

SWMP

VOLUME I - PROGRAM GUIDE

**STORM WATER MANAGEMENT PROGRAM
NEW YORK STATE
SPDES GENERAL PERMIT NO. GP-02-02**

**PUTNAM/NORTHERN WESTCHESTER BOCES
200 BOCES DRIVE
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SECTION 1 – SWMP ORGANIZATION

1.1 PLAN OVERVIEW

This Stormwater Management Program (SWMP) was prepared by CFE Consulting Services on behalf of the Putnam/Northern Westchester Board of Cooperative Educational Services (BOCES), with input and assistance of the Offices of School Facilities and Operations.

The District is a sole supervisory public school District and a provider of regional educational services to eighteen local school Districts and their residents in Westchester and Putnam Counties (District). Services to the eighteen local school districts includes vocational education, curriculum services, special education, adult education, staff training, technology instruction, guidance and testing, human resources and management services, that would be too costly or ineffective to provide individually.

BOCES employs 600 staff members and provides services to some 1,800 children and 5,000 adults (the school community) in local school buildings located on the BOCES property in Yorktown Heights, New York.

The SWMP complies with the intent of the NYSDEC SPDES Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-02-02, issued pursuant to Article 17, Title 7, 8 and Article 70 of the Environmental Conservation Law.

This SWMP is intended to be a guide to aid District in complying with the United States Environmental Protection Agency (EPA) Phase II Stormwater Regulations. The document does not constitute rule making nor does it substitute reading of the regulations and understanding all of its requirements as it applies to your facility. Additional information on Phase II rules, including a series of fact sheets and a full copy of the final rule, can be found on EPA's web pages at <http://www.epa.gov/owm/sw/phase> or at New York State Department of Environmental Conservation (NYSDEC) website www.dec.state.ny.us/website/dow/mainpage.htm .

The SWMP answers the following basic questions:

- What are applicable federal and state regulations and why must the District comply?
- What measurable goals must the District adopt to comply with Phase II Regulations?
- What factors should the District consider for each of the selected measurable goals?
- How is the program going to be implemented?
- What is the schedule for the SWMP implementation?

1.2 PLAN REVISIONS AND UPDATES

In accordance with Permit No.GP-02-02, the SWMP will be amended/updated whenever the Best Management Practices (BMPs) specified in this plan are ineffective in controlling the discharges of pollutants. These changes, if adopted, will be reflected in the Annual Report submitted to NYSDEC.

1.3 APPLICABILITY OF THE SWMP

The District property, is located at 200 BOCES Drive, Yorktown Height, New York. The land, on which the property is located, drains partially into the Town of Yorktown Heights and partially into the Town of Somers.

The SWMP, prepared for the District, consists of two (2) documents organized as follows:

- **Volume I – Program Guide**, is intended to serve as a guide for complying with NYSDEC SPDES Permit for Stormwater Discharges from the District property.
- **Volume II – Program Action Plan**, will be used for tracking and monitoring all actions taken by the District to implement the SWMP. This document (contained in a 3-ring binder) will contain correspondence exchanged between the District and outside parties and will include information related to specific measurable goals developed by the District.

1.4 DOCUMENT ORGANIZATION

This document is organized into seven (7) major sections plus three (3) appendices, as follows:

Section 1.0

- Introduces you to this guide
- Provides a program overview and the program's objectives

Section 2.0

- Provides background information of the federal stormwater regulations and its applicability
- Discusses New York State General Permit requirements
- Lists some of applicable definitions used under the new regulations

Section 3.0

- Provides the impacts of stormwater pollution
- Discusses the impact of diffuse sources of water pollution
- Describes some of the commonly discharged pollutants from stormwater

Section 4.0

- Summarizes EPA regulations as they pertain to the Six (6) Minimum Control Measures
- Lists the District's selected measurable goals for each minimum control measure
- Describes what factors should be considered for each of these measurable goals

Section 5.0

- Provides a discussion of steps to take in getting started
- Provides a discussion of steps to take for program development
- Provides a discussion of importance of maintaining your program

Section 6.0

- Discusses institutional and financial considerations
- Discusses how cooperative efforts with other parties will be beneficial
- Explores funding sources for stormwater initiatives

Section 7.0

- Provides a discussion on annual program accomplishments
- Describes the following year implementation goals
- Presents revisions/modifications that must be made to the SWMP
- Includes a schedule for implementation strategies

SECTION 2 – FEDERAL STORMWATER REGULATIONS

2.1 FEDERAL CLEAN WATER ACT

Through the early 1970s and into the 1990s, the major focus of the EPA, on water quality improvements, was on reduction of pollution from “point sources” of pollution from industrial wastewater sources and municipal sewage discharges. Over time it has become evident that more pollution is caused by diffuse sources of pollution (“non-point sources”) from overland runoff and construction sites. Consequently, On November 16, 1990, under the provisions of the federal Clean Water Act, EPA issued new regulations relative to the discharge of stormwater runoff. Stormwater management, therefore, has moved to the forefront, as environmentally protective, technically feasible and a cost-effective approach to water quality management.

The federal government has taken steps to set up and facilitate stormwater management programs in its offices nationwide. Various state agencies and interagency committees have been established to promote stormwater management activities. New York State is working with regional partners, such as New York State Association of Regional Councils, Soil and Water Conservation Districts, who can help communities conduct public education and outreach.

