children. Consider wearing brightly-colored safety vests, using traffic cones to protect your team and assigning a team member to serve as look-out for traffic.

Storm Drain Stenciling Tips

Supplies you will need:

- **Stencils**
- **Latex paint**
- **Foam brushes**
- **Safety Vests**
- **Educational flyers**
- **Gloves***
- **Paint stirrer**
- **Wire brushes or brooms**
- **Dustpans**
- **Newspapers or rags**
- **Trash bags**

Remember:

- A little paint goes a long way!! Using too much blurs the stencil image.
- Try to stencil in area where cars will not be driving directly on the paint. This greatly shortens the life of the paint.

How to stencil:

- Use a wire brush or broom to clear away any loose debris from the spot where the stencil will be placed. Pull weeds if necessary. Put debris in garbage bags and dispose of it properly. Keep recyclables separate and recycle any items that can be recycled.
- Designate one team member as the safety person to look out for vehicles.
- Have two team members hold down the stencil firmly on the street in front of or behind the storm drain. A third team member can gently sponge or brush paint onto the stencil. You do not need to soak the brush. The less paint you use the more control you will have in painting a clearly legible message. When using the foam brush, press straight up and down on the street to apply the paint. Wiping side to side will cause the paint to get trapped under the stencil blurring the message. All three of these team members should wear gloves.
- Once painting is completed, lift the stencil straight up to prevent smearing.
- While some team members are stenciling, others may hand out educational flyers to people passing by or to nearby businesses in the vicinity of the stenciled areas.

Please note that many people have allergic reactions to latex gloves. Check with your team members before distributing them if you use latex gloves.

Storm Drain Marking Tips

Supplies you will need:

- **Markers**
- **Adhesive**
- **Safety Vests**
- **Educational flyers**
- **Gloves***
- **Wire brushes or brooms**
- **Dustpans**
- **Newspapers or rags**
- **Trash bags**

Remember:

- Try to place the marker in area where cars will not be driving directly on it. This can greatly shorten the life of the marker.
- Surface temperatures must be over 50 degrees for most of the adhesives used to seal properly.

How to apply a marker:

- Use a wire brush or broom to clear away any loose debris from the spot where the stencil will be placed. Pull weeds if necessary. Put debris in garbage bags and dispose of it properly. Keep recyclables separate and recycle any items that can be recycled.
- Designate one team member as the safety person to look out for vehicles.
- Have two team members apply the adhesive in a spiral pattern on the back of the marker. Be sure to wear gloves.
- Apply the marker to the cleaned area. Press down hard to insure a proper seal with the adhesive under the entire surface of the marker.
- While some team members are applying markers, others may hand out educational flyers to people passing by or to nearby businesses in the vicinity of the stenciled areas.

Please note that many people have allergic reactions to latex gloves. Check with your team members before distributing them if you use latex gloves

Storm drain markers are available from two sources:
This information does not constitute an endorsement by the NJDEP of either of these manufacturers.

ACP International
1010 Oakmead
Arlington, Texas 76011
817-640-0992
www.acpinternational.com

das Manufacturing
3610 Cinnamon Trace Drive
Valrico, Florida 33594
800-549-6024
www.dasmanufacturing.com

For storm drain stencils, you may purchase stencil materials locally and create your own OR purchase pre-cut or custom stencils from:

Earthwater Stencils
Rochester, Washington
(360) 956-3774
www.earthwater-stencils.com

In addition, check with watershed association and environmental groups listed in the Additional Resources Section. They may have customized labels or markers for your watershed.

NonPoint Source Pollution Tips

Information in this section can be used in preparation of an educational flyer to distribute while labeling. Check with your local watershed association or environmental group listed in the Additional Resources Section for local educational materials.

Nonpoint Source Pollution is the contamination of our ground water, waterways, and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated by these activities are washed into storm drains that flow into our waterways and ocean. They also can soak into the ground contaminating the ground water below.

Each one of us, whether we know it or not, contributes to nonpoint source pollution through our daily activities. As a result, nonpoint source pollution is the BIGGEST threat to many of our ponds, creeks, lakes, wells, streams, rivers and bays, our ground water and the ocean.

The collective impact of nonpoint source pollution threatens aquatic and marine life, recreational water activities, the fishing industry, tourism and our precious drinking water resources. Ultimately, the cost becomes the burden of every New Jersey resident.

But there's good news - in our everyday activities we can stop nonpoint source pollution and keep our environment clean. Simple changes in YOUR daily lifestyle can make a tremendous difference in the quality of New Jersey's water resources. Here are just a few ways you can reduce nonpoint source pollution.

LITTER: Place litter, including cigarette butts and fast food containers, in trash receptacles. Never throw litter in streets or down storm drains. Recycle as much as possible.

FERTILIZERS: Fertilizers contain nitrates and phosphates that, in abundance, cause blooms of algae that can lead to fish kills. Avoid the overuse of fertilizers and do not apply them before a heavy rainfall.

PESTICIDES: Many household products made to exterminate pests also are toxic to humans, animals, aquatic organisms and plants. Use alternatives whenever possible. If you do use a pesticide, follow the label directions carefully.

HOUSEHOLD HAZARDOUS PRODUCTS: Many common household products (paint thinners, moth balls, drain and oven cleaners, to name a few) contain toxic ingredients. When improperly used or discarded, these products are a threat to public health and the environment. Do not discard with the regular household trash. Use natural and less toxic alternatives whenever possible. Contact your County Solid Waste Management Office for information regarding household hazardous waste collection in your area.

MOTOR OIL: Used motor oil contains toxic chemicals that are harmful to animals, humans and fish. Do not dump used motor oil down storm drains or on the ground. Recycle all used motor oil by taking it to a local public or private recycling center.

CAR WASHING: Wash your car only when necessary. Consider using a commercial car wash that recycles its wash water. Like fertilizers, many car detergents contain phosphate. If you wash your car at home, use a non-phosphate detergent.

PET WASTE: Animal wastes contain bacteria and viruses that can contaminate shellfish and cause the closing of bathing beaches. Pet owners should use newspaper, bags or scoopers to pick up after pets and dispose of wastes in the garbage or toilet.

SEPTIC SYSTEMS: An improperly working septic system can contaminate ground water and create public health problems. Avoid adding unnecessary grease, household hazardous products and solids to your septic system. Inspect your tank annually and pump it out every three to five years depending on its use.

BOAT DISCHARGES: Dumping boat sewage overboard introduces bacteria and viruses into the water. Boat owners should always use marine sanitation devices and pump-out facilities at marinas.

As you can see, these suggestions are simple and easy to apply to your daily lifestyle. Making your commitment to change at least one habit can result in benefits that will be shared by all of us and add to the health and beauty of New Jersey's water resources.

Resources Available at NJDEP

These resources are available through the NJDEP Division of Watershed Management and are provided for low or no cost. Please call 609-292-2113 or visit www.nj.gov/dep/watershedmgt

The New Jersey Watershed Ambassadors Program

The New Jersey Watershed Ambassadors Program is a community-oriented AmeriCorps environmental program designed to raise awareness about water issues in New Jersey. Through this program, AmeriCorps members are placed across the state to serve their local communities. Watershed Ambassadors monitor the rivers of New Jersey through River Assessment and Biological Assessment volunteer monitoring protocols. Watershed Ambassadors also make interactive presentations to community organizations and schools. They also organize and participate in stewardship projects such as storm drain stenciling, litter clean-ups and restoration projects.

Project WET (Water Education for Teachers)

Project WET is a nationally renowned program that offers teachers a better understanding about the world's water resources through hands-on, multi-disciplinary lessons. Project WET is the only program that teaches about the importance and value of water in our every day life with formal and non-formal educators while offering specialized programs about New Jersey's water resources and watersheds. NJ Project WET is a well-rounded program that focuses on water supply, water quality, water conservation, watershed management, land use planning and wetlands. Project WET provides educators with accurate insight into critical water issues while offering a large selection of creative teaching strategies.

In addition to workshops, NJ Project WET reaches another 5,000 students annually and an estimated 12,000 parents, volunteers, educators and administrators through its Water Festival Grant Program. A Water Festival is a one-day celebration of water with a focus on a school's watershed. Students participate in a series of learning stations that examine water use over time, water's role in shaping our country, what a watershed is, how water is cleaned and used again, how a molecule travels through the water cycle and much more. The festivals involve the community and attract positive media attention that reaches thousands of people across the state.

NJ Project WET offers a unique learning opportunity for high school students and teachers through its Watershed Stewards Program. This program focuses on a weekend leadership workshop for a high school team of four or five students. They are provided instruction and training in watershed topics and team-building experiences that prepare them to focus on a watershed service project that will address an environmental concern. Each Watershed Steward Team must work with three community organizations and solicit another 20 volunteers to assist with the project. Participants receive a small grant to conduct a Watershed Steward Project.

Harbor Watershed / Urban Fishing Program

The goal of the Urban Fishing Program is to educate young students living in the Newark

Bay Complex about the hazards of eating contaminated fish and help them to discover the beauty of the great natural resource. Students who participate in the program sample recreational opportunities that the bay has to offer while learning how to be responsible citizens within the estuary. The students experience four days of intense yet enjoyable instruction related to the Newark Bay Complex. Throughout the four days students are given hands-on experiences such as fishing, water monitoring, eco-cruising and community clean-ups which will endure with them over a lifetime. The program also includes a storm drain marking program that can help municipalities fulfill their stormwater permitting requirements.

Clean Water Raingers Program

This program offers educators a number of teaching materials for their students as well as background information on watersheds and nonpoint source pollution. Educators who participate in the Clean Waters Raingers Program are provided with free booklets and associated materials for their elementary school age students. The *Clean Water Raingers Coloring Book, How to be a Clean Water Rainger Booklet* and the *Clean Water Raingers stickers* are also popular giveaways at family oriented events and festivals. These publications are also available online on the Department's environmental education web page.

Volunteer Monitoring Program - Watershed Watch

The Division has begun to implement a Volunteer Monitoring Program over the last several years. Volunteers are being encouraged to assess their local waterways using visual surveys or benthic macroinvertebrate studies. The Watershed Watch Network, comprised of volunteer monitors from across the state, works with the Department to better coordinate and improve the data collected by volunteers.

Publications

The DWM produces a number of stormwater related publications that are available for free distribution to municipalities, watershed associations, environmental groups or other organizations. These include *What's A Watershed?* Brochure, *New Jersey's Watersheds* Poster, and *Watershed Focus* Newsletter.

Additional Resources

There are many government agencies, environmental groups, and watershed association that have resources to help you. They can help you organize an event, provide volunteers, or provide educational resources. Please contact organizations in your area.

New Jersey Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-292-2113
www.nj.gov/dep/watershedmgt

Alliance for a Living Ocean
2007 Long Beach Boulevard
North Beach Haven, NJ 08008
609-492-0222
livingoceanalo@comcast.net
http://www.livingocean.org/index.html

Clean Ocean Action
18 Hartshorn Drive
PO Box 505
Highlands, NJ 07732
732-872-0111
sandyhook@cleanoceanaction.org
http://www.cleanoceanaction.org/

Great Swamp Watershed Association
PO Box 300
New Vernon, NJ 07976
973-966-1900
everything@greatswamp.org
http://www.greatswamp.org

Jacques Cousteau National Estuarine Research Reserve
Jacques Cousteau Coastal Education Center
130 Great Bay Boulevard
Tuckerton, NJ 08087
609-812-0649
weiss@imcs.rutgers.edu
http://www.jcnerr.org/
Lisa Weiss

Monmouth Coastal Watersheds Partnership
c/o Monmouth County Planning Board
One East Main Street
Freehold, NJ 07728
732-431-7460
Turner Shell
http://www.visitmonmouth.com/area12/

North Jersey Resource Conservation and Development Council
54 Old Highway 22
Clinton, NJ
908-735-0733
chall@northjerseyrcd.org
http://www.northjerseyrcd.org/
Christine Hall

Partnership for the Delaware Estuary
1009 Philadelphia Pike
Wilmington, DE 19809
1-800-445-4935
partners@udel.edu
www.delawareestuary.org

Passaic River Coalition
246 Madisonville Road
Basking Ridge, N.J. 07920
908-766-7550
prcwater@aol.com
http://www.passaicriver.org/
Ella Filippone

Pequannock River Coalition
PO Box 392
Newfoundland, NJ 07435
973-492-3212
pequannockguy@aol.com
Ross Kushner

Pohatcong Creek Watershed Association
256 Creek Road
Phillipsburg, NJ 08865
(908) 213-1550
www.pcwa.org
Dawn Areia

Pompeston Creek Watershed Association

551 New Albany Road
Moorestown, NJ 08057
(856) 235-9204
dlord@aol.com
Debbie Lord

Rockaway River Watershed Cabinet
c/o Morris 2000
2 Ridgedale Avenue
Cedar Knolls, NJ 07927
973-984-2000

South Branch Watershed Association
Lechner House, Echo Hill
Environmental Area, 51 Lilac Drive
Flemington , NJ 08822
908-782-0422
sbwa@eclipse.net
http://www.sbwa.org

Stony Brook Millstone Watershed Association
31 Titus Mill Road
Pennington, NJ 08534
609-737-3735
creed@thewatershed.org
www.thewatershed.org

Sussex County Municipal Utilities Authorities
34 Route 94 South
Lafayette, NJ 07848
973-579-6998
scmua@nac.net
http://www.wallkillriver.org/
Nathaniel Sajdak

Ten Towns Great Swamp Watershed Management Committee
c/o Morris 2000
2 Ridgedale Avenue
Cedar Knolls, NJ 07927
973-984-2000
http://www.tentowns.org

Watershed Management Area 3 Public Advisory Committee
holzapfeg@waynetownship.com
George Hozapfel

Watershed Management Area 4 Public Advisory Committee
Ellen Gruber
mandegruber@hotmail.com

Watershed Management Area 5 Public Advisory Committee
Bergen County Department of Health Services
327 East Ridgewood Avenue
Paramus, NJ 07652
201-634-2600
avernick@aol.com or tdecandia@co.bergen.nj.us
Anthony Vernick or Anthony DeCandia

Watershed Management Area 19 Public Advisory Committee
Burlington County Office of Land Use Planning
P. O. Box 600
Mt. Holly, NJ 08060
Gina Berg

Wreck Pond Watershed Association
809 Central Avenue
Spring Lake Heights, NJ 07762
732-449-8764
wreckpond@hotmail.com

Clean Communities Program

Sandy Huber, Executive Director
Clean Communities Council
479 West State Street
Trenton, NJ 08618
609-989-5900
info@njclean.org
http://www.njclean.org/

The Clean Communities Council works with the state departments of Environmental Protection and Treasury to oversee the implementation of litter abatement programs in 556 municipalities and 21 counties. The Council provides a clearinghouse for information about litter abatement, forums for the free exchange of ideas, and a voice for its constituents.

The Council also will ask towns and counties to report how Clean Communities grant money is spent—the number of cleanups held, number of volunteers who participated, the amount and type of litter and recyclables picked up, and the number and type of educational programs offered to schools and community groups. This information will be compiled in the Annual Report to the Governor and Legislature

Storm drain labeling is one of the allowable costs under this entitlement program. If you are planning a storm drain labelling event, please contact your local Clean Communities Coordinator to see if funding is available.

Useful websites

In addition, there are many valuable websites that can give you background information on nonpoint source pollution, polluted runoff, watershed and storm drain marking. They are listed below.

NJ Department of Environmental Protection
www.nj.gov/dep
features information on the Department's clean water initiatives, educational materials and regulatory programs

United States Environmental Protection Agency
www.epa.gov/owow/nps/
features basic information at the national level on nonpoint source pollution

The Watershed Institute
www.thewatershedinstitue.org
features information about watershed associations from across the state

Watershed Partnership for New Jersey
www.wpnj.org
features information on watershed educational resource in New Jersey

IF YOU WASH

YOUR CAR IN THE DRIVEWAY,

YOU MIGHT AS WELL WASH IT

IN THE LAKE.

Rain washes pollutants into storm drains which flows directly into our streams, lakes, rivers and the ocean.
So what can you do?

CLEAN WATER

It's Up to You New Jersey

www.cleanwaterNJ.org

WHAT'S THE PROBLEM WITH WASHING YOUR CAR?

Washing your car on a paved surface can allow the soapy wash water and other pollutants, like oil and grease, to run off into a storm drain. Most soap contains phosphates and other chemicals that, in large amounts can contaminate your drinking water, as well as kill fish, wildlife and plants. The soap, together with the dirt and oil washed from your car, flows into nearby storm drains, which flows directly into lakes, rivers and the ocean. The phosphates from the soap can cause excess algae to grow, which can be harmful to the water quality.

YOU CAN HELP!

- Take your car to a car washing facility, rather than washing it yourself. Commercial car washes treat and recycle the water.
- If you can't get to a car washing facility, wash your car on an unpaved surface and use biodegradable soap.
- Organize a Car Wash Fundraiser for a local organization. Visit **www.cleanwaterNJ.org** to learn how.

WHY SHOULD YOU CARE ABOUT CLEAN WATER?

Stormwater pollution is one of the greatest threats to New Jersey's clean water supply. Clean water provides access to safe drinking water, places for recreation, commercial opportunities, healthy wildlife habitats, and adds beauty to our landscape. Rain washes pollution from streets, parking lots, and lawns into storm drains, then directly to our streams, rivers, lakes and oceans.

Did you know more than 60 percent of water pollution comes from things like motor oil, fertilizers, pet waste, and detergents? By sharing the responsibility and making small, easy changes in our daily lives, we can keep common pollutants out of stormwater.

CLEAN WATER
It's Up to You New Jersey

www.cleanwaterNJ.org

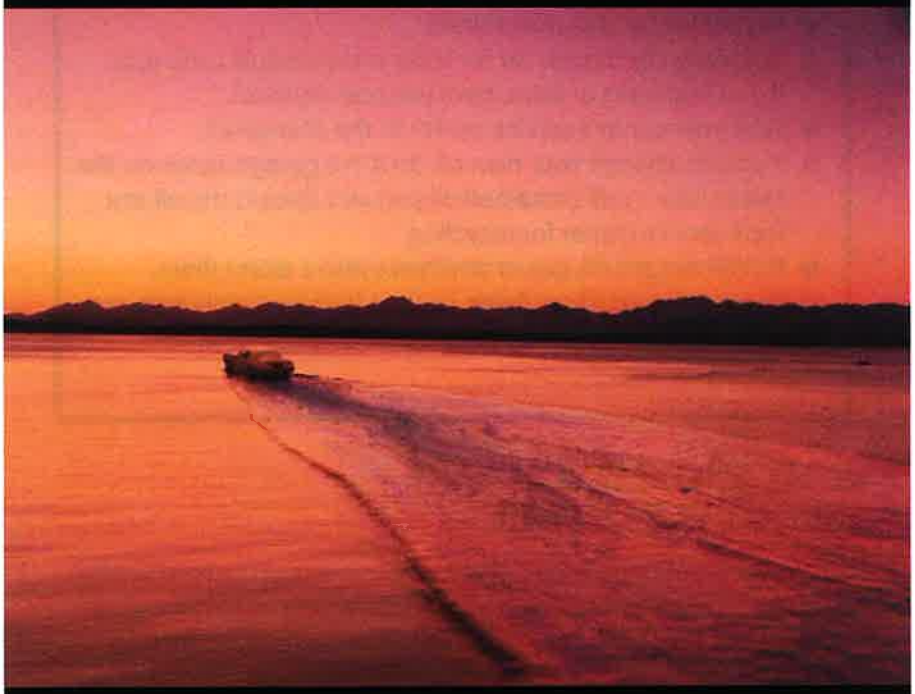
Thanks to the Washington State Department of Ecology, King County, and the cities of Bellevue, Seattle and Tacoma.

IF YOUR CAR LEAKS

OIL IN THE DRIVEWAY,

YOU MIGHT AS WELL

LET IT LEAK IN THE OCEAN.



Rain washes pollutants into storm drains which flows directly into our streams, lakes, rivers and the ocean.
So what can you do?

CLEAN WATER

It's Up to You New Jersey

www.cleanwaterNJ.org

WHAT'S THE PROBLEM WITH MOTOR OIL?

Oil does not dissolve in water. When motor oil runs into storm drains either from changing your car's oil or from leaky cars, it goes directly to our lakes, rivers and the ocean. Oil and other petroleum products are toxic and can contaminate your drinking water, as well as kill fish, wildlife and plants. Did you know that one pint of oil can make a slick larger than a football field? Used motor oil is the largest single source of all oil pollution in lakes, streams and rivers. Americans spill 180 million gallons of used oil each year into our waters.

YOU CAN HELP!

- Keep your car well maintained.
- Regularly check your car for leaks and schedule tune-ups. If you find leaks or drips, have your car repaired.
- Take your car to a service center to the change oil.
- If you do change your own oil, do it in a garage, never on the street. Use a self-contained oil pan and discard the oil at a local service center for recycling.
- NEVER discard oil, gas, or antifreeze into a storm drain.
- If you spill hazardous fluids, contain it immediately with rags and cat litter. Clean up the spill and properly dispose of the waste.

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CLEAN WATER
It's Up to You New Jersey

www.cleanwaterNJ.org

Thanks to the Washington State Department of Ecology, King County, and the cities of Bellevue, Seattle and Tacoma.

IF YOU USE TOO MUCH

FERTILIZER ON YOUR LAWN,

YOU MIGHT AS WELL

FERTILIZE THE STREAM.

Rain washes pollutants into storm drains which flows directly into our streams, lakes, rivers and the ocean.
So what can you do?

CLEAN WATER

It's Up to You New Jersey

www.cleanwaterNJ.org

WHAT'S THE PROBLEM WITH FERTILIZERS AND PESTICIDES?

Fertilizers help plants grow by adding nutrients to the soil. Pesticides (including herbicides) are any toxic substances used to kill insects, animals or plants. If fertilizers or pesticides are improperly applied, they can wash off your lawn or garden into storm drains and directly to our lakes, rivers, and the ocean. These chemicals can contaminate your drinking water, as well as kill fish, wildlife and plants. Too much fertilizer washing into a lake can cause algae to bloom in lakes, which will affect swimming, fishing and boating.

YOU CAN HELP!

- Test your soil at your County's Rutgers Cooperative Research and Extension office, or buy a self-test kit.
- Use natural, slow-release nitrogen, or low phosphorus fertilizers.
- Look into natural alternatives to fertilizers and pesticides, such as integrated pest management (IPM).
- If you need to use fertilizers or pesticides, follow the instructions on the label on how to correctly apply.
- Do not apply fertilizers or pesticides before it rains. This will not allow the fertilizers or pesticides to penetrate through the soil.
- Use drought-resistant native plants in gardens; they require less fertilizer and less water.
- Use a mulching mower instead of bagging grass clippings.

