

# **ORGANICS MANAGEMENT FOR RURAL, SMALL & TRIBAL COMMUNITIES**

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# What is NERC?

- Non-profit
- 10 Northeast states
- Mission: environmental sustainability through solid waste management

# or•gan•ics

## **noun**

1. Of, relating to, or derived from living organisms: organic matter
2. Yard and landscape trimmings—leaves, grass clippings, & tree & brush trimmings
3. Agricultural and land-clearing/forestry debris
4. Manures and biosolids
5. Food scraps and food processing residues
6. Non-recyclable/soiled paper—napkins, paper towels, pizza boxes & other paper products
7. Items manufactured from organics—compostable bags, utensils, plates, cups and bowls made from corn and potato starch, bagasse, PLA and similar materials

# Percentage of Organics in MSW

- Largest component of municipal solid waste
  - 56% of what we send to landfills & incinerators
- Yard trimmings are recycled at just over 57%
- Less than 4% of food scraps are currently recovered.
  - *34 million tons* of food waste are tossed away by homes & businesses in the U.S.

# Benefits of Organics Management

- Reduced disposal needs & costs
  - Communities, businesses, & residents
- Reduces greenhouse gas emissions
- Reduces open burning of yard waste
- Composting stimulates the local economy
  - Creates local jobs creation & business development
- Composting provides valuable soil amendment
  - Utilizing locally generated resources

# Organics Best Management Practices = Organics Management Hierarchy



# Reduce

- Smart Landscaping
- Grasscycling
- Leaf Mulching
- Food Waste Reduction



Keeping organics onsite  
offers the most cost effective  
management solution  
for communities



# Smart Landscaping

- Local & cultural native plant habitats
- “Edible” landscapes & gardens
- Easier to maintain
- Tend to be more adapted to local soil conditions & climate
  - Healthier & more resilient plants
- Benefits local wildlife
- Generates less yard waste



# Grasscycling

- Grass is left on the lawn when mowing
  - “Recycled” back into the lawn
  - Nutrients to return to soil
    - Reduces requirements for fertilizing
  - Does not harm lawns
- Commonly practiced on large grass areas—parks, golf courses, sport fields
  - Saves labor
  - Eliminates the purchase of disposal bags

# Leaf Mulching

- Mulching or mowing leaves in-place
  - Saves time & money
  - Leaves decompose adding valuable nutrients to soil
- *Tips for mulching success*
  - Mow leaves directly on lawns
  - Leaves will decompose over winter
  - Rake leaves on pathways or driveways into piles, mow over, & use as mulch



# Food Waste Reduction

- Around 40 percent of all edible food is wasted
- Better food management practices are easy to implement

## *Tips on food waste reduction*

- Improve food preparation procedures
- Adjust portion sizes
- Monitor food expiration dates closely



# Who's Doing it?

- **Springfield Township, Michigan** (population 13,940)
  - Native landscape project
  - Native Plants CD-ROM & Searchable database
- **Harwinton, Connecticut** (population 5,283)
  - Webpage on lawn care maintenance incorporating grasscycling
- **Irvington, New York** (population 6,468)
  - “Love 'em and Leave 'em!” leaf mulching campaign
  - Now throughout Westchester County- Love 'Em And Leave 'Em website—downloadable resources- [www.leleny.org](http://www.leleny.org)
- **EPA Food too Good to Waste**
  - <http://westcoastclimateforum.com/food>

# Reuse = Recovery

- Food Recovery
- Food Gleaning
- Food to Animals



# Food Recovery

- Reduces food waste
- Helps those in need
- Regional food banks
  - Local charities or churches
- Mobile pantries
- Food to Animals

# Who's Doing It?

- **Food Bank of Central & Eastern North Carolina**
  - Serves 34 counties throughout North Carolina
  - Mobile Food Pantry program—partners to bring three million pounds of food to rural communities annually
- **Agua Caliente Band of Cahuilla Indians**
  - Casino & Resort Spa, Palm Springs
  - Donated 2,500 pounds of food to the Well in the Desert
- **Society of Saint Andrew**
  - National network connects volunteers with farms
  - Gleaned produce is distributed to food banks

