



# Organics Recycling

## How Policy Supports Organics Recovery Markets

Josh Kelly, Materials Management Section Chief  
State of Vermont, Agency of Natural Resources



31% of food is lost or wasted.

\$161 billion annually.

Landfills are the 3<sup>rd</sup> largest source of methane in the US.

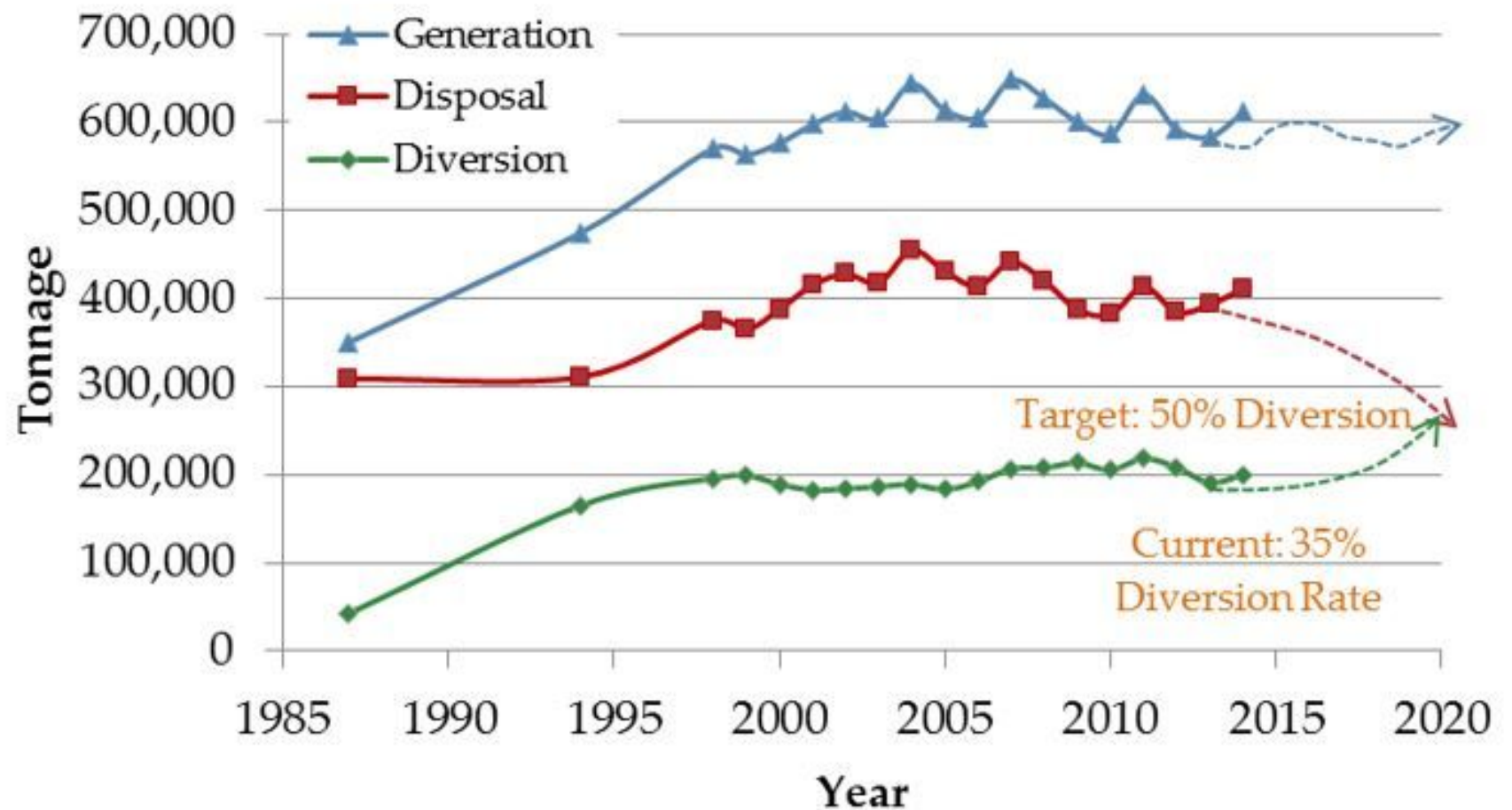
EPA & USDA have set 50% food waste reduction goal by 2030.