WHY SHOULD YOU CARE ABOUT CLEAN WATER?

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It's Up to You New Jersey

www.cleanwaterNJ.org

Thanks to the Washington State Department of Ecology, King County, and the cities of Bellevue, Seattle and Tacoma.

IF YOU DON'T

PICK UP AFTER YOUR PET,

IT MIGHT AS WELL

POOP IN THE RIVER.

Rain washes pollutants into storm drains which flows directly into our streams, lakes, rivers and the ocean.
So what can you do?

CLEAN WATER
It's Up to You New Jersey

www.cleanwaterNJ.org

WHAT'S THE PROBLEM WITH PET WASTE?

Rain can wash pet waste that sits on a lawn or unpaved surface into storm drains, ultimately ending up in our lakes, rivers and the ocean. Pet waste contains coliform bacteria and other pollutants that can make people sick, and often cause beach closures on lakes or the ocean. Coliform bacteria can contaminate shellfish, which causes people to get very sick when they are eaten. Bacteria from pet waste can also pollute your drinking water, as well as kill fish, wildlife and plants. Pet waste is not only a health hazard but also a nuisance in our neighborhoods.

YOU CAN HELP!

- Use newspaper, plastic bags, or a pooper-scooper to pick up the waste when you walk your pet.
- Properly dispose of pet waste into the trash or toilet. (Do NOT dispose of newspaper or plastic bags in the toilet.)
- Do not dispose of pet waste in storm drains.

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CLEAN WATER
It's Up to You New Jersey

www.cleanwaterNJ.org

Thanks to the Washington State Department of Ecology, King County, and the cities of Bellevue, Seattle and Tacoma.

What is Nonpoint Source Pollution?

Nonpoint Source Pollution, or people pollution, is a contamination of our ground water, waterways, and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated by these activities are washed into storm drains that flow into our waterways and ocean. They also can soak into the ground contaminating the ground water below.

Each one of us, whether we know it or not, contributes to nonpoint source pollution through our daily activities. As a result, nonpoint source pollution is the BIGGEST threat to many of our ponds, creeks, lakes, wells, streams, rivers and bays, our ground water and the ocean.

The collective impact of nonpoint source pollution threatens aquatic and marine life, recreational water activities, the fishing industry, tourism and our precious drinking water resources. Ultimately, the cost becomes the burden of every New Jersey resident.

But there's good news - in our everyday activities we can stop nonpoint source pollution and keep our environment clean. Simple changes in YOUR daily lifestyle can make a tremendous difference in the quality of New Jersey's water resources. Here are just a few ways you can reduce nonpoint source pollution.

LITTER: Place litter, including cigarette butts and fast food containers, in trash receptacles. Never throw litter in streets or down storm drains. Recycle as much as possible.

FERTILIZERS: Fertilizers contain nitrates and phosphates that, in abundance, cause blooms of algae that can lead to fish kills. Avoid the overuse of fertilizers and do not apply them before a heavy rainfall.

PESTICIDES: Many household products made to exterminate pests also are toxic to humans, animals, aquatic organisms and plants. Use alternatives whenever possible. If you do use a pesticide, follow the label directions carefully.

HOUSEHOLD HAZARDOUS PRODUCTS: Many common household products (paint thinners, moth balls, drain and oven cleaners, to name a few) contain toxic ingredients. When improperly used or discarded, these products are a threat to public health and the environment. Do not discard with the regular household trash. Use natural and less toxic alternatives whenever possible. Contact your County Solid Waste Management Office for information regarding household hazardous waste collection in your area.

MOTOR OIL: Used motor oil contains toxic chemicals that are harmful to animals, humans and fish. Do not dump used motor oil down storm drains or on the ground. Recycle all used motor oil by taking it to a local public or private recycling center.

CAR WASHING: Wash your car only when necessary. Consider using a commercial car wash that recycles its wash water. Like fertilizers, many car detergents contain phosphate. If you wash your car at home, use a non-phosphate detergent.

PET WASTE: Animal wastes contain bacteria and viruses that can contaminate shellfish and cause the closing of bathing beaches. Pet owners should use newspaper, bags or scoopers to pick up after pets and dispose of wastes in the garbage or toilet.

SEPTIC SYSTEMS: An improperly working septic system can contaminate ground water and create public health problems. Avoid adding unnecessary grease, household hazardous products and solids to your septic system. Inspect your tank annually and pump it out every three to five years depending on its use.

BOAT DISCHARGES: Dumping boat sewage overboard introduces bacteria and viruses into the water. Boat owners should always use marine sanitation devices and pump-out facilities at marinas.

As you can see, these suggestions are simple and easy to apply to your daily lifestyle. Making your commitment to change at least one habit can result in benefits that will be shared by all of us and add to the health and beauty of New Jersey's water resources.

Watershed protection and nonpoint source pollution
what you can do today!

One way you can protect your watershed is to reduce nonpoint source pollution. Nonpoint source pollution or "people pollution" is contamination of our watersheds, ground water, waterways and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil and littering. With each rainfall, pollutants generated by these activities are washed from the entire watershed into local waterways. They can also soak into the ground contaminating the ground water below.

But there is good news - in our everyday activities we can stop nonpoint source pollution and keep our environment clean. Simple changes in your daily lifestyle can make a tremendous difference in the quality of New Jersey's water resources. Here are a few ways that you can reduce nonpoint source pollution:

Place litter in trash receptacles. Never throw litter, including cigarette butts and fast food containers, in streets or down storm drains. Recycle as much as possible.

Avoid the overuse of fertilizers. Do not apply them before a heavy rainfall. Do a soil test to see if fertilizers are necessary. Fertilizers contain nitrates and phosphates that, in abundance, cause blooms of algae that can lead to fish kills.

Use alternative to pesticides whenever possible. If you do use a pesticide, follow the label directions carefully. Many household products made to exterminate pests are also toxic to humans, animals, aquatic organisms and plants.

Pick up after your pet. Pet owners should use newspaper, bags or scoopers to pick up after their pets and dispose of wastes in the garbage or toilet, not the storm drain. Animal wastes contain bacteria and viruses that can contaminate shellfish and cause the closing of bathing beaches. Animal waste also contains nutrients that can cause algae blooms that are unsightly and can lead to fish kills.

Do not feed ducks and geese. Feeding ducks, geese and other waterfowl causes them to concentrate in small areas resulting in concentrated animal waste, causing the same problems as pet waste.

Dispose of household hazardous waste properly. Do not pour household hazardous products down any drain or toilet. Do not discard with the regular household trash. Use natural and less toxic alternatives whenever possible. Contact your County Solid Waste Management Office for information regarding household hazardous waste collection in your area. Many common household products (paint thinners, mothballs, drain and oven cleaners, to name a few) contain toxic ingredients. When improperly used or discarded, these products are a threat to public health and the environment.

Recycle all used motor oil. Do not dump used motor oil down storm drains or on the ground. Take it to a local public or private recycling center. Used motor oil contains toxic chemicals that are harmful to animals, humans and fish.

Wash your car only when necessary. Consider using a commercial car wash that recycles its wash water. Like fertilizers, many car detergents contain phosphate. If you wash your car at home, use a non-phosphate detergent.

Treat your septic system with respect. Avoid adding unnecessary grease, household hazardous products and solids to your septic system. Conserve water. Inspect your tank annually and pump it out every three to five years depending on its use. An improperly working septic system can contaminate ground water and create public health problems.

Use marine sanitation devices and pump-out facilities at marinas when boating. Observe the state's no discharge zones. Dumping boat sewage overboard introduces bacteria and viruses into the water.

For additional information please contact:
New Jersey Department of Environmental Protection · Watershed Management
P.O. Box 418 · 401 East State Street · Trenton · New Jersey · 08625-0418
609-292-2113 · www.state.nj.us/dep/watershedmgt

NJ Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-984-0058

WATER RESOURCE PROTECTION PRACTICES

State of New Jersey
Christine Todd Whitman, Governor
Department of Environmental Protection
Robert C. Shinn, Jr., Commissioner

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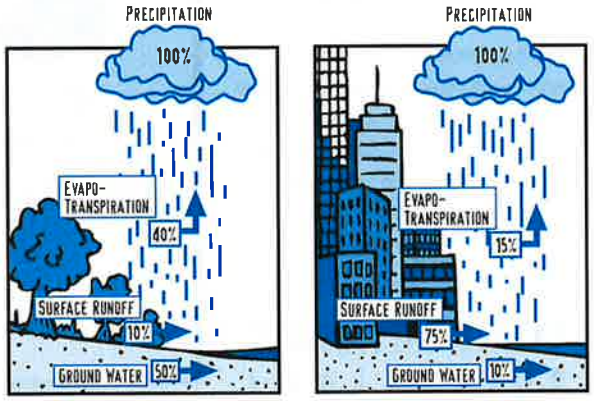
HOW DOES URBANIZATION CHANGE A WATERSHED?

Urbanization (or development) has a great effect on local water resources. It changes how water flows in the watershed and what flows in the water. Both surface and ground water flow are changed.

As a watershed becomes developed, trees, shrubs and other plants are replaced with impervious surfaces (roads, rooftops, parking lots and other hard surfaces that do not allow stormwater to soak into the ground). Without the plants to store and slow the flow of stormwater, the rate of stormwater runoff is increased. Less stormwater is able to soak into the ground because sidewalks, roads, parking lots and rooftops block this infiltration. This means a greater volume of water reaches the waterway faster and less of that water is able to infiltrate to ground water. This in turn leads to more flooding after storms but reduced flow in streams and rivers during dry periods. The reduced amount of infiltrating water can lower ground water levels, which in turn can stress local waterways that depend on steadier flows of water.

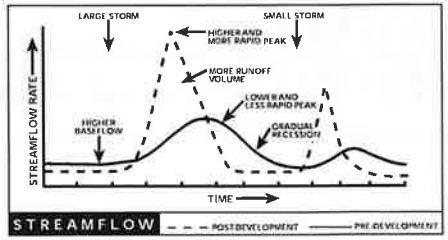


NATURAL WATERSHED URBANIZED WATERSHED

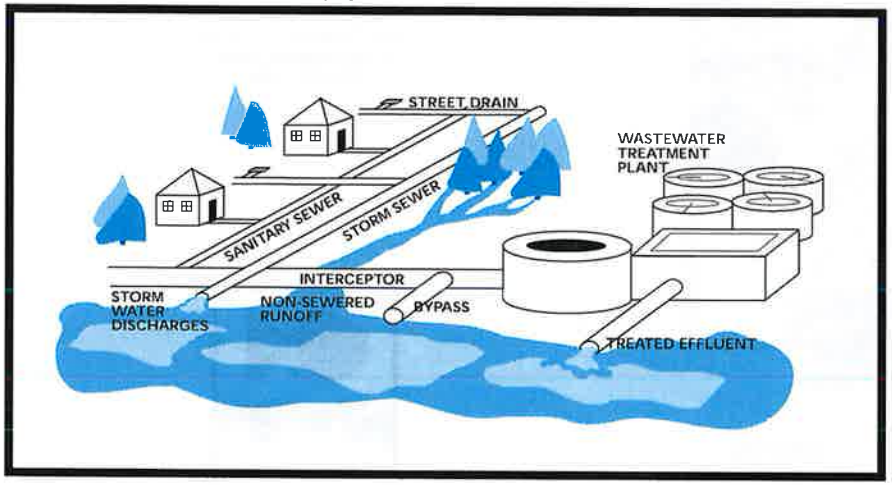
In the stream, more erosion of stream banks and scouring of channels will occur due to volume increase. This in turn degrades habitat for plant and animal life that depend on clear water. Sediment from eroded stream banks clogs the gills of fish and blocks light needed for plants. The sediment settles to fill in stream channels, lakes and reservoirs. This also increases flooding and the need for dredging to clear streams or lakes for boating.

① INCREASED RUNOFF ② STREAMBANK EROSION ③ DECREASED INFILTRATION
④ DECREASED GROUND WATER FLOW TO STREAM

In addition to the high flows caused by urbanization, the increased runoff also contains increased contaminants. These include litter, cigarette butts and other debris from sidewalks and streets, motor oil poured into storm sewers, heavy metals from brake linings, settled air pollutants from car exhaust and pesticides and fertilizers from lawn care. These contaminants reach local waterways quickly after a storm.



Stormwater Sewer Basics



Stormwater flows into the stormwater system through a storm drain. These are frequently located along the curbs of parking lots and roadways. The grate that prevents larger objects from flowing into the storm sewer system is called a catch basin. Once below ground, the stormwater flows through pipes which lead to an outfall where the stormwater enters a stream, river or lake. In most areas of New Jersey, the stormwater sewer goes directly to local waterway without any treatment.

In some areas of the state, the outfall may lead to a stormwater management basin. These basins control the flow of stormwater and can also improve water quality, depending on how they are designed. These basins are frequently seen in newer commercial and residential areas.

In some older urban areas of the state, the stormwater and sanitary sewer systems may be combined. Here both stormwater and sewage from households and businesses travel together in the same pipes. Both stormwater and sewage are treated at sewage treatment plants except during heavy rains. During these occasions, both the stormwater and untreated sewage exceed the capacity of the treatment plant and this overflow is directed into local waterways.

Protecting Stormwater Sewers

In the first rush of water from a rainstorm, much of the debris and other pollutants that had settled on the land surface and in the stormwater sewer since the last storm will be picked up and carried into the local stream. This can significantly add to water quality problems. It is therefore important to protect the stormwater system from sources of pollution.

The following should never be dumped down storm drains, road gutters or catch basins: motor oil, pet waste, grass trimmings, leaves, debris and hazardous chemicals of any kind. Anything dumped in our stormwater collection systems will be carried into our streams.

Controlling Stormwater Flow

Managing stormwater to reduce the impact of development on local watersheds and aquifers relies on minimizing the disruption in the natural flow - both quality and quantity of stormwater. By designing with nature, the impact of urbanization can be greatly reduced.

This can be accomplished by following these principles:

- minimizing impervious surfaces;
- maximizing natural areas or areas of dense vegetation;
- structural stormwater controls such as stormwater management basins; and
- practicing pollution prevention by avoiding contact between stormwater and pollutants.

You Can Make a Difference in Your Own Backyard

Managing stormwater in your own backyard is important. As an integral part of the watershed you live in, what you do in your backyard makes a difference. Here are some examples of what you can do at home:

1. Reduce impervious surfaces by using pavers or bricks rather than concrete for a driveway or sidewalk.
2. Divert rain from paved surfaces onto grass to permit gradual infiltration.
3. Landscape with the environment in mind. Choose the appropriate plants, shrubs and trees for the soil in your yard; don't select plants that need lots of watering (which increases surface runoff), fertilizers or pesticides.
4. Maintain your car properly so that motor oil, brake linings, exhaust and other fluids don't contribute to water pollution.
5. Keep stormwater clean. Never dump litter, motor oil, animal waste, or leaves into storm drains or catch basins.

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FS811

Fact sheet

Home Composting

William T. Hlubik, Middlesex County Agricultural Agent; Jonathan Forsell, Former Essex County Agricultural Agent (deceased); Richard Weidman, Middlesex County Program Associate; and Mark Winokur, Former Program Assistant

What is Composting?

Composting is a natural process where organic materials decompose and are recycled into a dark, crumbly, earthy smelling soil conditioner known as "compost". Compost improves soil structure and moisture retention, and contributes to healthy plant growth by providing plant nutrients.

Why Should I Compost?

- Composting can save money!
- Reduces fertilizer and water use
- Avoids garbage collection and landfill fees
- Reduces the need for soil and plant amendments
- Composting helps the environment
- Reduces the volume of garbage going to landfills, transfer stations and incinerators
- Composting benefits your soil and plants
- Improves soil structure and texture
- Increases aeration and water holding
- Promotes soil fertility
- Stimulates healthy root development
- Aids in erosion control
- Reduces chemical inputs
- Composting is easy
- Save time bagging grass and leaves
- Quick and fun way to do part for the environment

Compost Ingredients

Do Compost:

- ✓ Vegetable food scraps
- ✓ Grass clippings
- ✓ Leaves
- ✓ Flowers
- ✓ Weeds
- ✓ Sawdust and wood ash
- ✓ Chopped twigs and branches
- ✓ Coffee grounds w/filters

Don't compost:

- × Meat scraps
- × Diseased or insect infested plants
- × Weeds with seeds
- × Dog and Cat feces
- × Food with grease or soap residues

Composting Methods

Slow Harvest: Ready in 12-18 Months

Made by adding layers of available yard waste over several months.

1. Set compost bin where is will get rain.
2. Put yard waste in bin as it is generated in your yard. The material at the bottom and in the center will compost first.

Fast Harvest: Ready in 5-15 Weeks

Made by mixing equal weights of green and brown materials at once.

1. Add green materials such as grass clippings or vegetable scraps mixed with brown materials such as leaves (no woody-type materials should be included).
2. Add water to pile until it's as wet as a wrung out sponge.
3. Turn pile with a pitch fork or compost aerator tool twice a week for faster compost production (less often in wintertime).

Types of Compost Bins

Compost can be made in open piles. However, to help keep a pile neat and maintain conditions needed for rapid decomposition, consider simple homemade or store bought bins. See back page for demonstration sites in New Jersey.

Homemade Bins:

- Made from wood pallets
- Made from snow fences

Store Bought:

- Compost Tumbler
- Durable Plastic Bin

Troubleshooting

Here is how to solve problems should they occur:

Symptom	Problem	Solution
Pile has a rotten odor	Not enough air	Turn pile
Pile has ammonia odor	Too many greens	Add brown material like leaves/straw
Pile is dry	Not enough water; too much woody material	Turn and moisten; add fresh greens
Low pile temperature (pile is not composting)	Pile is too small Insufficient moisture Poor aeration Lack of nitrogen Cold weather	Add new materials Add water Turn pile Mix in greens like grass or food scraps Insulate pile with layer of straw or cover with tarp
Pests (rats, raccoons, insects)	Presence of meat or fatty food scraps	Remove from pile

Keys to Good Compost

Water: The microorganisms in the compost pile need water to live. Water pile only as needed, to maintain compost as moist as a wrung out sponge. Don't let your pile dry out completely.

Nutrients: The microorganisms in the pile need carbon for energy and nitrogen for protein in order to survive. A good balance can be achieved by mixing two parts of nitrogen rich green materials such as grass clippings, with one part of carbon rich brown materials such as leaves. However, carbon-rich leaves by themselves will compost.

Aeration: To speed up decomposition, turn the pile frequently using a pitch fork. This provides the microorganisms with enough oxygen to thrive so they can heat up the compost. Placing large branches at the bottom of the pile will also help add air to the pile. Minimal turning would be once per month and less frequently during the year.

Surface area: The more surface area the microorganisms have to work on, the faster materials will decompose. Consider chopping materials, particularly brush or branches which have a diameter of ¼ inch or more. Pile size is also important. For quicker decomposition, pile should be at least 3 feet x 3 feet to hold the heat of microbial activity, but not so large (larger than 5 feet x 5 feet) that air can't reach microbes at the center of the pile.

Use for Compost

Mulch: Spread compost around flower and vegetable plantings, trees, shrubs, and on exposed slopes. This will smother weeds, keep plant roots moist, and prevent soil erosion.

Soil Conditioner: Mix 1-3 inches of compost into vegetable and flower beds before planting. This returns organic matter to the soil in a usable form.

Potting Mix: Make your own mix by using equal parts of compost and sand or soil. Make sure compost is fully decomposed and screened.

Resources

Some books to help you along...

Backyard Composting, Harmonious Technologies, P.O. Box 1865-100 Ojai, CA 93024

How to Grow More Vegetables, John Jeavons, Ecology Action, 5798 Ridgewood Rd. Willits, CA 09590

Let it Rot, Stu Campbell, Storey Communications, Inc., Schoolhouse Rd., RD #1, Box 105, Pownal, VT 05261

The Rodale Guide to Composting, R.A. Simpson, Rodale Press, 33 E. Miner St., Emmaus, PA 18098

Worms Eat My Garbage, Mary Appelhof, Flower Press, 10322 Shaver Rd., Kalamazoo, MI 49002

For additional information on composting or where to get compost materials, call your Rutgers Cooperative Extension county office, found in the telephone directory blue pages, under "County Government" or your county recycling office.

Compost Deconstruction Areas

These areas in New Jersey have various types of compost bins on display. Call ahead for hours and when tours or workshops are given.

Atlantic County
Atlantic County Utilities Authority Geo Garden
6700 Delilah Rd.,
Egg Harbor Township, NJ
Contact: (609) 646-6600

Burlington County
Burlington County Resource Recovery Geo Garden Complex, Rt 543,
Border of Florence and Mansfield Township
Contact: (609) 499-5210

Mazza & Sons, Inc. Recycling Facility
3230 Shafto Rd.,
Tinton Falls, NJ
Contact: (732) 922-9292

Middlesex County
Davidson's Mill Pond Park, Riva Avenue, South Brunswick, NJ
Contact: (732) 745-3443

Monmouth County
Deep Cut Park, Red Hill Rd.,
Middletown, NJ
Contact: (732) 842-4000

Morris County
Frelinghuysen Arboretum, 53 E. Hanover Ave.,
Morris Township, NJ
Contact: (973) 326-7600

Passaic County
Passaic County Office of Recycling
1310 Rt. 23 N,
Wayne, NJ
Contact: (973) 305-5734

Photos Courtesy of Lindsay Halladay.

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FS805

Fact sheet

Vermicomposting
(Worm Composting)

Jonathan H. Forsell, Agricultural/Resource Management Agent, Essex County

Kitchen wastes, such as fruits, vegetables, coffee grounds, tea bags, and eggshells, are a part of the solid waste stream. Most of this material is disposed of as garbage at transfer stations, landfills, and incinerators at a high economic and environmental cost to citizens. A positive alternative is to compost kitchen scraps using red worms to make a valuable compost for use as a soil amendment or as a starter mix for house plants or seedlings. **Note**: Avoid meats, oils, and grease in the compost system.

Worm composting is enjoyable, and it demonstrates the natural process of decompostion and the life cycle of the organisms involved.

