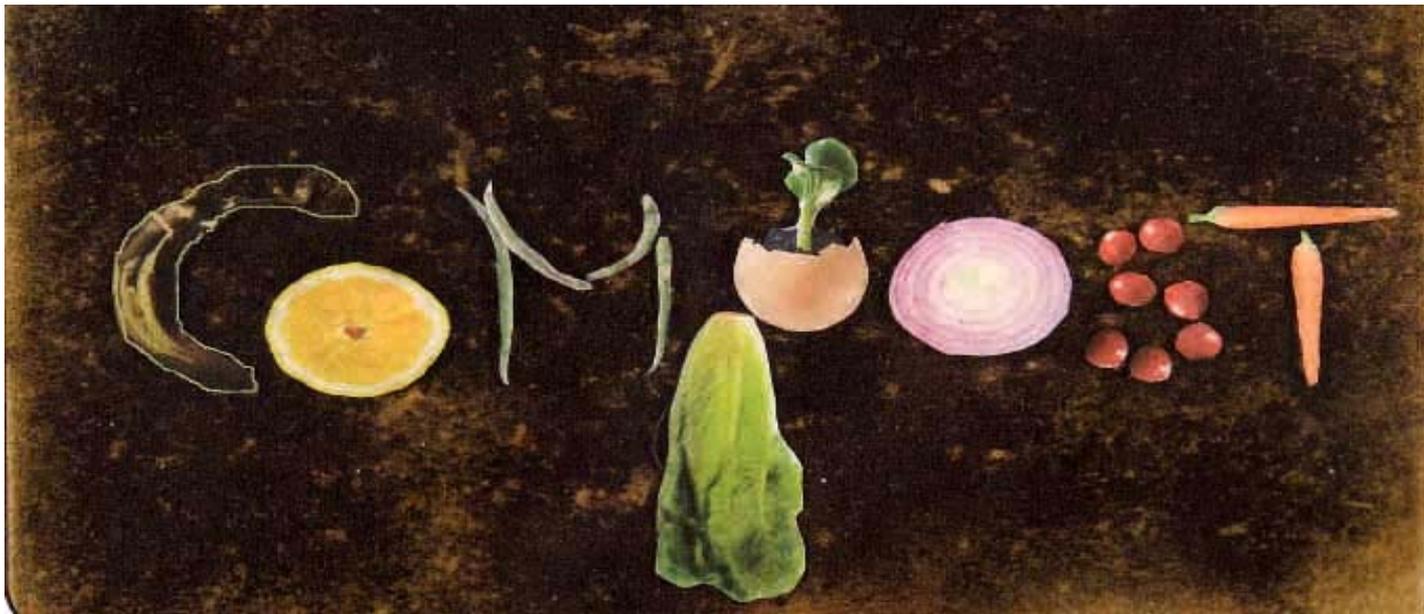


# It takes a village...

to manage organics.



