ARLINGTON CENTRAL SCHOOL DISTRICT LAGRANGEVILLE, NY

MS4 STORMWATER PROGRAM

FACT SHEET # 1
MAY 2024

ALGAE BLOOMS AND STORMWATER POLLUTION

FOR MORE INFORMATION CONTACT YOUR STORMWATER COORDINATOR:

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1. Algae Blooms and Stormwater Pollution

Algae grow profusely in nutrient-rich waters, particularly during the hot summer months of July through October. Blue-green algae are naturally present in lakes and streams in small numbers. Algae blooms may be triggered by a combination of the following factors:

- **Excess nutrients** (phosphorus and nitrogen)
- **Sunlight**
- **Low water** and low flow conditions
- **Warmer temperatures**

Phosphorus and nitrogen, the essential nutrients that promote algae growth, end up in our streams and waterways through stormwater runoff.

2. Harmful Effects of Algae Blooms

As reported by NYSDEC, most algae (green algae) are harmless and are an important part of the food chain. Some blue-green algae can produce toxins that can be harmful to people and animals. These are referred to as harmful algae blooms (HABs). Blue-green algae HABs occur most frequently in nutrient-rich water particularly during the hot, calm weather. They have the appearance of spilled green paint or pea soup. Blue-green algae discolor the water and produce floating rafts or scums on the surface of the water. Some of the harmful impacts of algae blooms in streams and lakes are:

- **Sunlight Reduction:** Algae blooms block sunlight beneficial to fish and other aquatic plants

- **Toxins**: Under certain conditions, blue-green algae produce toxins that may be harmful to humans, animals, fish and other organisms
- **Oxygen Depletion:** As the algae bloom (both harmful and non-harmful algae) dies and decomposes, the amount of oxygen in the water decreases and can threaten fish and other aquatic life
- **Avoid Contact**: Because it is hard to tell HABs from other non-harmful algae blooms, humans and animals should not be permitted to swim in and should avoid all contact with waters affected by algae blooms
- **Non-Public Water Supplies**: People not on public water supplies should not drink surface water, even if it treated, during an algae bloom, because boiling or disinfecting water with chlorine may not protect you from blue-green algae toxins

3. What Causes Algae Blooms

Algae blooms are generally caused by an overabundance of essential plant nutrients nitrogen and phosphorus. These essential plant nutrients enter the waterways from:

- **Septic Systems**: Improperly maintained septic tanks and septic leaching fields, that discharge sewage overflows, are a major source of essential plant nutrients nitrogen and phosphorus
- **Fertilizers:** fertilizers contain nitrogen and phosphorus. Excessive amounts of fertilizers applied in lawns and gardens are transported by stormwater runoff to nearby waterways
- **Car Washing:** detergents used for car washing may contain phosphorus. Runoff from wash water usually end up in nearby storm drains, ditches and swales
- **Leaves and Grass Clippings:** Leaves and grass clippings contain phosphorus and nitrogen and should not be blown into nearby waterways and storm drains
- **Pet Waste:** contain a large amount of phosphorus and nitrogen and if not picked up ends up in nearby waterways
- **Sediments from Construction Sites:** some soils contain a large amount of phosphorus and nitrogen. Sediments from soil from construction sites can wash into nearby waterways

3. What You Can Do To Reduce Algae Blooms

The potential for algae blooms comes from an overabundance of essential plant nutrients nitrogen and phosphorous. These elements may enter the waterways from nutrient-enriched rainfall transported by stormwater runoff. Employing the following pollution abatement measures will reduce these nutrients:

Preventing Sewage Overflows:

- Know the location of your septic tank and leaching field
- Have a licensed contractor inspect and pump your tank every three (3) years
- Grow grass over your leaching field
- Keep trees and shrubbery away from the leaching field
- Install water conservation fixtures or devices that reduce the total volume of water entering the system and repair leaking fixtures
- Do not drive over the leaching field
- Do not pour chemicals or other toxic liquids into your septic tank