# Who's Doing It?

## Mohegan Sun Casino and Resort, Uncasville, Connecticut

- 37.5% of its waste stream was food scraps
- 1,000 tons/year of food scraps to a pig farm
  - Breakeven cost comparison....but, good for the community
- 52 tons of cooking grease sold for biofuel & animal feed
- Waste reduced by 1800 tons



# Feed the Pigs – Schools and Businesses



- Barthold Farms
- St. Francis, Minnesota
- Population 7,218
- 23,000 tons of food scraps are fed to 5,000 hogs
- 400 businesses & schools



# Recycle = Composting

- Backyard Composting
- Home Digester
- Vermicomposting
- Neighborhood Composting
- School & Special Events Composting
- Centralized Composting
- Anaerobic Digestion

# Backyard and Neighborhood Composting

- **Lower startup costs**
  - No need for collection, transportation, or processing
- **Creates a home compost product**
- **Lowers residential trash bills (unit or variable fees)**
- **Reduces landfill/incineration**
- **Reduces air, water pollution, & greenhouse gas**
  - Reduced transportation & disposal
- **Benefits are especially magnified when combined with grasscycling & leaf mulching**

# Backyard Composting









# Promoting Home Composting of Food Scraps

- Tips on proper composting of food scraps
  - Adequate carbon (leaves, soiled paper, straw, etc.)
  - Always cover food scraps with carbon & soil
  - Cover with lime to deter fruit flies & vermin
  - Line bottoms of compost bins with thin wire mesh
- Promote and sell compost digesters, such as the Green Cone™

# Backyard Food “Digesters”

- Food & pet wastes, not yard trimmings
- Systems produce few odors if done correctly
  - Deterrent against unwanted vermin
- Commercial home digesters
  - Green Cone™
  - All types of food organics—meat, dairy & eggs
- Do-it-yourself digesters
  - Easily constructed from a metal garbage can

# Home Digester





# Community Composting



Carter's and Oryana's  
Ceremonial Compost  
Turning Celebration  
Oryana's East Parking Lot  
Saturday October 26, 2013  
1:00 - 3:00 PM



# Opportunities and Action

## “Revisiting”

### Home Composting Programs

- Offer new outreach & training programs
  - Include food scrap composting
- Sales of compost bins & home digesters
- Reach out to new residents
- Make available to schools



# Who's Doing It?

## **Central Vermont Solid Waste Management District**

- Promotes onsite management of home generated organics
  - Educational outreach
  - Sales of compost bins & the Green Cone digester
- All District schools compost

## **Manchester Essex Regional Middle School**

Manchester-by-the-Sea, Massachusetts (population 5,136)

- Successful Green Team—Now district-wide
- Multi-faceted waste reduction, recycling, & composting
- Resulted in a 90% reduction in the school's waste stream

# Who's Doing It?

## Fond du Lac Tribe, Cloquet, Minnesota

- Ojibwe School Vermiculture Program
- Head Start Vermicomposting
- Household Vermiculture Project
- Household Yard Composting Bin Project
- Educational Outreach Program



# Ojibwe School Vermiculture Program



Shannon Judd, Fond du Lac

# Who's Doing It?

## **Annapolis Royal, Nova Scotia** (population 481)

- Zero waste goal
- Biweekly curbside collection for recyclables & garbage
- Promotes onsite management of all household
  - Home composting
  - Green Cones for food scraps & grease
  - Neighborhood Composters –large wooden composters
    - Built & maintained by the town for residents

# Who's Doing It?

**Pleasantville Music Festival**, Pleasantville, New York (population 7,019)

- Zero waste event
- Volunteers staff zero waste stations around the event
- In 2012, the first year of initiating zero-waste the festival reduced waste by 65%, down from 5.5 tons in 2011 to 1.85 tons

**Garlic and Arts Festival**, Orange, Massachusetts (population 7,839)

- 10,000 people attend this two-day event
- Composting since 2004 & became a zero waste event two years later
- Vendors are required to use compostable service ware
- Volunteers staff five zero waste stations
- Two bags of trash from the portable toilet areas

# Food Scrap Collection

# From What Sources?



← Residents

Supermarkets →



← Institutions

Restaurants →



# Getting Businesses on Board

- Offer to assist with waste audits
- How to “right size” trash collection
- Training & training resources
- Reduction, Recovery/Donation, & Composting