Or,

# How **Troy Compost** came to be.

Abby Lublin, MCR/Community Organizer

Chair, Citizens Working Group on Composting

Prepared for CSC Webinar – Climate Smart Waste Management

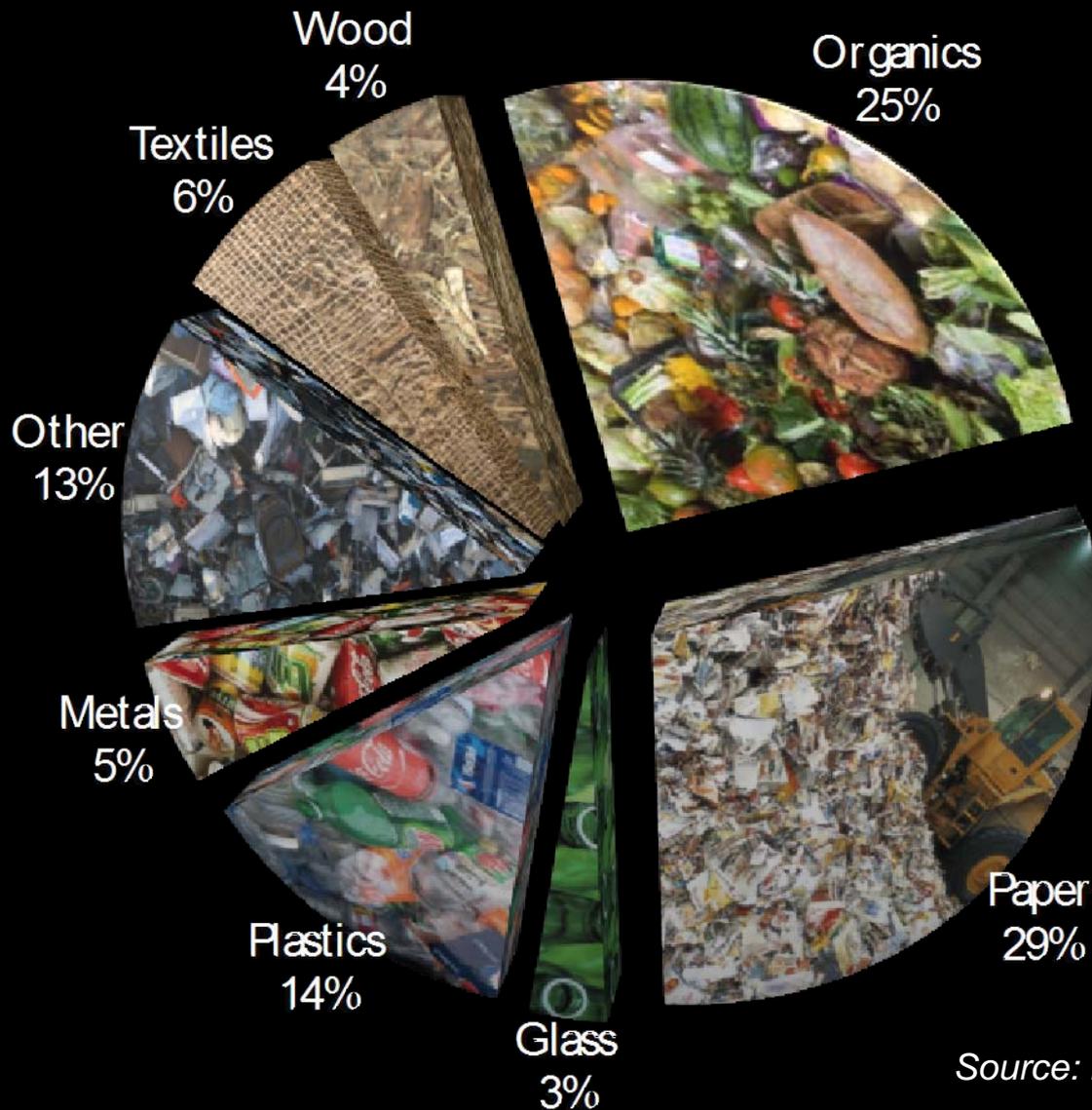
May 9, 2013

# About Troy, NY



- Population of 50,000+
- One of three cities that form the Capital Region
- Includes three colleges/universities and two hospitals
- In 19th C. was the second largest producer of iron
- Was at the forefront of manufacturing (iron, steel, textiles), women's education, engineering, social justice (first women's labor union, Underground Railroad), and brothels.
- Largest employers: RPI and NYS
- Steady decline with evidence of dilapidation and disinvestment since peak in early 20th C.

# NYS Solid Waste Content



Source: DEC: Beyond Waste, 2010

# Troy's Solid Waste



Note: This is household waste. C&D and industrial recycling brings recycling rate closer to 20%

## ***The City of Troy's MSW Stream: Content, Diversion, and Cost***

	<b>Content of Average NYS Waste Stream</b>	<b>NYS Average Diversion Rate</b>	<b>Troy Recovery (end use by %)</b>	<b>Est. total quantity in Troy's waste stream (tons per year)</b>	<b>Potential Savings: diversion (\$60/ton) *tipping fees only</b>
<b>Recyclable</b>	55%	24% (includes yard waste)	<b>6.3%</b> (residential) <b>15-20%</b> (overall w/C&D)	10,455	\$555,321
<b>Compostable</b>	27%	N/A	0.4% (yard waste)	5,133	\$303,457
<b>Other (Landfill/Combustion)</b>	18%	76%	<b>93%</b>	3,421	N/A

Sources:

- DEC: "Beyond Waste," 2010. ([http://www.dec.ny.gov/docs/materials\\_minerals\\_pdf/frptbeyondwaste.pdf](http://www.dec.ny.gov/docs/materials_minerals_pdf/frptbeyondwaste.pdf))
- Gerard J. Wagner (Division of Materials Management, NYS-DEC) email to Abby Lublin based on 2010 Annual Reports, January 2012.
- DEC: Division of Materials Management. Annual Report Form – Planning Unit Recycling Report: 2010, City of Troy.

# Troy's Advantages

- Distinctive **architecture** and **central downtown** with local businesses
- Urban **density** at livable, affordable scale
- Expansive, accessible **waterfront**; river and canal access
- Brownfield-designated **areas** ripe for remediation and repurpose
- Proximity to **farmland**
- Popularity of **gardening** and **urban agriculture**
- Large presence of **artists** and other creative class residents
- Balance of “old” and “new” **residents** (college town)
- Grit and relentless **hustle**: nothing to lose!

Once, there was a bright, eager RPI student who chaired the Student Sustainability Taskforce on campus.

Frustrated by administrative obstacles, **Anasha** reached out beyond the campus walls to engage with larger community, specifically **Transition Troy**\*.



\***Transition Troy** is a collaboration of residents building community resilience in the face of peak oil, climate change and economic crisis.

# Meanwhile...

Composting was afoot in small pockets throughout Troy:

- in *backyards*



- at various *gardens* including those owned and managed by Capital District Community Gardens, such as the Produce Project - a youth-powered farm

- vermicomposting in *kitchens* and *classrooms*



- in *research labs* at RPI where students and faculty develop sustainable technologies



Together,



+



organized a conference at RPI in October 2011 called:

## **Large-Scale, Food-Grade Composting in Troy:**

a conference on channeling Troy's food waste toward local food production



Jackie Baldwin, RPI's Executive Chef

# And a funny thing happened...

**80** People attended. Mostly from Troy.  
(Or, .16% of Troy's population)

Including...



Every candidate from all parties running for City Council or Mayor.

# City Code

## Chapter 234. RECYCLING

**§ 234-8. Citizens advisory board.** At the discretion of the Mayor, an **advisory board** shall be appointed to review and work with the City administration on **current and future recycling issues and programs.**

Said advisory board members shall be appointed by, and serve at the pleasure of, the Mayor and shall receive **no financial compensation** for their work. Advisory board members shall be **residents of the City** and shall **not hold public office** within the City administration. The advisory board shall consist of a minimum of five and a maximum of nine members. The advisory board shall have a Chair who shall preside at all meetings. Meetings of the advisory board shall be scheduled by the Chair in conjunction with the Mayor or his/her designated representative.

