# Climate Smart Communities Webinar

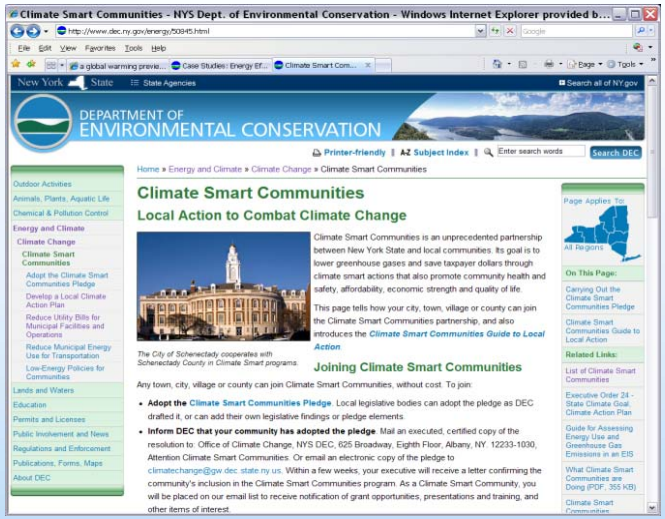
**Telephone call-in number**

- 1-866-394-2346
- Code: 9587140750#
- No audio signal will be transmitted over the Internet

# CSC Support for Localities

- NYSERDA Focus on Local Governments
- Webinar series
- Direct notice of funding and educational opportunities
- Funding preference
- Online guidance
- CSC listserv
- Regional Climate Smart Community Coordinators (coming)

# CSC Online Guidance




- Adopting the CSC pledge
- Climate action planning
- Conducting GHG inventories
- Reducing municipal energy use, costs
- Low-energy policies for communities
- Climate-smart waste management

**www.dec.ny.gov/energy/50845.html**

# Regional Climate Smart Community Coordinators

- Pilots: Capital District, Long Island, Lower Hudson Valley, Central New York
- Deliverables: Regional GHG inventories, assistance with community inventories, planning, anchor projects, training

# Statewide CSC Activities

- Statewide CSC support
- Local land-use and transportation planning support
  - Transportation Climate Initiative
- Land-use, zoning, transportation, building-code toolkit

# Why Inventory GHGs?

- Basis for GHG emission-reduction planning
  - Set reduction targets
  - Help identify reduction opportunities and options
- Regular updates
  - Track progress toward goals
  - Identify necessary mid-course corrections

# Climate Smart Community GHG Inventory Recommendations

| *Inventory Type* | *CSC-preferred protocol* | *CSC-recommended tool/membership* | *Alternative tool* | *2nd alternative tool* |
|---|---|---|---|---|
| Municipal Operations | Local Government Operations Protocol | CRIS/The Climate Registry<br>CAPA 2009/ICLEI Comprehensive Report | CACP 2009/ICLEI Quick Action Report | CACP 2005 |
| Community | None available | CACP 2009/ICLEI Comprehensive Report | CACP 2009/ICLEI Quick Action Report | CACP 2005 |

# CONDUCTING A GREENHOUSE GAS EMISSIONS INVENTORY:
## GOVERNMENT OPERATIONS AND COMMUNITY

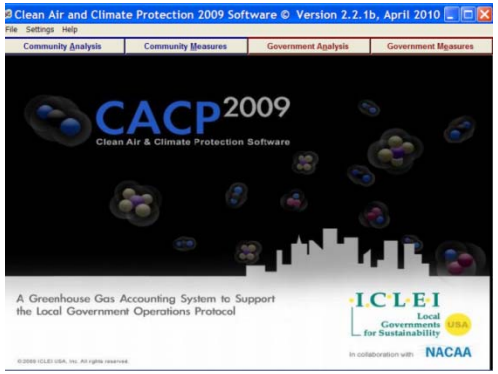
Katie Stoner, *Sustainability Planner*

# Town of Ithaca, NY

- Climate Smart Community
- ICLEI member
- GHG emissions reduction goals
- Sustainability goals
- Government operations
- Community
- Sustainability Planner, 2 year position shared with Dryden, NY

