



# National Biosolids Partnership



*Protecting Our Water Environment*



*Metropolitan Water Reclamation District of Greater Chicago*

## EMS TRAINING

Environmental Management  
System for Biosolids

# Overview

What is an EMS?

Why do we have an EMS for Biosolids?

What is your role in the EMS?

# We produce two products

- ▣ Clean effluent
- ▣ High quality biosolids



# We play a critical role in protecting the local environment

Our community relies on us to:

Keep our rivers and lakes clean

Protect public health and

Recycle valuable nutrients



# The Biosolids Challenge

Many Biosolids Controversies around the United States create challenges, such as:

- ▣ Allegations of deaths/illness from biosolids
- ▣ Odor impacts
- ▣ Worker Health & Safety
- ▣ Congressional Inquiry
  - 2010 Rep. Mautino
- ▣ Local Bans/Ordinances
  - Pembroke Township



# Biosolids Programs Are Under Increasing Pressure...

- ❑ Public concerns about land application of biosolids
- ❑ Lack of trust in government
- ❑ Potential disconnect between generators and contractors
- ❑ Increasing restrictions and bans on land application



To help address challenges associated with Biosolids management the District is a participant in the National Biosolids Partnership EMS program



# Overview

What is an EMS?

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# What is an EMS?

An EMS is framework to identify and act on opportunities to improve in the following areas:

- Regulatory compliance
- Product and service quality
- Credibility with stakeholders
- Internal communication
- Emergency preparedness and response



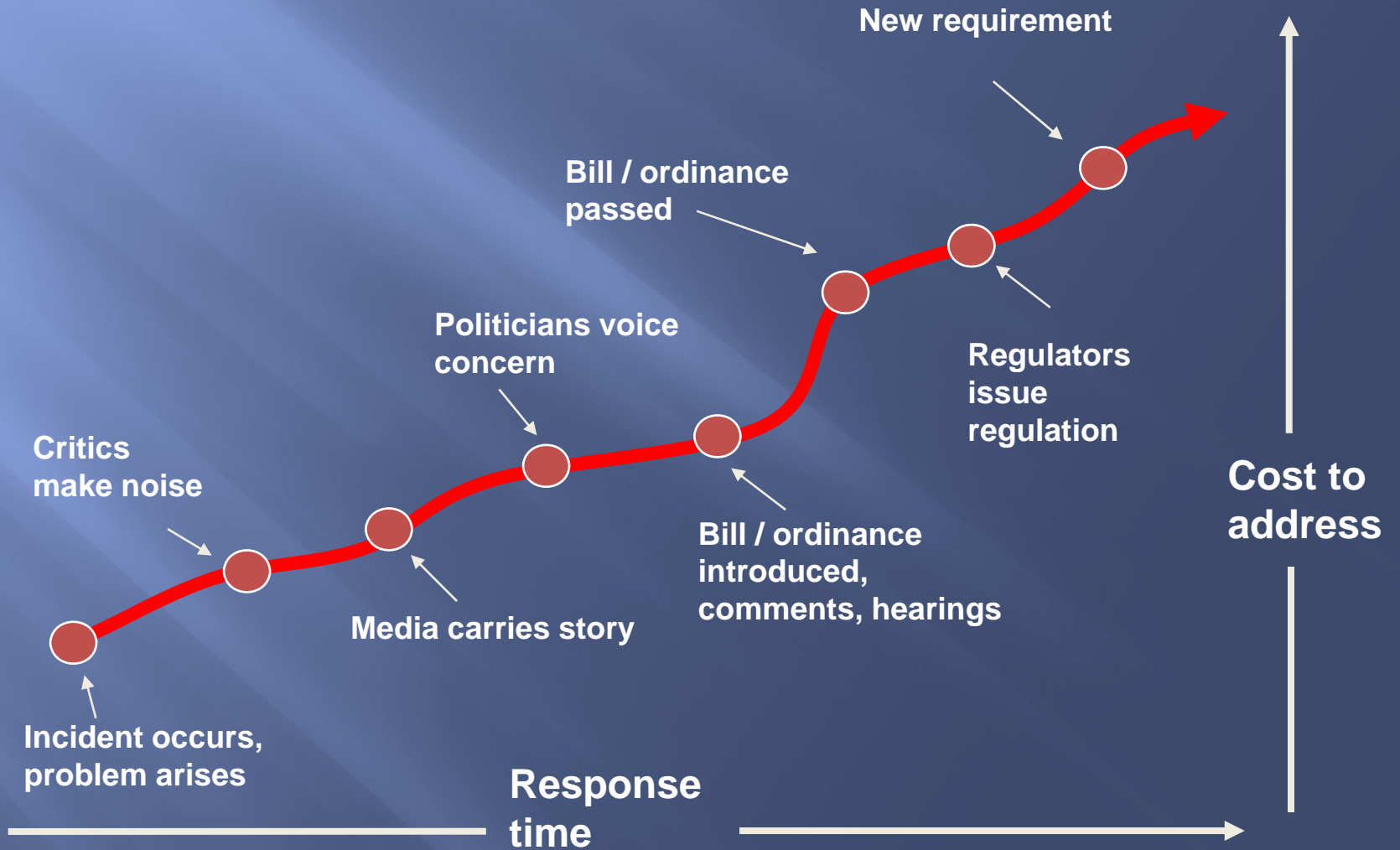
# EMS drives utilities to achieve and demonstrate high performance