# Drafting Resolution



...worked together to draft a resolution for the formation of the CWG-C.

In March, 2012 the resolution is discussed and passed through the Council's Technology and Sustainability Committee, chaired by



The T&S Committee passed the CWG-C resolution and placed it on the agenda for approval at the full City Council meeting in April.

# Resolution Passed!



- Council unanimously established a “Citizens Working Group on Composting”
- Applicants interviewed and selected. Three women, two men. Three decades represented.
- Began meeting immediately.

# CWG-C's Task

*The CWG-C had six months to write a report that:*

- Summarized Troy's **current state** of organic materials management
- Presented **benefits** to municipal-scale composting and increased recycling, including potential financial savings
- Outlined **available technologies** and **best practices** for municipal-scale composting
- Identified **funding opportunities** for investment and infrastructure
- Made **recommendations** for next steps and longer term goals for a municipal system

# Current System - Problems

- **Inversion of economic incentives:** Residents pay to recycle (added fee), while unaware of disposal costs
- **Low participation.** At 10-18% of solid waste stream, Troy's recycling rate is one of the lowest in the region, and well-below average for NYS.
- **Widespread confusion** as to what and how to recycle. Single stream began Oct. 2010; slight increase in participation
- **Lost financial savings.** Troy saves \$15,000 for every 1% increase in the recycling rate.

---

(Based on 2008 MSW Recycling #s. Before Troy's single-stream system.)

Source: NYSDEC. *Beyond Waste*. 2010

# One Size Does **Not** Fit All

## **Diverse population**

- age, living arrangements
- urban, rural
- ownership, length of residency

## **Range of Participation**

- different waste volume and needs:  
institutions, residences, businesses

## **Centralized and De-centralized System**

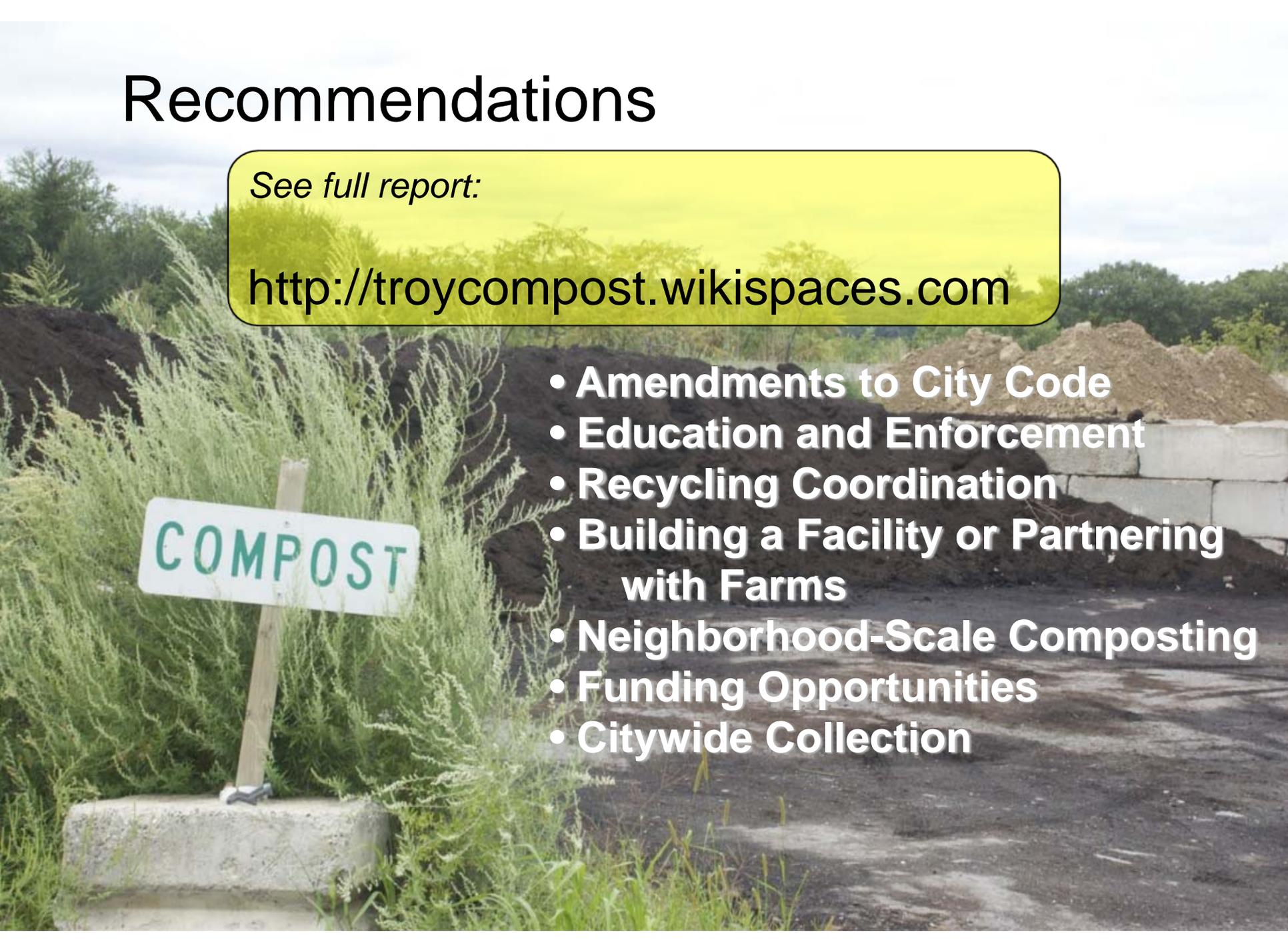
- system design: not reliant on one system  
or company for organics management  
= more resilience

