



Sustainable Jersey Gold Star Standard in Waste

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League of Municipalities Conference

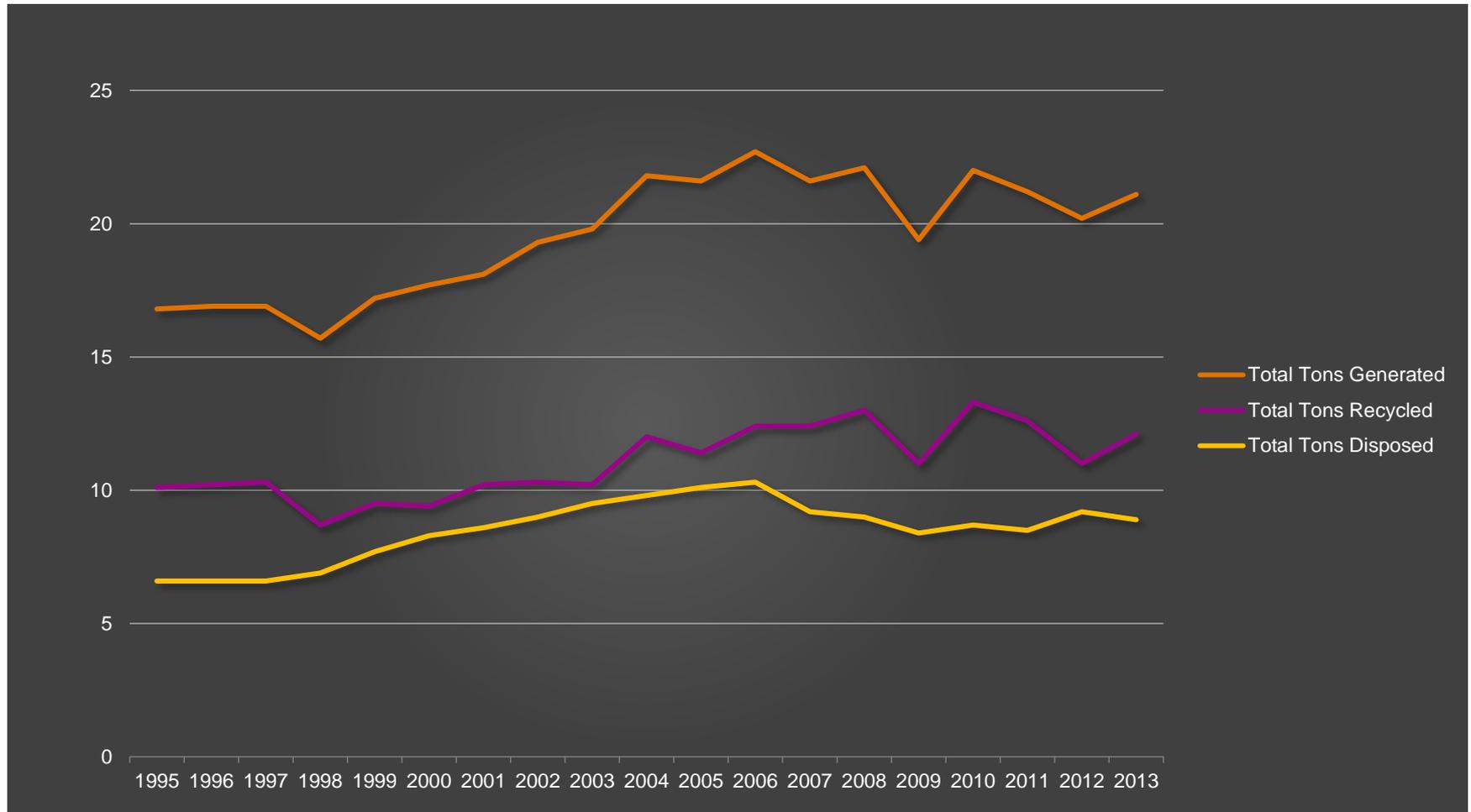
November 16, 2016

Sustainable State Goals in Waste:

1. **Solid waste** generation is minimized.
2. **Reuse and recycling** of waste generated are maximized.
3. The production of **hazardous waste** is minimized, and that which is produced is disposed of in ways that are safe for both humans and the environment.
4. There is an **equitable distribution** of the impacts on human health of all forms of toxic pollution and waste disposal.