The federal Clean Water Act, set March 10, 2003 as the start of the Phase II program and expects a Notice of Intent (NOI) to be filed and the initial Stormwater Management Program (SWMP) to be started. Municipalities and public entities have five (5) years to fully develop and implement their SWMP. New York State Department of Environmental Conservation (NYSDEC), the permitting state agency, requires that communities demonstrate substantial continual progress over the five (5) year life of the permit, or they will be in violation of its provisions. While programs must be fully implemented by 2008, the Department encourages communities to maximize implementation of their programs and to have their full programs operational before 2008.

There is a statewide concern about the cost of implementing this program as this is an unfunded federal mandate. Various states have approached EPA to request the federal government to set up funding to assist municipalities and other public entities with the implementation of the program. To help cover basic costs, New York State has earmarked \$3.4 million from the Environmental Protection Fund (EPF) to assist communities develop and implement their programs in FY 2003. Additional funding from EPF is anticipated in future years, which will be available to further assist communities as they move to full implementation of their programs.

2.2 PHASE I STORMWATER REGULATIONS

On November 16, 1990, new regulations, relative to the discharge of stormwater runoff were issued, known as “Phase I Stormwater Regulations”. Under these regulations, a National Pollutant Discharge Elimination System (NPDES) Permit is required for all stormwater discharges from “medium” and “large” urban communities. As designated by EPA, NYSDEC was granted the authority to issue two (2) stormwater general permits: one for stormwater runoff from industrial sites, and the other for discharges from construction sites.

2.3 PHASE II STORMWATER REGULATIONS

On December 8, 1999, under the provisions of the Clean Water Act, the EPA amended the stormwater regulations to include “Phase II Final Rule”. The Phase II regulations require operators of “small” municipal separate storm sewer systems (MS4s), within an urbanized area to develop programs to control stormwater discharges under their jurisdictions. The Phase II regulations also lowered the threshold of construction activity to include land disturbance to one or more acres of land.

2.4 APPLICABILITY OF PHASE II STORMWATER REGULATIONS

According to New York State Department of Environmental Conservation (NYSDEC), the new regulations cover all public entities that are located within an MS4 area, that own or operate a separate stormwater sewer system. Examples of public entities include State Department of Transportation, State University Campuses, federal and State prisons, federal and State hospitals, Thruway and Dormitory Authorities, public housing authorities, school and other special Districts, such as DISTRICT.

Public entities in contiguous MS4 areas may also have to comply, if the State determines that the contiguous area is contributing significant pollutants to the adjacent MS4 area.

2.5 NEW YORK STATE GENERAL REQUIREMENTS

As of March 10, 2003, all public entities within an MS4 area are regulated and must obtain a SPDES Permit by 1) filing a Notice of Intent (NOI) and 2) developing a Stormwater Management Program (SWMP) on how the MS4 intends to implement measurable goals to minimize pollutant runoff from stormwater discharges. The SWMP must include measurable goals to address each of the following six (6) minimum control measures:

- Public Education and Outreach Program
- Public Involvement and Participation
- Elimination of Illicit Discharges
- Construction Site Stormwater Runoff Controls
- Post-Construction Stormwater Runoff Management Controls
- Pollution Prevention and Good Housekeeping

MS4s can modify their programs at any time during the life of the permit, provided changes are reported to NYSDEC in the annual report.

An MS4 does not have the authority to control stormwater runoff originating upstream or outside of its boundaries. The permittee is only responsible for the stormwater originated from its own system. However, the MS4 is responsible for discharges that flow to another MS4, if the runoff is generated by the MS4, or from within its boundaries.

2.6 DEFINITIONS

A listing of definitions used in this document follows:

Municipal Separate Storm Sewer System (MS4) – A publicly-owned conveyance or system of conveyances that discharges to waters of the U.S. and is designed or used for collecting or conveying stormwater, is not a combined sewer, and is not part of a publicly-owned treatment works (POTW).

Medium Municipal Separate Storm Sewer System- An MS4 located in an incorporated place or county with a population of 100,000 or more but less than 250,000, as determined by the latest U.S. Census.

Large Municipal Separate Storm Sewer System- An MS4 located in an incorporated place or county with a population of 250,000 or more, as determined by the latest U.S. Census.

Urbanized Area – A bureau of Census determination of a central place (or places) and adjacent densely settled surrounded territory that together have a minimum residential population of 50,000 people and a minimum average density of 1,000 people/square mile.

Industrial Activity – includes any activity which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant.

Small Municipal Separate Storm Sewer Systems – includes any MS4 that is not regulated under Phase I of the NPDES Stormwater Program and Federally-owned MS4s, with a population of less than 100,000, as determined by the latest U.S. Census.

Construction Activity – Under Phase II regulations, an MS4 must, as a minimum, develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to a small MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Current Operator(s)/Owner(s), conducting construction under Phase I permits, are required to modify their SWPPPs, by August 1, 2003, to comply with new requirements of Phase II regulations. Site activities of less than 1 acre are also regulated as a small construction activity, if they are designated by the State.

SECTION 3 - IMPACTS OF STORMWATER POLLUTION

3.1 IMPACTS OF DIFFUSE SOURCES OF POLLUTION

Efforts to improve our nation's water quality have been focused on reducing pollutants from industrial process wastewater and municipal sewage treatment plant discharges (typically referred to Point Sources of Pollution).

Over time it has become evident that more pollution is caused by diffuse sources of pollution from overland runoff and construction sites. Sources of pollution, typically referred to as Non-Point Sources of Pollution, vary from location to location.