(Source: US EPA)

# Recycling Rate Stagnation

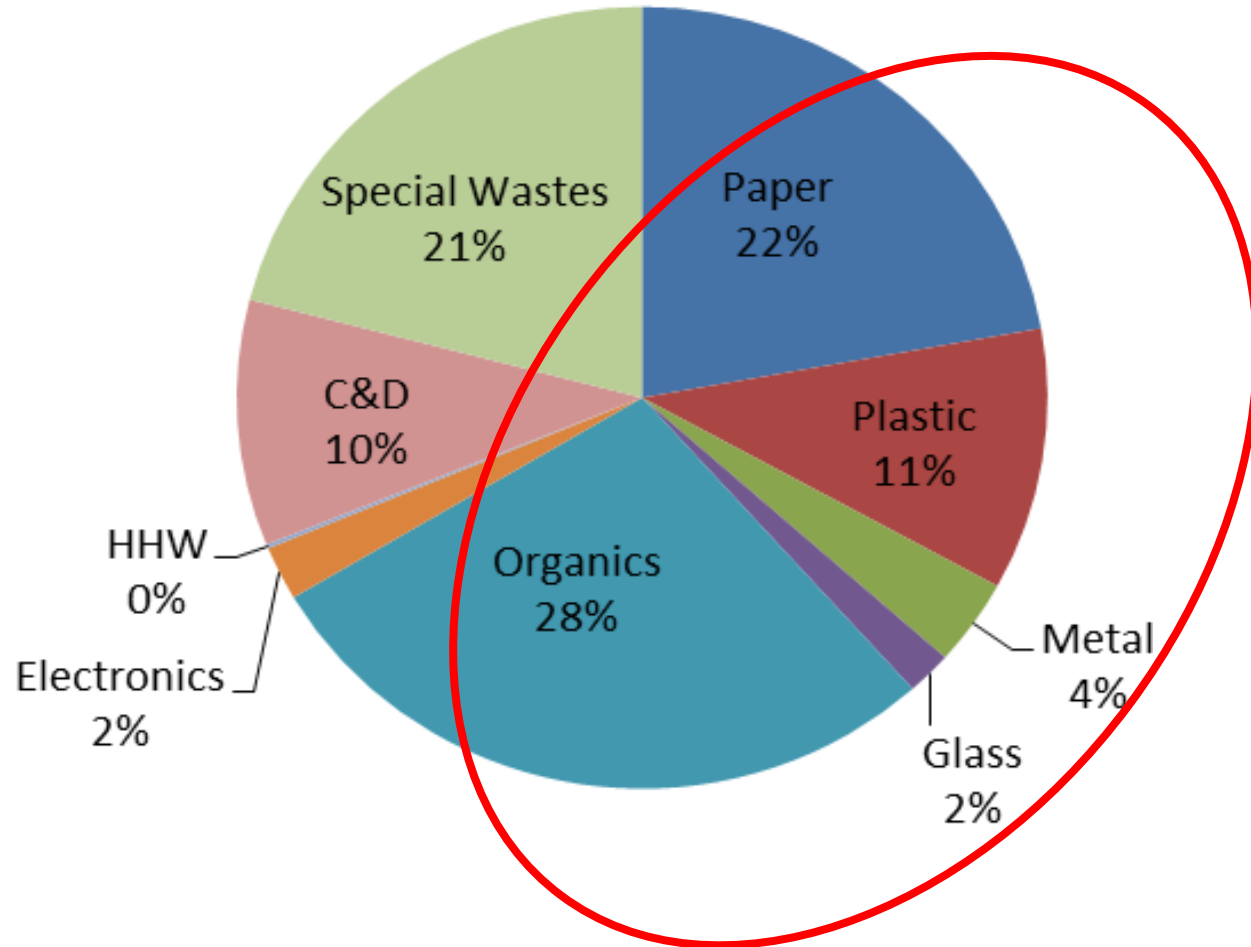
Vermont 30-36% for more than a decade

U.S. ~34%



# THE PROBLEM

State of Vermont Residential MSW 2013



**~50% of trash  
could be  
recycled,  
recovered, or  
composted**

# 2012 – BIG year for Vermont

Universal Recycling (Act 148) passes unanimously

Hey, you can  
compost  
that!



That's  
recyclable!

Moving from “waste management”





# Materials Management



# Comprehensive Solid Waste Policy

**Required Diversion (bans) = Motivation**

- recyclables
- leaf, yard, and clean wood
- food scraps

**Parallel Collection = Convenience**

**Pay As You Throw = Incentive**

**Recycling in Public Spaces = Lead by Example**





# Baseline Recyclables

## Metal

- Steel cans and containers
- Aluminum cans, pie plates, clean foil

## Paper

- News paper, office paper
- Mail, magazines, paper bags, soft cover books
- Cardboard, boxboard