NJ Waste Generation & Recycling



2012 Recycling Rate NJ Silver Municipalities

CO	MUN	Current SJ Status	Total Rate without Leaves	MSW Rates without Leaves
Camden	Haddon	Silver	80%	45%
Morris	Chatham Boro	Silver	76%	76%
Hudson	Secaucus	Silver	75%	70%
Morris	Madison	Silver	70%	56%
Atlantic	Hammonton	Silver	68%	42%
Morris	Mountain Lakes	Silver	67%	69%
Burlington	Bordentown City	Silver	66%	62%
Burlington	Moorestown	Silver	66%	48%
Middlesex	Woodbridge	Silver	66%	36%
Mercer	West Windsor	Silver	65%	61%
Mercer	Princeton	Silver	65%	41%
Essex	Millburn	Silver	63%	59%
Essex	Maplewood	Silver	62%	38%
Atlantic	Galloway	Silver	61%	35%
Camden	Cherry Hill	Silver	60%	38%
Union	Rahway	Silver	60%	46%
Camden	Haddonfield	Silver	60%	45%
Somerset	Bernards	Silver	59%	43%
Union	Summit	Silver	59%	50%
Camden	Gloucester Twp	Silver	58%	44%
Essex	Livingston	Silver	57%	22%
Bergen	Wyckoff	Silver	55%	44%
Middlesex	Highland Park	Silver	52%	34%
Passaic	Hawthorne	Silver	49%	43%
Cape May	Cape May	Silver	48%	15%
Mercer	East Windsor	Silver	48%	33%
Somerset	Warren	Silver	47%	19%
Union	Berkeley Heights	Silver	46%	32%
Somerset	Hillsborough	Silver	45%	24%
Mercer	Trenton	Silver	40%	16%
Ocean	Ocean	Silver	40%	42%
Burlington	Southampton	Silver	33%	23%
Camden	Camden	Silver	12%	9%

Meets Gold Standard ➔➔➔➔➔➔➔	11	7
	33%	21%



Waste Management Actions

- Most used action area in Municipal Program (along with Energy)
- 18 Existing Source Reduction and Recycling Actions

Recycling Depot

Carpet/Padding

Paper Shred

Cut It/Leave It

WasteWise Partner

Reusable Bag

C&D Ordinance

Bulky Plastics

Waste Audit

Backyard Compost

Prescription Drug

Non-Mandated Mat.

Food Waste

Shrink Wrap

Pay As You Throw

Materials Reuse

Commercial Recycle

Educ. & Enforcement

- 4 New Waste Actions:

Litter Abatement

Soil Management

Class A Quality

Household Hazardous Waste Collection



Gold Star Standard in Waste

Overview:

- Meet 2 rates ('Gold actions'):
 - Documented Recycling Rate Standard
 - Waste Reduction Standard
- Do 3 Actions (also good for Bronze & Silver):
 - Household Hazardous Waste Disposal
 - Prescription Drug Disposal
 - Education and Enforcement



Waste Gold Implementation

Documented Recycling Rate Standard:

High bar of historic achievement in recycling over time.

- 65% Total Waste Stream Recycling Rate;
- 55% Municipal Waste Stream Recycling Rate
- Rates can be Averaged over Three Years;
- Rates are “Exclusive” of Leaves.



Waste Gold Implementation

Waste Reduction Standard:

Towns must commit when applying for the Gold Star to reduce generation by at least 2% per year for 3 years (6% total).

