City of Los Angeles

Biosolids Environmental Management System
Executive Summary

October 2004

INTRODUCTION

The City of Los Angeles, Department of Public Works, Bureau of Sanitation is responsible for collection, treatment, and disposal of wastewater and its by-products. The Bureau of Sanitation operates four wastewater treatment facilities (Hyperion, Terminal Island, Donald C. Tillman, and Los Angeles Glendale) within a 600 square mile area that services 3.7 million people and 29 contracting cities and agencies. The treatment facilities are divided into service areas. The Hyperion, Donald C. Tillman, and Los Angeles Glendale treatment facilities are included under the Hyperion service area, which processes approximately 450 million gallons per day of wastewater. The Terminal Island treatment facility located in the Terminal Island service area processes an average of 15 million gallons per day of wastewater.

The Hyperion Treatment Plant (HTP) and Terminal Island Treatment Plant (TITP) are responsible for managing the biosolids that are produced from the wastewater processing. HTP and TITP produce approximately 650 and 50 wet tons of Exceptional Quality biosolids per day, respectively. The overall biosolids program is managed by HTP. From 1957 to 1987, biosolids produced at HTP were disposed in the ocean. Between 1987 and 1989, biosolids were disposed in landfills. In 1989, the City started an extensive beneficial reuse program and has continued to beneficially reuse all the biosolids produced at HTP and TITP since that time. In 1989, 1994, and 2003, the City received national awards from the U. S. EPA for its beneficial reuse program. Currently, biosolids are beneficially reused by composting and land application. The City owns a 4688-acre Green Acres Bio-Farm in Kern County where approximately 97% of biosolids are land applied. The remaining biosolids are reused by composting at the City's Griffith Park Composting Facility.

The Industrial Waste Management Division (IWMD) of the Bureau of Sanitation manages the pretreatment program. IWMD is responsible for regulating industrial users discharging into the City's collection system and treatment facilities. Currently there are over 6,000 industrial users discharging into the City's system, of which over 200 are designated as significant industrial users.

The Bureau of Sanitation biosolids policy commits to developing an Environmental Management System (EMS) for its biosolids program. The EMS is a management tool being utilized by the City to document regulatory compliance requirements for the management of biosolids and to gain public confidence and acceptance of its biosolids beneficial reuse program. In 2002, the City started the EMS implementation. The Assistant Director of Treatment Plant Operations is responsible for the implementation and management of the Biosolids EMS. The EMS Coordinator is responsible for working with the Assistant Director to meet all the requirements for maintaining the Biosolids EMS.

The biosolids EMS documents monitoring results of biosolids processing and reuse, regulatory issues, reuse contracts, standard operating procedures (SOPs), response

plans, goals and objectives. These documents and records are maintained in a database called Biosolids EMS Document and Recordkeeping Tracking System (BEDRTS). The database provides detailed information about the biosolids program with the intent to involve the public in the development of goals and objectives for the program. The EMS outlines a public participation program and various methods of communication that encourage feedback from special interest groups and the public. The feedbacks are used to identify goals and objectives for the biosolids program and to address issues that are of concern to the public.

An annual biosolids program performance report is published by the Bureau of Sanitation and made available to the public. The report includes biosolids performance, monitoring and measurement results that ensure compliance with regulations, successes and failures of the program, meeting goals and objectives, contractors' performance, audit results, and public feedback, suggestions, and ideas.

The City had an independent audit of its EMS based on the National Biosolids Partnership (NBP) guidelines. In September 2003, the City's EMS was verified by an outside audit firm and received a certification from the NBP for developing an EMS that encourages public participation, follows best management practices, demonstrates environmental performance, exceeds regulatory compliance, and commits to continual improvement for its biosolids program. The audit results were made available to the public.

The City will annually conduct an internal EMS audit to ensure meeting the NBP requirements and following the procedures outlined in the EMS manual. The internal audit results will be reviewed by management and used to determine if changes are necessary to improve the Biosolids EMS. The internal audit results will be made available to the interested parties and the public. An independent auditor will perform re-certification every five years to ensure that continual improvements are made and system health is maintained.