# Recommendations

*See full report:*

<http://troycompost.wikispaces.com>

- **Amendments to City Code**
- **Education and Enforcement**
- **Recycling Coordination**
- **Building a Facility or Partnering with Farms**
- **Neighborhood-Scale Composting**
- **Funding Opportunities**
- **Citywide Collection**



COMPOST

# Post-Report Organizing

CWG-C submitted report and gave presentation in  
Jan. 2013

- CWG-C folded into larger Troy Compost
- Each recommendation area (7) = a committee
- Committees meet, report to large



# Accomplishments

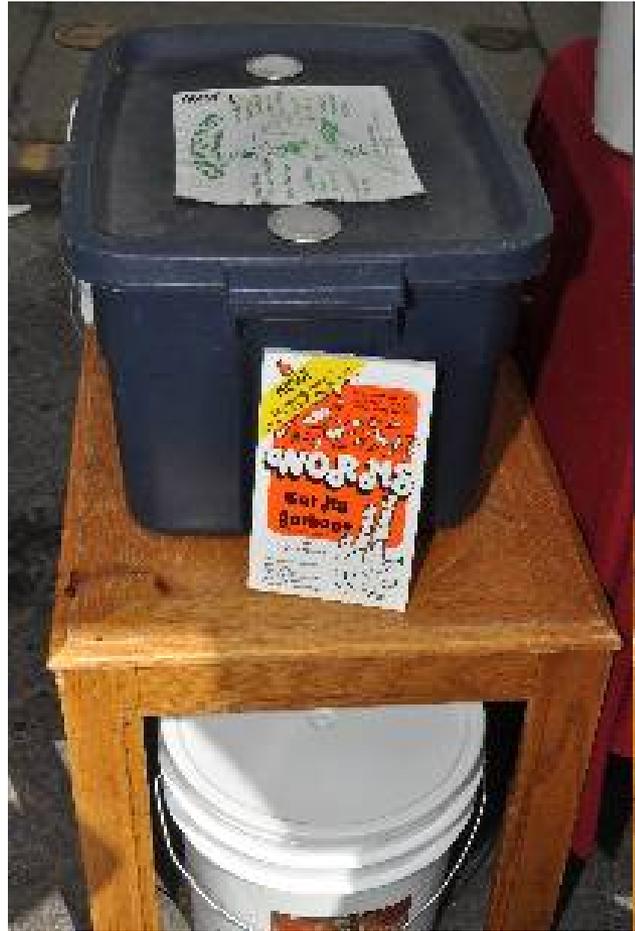
- Tabling at events, increasing volunteer base
- Presentations in classrooms
- Weekly collection of food scraps at Farmers Market
- Distribution of city's blue bins with updated "how to" guides
- Tour of Recycling Facility at Port of Albany
- Consultations for backyard composting
- CDCG as partner: open hours for food scrap collection
- Compost is part of planning, neighborhood, etc. conversations
- DPW = willing partner to collect data
- Interest in MCR training
- Community groups w/land establishing piles for neighborhood systems

# Outreach: Tabling at Farmers Market

Mary Alice collects **survey information** from Troy residents and shares **updated recycling information** before **distributing a blue bin.**

Marie shares information about **food scrap collection** at two CDCG gardens in South Troy.





# Next?

- Facility committee to do more site visits, create business plan/RFP for city LDC
- In meantime, partner w/farms & yard waste facilities
- Expand Troy's yard waste facility (permitting)
- Incentivize participation for businesses (right-sizing and collective bins, renegotiated hauling contracts, BID as facilitator)
- Train neighborhood leaders for maintaining shared bins
- Bin sale for residents
- Trainings for food service at institutions
- Branding recycling/composting as sexy and cool!
- Continue to build on this civic engagement!

# Contact Information

CWG-C Site and Report

<http://troycompost.wikispaces.com>

requires a wikispaces account and permission

Troy Compost

[troycompost@gmail.com](mailto:troycompost@gmail.com)

Abby Lublin

[abblub@gmail.com](mailto:abblub@gmail.com)