Limiting Inorganic Fertilizers Application:

- The correct amount of fertilizer can reduce the amount of pollution reaching our waterways, save water and money and result in a healthier landscape
- Over fertilization will stimulate plant and grass growth and will require more maintenance and more water
- Contact your local Cooperative Extension Service and test your soil to determine if your soil is nutrient deficient
- If your soil is nutrient deficient, apply correct amount, according to the fertilizer label instructions
- Choose slow-release fertilizers. Slow release fertilizers stay in the soil to supply nutrients to plants on a gradual basis over a longer period of time
- Consider utilizing organic fertilizers with low or no phosphates
- Fertilize only in the growing season. Allow a month between the autumn application and first freezing temperatures, which will make new growth less vulnerable to frost
- Do not apply fertilizers immediately before a rain or most of the fertilizers will not be absorbed by the plants and washed away by the rain

Restricting Car Washing on Your Property:

- Use phosphorus free detergents if you must wash cars on your property
- Take your car to a car wash facility that treats and recycles wash water

Utilizing Phosphorus Free Detergents:

- Use phosphorus free laundry and dish detergents

Proper Handling of Leaves and Grass Clippings:

- Cut your grass more frequently so that clippings can be recycled into your lawn
- If you bag clippings you should dispose of them properly at a compost facility
- In the autumn, collect leaves and dispose of them properly at a compost facility
- Grass clippings and leaves should not be placed near drainage ditches or blown into nearby waterways and storm drains

Picking Up After Your Pet:

- Pick up and properly dispose pet waste in covered disposal containers

Reducing Sediments From Construction Sites:

- Obtain professional advice from your Architect/Engineer on construction projects, disturbing an area equal to, or greater than one (1) acre
- Cover soil stockpiles with plastic tarps until soil has been used
- Install perimeter boundary stormwater swales to redirect stormwater to temporary retention/ detention ponds
- Utilize sediment traps at all outlet points to trap sediment from the construction site
- Refer to the NYSDEC SPDES Permit for Construction Activity (Permit No. GP-0-10-001) for regulations that are specifically related to major construction projects, disturbing an area equal to, or greater than one (1) acre

ARLINGTON CENTRAL SCHOOL DISTRICT LAGRANGEVILLE, NY

MS4 STORMWATER PROGRAM

FACT SHEET # 2
MAY 2024

GREEN INFRASTRUCTURE PROGRAM BY THE NYC DEPARTMENT OF ENVIRONMENTAL PROTECTION

FOR MORE INFORMATION CONTACT YOUR STORMWATER COORDINATOR:

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1. DEP Green Infrastructure Program

In 2012, the New York City Department of Environmental Protection (DEP) entered an agreement with the New York State Department of Environmental Conservation (NYSDEC) to reduce stormwater pollution from Combined Sewer Over Flows (CSOs). The information contained in this fact sheet highlights some of the principal DEP actions to reduce pollution from stormwater by implementing green subsurface and rooftop stormwater design concepts.

2. Lessons Learned from the DEP

The purpose of citing these green measures in this fact sheet are several-fold:

1. Understanding the Successes of the NYC Green Infrastructure Program: The District can initiate a green infrastructure program, based on lessons learned from the DEP initiatives

2. Public Education through MS4 Inter-Regional Participation: The green infrastructure program developed by the DEP has been approved by NYSDEC for stormwater pollution control. Through an inter-regional MS4 participation, successful procedures adopted by the DEP that may be applicable to the District.

3. Stormwater Outreach Program: the District can coordinate tours and visits by students, staff and administrators, to view some of the projects completed by the City. Alternatively, DEP officials can make presentations to the District on the success of the DEP green infrastructure program.