- ▣ Produce consistent, high-quality products and services
- ▣ Meet or exceed regulatory requirements
- ▣ Engage opponents and supporters more effectively
- ▣ Avoid mistakes that can result in negative publicity or costly fixes
- ▣ Track and report achievements and performance - both internally and externally
- ▣ In the case of biosolids, maintain long-term viability of end use options

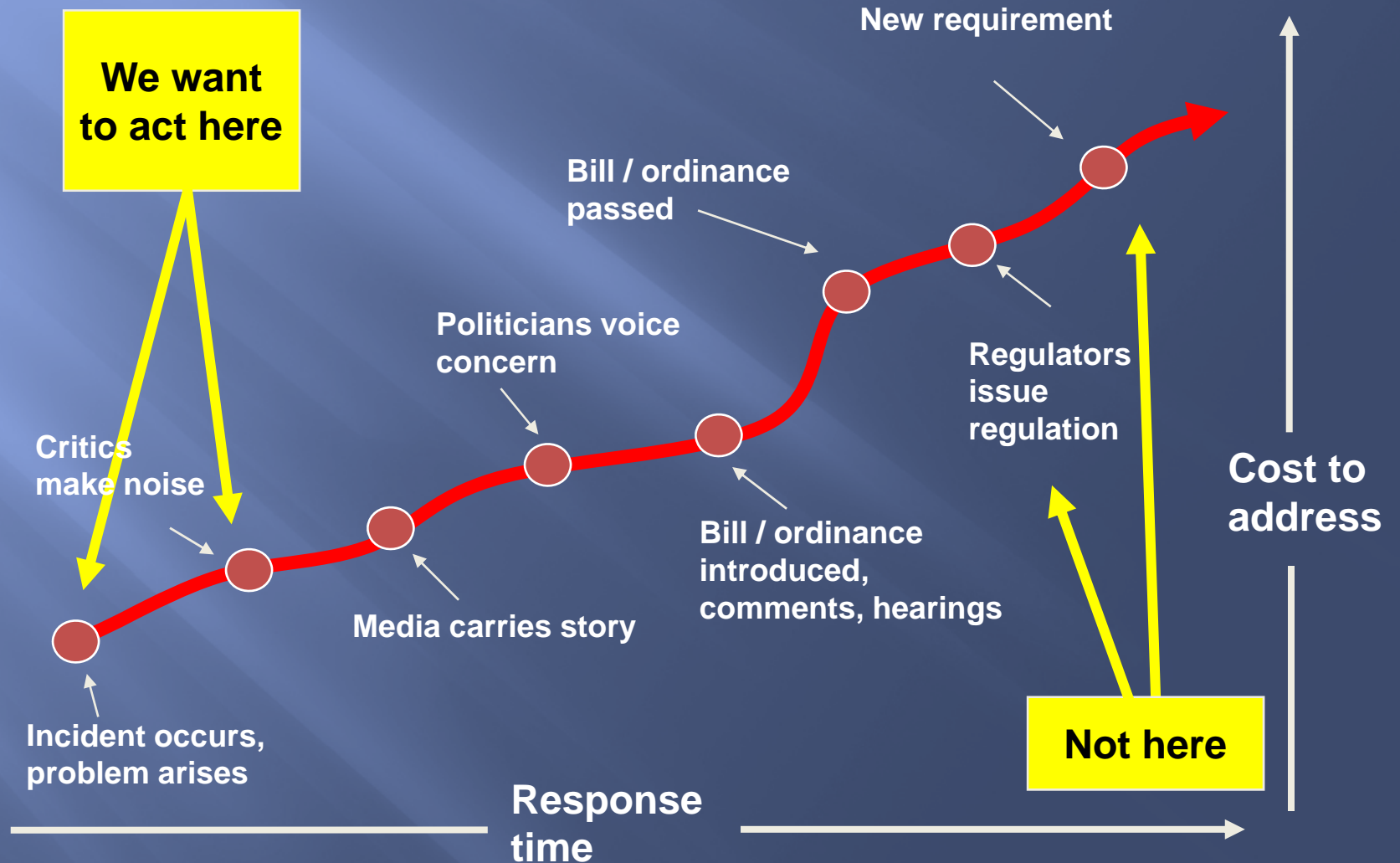


**FOLLOWING AN EMS  
IMPROVES RESPONSE TIME  
IN ADDRESSING ISSUES  
BEFORE THEY BECOME  
COSTLY**

# Response Time Vs. Cost to Address



# EMS improves reaction time and overall response



# Basic Components of an EMS

- ▣ Identify principles and priorities
- ▣ Establish Goals and Objectives
- ▣ Identify performance indicators
- ▣ Implement action plan
- ▣ Measure improvements
- ▣ Demonstrate performance

# EMS 17 Elements

- ▣ Building blocks of the NBP EMS framework
- ▣ Minimum requirements that an organization must meet to receive 3rd party certification from the NBP

## EMS Elements

- Overview and Policy
  - 1 — EMS Manual