## Plastic

- #1 & #2

## Glass

- Bottles and Jars



# Timing

<b>MATERIAL</b>	<b>FACILITIES</b>	<b>HAULERS</b>	<b>BANNED</b>
Recyclables	<b>2014</b>	<b>2015</b>	<b>2015</b>
Leaf & Yard	<b>2015</b>	<b>2016</b>	<b>2016</b>
Food Scraps	<b>2017</b>	<b>2017</b>	<b>2014-2020</b>
Clean Wood			<b>2016</b>

# Food Scraps Summary

Phases for larger food scrap generators, if there is a facility within 20 miles

- 2014 > 104 tons/year **2 tons/wk**
- 2015 > 52 tons/year **1 ton/wk**
- 2016 > 26 tons/year **1/2 ton/wk**
- 2017 > 18 tons/year **1/3 ton/wk**
- **2020 all food scraps banned regardless of distance**



# Food Scraps Details

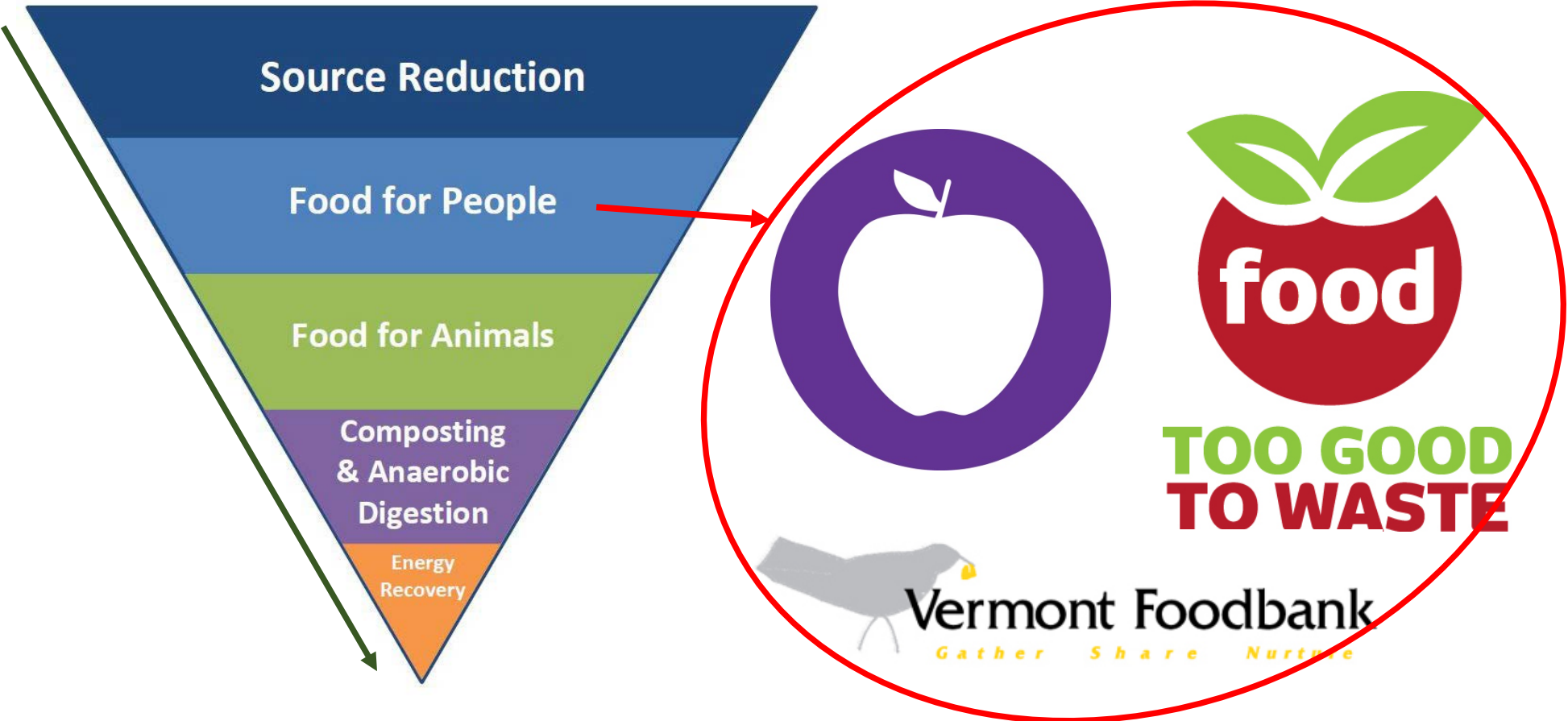
Residents need not compost meat and bones if they compost at home.

Businesses/Institutions de minimis clause



Photo courtesy of CVSWMD

# Universal Recycling Food Hierarchy



Bill Emerson Good Samaritan Food Donation Act (1996) – helps protect food donors from liability associated with donated food.