3. Relevant DEP Accomplishments

The following are relevant DEP stormwater accomplishments:

1. **Guidelines:** DEP published *Guidelines for the Design and Construction of Stormwater Management Systems,* which focused on the planning, design and construction of onsite source controls
2. **Retrofit Design Projects for Schools**: In 2012, DEP reviewed designs for five (5) schoolyard sites, identifying opportunities for green infrastructure retrofits.
3. **Subsurface and Rooftop Design Concepts:** In 2012, DEP awarded grants for projects spread across four boroughs that included green roofs, rain gardens, porous pavements and bio-infiltration
4. **Public Outreach Program:** As a part of the public outreach program, the DEP Office of Green Infrastructure has established a green infrastructure steering committee
5. **The Steering Committee Initiatives:** The principal focus of the committee is to
   - Help foster *greater stakeholder participation* in the development of the green infrastructure program
   - *Raise awareness* in the community
   - *Promote green infrastructure practices*
6. **Implementations:** the steering committee initiatives are implemented through:
   - Quarterly *public meetings*
   - *Newsletters* and *fact Sheets*
   - *Public workshops*
   - *Public webinars*
   - *Presentations to school officials* and other civic organizations

4. High Line Park, Green Roof Concepts

The High Line Park, located from Gansevoort St. to West 34th St. in NYC, was constructed utilizing the green roof design concepts for stormwater drainage. The paths along either side of the elevated walkway contain a variety of plants, shrubs, wild flowers and grasses, to reflect many of the original micro-climates of the High Line. The open-jointed concrete planks, with pea gravel, and soil medium, act as a filter system, and the plants provide absorption and treatment as well as runoff reduction through evapo-transpiration.

5. NYC Subsurface and Rooftop Systems

Subsurface and rooftop systems utilized by the DEP consists of :

- **Precast concrete structures** built with or without bottom slabs, depending on the permeability of the soils
- **Gravel Beds:** consists of excavated areas filled with uniformly-graded gravel. The void space detains water or can also be used to infiltrate water underground
- **Perforated Pipes:** perforated pipes provide detention and infiltration
- **Stormwater Chambers:** detain water and also promote infiltration through open-bottom systems
- **Rooftop Systems:** consists of blue roofs (controlled flow roof drain systems) and green roofs (vegetated plants in specially designed soil above a drainage layer)

6. Complying with the Clean Water Act

Utilizing the green infrastructure, USEPA suggests (EPA, 2011) is a cost-effective, flexible and environmentally-sound approach to reduce stormwater pollution under the Clean Water Act. EPA encourages this program as it also provides a variety of community sustainable benefits.

ARLINGTON CENTRAL SCHOOL DISTRICT LAGRANGEVILLE, NY

MS4 STORMWATER PROGRAM

FACT SHEET # 3
MAY 2024

NYS GREEN CLEANING PRODUCTS AND GREEN CLEANING PROGRAMS: RE-VISITED

FOR MORE INFORMATION CONTACT YOUR STORMWATER COORDINATOR:

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1. Highlights of the NYS Green Cleaning Products Laws of 2005

On September 1, 2006, New York became the first state to mandate the use in schools of green cleaning products that are both environmentally sensitive and environmentally sustainable. This fact sheet contains highlights of the School Green Cleaning Product Law, extracted from the NYS Office of General Services (OGS) website. Over the past few years, since the law was enacted, OGS and its Environmental Services Unit have developed various Policies, Guidelines and Reports pertaining to the Green Cleaning Program. For details and more information of the law, you should contact OGS directly.

2. Applicability of the Law

The NYS Green Cleaning Law, which pertains to both green cleaning products as well as green cleaning (Green Cleaning Program), applies to all state agencies and public and nonpublic elementary and secondary schools. Note the law does not supersede or change existing health, labor, education and environmental regulations, related to cleaning and maintenance practices and the disposal of hazardous chemicals. The Office of the State Comptroller audits schools to determine their compliance with implementing the provisions of the law. Accordingly, to meet this mandate and reporting requirements, schools are advised to document the cleaning products purchased and the products replaced. It is the responsibility of the school to document its adherence/compliance to the laws.