# Government Operations: Preparation

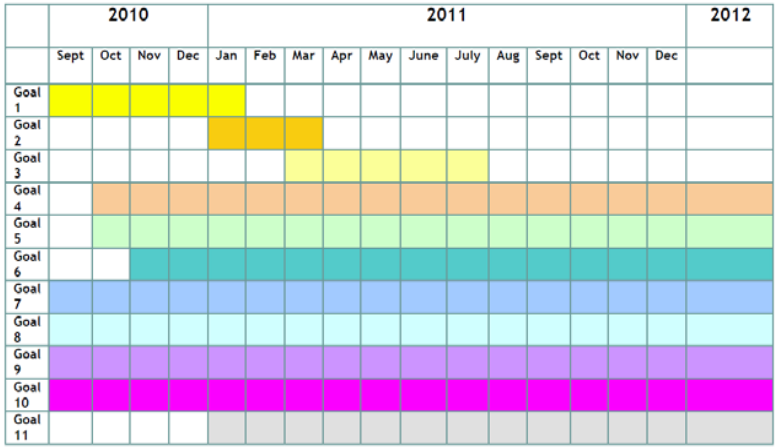
ICLEI
Local Governments for Sustainability



***Goal 1:*** Evaluate and assess baseline energy conditions

| Objectives | Action Steps | Benchmarks |
|---|---|---|
| a) Gather data on current Local Government and Community energy use<br>b) Inventory greenhouse gas emissions resulting from all Town operations and facilities and the residential, commercial, industrial, transportation, and waste sectors of the community | 1) Access and collect utility bills for all facilities and operations; collect aggregate community data from NYSEG<br>2) Become ICLEI member<br>3) Input utility data into CACP software and generate reports for analysis<br>4) Present report to Town Board for input and feedback | ■ All utility data (Local Government and Community) is collected and organized<br>■ GHG emissions inventory is complete; baseline energy measurement is established, report generated |

**Proposed Timeline**



# Government Operations: Data Collection

| Sector | Details |
|---|---|
| Building and Facilities | Town Hall<br>Public Works |
| Streetlights | 10 Lighting Districts<br>2 School Crossing Lights |
| Water Delivery | Bolton Point Facility<br>4 Pump Stations<br>19 Pump Houses and Tanks |
| Wastewater Treatment | Ithaca Area Wastewater Treatment Facility (42%)<br>14 Pump Houses |
| Vehicle Fleet | 73 Vehicles and Equipment (Public Works and TOI)<br>13 Vehicles (Bolton Point) |
| Employee Commute | 72 Employees from TOI, Public Works & Bolton Point<br>Passenger cars, vans, light trucks, SUVs |