The City is committed to managing its biosolids in an environmentally sound, socially accepted, cost-effective, and safe manner. Implementation of the biosolids EMS will help achieve this goal through documentation of the program, public participation, and communication.

EMS ORGANIZATION AND PROCEDURES

The City of Los Angeles biosolids EMS includes seventeen elements based on the guidelines established by the National Biosolids Partnership (NBP) as shown in Table #1. Each element contains a set of procedures that will be implemented in order to have a successful biosolids EMS. An EMS Plan contains the requirements for each element. The plan was developed based on the existing biosolids program and changes

made to the program that will encourage public participation and enhance the public relations efforts of the City.

Table #1: EMS Organization

Category	Element #	Element Name
Policy	1	EMS Documentation
	2	Biosolids Management Policy
Planning	3	Critical Control Points
	4	Legal and Other Requirements
	5	Goals and Objectives for Continual Improvement
	6	Public Participation in Planning (some requirements addressed in Element 9)
Implementation	7	Roles and Responsibilities ▪ Bureau of Sanitation Management level
	8	Training
	9	Communication Internal (addresses some Element 12 requirements) ▪ External (includes some Element 6 requirements)
	10	Operational Control of Critical Control Points
	11	Preparedness and Response Plans
	12	EMS Documentation, Document Control and Record keeping (some requirements addressed in Element 9)
Measurement and Corrective Action	13	Monitoring and Measurement
	14	Nonconformance: Preventive and Corrective Action (some requirements addressed in Element 16)
	15	Biosolids Management Program Performance Report (documentation supporting the report addressed in Elements 6 and 12)
	16	Internal EMS Audit (some requirements addressed in Elements 6 and 14)
Management Review	17	Periodic Management Review of Performance

EMS PROCEDURES

ELEMENT 1
EMS DOCUMENTATION

1. Review and update the EMS plan.
2. Review and update the EMS procedures.
3. Review and update the EMS element summaries.
4. Review and update the EMS element documentation and responsibility tables.
5. Review and update the internal EMS audit forms.
6. Review and update the BEDRTS.
7. Review and update the BEDRTS master document list.

Revisions should be based on:

a) Management review recommendations and approved changes
b) Internal EMS audit report
c) Nonconformance forms and report
d) Changes to the biosolids management and EMS program approved by the EMS coordinator and management
e) Third party verification audit results
f) Changes to applicable legal and other requirements

Note: The EMS coordinator shall be responsible for reviewing and updating the EMS documentation

ELEMENT 2
BIOSOLIDS MANAGEMENT POLICY

1. Update biosolids policy as necessary to ensure compliance with all regulations, conformance with NBP Code of Good Practice, and to address continual improvement to the biosolids program.
2. Obtain approval from the Board of Public Works, City Council, and Mayor.
3. Provide a current copy of the biosolids policy statement to each division/section that support biosolids activities.
4. Include the current biosolids policy statement in the EMS, BEDRTS, and on the EMS websites.
5. Communicate the biosolids policy to all employees that support biosolids activities.
6. Make available and provide the biosolids policy statement to interested parties identified in Element 6 and others upon request

ELEMENT 3
CRITICAL CONTROL POINTS

1. Review and revise the critical control points that influence the management of the biosolids program when there is a change in:
   a) Operational control
   b) Goals and objectives
   c) Legal and other requirements
2. Update the critical control points and summaries as necessary to maintain currency in the biosolids program.

ELEMENT 4
LEGAL AND OTHER REQUIREMENTS

1. Provide copies of all regulations and legislation on the federal, state, and local level that affect biosolids management to the EMS coordinator and to each division that is affected by the regulation.
   - Environmental Impact Reports
   - HTP and TI NPDES permits
   - U. S. EPA 40 CFR Part 503
   - County Biosolids Ordinances
   - State Water Resources Control Board General Order
   - Regional Water Quality Control Board General Order
   - Los Angeles Municipal Code
   - CWEA Manual of Good Practice for Agricultural Land Application of Biosolids
   - New requirements
2. Update and revise the BEDRTS when changes to or new legal requirements are implemented. Changes should be made to documents or records per the document revision system outlined in Element 12.
3. Notify the EMS coordinator of all proposed rules and regulations on the federal, state, and local level that could potentially affect biosolids management.
4. Coordinate comments with all divisions/sections that support biosolids activities on proposed regulations and legislation that could affect the biosolids program.
5. Review and revise the documentation and tracking system procedures used to notify each division/section of any proposed regulation or legislation that could potentially affect biosolids management.
6. Maintain and update the regulation and legislation tracking system.
7. Provide interpretation, clarification, and information on regulations and legislation to each division that support biosolids activities