According to an inventory conducted by EPA, major sources of water pollution nationally, are as follows:

- 60% of total pollution results from overland runoff from diffuse sources
- 15% from urban stormwater channelized flow
- 25% from wastewater facilities (point sources or piped discharges)

According to Federal Clean Water Action Plan:

- 40% of nation waters, assessed by the States, are still unsafe for fishing and swimming
- 50% of approximately 1000 watersheds evaluated are experiencing "significant" levels of degradation under generally accepted methodologies.

3.2 COMMONLY DISCHARGED POLLUTANTS FROM STORMWATER

The District property is located in a drainage basin that primarily discharges to East-of- Hudson portion of New York City Watershed. Pollutants commonly discharged into these water bodies affect drinking water supplies and aquatic life support (fishing). The primary pollutant that affects the East-of- Hudson Watershed is phosphorus, which causes excessive algae blooms, leading to a reduction of dissolved oxygen. The City of New York may recommend permit requirements beyond those outlined in the statewide program needed to achieve Total Maximum Daily Load (TMDL)-mandated phosphorus reductions for East-of-Hudson watershed .Other commonly discharged pollutants carried by stormwater runoff may include:

- **Pathogens** (disease-causing microorganisms, such as bacteria and viruses) that transfer from over loaded septic fields, potentially render water supplies unsafe to drink
- **Nutrients** from nitrogen compounds in fertilizers, enhance algae growth, which in turn cause oxygen deficiencies in lakes and water bodies
- **Pesticides and herbicides** contain chemical compounds that seriously affect fish and other aquatic habitats, as well affect quality of drinking water supplies
- **Oil and Grease** and petroleum products adversely affect water supplies, and negatively impact habitats of fish and water fowl

- **Toxic inorganic and organic compounds** from bus, car and truck washouts (detergents and chemicals used for bus and car washing) discharged into storm drains, cause potential harm to drinking water supplies and other aquatic habitats
- **Road sand and de-icing agents** (salt and chlorides applied to school roads and parking lots) accumulate over years causing sources of water supply to be unfit for human consumption
- **Excessive sediment** runoff from construction-related activities ending up in nearby stream beds and ponds where they alter stream flow and decrease availability of healthy aquatic habitats and cause flooding

SECTION 4 – PROPOSED MEASURABLE GOALS

4.1 PUBLIC EDUCATION AND OUTREACH

EPA Regulations - According to EPA regulations you must implement a public education program or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies, and develop steps that the public can take to reduce pollutants in stormwater runoff.

The following measurable goals, as described under Sections 4.1.1 and 4.1.2, should be adopted by the District, to comply with the NYSDEC regulations on the Public Education and Outreach.

4.1.1 STORMWATER EDUCATIONAL MATERIALS

The District should consider preparing educational materials on stormwater for distribution to the school community. To be effective, educational materials should be planned, should be prepared on-going basis and should include relevant information on stormwater regulations, sensitive water bodies impacted and effects of various pollutants on the water bodies.

Planning – A Public Steering Committee should be set up to select the type of educational material that should be prepared, determine the audience that needs to be reached, and evaluate when and how the information should be distributed.

Ongoing Outreach Program - To be effective the educational program should be ongoing. Presentation materials should be designed and produced at the onset of the outreach program (starting in September 2003) and should be distributed throughout the permit duration, until the full implementation date of March 10, 2008.

Multi-faceted – to maintain interest, educational material should be designed to attract the attention of all school groups of the school community, from young school children to high school students, teachers and school administrators.

Outreach Audience - The targeted audience for the District, should include:

- District Board Members
- School Administrators
- Operations and Maintenance Staff
- School Staff
- Students
- Adult School Community Members

Educational Materials, to be developed should consist of fact sheets, flyers, brochures, posters, and other handout materials, and should address the following stormwater topics:

- Background Information on Phase II Stormwater Regulations
- Impacts of Diffuse Sources of Water Pollution
- Impacts of Pollutants to Sensitive Water Bodies
- School Leadership Program on Implementation of SWMP
- How can the School Community assist in the Implementation of the SWMP
- Discussion on Schedule for Implementation Strategies

Distribution Media - Education materials should be distributed to targeted audiences via the following approaches:

- Memos
- Display charts, graphs, pictures, posters
- School Website
- Classroom Distribution
- Oral Presentations at District Board Meetings and other District Community Group Meetings
- Annual Workshop /Conferences
- Local School Newspaper

4.1.2 WEBPAGE EDUCATION ON STORMWATER

The second measurable goal on the Public Education and Outreach Program should include webpage education on stormwater. To be effective, webpage education should be planned, on-going and should include multi-faceted information on stormwater regulations, sensitive water bodies impacted and effects of various pollutants on the water bodies. Webpage education should be implemented throughout the schools of the District.

Webpage Information – The District is encouraged to develop a stormwater-related information for its webpage. The information should focus on the impacts of stormwater pollutants and how the District can assist in reducing pollution from stormwater runoff.