I41

| | A | B | C | E | G | I | J | K |
|---|---|---|---|---|---|---|---|---|
| 1 | **Buildings & Facilities: 2009** | | | USE FOR kWh TOTALS | Delivery | Supply | | |
| 2 | Facility | Therms | Natural Gas Cost | NYSEG kWh | NYSEG Cost | Total Electricity Cost | Scope | Total Cost |
| 3 | Town Hall | 12,883 | $15,003.59 | 163,650 | $7,462.53 | $16,987.06 | 2 | $31,991.65 |
| 4 | Public Works - Main Bldg. (includes outdoo | 8,646.90 | $10,080.76 | 101,592 | $5,465.72 | $12,626.25 | 2 | $22,707 |
| 5 | Public Works - Town Barn | 298.50 | $299.54 | 1,651 | $264.69 | $362.94 | 2 | $662.48 |
| 6 | Public Work - Salt Shed | | | 11,383 | $711.93 | $1,058.59 | 2 | $1,058.59 |
| 7 | | | | | | | | |
| 8 | Total Natural Gas Usage | 21,828.50 | therms | | | | | |
| 9 | Total Natural Gas Cost | $25,383.89 | | | | | | |
| 10 | Total Electricity Usage | 278,276.00 | kWh | | | | | |
| 11 | Total Electricity Cost | $31,034.84 | | | | | | |
| 12 | Total Energy Costs | $56,419.73 | | | | | | |
| 13 | | | | | | | | |
| 14 | | | | | | | | |
| 15 | **Streetlights and Traffic Signals: 2009** | | | USE FOR kWh TOTALS | Delivery | Supply | | |
| 16 | | | | NYSEG kWh | NYSEG Cost | Total Electricity Cost | Scope | Total Cost |
| 17 | Warren Road Signal | | | 275 | $199.08 | $218.46 | 2 | $218.46 |
| 18 | Warren Road 51G | | | 235 | $197.24 | $210.80 | 2 | $210.80 |
| 19 | At Large Street Light | | | 198,161 | $6,793.48 | $16,103.72 | 2 | $16,103.72 |
| 20 | Forest Home Lighting District | | | 10,977 | $1,298.09 | $1,814.54 | 2 | 1814.54 |
| 21 | Glenside St. Lighting District | | | 4,277 | $503.62 | $704.54 | 2 | 704.54 |
| 22 | Renwick Lighting District | | | 5,696 | $718.08 | $985.68 | 2 | 985.68 |
| 23 | Eastwood Commons Lighting District | | | 7,794 | $1,705.23 | $2,071.39 | 2 | 2071.39 |
| 24 | Clover Lane Lighting District | | | 203 | $985.00 | $1,031.28 | 2 | 1031.28 |
| 25 | Winner's Circle Lighting District | | | 1,477 | $652.33 | $721.70 | 2 | 721.7 |
| 26 | Burleigh Dr. Lighting District | | | 3,448 | $683.12 | $845.08 | 2 | 845.08 |
| 27 | West Haven Rd. Lighting District | | | 13,677 | $2,067.87 | $2,710.36 | 2 | 2710.36 |
| 28 | Coddington Rd. Lighting District | | | 7,956 | $1,233.40 | $1,607.10 | 2 | 1607.1 |
| 29 | | | | | | | | |
| 30 | Total Electricity Usage | 254,175.84 | kWH | | | | | |
| 31 | Total Electricity Cost | $29,024.65 | | | | | | |
| 32 | | | | | | | | |
| 33 | | | | | | | | |
| 34 | | | | | | | | |
| 35 | **Water Delivery Facilities and Pumps: 2009** | | | USE FOR kWh TOTALS | Delivery | Supply | | |
| 36 | | Therms | Natural Gas Cost | NYSEG kWh | NYSEG Cost | Total Electricity Cost | Scope | Total Cost |
| 37 | Bolton Point Plant | 13934.8 | $16,107.74 | 1,864,474 | $180,011.77 | $180,011.77 | 2 | $196,119.51 |
| 38 | Oakcrest Booster Pump Station | 397.8 | $729.21 | 834,000 | $60,000.94 | $60,000.94 | 2 | $60,730.15 |
| 39 | Raw Water Pump Station | | | 1,288,744 | $129,439.27 | $129,439.27 | 2 | $129,439.27 |
| 40 | Burdick Hill Pump Station | | | 213,017 | $16,137.44 | $16,137.44 | 2 | $16,137.44 |
| 41 | Bostwick Rd. Park | | | 5,281 | $727.34 | | 2 | $727.34 |
| 42 | Bostwick Rd. Water Tank | | | 100 | $191.41 | $197.74 | 2 | $197.74 |
| 43 | Cliff St. Pump | | | 4,687 | $377.02 | $681.73 | 2 | $681.73 |
| 44 | Coddington Rd. | | | 457 | $207.44 | $238.94 | 2 | $238.94 |