2015 Mercer County characterization study shows waste reduction trend over past 10 years;

NJDEP statewide data shows slight reduction since 2010



Waste Gold Implementation

Available Activities Toward Waste Reduction Goal:

- Pay-As-You-Throw	14 - 27%
Reduction	
- Cut It and Leave It	3 – 5%
- Education & Enforcement	1 – 10%
- Backyard Composting	1 – 5%
- Materials Reuse Program	1 – 5%
- Reusable Bag Education	0 – 1%



Waste Gold Implementation

- **Prescription Drug Safety and Disposal**
- **Education and Enforcement:**
Upgrade and expansion of existing Recycling Education & Enforcement Action to:
 - improve recycling participation rates and *quality* of materials collected
 - Improve rate of waste *reduction*

Waste Gold Implementation

Household Hazardous Waste (HHW) Action:

- Creation of “permanent” HHW collection programs v. periodic (quarterly) collection;
- Must have municipal convenience center or drop off location or “otherwise provide for collection” via shared services agreement or use of a private facility
- Must commit to collect at least 4 HHW materials...

Waste Gold Implementation

Sample County HHW Inventory (25 Town County):

- 24 of 25 have a convenience center
- 15 collect used motor oil
- 12 Car Batteries
- 11 e-Waste
- 9 Rechargable Batteries
- 8 Paint
- 7 Anti-Freeze
- Other materials could include:
 - Florescent Bulbs, Pesticides,
& others agreeable to the program





Moving as a Society toward Zero Waste

Organic waste recycling is all we do

- Vertically integrated
 - From collection to end products sales
- Multi-feedstock processors
- Dual Technology
 - High-solids digestion
 - In vessel composting
- Completely indoor facility
- Production model vs waste model
- ***End product focused***



Management Team

Experienced management team

- 25 years food service experience
- 25 years transportation experience
- 15 years renewable energy experience
- 25 years indoor composting experience
- 25 years composting sales experience
- 7 years food waste collection experience



Business Philosophy

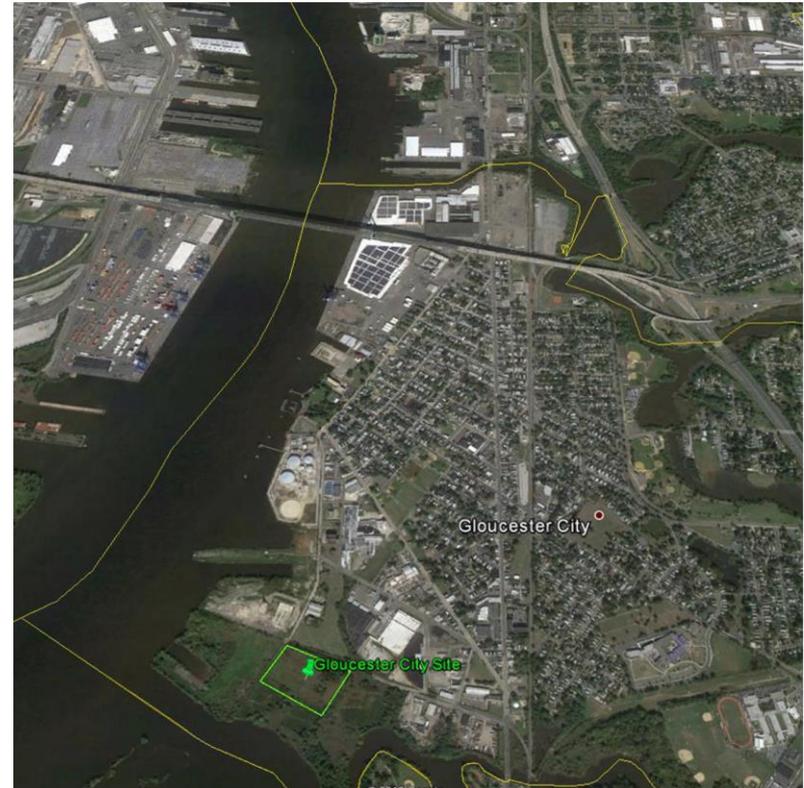
- To build and operate medium-scale organics recycling facilities in the Northeast.
- To extract the highest environmental and economic value from the organic waste stream in the form of renewable energy and high-quality compost.
- Operate world class facilities using the best available control technologies, while encompassing fully enclosed, odor-free organics receiving and processing facilities.
- ***Serve the communities by offering organics recycling and renewable energy to the community and businesses within 25 miles of each plant.***