  - 2 — Biosolids Management Policy
- Planning
  - 3 — Critical Control Points
  - 4 — Legal and Other Requirements
  - 5 — Goals and Objectives
  - 6 — Public Participation and Planning
- Implementation
  - 7 — Roles and Responsibilities
  - 8 — Training
  - 9 — Communications
  - 10 — Operational Control of Critical Control Points
  - 11 — Emergency Preparedness and Response
  - 12 — EMS Documentation and Document Control
- Measurement and Corrective Action
  - 13 — Monitoring and Measurement
  - 14 — Nonconformances: Preventive and Corrective Action
  - 15 — Periodic Biosolids Management Program Performance Report
  - 16 — Internal EMS Audit
- Management Review
  - 17 — Periodic Management Review of Performance

# Biosolids EMS Promotes Four Key Outcomes

## **Quality Management Practices**

Ensure consistent  
product quality

## **Relations with interested parties**

Establish and maintain  
credibility

## **Regulatory Compliance**

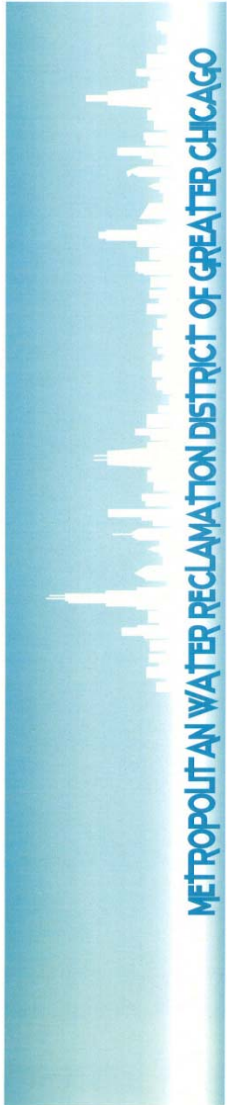
Meet or exceed  
compliance with  
regulatory requirements