Materials

- A worm bin can be made from an old dresser drawer, a 5-gallon plastic bucket, or from wood. A wooden box should be approximately 2 ft. X 2 ft. X 8 in. high. Do not use cedar, as it is toxic to the worms.
- Bedding material: shredded, moist newspaper, cardboard, and/or leaf compost.
- Watering can or container to provide water for the system.
- Red worms (Eisenia foetida) 1 pound. They can be ordered from:

  Flowerfield Enterprises
  10332 Shaver Road
  Kalamazoo, MI 49002

  Lower East Side Ecological Center
  P. O. Box 20488
  New York, NY 10009

Procedure

1. Shred newspapers or cardboard or use leaf compost. Moisten this material and place it in the bin loosely to provide for air circulation.
2. Add 1 lb. of red worms to the bin. They will crawl to the bottom of the bedding material to avoid the light.
3. Place food scraps except animal products (meats, greases, etc.) under the bedding. The worms can consume 3 to 3 1/2 lbs. of kitchen waste per week while making vermicompost.
4. Keep the bin covered loosely with plastic or newspaper to retain moisture. The box should be checked every day or two

for moisture. When the surface or edges of the bedding begin to dry, add water.

Summary

The process takes about 3 to 4 months to produce a finished vermicompost product, which looks like brown coffee grounds. The compost consists of worm castings, partially decomposed kitchen waste, and some undecomposed bedding. The worms eat not only the food, but also the newspaper or other bedding. Vermicompost can be mixed into garden soil to improve structure and to provide nutrients, can be used as mulch, or as a potting soil mix.

To separate the compost, place it on a table under lights. The worms will go to the bottom of the pile away from the light. Remove the finished compost and start the process over again. Because the worms have reproduced, you can separate out the surplus and start a new box. Always keep the bin at a temperature above freezing and below 95° F. The bin should be kept indoors in winter, but can be placed in the shade in summer. Stop feeding for several days or weeks before ready to use.

References

Appelhof, Mary. 1982. Worms Eat My Garbage. Flower Press, Kalamazoo, MI.

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FS806

Fact sheet

Yard Trimmings Management Strategies in New Jersey

Jonathan H. Forsell, Agricultural and Resource Management Agent, Essex County

Introduction

Most yard debris consists of leaves, grass clippings, prunings, branches, trunks of trees, and their root systems. There are various options for managing these materials. The following are some guidelines to assist decision makers and others in determining best management strategies.

Materials Management Guidelines

Leaves: In New Jersey, leaves were banned from landfills, transfer stations, and incinerators in 1988. Collected leaves are generally composted at municipal, regional, commercial, or farm sites in large windrows (elongated piles) using the Leaf Composting Manual for New Jersey Municipalities as a guide. Municipal, regional, and private facilities can use a Type 1.11 simplified New Jersey Department of Environmental Protection (NJDEP) permit, if fewer than 20,000 cubic yards of leaves are composted annually, or a more detailed Type 2.1 permit, if the volume is greater.

Farmers can accept leaves for composting with the simplified permit if the volume is less than 20,000 cubic yards or can receive leaves to be mulched into the soil at no greater than a six-inch depth on the soil and within seven days from delivery without need of a permit. This requires that the leaves be incorporated into the soil no later than the next tillage season.

Backyard composting (household scale) is the most cost-effective method of leaf composting because of avoided collection costs, tipping fees, permits, equipment, and management costs. Refer to fact sheets FS074 and FS117. Further detailed information about composting and trimmings management can be obtained through Rutgers Cooperative Extension and the NJDEP, Bureau of Resource Recovery.

Grass Clippings: Ideally, lawns should be mowed frequently (about five-day intervals) removing only one-third of the grass blade. The clippings will biodegrade at the soil surface providing nitrogen and organic matter. Although any type mower may be used, mulching mowers or mulching attachments on traditional rotary machines can improve the results by chopping more finely. If clippings are long and clump on the lawn, the excess can be raked up and used as a nitrogen source in the backyard composting pile. Permits can be issued by the

NJDEP to include a limited volume of grass clippings in large-scale leaf composting facilities, but the rules are quite stringent to prevent odor problems, which are common, when grass is composting in an anaerobic (oxygen- deficient) environment. A one-year farm grass clippings demonstration permit is available to farmers from NJDEP to apply grass around seasonal crops under a nutrient management plan.

Prunings: Trimmings from trees, shrubs, hedges, and perennials are composted at some permitted facilities, but can also be composted in the backyard pile. A shredder-grinder is helpful to break down larger woody material to a more compostable size.

Tree Limbs: Limbs can be cut for firewood or chipped to make a mulch for landscape use. If finely ground, the product can be composted, but at a slower rate than leaves or grass clippings. Woodchips can be used as a carbon source, when composting sewage sludge.

Tree Trunks: Trunks are usually cut, split, and dried for use as firewood. Some desirable species are used to make furniture and cabinetry, and others are ground for mulch or pulp.

Tree Root Systems: Excavated tree roots are generally ground into mulch material. Massive root systems and trunks that are not made into firewood or mulch cannot be stockpiled at a site and are classified as Type 13 Bulky Waste, which must be hauled away for grinding or other processing.

Summary

Because yard trimmings are recyclable through composting or other means, it is prudent for government, businesses, farmers, and other people to avoid non-recycling avenues for managing this important fraction of the solid waste stream.

References

1. **Backyard Leaf Composting**, FS074, Franklin Flower and Peter F. Strom, Dept. of Environmental Science, Cook College.

2. **Grass—Cut It and Leave It**, NJDEP Division of Solid Waste Management, Office of Recycling, in cooperation with Rutgers Cooperative Extension. 1991.

3. **Leaf Composting Manual for New Jersey Municipalities**, Peter F. Strom and Melvin Finstein, Dept. of Environmental Science, Cook College and NJDEP. 1989.

4. **Using Leaf Compost**, FS117, Roy Flannery and Franklin Flower.

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FS389

Fact sheet

Minimizing Waste Disposal: Grass Clippings

Peter F. Strom, Ph.D., Associate Professor of Environmental Science; James A. Murphy, Ph.D., Specialist in Turfgrass Management; and Henry W. Indyk, Ph.D., Specialist Emeritus in Turfgrass Management

Since refuse disposal costs have dramatically increased, and some landfills no longer accept grass clippings, many individuals and governmental agencies are seeking alternatives for disposal of clippings. During the maximum grass growing period, the municipal refuse load in some New Jersey suburban communities may contain nearly one-third grass clippings. Collected clippings become anaerobic very quickly because of their high demand for oxygen. After becoming anaerobic they emit strongly unpleasant odors. Therefore, grass clippings (in quantity) are difficult to handle and to process.

From our own experience with the handling and disposal of grass clippings, and discussions with others such as lawn care professionals, we suggest considering the following methods to reduce landfilling:

1. RETURN TO LAWN — It is most desirable to leave grass clippings uncollected on the lawn so that they are recycled, contributing to soil organic matter and supplying part of the fertilizer needs of the lawn. Adopt a mowing schedule to keep clippings short enough to filter through growing grass and not remain as a mat on top of the lawn. Research and experience indicate that only 1/3 of the grass length should be removed during mowing. Never allow the lawn grass to double its height between mowings. This approach not only eliminates clipping collection and disposal problems, but also can contribute to improvement of the lawn.

Clippings are not a cause of thatch in lawns. Rather, thatch is formed primarily from a dense accumulation of grass roots and stemmy material. Returning clippings along with proper mowing frequency will not increase disease problems.

Use caution when removing collection bags from mowers. Some machines are not designed to operate safely without a bag or other attachment in place. If you are unsure, check with your equipment supplier.

2. GARDEN MULCH — Grass clippings can be used as a garden mulch. To minimize any tendency to protect slugs, clippings can be dried in the sun for a day prior to being used in this way. Clippings can be spread on garden soil to check weed growth, reduce soil spattering and crusting, moderate soil temperatures, etc. As a precaution, do not use grass clippings from herbicide-treated lawns until after two grass cuttings have been made.

3. SOIL INCORPORATION — Clippings can serve as a source of organic matter for soil improvement when incorporated into the garden.

4. BACKYARD COMPOSTING — Grass clippings can be composted, particularly when incorporated into a backyard leaf composting pile. However, grass has a high nitrogen content, a much higher demand for oxygen than leaves, and a tendency to mat, thereby greatly reducing the passage of oxygen. Composting piles containing

grass clippings thus readily become anaerobic. This, in turn, can produce strong, unpleasant odors. These odors are particularly noticeable when the pile is disturbed.

Because of these problems, grass clippings should not be composted alone, but rather mixed with composting leaves. The partially decayed leaves which now (6-9 months after leaf fall) have a low demand for oxygen, will serve as a bulking agent permitting more oxygen to reach the grass. Grass, which is high in nitrogen, will provide a more rapid decomposition of the remaining leaves as long as it remains under aerobic conditions. Grass clippings will also contribute to a better end product (higher nitrogen content) than that obtained from composting leaves alone. One must be aware, however, that an excess of damp grass in the pile will soon become anaerobic, produce very unpleasant odors, and reduce the rate of decomposition. The objective is to keep the material **aerobic**. Also, to ensure that excess nitrogen is not given off as ammonia, do not add more than 1 part fresh grass clippings to 3 parts partially composted leaves.

The resulting compost can be used as a soil amendment, as a mulch for gardens, flower or shrub beds, or as a potting medium.

5. MUNICIPAL COMPOSTING — Some grass clippings can be incorporated into a municipal leaf composting operation. However, problems that may be experienced with backyard grass composting could be greatly magnified at a municipal facility. Even grass stored for one day or less in plastic bags or the back of a lawn maintenance pick-up truck may emit very unpleasant odors when being unloaded at the site. For this reason, grass clippings are banned at many leaf composting facilities, unless they are very isolated. Research is continuing in this area, but other problems include the high cost of collection and an inadequate supply of leaves for the amount of clippings.

Partially composted leaves should be mixed with the grass in a 3:1 ratio, or more. Because the leaves have already decomposed by the time the grass comes to the site, however, this means the ratio actually collected must be at least 6:1. For most towns this would be possible only if most of the grass clippings are handled directly by residents on their own property.

6. CLIPPING REDUCTION — Fertilizing and watering above the requirements of the grasses may be more detrimental than beneficial to the lawn. One of the effects is increased production of clippings. (Another is potential ground or surface water pollution.) Judicious and proper use of fertilizer and water can provide an attractive lawn with a reduction in the costs, effort, susceptibility to disease, and amount of clippings produced. A fertilization program should emphasize fertilizing the lawn in the fall season rather than in the spring. This can be effective not only in reducing the amount of clippings produced, but also in contributing to a better lawn.

Two related fact sheets: "Backyard Leaf Composting" (FS074) and "Using Leaf Compost" (FS117), and assistance with procedures covered above, may be obtained from the Rutgers Cooperative Extension office in your county. The telephone number appears under County Government in your local phone directory.

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FS117

Fact sheet

Using Leaf Compost

Roy L. Flannery, Specialist in Soils, Emeritus and
Franklin Flower, Specialist in Environmental Science, Emeritus

Composting involves primarily the microbial decomposition of organic matter. Compost - the end product - is a dark, friable, partially decomposed substance similar to natural organic matter found in the soil. The organic matter content of soils is very important. It influences the physical condition, water-holding capacity, and temperature of the soil, and especially the soil bacterial processes which affect the availability of mineral salts to plants.

Why Compost Leaves

If newly fallen leaves are added directly to the soil without first being composted, the microbes that decompose the leaves compete with growing plants for soil nitrogen. The temporary nitrogen shortage caused by the microbes can reduce plant growth. To reduce or eliminate this competition for nitrogen, composting of the leaves is recommended prior to incorporating them into soils.

Need for Organic Matter

Most New Jersey soils need an increase of 1/2 to 1% in organic matter. Sandy soils, such as loamy sands and sands, and soils with very high clay content are improved the most by an increase in organic matter content.

Benefits of Adding Leaf Compost to Soil

- Among the benefits derived from adding leaf compost to New Jersey soils are:
- Drought damage to plants is reduced because of an increased water-holding capacity of the soils.
- Soil tilth is improved making the soils easier to cultivate.
- Very small amounts of the 16 essential elements needed for plant growth are supplied.
- Adverse effects of excessive alkalinity, acidity, or over-fertilization are reduced by the added buffering of the soil.
- The cation exchange capacity of soils is increased, enabling the soils to hold more plant nutrients for longer periods.
- Decomposition of the organic matter produces organic acids which combine with iron and aluminum ions, thereby reducing their potential toxicity to plants. This also makes more phosphorus available for plants because free iron and aluminum can tie up the phosphates.
- The added organic matter provides a food source for desirable soil micro-organisms.
- When incorporated into the soil, or used in a thin mulch 1/16- to 1/8-inch thick, compost helps seeds to germinate.

Overall, compost improves the physical, chemical, and biological properties of soils. Leaf compost, however, is not normally considered a fertilizer as it is too low in nutrient content. It serves primarily as an organic amendment and a soil conditioner. The nitrogen content of composted leaves on a dry basis is about 1/2 to 1% by weight. For other materials commonly added to backyard leaf compost piles, the nitrogen content is: blood meal 10-14%; grass clippings 2-4%; coffee grounds 1 1/2-2%; eggshells 1-2%; horse manure 1-5%; cow manure 1-1 1/2%; poultry manure 3-5%; ammonium sulfate 20 1/2%; urea 45%; bone meal 1 1/2-4%; and cotton seed meal 6-7%.

When Compost is Ready to Use

When compost is ready to use (6 to 18 months after starting) its temperature will generally have decreased to slightly above air temperature. Finished compost will usually be drier than leaves during composting. The material also will be crumbly in texture. Before using compost, "screening" may be necessary to remove the larger partially decomposed materials. These materials will sometimes be present in composting piles because not all items decompose at the same rate. The undecomposed organic matter clumps may be broken up and added to another active compost pile for additional decomposition.

Adding Leaf Compost to the Soil

A good rate of organic matter to work into the top 6 1/2 to 7 inches of most New Jersey cultivated soils is 0.5 to 1.0% organic matter by weight. This is equivalent to adding 900 to 1,800 wet pounds (25 to 50 bushels) of leaf compost per 1,000 square feet of area. To accomplish this, spread a 3/8- to 3/4-inch depth of leaf compost uniformly over the soil surface and mix into the top 6 to 8 inches of soil.

Little or no nitrogen will be released from compost for plant use during the season immediately following incorporation into the soil. It is generally necessary to add nitrogen to soils containing compost to prevent the compost from "robbing" the soil of nitrogen and creating deficiency problems in plants grown in the soil. Adding 1 to 1 1/2 lbs. of 10% nitrogen fertilizer to each 100 lbs. (about 3 bushels) of leaf compost is recommended.

The preceding recommendations supply only the needs of the leaf compost. Most plants require an additional 1 to 3 lbs. of actual nitrogen per 1,000 square feet for normal feeding. This nitrogen should be applied to the soil in addition to that applied in the leaf compost.

Using Leaf Compost as a Mulch

Leaf compost can also be used as an organic mulch on the surface of soil in place of peatmoss, straw, etc. Organic mulches are valuable because they:

- Reduce rainfall runoff, thereby making more water available for plant growth.
- Decrease water evaporation losses from the soil.
- Keep the soils cooler in hot weather and warmer in cold weather.
- Reduce alternate freezing and thawing of soils which can injure the fibrous roots of plants.
- Help to prevent soil erosion by wind or water.
- Keep soils friable, therefore easier to cultivate.
- Increase biological activity of earthworms and other soil organisms.
- Prevent soil spattering on leaves, flowers, or fruits such as strawberries.
- Reduce soil compaction from rain and irrigation water.
- Help to control weeds.
- Present a pleasing appearance.

Recommended thicknesses of mulch layers: 2-3 inches for deciduous shrubs and trees, vegetables, and rosebeds; 3 inches for flower beds; and 3-4 inches for shallow-rooted, acid-loving plants.

Other Uses for Leaf Compost

Leaf compost may also be used in potting soil. However, no more than 25 to 30% of the potting soil should be leaf compost. Frequently leaf compost will continue to decompose. If more that 25 to 30% of the potting soil is leaf compost, there will be a significant volume reduction of the potting soil after 1 year.

Composting generally destroys most weed seeds contained in the compost material; however, not all of them will be destroyed. Some are heat resistant, and others will not be fully exposed to the high temperatures. If a completely pasteurized leaf compost is desired for potting soil, it will be necessary to heat it in an oven until the temperature of the center of the mass reaches 180°F and is maintained for 30 minutes.

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New Jersey Agricultural Experiment Station
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FS074

Fact sheet

Backyard Leaf Composting

Franklin Flower, Extension Specialist Emeritus in Environmental Science
Peter Strom, Assistant Professor in Environmental Science

Many New Jersey homeowners have an excessive quantity of leaves in the fall. One alternative for deal-ing with leaves is backyard composting. This process involves primarily the microbial decomposition of organic matter. Compost - the end result - is a dark, friable, partially decomposed substance similar to natural organic matter found in the soil.

The Composting Process

Composting speeds natural decomposition under semi-controlled conditions. Raw organic materials can be converted into compost by microorganisms. As microorganisms decompose organic matter, temperatures within the pile increase, sometimes approaching 150 degrees F. at the center. These inside-pile temperatures speed the process, and kill many weed and disease organisms.

Leaves may be composted by piling them in a heap. Locate the pile where drainage is adequate and there is no standing water. The composting pile should be damp enough that when a sample taken from the interior is squeezed by hand a few drops of water will appear. A shaded area will reduce moisture evaporation from the surface, but tree roots may grow into the pile. If the surface of the pile becomes excessively dry, it will not compost, and those leaves may blow away.

The leaf pile should be at least 4 feet in diameter and 3 feet in height. If it is too small, it is difficult to maintain adequate temperatures for rapid decomposition. The maximum size should be about 5 feet in height and 10 feet in diameter. If the pile is too large, the interior will not obtain the oxygen needed for adequate, odor-free decomposition. If more material is available, lengthen the pile into a rectangular shape while keeping it 10 feet wide and 5 feet high. If there is sufficient space and material, two or three piles will provide greater flexibility. One pile can contain compost for immediate use; the second is actively composting; and the third receives newly fallen leaves. If there is space for only one pile, new material may be added gradually to the top while removing the decomposed product from the bottom.

Containing the Pile

Composting may be done in a loose pile. However, for the most efficient use of space, it can be contained in a bin or other enclosure. The sides of this bin should be loose enough to permit air movement. One side should be open, or easily opened, for turning the pile and for removing the finished compost.

Woven wire or wooden slat fencing, or cement blocks on their sides have been used successfully. Wood gradually decomposes, and wire fencing may rust, so these materials will need periodic replacement. Wooden stakes driven into the ground may attract termites, so lumber treated with wood preservative or metal snow-fence posts may be better.

Constructing the Pile

Many instruction sheets advocate constructing the pile in layers that may include grass clippings, fertilizer, limestone, manure, soil, and leaves. However, we have found this practice to be unnecessary. The pile can be constructed of leaves only. A small amount of grass clippings may be added to the leaves as the pile is being constructed. However, because of its high demand for oxygen, too much grass tends to cause an anaerobic (without oxygen) condition. This greatly reduces the composting rate, and can produce unpleasant odors. Fresh vegetable peelings may be included, but do not add meat or grease because they may cause odors or attract pests.

Unless leaves are collected in a very wet condition, add water while placing them in the pile. Without moisture, the microorganisms will not function. Moist-en to the point

where it is possible to squeeze droplets of water from a hand-held mass of leaves.

Dead leaves lack adequate nitrogen for rapid decomposition. Therefore, a high-nitrogen fertilizer added to the pile may speed up decomposition. However, since leaves fall only for about 2 months a year, there are 10 months for decomposition before space is needed for the next batch. So, while it is generally unnecessary to add fertilizer, for more rapid decomposition and a product with a higher nutritive content, 5 ounces (about 1/2 cup) of 10% nitrogen fertilizer per 20-gallon can of hand-compacted leaves could be added. Fresh manure could be substituted, but it may cause odor problems.

Ordinarily it is unnecessary to add ground limestone because the pile seldom becomes too acidic. If fertilizer has been added, an equivalent quantity of limestone will counteract any acidity. Little or no limestone should be added if the compost is to be used on acid-loving plants.

Some guides on leaf composting recommend adding layers of soil periodically to the piles to supply the microorganisms needed for decomposition. We have not found this practice to be necessary, because leaves, themselves, contain a multitude of microorganisms. Available commercial activators or starters definitely are not needed.

Avoid packing the materials too tightly. Too much compaction will limit movement of air through the pile. Shredding the leaves generally speeds up composting.

To reduce weed germination, weeds in flower or with seeds should not be composted. Also, it is best to avoid composting diseased plants, or herbicide-treated lawn clippings until after at least three mowings.

Care of the Pile

The composting pile must be kept moist, but not soggy, for proper decomposition. Inadequate moisture reduces microbial activity, while excessive water may cause anaerobic conditions. A thin outer layer of dry leaves is unavoidable.

The pile should be periodically turned or mixed. The main objectives of turning are to shift materials from the outer parts of the pile closer to the center for better decomposition, and to incorporate oxygen. During warm weather, turn the pile once a month. In cool weather frequent turning is not recommended because it allows too much heat to escape. Piles should be turned immediately if ammonia or other offensive odors are detected. If space is available, turning may be accomplished by shifting the entire pile to an adjacent area or bin.

Within a few weeks after starting, the pile should be hot in the center. Heating generally indicates that the pile is decomposing properly. Failure to heat may be caused by too little or too much water, improper aeration, packing too tightly, or a pile that is too small. As leaves decompose, they should shrink to less than one-half of their original volume. During dry weather it may be necessary to add more water. The moisture content of the interior of the pile should be observed while turning.

Using Leaf Compost

Finished compost should be dark and crumbly with much of the original appearance no longer visible. It should have an earthy odor. Normally, compost will be ready in 4-9 months.

The major horticultural use for leaf compost is to improve the organic content of soil. Most New Jersey soils need an increase of 1/2 to 1% in organic content, particularly to improve moisture-holding capacity and tilth. Leaf compost is not normally a fertilizer, because it is too low in nutrients. Compost serves primarily as an organic amendment and as a soil conditioner. Soil mulch is another valuable use for leaf compost.

Based in part on Experiment Station Research Project No. 07526.

