

# Biosolids Management Program Manual

For the District of Columbia Water and Sewer Authority

Record of Revisions		
Version #	Revision Date 20XXMoDa	Nature of Revisions
1	06/30/2003	Original
2	08/31/2006	Replaces entire original. Updated and simplified entire manual; removed some documents from EMS and appendices and created separate documents.
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4	09/22/2008	Replaces entire original to reduce size and more closely reflect biosolids management program current practices. Also adds overall DC WATER vision, mission, and values.
5	20090921	Replaces entire original to reduce size and more closely reflect biosolids management program current practices. Removes some procedures and incorporates them by reference. Dates formatted for ISO.

The mission of the District of Columbia Water and Sewer Authority biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective management of biosolids produced by the Blue Plains Advanced Wastewater Treatment Plant while helping preserve agriculture and protect the Chesapeake Bay.

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# Section 1 — Biosolids Program Management

## 1.1 Background

From 1938 to 1996, the District of Columbia Water and Sewer Utility Administration was part of the Washington DC government. In 1996, the DC government turned it into a semi-autonomous regional entity, the District of Columbia Water and Sewer Authority (DC WATER).

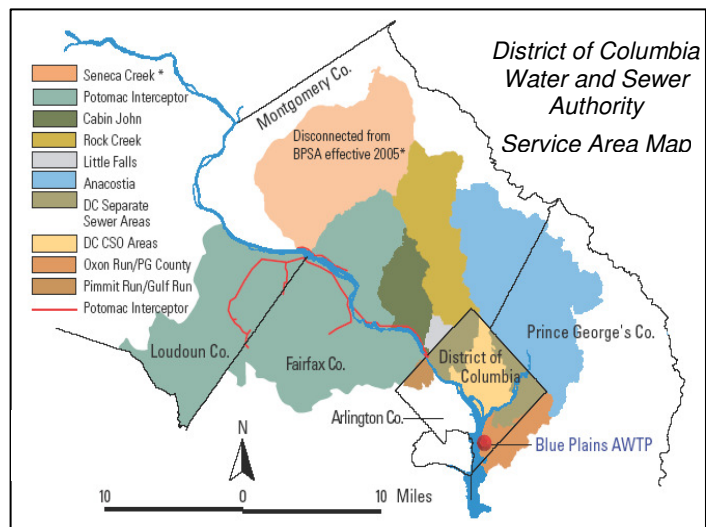
DC WATER provides wastewater treatment to more than two million Washington DC metro area customers. It has capacity to treat 370 million gallons of wastewater a day and a peak wet-weather capacity to treat 1.076 billion gallons a day. Wastewater treatment meets regulatory secondary treatment requirements. The two valuable end products that result from these treatment processes are highly treated effluent and biosolids.

Effluent is discharged to the Potomac River. Biosolids are 100% lime-stabilized and nearly 100% recycled through land application, including agriculture, silviculture (tree farming), and mine reclamation. DC WATER biosolids consistently meet Class A standards for fecal coliform and are of significantly higher quality than Class B in general.

On May 1, 2000, the chief engineer of DC WATER signed a letter of understanding with the National Biosolids Partnership (NBP) in which DC WATER agreed to join the voluntary NBP Environmental Management System (EMS) program. DC WATER specifically committed to meeting the national requirements for an excellent biosolids program, committed to implementing an EMS, and committed to the NBP's National Code of Good Practice.

DC WATER's biosolids program was certified to the NBP EMS by a third-party auditor in October 2004. It has maintained third-party certification since then.

The EMS requires DC WATER to identify areas critical for regulatory compliance, set clear and attainable goals, establish a mechanism for periodic review of all the areas of the system, commit to continually improving all aspects of the biosolids management system, and involve the public and stakeholders in the process.



Through the EMS, the biosolids program has a formal process for identifying root causes of incidents such as odors; establishing goals and associated action plans; improving inspections, training, operational processes, research activities, and public outreach; and monitoring and reviewing progress toward goals, among other activities.

Biosolids transportation and land application is accomplished using contractors who are required to meet biosolids management criteria. Biosolids division staff regularly meet with contractors to ensure they are maintaining their contract and EMS obligations.

DC WATER modifies its biosolids program as needed in response to factors such as new state regulations and facility upgrades.

## 1.2 Manual

This biosolids program manual describes DC WATER's biosolids management program and documents DC WATER's biosolids management program mission, policies, and procedures. It serves as a reference for program staff, contractors, and stakeholders. It formalizes DC WATER's commitment to the goals and principles of the National Biosolids Partnership.

References throughout the manual are separate documents that relate most directly to the particular section. The manual itself is a controlled document, following procedures in Section 4 on Documentation.

### Procedure for Biosolids Management Program Manual

1. The manual is intended to be a "living" document and contains procedures for managing the biosolids program. Revisions are expected as new information is obtained, changes to existing systems occur, and as experience is gained in managing the biosolids program.
2. DC WATER will make revisions to the *Biosolids Management Program Manual* on an "as needed" basis.
3. The Biosolids Division manager will inform the general manager of significant revisions to the biosolids program.
4. The Biosolids Division manager will provide notification of significant changes to the biosolids program to interested parties.

## 1.3 Vision, Mission, and Policy

DC WATER has adopted an overall mission, vision, and values statement that relates to all its divisions, including the Biosolids Division, as follows:

### DC WATER Mission

The mission of DC WATER is to serve all its customers with outstanding service by providing reliable and cost-effective water and wastewater services in accordance with best practices.

### DC WATER Vision

DC WATER provides world-class water and wastewater services as a leading environmental steward.

### DC WATER Values

- ✓ Respectful, responsive, and sensitive to the needs of our customers and employees
- ✓ Ethical in professional and personal conduct
- ✓ Vigilant to ensure optimal health, safety, and environmental
- ✓ Outcomes
- ✓ Dedicated to teamwork and cooperation

- ✓ Committed to equity, trust, and integrity in all we do

The DC WATER Board of Directors approved a specific biosolids program vision, mission, and policy statement in a board meeting on April 2, 2004. The mission statement was developed using a structured decision process to address biosolids management and multiple stakeholder issues, summarized in the *Biosolids Management Program Decision Science* brochure. The policy was likewise developed with stakeholder input and refined during Cross-Functional Team (now Biosolids Workgroup) meetings. The policy forms the basis of the biosolids management system.

### **Biosolids Program Vision**

DC WATER's vision is to establish a self-sustaining, world-class regional biosolids management program that will carry the facility through the demands of this century.

### **Biosolids Program Mission**

The mission of the District of Columbia Water and Sewer Authority biosolids management program is to provide reliable, diversified, flexible, sustainable, environmentally sound, publicly acceptable, and cost-effective management of biosolids produced by the Blue Plains Advanced Wastewater Treatment Plant while helping preserve agriculture and protect the Chesapeake Bay.

### **Biosolids Program Policy**

DC WATER commits to uphold and implement the NBP *Code of Good Practice* as its biosolids policy.

