

**PUTNAM VALLEY  
CENTRAL SCHOOL  
DISTRICT  
PUTNAM VALLEY, NY**

**MS4PY4 STORMWATER PROGRAM**

**FACT SHEET # 1  
DECEMBER 2013**

**ALGAE BLOOMS AND  
STORMWATER POLLUTION**

**FOR MORE INFORMATION CONTACT  
YOUR STORMWATER COORDINATOR:**

**PATRICK BELLINO AT:  
845-528-8143 OR AT  
pbellino@pvcasd.org**

**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 phosphorus. 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