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COLORING BOOK

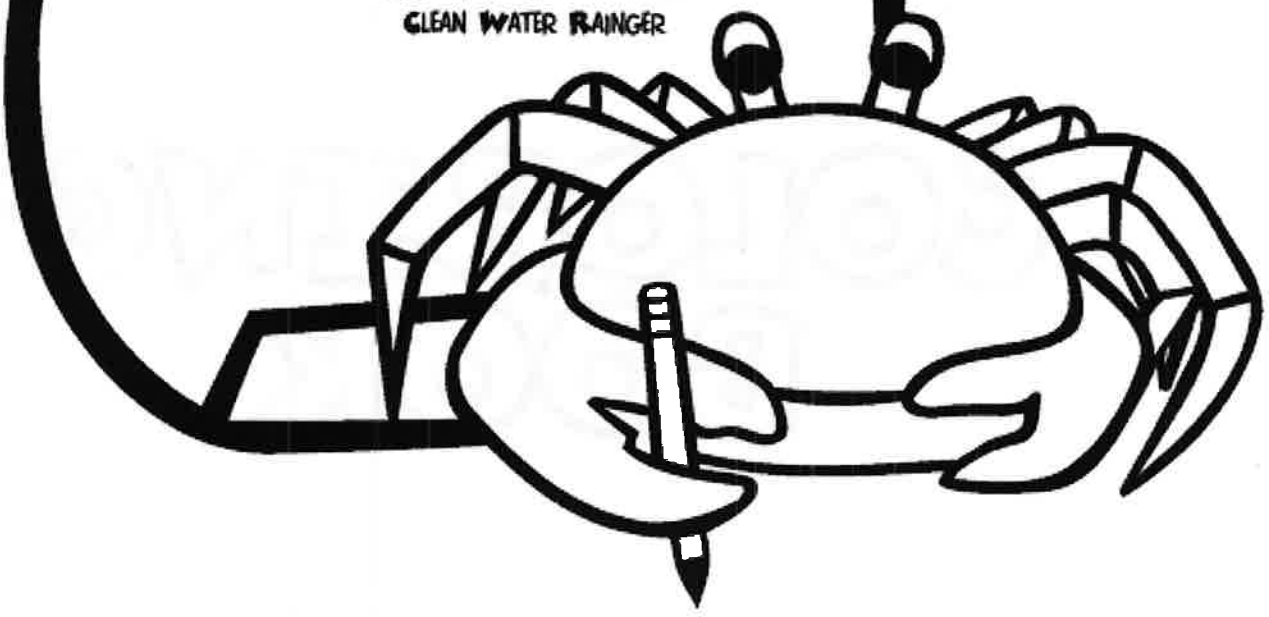
HEY KIDS,

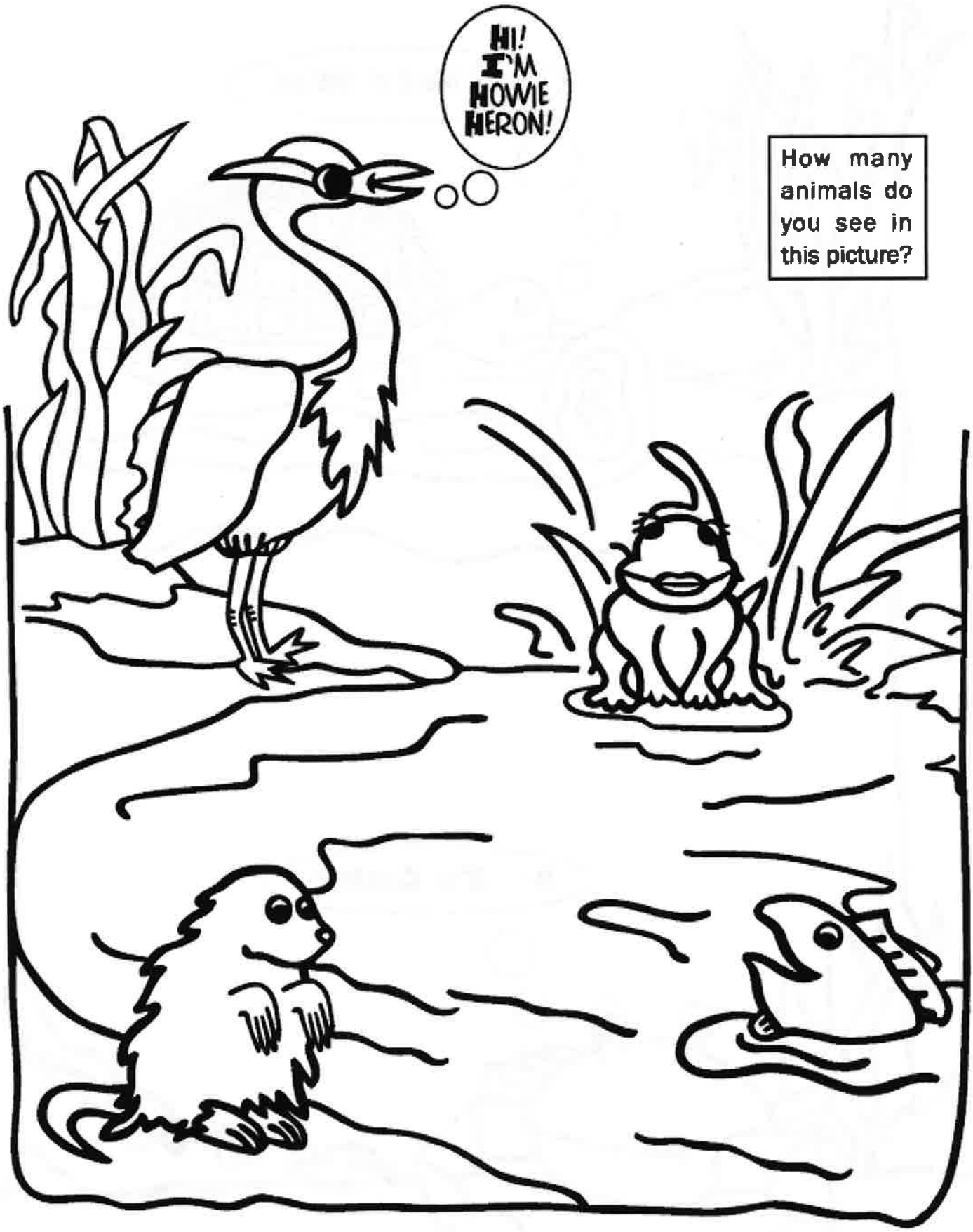
ARE YOU INTERESTED IN KEEPING NEW JERSEY'S WATER CLEAN? WELL, WE NEED YOUR HELP! NOT LONG AGO, MY FRIENDS AND I FOUND THAT ONE OF NEW JERSEY'S BIGGEST WATER POLLUTION PROBLEMS COMES FROM PEOPLE — FROM HOW WE LIVE OUR DAILY LIVES. THAT MEANS THINGS LIKE LITTERING, NOT CLEANING UP AFTER PETS, USING TOO MANY PESTICIDES, AND DUMPING MOTOR OIL DOWN STORM DRAINS. WITH CLOSE TO EIGHT MILLION PEOPLE LIVING IN THE STATE, WHAT EVERYBODY DOES CAN REALLY ADD UP.

THIS COLORING BOOK TELLS THE STORY OF HOW WE FOUND THE SOURCE OF THE PROBLEM, AND IT TELLS WHY WE STARTED THE CLEAN WATER RANGER TEAM.

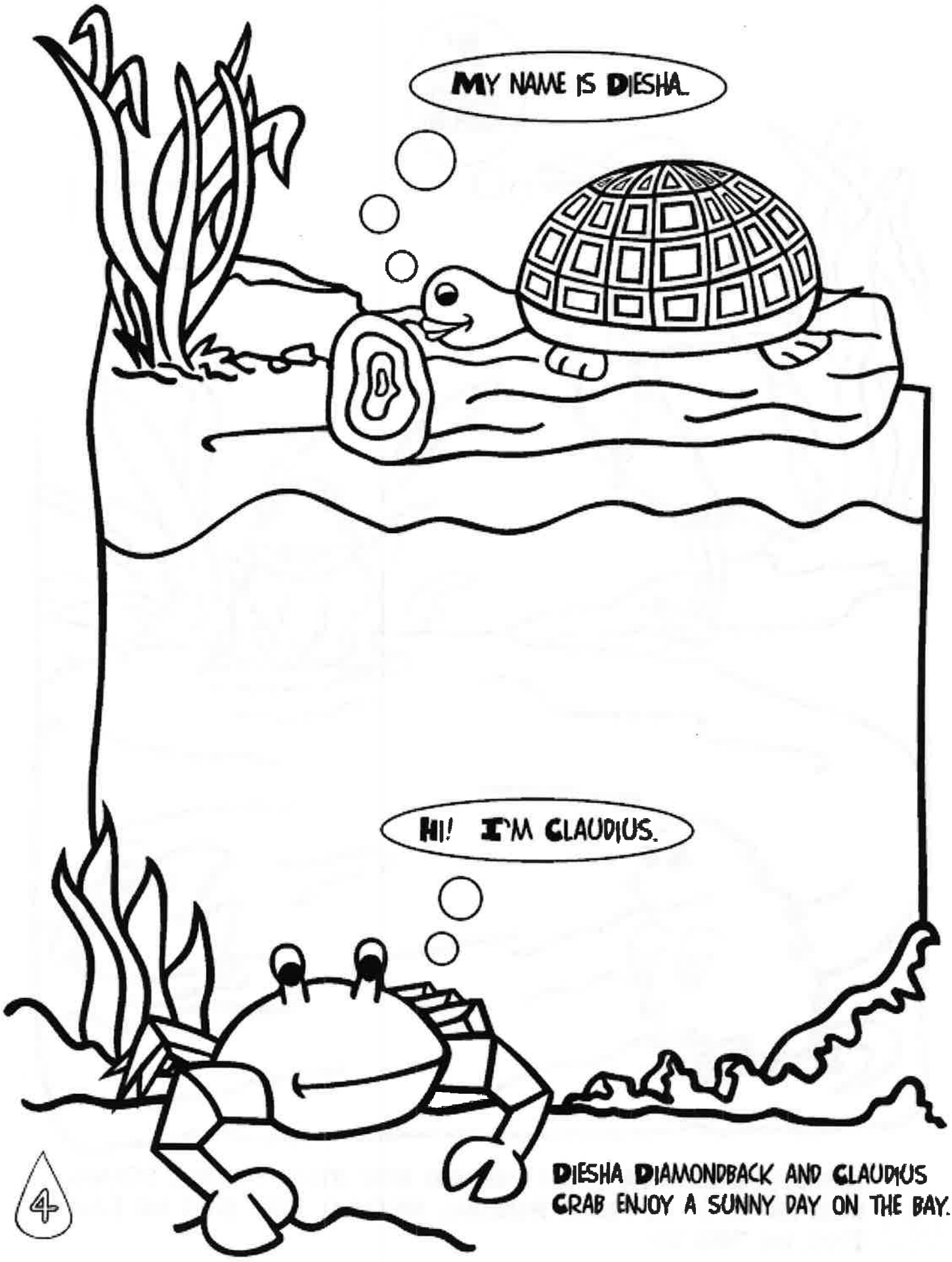
YOUR FRIEND,

Claudius Crab
CLEAN WATER RANGER

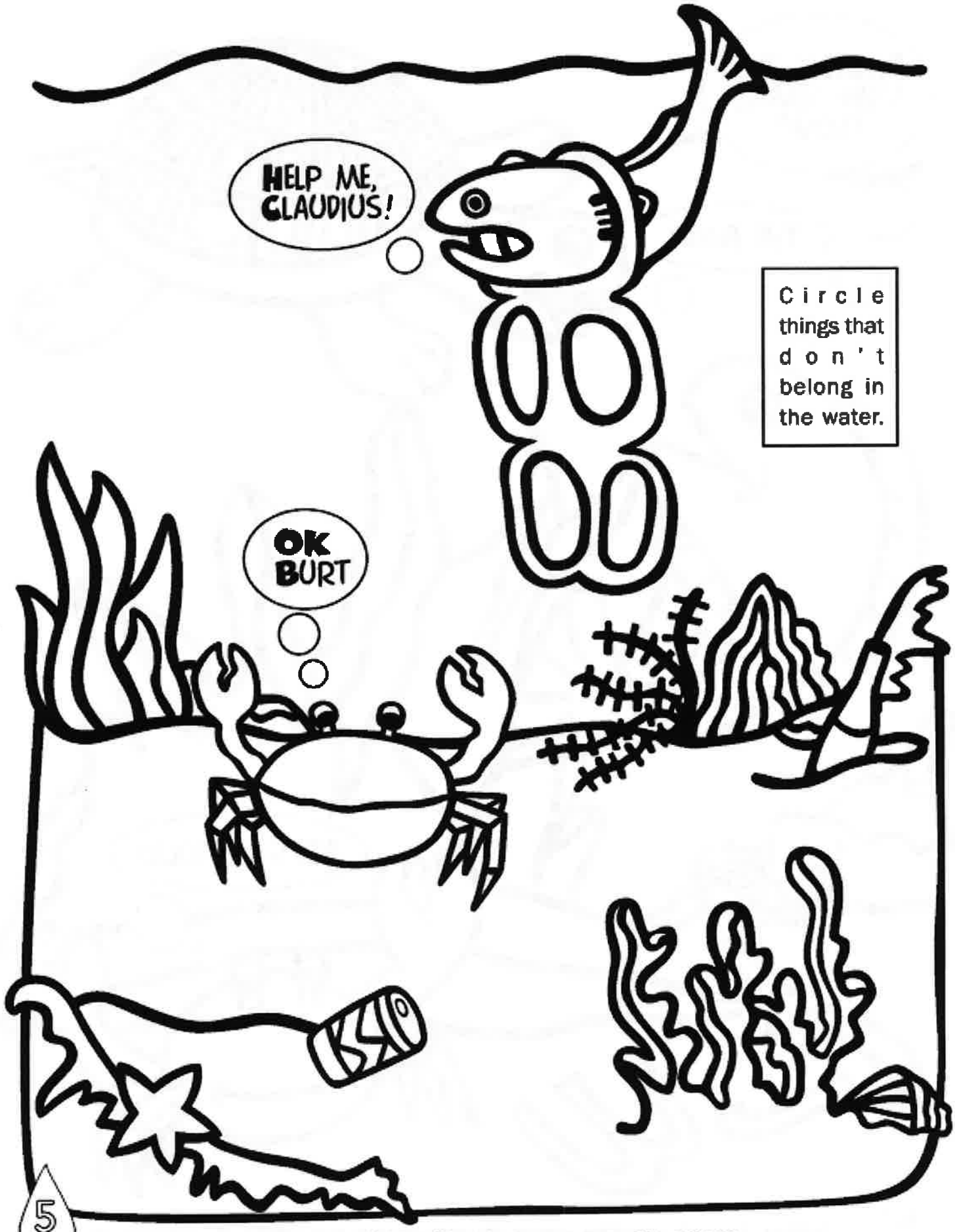




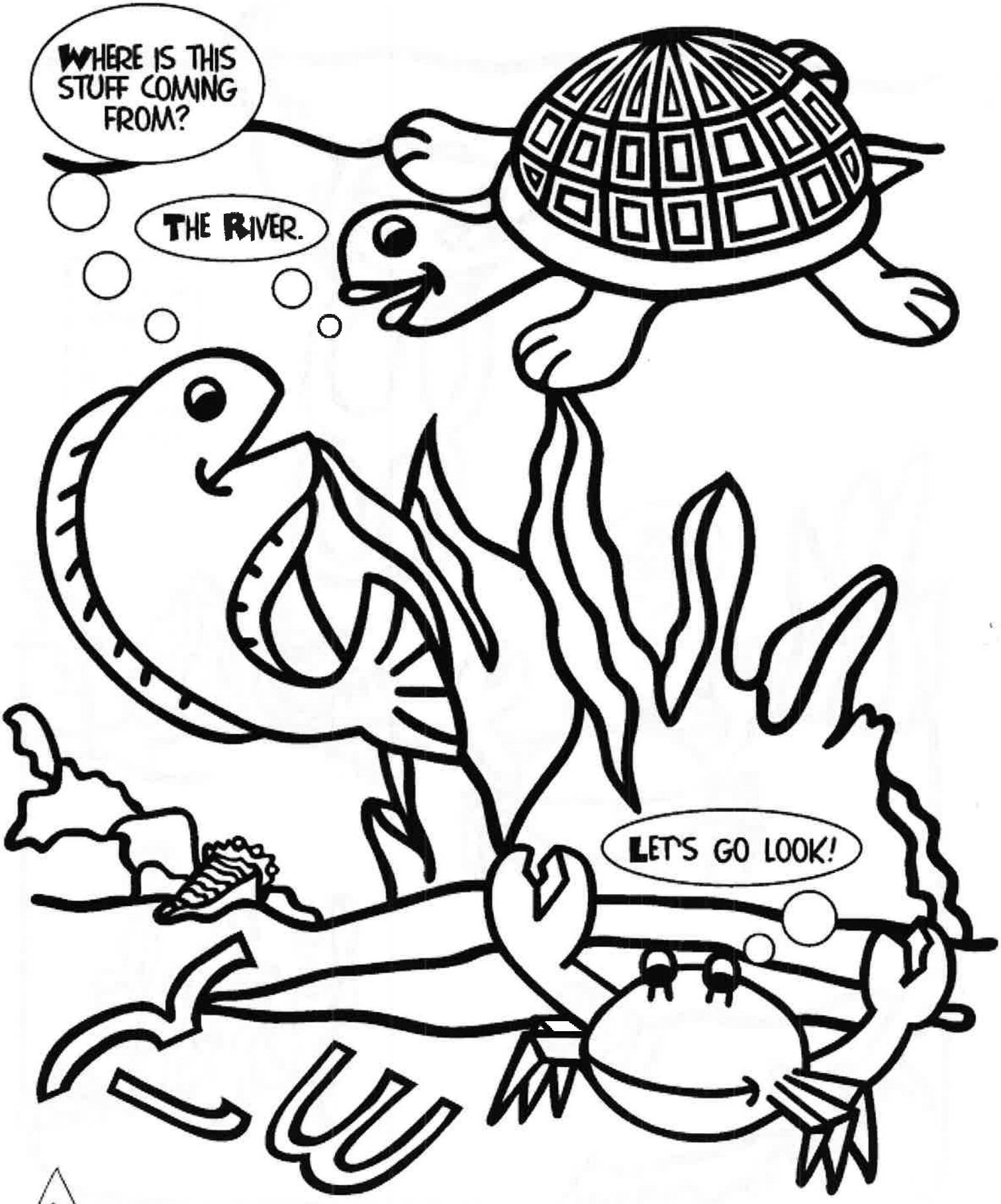
HOWIE THE GREAT BLUE HERON LIVES NEAR NEW JERSEY'S RIVERS, STREAMS, LAKES AND BAYS. HIS FRIENDS MARSHALL MUSKRAT, BURT BASS AND FRANCINE FROG, LIVE THERE TOO.



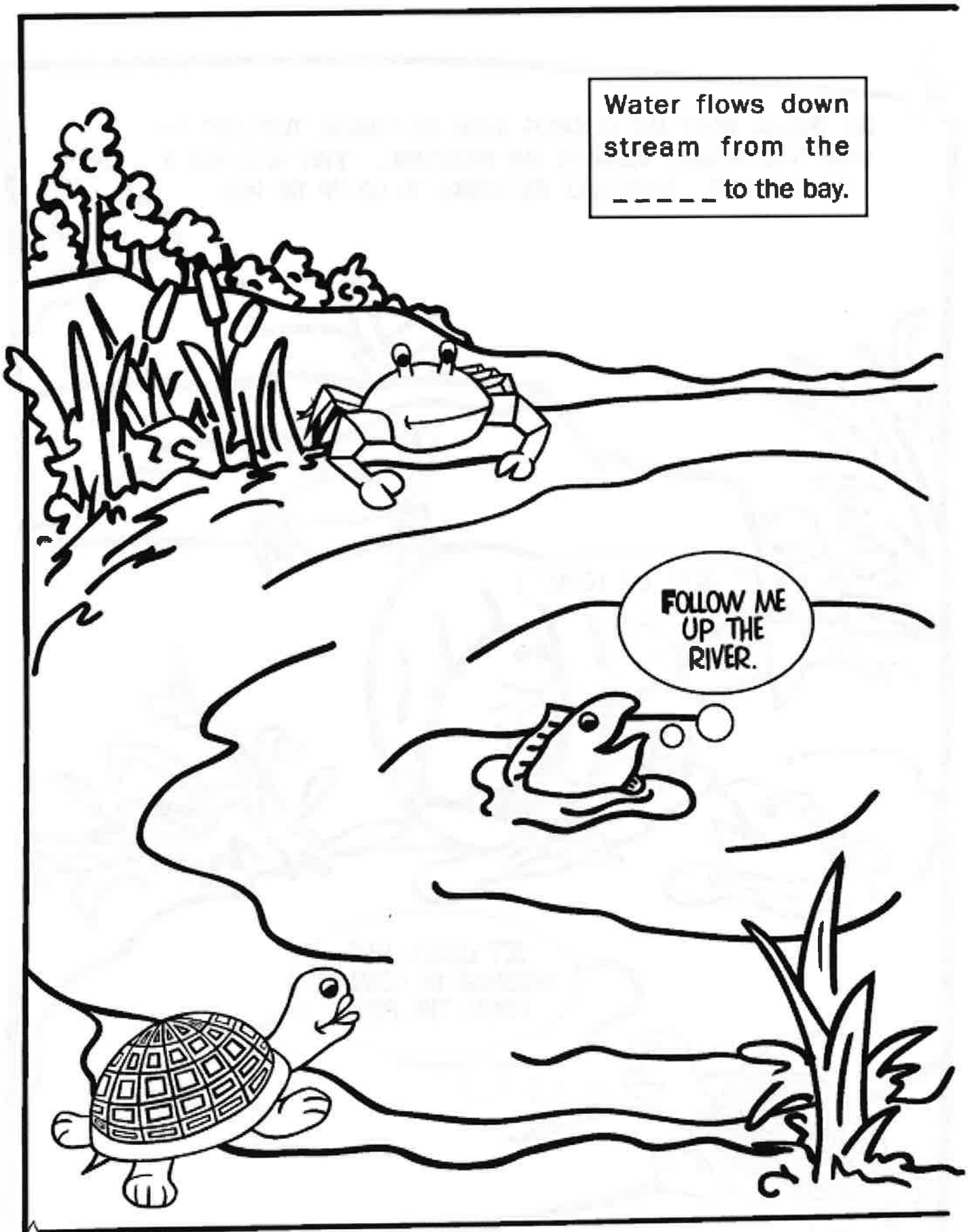
DIESHA DIAMONDBACK AND CLAUDIUS CRAB ENJOY A SUNNY DAY ON THE BAY.



CLAUDIUS SWIMS OVER TO HELP HIS FRIEND BURT.