Gloucester City Organic Recycling, LLC

850 Water Street
Gloucester City, NJ 08030

- Former BP / Arco Terminal Site
- Brownfield Site vacant for 30 years
- Three party settlement agreement with City, BP / Arco and NJDEP
- Remediation at no cost to the City



Moving toward Zero Waste

There is no “Zero waste” without dealing with food waste

Biomass Waste in MSW (2010) (Tons)				
	% MSW	Disposed ⁴	Incinerated ⁵	Landfilled
Total MSW	100.00	5,917,468	1,463,537	4,453,931
Food waste ¹	15.82	936,143	231,532	704,612
Paper Waste ²	19.45	1,150,947	284,658	866,289
Other Biomass ³	26.93	1,593,574	394,131	1,199,443
Total Biomass	62.20	3,680,665	910,320	2,770,345

Sources

1 USEPA

2 Percentage given by Ray Worob of NJDEP

3 Municipal Solid Waste. EPA. Accessed 1 Feb 2013. <http://www.epa.gov/epawaste/nonhaz/municipal/index.htm>

4 2010 New Jersey Generation, Disposal and Recycling Statistics: By County. Solid and Hazardous Waste Management Program. NJDEP. Accessed 6 Nov 2012. http://www.state.nj.us/dep/dshw/recycling/stat_links/10disposalrates.pdf

5 Data given by Joseph Davis MPA, Data base Analyst 1 of NJDEP that was received 11/9/12

The Food Waste Issues

- Lack of receiving infrastructure
- Multiple closed facilities in NJ and the US
- Waste model vs manufacturing model
- Development / Investment risk factors
- Stakeholder issues



The Food Waste Solutions

Government Regulation

- REC's / Feed-in Tariffs
- Compost Market Development
- Food Waste Disposal Ban

Investments are being made and jobs are being created in States that have at least two of the above

Appropriate Technology Deployment for the Market

SENATE, No. 771

STATE OF NEW JERSEY

217th LEGISLATURE

PRE-FILED FOR INTRODUCTION IN THE 2016 SESSION

Sponsored by:
Senator BOB SMITH
District 17 (Middlesex and Somerset)
Senator CHRISTOPHER "KIP" BATEMAN
District 16 (Hunterdon, Mercer, Middlesex and Somerset)

SYNOPSIS
Requires large food waste generators to separate and recycle food waste and amends definition of "Class 1 renewable energy."

CURRENT VERSION OF TEXT
Introduced Pending Technical Review by Legislative Counsel.



The Great Seal of the State of New Jersey, featuring a shield with a plow and a sheaf of wheat, flanked by two female figures, and a crest above with a horse and a figure. The motto "LIBERTY AND PROSPERITY" is on a ribbon below the shield. The seal is encircled by the text "THE GREAT SEAL OF THE STATE OF NEW JERSEY" and the date "1776".

Technology Platform

- Multi-feedstock
 - Wide Variety of Organic Waste
- Dual Technology
 - High-Solids Anaerobic Digestion
 - In Vessel Composting
- Odor Management
 - Completely Indoors
 - O&M
 - Housekeeping
 - Negative Pressure
 - Biofilters & Scrubbers