*Bin in front of Public Library, Palo Alto, CA*



# The City of Watervliet

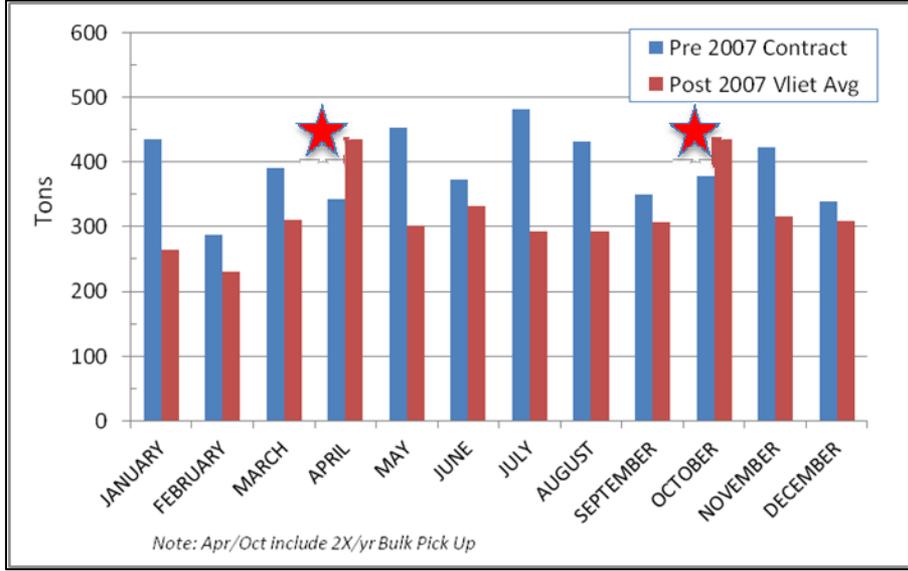
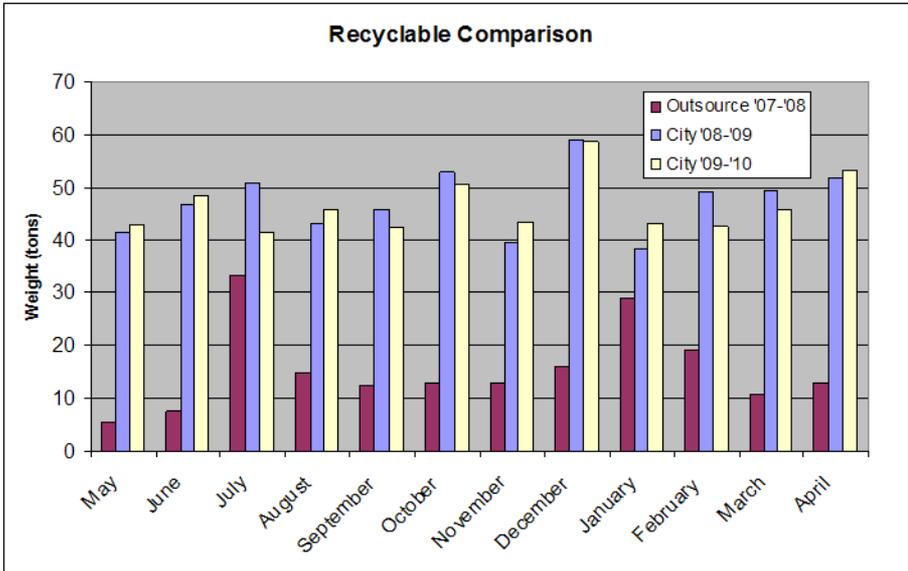
Watervliet Organic Waste Program



# Introduction: The City of Watervliet



- Population of 10,254 Residents
- 2,448 Residential Sites
- 370 Commercial Sites
- 1350 Pupil School District



**DRIVING RECYCLABLES UP/WASTE DOWN**



# Introduction: The City of Watervliet



- Adopted US Conf of Mayors/NYS DEC Climate Smart Pledge
- US EPA Green Power Partner
- Completed Climate Action Plan and GHG Inventory for municipal operations
- Renewables :(3) Solar Projects = 100 kW; growing to 6.25 MW hydroelectric
- Established Watervliet Sustainability Working Group as part of Local Development Corp.





- **Made possible by grant from Horizon Milling/Cargill Corporation**
- **On January 27, 2012 a 6-month Pilot Program was launched**
- **Participating residents were given materials to participate in the program**
  - **Outside Bin**
  - **Inside Bin (Kitchen Catcher)**
  - **Compostable Liners**
  - **Rules - Only Organic Waste (Essentially Food Waste)**
  - **Schedule - Pickup bi-weekly on Friday**

# The WOW Kit – Easy as 1-2-3-4



1. Put compostable bag in inside bin
2. Fill bag with organic waste
3. Remove bag, tie and place in outside bin
4. Outside bin collected bi-weekly