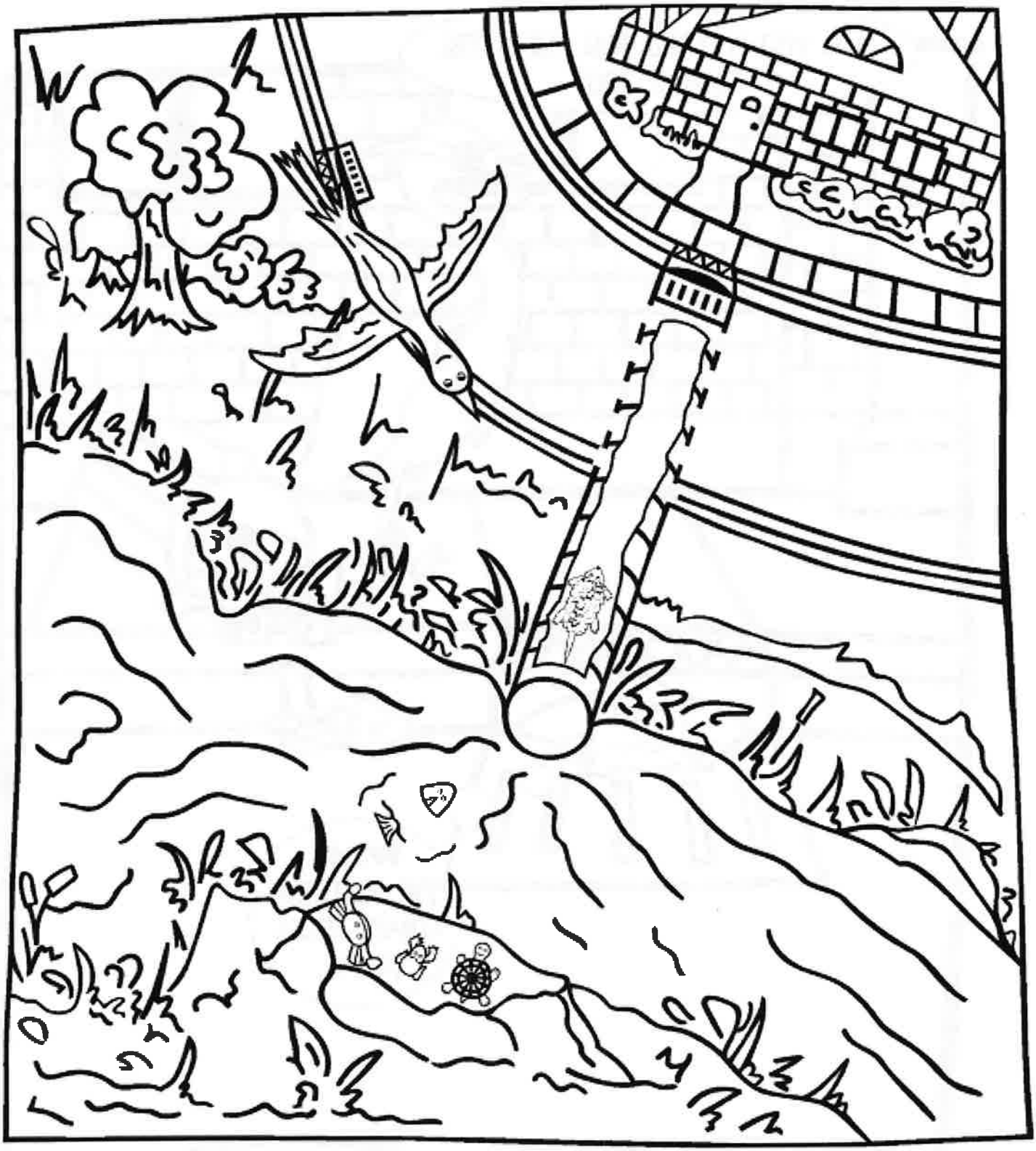


DIESHA AND HER FRIENDS WANT TO FIND WHERE THE LITTER IS COMING FROM.



CLAUDIUS, BURT AND DIESHA GO UP STREAM IN SEARCH OF THE POLLUTION SOURCE.

AS DIESHA, BURT AND CLAUDIUS SWIM UP STREAM, THEY MEET UP WITH THEIR FRIENDS, FRANCINE AND MARSHALL. THEY ALSO FIND A STORMPIPE. MARSHALL VOLUNTEERS TO GO UP THE PIPE.



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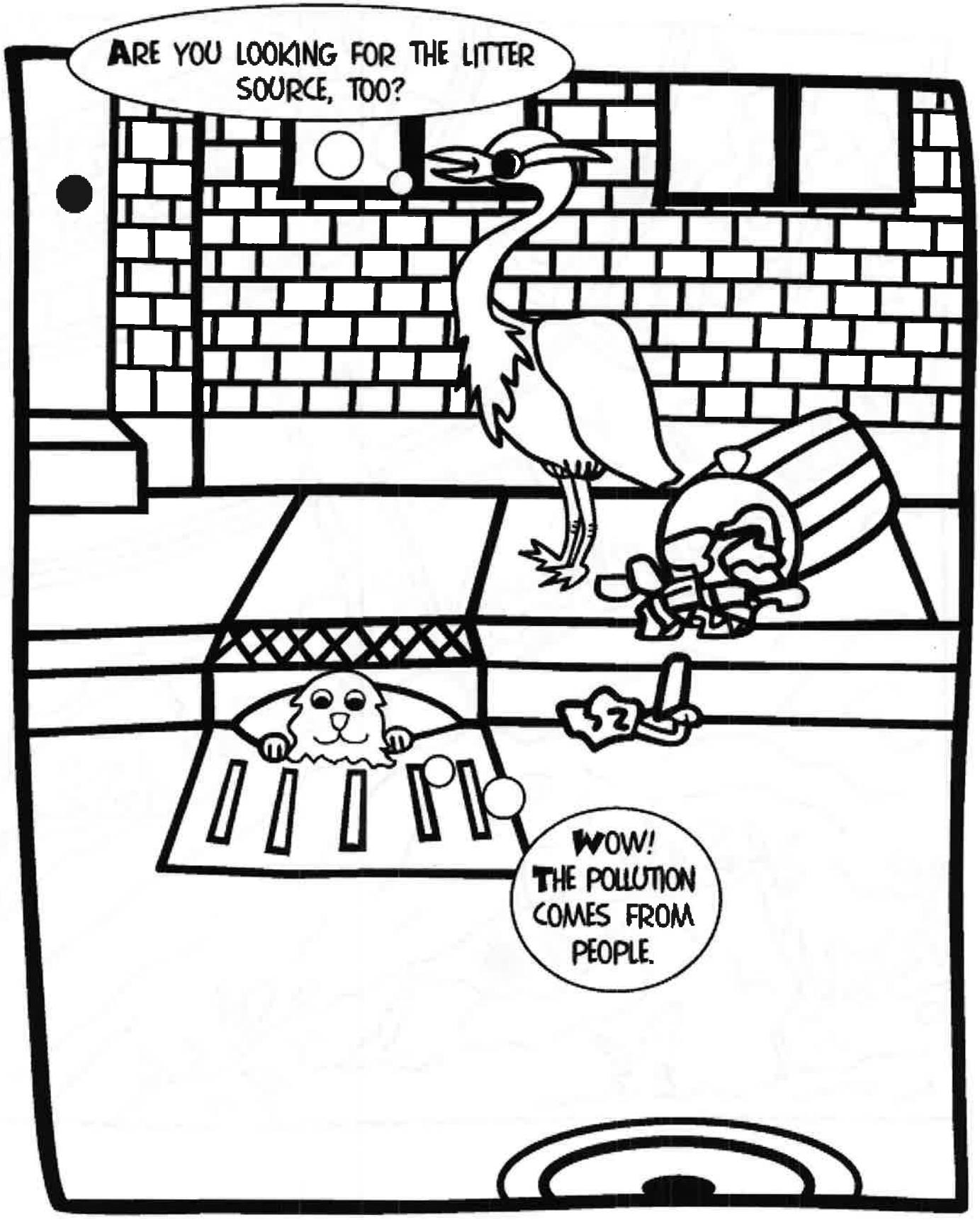
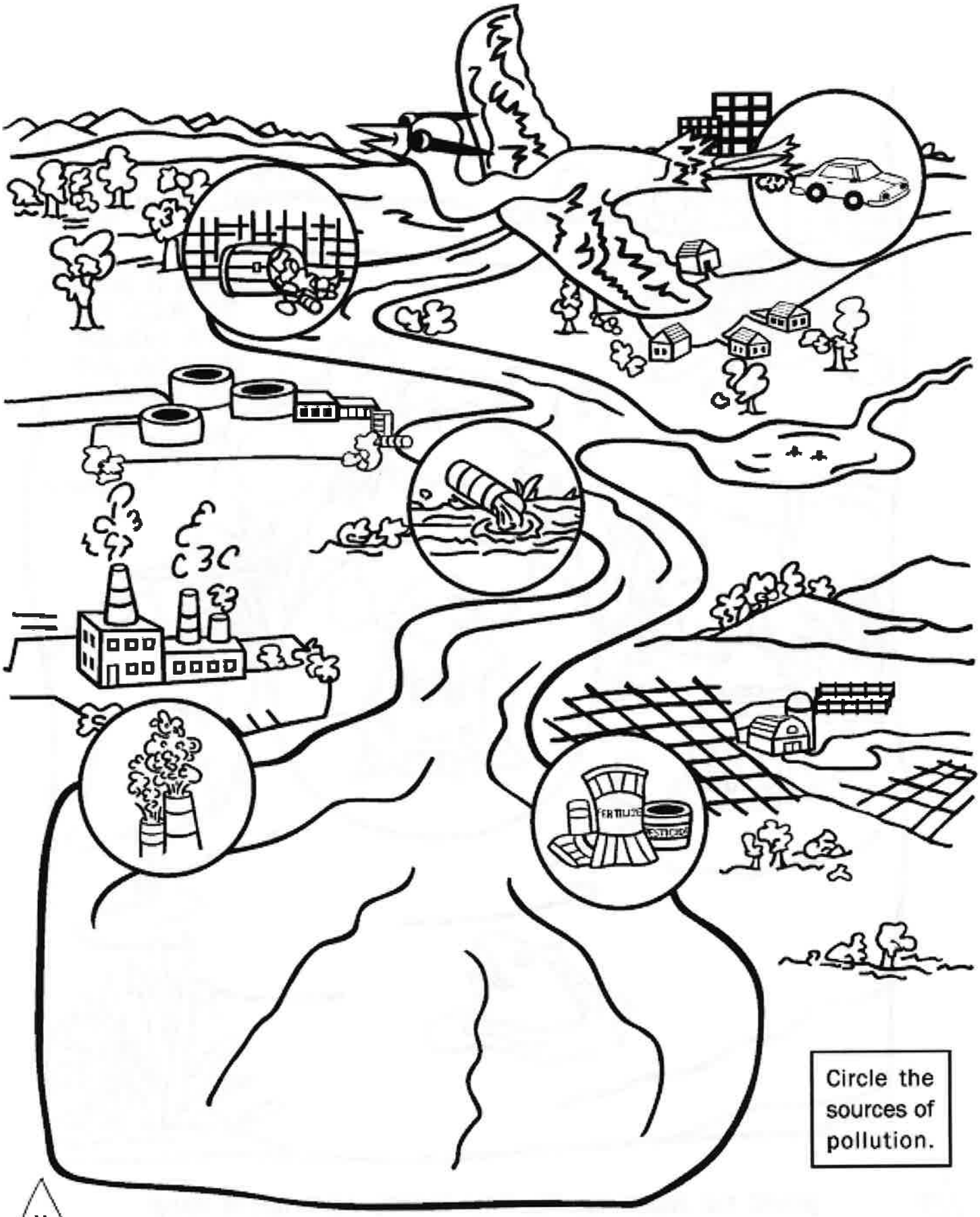
AS HOWIE FLIES ABOVE, MARSHALL GOES THROUGH THE STORMPIPE IN SEARCH OF THE POLLUTION SOURCE.



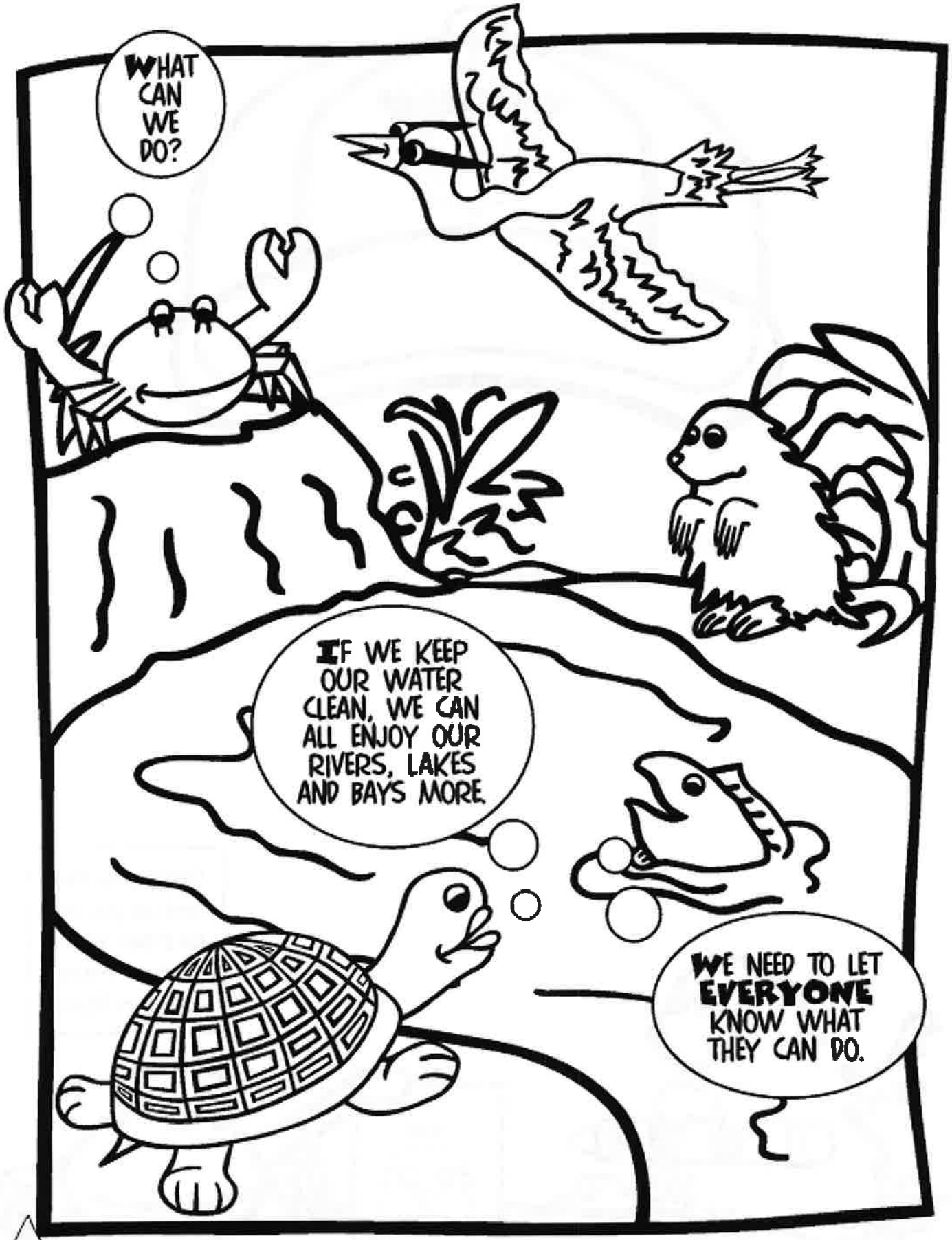
AS MARSHALL PEEKS OUT THE STORM DRAIN, HE SEES HIS FRIEND HOWIE. HE ALSO SEES WHERE THE LITTER IS COMING FROM.



Circle the sources of pollution.

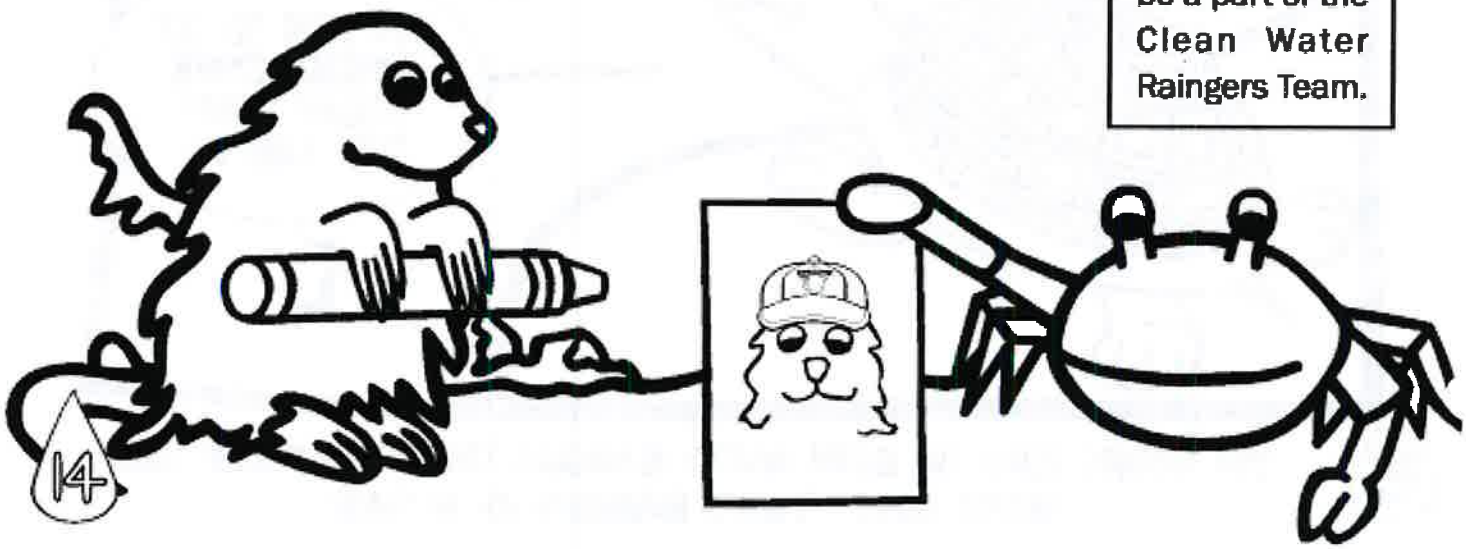
AS HOWIE FLYS BACK TO HIS FRIENDS, HE SEES OTHERS SOURCES OF POLLUTION.

HOWIE AND MARSHALL TELL THEIR FRIENDS WHAT THEY'VE FOUND.



THE FRIENDS FORM THE CLEAN WATER RAINGERS TEAM TO HELP KEEP THEIR WATER CLEAN. THAT'S RAINGERS AS IN RAIN!

Draw yourself here, so you can be a part of the Clean Water Raingers Team.



TOP TEN THINGS YOU CAN DO TO HELP KEEP WATER CLEAN AS PART OF THE CWR TEAM

1. NEVER THROW ANYTHING DOWN STORM DRAINS. THEY ARE FOR RAINWATER ONLY.

2. DON'T LITTER. ALWAYS PUT TRASH WHERE IT BELONGS.

3. ALWAYS CLEAN UP AFTER YOUR PETS. OBEY YOUR TOWN'S "POOPER SCOOPER" LAWS.

4. TELL OTHERS HOW IMPORTANT IT IS TO KEEP OUR LAND AND WATER CLEAN.

5. PLANT A TREE. THEY TAKE POLLUTANTS OUT OF GROUND WATER, PROVIDE SHADE, AND CLEAN THE AIR.

6. FIND OUT WHAT WATERWAY YOU LIVE NEAR. WHERE DOES YOUR WATER COME FROM?

7. PRECYCLE! BUY PRODUCTS THAT USE THE LEAST AMOUNT OF PACKAGING.

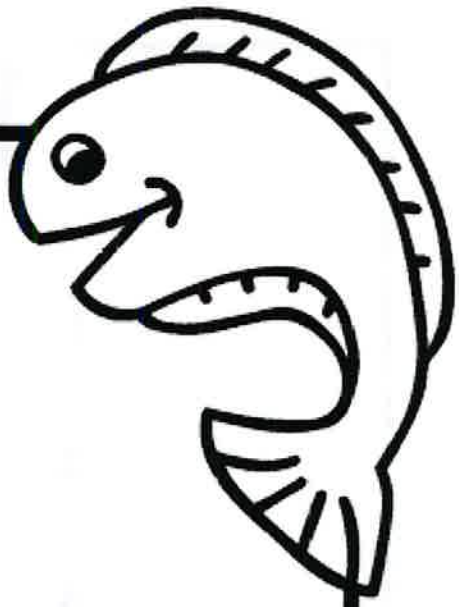
8. RECYCLE. FIND OUT WHAT IS RECYCLABLE IN YOUR COMMUNITY. BUY PRODUCTS IN RECYCLED OR RECYCLABLE CONTAINERS.

9. CONSERVE WATER WHENEVER POSSIBLE. FOR EXAMPLE, TURN OFF THE WATER WHILE BRUSHING YOUR TEETH AND DON'T LINGER IN THE SHOWER.

10. LEARN ABOUT ENVIRONMENTAL ISSUES. GET INVOLVED IN LOCAL ORGANIZATIONS.

JOIN THE TEAM!

THIS BOOK BELONGS TO...



CREDITS

THE CLEAN WATER RANGERS CONCEPT WAS DEVELOPED BY THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.

