



City of Grand Rapids  
Environmental Services Department  
Policies and Procedures

<b>Title:</b> Element 1 – Documentation of Biosolids Management Plan	<b>Created by:</b> Dave Harris <b>Approved by:</b> William R Kaiser
<b>Policy Number:</b> 1103-1 Version: 7.0	<b>Effective:</b> 10/26/2017

### General

The City of Grand Rapids (City) provides wastewater collection and treatment for:

- City of Grand Rapids
- Ada Township
- Cascade Charter Township
- City of East Grand Rapids
- City of Kentwood (service area East of Breton avenue and West of Breton avenue tributary to the Wyoming CWP)
- City of Walker
- Gaines Charter Township
- Grand Rapids Charter Township
- Tallmadge Charter Township
- Wright Township

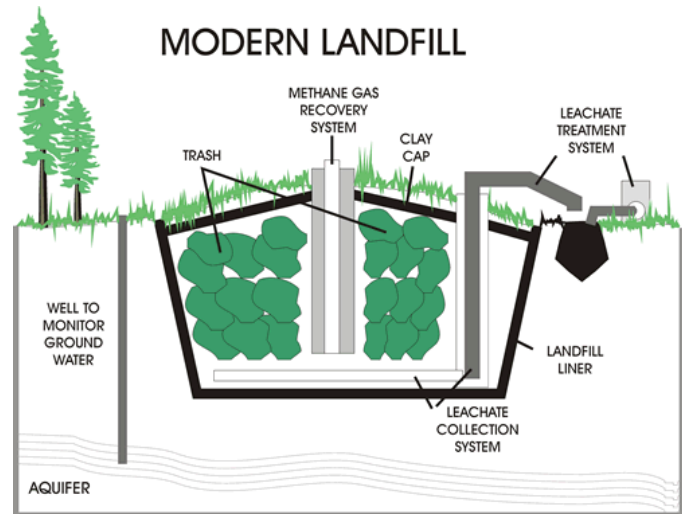
Wastewater treatment relies on both physical and biological processes. Two products are currently produced during this process: treated effluent and dewatered biosolids. The treated effluent is discharged into the Grand River. Biosolids are processed under a contract with the Grand Valley Regional Biosolids Authority (GVRBA). GVRBA is operated under a Joint Biosolids Management Project Agreement between the City of Grand Rapids and the City of Wyoming. The City of Wyoming also contracts with GVRBA to process all biosolids which are included in Wyoming's land application program.

The GVRBA started a composting pilot project with Spurt Industries. Biosolids was sent to compost facility from early March 2013 through June 2013, but the program was discontinued by the contractor. During March, April and May, approximately 65% of all GVRBA dewatered biosolids were used for composting through Spurt Industries. The other 35% was sent to landfill. At the present time, all of Grand Rapids and the GVRBA dewatered biosolids are sent and used by up to three local landfills as a source of organics and organisms to enhance the landfill bioreactor<sup>A</sup> technology which they utilize to accelerate biological breakdown of the waste and increase "biogas" production. The dewatered biosolids with other organics are mixed at a ratio of four (4) parts municipal solid waste (MSW) with one (1) part organics<sup>B</sup>. Resulting in;

- Expedited startup (gas production) of the landfill when dewatered biosolids are used as a source of microorganisms and organics.

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- Increased “biogas” production.
- “Biogas” offsets fossil fuel usage.
- Increase rate of decomposition of solid waste material in the landfill.
- The dewatered biosolids fill in the voids and require minimum landfill space.
- Shorter closure period after the landfill stops accepting waste.
- Biosolids help abatement of greenhouse gases because they help to stabilize “biogas” production for beneficial uses versus flaring or uncontrolled releases.



The “biogas” recovered from these landfills is beneficially utilized in several environmentally friendly ways. One of the landfills collects the “biogas” and then pressurizes and pumps it approximately three miles to a local soybean processing facility. There it is used to dry soybeans or in soy oil manufacturing processes and to produce electricity for onsite utilization. At another site the recovered “biogas” is used in generators to produce “green” electricity which helps offset the need for fossil fuels at generating plants.

At GVRBA, solids are stored in either the Primary Solids storage tank or the Waste Activated Solids storage tank. Stored solids are mixed with a dewatering agent and then dewatered in one of three centrifuges. The dewatered biosolids are stored in silos and then loaded into transport trucks and delivered to the composting facility or landfills. The dewatering equipment and silos are operated under contract by City employees while the loading and transport is performed by an outside contractor. The City is responsible for all critical control points in collection and treatment and also in processing at GVRBA. The Trucking Contractor is responsible for the proper loading and maintenance of their vehicles and has developed operational controls to manage their responsibilities<sup>CD</sup>.