## **Environmental Performance**

Protect the  
environment for future  
generations



# Our EMS policy defines our commitment to protecting the environment



## MWRDGC BIOSOLIDS POLICY

The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) is committed to following the principles set forth in the National Biosolids Partnership's Code of Good Practice in all aspects of its biosolids management programs as listed below:

### NBP CODE OF GOOD PRACTICE

**Compliance:** To commit to compliance with all applicable federal, state, and local requirements regarding operations and reclaimed water production at the wastewater treatment facility, and management, transportation, storage, and use or disposal of biosolids away from the facility.

**Product:** To provide biosolids that meet the applicable standards for their intended use or disposal.

**Environmental Management System:** To develop an environmental management system for biosolids that includes a method of independent third party verification to ensure effective on-going biosolids operations.

**Quality Monitoring:** To enhance the monitoring of biosolids production and management practices.

**Quality Practices:** To require good housekeeping practices for biosolids production, processing, transport, and storage, and during final use or disposal operations.

**Contingency and Emergency Response Plans:** To develop response plans for unanticipated events such as inclement weather, spills, and equipment malfunctions.

**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.

**Preventive Maintenance:** To prepare and implement a plan for preventive maintenance for equipment used to manage biosolids and wastewater solids.

**Continual Improvement:** To seek continual improvement in all aspects of biosolids management.

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

### THE MWRDGC IS ALSO COMMITTED TO:

- Generating and utilizing all biosolids in a responsible manner which comply with all requirements of the MWRDGC's permits and applicable federal, state, and local regulations.
- Providing multiple avenues of utilization of biosolids as the MWRDGC believes that diversity leads to competition and subsequently lower costs to the taxpayer.
- Continually maximizing the proportion of biosolids beneficially utilized through land application programs and the MWRDGC's Controlled Solids Distribution Program.
- Instilling public confidence in the MWRDGC's biosolids activities through consistent production of a high quality biosolids product.

[www.mwrdd.org/mo/biosolids](http://www.mwrdd.org/mo/biosolids)    [www.biosolids.org](http://www.biosolids.org)

Policy adopted March 15, 2004. Revised February 20, 2007.

Why do we have an EMS for  
Biosolids?

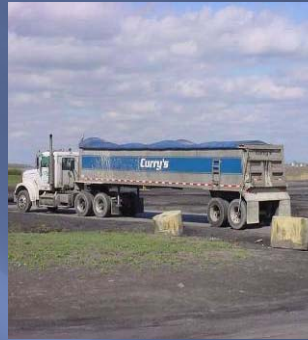
# We need to understand and be responsive to what our “interested parties” care about



- ❑ Pathogens
- ❑ Metals
- ❑ Organic pollutants
- ❑ Odor
- ❑ Color
- ❑ Texture
- ❑ Particle size / hardness
- ❑ Percent solids
- ❑ pH / calcium



# We need to manage our biosolids value chain to ensure product quality



- ◆ Think of biosolids as a product, not a by-product
- ◆ Manage key activities that impact biosolids quality and the environment
- ◆ Follow best practices and have documented procedures for key activities

# What do you need to know

- ▣ Managers and staff should understand
  - Why the organization has an EMS
  - What role we play in protecting the environment
  - The commitments we have made as an organization to protecting the environment
  - How your job responsibilities are related to ensuring product quality and preventing environmental impacts
  - Critical Control Points