# Some of What We've Done

- Hauler Meetings
- Town/District Meetings
- Industry Outreach
- Letters & Phone Calls
- Outreach Materials
- Webinars
- Site Visits
- Small Grants
- Partnerships & Collaboration



Tote washing. Photo courtesy of CVSWMD

# Materials Management Map

UNIVERSAL RECYCLING  
**Materials Management Map**

VERMONT  
AGENCY OF NATURAL RESOURCES

Organic Tools Measure Drawing

Print Map Pan Zoom In Zoom Out Initial View Full Extent Zoom to Town Filter by Generator Type Filter by Scrap Tons Generated Filter by Facility Type Search for Facilities Near You Clear layer filters

Print Navigation Queries

Street Map

The map displays a geographical view of Vermont with numerous red pin icons representing recycling facilities. Several pins are highlighted with blue circular icons containing a recycling symbol. The map includes labels for various towns and regions such as South Hero, Westford, Underhill, and Richmond. Major roads like VT-128 and VT-117 are also visible. The interface includes a navigation sidebar on the left and a toolbar at the top with various interactive tools.

Food Scrap Generator



## CHELSEA ROYAL DINER

*Food Establishment*

*Restaurant*

**Estimated Tons Per Week: 0.63**

### Physical Address:

487 MARLBORO ROAD  
BRATTLEBORO  
05303

### Telephone Number:

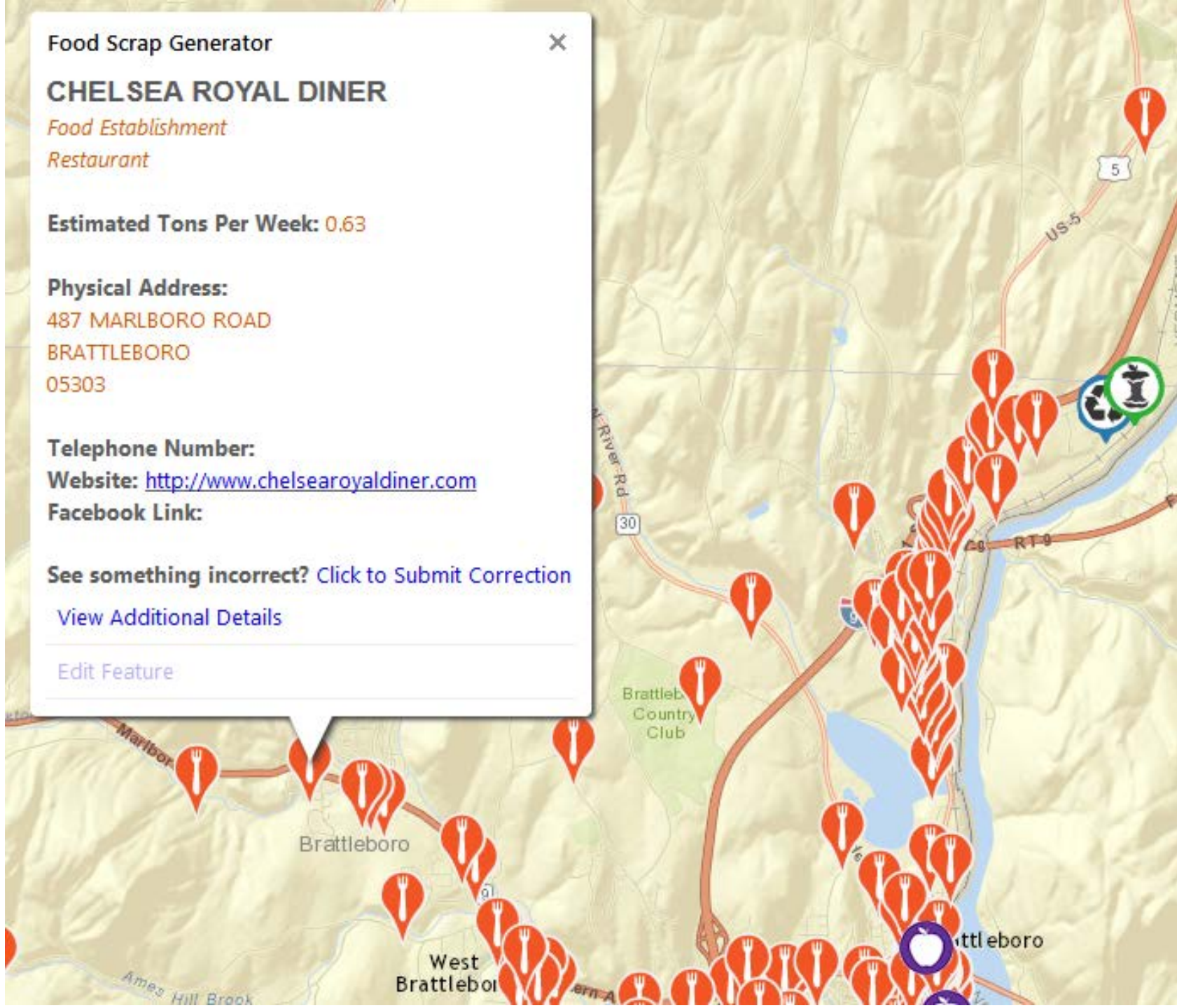
**Website:** <http://www.chelsearoyaldiner.com>