#### **The National Biosolids Partnership's Code of Good Practice 10 Principles of Good Conduct**

The Code of Good Practice (the Code) is a broad framework of goals and commitments to guide the production, management, transportation, storage, and use or disposal of biosolids — in short, a comprehensive environmental management system (EMS) for biosolids. Those who embrace the Code and participate in the EMS commit to “do the right thing.” Specifically, Code subscribers and EMS participants pledge to uphold the following principles of conduct:

1. **Compliance:** To commit to compliance with all applicable federal, state, and local requirements regarding production at the wastewater treatment facility, and management, transportation, storage, and use or disposal of biosolids away from the facility
2. **Product:** To provide biosolids that meet the applicable standards for their intended use or disposal
3. **Environmental Management System:** To develop an environmental management system for biosolids that includes a method of independent third-party verification to ensure effective ongoing biosolids operations
4. **Quality Monitoring:** To enhance the monitoring of biosolids production and management practices
5. **Quality Practices:** To require good housekeeping practices for biosolids production, processing, transport, and storage, and during use or disposal operations
6. **Contingency and Emergency Response Plans:** To develop response plans for unanticipated events such as inclement weather, spills, and equipment malfunctions
7. **Sustainable Management Practices and Operations:** To enhance the environment by committing to sustainable, environmentally acceptable biosolids management practices and operations through an environmental management system
8. **Preventive Maintenance:** To prepare and implement a plan for preventive maintenance of equipment used to manage biosolids and wastewater solids
9. **Continual Improvement:** To seek continual improvement in all aspects of biosolids management

10. Communication: To provide methods of effective communication with gatekeepers, stakeholders, and interested citizens regarding the key elements of each environmental management system, including information relative to system performance

To help communicate the policy as widely as possible, a short version may be used, such as the following:

### **DC WATER Biosolids Program Policy (short version)**

**DC WATER commits to achieving the following biosolids program outcomes:**

- ✓ Legal and regulatory compliance
- ✓ Consistent product quality
- ✓ Ensuring public acceptance of biosolids
- ✓ Excellent environmental performance
- ✓ Continual improvement in processes, products, and services
- ✓ Implementing the National Biosolids Partnership *Code of Good Practice and Principles of Good Conduct*

### ***Continual Improvement***

DC WATER is committed to continual improvement of its biosolids program. As biosolids management practices and the industry evolve, DC WATER strives to incorporate technology and other advancements into its operations. It also is committed to developing a diverse, flexible program capable of meeting the dynamic needs of the communities where biosolids are applied. Continual improvement will help protect the environment and public health, and will allow the biosolids program to address changes in demographics, public attitudes, and market needs.

The continual improvement program uses the EMS as a management tool, and specifically relies on Biosolids Workgroup meeting discussions, stakeholder contacts, annual and other reporting, the goals and action plan process, incident responses, management review, and auditing to ensure improvements are identified, reviewed, and enacted.

### **Procedure for DC WATER Biosolids Management Program Policy**

1. The Biosolids Division manager is responsible for ensuring that the biosolids management program policy, and any changes to it, are implemented and communicated to appropriate DC WATER managers and staff, contractors, and other stakeholders.
2. To ensure that biosolids management program policies remain relevant, the Biosolids Workgroup will review biosolids management program policy at least annually.
3. If changes are required to the policy, the Biosolids Workgroup will oversee the change process and the Biosolids Division manager will approve changes. DC WATER's board of directors is responsible for final approval of the biosolids program policy and any changes to it.
4. If no changes are required, this decision will be recorded as a matter of record in Biosolids Workgroup meeting minutes.

## 1.4 Legal and Other Requirements

### ***Reference: Procedure for Legal and Other Requirements***

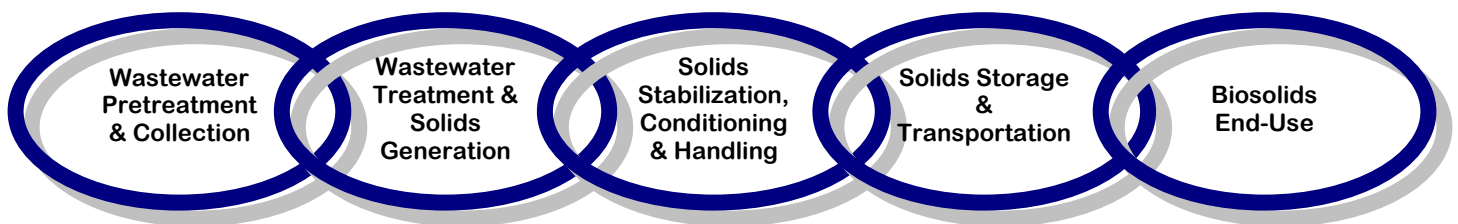
The DC WATER Biosolids Management Program Procedure for Legal and Other Requirements used by DC WATER to identify, track, and assess the potential effects of new or revised legal, regulatory, and other requirements that may affect biosolids is described in the file <DCWATER Bio Procedure\_Legal> on the DC WATER I-Drive. A summary of legal and other requirements is provided in that document.

## Section 2 – Monitoring and Controlling Operations

### 2.1 Critical Control Points, Monitoring and Measurement, Goals, Action Plans, and Operational Corrective Action

Critical control points (CCPs) are key biosolids management activities that are under the direct control or influence of DC WATER, and that have the potential, if not managed effectively, to create significant changes to the quality of its biosolids and could create negative environmental impacts. Critical control points include activities that can affect the quality of biosolids, how biosolids are managed, or how the DC WATER biosolids program is viewed by the general public and regulators.

Following is the “biosolids value chain” at DC WATER:



Identifying areas in the biosolids value chain critical to control, controlling them, and then monitoring that they are being controlled properly is at the heart of the biosolids management program. Emergency response procedures are part of the operational control system. A key to accomplishing this is setting and meeting measurable goals, with associated action plans. The procedures for operational controls, monitoring and measurement, goals, action plans, and for operational corrective and preventive action plans, are in the following documents, maintained on the DC WATER I-Drive.

**Reference: Procedure for Operational Control, Monitoring, and Measurement**

The *Biosolids Management Program Procedure for Operational Control, Monitoring, and Measurement*, including a list of critical control points and related operational controls, are contained in <DCWATER Bio Procedure\_CCPs & M&M>. Hard copies are not controlled.

**Reference: Procedure for Biosolids Incident Responses**

The *Biosolids Management Program Procedure for Biosolids Incident Responses* for responding to biosolids-related incidents including onsite biosolids and lime spills, offsite biosolids spills, non-spill or accident emergencies, and fires are contained in the document <DCWATER Bio Procedure\_Incidents> on the DC WATER I-Drive. The *Biosolids Transportation Handbook* is part of this procedure and relates to procedures directly affecting truck/trailer drivers.

**Reference: Procedure for Goals, Action Plans, and Operational CAPAs**

This spreadsheet that includes the *Biosolids Management Program Procedure for Goals, Action Plans, and Operational CAPAs* is in the spreadsheet <DCWATER Bio Procedure\_Goals Action



CAPAs> on the DC WATER I-Drive. It includes procedures for establishing goals and associated action plans, for creating corrective and preventive action plans (CAPAs) related to operations, and definitions. The spreadsheet also maintains action items identified during Biosolids Workgroup meetings.

The procedure for CAPAs related to legal and regulatory and audit nonconformances are in Section 5 of this manual

## 2.2 Emergency Preparedness and Response

The *Biosolids Management Procedure for Biosolids Incident Responses* contains a plan to facilitate a quick response to a potentially hazardous situation. This plan focuses on biosolids spills because they are the most likely and frequent biosolids emergency and because response procedures for other types of emergencies are well documented in the *Blue Plains Stormwater Pollution Prevention Plan* and *Blue Plains Emergency Response Plan*.

The *Blue Plains Stormwater Pollution Prevention Plan* includes response plans for spills of materials other than biosolids, such as lime and polymer. For emergency responses to weather-related situations such as earthquakes, floods, and tornadoes, refer to the *Blue Plains Emergency Response Plan*.