# We all have a role to play



Protect public  
health and the  
environment

# Your role in Biosolids

- Members of the staff from all Departments.
  - Include, but no limited to: Engineers, Engineering Technicians, ACOE, TPOs, OEs, Laborers and Firemen/Oilers, PCO's and Soil Scientists. **(See TPO and OE Training Document (attachment))**
- The Critical Control Point (CCP) Table is to be used as the main EMS training guide for all operations positions. It must be reviewed by operations staff each year to ensure knowledge and compliance of stated responsibilities. **(Official copy of each WWTP's CCP Table is located at [www.mwrd.org](http://www.mwrd.org))**
  - During meetings, held in small groups or individually, discuss how their performance individually and collectively affects the production of biosolids.
- Extend EMS awareness to all coworkers in their work Units.

# Critical Control Point Tables

Biosolids Value Chain	CCP	Operational Controls	Potential Environmental Impacts	Monitoring/Measuring/Record Keeping	Primary Person Roles/Responsibilities
Wastewater Collection and Pretreatment	Residential Discharges	<ul style="list-style-type: none"> <li>Public Outreach</li> <li>Household hazardous waste collection(HHW)</li> </ul>	<ul style="list-style-type: none"> <li>Poor surface water quality</li> <li>Metals accumulation in biosolids</li> </ul>	<ul style="list-style-type: none"> <li># Educational outreach events</li> <li>HHW Event Summaries</li> </ul>	Section 071 Manager of Public Affairs (X17909); Section 643 CE (X16553)
	Industrial Discharges	<ul style="list-style-type: none"> <li>Permits – DA</li> <li>Pretreatment Inspections</li> <li>SPCC Plans (Spill)</li> <li>TOMP Plans (Toxics)</li> <li>Sewage &amp; Waste Control Ordinance</li> <li>Field Surveillance and Enforcement Action</li> <li>Regulated community outreach</li> </ul>	<ul style="list-style-type: none"> <li>Pipe Corrosion</li> <li>Process upsets – poor quality surface water &amp; biosolids</li> <li>Metals accumulation in biosolids</li> <li>Violation of NPDES Permit</li> <li>Fish Kills</li> <li>Explosions</li> </ul>	<ul style="list-style-type: none"> <li>Random Sampling</li> <li>Inspections</li> <li>Continuous Sampling</li> <li>Interceptor Sampling</li> <li>IEPA Annual Pretreatment Report</li> <li>Notices of Noncompliance</li> <li>Cease and Desist Orders</li> <li>Semi-annual Continued Compliance Reports</li> <li>Discharge Authorizations</li> <li># of outreach events</li> </ul>	Section 192 (X13050) Section 195 PCO / (X63577)
	Spills into Collection System	<ul style="list-style-type: none"> <li>Sewage &amp; Waste Control Ordinance</li> <li>Enforcement</li> <li>Regulated community outreach</li> </ul>		<ul style="list-style-type: none"> <li>Incident Report</li> <li># of outreach events</li> </ul>	Section 195 PCO / (X63577)



# Reporting a problem “nonconformance” Element 14 of the EMS Manual

- ❑ Issue with biosolids quality
- ❑ Spill or incident that could impact the environment or affect worker safety
- ❑ Situation that could cause a permit violation or has potential to result in negative impact to the environment
- ❑ Failure to follow a procedure that could cause a problem



**Notify your supervisor. The supervisor should notify the EMS Coordinator.**

# Communications

- ▣ Communicate internally and externally through:
  - MWRD Intranet - Biosolids Page
  - Meetings and correspondence w/ interested parties
  - Annual performance report
  - Document control
  - Recordkeeping
  - Training Documents for all EMS responsible staff
  - Goals and Objectives development

NBP Seal of Approval – 2008  
Platinum Certification – 2009





Daniel E. Collins

EMS Coordinator

[www.mwrd.org](http://www.mwrd.org)

[Departments](#) >> [Maintenance & Operations](#) >> [EMS for Biosolids](#)

[www.biosolids.org](http://www.biosolids.org)