Webpage Materials Many national and regional organizations can be reached to provide assistance and materials to the District for stormwater education. A partial listing of organizations to contact includes:

- Center for Environmental Education (<http://www.cee-ane.org>) has an outreach department that works closely with schools nationally.
- Colorado springs, Colorado (www.csu.org/water/watereducation/waterreduction.html) have made their classroom materials available free of cost.
- The University of Wisconsin offers educational materials titled “Educating Young People about Water.” (www.uwex.edu/erc/ywc/index.html)
- The U.S. Geological Survey (USGS) offers a number of educational resources (water.USGS.gov/education.html)
- The Water Environment Federation offers educational resources (www.wef.org/WefStudents/index.htm)

4.2 PUBLIC INVOLVEMENT AND PARTICIPATION

EPA Regulations - According to EPA regulations you must include the public community in developing, implementing, and reviewing your stormwater management program, and the public participation process should make efforts to reach out and engage all economic and ethnic groups.

The following measurable goals, as described under Sections 4.2.1 and 4.2.2, should be adopted by the District, to comply with the NYSDEC regulations on the Public Involvement and Participation. In addition the Annual Report to NYSDEC (refer to Section 7), should be available to the Public for their comment and input.

4.2.1 STORM DRAIN STENCILING

The first measurable goal for Public Involvement/Participation should include the development of a storm drain stenciling and signage program, involving various members of the school community.

Storm Drain Stenciling and Signage - involves labeling of storm drain inlets, identification of outfall points to sensitive water bodies, and warning signs for salt, sand and chemical storage stockpile areas. Stencils or signage remind passersby where storm drains connect to local water bodies, or where material storage stockpiles are, which if not properly maintained and protected, could cause stormwater pollution. Stenciling and signage will deter littering and assist in monitoring and tracking of potential stormwater pollutants.

Stenciling and Signage Coordination –Stenciling and signage group should be led by a coordinator, who is skilled in recruiting, training, managing and recognizing volunteers. Most programs suggest that stenciling be done in teams, with at least one person designated to watch traffic. If possible this work should be conducted during off school season, to mitigate interference and disruption of school activities. Adult supervision is critical, if school children or members of youth groups are involved. The District is advised to obtain waivers of liability from parents, teachers and other participants involved in the program.

Planning Activities – Planning activities led by the stenciling coordinator, should include a thorough review of:

- Type of stenciling kits, containing materials and tools required to carry out a stenciling project
- Maps of storm drains, outfall point and material storage stockpile areas to be stenciled
- Training for volunteers on safety procedures and on the technique for using stencils or for affixing signs
- Safety equipment (traffic cones, safety vests, masks and/or goggles for spray paint and gloves)
- Pollutant Monitoring and Tracking Forms to collect data on instances of dumping or littering

Materials – Materials may vary depending on availability, applicability and cost. Typically the following materials may be used:

- Stencils made of mylar or flexible plastic materials
- Pre-painted permanent signs, made of aluminum, plastic or other durable materials, may be affixed next to outfalls or material storage stockpile areas
- Paint or ink may be sprayed on or applied by brush or roller

Effectiveness – It is difficult to precisely measure the effectiveness of the storm drain stenciling program. However, EPA has concluded that raising public awareness of stormwater runoff, through stenciling has discouraged practices that generate nonpoint source pollutants.

Resources – Information on how to develop a storm drain stenciling program, including a partial list of communities with storm drain stenciling programs, and where stencil materials can be purchased, is listed below:

- Center for Marine Conservation: (<http://www.cmc-ocean.org/mdio/drain.php3>)
- TexasNaturalResourceConservationCommission: (<http://www.tnrcc.state.tx.us/exec/oppr/cc2000/storm-drain.html>)
- The Rivers Project, Southern Illinois University at Edwardsville, 1998, Gateway Area Storm Sewer Stenciling Project: (<http://www.siu.edu/OSME/river/stencil.html>)
- Clean Ocean Action, 2000. Storm Drain Stenciling (Purchase Stencils): (<http://www.earthwater-stencils.com>)
- Earthwater Stencils, Ltd. (Purchase Stencils): (<http://www.earthwater-stencils.com>)

4.2.2 STREAM CLEANUP AND MONITORING

The second measurable goal on Public Involvement and Participation should include Stream Cleanup and Monitoring. To be effective, this activity should be planned on an on-going basis and should be scheduled either semi-annually or annually.

Applicability - Stream cleanup and monitoring activities will include all water bodies on the school property, as well as drainage swales and culverts that eventually lead to the water body, if the water body is not located directly on the property. Almost anyone from parents, teachers, operation and maintenance staff, as well as school children and youth groups can be involved in a stream cleanup and monitoring activity. Cleanup tasks vary from walking the stream bank or drainage area, collecting trash and recording information about evidence of erosion, the quantity and types of trash that have been removed.

Staffing, Scheduling and Organizing – A coordinator from the District should be in charge of the recruiting, scheduling and organizing of the cleanup activity. Projects should be scheduled several months in advance to provide adequate time to organize volunteers and handle logistical issues, such as meeting times, location of cleanup areas, clothing and footwear, inclement weather conditions and any other pertinent information. If possible this work should be conducted during off school season, to mitigate interference and disruption of school activities. Adult supervision is critical, if school children or members of youth groups are involved. The

District is advised to obtain waivers of liability from parents, teachers and other participants involved in the program.

4.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION

EPA Regulations - According to EPA regulations you must develop, implement and enforce a program to detect and eliminate illicit discharges (non-stormwater discharges) i.e.:

(1) You must develop a plan that will include the following four (4) components:

- Procedures for priority areas likely to have illicit discharges
- Procedures for tracing the source of an illicit discharge
- Procedures for removing the source of discharge
- Procedures for program evaluation and assessment

(2) You must develop a storm sewer map, showing the location of outfalls and names and locations of all waters of the United States that receive discharges from these outfalls.