### Procedure for Emergency Preparedness and Response

1. The DC WATER Blue Plains Advanced Wastewater Treatment Plant has developed the *Blue Plains Emergency Response Plan* and the *Blue Plains Stormwater Pollution Prevention Plan* (SWPPP) that are formally reviewed and updated periodically. Interim revisions to specific sections of the plans are made on an “as needed” basis.
2. The plans establish clear protocols for how a wide variety of situations should be handled. Copies of the plans are kept in the Bio 01 File Cabinet. Important emergency contact information is kept in all vehicles used in the DC WATER biosolids program, including contractor vehicles.

Testing and training with respect to safety and emergency response procedures is conducted on a periodic basis as determined by the Liquid Treatment Division Manager.

3. The need to require that contractors performing work related to DC WATER’s biosolids activities develop emergency response and preparedness plans is determined on a case-by-case basis. Generally, contracted activities are limited to biosolids transportation, land-application of biosolids, and site inspections. Relevant portions of the emergency response plans may be applicable to these contracted activities, as identified in the plans.

## Section 3 — Communication, Roles and Responsibilities, and Training

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### 3.1 Introduction

DC WATER has a well-managed and award-winning biosolids program. Public confidence in the quality of its biosolids remains high and public interest in participating in planning processes is relatively moderate. DC WATER has a proactive approach to providing the public with meaningful opportunities to provide input in these processes.

DC WATER is committed to proactively communicating information on its biosolids operations (including the EMS program) both internally and to interested external individuals and agencies. Contractors also play a formal role in DC WATER's communications efforts.

DC WATER's stakeholders include its own staff, whose roles and responsibilities related to biosolids are critical for achieving desired outcomes. Training is an important part of biosolids management, providing staff with information for carrying out their responsibilities, and providing management opportunities to convey key biosolids management information.

DC WATER's contractors play a formal role in communication and training. They are responsible for direct communication with biosolids end-users and with community officials, and for reporting important input back to the Biosolids Workgroup. They are responsible for training their staff and often go beyond their scopes and provide beneficial training outside their own organizations. They are responsible for establishing roles and responsibilities relevant to their biosolids activities as well.

### 3.2 Communication

DC WATER's public input and communication programs are consistent with legal requirements, the degree of current public interest, historical levels of public involvement, and related local circumstances.

One of the most important communication mechanisms is via the Biosolids Workgroup, which meets monthly and reports to the Blue Plains Regional Committee (BPRC). Another significant avenue for both input and outreach is through the Virginia Biosolids Council, which DC WATER helped found in 2005.

An informed public is critical to its participating responsibly in helping plan biosolids management program activities. The *DC WATER Biosolids Management Program Approach and Procedure for Communication* contains the procedure for responding to inquires and describes in more detail how input is gained and information is communicated internally and externally. The procedure on legal and other requirements also lists arenas where staff and stakeholders interact.

Significant biosolids-related education and outreach efforts, proactive and reactive, and public input information are documented. Also, inquiries and responses are taken into account in setting the goals of the Biosolids Division.

### **Reference: Procedure for Communication**

DC WATER has a formal procedure for receiving and responding to input, inquiries, and requests for information about its biosolids operations. The Biosolids Division keeps records of all such inquiries and has a policy of responding as soon as possible. The *Procedure for Communication* is in the document *DC WATER Biosolids Management Program Communication Approach and Procedure*, filename <DCWATER Bio Procedure\_Communication>, located on the DC WATER intranet I-Drive.

## **3.3 Roles and Responsibilities**

Clearly identifying roles and responsibilities is important to the success of both the biosolids management program and the EMS. Without a clear definition of roles and responsibilities, the likelihood of failing to comply with operational and regulatory requirements significantly increases.

### **3.3.1 Program Organization**

There are approximately 1,100 WATER employees, 400 in wastewater treatment operations and maintenance. DC WATER is organized into several departments, each reporting to a director. The DC WATER organization chart is posted on the website: [www.DCWATER.com](http://www.DCWATER.com), under “about us/key personnel.”

The Wastewater Treatment Department includes the Pretreatment, Biosolids Management, and Liquid Treatment Divisions. The Biosolids Division includes staff directly involved in biosolids management and contractor oversight. In addition to DC WATER staff, several contractors are employed for the biosolids management program – third-party inspection contractors, dewatering and lime stabilization contractors, reuse contractors, and an engineering program manager.

Official job descriptions of DC WATER biosolids management staff are located in the personnel office and on the intranet I-Drive as well.

The Biosolids Division manager serves as the biosolids EMS coordinator.

### **3.3.2 Description of Biosolids Program Roles and Responsibilities**

Biosolids management and program roles and responsibilities at DC WATER are summarized in the procedure below. Full descriptions of biosolids roles and responsibilities are covered in official job descriptions.

Biosolids program roles and responsibilities are highly cross-functional, cutting across many different departments. This is especially true for continual improvement, management of change, and training activities. Nonetheless, there are core responsibilities assigned to specific functional groups. The Department of Wastewater Treatment Biosolids Division manages the biosolids program since it has primary responsibility for managing biosolids production and reuse. The assigned biosolids EMS coordinator is from the Department of Wastewater Treatment.

General descriptions of the roles/responsibilities for various biosolids positions are provided below. Official job descriptions are maintained by the Department of Human Resources.

**DC WATER Board of Directors** has oversight responsibilities, which include review and approval of recommendations by the Office of General Manager for the biosolids program policy, vision, mission, and DC WATER-wide long-term goals. It also has responsibility for approving the required biosolids capital and operating expenses and to review progress toward long-term goals periodically. It is responsible for expenditures greater than \$1 million.

**Blue Plains Regional Committee (BPRC):** Established under the 1985 Blue Plains Intermunicipal Agreement (IMA). Under the terms of the IMA, the BPRC officially represents the agencies and jurisdictions participating in the IMA in coordinating and implementing the IMA itself, and provides a forum for in-depth discussion and development of consensus on a range of technical, policy, and financial issues identified within the IMA – including biosolids management issues. The BPRC is composed of 12 members, with two from each of the following DC area municipal jurisdictions or agencies: Washington DC; Fairfax County, VA; Prince George’s County, MD; Montgomery County, MD; the Washington Suburban Sanitary Commission, MD (WSSC); and DC WATER. The BPRC members are appointed by the Blue Plains Leadership Committee, i.e., the chief administrative officers and general managers of the participating jurisdictions and agencies. The BPRC routinely communicates to and may provide formal recommendations to the DC WATER Board of Directors and upper management, and provides overall guidance to the Biosolids Workgroup.

**General Manager** has overall management responsibility for setting DC WATER’s biosolids policy, vision, mission, and long-term goals, and for reviewing performance and progress toward long-term goals periodically. He or she is responsible for expenditures between \$100,000 and \$1 million and is the contracting officer. The Biosolids Workgroup provides monthly reports on activities to the GM.

**Department of Wastewater Treatment Director** is responsible for overall operations of the Department of Wastewater Treatment. Primary responsibility with respect to biosolids is to provide management support for the biosolids program. He or she reviews all NPDES discharge monitoring reports for biosolids. In addition, his or her staff communicate any activities around the plant that might affect the biosolids program.

**Liquid Treatment Division Manager** is responsible for directing the liquids treatment program toward efficiency, effectiveness, public acceptance, and product quality. He or she also is the emergency incident commander for the overall Department of Wastewater Treatment.