This Biosolids Management Plan (BMP) manual provides a general description of the applicable policies, programs, plans, procedures, and management practices that have been established for each of the biosolids activities that are directly or indirectly controlled at each critical control point<sup>C</sup> within the biosolids value chain, including activities performed by contractors. The Biosolids Management Plan manual is organized into five sequential steps or categories required to effectively develop and implement a BMP. These five steps contain seventeen different elements, as shown below, which make up the body of the manual.

Table 1.1 BMP Elements

BMP Elements			
PLAN – DO – CHECK – ACT	Policy	1	Documentation of Biosolids Management Plan
		2	Biosolids Management Policy
	Planning	3	Critical Control Points
		4	Legal and Other Requirements
		5	Goals and Objectives
		6	Public Participation in Planning
	Implementation	7	Roles and Responsibilities
		8	Training
		9	Communication and Public Outreach
		10	Operational Controls of Critical Control Points
		11	Emergency Preparedness and Response
		12	BMP Documentation and Document Control
	Measurement & Corrective Action	13	Monitoring and Measurement
		14	Nonconformance: Preventive and Corrective Action
		15	Periodic Biosolids Program Performance Report
		16	Internal BMP Audit
	Management Review	17	Periodic Management Review of Performance

**1) Procedures**

- a) The Biosolids Management Plan manual is intended to be a “living” document. Revisions are expected as new information is obtained, changes to existing systems occur, problems are identified and corrected, and as experience is gained in administering the Biosolids Management Plan.
- b) Revisions to the Biosolids Management Plan manual will be coordinated by the BMP coordinator<sup>D</sup> in accordance with Element 12 “Documentation and Document Control” procedures.
- c) The BMP coordinator will inform the internal BMP team<sup>D</sup>, interested parties<sup>E</sup>, and the ESD Manager<sup>D</sup> of significant revisions to the BMP manual through one or more of the communication tools identified in Element 9 “Communication and Public Outreach.”
- d) The controlled<sup>F</sup> copy of the Biosolids Management Plan manual will be maintained on the ESD Sharepoint Site as specified in Element 12 “Documentation and Document Control”

**References**

- Appendix A Glossary
- Appendix B Tables, Figures, Forms
- Appendix C CCP Postings

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<sup>A</sup> Reference City Biosolids Management Plan web page “Biosolids Management Plan Information”, “The Bioreactor Landfill – An Innovation in Solid Waste Management”

<sup>B</sup> Reference Figure 3.3 (Page 3-7) ARRPET report “Enhancement of solid waste degradation using different operating techniques in bioreactor landfill” located on City Internet web page [www.ci.grand-rapids.mi.us/epsd/biosolids](http://www.ci.grand-rapids.mi.us/epsd/biosolids)

<sup>C</sup> Reference Element 3 Critical Control Points – Table 3.1 “Critical Control Points”

<sup>D</sup> Reference Element 7 Roles and Responsibilities – Table 7.3 “Internal BMP Team”

<sup>E</sup> Reference Element 6 Public Participation in Planning – Table 6.1 “Interested Parties” and Table 6.2 “Interested Parties Contact Information”

<sup>F</sup> Reference Element 12 BMP Documentation and Document Control

Figure 1.1 – Letter of Understanding



**Management Committee**

- Robert W. Hite  
Chief, Denver, CO
- Albert C. Gray, Ph.D., P.E.  
Webb, Alexandria, VA
- Ken Kirk  
AMS, Washington, DC
- Richard D. Kuchenther, Ph.D., P.E.  
Kansas City, MO
- James Hanton  
U.S. EPA, Adelphi, VA
- John M. Walker, Ph.D.  
U.S. EPA, Adelphi, VA

**Steering Committee**

- Cecil Luo-Hing, Ph.D.  
Grand Rapids, MI
- Hershel Elliott, Ph.D.  
Jersey City, NJ
- Richard Finger  
King County, WA
- Jane B. Forste  
Annapolis, MD
- Tim Frank  
Ft. Collins, CO
- James Horne  
U.S. EPA
- Ernie Kelley  
Waterbury, VT
- Robert O'Dette  
Houston, TX
- A. R. Rubin, Ph.D.  
Raleigh, NC
- Paul Schur  
Windsor, CT
- Prakasam Tata, Ph.D.  
Chicago, IL
- William E. Tolley  
Portland, OR
- Gary G. Van Riper, Ph.D.  
Lakewood, CO
- José Velasquez  
Denver, CO

**AMSAs Biosolids Management Committee**

- Robert P. Dominak  
Co-Chair, Cleveland, OH
- Raymond J. Kearney  
Co-Chair, Los Angeles, CA

**WEF Residuals & Biosolids Committee**

- Mark E. Lenc  
Co-Chair, Chesapeake, VA
- Richard Christy  
Co-Chair, York, PA

801 Wythe Street  
Alexandria, VA 22314-1994  
703 667-2118 fax  
703 667-2192 fax

December 17, 2004

The Honorable George Heartwell  
Mayor, City of Grand Rapids  
300 Monroe Avenue  
Grand Rapids, MI 49503

Dear Mayor Heartwell:

**LETTER OF UNDERSTANDING**

This agreement is between the City of Grand Rapids, Michigan (The City) and the National Biosolids Partnership (NBP) located in Alexandria, Virginia.