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PO BOX 418
TRENTON, **NJ** 08625-0418

609-292-2113

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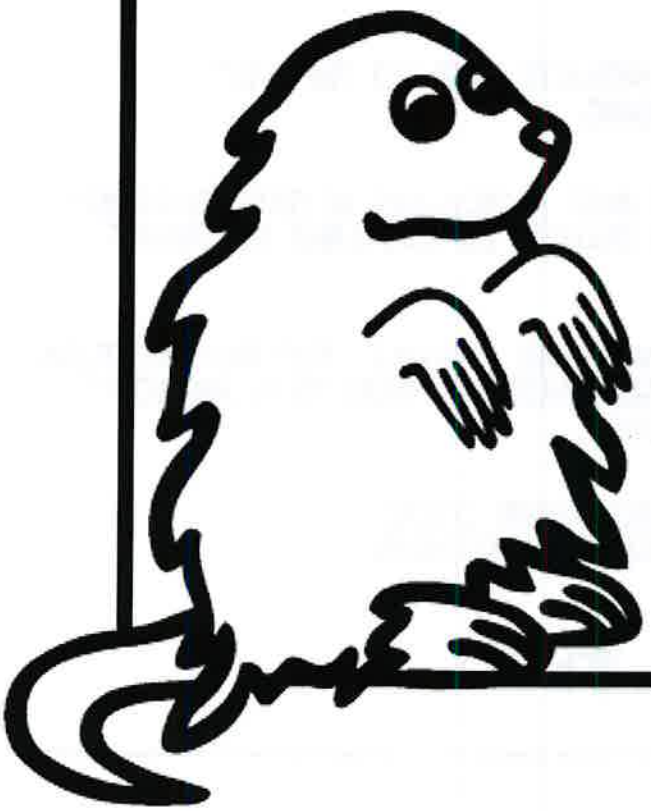
KYRA HOFFMANN,
COORDINATOR

ERIN BRODEL,
GRAPHIC DESIGN & ILLUSTRATION

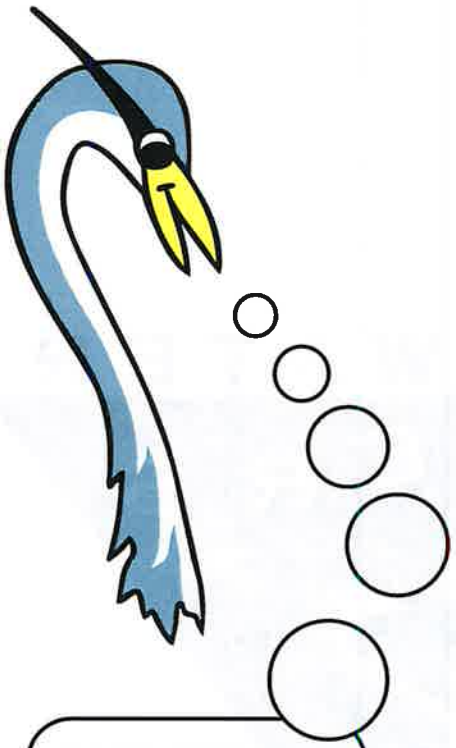
WATERSHEDS...
WHERE YOUR QUALITY OF LIFE BEGINS.
THE LINK BETWEEN OUR LAND, OUR WATER AND OUR COMMUNITY



How To Be A Clean Water Rainger

Save this booklet! It contains valuable information you can use!

Who Are the Clean Water Raingers?



HI! I'M HOWIE HERON. MY FRIENDS AND I HAVE JOINED THE CLEAN WATER RAINGER TEAM AND WE'RE HERE TO SHARE WHAT WE'VE LEARNED ABOUT THE WATER QUALITY OF THE GREAT STATE OF NEW JERSEY. THE CLEAN WATER RAINGERS TEAM IS DEDICATED TO PROTECTING NEW JERSEY'S WATER. IN THIS BOOKLET, YOU'LL LEARN HOW YOUR EVERYDAY ACTIVITIES AFFECT WATER.

CLEAN WATER RAINGERS

DEAR CLEAN WATER RAINGER CANDIDATE,

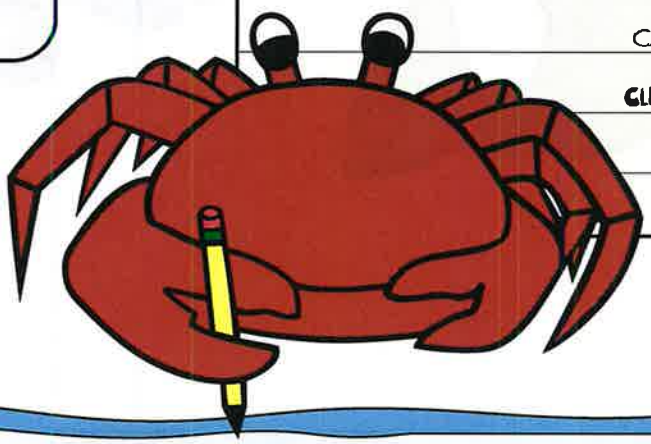
ARE YOU INTERESTED IN KEEPING NEW JERSEY'S WATER CLEAN? WELL, WE NEED YOUR HELP! NOT LONG AGO, MY FRIENDS AND I DISCOVERED THAT ONE OF NEW JERSEY'S BIGGEST WATER POLLUTION PROBLEMS COMES FROM PEOPLE -- FROM HOW WE LIVE OUR DAILY LIVES. THAT MEANS THINGS LIKE LITTERING, NOT CLEANING UP AFTER PETS, USING TOO MANY PESTICIDES, AND DUMPING MOTOR OIL DOWN STORM DRAINS. WITH EIGHT MILLION PEOPLE LIVING IN THE STATE, WHAT EVERYBODY DOES CAN REALLY ADD UP.

WE HOPE YOU WILL USE THE INFORMATION IN THIS BOOKLET TO IMPROVE WATER QUALITY IN YOUR NEIGHBORHOOD. JOIN THE CLEAN WATER RAINGER TEAM AND MAKE NEW JERSEY A BETTER PLACE TO LIVE, WORK, AND PLAY!

YOUR FRIEND,

Claudius Crab

CLEAN WATER RAINGER



HI! I'M DIESHA DIAMONDBACK. DID YOU KNOW THAT ALL OF THE STREAMS, CREEKS, RIVERS, LAKES, AND BAYS IN NEW JERSEY EVENTUALLY FLOW TO THE ATLANTIC OCEAN? WHAT YOU DO IN YOUR HOME TOWN CAN AFFECT THE JERSEY SHORE, EVEN IF YOU LIVE FAR AWAY!

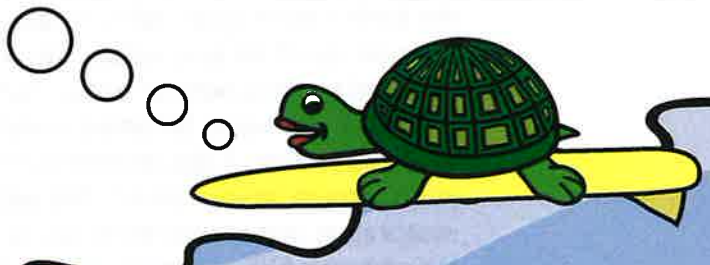


Table of Contents

Acknowledgments

The Clean Water Raingers concept was developed by the New Jersey Department of Environmental Protection.

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MARCH 2001

The Water Cycle

For millions of years water has been recycled and reused. It is important to understand how water moves through the Earth's water cycle. When it rains, the rainwater flows on top of the land surface into waterways or is absorbed by the ground or plants. Water evaporates from land and water, becoming water vapor in the atmosphere. Water is also released from trees and other plants through "transpiration." The water vapor from evaporation and transpiration forms clouds in the atmosphere which in turn provide precipitation (rain, hail, snow, sleet) to start the cycle over again. This process of water recycling, known as the water cycle, repeats itself over and over.

Water. It's an essential part of our lives. We use it to drink, to cook, to bathe, and to clean. It's used by industry and businesses to make their products. Farmers and gardeners use it to water their crops. Fish live in it and other animals need it to survive.

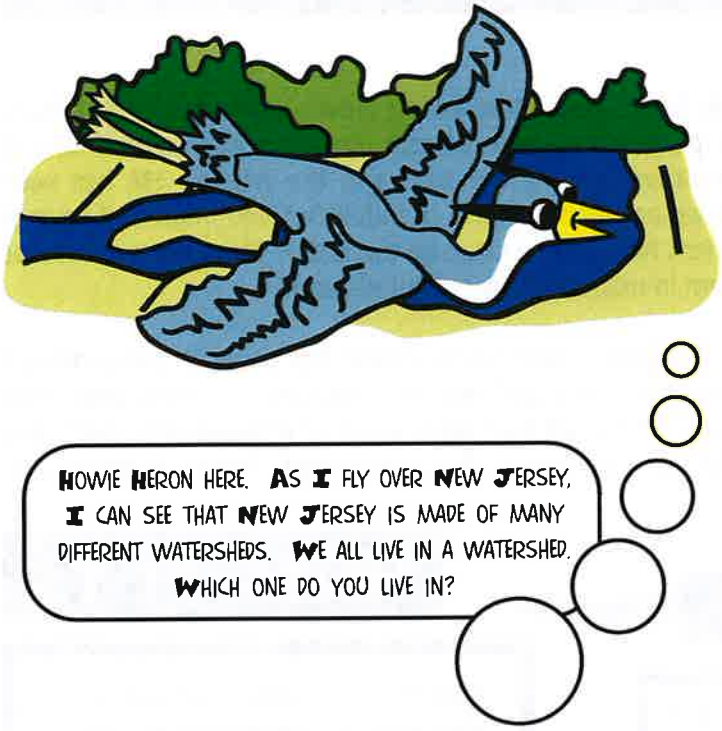
The earth has a lot of water - approximately 1.4 quintillion cubic meters of it. Yet, less than 1% of that is fresh, usable water. The oceans, glaciers, and ice caps account for greater than 99% of all water on Earth. That remaining small fraction accounts for every cloud, river, lake, pond, swamp, and aquifer. Of that, more than two thirds is below the Earth's surface.

In New Jersey, an average of 44 inches of precipitation per year replenishes the state's 6,500 miles of streams and rivers, 61,000 acres of lakes and an extensive network of underground aquifers.

What is Ground Water?

Some rainwater runoff seeps into the ground to become ground water. Ground water moves into water-filled layers of porous rock or soil that are called aquifers. Aquifers are not flowing underground streams or lakes. If the aquifer is close to the surface, its ground water can flow into nearby waterways and wetlands. More than 100 aquifers are below us in New Jersey, covering 7,500 square miles. Through wells, ground water is used for drinking water for half of the people in New Jersey.

What is a Watershed?



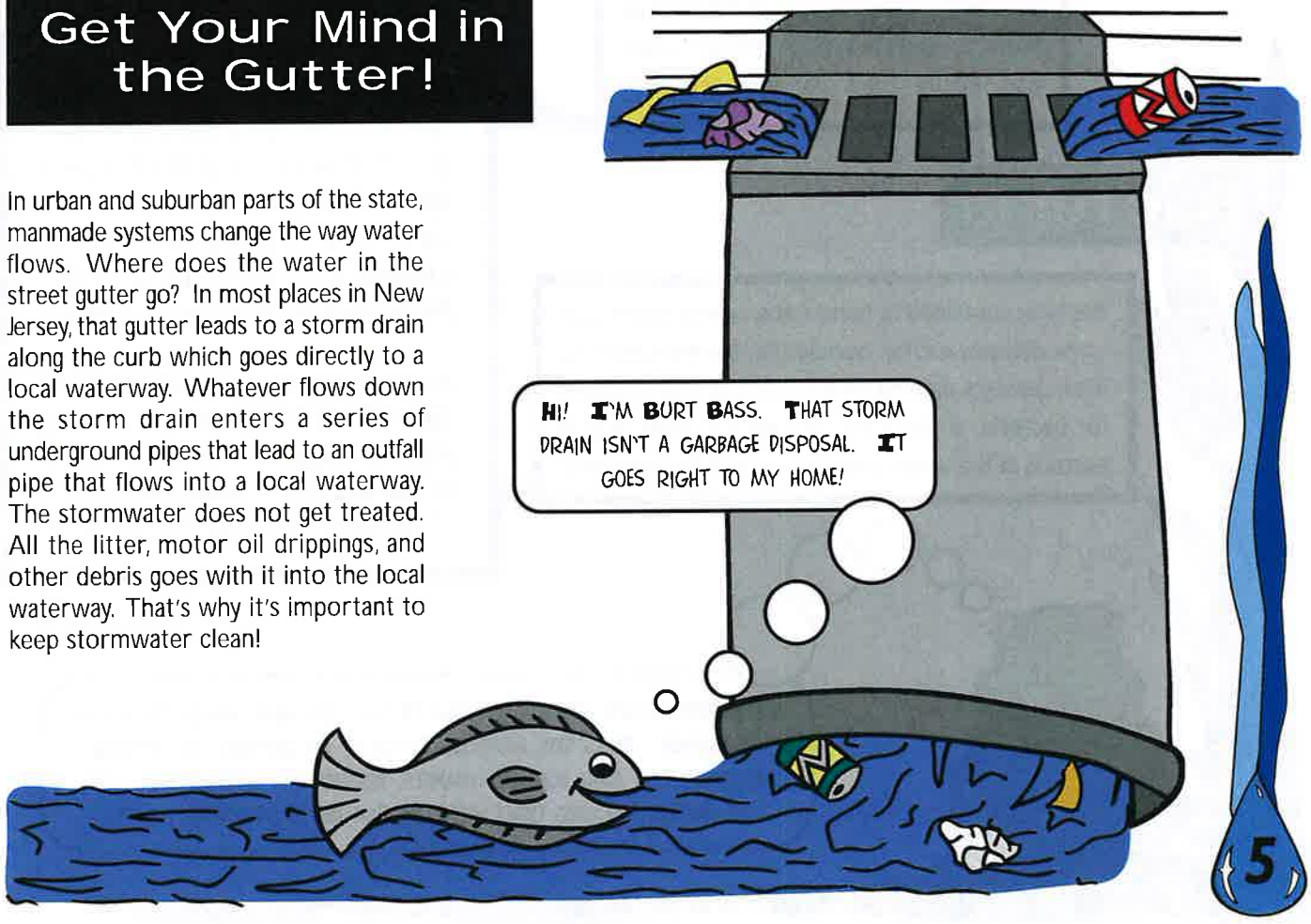
A watershed is the area of land surrounding a waterway that drains into it. A watershed includes not only the waterway itself but also the entire land area that drains to it. For example, the watershed of a lake would include not only the streams entering into that lake but also the land area that drains into those streams and eventually the lake.

A watershed can be as small as a backyard that drains to a puddle or as large as the sections of New York, Pennsylvania, New Jersey and Delaware that drain into the Delaware River.

So what happens on the land in a watershed affects the waterway. For example if too many fertilizers are used on lawns, the extra fertilizer can end up in the local waterway. The same thing goes for ground water. The extra fertilizer could end up in ground water and maybe someone's well.

Get Your Mind in the Gutter!

In urban and suburban parts of the state, manmade systems change the way water flows. Where does the water in the street gutter go? In most places in New Jersey, that gutter leads to a storm drain along the curb which goes directly to a local waterway. Whatever flows down the storm drain enters a series of underground pipes that lead to an outfall pipe that flows into a local waterway. The stormwater does not get treated. All the litter, motor oil drippings, and other debris goes with it into the local waterway. That's why it's important to keep stormwater clean!



What's Wrong With Our Water?

On his flights over New Jersey, Howie Heron sees that many water pollution problems begin upstream and concentrate as water flows toward the bays and the ocean. He has seen improvement as regulation of industries and improved sewage treatment have helped clean up the water. Now the number one problem in many areas is "polluted runoff."

Polluted runoff is stormwater runoff that picks up pollution as it washes over lawns, parking lots, roadways, farmland and other surfaces. There are four basic types of pollution in runoff: soil particles, nutrients, bacteria and toxic substances.

Soil Particles

Construction sites, farms, and eroded stream banks can be large sources of pollution. Because bare ground lacks plants to hold soil in place, rain and waves can easily lead to soil erosion.

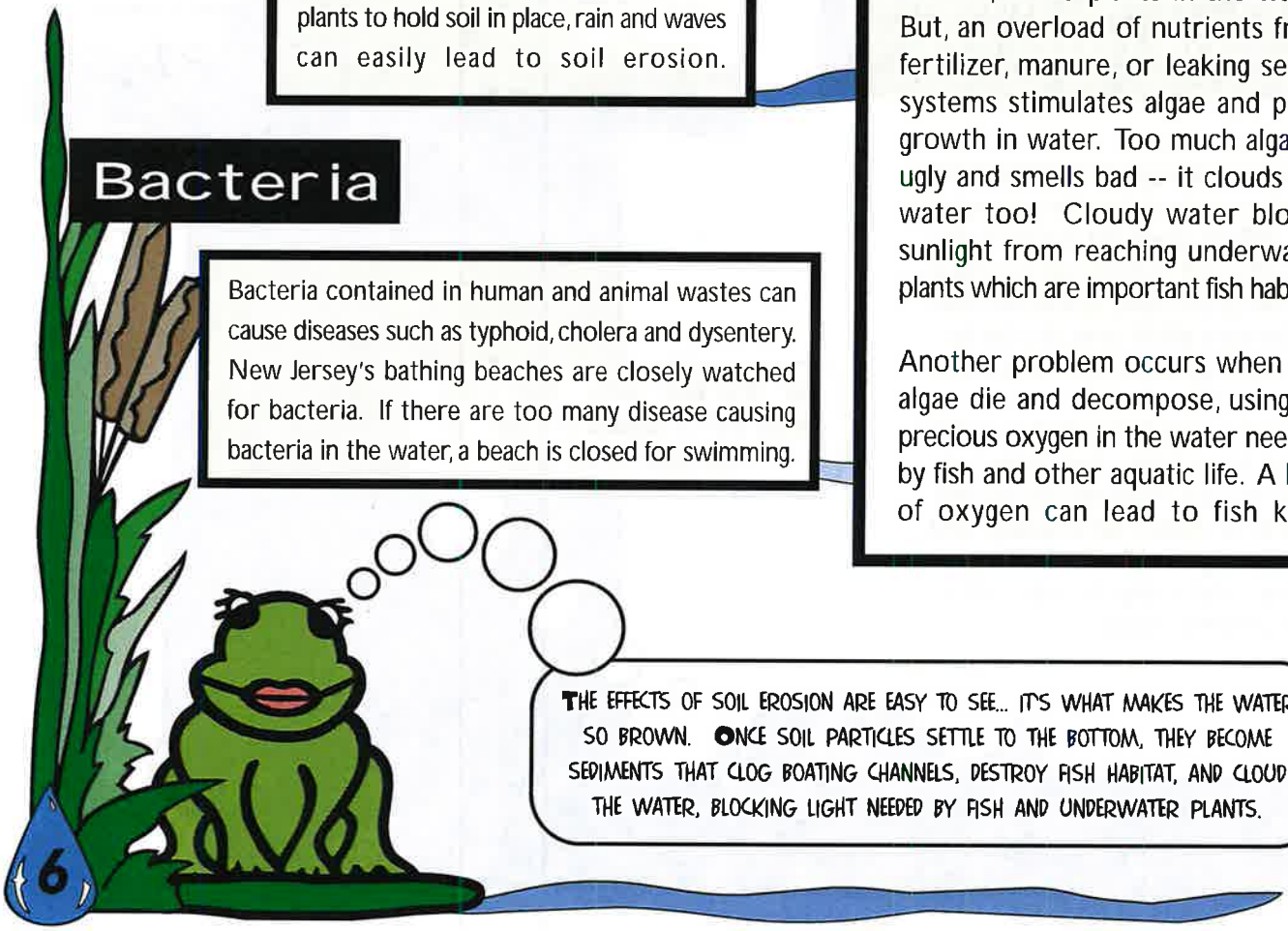
Nutrients

Nutrients, like potassium, phosphorous, and nitrogen, help plants grow. Just like we need food to survive, so do plants in the water. But, an overload of nutrients from fertilizer, manure, or leaking septic systems stimulates algae and plant growth in water. Too much algae is ugly and smells bad -- it clouds the water too! Cloudy water blocks sunlight from reaching underwater plants which are important fish habitat.

Another problem occurs when the algae die and decompose, using up precious oxygen in the water needed by fish and other aquatic life. A loss of oxygen can lead to fish kills.

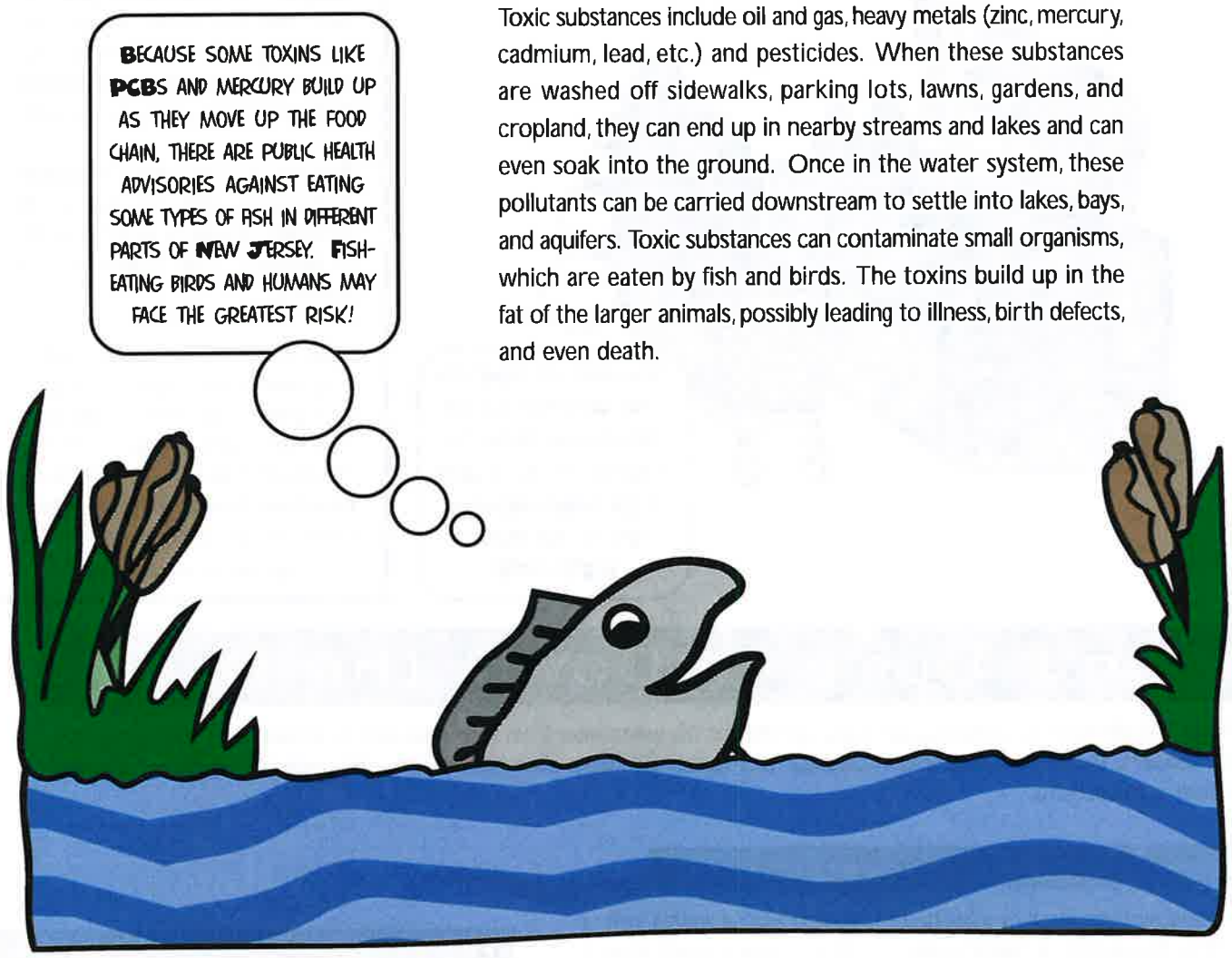
Bacteria

Bacteria contained in human and animal wastes can cause diseases such as typhoid, cholera and dysentery. New Jersey's bathing beaches are closely watched for bacteria. If there are too many disease causing bacteria in the water, a beach is closed for swimming.