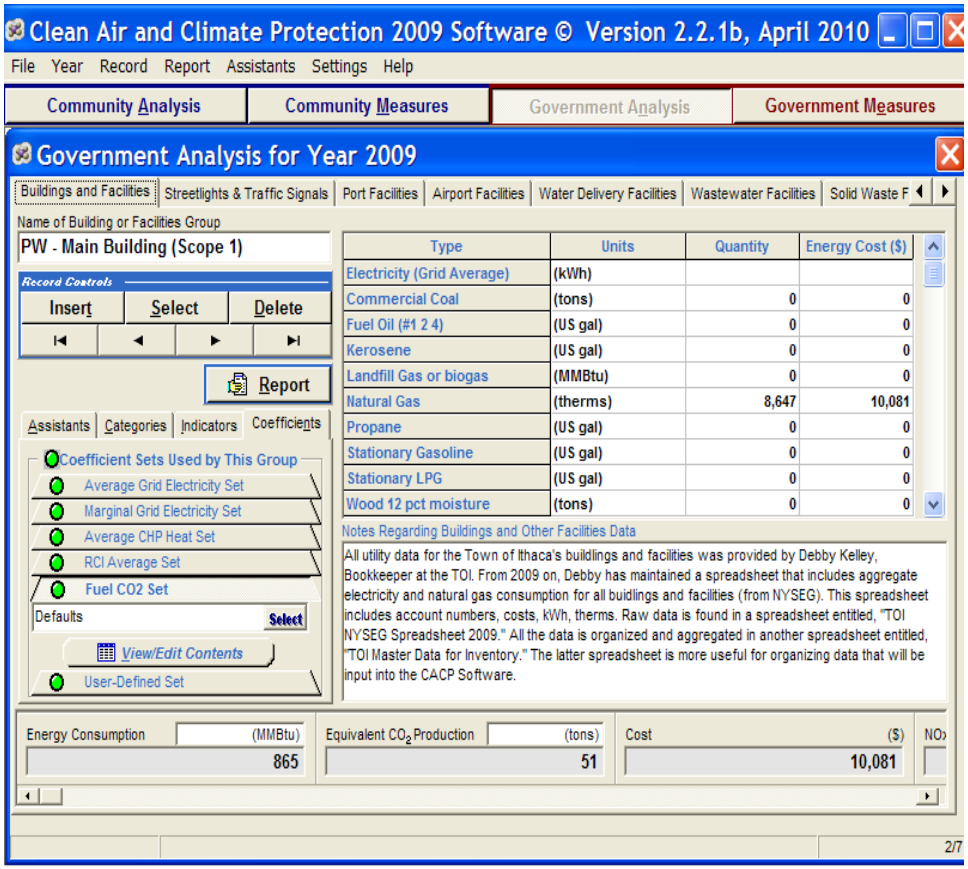
2009 Total Usage | Sheet3 | Guide to Pages | INTEGRYS Data | Town Hall | Public Works Main | PW Barn | PW Salt Shed | Warr