(3) You must develop regulatory mechanisms that will prohibit non-storm water discharges into your storm sewer system and implement appropriate enforcement procedures and actions.

(4) You must inform public employees of hazards associated with illegal discharges and improper disposal of waste.

(5) You need to address any non-stormwater dry weather flows that significantly contribute pollutants to your MS4.

The following measurable goals, as described under Sections 4.3.1 and 4.3.2, should be adopted by the District, to comply with the NYSDEC regulations on the Illicit Discharge Detection and Elimination.

4.3.1 IDENTIFICATION OF ILLICIT CONNECTIONS

Illicit connections - are defined as “illegal and/or improper connections to storm drainage systems and receiving waters.” A discharge of industrial wastewater is illicit because it would ordinarily require a permit under the Clean Water Act. Identifying illicit and improper connections are necessary to prevent pollutants from entering the water body.

Identification Methods – Identification methods may include any of the following methods:

- Survey of individual buildings to discover where connections to storm drains exist
- Inspection of sewer lines with television equipment to visually identify all physical connections
- Conducting of field tests, utilizing dye testing, visual inspection, smoke testing, and flow monitoring

- Comparison of field test results and video inspections with known connections on the map. Suspicious areas should be further investigated.

Limitations- of the methods used for detecting and eliminating illicit connections are:

- Illicit connections may occur from outside the MS4, and suspicious areas, therefore, should be reported to MS4 having jurisdiction of outside illicit connection, before any further implementation can be undertaken
- Visual inspections, flow monitoring, smoke and dye testing must be conducted in dry weather periods, or results will be misleading

4.3.2 IDENTIFICATION OF WASTEWATER CONNECTIONS TO STORM DRAIN SYSTEM

The second measurable goal to be adopted by the District for Illicit Discharge Detection and Elimination, should include the identification of wastewater connections to the storm sewer drain system.

Wastewater Connections are sometimes employed as an inexpensive or convenient alternative to the proper disposal of wastewater to a treatment plant. The illicit connections cause pollutants typically found in raw sewage to be discharged in the receiving water body. Pollutants may include heavy metals, oil and grease, solids, detergents, chlorine, ammonia and nutrients, which are all extremely toxic to aquatic organisms. Excessive nutrient loads also lead to DO depletion causing hypoxia and eutrophication in the receiving waters.

Detection Methods will include the following approaches:

- Location and mapping of all outfalls
- Testing of outfalls during dry weather
- Spot testing(smoke testing and dye testing) of storm drain manholes upstream of the outfalls
- Infrared and thermal photography have also been used to identify suspect discharges
- Field inspections of sanitary and storm sewer manholes

Limitations – Wastewater discharges are intermittent and hence, difficult to detect. Considerable time and effort must be expended in detecting illicit wastewater discharges. Nevertheless, illicit wastewater connection elimination has been identified by EPA as an important tool in protecting water quality.

4.4 CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS

Construction Activity Regulations - According to EPA regulations you must develop, implement and enforce a program to reduce pollutants in any stormwater runoff from construction activities that result in a land disturbance of greater than or equal to one acre. As a minimum, the program must include the development and implementation of:

- Regulatory Procedures to require Erosion and Sediment Controls (ESC)
- Requirements for Construction Site Operators to implement ESC Best Management Practices
- Requirements for Construction Site Operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause adverse impacts to water quality
- Procedures for Site Plan Review, which incorporate consideration of potential water quality impacts
- Procedures for receipt and consideration of information submitted by the public
- Procedures for Site Inspection and Enforcement of Control Measures

The following measurable goals, as described under Sections 4.4.1 and 4.4.2, should be adopted by the District, whenever applicable, to comply with the NYSDEC regulations on Construction Site Stormwater Runoff Controls.

4.4.1 DEVELOPMENT OF REGULATORY PROCEDURES

NYSED - Currently, the only regulatory mechanism available to BOCES falls under the State Education Department (NYSED), which is charged by the Secretary of the State to administer and enforce the NYS Uniform Fire Prevention and Building Code with respect to buildings, premises and equipment, owned by BOCES. There are two enforcement mechanisms: 1) an annual fire inspection, which leads to a Certificate of Occupancy and 2) Approval of Plans and Specifications based on procedures developed by the Bureau of Facilities Planning, which leads to a Building Permit.

Local Government - All other issues, such as environmental compliance issues, fall under the local government in which the District is located, such as Villages and Towns and or State and County regulatory agencies.

Local MS4 Operator - Accordingly, the District would fall under the jurisdiction of NYSDEC and the local municipality, in which the District is located. If the municipality in which the District is located is an MS4 operator, the District must comply with the local MS4 operator requirements, as they relate to construction activity on the school's property. If the MS4 is unable to establish an enforceable construction program due to lack of legal authority, the NPDES permitting authority, NYSDEC, would then assume responsibility.

Separate Site Plan Review Procedure - Because of potential jurisdictional problems, it is recommended that the District develop a separate Site Plan Review Procedure, which complies with appropriate EPA BMPs on construction sites, to control erosion and sediment, as well as waste at the site, should any future construction be carried out at the BOCES property. The Site Plan Review procedure must be developed by a licensed professional (professional engineer, licensed landscape architect, or a Certified Professional in Erosion and Sediment Control), as is required under NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No.GP-02-01.

The Site Plan Review Procedure should be included in all Plans and Specifications, submitted to the Bureau of Facilities Planning, for building renovations, expansions or upgrades.