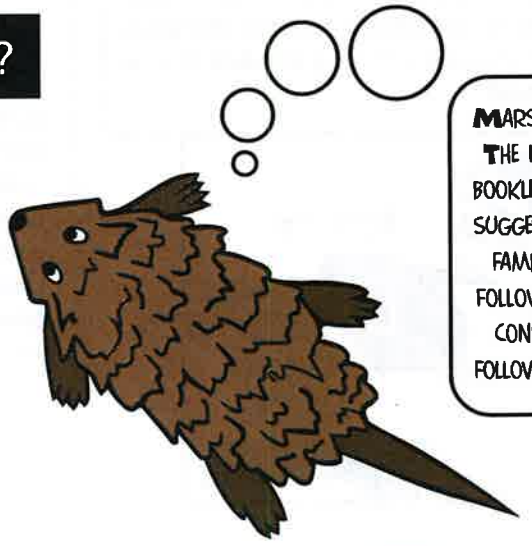
Toxic Substances

Toxic substances include oil and gas, heavy metals (zinc, mercury, cadmium, lead, etc.) and pesticides. When these substances are washed off sidewalks, parking lots, lawns, gardens, and cropland, they can end up in nearby streams and lakes and can even soak into the ground. Once in the water system, these pollutants can be carried downstream to settle into lakes, bays, and aquifers. Toxic substances can contaminate small organisms, which are eaten by fish and birds. The toxins build up in the fat of the larger animals, possibly leading to illness, birth defects, and even death.

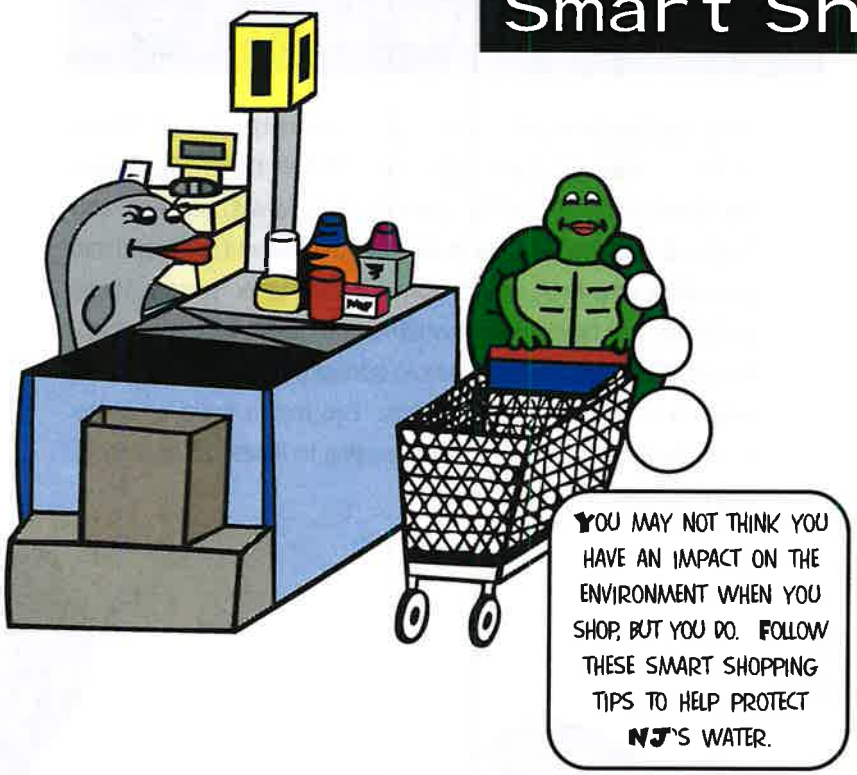


What Can You Do?

The most important thing you can do to improve New Jersey's water is to learn about the ways in which you and others affect the environment. Lots of little changes will make the biggest difference!



Smart Shopping Tips



Precycle! That means buying products that use the least amount of packaging. This helps by reducing water pollution from manufacturing and trash disposal problems.

Recycle! Find out what is recyclable in your community. Buy products in recyclable containers. Buy containers or products made from recycled materials.

Read labels and be aware of what they mean before you buy. Watch for signal words such as "caution," "warning," and "danger." These indicate that an item is a potentially hazardous product that consumers need to be concerned about.

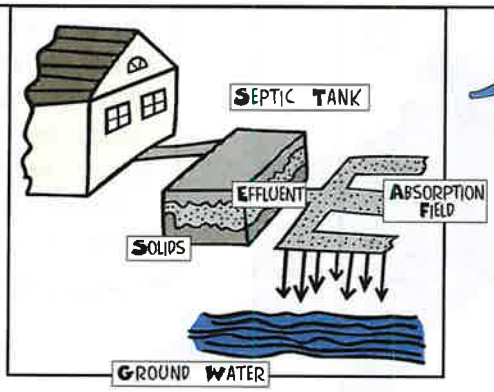
Thank You For Shopping Smart!

Don't Dump It Down the Drain

About 500,000 New Jersey homes use septic systems for the wastewater from their sinks, toilets, dishwashers, washing machines and showers. Rather than send their wastewater to a sewage treatment plant, homes with septic systems treat their wastewater in their own backyard.

How does a septic system work?

Septic systems work by using bacteria to decompose wastes sent into the system. A typical septic system has underground pipe leading from the home to an underground holding tank where most of the pollutants are treated. An underground system of small pipes leads from the tank into the backyard. These pipes allow treated water to soak into the ground.



Treat them with respect.

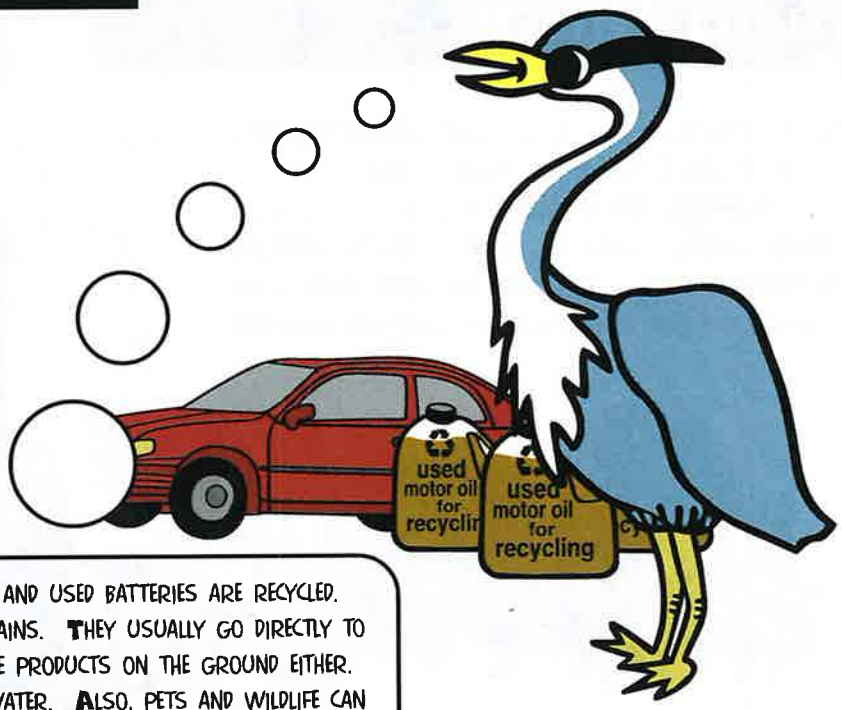
In order to keep these systems working, it's important to treat them right. To do this, you must be careful about what is put down the drain. The following things should not be put down household drains: hazardous household chemicals (for example, paints, varnishes, pesticides, drain cleaners), motor oil and other automotive fluids, cooking oils and grease, and large amounts of bulky materials such as kitter litter, diapers, or paper towels. These items may cause a septic system to stop working and can contaminate ground water.

Conserve.

It's also important to conserve water with a septic system. The less water the septic system treats, the longer the system will last.

Getting Around

You may not think of cars as a source of water pollution but they can be. Think of a parking lot or street. All that oil, grease, and other fluids that stain the pavement are washed into local waterways when it rains or as snow melts. Little bits of tires and brakes that wear off the car drop onto the pavement and are washed into waterways too. How do you avoid this pollution? Cars should be maintained properly and leaks fixed as soon as possible. That makes safety and environmental sense!



BE SURE USED MOTOR OIL, ANTIFREEZE, AND USED BATTERIES ARE RECYCLED. NEVER DUMP ANYTHING DOWN STORM DRAINS. THEY USUALLY GO DIRECTLY TO A LOCAL WATERWAY. NEVER DUMP THESE PRODUCTS ON THE GROUND EITHER. HERE THEY CAN SOAK INTO THE GROUND WATER. ALSO, PETS AND WILDLIFE CAN BE ATTRACTED TO SWEET TASTING ANTIFREEZE, BUT IT'S TOXIC TO THEM.

Scoop the Poop

Feces, guano, dung, poop, and road apples are all forms of animal waste which can be a serious water pollution problem. Too much animal waste from pets, wildlife, or livestock adds too many nutrients and disease-causing bacteria to the water.

If you walk your pet near a lake or stream, it's important to clean up after your dog. Don't leave animal waste on the sidewalk or roadway either. When it rains, the waste can be washed down the storm drain to the nearest waterway.

Trees, Turf, Bugs and Birds

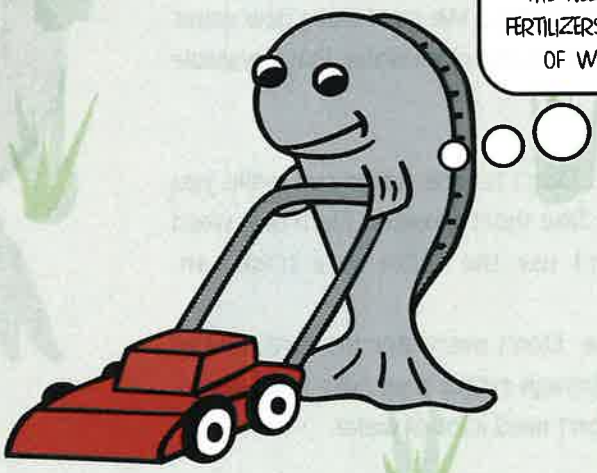
Most people like a healthy landscape surrounding their home. It can increase the value of your home and produce environmental benefits such as preventing soil erosion, keeping your home cooler in the summer, and filtering pollutants from runoff. The right combination of plants can even attract wildlife, butterflies, and birds.

Unfortunately using too many fertilizers and pesticides on lawns and gardens can also be a source of pollution. It's important to use these products wisely - at the right time and the right amount - if they're needed at all. Make sure the products are needed and, if so, use them according to the label.

Many people consider all insects to be harmful to the lawn or garden, but most insects are not harmful. In fact, many of them eat other harmful insects. Don't automatically turn to pesticides. These chemicals can also be dangerous to human health and the environment. All home and garden pesticides are poisonous to some degree. The most important thing to remember is to read and follow the label carefully if you are going to use a pesticide.

Mowing the Lawn

Always mow with a sharp blade set at the right height (about 2 to 3 inches). Never mow more than one third of the grass height. Cutting more will stress you lawn's health, opening the door to weeds and disease. A healthy lawn doesn't need pesticides.



Trees Are Tops

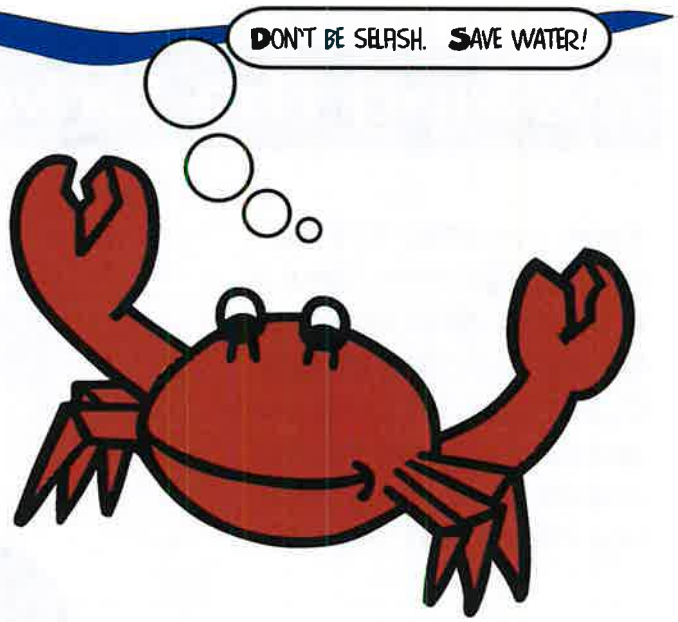
Trees provide a whole range of environmental benefits. They provide shade - especially important during a hot summer day. This keeps your house cooler and shelters other plants from the drying sun. Trees use nutrients and can prevent those nutrients from entering waterways. Their roots hold the soil in place, thereby preventing soil erosion.

Slow the Flow

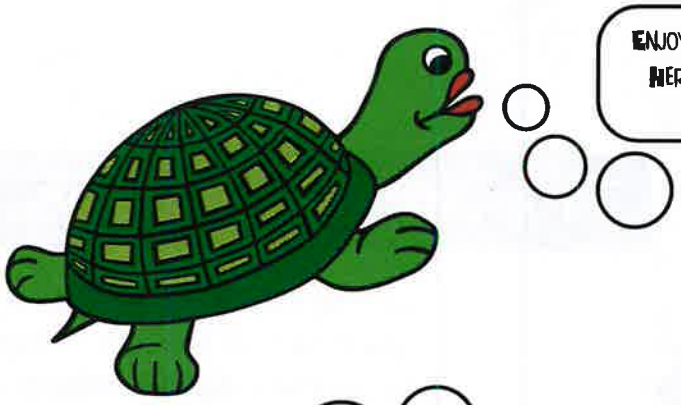
Like any valuable resource, water should be conserved both outdoors and indoors. We can't make new water so we need to conserve the clean water that's available to us.

Inside the home: Don't let the water run while you brush your teeth. Take short showers. Flush only when necessary. Don't use the toilet as a trash can.

Outside the home: Don't overwater the yard. Sweep sidewalks and driveways rather than hose them down. Use plants that don't need a lot of water.



Boating and Fishing Tips

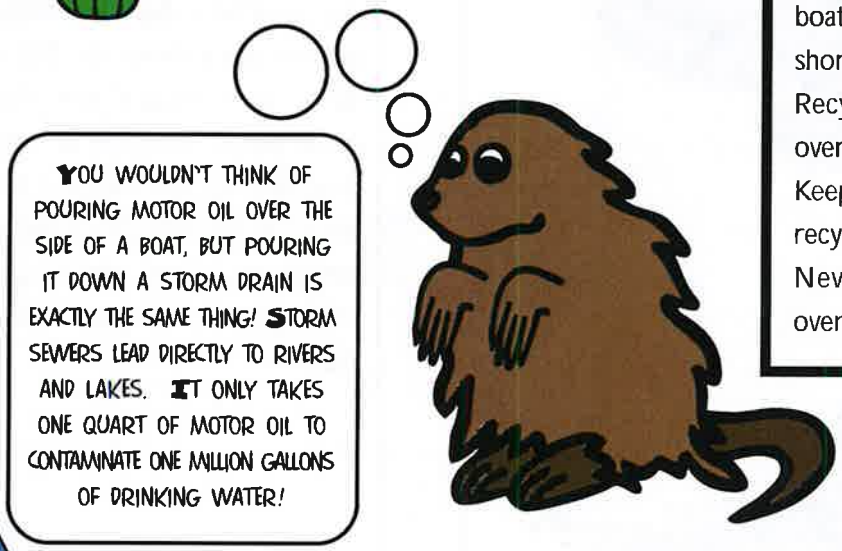


Slow down and observe "No Wake" zones, which are designated to protect the shore. A wake is the wave caused by a boat moving too quickly through the water. Fast moving boats cause large waves that can cause the shoreline to erode.

Recycle old fishing line. Never throw it overboard.

Keep a trash bag handy and remember to recycle.

Never dispose of bait or fish waste overboard.



Glossary

AQUIFER - water filled underground layers of cracked rock, sand, gravel, or clay. Wells tap into aquifers to provide water for people to use.

EROSION - movement of soil commonly caused by running water or wind.

EVAPORATION - movement of water from land to the air when the sun heats up water and it becomes water vapor.

FERTILIZER - nutrient source for plants.

GROUND WATER - water that lies beneath the earth's surface.

PESTICIDE - chemical used to control a pest, such as an insect, weed or rodent.

POLLUTED RUNOFF - rain water or snow melt that carries pollutants.

PRECIPITATION - water that falls back to land from clouds as snow, sleet, hail or rain.

PRECYCLE - selection of products and packaging that produce the least amount of trash.

RECYCLE - reuse of materials such as plastic, glass or metal in either its original or different form rather than putting them in the garbage.

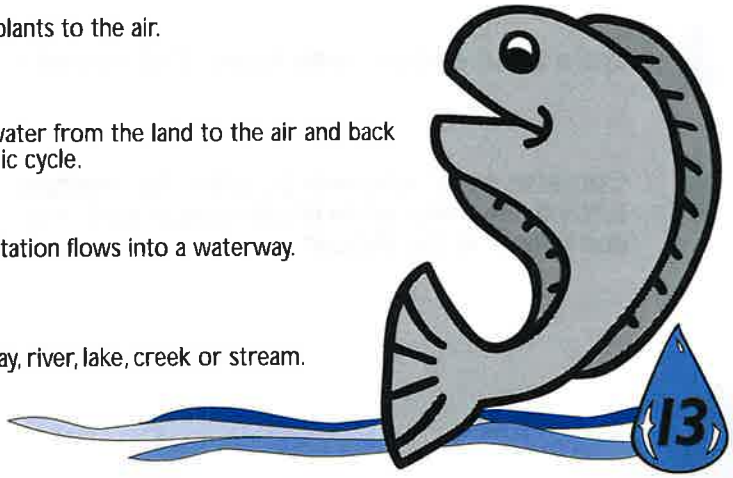
STORM SEWERS - underground pipe system that carries stormwater from streets and parking lots to local waterways.

TRANSPIRATION - movement of water from plants to the air.

WATER CYCLE - natural process of recycling water from the land to the air and back again, also called the hydrologic cycle.

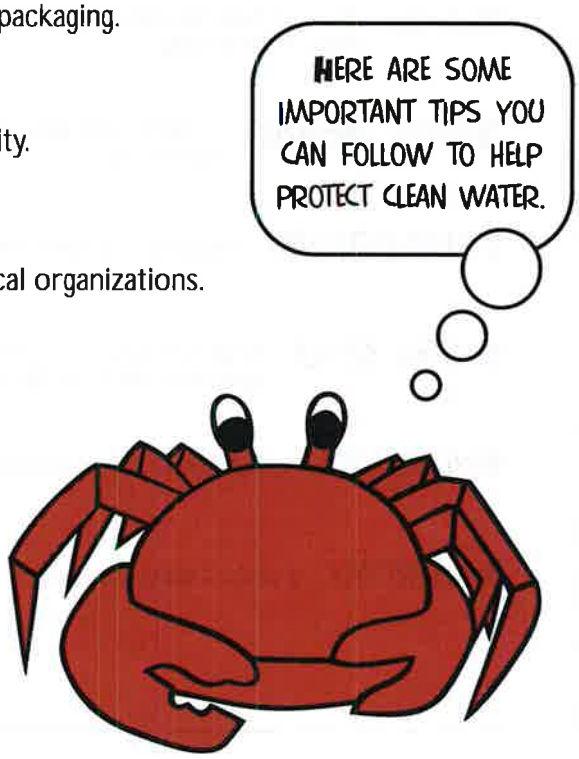
WATERSHED - the land area from which precipitation flows into a waterway.

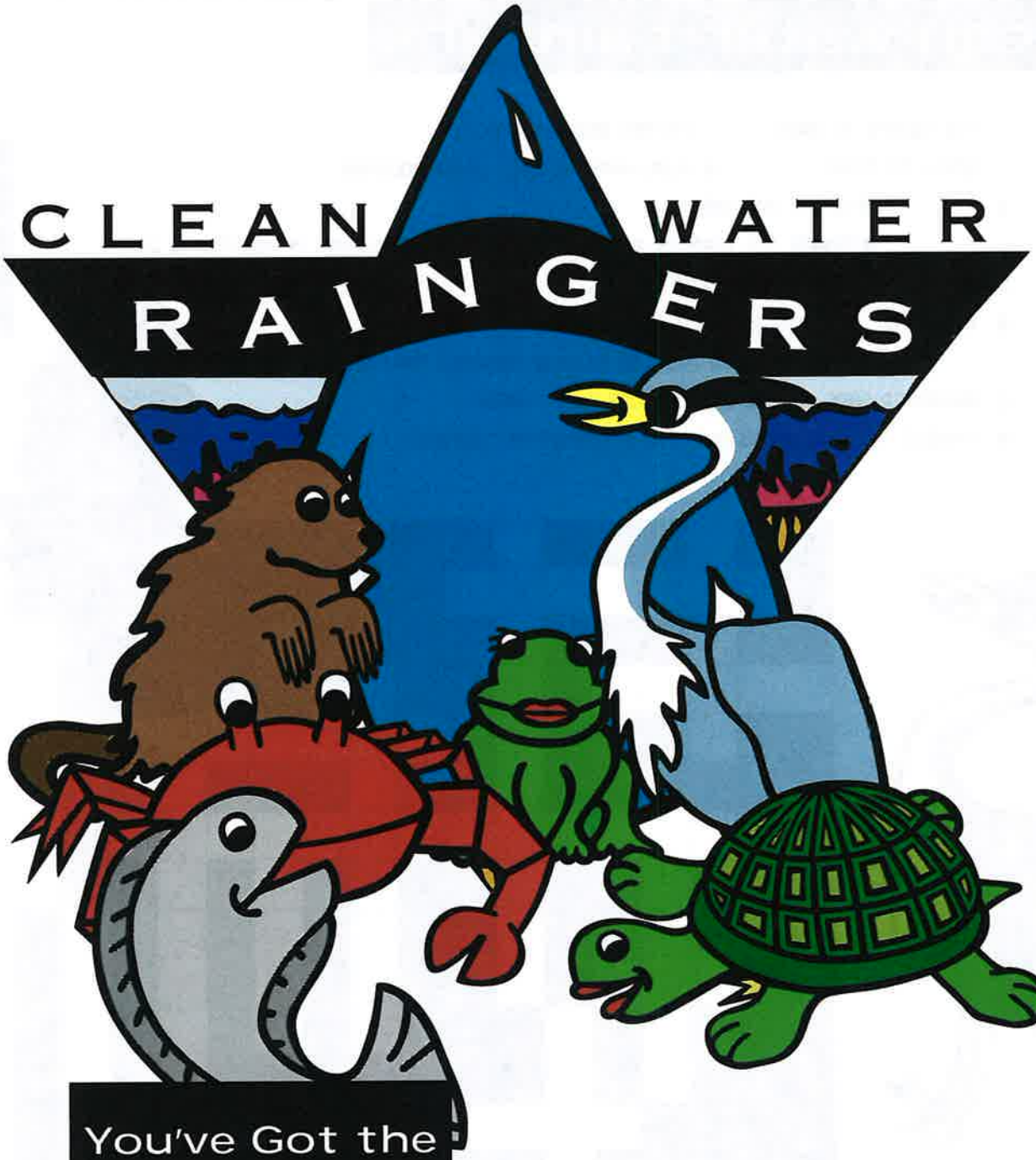
WATERWAY - a body of water, for example a bay, river, lake, creek or stream.