# WOW Program - Process



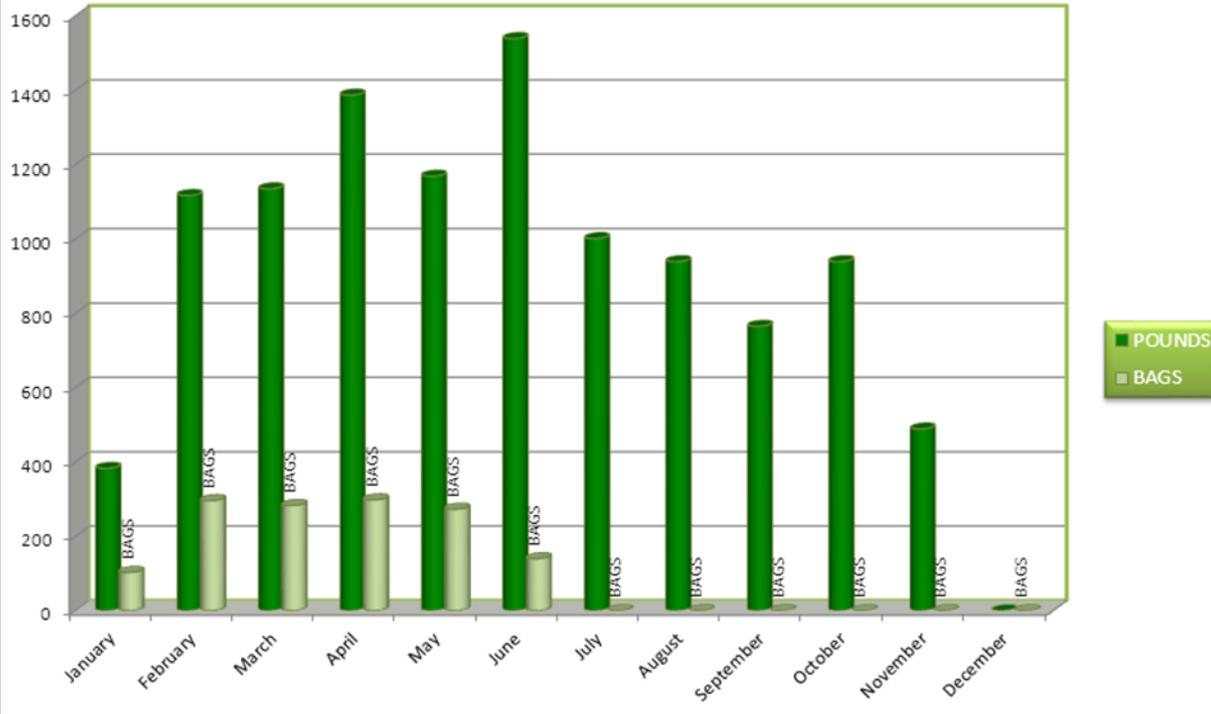
- **Organic waste was collected bi-weekly and weighed – tracked number of bags, bag weight, total weight.**
- **Brought to Albany County Sewer District's Anaerobic Digester**
  - Partnership with Albany County Sewer District, Spectrum Bio-Energy and NYSERDA.
- **Collected 6,730 lbs of organic waste during the 6-month period**



# WOW Program: Results to Date



2012 Organic Waste Recycling  
(started January 27, 2012)



## WEEKLY COLLECTION AMOUNT

Data from 2012 workbook

Pick-up began 1/27/12

MONTH	POUNDS	BAGS
January	383	103
February	1117	296
March	1135	283
April	1387	298
May	1169	273
June	1539	140
July	1001	0
August	939	0
September	765	0
October	939	0
November	489	0
December	0	0
<b>GRAND TOTALS</b>	<b>10863</b>	<b>1393</b>

# WOW AD Proof Study Results (NYSERDA, Alb Co Sewer, Spectrum)



**Goal: Demonstrate the effectiveness of using AD systems for wastewater bio solids, food waste, and fats, oils and grease (FOG) management to produce biogas**

Load Date	Type of Waste (lbs/day)			Biogas	Digestate		Percent solids		OLR
	Sludge	Food	Bakery	CH <sub>4</sub> generation / Day	Disposed (lbs)	% Recycled	Feed	Effluent	
2/27-3/2	498	0	0	815 ft <sup>3</sup> (23.07 m <sup>3</sup> )	41	53%	6.3	3.9	0.134
3/5-3/9	373	62	66	1365 ft <sup>3</sup> (38.65 m <sup>3</sup> )	42	56%	7.3	4.7	0.162
3/12-3/16	381	0	124	1982 ft <sup>3</sup> (56.15 m <sup>3</sup> )	39	54%	8.4	4.6	0.155
3/19-3/23	375	122	0	1124 ft <sup>3</sup> (31.83 m <sup>3</sup> )	31	66%	8.1	4.9	0.157

Waste Type	CH <sub>4</sub> generation (m <sup>3</sup> /yr)	Electricity (kWh/yr)	Homes powered	Homes heated
Sludge	8,420	16,618	1.48	1.65
Sludge + Food/Bakery	14,107	28,094	2.50	2.79
Sludge + Bakery	20,495	40,340	3.59	4.01
Sludge + Food	11,618	23,051	2.05	2.29

Duration of operation is 52 weeks per year. Electricity was calculated assuming a 35% generator efficiency

# WOW Program: Actual vs. Potential



## WOW - (bi-weekly pick up )

Pilot program 10 week results - 51 participants  
 City Wide Participation projected at 75%  
 Per ton tipping fee \$51

	# of Households	Total Lbs.	Average Wkly Lbs. Collected	Average Wkly Lbs per household	Projected Total Tons	Projected Savings
Pilot participants for 10 wks	51	5765	113.04	11.30	2.88	\$ 147.01
Pilot participants for remainder of yr (16 wks) *	51	9224	180.86	11.30	4.61	\$ 235.21
City Wide Participation **	3750	1,102,132	293.90	11.30	551.07	\$ 28,104.38

**actual figures**

- \* projected figures for the remainder of the year
- \*\*Household projections based on 5000 units in the City

# WOW Program – Pilot Issues



- **MAIN ISSUE:** Warm Weather Caused Accelerated “Reaction” at residence
- Design, Size and Location of Compost Site
- Getting Waste Out of Compostable Bags to Facilitate Compost/Digestion
- Residents Using Plastic Bags as Liner vs. Compostable Bags
- Attractiveness of Outside Bins leads to Bins Being Stolen



# WOW Program: Going Forward



## 1. Roll out City wide, 75% of Watervliet Residents Participation

- Recruit 50 residents per quarter

## 2. Reduce Community GHG Inventory

## 3. Reduce Tipping Fees/Increase Landfill Life

- 75% participation = \$30+ K/yr in tipping fees

## 4. Anaerobic Digestion

- Working with partners to develop/build system
- Generate NG for heat and/or power City vehicles