**Biosolids Division Manager (may also be the biosolids EMS coordinator)** is responsible for directing the program toward sustainability, public acceptance, and product quality. The biosolids division manager oversees the general operation of all aspects of the biosolids management program from dewatering through final end use or disposal. The manager ensures that the biosolids management program and EMS are implemented and maintained. He or she develops the policies, goals, and objectives for

the biosolids program with input from interested parties. He or she also is responsible for research oversight.

**Biosolids Workgroup:** A biosolids management program team composed of representatives from DC WATER divisions in the biosolids value chain, contractors responsible for inspections and legal and regulatory tracking, partner agencies, and land application contractors. The Biosolids Workgroup is a formal workgroup of the BPRC, and provides regular updates (e.g., quarterly) to the BPRC on program and regulatory activities that may affect the biosolids management program, as well as recommendations for BPRC-funded biosolids research projects. Monthly meetings are held to review the biosolids program and EMS.

**Biosolids EMS Coordinator (may also be the biosolids division manager)** is delegated management responsibility and authority for overseeing the EMS and managing the various EMS documents, including document control, and for administering corrective action, reporting, internal EMS auditing, and management review activities.

**Biosolids Program Document Manager (also may be the Biosolids Process Engineer)** is responsible for managing documents in the EMS document control process.

**Biosolids Process Engineer (also may be the Biosolids Program Document Manger and/or Biosolids Chief Process Engineer)** is responsible for collecting all regulatory required data, compiling regulatory reports, maintaining files of analysis results and regulatory reports, reviewing contractor invoices, and coordinating research. He or she also is responsible for emergency preparedness and response procedures related to biosolids and provides procedures and O&M manuals to the OMAP manager,

**Operations & Maintenance Personnel** have core responsibility for maintaining the collection/ interceptor/transmission system. They also have core responsibility for operating and maintaining all unit processes/critical control points within the Blue Plains AWTP, from the headworks through conditioning and dewatering, storage, and loading of the biosolids into trucks for transport to land application sites. AWTP operators also collect all the biosolids-related samples at critical control points within the AWTP for both compliance and operational control. AWTP operators have primary responsibility for the SPs for operational control and monitoring and measurement for AWTP unit processes. The AWTP operators also maintain operational control records and perform inspection and testing, including biosolids sampling for vector attraction reduction, pathogens and heavy metals to meet the 503 rules.

**Biosolids Office Support** has core responsibility tracking biosolids with the scalehouse data system, checking invoices against scale totals, and compiling information for the monthly report.

**Pretreatment and Laboratory Division Manager** is responsible for monitoring influent quality as well as biosolids quality from the time chain-of-custody arrives at the lab until analysis is complete and reported. He or she also is responsible for sampling and analysis of the biosolids, used in regulatory reports. The division performs or oversees subcontracting of all biosolids-related analytical work.

**Department of Procurement Director** is responsible for ensuring that purchases are properly authorized and documented, and then delivered, and that contracts are

properly executed. Procurement maintains all contracts and has authority to approve expenditures up to \$100,000.

**Department of Finance and Budget Director** (who is also the Chief Financial Officer) is responsible for managing and helping develop the overall DC WATER budget, and for approving purchase orders.

**Department of Human Resources Director** is responsible for hiring, job descriptions, and training implementation.

**Administrative Services Supervisor** coordinates general employee training for the Department of Wastewater Treatment.

**The Office of Public Affairs Director** is responsible for general communication management and input. Most biosolids communication feedback is conducted by the Biosolids Division Manager.

**Internal audit team and lead auditor** are designated by the biosolids EMS coordinator and management representative (management)

**Engineering Services** oversees capital planning in conjunction with the Office of the General Manager and manages design and construction of all major new equipment and rehabilitation/replacement equipment and unit processes. The new biosolids dewatering centrifuge project is being managed by Engineering Services. Engineering Services manages all facilities-related capital improvements.

**Operations and Maintenance Assistance Program (OMAP) manager** provides job-related training and keeps training records; reviews and maintains operations manuals and standard operating procedures for all of DC WATER.

**Contractors** perform full-service contracts for hauling, applying, permitting, and recordkeeping for all biosolids-related use or disposal. Contractors also are responsible for some laboratory services and for crane operations. They are responsible for meeting legal and regulatory requirements related to their contracted work.

**Inspectors** are contracted and visit each land application site every day and record information on quantities, site-management practices, complaints, nuisance conditions, infractions, etc., in an electronic database. This report is submitted electronically to DC WATER weekly and is compiled and submitted monthly. Inspectors respond to spills, truck accidents, complaints, and inquiries from the public as well as the regulatory agencies.

## Procedure for Roles and Responsibilities

1. Roles and responsibilities for various individuals (including contractors) that are specific to the biosolids management program are assigned by the Biosolids Division manager. They are reviewed and updated as necessary.
2. The Biosolids Division manager also will review existing roles/responsibilities whenever significant operational changes are made, to ensure that roles/responsibilities are appropriately defined. Revisions to the roles and responsibilities are made by the Biosolids Division manager or other top management officials.

## 3.4 Training

Training is important for ensuring good job performance. Training occurs through a variety of mechanisms, including (but not limited to):

- Crew, staff, department, or plant meetings
- Duty station and tailgate training
- On-the-job training
- Review of internal reports
- Review of external publications
- Safety and emergency response training sessions
- Offsite training sessions
- Training required for maintaining certification

DC WATER staff responsibilities for training are as follows:

- **Administrative Services Supervisor** – Provides training information to employees; coordinates requested training with the Department of Human Resources or the Operations and Maintenance Assistance Program (OMAP).
- **Biosolids EMS Coordinator or Biosolids Division Manager** – Develops or coordinates development of additional technical or EMS training courses.
- **Department of Human Resources** – Coordinates all employee training for entire plant; tracks courses attended by each employee. May delegate this work to OMAP.
- **General employees** – Complete training forms and submit to administrative services supervisor; provide proof of attendance to the Department of Human Resources.

### 3.4.1 General Employee Training

The administrative services supervisor coordinates all general employee training for the Department of Wastewater Treatment. The Department of Human Resources compiles a list of the training provided by DC WATER, which is available on a monthly basis, and the administrative services supervisor distributes the list to all staff members. These courses include computer training, safety training, and various other general training courses. Employees can request to attend external training courses and professional meetings of their choice in addition to the courses offered by DC WATER.

Separate forms are available from the Department of Human Resources for internal and external training requests. Employees are permitted to attend as many internal training courses as requested. Requests for external courses are evaluated by the Department of Human Resources based on cost and benefit to the employee.

The employee is responsible for selecting any courses of interest, filling out the appropriate forms, and having the forms approved and signed by his or her supervisor. The employee gives the forms to the administrative services supervisor who helps coordinate the training with the Human Resources Department.

Specific training for new equipment, and operations training is provided by the contractor installing the equipment or by the Operations and Maintenance Assistance Program (OMAP). In addition, OMAP reviews operations manuals and standard operating procedures for all of DC WATER, and produces new ones as necessary. These manuals can be obtained from OMAP and should be provided to all employees when they begin to work with the related equipment.

### **3.4.2 Biosolids Training**

In addition to the general courses offered by DC WATER, the Biosolids Division has developed technical presentations for its staff, focused on the biosolids management program, the biosolids program policy, the biosolids value chain and individual roles and responsibilities associated with it, and program goals and environmental impacts associated with roles and responsibilities.

DC WATER requires contractors to establish and implement their own training programs consistent with their roles and responsibilities in biosolids management. Contractors with staff who require training include crane operators, laboratory services providers, hauling/transportation providers, inspectors, and end-use operators. Contractors are required to keep records of their training activities.