3. The Purpose of the Law

The NYS Green Cleaning Program was introduced to reduce, as much as possible, **exposure of children and school staff to potentially harmful chemicals** and substances used in the cleaning and maintenance of school facilities, based on the following facts about the school environment:

- **Air Pollutants Levels:** USEPA estimates that air pollutants levels can be two to five times, and occasionally up to 100 times, higher indoors than outdoors
- **Exposure to Chemicals:** Children are more vulnerable than adults and may be severely affected by the exposure to chemicals, hazardous wastes and other environmental hazards
- **School Building Occupancy:** Children, teachers, and employees spend a significant amount of time in school buildings that may contain harmful chemicals from cleaners and other maintenance products

- **Number of Occupants:** schools have four times the number of occupants per square foot than most buildings
- **Increased Occurrence of Asthma:** Studies have shown links between chemicals used in institutional cleaning products and the increased occurrence of asthma and reproductive harm
- **Reduced Ecosystem Damage:** Reducing the use of toxic cleaning products will reduce the amount of hazardous waste requiring disposal and causing damage to our environment

4. The Ownership of the Program

The responsibility (ownership) of the program does not fall solely upon the custodial staff of the District. Stakeholders involve the entire District Community comprised of the administrative and supervisory personnel, teachers, students, school board members and various parent-teachers groups.

5. Green Cleaning Products and Green Cleaning Procedures

The term green cleaning products and green cleaning refers to the cleaning products as well effective cleaning procedures utilized to minimize adverse impacts on human health and the environment from potentially harmful chemicals

- Green cleaning is more than just switching to green cleaning products.
- A well designed cleaning program uses a holistic approach to facility cleaning and maintenance, and includes green cleaning products approved by the OGS, as well as comprehensive custodial training program
- The cleaning program should reduce levels of chemicals, mold and airborne dust and promote a healthier learning environment for children and a safer workplace for staff.

6. Green Seal Environmental Standards

Conventional cleaning products should not be used at schools as they contain chemicals that are very harmful to humans and the environment. Green Seal, a non-profit organization that provides science-based environmental certification standards has developed:

- Environmental Stands for General-Purpose, Bathroom, Glass and Carpet Cleaners used for Industrial and Institutional Purposes under GS-37, which establishes certification requirements for safer and less harmful cleaning products
- Under GS-37 standard for Green Seal certification, products must meet requirements for toxic compounds, carcinogens and reproductive toxins, skin and eye irritation, skin sensitization, and combustibility, as well as life cycle analysis from production to disposal

7. OGS Approved Products

There is a list of approved products that meet OGS guidelines and specifications for environmentally sensitive cleaning and maintenance products. There are several categories of OGS-approved products:

a. **General Purpose cleaners:** This category includes products for cleaning hard surfaces, including impervious flooring such as concrete, stone surfaces or tile. It does not include strippers, polishers or floor waxing products
b. **Restroom Cleaners:** This category includes products for cleaning hard surfaces in a restrooms, such as counters, walls, floors, fixtures, basins, tubs, toilets, urinals and tile
c. **Toilet Bowl Cleaners:** This category includes products for cleaning toilet bowls or urinals
d. **Carpet Cleaners:** This category includes products for cleaning of carpets and rugs , but is not limited to wet extraction, shampooing, dry foam, or absorbent compounds
e. **Carpet Spot Removers:** This category includes products for spot removal of stains on carpets and rugs by means of extraction, shampooing, dry foam, or absorbent compounds
f. **Glass, Window, and Mirror Cleaners:** This category includes products for cleaning windows, glass, dry erase boards, and mirrored surfaces
g. **Vacuum Cleaners:** Vacuum cleaners consist of general purpose vacuums approved for use on all conventional carpet styles and vacuums approved for use on carpet with a low pile, or surface texture, measuring approximately one quarter inch or less

h. **Hand Cleaners/Hand Soaps:** Hand soaps are designed to be used with water to remove both organic and inorganic soil from skin