# Commercial Food Scrap Collection



# Commercial Collection Containers



# Sugarloaf Resort, Maine



# ZERO WASTE CENTRAL™



# Residential Organics Collection

- Options
  - Drop-off (transfer stations, recycling centers)
  - Door-to-door service (“curbside”)
  - Modified curbside
  - Standalone options or in combination
- Arrange for processing prior to establishing collection system

# Transfer Station Food Scrap Drop-off



# Bear-Resistant Food Scrap Drop-Off



# Who's Doing it?

## Franklin County Solid Waste District, Massachusetts

- Transfer Station Drop-off
  - New Salem (population 990)
  - Northfield (population 3,032)
  - Orange (population 7,839)
  - Whately (population 1,496)
- Food scraps & soiled paper
- Provides technical assistance at schools & special events





# Who's Doing it?

## Chittenden Solid Waste District

- Drop-off centers, including: Hinesburg (population 4,340); Milton population (10,352); Richmond (population of 4,090); & Williston (population 8,698)
- No charge to drop-off food scraps
- Residents are provided with a free 4-gallon bucket with a lid to use in their kitchen

# Who's Doing it?

## Salt River Pima-Maricopa, Arizona

- Composting program is located at is permitted Subtitle D landfill
- Yard trimmings – ground & composted in windrows
- Tip fees
- Product sales

# Residential Curbside



# Curbside Collection Options



# Three-Stream Collection



# Who's Doing it?

## Windham Solid Waste Management District

- Brattleboro (pop. 12,049) curbside food scrap collection
- Vernon (pop. 2,141) food scrap drop-off at Town Garage
- Two food scrap drop-offs for Windham County residents or businesses



# Who's Doing it?

**Hamilton** (population 7,764) and **Wenham** (population 4,875)

- Rural-suburban communities in eastern Massachusetts
- Citizen-led initiative for curbside collection of food scraps
- Hiltz Disposal collects the organics & recyclables with a split body truck on a weekly basis
- Bricks End Farm processes the organics
- Hamilton switched trash collection to every other week

**Huron, Ohio** (population 7,149)

- Year-round collection of food scraps
- Yard waste collection for nine months/year
- In 2011, the program diverted more than 486 tons of organics
- Residents charged \$220/year for waste, recycling, & compost
- Contracts the collection service; Barnes Nursery and Compost

# Who's Doing it?

## **Wayzata, Minnesota** (population 3,688)

- Food waste & soiled paper are placed into a Blue Bag Organics BPI-certified (compostable) bag
- Residents place the Blue Bag inside their regular garbage cart
- Trash & organics are transported to a transfer station where the Blue Bag is removed for transportation to a compost facility

## **Earthgirl Composting**

- Curbside collection of food scraps & soiled paper for households, small businesses, & special events in two counties in Vermont
- Participants provided a 5-gallon bucket
- Organics delivered to Grow Compost or Green Mountain Compost
- Participants are charged based on collection frequency



# Organics Processing Options

- Small vs. Regional
- Municipal, farm, private operations
- Range of processing technologies—from very simple to complex technology systems
- Each system has its advantages
- Can be combined to better serve the community & for cost efficiencies

# Centralized Composting

Successful centralized composting requires

- A solid plan of action
- Available land
- Appropriate equipment
- Proper training and management
- Community support

# Funding Options

- **Tip Fees**
  - Residents
  - Landscapers & other small commercial generators
  - Keep fees lower than solid waste tip fees
- **Sales of compost product**
  - Mulch – grind brush, wood, pallets
  - Compost – quality product can be sold to offset costs
- **Cost Savings**
  - Sharing equipment & labor
  - Used equipment
  - Calculating avoided disposal costs
  - Reduced soil & fertilizer purchase costs through use of compost

# Who's Doing it?

## St. George, Maine

- Population 2,591
- Transfer Station accepts yard waste, grass clippings, leaves, manure, specified food scraps (no meat or dairy), & wet & waxed cardboard from residents
- Town website promotes the compost operation & backyard composting as a way to reduce the town's overall disposal costs



# Who's Doing it?

## Skowhegan, Maine

- Population 8,589
- Yard trimmings, brush, leaves farm manure, food scraps
- Two certified compost operators manage the facility
- 800 yards of compost are generated each year