ELEMENT 5
GOALS AND OBJECTIVES FOR CONTINUAL IMPROVEMENT

1. Review and revise the goals and objectives for the biosolids program based on the legal and other requirements identified in Element 4.
2. Provide goals and objectives that are consistent with the current biosolids policy statement.
3. Review and revise the goals and objectives so that they are consistent with changes in:
   a) Significant environmental aspects and impacts
   b) Technology
   c) Financial requirements
   d) Operational critical control points
   e) Market conditions
   f) Latest scientific findings
4. Communicate the goals and objectives identified by the Bureau management and each division to the employees that support biosolids activities.
5. Update the BEDRTS and the Element 1 documents based on changes to the goals and objectives for the biosolids program.
6. Make the goals and objectives available to interested parties.

ELEMENT 6
PUBLIC PARTICIPATION IN PLANNING

1. Review interested party list and revise to ensure public participation in the biosolids program and EMS process.
2. Notify interested parties when significant changes are being considered to:
   a) EMS procedures
   b) Biosolids Policy
   c) Critical control points
   d) Public participation program
   e) Biosolids program
3. Review and revise the public participation program based on:
   a) Continual improvements to biosolids program
   b) Changes implemented by management
   c) Feedback received from the public and approved by management
   d) New beneficial use options and/or changes to existing programs
4. Update the EMS website with:
   a) Significant changes to EMS
   b) Changes to biosolids policy
   c) New goals and objectives
   d) Annual performance report
   e) Third party verification audit results
   f) Approved feedback received from interested parties

5. Provide feedback to inquiries received from the public before or within 72 hours.
6. Verify that facility tours and the public outreach materials include information about the EMS.
7. Maintain and update the inquiry tracking system.
8. Review and revise the feedback systems on the EMS websites to ensure accessibility for the public

ELEMENT 7
ROLES AND RESPONSIBILITIES

1. Each division/section create, update, and revise documents, files, and records per the document tracking system outlined in Element 12.
2. Each division/section that supports biosolids activities review, revise, and communicate your roles and responsibilities in the management and implementation of the EMS.
3. Each division/section that supports biosolids activities identify human, technical, and financial resources required to continue the successful implementation of the EMS. Forward the information to the EMS Coordinator.
4. EMS Coordinator analyzes the human, technical, and financial resources information received from each division/section manager and prepares a recommendation for management review.
5. EMS Coordinator submits recommendation to management for review and response.
6. EMS Coordinator communicates management decision on the recommendation to each division that supports biosolids activities. Incorporate the changes into the EMS.
7. Review and revise as necessary the roles and responsibilities of the biosolids contractors.
8. Division manager responsible for the EMS reviews and revises the roles and responsibilities for the EMS coordinator.

ELEMENT 8
TRAINING

1. Review and revise the EMS and biosolids training programs to ensure those personnel responsible for biosolids activities are competent in performing their assigned tasks and duties.
   a) Review and update tracking system that maintains records of all training delivered
   b) Document individual employee training
   c) Review and update employee competency testing.
2. Review and revise the EMS and biosolids training program based on current:
   a) Biosolids policy
   b) Goals and objectives
   c) Legal and other requirements

d) Operational critical control points
e) Revisions to EMS

3. Review and revise contractor-training program for biosolids to ensure it is consistent with the Bureau's policy, goals and objectives, and the EMS.
4. Review the division/section roles and responsibilities tables located in Element 7 to verify that new employees that support biosolids activities have received the EMS training.