- With the exception of floor finishes and floor strippers, OGS has developed green cleaning guidelines and a list of approved products to help in this process
- Except for floor finishes and floor strippers, unless Green Seal or Ecologo has certified the product, OGS cannot approve other products for use in schools
- There is no evidence that bio-based (naturally derived) products are less likely to affect the health of the building occupants than other approved products
- For instance, natural or naturally occurring products like citrus-based (from orange or lemon peels) products contain terpenes that on contact with air, are oxidized to form a sensitizing chemical that can affect human health

8. Disposal of Floor Finish Strippers and Floor Wax Solutions

At this time, OGS does not have published standards or guidelines for floor finish and floor strippers (GS-40). Floor Finish Strippers and waxes contain numerous hazardous chemicals, which can adversely affect the environment. Most communities limit the amount of zinc, present in strippers that you may discharge into the sewer system. Accordingly, the following compliance steps should be strictly adhered by the District:

- **Temporary Onsite Storage:** Collect and store used floor strippers and floor wax solutions in labelled hazardous waste containers
- **Disposal by a Licensed Company:** Contact a licensed hazardous waste disposal firm to collect and safely dispose of your used strippers and wax solutions
- **Environmental Impact:** Do not discharge used waste products onto the ground, grass or storm sewer drains

9. Products by Vendors and Third-Party Organizations

The characterization of a product as green does not mean that the products will satisfy the requirements of the Law, or that such a product is on the OGS list of acceptable products. The District should use discretion when consulting with vendors, shopping for green cleaning and maintenance products, and when testing these products in their facilities

10. An Effective Green Cleaning Program

One of the first steps to developing an effective green cleaning program is to develop a baseline facility assessment as follows:

- First establish current facility conditions related to the physical layout, population served, cleaning tasks, custodial resources, team leaders, cleaning and chemical inventories, complaints and training programs
- From this baseline, goals and objectives should be established to determine the effectiveness of the Green Cleaning Program

11. Compliance Measures and Recommendations

- **Custodial Staff Training:** One of the first steps you should take is to consult with your supervisor about receiving training on the District Green Cleaning Program
- **Equipment Operation:** Be sure you understand how the cleaning equipment operates or its intended use
- **Use of Approved Equipment:** Only use approved OGS equipment
- **Approved Cleaning Products:** Only use approved OGS Cleaning Products
- **Follow Manufacturer Instructions on Product Use:** Strictly adhere to manufacturer instructions on product use
- **Disposal of Spent Floor Strippers and Floor Waxes:** Do not discharge used waste products onto the ground, grass or storm sewer drains. Contact a licensed hazardous waste disposal firm to collect and safely dispose of your used strippers and wax solutions
- **If not Certain, Consult your Supervisor:** Always consult your supervisor if you have questions on how a product should be used and how residual waste resulting from the cleaning should be disposed

ARLINGTON CENTRAL SCHOOL DISTRICT LAGRANGEVILLE, NY

MS4 STORMWATER PROGRAM

FACT SHEET # 4
MAY 2024

POLLUTION PREVENTION OF ILLICIT DISCHARGES

FOR MORE INFORMATION CONTACT YOUR STORMWATER COORDINATOR:

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1. Stormwater Runoff: Prevention of Illicit Discharges

Stormwater runoff is water from rain or melting snow that does not soak into the ground, but runs off into nearby streams and lakes. The runoff attributable to precipitation from rain or melting snow is considered as "wet-weather" runoff. In addition to "wet-weather" run-off, nearby streams and lakes are also subject to "dry-weather" flows or "illicit discharges" from non-stormwater discharges that enter the storm drainage system through direct and indirect connections. Minimum Measure 3 of the Phase II Stormwater regulations requires the District to identify, detect and eliminate illicit discharges (IDDE) that may enter a storm sewer system.