The licensed professional, hired by the District, should be responsible for reviewing and approving any future construction Site Plans, to ensure that these documents are in compliance with NYSDEC Phase II Stormwater Regulations.

4.4.2 SITE ASSESSMENTS AND INSPECTIONS

The second measurable goal that the District should consider adopting, if applicable, to ensure compliance with Construction Stormwater Runoff Controls, is to hire a licensed professional to be responsible for site assessment and inspections prior to and during any future construction, in accordance with the provisions contained in the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No.GP-02-01.

The licensed professional hired by the District would be responsible for:

- Assessment of the site prior to construction
- Inspection during the construction
- Final inspection and certification

4.5 POST-CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS

Post-Construction Activity Regulations - According to EPA regulations you must develop, implement and enforce a program from new development and redevelopment projects to reduce pollutants in any stormwater runoff from these sites. As a minimum you must:

- Develop and implement strategies which include a combination of structural and non-structural Best Management Practices (BMPs) appropriate for the site.
- Use regulatory mechanism to address post-construction runoff from the site.
- Ensure adequate long-term operation and maintenance of BMPs.

Development/Re-development – refers to alterations of a property that change the original footprint of the site by the disturbance of the land through activities such as clearing and excavation for the addition of new buildings and /or structures, paving or underground utilities at the site.

The following measurable goals, as described under Sections 4.5.1 and 4.5.2, should be adopted by the District, whenever applicable, to comply with the NYSDEC regulations on Post-Construction Site Stormwater Runoff Controls.

4.5.1 PROCEDURES FOR STRUCTURAL AND NON-STRUCTURAL BMPS

The District should develop procedures to ensure that all development and re-development projects comply with New York State Standards and Specifications for Erosion and Sediment

Controls and that these projects include site-based non-structural and structural BMPs as specified in the New York State Stormwater Management and Design Manual.

Specifically the Site Plan should include the following non-structural BMPs, if appropriate:

- Buffer strips for wetlands and sensitive water bodies.
- Site controls to minimize disturbances of soils and vegetation and other pervious areas on the site.
- Site controls to minimize directly connected impervious areas by use of plantings and vegetative strips

The Site Plan should also include the use of the following structural BMPs, if appropriate:

- Wet Ponds and extended-detention outlet structures
- Filtration practices such as grassed swales, sand filters and filter strips
- Infiltration practices such as infiltration basins and infiltration trenches

As stated previously for construction site stormwater runoff controls, all Site Plans for development and re-development projects must be prepared and/or reviewed by a licensed professional (professional engineer, licensed landscape architect, or a Certified Professional in Erosion and Sediment Control), who is familiar with New York State Standards and Specifications for Erosion and Sediment Controls and the New York State Stormwater Management and Design Manual.

4.5.2 LONG-TERM OPERATION AND MAINTENANCE CONTROLS

Ongoing Operation and Maintenance Program - To be effective the structural site control BMPs specified above should be operated and maintained on a regularly planned basis. Over a period of time, silt, leaves and runoff debris will accumulate in wet ponds and extended-detention outlet structures. These structures must be pumped down and cleaned out, or the sediment and pollutants they capture, will flow into nearby water bodies that these structures were meant to protect.

4.6 POLLUTION PREVENTION/GOOD HOUSEKEEPING

Regulations - According to EPA regulations you must develop, implement an operation and maintenance program that includes:

- a training component that prevents and reduces stormwater pollution from such activities as bus garages and building maintenance and new construction and land disturbances and stormwater system maintenance.
- Maintenance schedules for various stormwater-related maintenance activities.
- Long-term inspections of structural and non-structural stormwater controls
- Controls for reducing discharges of pollutants from streets, roads, parking lots and sand and chemical storage yards

The following measurable goals, as described under Sections 4.6.1 and 4.6.2, should be adopted by the District, to comply with the NYSDEC regulations on Pollution Prevention/Good Housekeeping.

4.6.1 EMPLOYEE TRAINING

In-House Employee Training – should be provided to teach employees about stormwater management, potential sources of contaminants, and Best Management Practices (BMPs).

Training Classes – include 1) classroom instructions through posters, fact sheets and brochures about stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff, and 2) field training programs that show areas of potential stormwater contamination and associated pollutants, followed by site- specific BMPs by certified Professionals.

On-Going Program – To be effective an employee training program should be provided on an annual basis. Meetings on SWMP should be held at least semi-annually, possibly in conjunction with other training programs.

DISTRICT Support from Senior Management – Probably the most important aspect for any employee training program to be successful is senior management support. The District must ensure strong commitment and support by having senior management attend key training sessions, and by providing periodic input and support to the SWMP. Training sessions can in-house or training may be provided outside, through employee attendance at various State and EPA Workshops and seminars on stormwater management.

Operating Manuals – operating manuals and/or standard operating procedures should be prepared for stormwater management, potential contaminant sources, and prevention of contamination in surface water runoff.

4.6.2 SPILL RESPONSE AND PREVENTION

The second measurable goal that the District should adopt, to ensure compliance with Pollution Prevention/Good Housekeeping, is development of a Spill Response and Prevention Control Plan.

Spill Prevention and Control Plans – identify measures to be taken to stop the source of a spill, contain the spill, clean up the spill, dispose of contaminated materials and train personnel to prevent and control future spills.