ELEMENT 9
COMMUNICATION

1. Review and update monthly the BEDRTS based on changes to the EMS and the biosolids program. Use the results from:
   a) Internal EMS Audit
   b) Management review report
   c) Third party verification audit results
   d) Nonconformance forms and reports
   e) Changes received from each division/section that supports biosolids activities.
2. Review and update the roles and responsibilities of the EMS coordinator as they pertain to EMS communication and public outreach.
3. Verify that EMS web sites are updated to include:
   a) Biosolids program performance annual report
   b) EMS plan and procedures
   c) Goals and objectives for biosolids program
   d) Third party verification audit results
   e) Roles and responsibilities for biosolids program
   f) Feedback from public and interested parties
4. Review and revise the inquiry tracking system to support public participation and communication procedures.
5. Review and revise the roles and responsibilities of the contractor concerning communication requirements for the biosolids program and the EMS.
6. Review and update the facility tours, biosolids program information, and the public outreach material with latest EMS information.

Element 10
OPERATIONAL CONTROL OF CRITICAL CONTROL POINTS

1. Review and update standard operational procedures for critical control points that include:
   a) Pretreatment operational procedures
   b) Dewatering operational procedures
   c) Digestion operational procedures
   d) Truck loading operational procedures
   e) Sampling, monitoring, and laboratory test procedures
   f) Legal and other requirements
   g) Other standard procedures identified for the biosolids program

2. Review and revise standard procedures for the biosolids contractors activities that include:
   a) Contract Requirements
   b) Truck loading procedures
   c) Land application procedures
   d) Site inspection procedures
   e) Monitoring procedures
   f) Communication procedures
   g) Permitting procedures
   h) Other procedures identified by the biosolids program
3. Review and revise standard procedures based on document revision system outlined in Element 12.

Element 11
PREPAREDNESS AND RESPONSE PLANS

1. Review and revise preparedness and response procedures that support biosolids activities.
2. Update as necessary the personnel from each division/section that are responsible for handling emergencies that relate to biosolids activities.
3. Test, review, and revise as necessary the preparedness and response procedures for biosolids activities.
4. Review and revise the contractor's emergency preparedness and response procedures as specified in the bid and contract documents.
5. Review and update the BEDRTS with current preparedness and response procedures.

Element 12
DOCUMENTATION, DOCUMENT CONTROL, AND RECORD KEEPING

1. Create, update, and make revisions to files, documents, and records per the document revision system.
2. Monthly review, and update files, documents, and records in the BEDRTS. Verify that:
   a) Latest copies are available
   b) Documents are orderly and legible
   c) Documents are retained for a specified time as determined by legal and other requirements
   d) Documents are revised per the document revision system
3. Review and update the BEDRTS master document list:
   a) When new documents are added
   b) When existing documents are changed, removed, and/or relocated
   c) When existing documents are renamed

4. Verify that hard copies of documents listed in the BEDRTS master document list are up to date and in the specified location.
5. Maintain and update the BEDRTS log. Include:
   a) Date reviewed
   b) Changes made and elements affected
   c) Who was notified of the change
5. Review and revise the contractor requirements for documentation and record keeping specified in the bid and contract documents.
6. Review and update the contractor documents located in the BEDRTS.

Element 13
MONITORING AND MEASUREMENT

1. Review and revise monitoring and measurement procedures and practices to ensure compliance with:
   a) HTP and TI NPDES permit requirements related to biosolids for:
      1) Pretreatment
      2) Digestion
      3) Dewatering
      4) Truck Loading
   b) Los Angeles Municipal Code requirements
      1) Industrial Users
   c) Compost facility requirements
      1) Integrated Waste Management Board
      2) Air Quality Management District
   d) U. S. EPA 40 CFR Part 503 requirements
   e) State and Regional Water Quality Control Board General Order
   f) County Ordinance requirements
   g) California Manual of Good Practice for the Agricultural Land Application of Biosolids.
   h) City of Los Angeles contract agreement with contractor
   i) Other legal requirements identified in Element 4
2. Update, file, and maintain the monitoring and measurement results in Element 12 of the BEDRTS.
3. Review and revise the contractor monitoring and measurement procedures and practices as specified in the bid and contract documents.