2. Potential Pollutants from Dry-Weather and Wet-Weather Flows

Sources of illicit discharges may include:

- sewage from overflowing septic fields
- oils and greases from parking lots from improperly maintained automobiles
- sand, salt and other de-icing chemicals not picked up after winter season
- chlorinated swimming pool discharges
- sediment and other chemicals from construction sites not properly maintained
- improper disposal of floor cleaning chemicals
- contaminated pumped water from building sumps
- Improperly covered trash containers located near storm drains

3. District Outfall Screening and Survey of Yard Operations

As a part of the program to identify illicit discharges, the District, conducts an Annual Inspection Program of all Stormwater Outfalls and the District Yard Operations to determine potential sources of illicit discharges to nearby storm drains. The new permit requires the District to include documentation and a self-assessment of all District operations/performances that could potentially impact stormwater discharges. These operations include:

- Winter roads, driveways and parking lots maintenance

- Salt/sand and material storage area operations
- Vehicle/building maintenance
- Solid waste/trash areas collection and operations
- Onsite wastewater maintenance
- Athletic/recreational field maintenance
- New construction and land disturbance

After screening and survey, all potential sources of illicit discharges are identified and brought to the attention of the Stormwater Coordinator for prompt corrective actions.

4. O & M Staff Training

As part of the pollution prevention campaign on illicit discharges, the District must undertake a training program for their O & M Staff. The training program includes the distribution of educational materials on the proper handling and disposal of solid waste and non-stormwater discharges from vehicle operations, physical plant maintenance and landscaping and grounds care.

5. Remember: Only Rain In The Drain

To keep stormwater pollution out of our water bodies, we must learn to adopt environmentally friendly habits and simple guidelines summarized below.

Vehicle Maintenance

- Check your car and other machinery and equipment for leaks and spills and make needed repairs as soon as possible
- Clean up spilled fluids with absorbent materials like kitty litter or sand and remember to properly dispose of absorbent materials
- Recycle used oil and other automotive fluids at a participating service station. Do not dump these fluids into a storm drain or dispose of them into your trash

Lawn And Garden

- Use pesticides and fertilizers sparingly
- Select native plants and grasses that are drought resistant
- Compost or recycle yard waste
- Vegetate bare spots to prevent soil erosion
- Cover exposed soil and backfill materials during a landscaping construction project

Home Repair and Improvements

- Before beginning an outdoor project, locate the nearest storm drain to insure that debris other materials from your home repair project does not enter the drain
- Sweep up after completion of your repair project and remember to properly dispose of waste materials and debris
- Purchase and use nontoxic, biodegradable and recyclable products in your home repair and improvements project
- Properly dispose excess paints through a household and hazardous waste collection program, or donate unused paint to local organizations

Swimming Pools

- Drain your swimming pool only when your chlorine test kit detects no chlorine
- Whenever possible, drain your swimming pool/spa filter backwash water into a sanitary sewer system
- Properly store pool and spa chemicals to prevent leaks and spills, preferably in covered containers or a covered area to avoid exposure to stormwater

Pet Care

- Pick up and dispose pet waste properly
- Flushing pet waste is best disposal method
- Leaving pet waste on the ground increases public health risks by allowing harmful bacteria to migrate into the storm drain and eventually into your drinking water supply and other water bodies

Septic System Use and Maintenance

- Have your septic system inspected and cleaned by a professional at least every three years
- Only plant grass over your septic fields and do not drive or park vehicles over the fields
- Do not flush household chemicals like paint, pesticides, oil and antifreeze, as these chemicals will destroy the biological treatment system taking place in the system
- Other items such as diapers, paper towels and cat litter can clog the septic system and potentially damage components