Applicability - Spill response and control plans may be used to control the discharge of pollutants such as oil and grease, vehicle coolants, petroleum products and other building chemicals such as floor cleaning solvents and polishes, chlorox, acid and bases, salt and de-icing agents and other chemical products used as cleaners in school bus garages and maintenance storage buildings and storage stockpile areas.

Components of a Spill Prevention Plan – The Spill Prevention Plan should:

- Identify potential spill or source areas such as loading and unloading areas, storage stockpile areas, areas designated for waste collection and disposal.
- Evaluate current material handling procedures and storage requirements.
- Define actions to be taken to reduce spill potential and impacts on stormwater quality.
- Develop procedures for regularly scheduled inspections where spills may occur.
- Evaluate need to install leak detection monitoring and control systems.
- Take measures to disconnect drains that might lead to the storm sewer
- Use material transfer procedures or filling procedures for fuel tanks and other equipment that minimize spills.

Components of a Spill Response Plan – The Spill Response Plan should:

- Identify individuals responsible for implementing the plan
- Define safety measures to be taken for each kind of chemical being handled
- Specify how to notify appropriate authorities such as police and fire departments, hospitals or publicly-owned treatment works for assistance
- Identify procedures for containing, diverting, isolating and cleaning up the spill
- Describe spill response equipment to be used, including safety and clean up equipment

Effectiveness – A Spill Prevention and Response Control Plan is highly effective at reducing the risk of stormwater pollution. However, to be effective, the following factors must be included:

- On-going worker training must be provided
- Proper materials and equipment must be available for cleanup
- Extra support must be provided by senior management to ensure procedures are followed
- Potential spill areas must be inspected regularly to ensure preventive spill measures are being followed
- The Plan must be updated on an on-going basis to accommodate any changes in site procedures

SECTION 5 – SWMP IMPLEMENTATION SUGGESTIONS

5.1 Phase 1 – Getting Started

In this phase, the District should set its direction, gather resources, and research its current situation. These steps are explained in more detail below:

Step 1 – Commit to Stormwater Management Program

Critical to the successful implementation of any SWMP is the support and endorsement of the program by senior District School officials. The start-up to establish a SWMP must come from top level school administrators. It should be clear that management supports the program, and that it is to be implemented throughout the District facilities. Without this support, it is not likely that the program will be successful. It is also important that the entire school community from students to the school board be represented in the implementation of the program.

Mitigating the impacts of stormwater pollution is a costly endeavor, since this is unfunded federal mandate and most of the costs will have to be borne by the District. New York State Environmental Protection Fund anticipates funding assistance to be available in future years, however, because of the number of communities competing for these funds, it will be very difficult to obtain outside funding to implement the program.

Costs for setting up the program vary according to size of the community, implementation strategy and very importantly, the resources that are available in-house. EPA reports for MS4s nationwide, costs vary from \$3 per capita to \$60 per capita. The lesser figure represents a program that just barely complies with the minimum program requirements whereas the upper figure is for an extensive program, with many optional components that a community may find beneficial and desirable.

All MS4s must comply with permit conditions or be in violation of the Clean Water Act and the Environmental Conservation Law. Penalties for violations include substantial criminal, civil and administrative penalties, which could easily exceed the costs for implementation of the program. On the other hand, effective implementation of this program is expected to generate long term economic benefits to the community by improving the environment around us, particularly the water you drink, by improving lakes and ponds used for swimming, boating and other recreational uses, as well as by reducing the impacts of flooding. Based on EPA analysis, the long term benefits of Phase II stormwater program nationwide are anticipated to be greater than the costs of its implementation. The Department expects this will also be the case in New York State.

Step 2 - Set Up Your Organization

The effectiveness of a SWMP will depend, in part, on adequate staffing. Prior to initiating a SWMP, senior Administration officials must designate a SWMP Coordinator. The coordinator may spend anywhere from a week a month or more to get the program off the ground. Hours to

oversee the program once it is running can range from a few hours per week to full time during the implementation of the District's selected measurable goals.

The **SWMP Coordinator** will be responsible for overseeing the program and recruiting staff to implement the program. The staffing activity involves three steps: 1) establishing the SWMP Steering Committee, 2) assigning representatives from school community to be monitors for various measurable goals, and 3) using consulting experts as required.

SWMP Steering Committee

The first official duty of the SWMP Coordinator will be to establish a SWMP Steering Committee, which will be set up for the development and implementation of the SWMP. The committee consisting of representatives from the following groups:

- District Board
- District School Administrators
- Operations and Maintenance Staff
- Teacher Representative
- Student Representative
- District Public Relations Officer
- Consulting Experts

Representatives should include people who are both interested and dedicated to the program and have leadership/communications experience. While members do not have to be stormwater experts, specialty trained personnel, such as the District's lawyer, public relations officer, procurement specialists, should be a part of the committee.

Assigning Monitors

The SWMP Coordinator and the SWMP Steering Committee should ask for volunteers to be monitors for the implementation of the SWMP. One monitor for each measurable goal is optimal. Monitors do not need to be experts, but should have a good rapport with staff and have a thorough understanding of how measurable goals work. Monitors may be responsible for developing fact sheets and flyers, coordinating the activity schedule with the SWMP Coordinator, procuring equipment and/or materials required to carry out the activity and assigning people to work on various activities.

Using Consulting Experts

The District may consider using an outside "expert" such as a consultant who is knowledgeable, is a certified professional, and has experience in conducting certain specific tasks, such as Stormwater Mapping, Preparation of Plans and Specifications, Detecting and Eliminating Illicit Connections and providing Site Plan Reviews and Inspections of ongoing Construction Activities.