**Facebook Link:**

**See something incorrect?** [Click to Submit Correction](#)

[View Additional Details](#)

[Edit Feature](#)





## Facility

### Hartford C&D Landfill & Transfer Station

Facility Type: Transfer Station

Accepts:

Recycling: YES

Trash: YES

E-Waste: YES

HHW: NO

Food Scraps: NO

Clean Wood: NO

Leaf Yard Debris: YES

Specifics:

*\*Please call to confirm what materials are currently accepted before visiting.*

#### Physical Address:

[Get Directions](#)

2590 North Hartland Road

Hartford

05047

Telephone Number: 802-295-9353

Email:

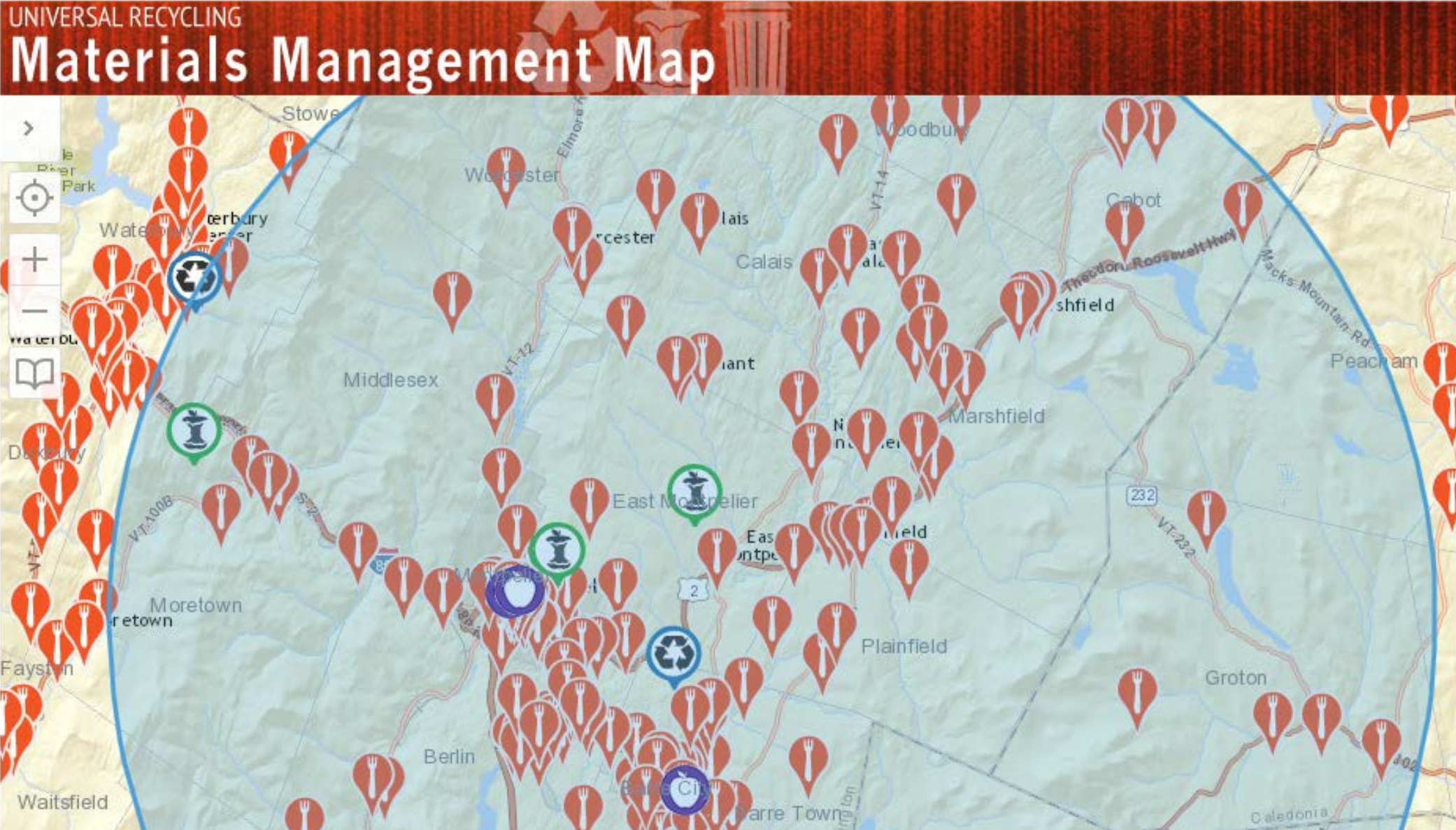
Website: <http://www.hartford-vt.org/content/recycling/>