#### **Procedure for Biosolids Management Program Training**

1. Training is generally based on performance needs as determined by supervisors and managers. Training may be formal or informal. Training usually occurs when new Biosolids Division employees are hired, when new equipment or processes are put in place, or when incident reviews reveal a need.
2. Formal training hours are documented by the Department of Human Resources or by Operations and Maintenance Assistance Program (OMAP) management.
3. To ensure that employees and contractors have a general awareness of the biosolids value chain and the biosolids management policy, and how they relate to their areas of responsibility, the Biosolids Division manager will:
  - Identify relevant training opportunities for employees and contractors providing biosolids services to DC WATER
  - Develop and schedule at least one general biosolids management program awareness training module to be offered to each member of the Biosolids Division staff.
  - Require in contracts or other agreements that contractors participate in training activities.



## Section 4 – Documentation

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### 4.1 Introduction

There are only a few documents that must be under control (i.e. identified, reviewed, approved, secure, accessible, version-controlled) as part of the biosolids management program:

- Policies
- EMS manual
- SOPs
- Contracts

The following are not under DC WATER's control, but must be current and accessible:

- Regulations
- Permits

To ensure that personnel have access to the most current and relevant biosolids management program documents, DC WATER has established a procedure describing how such documents are controlled. This procedure ensures that controlled documents are:

- Available and can be located easily
- Created following established document creation protocols
- Kept up-to-date through periodic reviews and revisions (if applicable)
- Properly marked with version date(s) and references to superseded versions (where applicable)
- Approved by authorized personnel
- Retained for the specified period of time
- Removed according to established protocols

A list of controlled documents is maintained in the *DC WATER Biosolids Management Program List of Critical Control Points and Operational Controls*, under filename <DCWATER Bio Procedure\_CCPs & M&M> on the DC WATER I-Drive.

Records should be clear, identifiable, legible, secure, accessible, retained/disposed of after a time certain, with a person responsible. Records might include:

- Operating data
- Lab data
- Public input
- Internal audit reports

- Management review records (BWG meeting minutes, reports to GM, annual report, any board or other management meeting minutes where the biosolids program is discussed)
- CAPAs (corrective and preventive action reports)
- Training records
- Incident investigations
- Regulatory communications
- Contractor records

### **Procedure for Document Control and Recordkeeping**

1. The following documents related to DC WATER's biosolids management program or relevant biosolids management activities are considered "controlled" documents:
  - Policy statements
  - The EMS manual
  - SOPs
  - Contracts
2. Contracts are maintained by the Procurement Department and follow procedures established there. Copies may be retained in the Biosolids Division, but are not considered master documents.
3. A master document is the controlled document and will be maintained on the intranet I-Drive. The master document will contain a header or a footer stating that hard-copy documents are not controlled versions. Standard operating procedures and the EMS manual will contain the following document control information:
  - Title:
  - Approved By:
  - Issue Date:
  - Supersedes (previous date):
4. A link to the master document will be accessible to all employees via the document system established by the Operations and Maintenance Assistance Program (OMAP).
5. Version and revision history will be maintained for all controlled documents. Old documents will be removed from the OMAP link file and from the master document file and archived.
6. Record retention periods will be consistent with DC WATER's records retention policies, generally identified in related standard procedures. When documents have reached the retention date, the document will be reviewed by the relevant supervisor to determine whether the retention period needs to be extended. Records are retained in the Biosolids Division I-Drive or Bio 01 file cabinets.

7. The Biosolids Division manager has sole responsibility for updating/revising the EMS manual to reflect current practices. Minor grammatical edits, links to new or revised documents, etc. are not considered significant changes. Updates/revisions generally will be made in response to one or more of the following:
  - Internal audits
  - External audits
  - Operational changes
  - Annual reviews of critical control points, operational controls and biosolids program goals
  - Annual Biosolids Management Program Performance Report
8. Contractors are required to maintain and control documents in accordance with requirements in their contracts, with DC WATER procedures, or with their internal requirements.

## Section 5 – Review and Improvement

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### 5.1 Introduction

The DC WATER biosolids management program relies on internal checks and balances to ensure it is meeting program requirements and desired outcomes. These activities include investigating activities that did not conform to requirements and developing and completing corrective and preventive action plans (CAPAs), internal auditing, publishing a periodic report that captures the highlights of the program and offers information to the public, and reviewing the program (and the report) for overall effectiveness and relevance to DC WATER’s overall mission and vision and to its policies.

### 5.2 Nonconformances

DC WATER establishes, documents, and maintains procedures for investigating nonconformance with EMS protocols, legal/regulatory and other requirements, including conformance issues that may arise from monitoring/measurement activities, or nonconformances noted as a result of internal or external EMS audits. Note that “noncompliance” is a term specifically referring to legal and regulatory requirements.

#### ***Reference: Procedure for Biosolids Management Program Operational Nonconformances***

Procedures for operational nonconformances – that is, those not related to legal and regulatory compliance, and not related to internal or third-party management system audits – are contained in the spreadsheet *Procedure for Goals, Action Plans, and Operational CAPAs*, filename <DCWATER Bio\_Goals Action CAPAs> under the Procedure and Definitions tab.

#### **Procedure for Biosolids Management Program Legal, Regulatory, and Audit Nonconformances**

DC WATER staff involved in biosolids management activities will notify the Biosolids Division manager of any noncompliance with applicable regulatory requirements or nonconformance with internal EMS procedures identified during routine monitoring and measurement and audits. Corrective and preventive action plans for operational, legal, regulatory, and related nonconformances will follow procedures in the

#### ***Legal and Regulatory Nonconformances***

1. Biosolids management program legal/regulatory nonconformances are specifically identified in federal regulations, state permits, or local ordinances. These documents contain procedures for investigating nonconformances of legal/regulatory requirements identified in them.

#### ***Internal and Third-Party Audit Nonconformances***

2. Based on findings of system nonconformance through internal audits and EMS verification audits conducted by third parties, DC WATER will initiate a nonconformance/corrective action plan for each nonconformance identified. The corrective action plan describes what actions will be taken to address the audit findings,

the individual(s) responsible, the estimated completion date, and required resources to develop and implement corrective and preventive action.

3. The Biosolids Division manager will review and approve proposed corrective action plans, designate responsible staff for implementing them, and monitor progress toward implementing corrective and preventive actions, using tracking methods that he or she deems appropriate.
4. For minor nonconformances, progress will be tracked every month. For major nonconformances, progress will be checked every week. Minor nonconformances will be corrected within a 90-day period and major nonconformances will be corrected within a 30-day period, unless the auditor and DC WATER Biosolids Division manager agree that these timeframes need to be extended.
5. Upon implementation of the activities/changes specified in the CAPA, designated staff will complete the corrective action form and submit it to the Biosolids Division manager for approval. Records of closed-out corrective action forms are located in the BIO 01 file cabinet or on the I-Drive.
6. The Biosolids Division manager will prepare and submit a written report to the General Manager annually, summarizing the internal and third-party audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances. The audit report may be a stand-alone document or may be included as part of other prepared reports (e.g. the Biosolids Management Performance Report). The audit report or summary will be made available on the DC WATER website, sent to the Biosolids Workgroup, and made available to stakeholder on request.
7. Nonconformances, corrective, and preventive action will be reported to management as part of the management review process.