## 5. Engage businesses and Watervliet City School District

## 6. Work/Share with Other Communities

# Current Disposal: Compost



## Residential Separation



## Municipal Pick Up



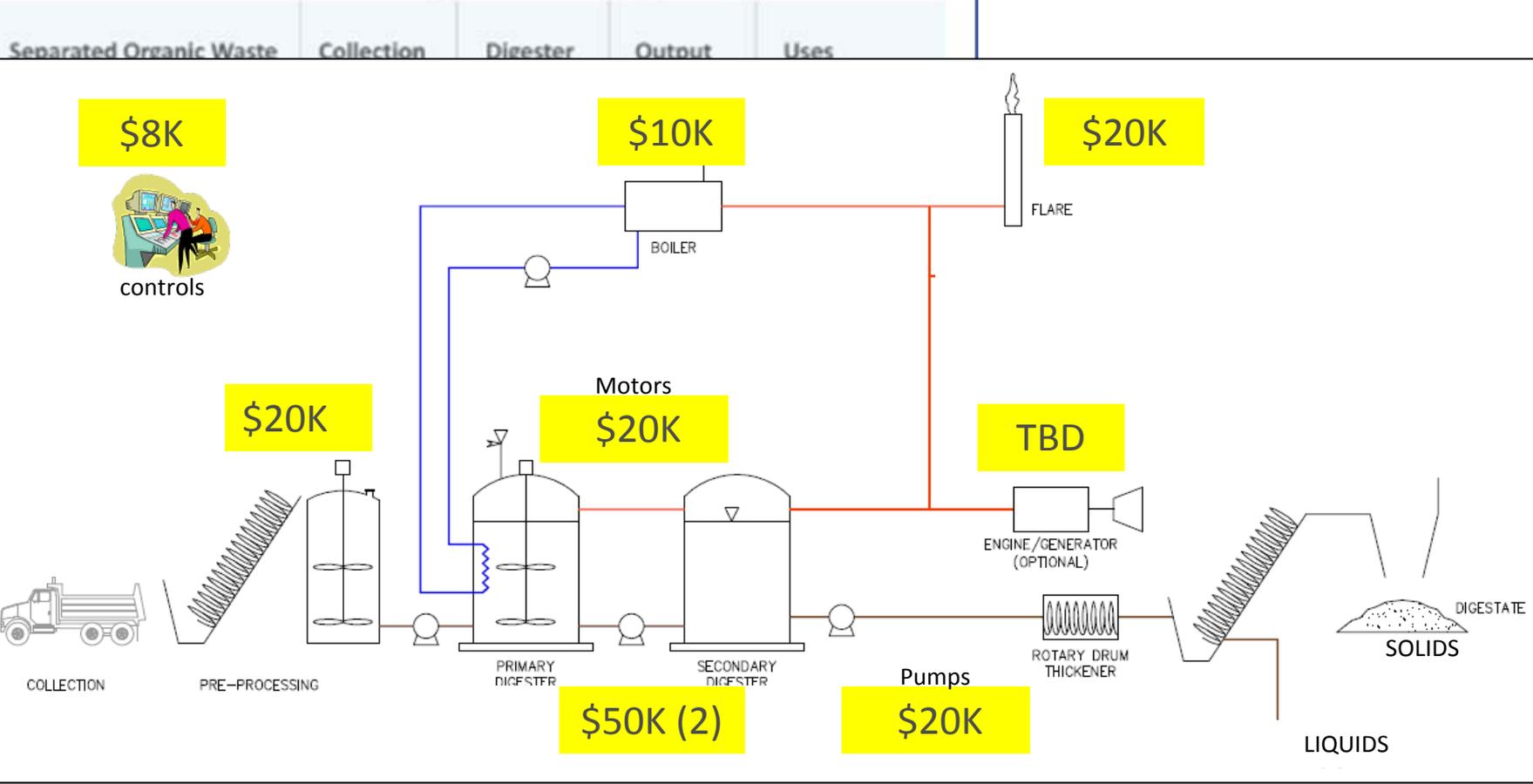
## Yield Compost

## Mix With Other Organics

# Future Disposal: Anaerobic Digestion



Watervliet Anaerobic Digestion Process / Benefits Flow



# ADDITIONAL INFO



# WOW Program: In The News



Albany / Schenectady / Troy Change region

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3:51 pm 39°

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01/27/2012 01:14 PM

**Watervliet starts organic waste program**  
By: YNN Staff

WATERVLIET, N.Y. -- The city is making its city greener.

The "Watervliet Organic Waste" program now wants to also...

Residents are taking part in the program. The bin is set next to a resident's home.

The mayor said the rules of the program are simple. "Anything organic. Anything that can go into your garbage can," said Manning. Manning also said the trial...

8 - Friday, January 27, 2012

local news

The Record www.troyrecord.com

## Watervliet's organic waste pilot program goes through trial run today

**WATERVLIET** — With a unique organic waste program currently in a trial stage, the city of Watervliet is expecting to decrease the amount of actual garbage sent to the local landfill which will help save the environment and save the city money.

The first curbside pickup of the pilot Watervliet Organic Waste program (WOW) is set for today. About 35 residents, mainly city employees, are participating in the service but the city would like to include a total of 50 people in the trial program to work out any issues or bugs before eventually offering it to the residents city-wide in several months, said Watervliet Mayor Mike Manning.