See something incorrect? [Click to Submit Correction](#)

[View Additional Details](#)

[Edit Feature](#)

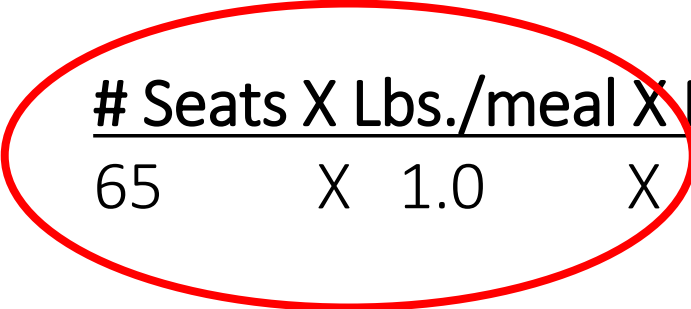
# 20-mile radius tool



# How much food waste do you produce?



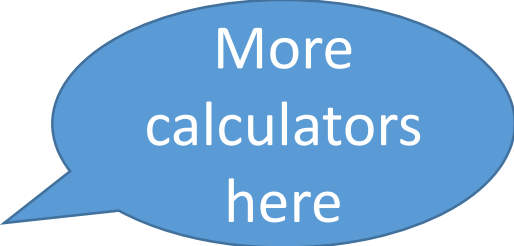
## Restaurant



$$\# \text{ Seats} \times \text{Lbs./meal} \times \text{Meals/day} \times \text{days/wk} = \text{Lbs./wk}$$
$$65 \quad \times \quad 1.0 \quad \times \quad 3 \quad \times \quad 7 \quad = \quad 1,365$$

0.68 tons/week = *estimated* 35 tons/year

[www.newmoa.org/solidwaste/projects/food/](http://www.newmoa.org/solidwaste/projects/food/)



# How much food waste do you produce?



## Institution

(prison, nursing home, hospital)