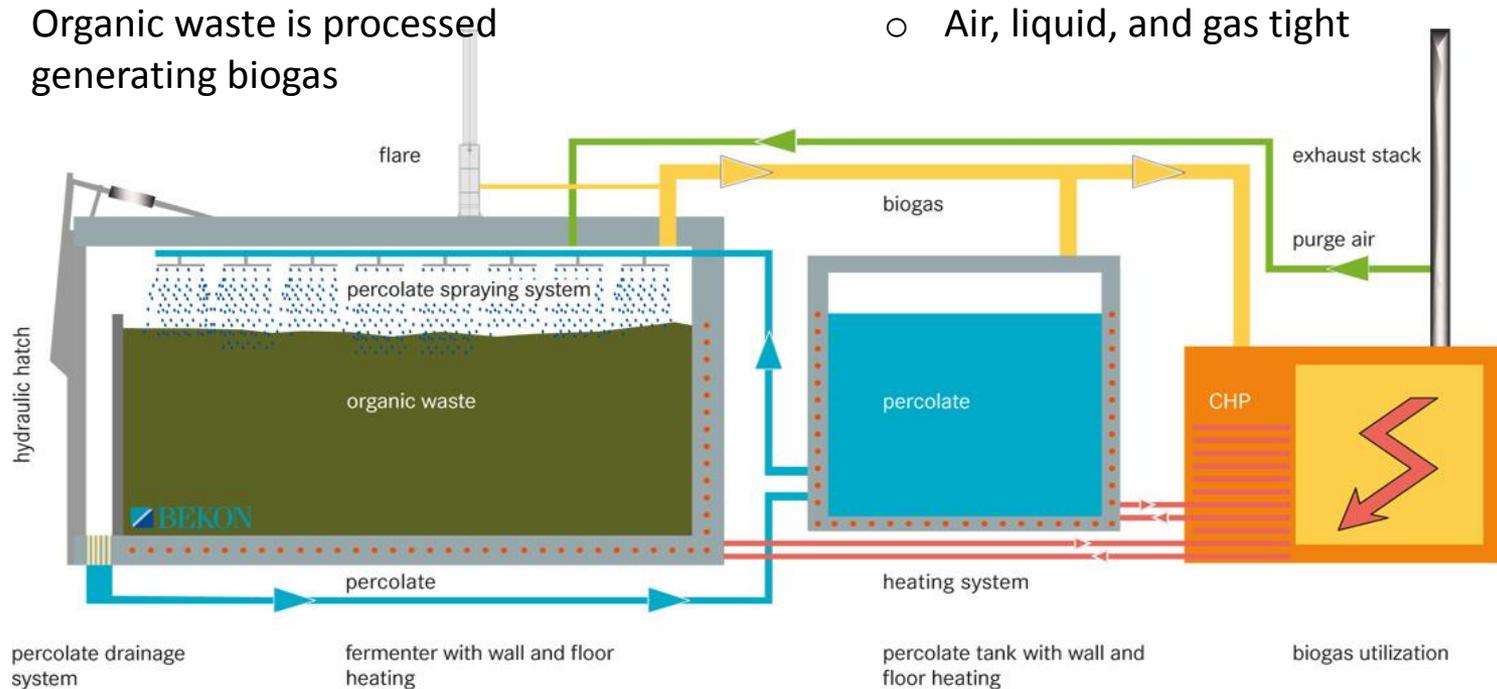


High-Solids Digestion



High-Solids Digestion

- Materials are mixed and filled with a wheel loader into concrete digesters
- Organic waste is processed generating biogas
- Biogas sent to a combined heat and power unit
- Air, liquid, and gas tight