According to a recent survey of the participating residents, they are putting much less actual garbage

than before since most items are either going in the recycling bin or in the organic waste bin.

"It's working out well. And it's cleaner and easier than we initially expected," said Manning, who is also participating in the trial that is expected to last about 10 weeks.

Because there is less garbage, the city expects to pay less in landfill tipping fees. About 25 percent in current landfill costs, or \$100,000 annually, will likely be saved, said Manning.

Though, the program also comes with an initial price of at least \$30 per household for an indoor bin and outdoor bin for the organic waste. The program uses a newly-developed composting and digestion system using an anaerobic digester. The digested

compost is recycled and methane gas is captured that could be used for fuel or heating.

Organic waste items include most food items like vegetables or fruits.

"This is a great opportunity and effort to make our city greener," said Manning. "Not only are we saving space in our landfill, but we are putting our waste to better use which will go back into the community."

It is unclear how the WOW city-wide supplies would be paid for since the city is looking into possible grant funding or partnerships. The survey form, for example, is in collaboration with the Cornell Cooperative Extension.

"They are very interested in our results," said city general manager Mari Gleason noting that city

officials believe this is the first program of its kind in the state.

The trial program was funded using a \$6,000 grant that was matched by

officials.

Trial participants, who are asked to weigh and record the organic waste, use an indoor bin lined with a certain type of bag

other week to the outdoor bin. Residents were asked to put out their waste Thursday night and it was picked up today by a pickup truck.

## Watervliet to implement WOW city-wide

**WATERVLIET** — The success of the Watervliet Organic Waste (WOW) pilot program has drawn international attention to the Arsenal City and its innovative uses for biodegradable organic waste. Due to its success, WOW is now available to residences throughout the city.

Officials said the program removed 5,765 pounds of organic waste from the city's waste stream, with each participating household diverting an average of 113 pounds of organic waste from the landfill during the test period.

City officials hosted several delegates from India at the Department of Public Works garage Thursday to discuss the WOW program and how the city plans on using

organic waste as a renewable energy resource.

"It is exciting to have the success of the program on an international level," said Watervliet Mayor Mike Manning. "Our program is unique and puts organic waste to use instead of letting it take up space; we hope to share the success of our program to inspire future developments in renewable energy and environmental sustainability efforts."

Thursday was the second time a group of participants in the U.S. Department of State's International Visitor Leadership Program (IVLP) have visited Watervliet this year. The six delegates, who are leaders in their professional fields which focus on environmental initiatives, are

in the country to participate in a three-week program on climate change and clean energy. The city hosted its first IVLP delegation, which hailed from Kosovo, in April. WOW's successful 20 week pilot program had its first pickup in January and ended June 1. WOW will now be implemented city-wide and all residents are encouraged to participate. If 75 percent of the city's households opt to participate in the program, the city would realize a savings of \$30,000 annually in tipping fees, in addition leaving a smaller carbon footprint.

Manning said he hopes to eventually extend the program to include businesses in the city.

Watervliet is working to secure grant funding to purchase its own digester, which biodegradable organic waste such as food into natural gas. Watervliet used 1 County Sewer anaerobic digester. WOW pilot program is also in the ordering "Kitchen containers which hold indoors with a plastic bag from the digester. Residents would place it into a plastic bag from the digester and place it into a plastic bag from the digester. The city is currently the organic waste to create compost and its parks.

—By Record Staff

## Watervliet, New York SMALL-SCALE RESIDENTIAL FOOD COMPOSTING

The city of Watervliet completed a 6-month pilot program in August that involved collecting source separated organics from 50 residences and taking them to a pilot-scale anaerobic digester set up at the Albany County Sewer District's South Plant. As part of its Watervliet Organic Waste (WOW) program, participating households were given a kitchen compostable bucket, an outside bin and compostable bags and were asked to divert food scraps only from the rest of their waste stream. The organics were picked up biweekly. The pilot diverted 6,730 pounds of food waste from the landfill. The city has decided to continue collecting organics from the 50 residences and compost them using passive aeration at its recently built facility. A campaign is under way to recruit more participants to the program, with the initial goal of signing up an additional 50/quarter. Watervliet will also compost residents' yard trimmings in the spring and summer, leaves in the fall and Christmas trees in the winter.

"We used to shred these materials and haul them away, but now they are used in the composting mix," says city Mayor Mike Manning. Piles are turned with a front-end loader. Finished compost will be used in municipal parks and distributed to participating residents. Currently, Watervliet pays a \$51/ton landfill tipping fee for residential waste and, according to the pilot project's report, would save more than \$28,000 annually if 75 percent of its residences participated in the source separation program. Manning notes that the city is still interested in pursuing development of an anaerobic digester, and is exploring options.



# WOW Program: Global Recognition



- Delegates from Kosovo and India took informational tours
- Both delegations were impressed with hopes to bring some form of the WOW program back to their countries





**Thank You**

**Questions?**

# Climate Smart Communities Webinar

## E-Mail Addresses



- Mark Lowery  
[mdlowery@gw.dec.state.ny.us](mailto:mdlowery@gw.dec.state.ny.us)
- Kim Farrow  
[kxfarrow@gw.dec.state.ny.us](mailto:kxfarrow@gw.dec.state.ny.us)
- Climate Change Office  
[climatechange@gw.dec.state.ny.us](mailto:climatechange@gw.dec.state.ny.us)

# Climate Smart Communities Webinar

**Website Address**



<http://www.dec.ny.gov/energy/50845.html>