# Beds X Lbs./meal X Meals/day X 7 days/wk = Lbs./wk

100 X 0.5 X 3 X 7 = 1,050

0.53 tons/week = **estimated** 27 tons/year

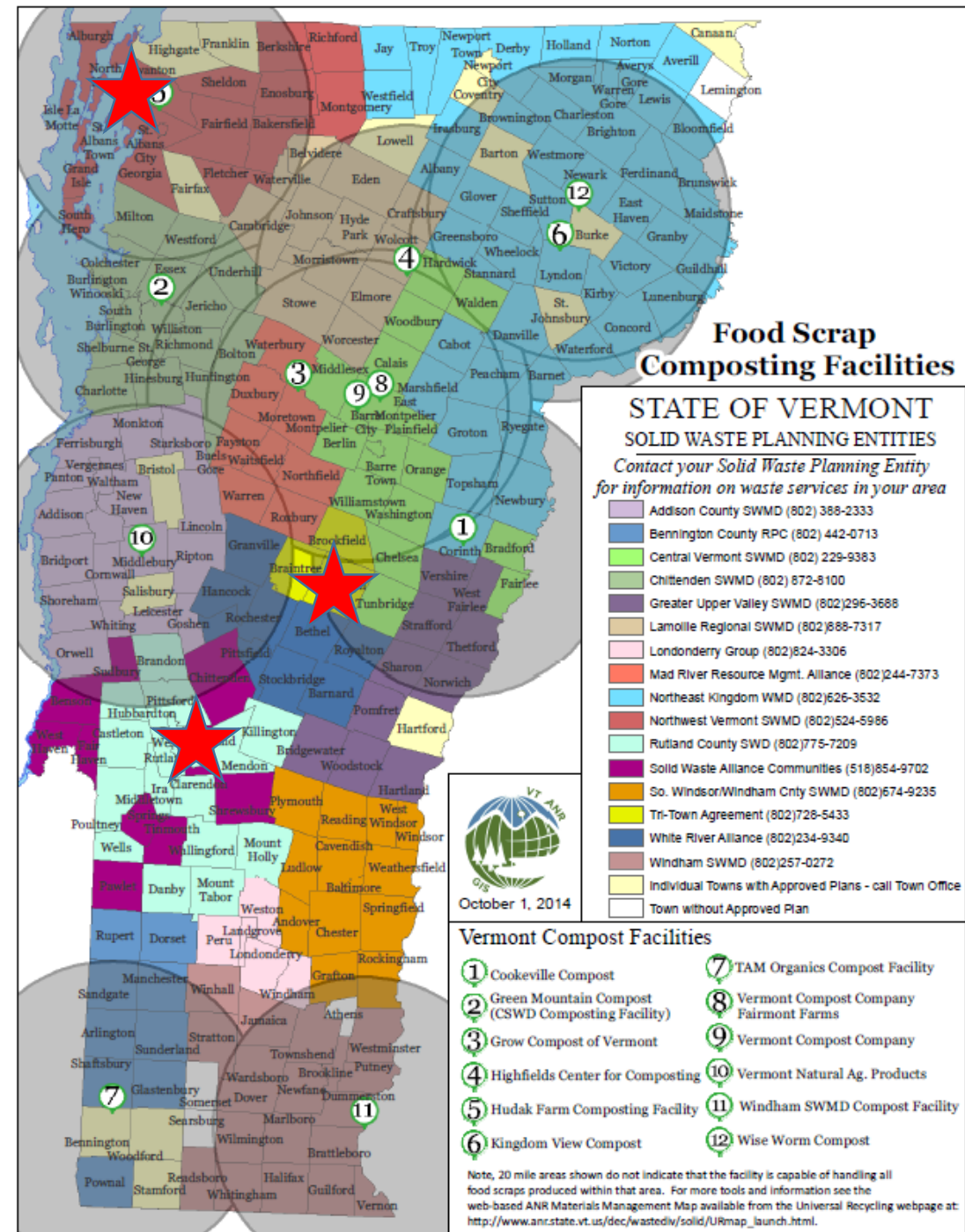
# Compost & Anaerobic Digestion

## New Digesters

★ Rutland

★ Randolph

★ St. Albans



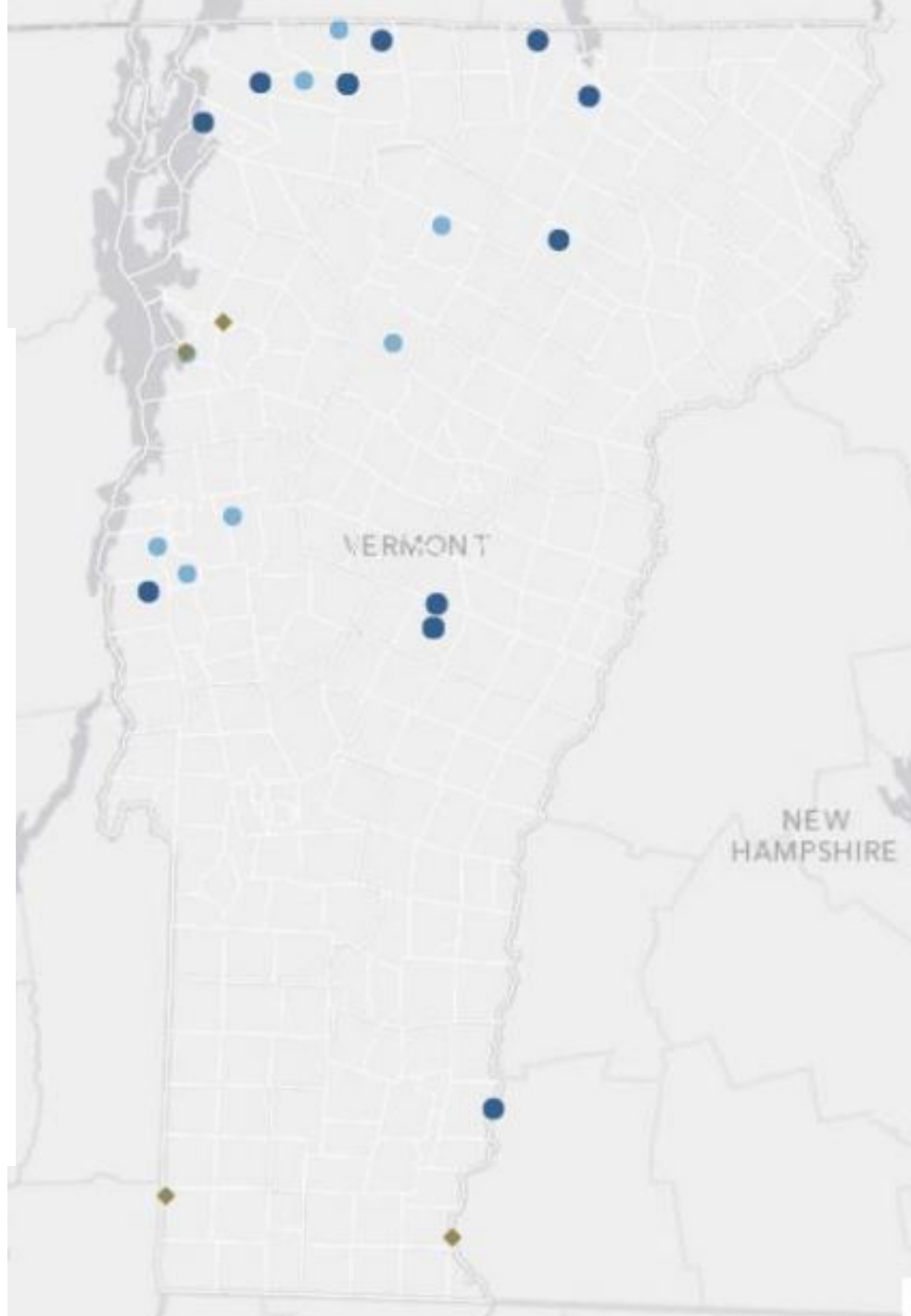
# Vermont Digesters

## On-Farm Digesters:

- Permitted to accept food processing residuals
- Not permitted to accept food processing residuals

## Other Digesters:

- ◆ Wastewater Treatment Plant





## AUDET'S COW POWER BRIDPORT, VT



DIGESTER TYPE	MIXED PLUG FLOW
YEAR BUILT	2005
SYSTEM PRODUCTS	BEDDING & COMPOST
BASE POPULATION	2,100 DAIRY COWS
OTHER FEEDSTOCKS	WHEY
ENGINE SIZE (kW)	680 kW
RECEIVING UTILITY	GREEN MOUNTAIN POWER
SYSTEM DESIGNER	DVO, INC.



# JONESLAN FARM HYDE PARK, VT



<b>DIGESTER TYPE</b>	COMPLETE MIX
<b>YEAR BUILT</b>	2012
<b>BASE POPULATION</b>	350 DAIRY COWS
<b>BIOGAS PRODUCTION (FT<sup>3</sup>/DAY)</b>	33,450 FT <sup>3</sup> /DAY
<b>RECEIVING UTILITY</b>	VT ELECTRIC COOP.
<b>SYSTEM DESIGNER</b>	UEM, INC.





**NEIGHBORHOOD ENERGY, LLC  
COVENTRY, VT**



<b>DIGESTER TYPE</b>	MIXED PLUG FLOW
<b>YEAR BUILT</b>	2008
<b>BASE POPULATION</b>	750 DAIRY COWS
<b>OTHER FEEDSTOCKS</b>	FOOD WASTE
<b>ENGINE SIZE (kW)</b>	225 kW
<b>RECEIVING UTILITY</b>	VT ELECTRIC COOP.
<b>SYSTEM DESIGNER</b>	DVO, INC.



“Clean Power,  
Cleaner Lake”

- Initial plans for 5 digesters along Lake Champlain