# Town of Skowhegan Transfer Station



Screening Compost

# Who's Doing it?

## **Ulster County Resource Recovery Agency**

- Aerated static pile to manage yard waste, food scraps, & other organics
- Tip fee \$50/ton for separated organics (vs. \$100/ton LF)
- Currently accepting food scraps from supermarkets, grocers, and restaurants

# Aerated Static Windrow

Moderate technology, costs & labor





# Who's Doing it?

## Prairie Band Potawatomi Nation, Mayetta Kansas

- Bio-solids & food scraps



# Who's Doing it?

## Eastern Band of Cherokee Indians, North Carolina

- Two large-scale composting operations—one for food scraps & one for biosolids
- Saves thousands of dollars in tipping fees annually
- Compost used by tribal members for gardens
- Tribe composts approximately 72 tons of food waste/year
  - Collected from seven local restaurants, including three within Harrah's Cherokee Casino
- Food scrap compost sells for \$35 per ton; biosolids compost is sold for \$15 per ton



# On-Farm & Private Sector Composting

- Provides opportunity to divert organics
  - Without having to invest the space, equipment, & staffing required to compost materials onsite
- Helps farms diversify their operation
  - Manufacturing a valued added product for sale
  - Soil amendment for farm fields
  - Typically have more flexibility in permitting requirements
- Private sector may profit from locating in rural, agricultural areas & servicing urban area

# Opportunities and Action

- Determine interest in composting & accepting municipally-generated organics
  - Farms
  - Private sector operations (landscapers, garden centers)
- Determine hauling – Municipal? Farm? Private sector?
- Work with state regulators & the operation
  - Ensure compliance with regulations & permit requirements
- Foster market development
  - Purchasing compost for town use
  - Promoting to local businesses & residents

# Opportunities and Action, cont.

- Help prevent contamination
  - Partner to provide training to businesses for composting
  - Educate residents
- Publically owned & privately managed operations present a potential model
  - Available local or regional land can be used to establish a compost facility that is operated by a private company

# Who's Doing It?

- **Grow Compost of Vermont**

- Started as a small farm operation in Moretown, Vermont (population 1,658)
- Farm residues & food scraps from restaurants, schools, & local residents

- **Bear Path Farm**

- Whately, Massachusetts (population 1,496)
- Food scraps from the town transfer station to mix with local horse bedding, leaves, & produce waste
  - Town employee hauls the food scraps to the compost operation

- **Holiday Brook Farm**

- Dalton, Massachusetts (population 6,892)
- Leaves, brush, horse manure, bedding, & produce scraps & wet cardboard from a local supermarket

# Who's Doing It?

- **Clear View Composting**

- Orange, Massachusetts (population 7,839)
- Collects food scraps from several area town transfer stations, local schools, & community events
- The company owner built a special “bear resistant” enclosure to house collection carts

- **Sonoma Compost**

- Operates the Organic Recycling Program on behalf of the Sonoma County Waste Management Agency
- Yard trimmings & vegetative food discards collected curbside from residents of Sebastopol (population 7,379)
- Food scraps from restaurants in Sonoma (population 10,741)



# MASS NATURAL Commercial Food Scraps Load



Bob Spenser, WSWMD

# BW Organics Rotary Drum For Food Scraps Mass Natural Fertilizer, Westminster, MA



Bob Spenser, WSWMD

**Green Mountain Technologies, Inc. (GMT)  
CONTAINERIZED COMPOST SYSTEM™ (CCS)**




**Bio-Solids Composting in Wilmington, VT**

# Quasar Food Scrap AD Facility Collinwood, Ohio



Bob Spenser, WSWMD



Recycling & Composting  
Saves Tax Dollars  
Thank you  
For Doing Your Share

# NERC Can Help

## **We're experts in**

- Waste reduction & recycling
- Recycling program design & implementation
- Organics management
- Green procurement
- C&D reuse & recycling
- Electronics recycling
- School reuse, recycling & composting
- Textile recycling programs
- Multi-stakeholder dialogues & negotiations
- & More!

**Fee for service program  
makes NERC's  
sustainable materials  
management**

**expertise available at a  
reasonable price with  
outstanding results**

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