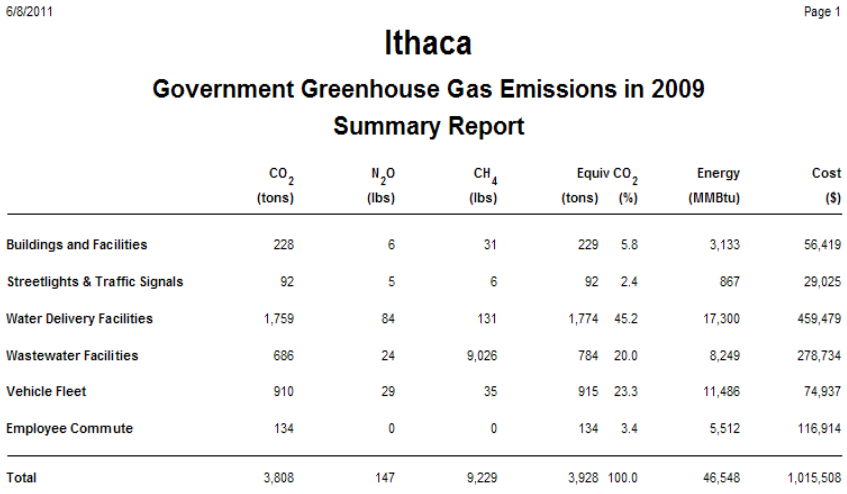
Ready

# Community: Data Collection

NYSEG

# Calculate Emissions: Software (or not)



6/8/2011 Page 1

**Ithaca**

**Government Greenhouse Gas Emissions in 2009**

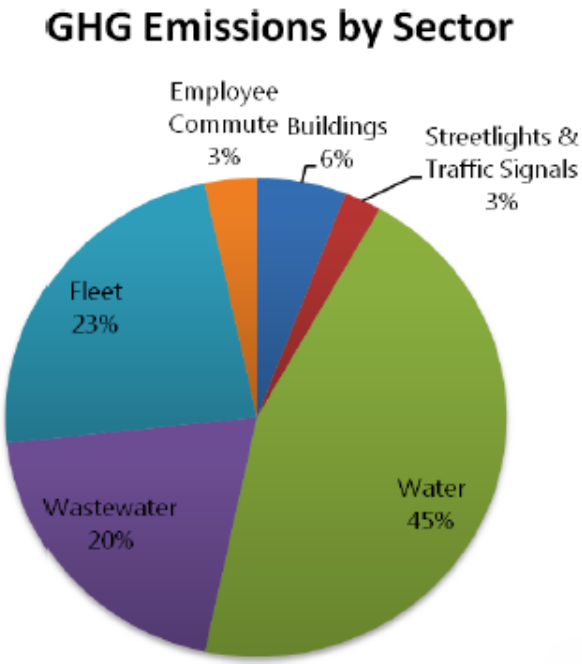
**Summary Report**

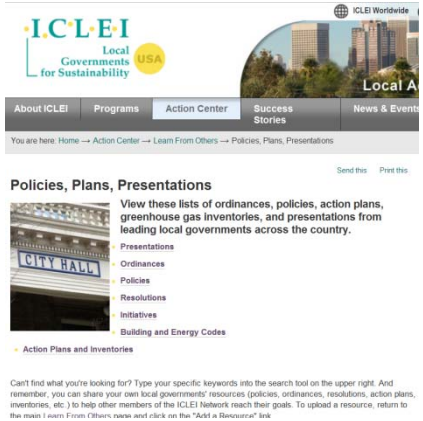
| | $CO_2$ (tons) | $N_2O$ (lbs) | $CH_4$ (lbs) | Equiv $CO_2$ (tons) | Equiv $CO_2$ (%) | Energy (MMBtu) | Cost ($) |
|---|---|---|---|---|---|---|---|
| Buildings and Facilities | 228 | 6 | 31 | 229 | 5.8 | 3,133 | 56,419 |
| Streetlights & Traffic Signals | 92 | 5 | 6 | 92 | 2.4 | 867 | 29,025 |
| Water Delivery Facilities | 1,759 | 84 | 131 | 1,774 | 45.2 | 17,300 | 459,479 |
| Wastewater Facilities | 686 | 24 | 9,026 | 784 | 20.0 | 8,249 | 278,734 |
| Vehicle Fleet | 910 | 29 | 35 | 915 | 23.3 | 11,486 | 74,937 |
| Employee Commute | 134 | 0 | 0 | 134 | 3.4 | 5,512 | 116,914 |
| Total | 3,808 | 147 | 9,229 | 3,928 | 100.0 | 46,548 | 1,015,508 |

**LGOP**

**(Local Government Operations Protocol)**

# Analyzing Results & Reporting



CAPPA
Climate and Air Pollution Planning Assistant

## Interim Target: 30% by 2020

| easure | CO2e (metric tons) | % towards goal |
|---|---|---|
| Water System Efficiency | 119 | 15.15% |
| Limit Idling of Heavy Duty Vehicles | 34 | 4.37% |
| Efficient Street Lights (other than LED) | 26 | 3.25% |
| Lights Out at Night Policy | 17 | 2.11% |
| Increase Chiller Efficiency | 6 | 0.75% |
| Efficient Lighting Retrofits | 6 | 0.72% |
| Energy Efficiency Computers | 3 | 0.44% |
| Reflective Roofing | 3 | 0.43% |
| Reduce Municipal Fleet Mileage | 3 | 0.36% |
| HVAC Fan Upgrades | 3 | 0.34% |
| Increase Boiler Efficiency | 2 | 0.23% |
| Energy Efficient Printers | 2 | 0.20% |
| Energy Efficient Computer Monitors | 1 | 0.13% |