Top Ten Things You Can Do to Help Keep Water Clean

1. Never throw anything down storm drains. They are for rainwater only.
2. Don't litter. Always put trash where it belongs.
3. Always clean up after your pets. Obey your town's "pooper scooper" laws.
4. Tell others how important it is to keep our land and water clean.
5. Plant a tree. They take pollutants out of ground water, provide shade, and clean the air.
6. Find out what waterway you live near. Where does your water come from?
7. Precycle! Buy products that use the least amount of packaging.
8. Recycle. Find out what is recyclable in your community. Buy products in recycled or recyclable containers.
9. Learn about environmental issues. Get involved in local organizations.
10. Conserve water whenever possible. For example, turn off the water while brushing your teeth and don't linger in the shower.





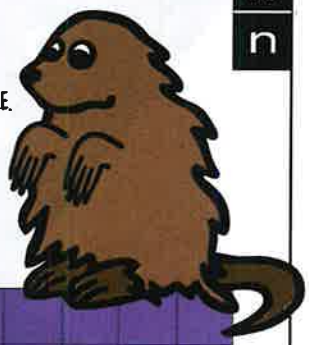
You've Got the Know-How Now!

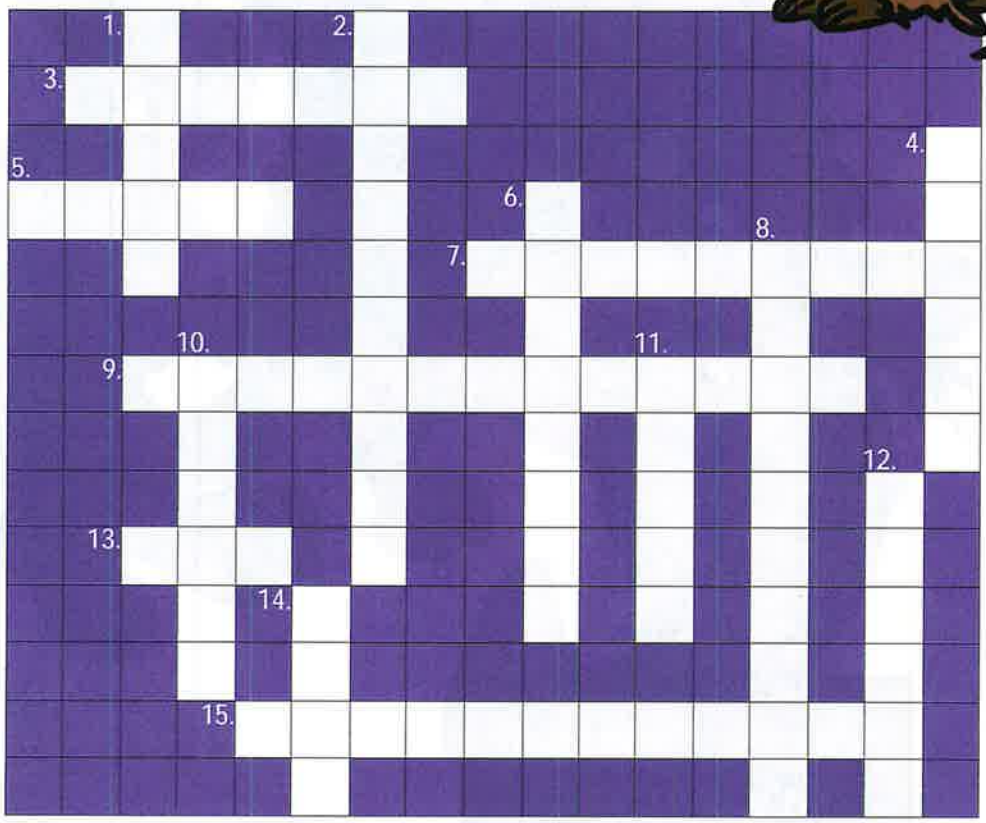
Now you know how to be a Clean Water Rainger! Join the team. Thanks for taking the time to read about how you can become a member of the team that's part of the solution to water pollution.

clean water raingers crossword

down

1. FOR MILLIONS OF YEARS, _____ HAS BEEN REUSED AND RECYCLED.
2. USING TOO MUCH _____ ON YOUR LAWN CAN CAUSE WATER POLLUTION.
4. _____ YOUR USE OF PESTICIDES.
6. _____ , NUTRIENTS, SOIL PARTICLES AND TOXIC SUBSTANCES ARE FOUR TYPES OF POLLUTION IN RUNOFF.
8. A _____ _____ IS NOT A GARBAGE DISPOSAL.
10. RAINWATER _____ CAN BECOME POLLUTED AS IT FLOWS ACROSS THE LAND.
11. _____ CAN HELP PREVENT WATER POLLUTION BY USING NUTRIENTS AND HOLDING SOIL IN PLACE.
12. RAINWATER SEEPS INTO THE SOIL TO BECOME _____ WATER.
14. FRANCINE _____ EATS INSECTS AND IS AN ALTERNATIVE PEST CONTROL.





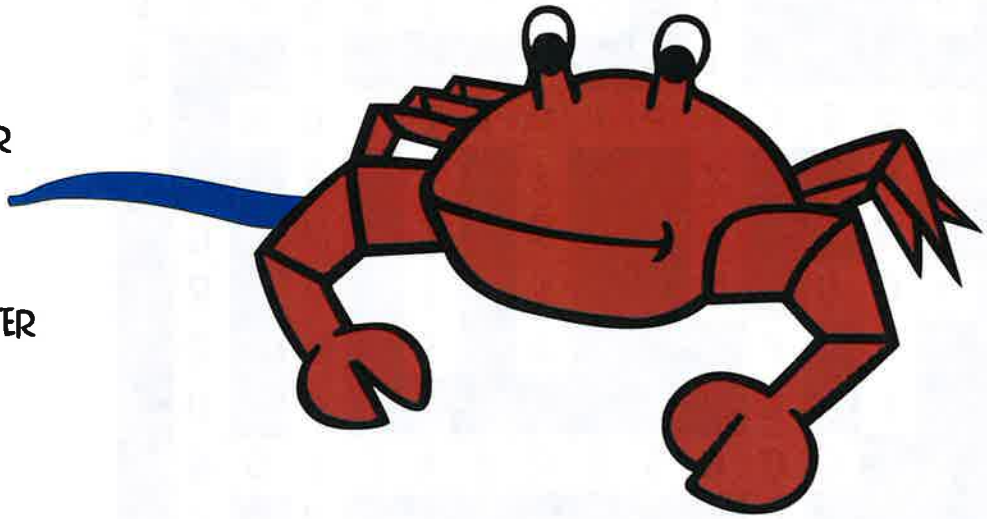
across

3. THE CLEAN WATER _____ TEAM IS WORKING TO KEEP NJ'S WATER CLEAN.
5. _____ UP AFTER PETS.
7. THE LAND SURROUNDING A WATERWAY IS ITS _____ .
9. RAIN AND SNOW ARE TWO TYPES OF _____ .
13. _____ CAN HELP KEEP WATER CLEAN.
15. USING PLANTS THAT DON'T USE A LOT OF WATER IS ONE WAY TO PRACTICE WATER _____ .

clean water raingers word search

FIND THESE WORDS ACROSS, DOWN, UP OR DIAGONALLY.

AQUIFER
BACTERIA
CLEAN WATER
CONSERVE
EROSION
FERTILIZER
GROUND WATER
LITTER
PESTICIDE
RAIN
RAINGERS
RECYCLE
RUNOFF
STORM DRAIN
STORM SEWER
WATER CYCLE
WATERSHED



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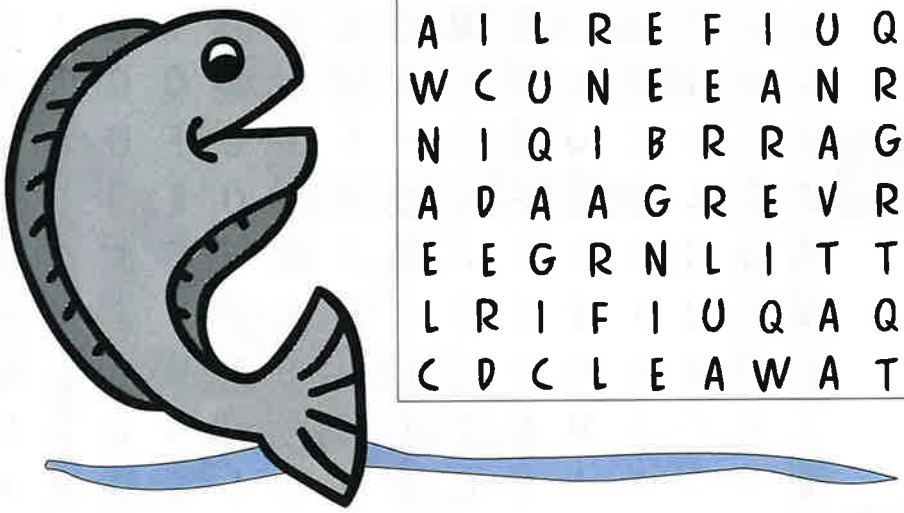

crossword answers

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3. R	A	I	N	G	E	R								
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5. C	L	E	A	N	T		6. B						E	
	R				I	7. W	A	T	E	R	S	H	E	D
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	9. P	R	E	C	I	P	I	T	A	T	I	O	N	C
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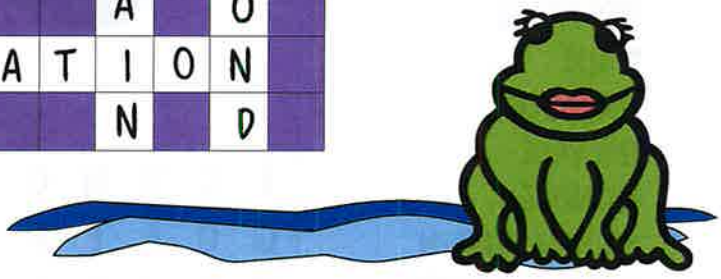
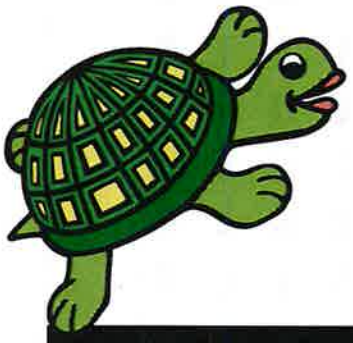


word search answers



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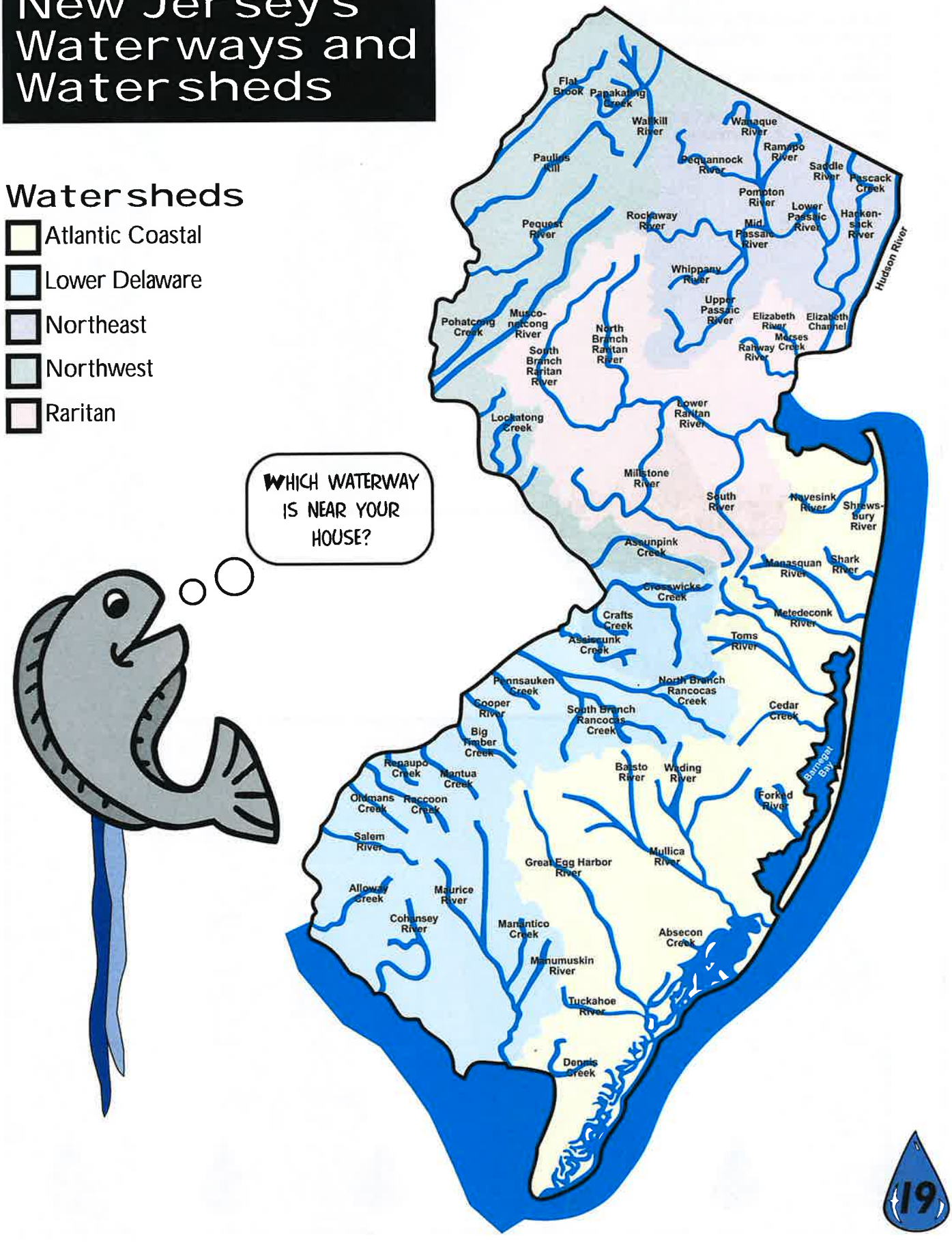
L	R	I	F	I	U	Q	A	Q	C	L	S	U	R	A
C	D	C	L	E	A	W	A	T	R	E	I	R	O	H

New Jersey's Waterways and Watersheds

Watersheds

- Atlantic Coastal
- Lower Delaware
- Northeast
- Northwest
- Raritan



New Jersey Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-292-2113
Donald T. DiFrancesco, Acting Governor
Robert C. Shinn, Jr., Commissioner

NJ Department of Environmental Protection
Division of Watershed Management
PO Box 418
Trenton, NJ 08625-0418
609-984-0058

WATER RESOURCE PROTECTION PRACTICES

State of New Jersey
Christine Todd Whitman, Governor
Department of Environmental Protection
Robert C. Shinn, Jr., Commissioner

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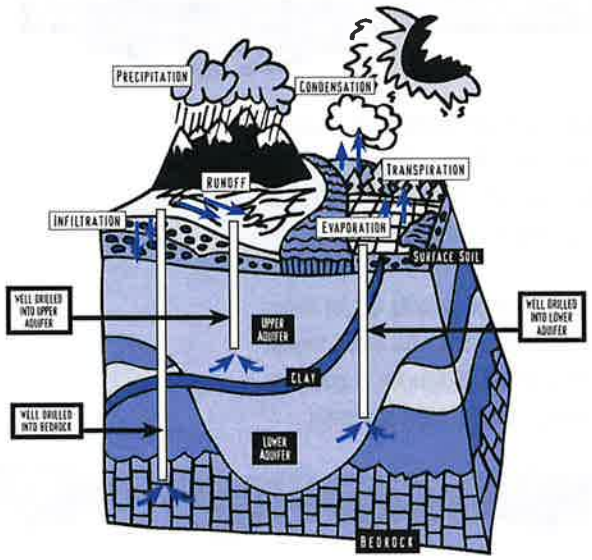
WHAT IS GROUND WATER?

Where does the water that rains on your home go? After it leaves your lawn, street or sidewalk, where is it headed? Does it wander into a wetlands? Does it puddle in your backyard? Does it zip down a sink hole? If it soaks into the ground, it becomes ground water.



A sizable amount of rainwater runoff seeps into the ground to become ground water. Ground water moves into water-filled layers of porous geologic formations called aquifers. If the aquifer is close to the surface, its ground water can flow into nearby waterways or wetlands, providing a base flow. Depending on your location, aquifers containing ground water can range from a few feet below the surface to several hundred feet underground. Aquifer recharge areas are locations where rainwater and other precipitation seeps into the earth's surface to enter an aquifer. Contrary to popular belief, aquifers are not flowing underground streams or lakes.

Ground water moves at an irregular pace, seeping from more porous soils, from shallow to deeper areas and from places where it enters the Earth's surface to where it is discharged or withdrawn. A system of more than 100 aquifers is scattered throughout New Jersey, covering 7,500 square miles.

WHY IS GROUND WATER IMPORTANT?

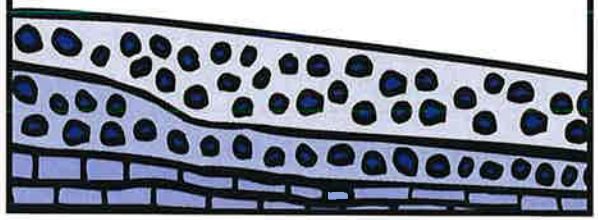
Ground water is the primary drinking water source for half of the state's population. Most of this water is obtained from individual domestic wells or public water supplies which tap into aquifers. New Jersey agriculture also depends on a steady supply of clean ground water for irrigation.

GROUND WATER COMPLICATIONS

Humans have an impact on ground water in a number of ways. One way people influence ground water is by changing where stormwater flows. By changing the contour of the land and adding impervious surfaces such as roads, parking lots and rooftops, people change how and where water goes. When it rains, the stormwater in a developed area is less able to soak into the ground because the land is now covered with roads, rooftops and parking lots. Less ground water will be recharged and more water will flow directly into streams and rivers.

Another way people affect ground water is by adding potential pollution sources. How the land above ground water is used by people, whether it is farms, houses or shopping centers, has a direct impact on ground water quality. As rain washes over a parking lot, it might pick up road salt and motor oil and carry these pollutants to a local aquifer. On a farm or suburban lawn, snow melt might soak fertilizers and pesticides into the ground.

When properly used, the amount of ground water pumped out for human purposes is less than what nature supplies to recharge the aquifer. If overused, more water is pumped out than is recharged. With less ground water in the aquifer, it becomes more difficult to use and more susceptible to pollution and salt water intrusion.

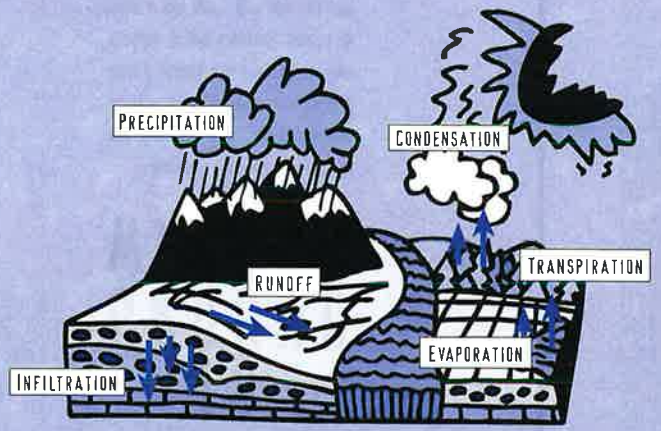


WATER CONSERVATION

Conserving water through efficient water use can help prevent pollution. Using less water reduces the runoff of agricultural pollutants pesticides and fertilizers. Diverting less water from waterways or aquifers leaves more water in streams or lakes, protecting existing ecosystems such as wetlands (which absorb certain types of pollution) and water supplies.

Water conservation can also save money by reducing pumping and treatment costs both before water reaches your home and after it leaves. Reduced water use may extend the life of existing sewage treatment facilities. It can also eliminate the need to develop a new water supply. New wells and reservoirs are expensive and time consuming to locate and build.

THE WATER CYCLE



For millions of years, water has been used. It is constantly being recycled and reused. It is important to understand how water moves through the Earth's water cycle, which is defined as the movement of water from the Earth's surface into the atmosphere and back to the Earth's surface again.

When it rains, the rainwater flows overland into waterways or is absorbed by the ground or plants. Water evaporates from land and water bodies, becoming water vapor in the atmosphere. Water is also released from trees and other plants through "transpiration." The water vapor from evaporation and transpiration forms clouds in the atmosphere which in turn provide precipitation (rain, hail, snow, sleet) to start the cycle over again. This process of water recycling, known as the water cycle, repeats itself continuously.