Element 14
NONCONFORMANCE: PREVENTATIVE AND CORRECTIVE ACTIONS

1. Complete a nonconformance form when any element of the EMS is in noncompliance or when internal corrective actions are taken relating to biosolids activities. Include nonconformance's related to:
   a) Legal and other requirements
   b) Operational control of critical control points
   c) Monitoring and measurement results

   d) Biosolids contract requirements
   e) Land application requirements
   f) Biosolids Policy
   g) EMS procedures and documentation
2. Element 12 that documents, maintains, and defines responsibility and authority for:
   a) Handling and investigating noncompliance with applicable regulatory requirements during routine monitoring and measurements or periodic internal EMS Audit.
   b) Handling and investigating nonconformance with internal EMS procedures
   c) Initiating, completing, and documenting necessary corrective and preventative action.

Element 15
BIOSOLIDS MANAGEMENT PROGRAM PERFORMANCE REPORT

1. Prepare a report annually that summarizes the:
   - Biosolids program
   - Goals and objectives identified and achieved
   - Monitoring and measurement results
   - Beneficial use options
   - Compliance/noncompliance with legal and other requirements
   - Contractor performance
   - Internal EMS audit results for the biosolids program
   - EMS nonconformance's
   - EMS management review report
   - Third party verification audit results
2. Review and update the report format template.
3. Publish the report and make available to interested parties identified in the public participation program under Element 6.
4. Place a copy of the report on City's EMS websites.

Element 16
INTERNAL EMS AUDIT

1. Distribute annually the internal EMS audit forms on February 1 to each division that supports biosolids activities. Request a response by March 15.
2. Select an internal auditor in April to conduct an internal EMS audit.
3. Request by April 15 that each division/section that supports biosolids activities:
   a) Turn in all nonconformance forms
   b) Submit outstanding items for EMS compliance
4. Review and revise by May 15 the EMS based on:
   a) Changes to biosolids EMS plan and procedures submitted during the year
   b) Changes submitted from the division/sections that support biosolids activities
   c) Changes to the Biosolids Policy
   d) Changes to the goals and objectives
   e) Compliance/noncompliance with legal and other requirements

f) Nonconformance forms and reports
g) Management changes and recommendations
h) Third party verification audit results
i) Changes in contractor requirements
j) Changes in public participation program
k) Changes to the communication program

5. Selected internal auditor conducts an internal audit of the EMS from June 1 to July 15.
   - Interview representatives from each division/section that supports biosolids activities
   - Conduct facility tours and include critical control points
   - Use nonconformance forms and report
   - Use third party verification audit results
   - Use management review report
   - Include the activities of the contractor in the internal EMS audit
6. Internal auditor completes audit and turns in audit forms and recommendations by July 15 to EMS coordinator.
7. Prepare annually a detailed and comprehensive internal EMS audit report by August 15.
8. Distribute the internal audit report by September 1 to the management review team.
9. Review and revise internal EMS audit program based on:
   a) Scope of audit
   b) Frequency
   c) Methodology
   d) Responsible agency
   e) Annual audit report

Element 17
PERIODIC MANAGEMENT REVIEW OF PERFORMANCE

1. EMS coordinator schedules an EMS management review meeting in October. Distribute for the meeting a copy of the latest:
   - Internal audit report
   - Nonconformance report
   - Annual biosolids program performance report
   - Third party verification audit results if available
2. Management review team (MRT) review and discuss the biosolids EMS and address the need for change to:
   a) Biosolids Policy
   b) Goals and objectives
   c) EMS procedures based on internal EMS audit results and report
   d) Nonconformance procedures
   e) Internal EMS audit procedures
   f) BEDRTS
   g) Operational control of critical control points

h) Public participation and communication program
i) Management review procedures

3. Record management comments and document changes or recommendations.
4. Prepare a management review summary and forward to management for approval.
5. Distribute approved summary to interested parties as identified in Element 6 and place on City's EMS websites.
6. Incorporate management recommendations and changes into the EMS and update Element 1 documents with the changes.