### **5.3 Internal EMS Audit**

DC WATER will conduct periodic internal audits of the biosolids EMS program to determine its effectiveness.

#### **Procedure for Internal Audits**

This procedure defines the process for conducting periodic internal EMS audits within DC WATER. The purpose of these audits includes, but is not limited to, determining whether the organization is maintaining conformance with the NBP guidelines and other established biosolids management program activities.

1. DC WATER conducts periodic internal EMS audits that cover the following:
  - The organization's performance relative to established biosolids program policy, outcomes, goals, and performance measures
  - Biosolids management program activities including those performed by contractors
  - EMS procedures and documentation
2. Internal audits will address program activities completed during the previous operating period. The schedule and overall plan for EMS audits is set by the Biosolids Division

manager. The lead auditor and Biosolids Division manager jointly determine the scope of the audit.

3. For each audit, an audit leader and team is identified. To maintain objectivity, the internal audit team should include personnel not directly responsible for areas being audited. The lead auditor is responsible for directing the process, coordinating activities of the audit team, overseeing compilation of the audit report, and participating in the management review process. The lead auditor needs to be familiar with systems auditing, and have sufficient understanding of the EMS and the biosolids management program.
4. The Biosolids Division manager or a designee will periodically evaluate the need to provide training or guidance to the internal auditors. He or she will be responsible for coordinating any subsequent activities related to training or guidance.
5. The Biosolids Division Manager or designee will make available the *NBP Third Party Verification Auditor Guidance* and other appropriate documents as resources to the audit team.
6. The internal audit lead auditor will conduct the audit in accordance with audit criteria developed and maintained by the Internal Audit Office, or as described in the *NBP Third Party Verification Auditor Guidance*.
7. Internal EMS audit results are reported to the organization's management as part of the management review process. The lead auditor reports observations and findings to management, along with recommendations for improvement, following procedures identified in Section 5.2.1 on nonconformances above.
8. The Biosolids Division manager is responsible for reporting CAPA results to the lead auditor or Internal Audit Office within 30 days of completion of the CAPA.
9. DC WATER maintains the following documents and records, as applicable, relating to its audit program:
  - Records of internal audit reports and schedules
  - List of lead auditor(s), qualifications, and description of roles and responsibilities of auditor(s), management representatives, and others who may participate in, review, or be expected to act upon the audit
  - Management's corrective and/or preventive action plans prepared as a result of an audit, and any related changes made to policies, plans, procedures, or work practices that occur in response to an audit's findings, evaluation, or follow-up actions.
10. The Biosolids Division manager will prepare and submit a written report to the General Manager annually, summarizing the internal and third-party audit results and corrective actions (if necessary) that have already been taken or will be taken to address any nonconformances. The audit report may be a stand-alone document or may be included as part of other prepared reports (e.g. the Biosolids Management Performance Report). The audit report or summary will be made available on the DC WATER website, sent to the Biosolids Workgroup, and made available to stakeholder on request.

## 5.4 Biosolids Management Program Report

DC WATER will periodically prepare a performance report that provides summary information on activities associated with the biosolids management program and the EMS.

### Procedure for Biosolids Management Program Performance Report

1. DC WATER publishes an annual biosolids management program performance report, based on the previous calendar year activities. The report provides information including the following:
  - A summary of program highlights and measures of biosolids program performance
  - Progress toward biosolids program goals
  - Indication of performance against legal and other requirements
  - Summary of its independent third-party EMS verification audit results
  - Summary of contractor activities
2. Within one month of being published, the biosolids management program performance report is presented to the DC WATER Board of Directors by the Biosolids Division manager, and is distributed to appropriate DC WATER staff.
3. The Biosolids Division manager will make the biosolids management program performance report available to the public through one or more of the following methods.
  - Electronic copies via the DC WATER website or via e-mail upon request.
  - Distribution through an email list maintained by the Biosolids Division manager
  - Printed copies available upon request.
  - Printed copies made available at meetings, presentations, and other activities as appropriate

## 5.5 Management Review

DC WATER conducts a management review of its biosolids and EMS program at least once a year. The purpose of this review is to address the possible need for changes to policy, goals, the biosolids management program, and other biosolids management program activities based on internal EMS audit results, third-party verification audit results, changing circumstances, and DC WATER commitment to continual improvement.

### Procedure for Management Review

1. The Biosolids Division manager or his/her representative leads the biosolids management review process.
2. The management review schedule is set by the Biosolids Division manager.
3. The scope of the management review includes the following:
  - Internal EMS audit results

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- External verification EMS audits by third parties
  - Review of information at the monthly Biosolids Workgroup meetings
  - Additional input from the biosolids management team as appropriate (such as through monthly General Manager Reports)
  - Additional evidence of changing circumstances or continual improvement
  - Goals and progress report from previous year; goals for current year
  - Annual performance report
4. The management review findings are documented in a written report (this may be Biosolids Workgroup minutes and/or the next annual report) and include possible directives for changes to policy, practices, goals, the biosolids management program, or other biosolids management program activities.
  5. Any changes to policies, plans, procedures, or work practices that are made as a result of the review also are documented.
  6. The Biosolids Division manager will develop a schedule and action plan to address recommendations from the management review.



## References

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- 40 Code of Federal Regulations (CFR) Part 503, *Criteria for the Use and Disposal of Sewage Sludge*
- State and local regulations, found via the national Biosolids Partnership website: [www.biosolids.org](http://www.biosolids.org).
- Blue Plains *Emergency Response Plan*, (located in Biosolids Division BIO 01 file cabinet)
- Blue Plains *Stormwater Pollution Prevention Plan* (located in Biosolids Division BIO 01 file cabinet)
- DC WATER Biosolids Management Program Procedure for Legal and Other Requirements , including a Summary of Legal and Other Requirements, <DCWATER Bio Procedure\_Legal> (located on the DC WATER intranet I-Drive)
- DC WATER Biosolids Management Program Approach and Procedure for Communication <DCWATER Bio Procedure\_Communication> (located on DC WATER intranet I-Drive)
- DC WATER Biosolids Management Program Goals, Action Plans, and Operational CAPAs, including action items from Biosolids Workgroup meetings, <DCWATER Bio Procedure\_Goals Actions CAPAs> (located on DC WATER intranet I-Drive)
- DC WATER Biosolids Management Program Procedure for Operational Control, Monitoring, and Measurement, including list of critical control points, operational controls, and related documents and records in the biosolids value chain, <DCWATER Bio Procedure\_CCPs & M&M> (maintained on DC WATER intranet I-Drive)
- DC WATER Biosolids Management Program Procedure for Biosolids Incident Responses, including contacts for offsite incident report forms (located on DC WATER intranet I-Drive)
- DC WATER Biosolids Transportation Handbook; contains procedures for onsite and offsite biosolids transportation incidents (located on DC WATER intranet I-Drive)
- Onsite incidents: DC WATER general foreman incident reports, located in General Foreman's office
- Maryland Environmental Science incident reports and other offsite incident reports
- DC WATER Biosolids Management Program Stakeholder Input/Request Response List (located on DC WATER intranet I-Drive)
- Solids Handling Facilities Plan for the Blue Plains Advanced Wastewater Treatment Plant
- TeamMate Audit Management System (located in the DC WATER Internal Audit Office)
- Internal and third-party audit results and corrective action plans (located on DC WATER intranet I-Drive)
- Biosolids management program training attendance sheets
- Biosolids management program training presentations