Step 3 - Research Your Current Situation

Research your current situation to capitalize on information and similar programs that have already been established, such as :

- Existing Building Layout/Plumbing/Utilities Drawings
- Architectural/Engineering Site Plans of previous facility planning and capital construction projects
- Current Storm Sewer and Catch Basin Cleaning Initiatives
- Evaluation of current and proposed construction projects
- Meeting with all local MS4s in which schools are located, 1) to understand their SWMP requirements 2) evaluate their plans for implementation, and 3) whether cooperative agreements can be made with these MS4s
- Find out with what state and local regulatory agencies the proposed SWMP must comply
- Contact NYSDEC to determine how they can assist you in designing and implementing a program that meets with their requirements

5.2 Phase 2 – Program Development

Step 4 – Develop Program Goals

Develop specific program goals commensurate with current selected measurable goals identified in this document:

- How is the selected measurable goal to be implemented, when and by whom?
- Are there different options for implementing the measurable goal?
- Does it meet State and local MS4 requirements?
- Can the measurable goal be implemented with ease by local staff?
- What are the available resources (staff, materials, equipment and cost) to implement the measurable goal?

Step 5 – Select Program that Meets Goals

After reaching agreement on Step 4, above, the District should decide the following:

- Develop a detailed implementation schedule for carrying out the program
- Which schools will you consider?
- Will you plan on phasing other schools at a later date?
- Will you try a pilot program prior to the start of a full scale program?

Step 6 - Initiate the Program

After reaching agreement on Step 5 above, the District should initiate the program, commensurate with current selected measurable goals identified in this document. In order to

move the program forward, always keep senior management informed of committee's findings and recommendations and obtain their approval before proceeding with any activity.

5.3 Phase 3 – Maintain Your Program

Step 7 - Implement the Program on an On-Going Basis

As stated previously, the permit requires the MS4 to demonstrate substantial continual progress over the life of the permit, or the permittee may be in violation of the Environmental Conservation Law. While full implementation is required by 2008, the NYSDEC encourages MS4s to maximize implementation of their programs and have full programs operational before 2008.

Step 8 – Annual Assessment, Record Keeping and Reporting Requirements

As covered in detail in Section 7 of this document, the final step of the program is to undertake an annual assessment of the appropriateness of the identified measurable goals, and to determine progress towards achieving full implementation by 2008. This step also involves record keeping and reporting requirements, as described in Section 7.

SECTION 6 – INSTITUTIONAL AND FINANCIAL CONSIDERATIONS

6.1 Formation of a Stormwater Management Department

The effectiveness of the SWMP will depend, in part, on staffing resources needed to implement and maintain the program. For a comprehensive program, a separate department may be necessary, especially after the full program has been implemented, to monitor the following activities:

- Catch basin and storm drain repairs and cleaning
- Street and parking lots cleanup
- Maintenance and repairs of structural and non-structural facilities
- Review and assessment of onsite construction activities
- Proper disposal of trash and other waste materials
- Proper lawn and garden care (restricted fertilizer and pesticide use)

The District may have to hire additional paid staff, to carry out the above duties.

6.2 Cooperative Efforts with Other Parties

EPA encourages operators of small MS4s to enter into partnerships with other entities to fulfill minimum control measures, especially under the Public Education and Outreach Program. It is generally more cost-effective to use an existing program than to develop a new program. Many communities (environmental civic groups), including other school districts, already have educational materials and may have performed outreach activities.

6.3 Funding of Stormwater Initiatives

Possibly the biggest challenge for the District is finding funding for the program. Funding is needed to maintain staff, equipment and materials necessary to develop and implement an effective SWMP. The following funding options, may be applicable to the District:

- **Debt Financing:** typically used for capital-intensive projects where bonds are used as source of revenue
- **Federal, State, or Regional Sources:** grants or loans earmarked for specific projects. depending on BMP's selected and location
- **Special Assessment:** taxpayers within the DISTRICT may be assessed annually to fund stormwater management programs

The applicability of the above funding initiatives need to be further researched through contact with the New York State Education Department and/or other appropriate federal and state agencies, to determine if current legislation in the District allows collection of revenue by above methods.

SECTION 7 – ANNUAL PROGRAM ASSESSMENT

7.1 Annual Program Accomplishments

The District must conduct an annual evaluation of its program to determine:

- Appropriateness of its identified management goals
- Progress towards achieving the identified measurable goals

NYSDEC may, at its discretion, require monitoring of discharge(s) from the permitted activity.

7.2 Recordkeeping

The District must keep records for at least five (5) years after they are generated.

Records, including the Notice of Intent (NOI) and the Stormwater Management Program (SWMP), must be available to the public at reasonable times during regular business hours, within 10 working days of approval by the permitting authority.

7.3 Reporting

Reports for the annual period ending March 10, must be submitted to NYSDEC no later than June 1 of each year. Reports must include:

- Status of compliance, assessment of appropriateness and progress towards achieving statutory goal.
- Results of information collected and analyzed of identified management goals
- Stormwater activities planned for next year, including an implementation schedule.
- Any changes in the identified measurable goals.
- A summary of public comments received on the annual report.
- Evidence that the final report is available for public inspection.

7.4 Schedule of Implementation

A preliminary schedule, with target dates for the implementation of measurable goals for each of the Six (6) Minimum Control Measures is included in Appendix A-4.