# Where Things Stand

RECYCLING (ban >6 months in effect)

- All Facilities accept recyclables
- Haulers are rolling out recycling services
- Recyclables are up!

ORGANICS (off to a great start)

- Food Donation up nearly 30%! (200+ food shelves)
- 10 Composters, 11 Haulers, up to 17 farm ADs
- 2 ton generators diverting; 1 tons outreach ongoing
- Leaf & yard collection growing rapidly

# Vermont's Story

## **1. Pilot Projects**

Grants, Support, & Recognition for Organics Recycling

## **2. Rules and Regulations** – Find a place for Organics Recycling

Protection of Food Donors

Compost Training, Technical Assistance, Siting, and Certification

Anaerobic Digestion Certification

## **3. Policy that supports market development**

## **CHALLENGES**

- Lack of Funding
- Down Recycling Markets
- Rural State/Economies of Scale

## **OPPORTUNITIES**

- More Awareness Than Ever
- Partnerships, Connections, Leverage
  - (compost/AD coexistence)
- Rural State = Space & Existing Farm Infrastructure

# Learning Lessons

- Engage Stakeholders Early and Often
- Ensure Level Playing Field
- Provide a Path Forward for Facilities
- Watch Markets
- Enforce Carefully
- Use Funding to Incentivize Greatest Needs
- Listen and Adapt

# Use the SYMBOLS!

Standardized Symbols available free.

Search web for “**Universal Recycling VT**”



[josh.kelly@state.vt.us](mailto:josh.kelly@state.vt.us)

802.522.5897

**Follow us on Facebook and Twitter -- @VTrecycles**