- Personnel files with DC WATER job descriptions
- DC WATER Biosolids Management Program annual reports
- Minutes of Biosolids Workgroup meetings (located on DC WATER intranet I-Drive)
- *Monthly Biosolids Division General Manager's Report* (located on DC WATER intranet I-Drive)
- Virginia Biosolids Council monthly and annual reports
- National Biosolids Partnership *Code of Good Practice* ([www.biosolids.org](http://www.biosolids.org))
- National Biosolids Partnership Letter of Understanding
- National Biosolids Partnership *National Manual of Good Practice for Biosolids* ([www.biosolids.org](http://www.biosolids.org))
- National Biosolids Partnership *Third Party Auditor Guidance*
- DC WATER brochure: *Blue Plains Advanced Wastewater Treatment Plant: A Water Reclamation Facility, Transforming Wastewater to Clean Water* (2005)
- *Decision Science Workshop, Executive Summary* brochure, August 1999
- DC WATER Biosolids Management Program brochure
- *Biosolids Management Program Decision Science* brochure
- DC WATER biosolids-related research summaries and reports

# Acronyms and Abbreviations

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AMSA	Association of Metropolitan Sewerage Agencies
ANC	Advisory Neighborhood Commission
AWTP	advanced wastewater treatment plant
BIO 01	Biosolids management program file cabinet in which documents are kept, in the EMS document control manager's office
Biosolids Division Manager	This person also is the biosolids EMS coordinator
Biosolids EMS Coordinator	This person also is the Biosolids Division manager
BMP	Biosolids Management Program
BPRC	Blue Plains Regional Committee
BPTC	Blue Plains Technical Committee
BURAC	Virginia Biosolids Use Regulations Advisory Committee
BWG	Biosolids Workgroup
CCP	critical control point
CFR	Code of Federal Regulations
CFT	cross-functional team (now known as the Biosolids Workgroup)
Code, The	National Biosolids Partnership's Code of Good Practice
COG	See "MWCOG"
CWEA	Chesapeake Water Environment Association
DC Council	Council of the District of Columbia
DC WATER	District of Columbia's Water and Sewer Authority
DEQ	Virginia Department of Environmental Quality
DMS	Department of Maintenance Services
DSLFL	dewatered sludge loading facility
DWT	Department of Wastewater Treatment
EMS	environmental management system
GIS	geographic information system
MABA	Mid-Atlantic Biosolids Association
MDE	Maryland Department of Environment
MES	Maryland Environmental Service
mgd	million gallons per day
MSDS	material safety data sheet

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MWCOG	Metropolitan Washington Council of Governments
NBP	National Biosolids Partnership
O&M	operation and maintenance
OMAP	Operations and Maintenance Assistance Maintenance Program
PIERS	Plant-Wide Interactive Electronic Reference System
RFP	request for proposals
SMART	specific, measurable, achievable, relevant, time-bounded
SOP	standard operating procedure
SP	standard procedure
US EPA	U.S. Environmental Protection Agency
VAMWA	Virginia Association of Municipal Wastewater Agencies
VBC	Virginia Biosolids Council
VDH	Virginia Department of Health
VWEA	Virginia Water Environment Association
WEF	Water Environment Federation
WSSC	Washington Suburban Sanitary Commission
WWTP	wastewater treatment plant

## Glossary

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**Audit (EMS)** – A systematic and documented verification process (internal or external) of objectively obtaining and evaluating evidence to determine whether an organization’s environmental management system conforms to the environmental management system audit criteria set by the organization, and for communicating the results of this process to management.

**Audit finding:** Documented nonconformance uncovered during the course of an audit. The audit finding process also includes corrective and/or preventive action plans.

**Biosolids 001 or Bio/001 file cabinet:** A file cabinet in the Biosolids Division that contains paper copies of reports, contracts, emergency plans, and other documents, or original records related to the biosolids program.

**Biosolids Cross-Functional Team:** See Biosolids Workgroup.

**Biosolids EMS coordinator:** The person who oversees development, implementation, and maintenance of the EMS. This may also be the Biosolids Division manager.

**Biosolids Management Program Performance Report:** The annual report prepared by the Biosolids Division Manager with input from the Biosolids Workgroup. Summarizes the status of DC WATER’s biosolids management program, including internal and third-party audit findings. See also Goals & Objectives document and Element 15.

**Biosolids Management Program:** The set of overall processes, plans, procedures, and approaches DC WATER implements to produce and manage biosolids from influent to end-use. This is used in place of the term “environmental management system” in most cases.

**Biosolids value chain:** The entire DC WATER wastewater process that is involved in the generation, treatment, and end-use of biosolids and that controls the final product quality. It includes wastewater pre-treatment and collection, wastewater treatment and solids generation, solids stabilization, conditioning and handling, solids storage and transportation, as well as biosolids use and disposition alternatives.

**Biosolids Workgroup:** A biosolids management program team composed of representatives from DC WATER divisions in the biosolids value chain, contractors responsible for inspections and legal and regulatory tracking, partner agencies, and land application contractors. The Biosolids Workgroup is a formal workgroup of the BPRC, and provides regular updates (e.g., quarterly) to the BPRC on program and regulatory activities that may affect the biosolids management program, as well as recommendations for BPRC-funded biosolids research projects. Monthly meetings are held to review the biosolids program and EMS.

**Blue Plains Regional Committee (BPRC):** Established under the 1985 Blue Plains Intermunicipal Agreement (IMA). Under the terms of the IMA, the BPRC officially represents the agencies and jurisdictions participating in the IMA in coordinating and implementing the IMA itself, and provides a forum for in-depth discussion and development of consensus on a range of technical, policy, and financial issues identified

within the IMA – including biosolids management issues. The BPRC is composed of 12 members, with two from each of the following DC area municipal jurisdictions or agencies: Washington DC; Fairfax County, VA; Prince George’s County, MD; Montgomery County, MD; the Washington Suburban Sanitary Commission, MD (WSSC); and DC WATER. The BPRC members are appointed by the Blue Plains Leadership Committee, i.e., the chief administrative officers and general managers of the participating jurisdictions and agencies. The BPRC routinely communicates to and may provide formal recommendations to the DC WATER Board of Directors and upper management, and provides overall guidance to the Biosolids Workgroup.

**Board of Directors focus areas:** DC WATER area of operations that require priority commitment by top management and resource allocation to support the agency’s vision and mission.

**Board of Directors strategic goals:** Desired outcomes related to each focus area.

**Board of Directors strategic objectives:** Concrete activities to be taken to achieve strategic goals.

**Board of Directors:** DC WATER’s Board is composed of 11 principal and 11 alternate members: six District of Columbia representatives, two each from Montgomery and Prince George’s counties in Maryland, and one from Fairfax County in Virginia. The mayor of the District of Columbia appoints, and the DC Council confirms, all six District Board members and alternates, including the Chairman. In addition, the Mayor appoints the five principal and alternate members who represent the surrounding jurisdictions based on executive submissions from those jurisdictions. Board members participate in decisions directly affecting the management of joint-use facilities. The District of Columbia members participate in those matters that affect District ratepayers and in setting fees for various services.

**Code of Federal Regulations (CFR):** Codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the federal government.

**Code of Good Practice:** Developed by the National Biosolids Partnership as a broad framework of goals and commitments to guide the production, management, transportation, storage, and beneficial use or disposal of biosolids. DC WATER has committed to upholding the code.

**Continual improvement:** The process of enhancing the biosolids program and its EMS to achieve improvements in overall environmental performance in line with DC WATER’s environmental policy.