The City and the NBP agree to work together on a Demonstration Project to employ the Environmental Management System (EMS) blueprint for biosolids management developed by the NBP in Grand Rapids. The Demonstration Program, which includes approximately one hundred (100) Demonstration Projects across the nation, will take place from January 2000 through December 2006. The City will be recognized as one of the EMS Demonstration Projects identified within the NBP.

*Objectives of the Demonstration Program:*

The objectives of the Demonstration Program are to:

- 1) Assist organizations in establishing EMS's based on the "blueprint" developed by the NBP
- 2) Evaluate the components of the blueprint; and
- 3) Gather information about EMS implementation by the Demonstration Organizations that will allow the NBP to expand the EMS program to full-scale implementation in 2005.

*please visit our website at: [www.biosolids.org](http://www.biosolids.org)*  
biosolids are ("990) solid organic matter recovered from waste water treatment process and used, esp. as fertilizer - usually in plants

Letter of Understanding (continued)

**Definition**

*Wastewater Solids and Biosolids Management:* This includes wastewater pretreatment, treatment, and beneficial/disposal of biosolids

*EMS Blueprint:* The blueprint has five components:

- 1.) The Code of Good Practice;
- 2.) The National Manual of Good Practices;
- 3.) The Elements of an Environmental Management System
- 4.) The EMS Guidance Manual
- 5.) The Independent Third-Party Verification Program

The Blueprint documents are found on [www.biosolids.org](http://www.biosolids.org)

**The National Biosolids Partnership (NBP) commits to the following:**

- Furnish the EMS Blueprint documents, an EMS Implementation Plan and provide guidance to the City during preparation of its EMS that is consistent with the established NBP Blueprint Strategies.
- Provide technical assistance through two (2) on site visits using NBP consultants. (The first visit will include the preparation of a draft EMS Implementation Plan and the second visit will include a review of The City's draft EMS.)
- Provide four (4) training workshops to guide City staff in preparing an EMS that meets NBP requirements.
- Provide technical guidance via telephone using NBP consultants.
- Commitment of technical resources for 12 months based on current grant funding
- Provide technical assistance for an additional six (6) months based upon apportionment of 2005 grant funding and demonstration of the City's satisfactory progress toward the development of The City's EMS.
- Recognize The City's efforts to develop an EMS at national biosolids conferences and through other suitable venues or means.
- Provide a documentation certificate recognizing the City's membership in the NBP Code of Good Practice Club.
- Publish a report on the experiences of the organizations that participate in the Demonstration Program containing recommendations on how the partners may strengthen their biosolids' EMS Program.

**The City of Grand Rapids commits to the following:**

- Implementation of the National Biosolids Partnership's "Code of Good Practice" (Attachment)
- Following the results of the Implementation Plan Site Visit.
- Development of an EMS consistent with the NBP's EMS blueprint.
- Beginning operations of the EMS within 18 months and no later than April 1, 2006.

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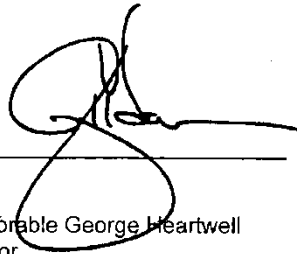
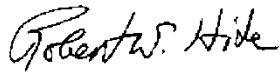
Letter of Understanding (continued)

- Participation in four (4) two-day regional training and information exchange workshops with the other Demonstration Organizations during the 18 months. (Regional meetings will be conducted in Northern Indiana, Southern Michigan, or Northern Ohio.)
  
- Sharing EMS experiences with other organizations and related information at local, regional, or national conferences and meetings when possible.
- Provide feedback to the NBP on the EMS blueprint and document costs, benefits and other relevant information through short quarterly progress reports and a final report.
- Conduct an independent third party audit of its EMS with an NBP certified audit company.

Points of Contact


National Biosolids Partnership

City of Grand Rapids, Michigan



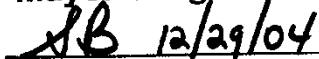
Mr. Robert Hite  
Chair  
National Biosolids Partnership  
601 Wythe Street  
Alexandria, VA 22314

Honorable George Heartwell  
Mayor  
City of Grand Rapids  
300 Monroe Ave.  
Grand Rapids, MI 49503

ATTEST   
to Mary Therese Hegarty  
City Clerk

**AFFIX**

**Mayor's Signature**



**Dept. of Law**