In Vessel Composting

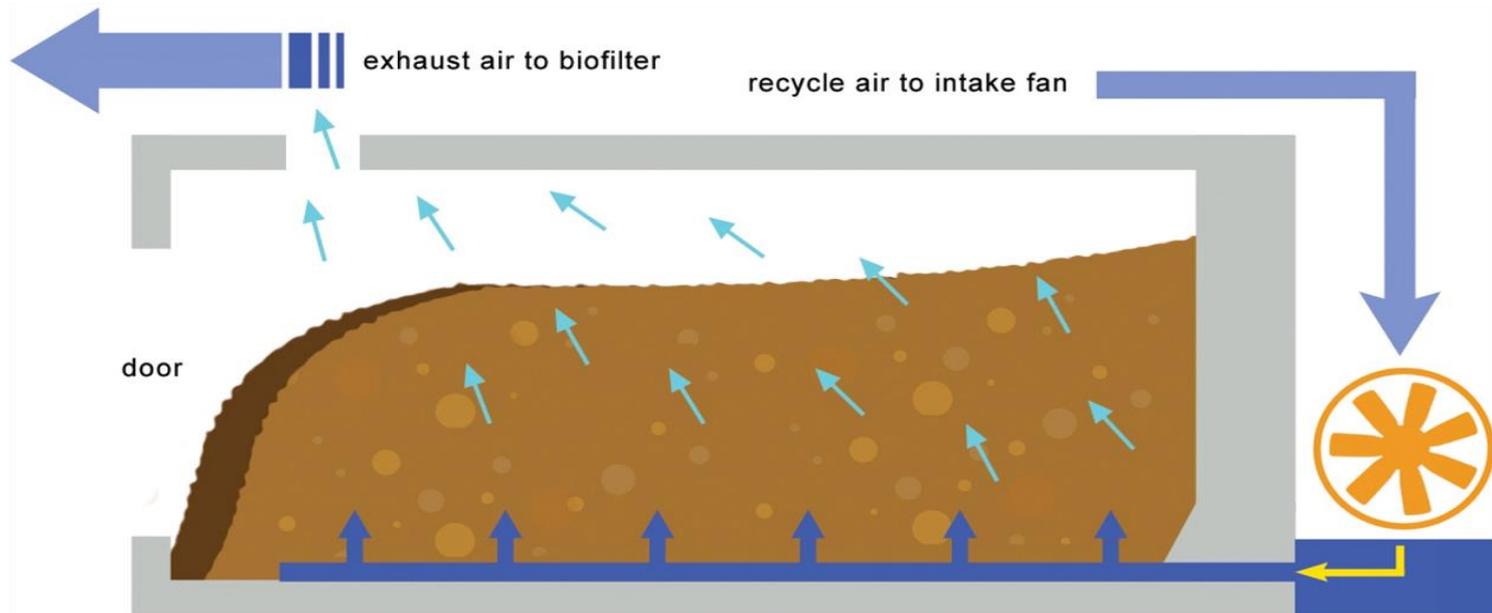
Indoor composting operations utilizes Aerated Static Pile (ASP) technology

- Industrial-scale composting facilities
- Modified Aerated Static Pile (ASP) processes and stabilizes organic materials into high-quality compost
- Refined over forty years of operations
- All operation are done indoors under controlled conditions



In Vessel Composting

- Materials loaded into aerated composting bays with sliding doors
- No mixing or turning
- Reaches temperatures over 140° F
eliminating odor causing compounds
- *Handles any residual liquids from digestion*



Odor Management & Control

Odor management is a fundamental business practice required for successful organics recycling in New Jersey. ***ALL operations are conducted indoors under negative pressure.***

Integrated odor management into every aspect of business planning and the business model including:

- Business Philosophy
- Generator Training Programs
- Equipment & Supplies Selection
- Collection Methodology
- Collection Equipment
- Truck Routing
- Technology Selection
- Facility Design
- Operations Plan
- Housekeeping Procedures
- End Product Marketing & Sales



Compost Production

The Organic Diversion team formulates and markets compost-based products

- In-house designed process produces consistent, high-quality compost
- 400,000 cubic yards of compost sold annually
- Customers include base in bagged, bulk, wholesale, landscaping, construction, nurseries, erosion-control industries and the agricultural market

Compost

- Saves Water
- Reduces chemical fertilizer use
- Reduces topsoil loss, curbs erosion
- Restores and replenishes depleted soil
- Improves resistance to pests and diseases





Conservation

Use Only What You Need

Tips & Tools

Your Water Consumption History

Water Use Rules & Regulations

Rebates

Single-Family Residential Audits

Commercial and Multifamily Services

Conservation Plan

WaterSense

Soil Amendment Program

Compost Classifications

Local Class I and II Compost Suppliers

Remodel Your Yard

Weather Reporting

Resource Links

Home > Conservation > Soil Amendment Program

Soil Amendment Program

Before a newly constructed premise may be landscaped, property owners must amend their soil with [compost](#) so the soil more efficiently retains water. This rule applies to all new residential, commercial, government and industrial properties within Denver Water's service area.

- > Importance of Soil Amendment
- > To Pass a Soil Amendment Inspection
- > Schedule a Soil Amendment Inspection
- > Winter Extension
- > Phased Projects

For more information:

Soil amendment: 303-693-2444 or customercore@denverwater.org

Tap issues: 303-628-6100

Meter set/inspection: 303-628-6165

Food Waste Recycling in NJ

New Jersey can easily lead the nation in food waste recycling if we take the time to build the necessary foundation to attract investment and create jobs to deploy the proper technology platforms throughout the State.





Organic
Diversion
food and organics recycling