**Contractors:** Private companies that provide a service to DC WATER through contractual agreements.

**Corrective actions:** Specific actions and steps taken to correct DC WATER’s non-compliance with legal and other requirements or non-conformance with procedures, and to mitigate any resultant impacts to the environment or to public perception.

**Critical control points:** Operational areas that impact biosolids quality and, in turn, can affect biosolids compliance and public acceptance. Officially, those locations, unit processes,

events, and activities throughout the biosolids value chain under the organization's direct control or influence that require effective policies, programs, procedures, practices, monitoring, and measurements to ensure the biosolids activities meet legal, quality, and public acceptance requirements and do not have undesirable environmental impacts. Critical control points include all biosolids management activities that are covered under applicable legal and other requirements.

**DWT workplan/biosolids goal:** Desired outcomes from the biosolids management program to support the program's policy, and related to the overall Department of Wastewater Treatment work plan and Board of Director focus areas, goals, and objectives.

**DWT workplan/biosolids milestones:** Concrete, measurable activities to be taken to achieve biosolids goals. Milestones also are known as the "action plan."

**Emergency procedures:** A set of standard emergency instructions and practices for employees describing the "how to" steps in managing emergency situations that may affect biosolids quality and compliance with legal and self-imposed requirements.

**EMS Elements:** The standards or benchmarks by which the EMS should be developed and to which the program will be assessed.

**Environmental impacts:** Include any change to the environment (positive or negative) including public health, public nuisance and odors that wholly or partially result directly or indirectly from DC WATER's biosolids activities, products or services.

**Environmental Management System (EMS):** Composed of 17 Elements that describe and document the way DC WATER manages its biosolids program by identifying the areas critical for regulatory compliance, by setting clear and attainable goals, by setting a mechanism for periodic review of all the areas of the system, and by involving the public and stakeholders in the process. The National Biosolids Partnership has created an EMS standard codifying the 17 elements and that can be audited by a third party. DC WATER has reorganized the 17 elements to suit its own biosolids management system, and has moved away from using the term "EMS."

**Incident:** Atypical positive or negative events that cause or may cause an interruption to, a reduction in, or an enhancement of desired biosolids management program outcomes. Negative incidents can include biosolids spills, odor complaints, equipment failures, or accidents. While most incidents that require reporting are negative, positive incidents can include seizing opportunities to make equipment or processes more efficient and effective, or to implement prevention measures; an unsolicited report on field conditions; or a farmer remarking on biosolids benefits.

**Indicator:** A value used to assess progress toward milestones.

**Interested parties or stakeholders:** Individuals, groups, or other public/private organizations interested in, involved with, or otherwise affected by DC WATER's biosolids management activities. This includes customers, farmers, regulators, local/state government officials, community residents, the media, environmental and public interest groups, university professors, agency staff, and the general public. DC WATER staff responsible for communication and public outreach for the biosolids PROGRAM maintains

a current list of internal and external stakeholders, their affiliation, and details on how to contact them.

**Internal audit:** An audit is a systematic review of conformance against the National Biosolids Partnership biosolids EMS requirements or other standards adopted by DC WATER. DC WATER can use internal staff or hire an audit contractor to perform these audits. The audit is a key step in continuously improving the agency's biosolids EMS and program.

**MAXIMO:** Tracks maintenance staff work activity; preventive maintenance schedules; and mechanical and electrical asset, location, and maintenance information obtained and reported.

**Metropolitan Washington Council of Governments (COG):** COG is a regional organization of Washington DC area local governments, composed of 21 local governments surrounding the nation's capital, plus area members of the Maryland and Virginia legislatures, the US Senate, and the US House of Representatives. The Biosolids Workgroup has a representative that helps staff in track pertinent legislative and regulatory issues and provides insight and input into biosolids program management.

**Monthly Report to the General Manger:** Reports biosolids quantity and characteristics, end-use data, incidents, and operational changes for the previous month.

**National Association of Clean Water Agencies (NACWA) [formerly Association of Metropolitan Sewerage Agencies (AMSA)]:** Represents the interests of the country's wastewater treatment agencies, true environmental practitioners that serve the majority of the sewered population in the United States, and collectively treat and reclaim more than 18 billion gallons of wastewater each day. AMSA maintains a key role in the development of environmental legislation, and works closely with federal regulatory agencies in the implementation of environmental programs.

**National Biosolids Partnership (NBP):** A not-for-profit alliance among the Water Environment Federation (WEF), the Association of Metropolitan Sewerage Agencies (AMSA), and the U.S. Environmental Protection Agency (EPA) whose purpose is to promote safe and environmentally sound biosolids management. See [www.biosolids.org](http://www.biosolids.org).

**Nonconformance:** A deviation from the established biosolids management program and EMS requirements that has the potential to create a non-compliance situation, significant environmental impact, or public perception issue.

**Notice and Necessary Information Sheet (NANI):** Reporting document that certifies that our Biosolids meet class B standards. This report contains metals concentrations, and Class B pathogen reduction and vector attraction reduction data.

**O&M:** Operations and maintenance.

**Operational controls:** The major functions within each of the critical control points that can affect biosolids compliance with legal and other requirements and/or its public acceptance. These include standard procedures (SPs), work practices, process controls, monitoring, periodic reports, and inspections, as well as others mandated by ordinances, permits, and other requirements.



**Other requirements:** Voluntarily binding biosolids management practices and environmental requirements to which DC WATER subscribes as part of its EMS for biosolids.

**Outcomes:** The NBP requires that participants in the EMS have outcomes in four key areas to ensure their EMSs are effective: regulatory compliance, environmental performance, quality management practices, and relationships with interested parties.

**Part 503 Rule:** The US Environmental Protection Agency regulation providing comprehensive requirements for managing biosolids generated during the process of treating municipal wastewater. It provides incentives for beneficial use of biosolids and requires regular reporting by generators. It is part of the Code of Federal Regulations, Title 40, Protection of the Environment.

**Policy:** Guiding principles intended to influence and determine decisions, actions, and other matters related to the biosolids management program. The policy supports DC WATER's overall vision and mission, and the biosolids management program's vision and mission.

**Preventive actions:** Specific actions and steps taken to identify, analyze, and eliminate the root causes of noncompliance and/or non-conformance and to put in place permanent solutions that prevent a recurrence.

**Publicly Owned Treatment Works (POTW):** A sewage or municipal wastewater treatment facility.

**Service level agreement:** The contract between DC WATER and other person(s) to perform specific acts in relation to biosolids management.

**Spill:** Accidental discharge of biosolids during transportation.

**Stakeholders or interested parties:** See "Interested parties or stakeholders."

**Standard procedure (SP):** Set of standard work instructions and practices for employees describing the "how to" steps in managing critical control points of a specific management activity affecting biosolids quality and compliance with legal and self-imposed requirements.

**Supervisory Control and Data Acquisition (SCADA):** Category of operations instrumentation monitoring system DC WATER uses.

**Virginia Water Environment Association (VWEA):** A member association of the Water Environment Association. A not-for-profit association of professionals in the wastewater industry committed to keeping Virginia's water clean. It trains wastewater professionals, disseminates technical information, and promotes sound policies to benefit society through protection and enhancement of our water environment.

**Water Environment Federation (WEF):** A not-for-profit technical and educational organization with members from varied disciplines who work toward the WEF vision of preservation and enhancement of the global water environment.

**Water Environment Research Foundation (WERF):** A not-for-profit research organization with members from varied disciplines who are dedicated to advancing science and



technology addressing water quality issues as they impact water resources, the atmosphere, the lands, and quality of life.