# ıccesses and Outcomes to Date

- ✓ Baseline Report Complete
- ✓ Reduction Goals Endorsed
- ✓ Energy Efficiency Lighting Retrofit
- ✓ Audit on Water Facilities
- ✓ Intermunicipal Sustainability Collaboration
- ✓ Focus on Sustainability in Comprehensive Plan

# Get in touch!


Katie Stoner

*Sustainability Planner*

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http://www.town.ithaca.ny.us/sustainability

# Watervliet Climate Action Plan

2008 Government Operations

5/31/2011

Prepared by:

Climate Action Associates LLC

Climate Smart Communities Webinar

June 15, 2011

# About our City…

- Urban community north of Albany on the Hudson River
- Population roughly 10,000
- 2nd most dense city in NY outside of NY Metro Area
- Older / historic building stock

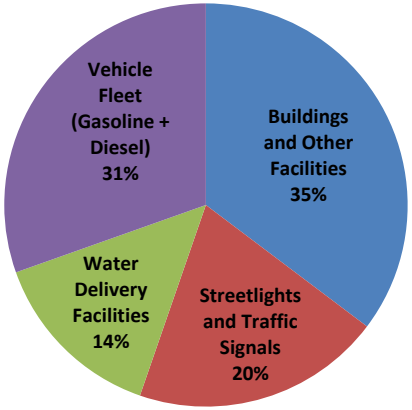
# Climate Smart Communities Progress

- Signed Climate Smart Communities and US Conference of Mayors pledges
- Formed a Sustainability Working Group to manage the CSC commitment
- Developed a baseline inventory for 2008, and initiated climate actions
- City Council adopts Climate Action Plan in 2011
- GHG Reduction Goal: 10-20% against 2008 baseline by 2014

# By the numbers… 2008 Baseline

| | Electricity (MWh) | Natural Gas (Therms) | CO2e (Metric Tons) | Energy Cost ($) |
|---|---|---|---|---|
| | | | | |
| **Buildings and Other Facilities** | 496.89 | 43173.81 | 398.14 | $138,352.38 |
| **Streetlights and Traffic Signals** | 687.41 | 0.00 | 225.99 | $174,974.67 |
| **Water Delivery Facilities** | 381.73 | 6529.70 | 161.01 | $67,934.15 |
| **Vehicle Fleet (Gasoline + Diesel)** | | | 343.37 | $102,666.35 |
| | | | | |
| **TOTAL GOVERNMENT:** | **1566.03** | **49703.51** | **1128.51** | **$483,927.55** |

$48 / person



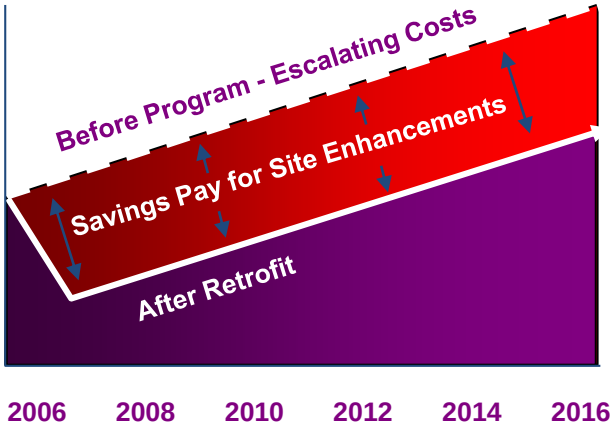

| Table 2: Watervliet Climate Action Summary (Metric Tons GHGs) | | | | |
|---|---|---|---|---|
| **Sector** | **Measure** | **Status** | **Reductions** | **Offsets** |
| **Energy Efficiency** | Performance Contracting | Underway | 208 | |
| **Renewables** | Solar Installations | Complete | 27 | |
| | Rome Hydro Project | Planning | | 6539 |
| | Geothermal at Cultural Center | Concept | 20 | |
| **Waste Recycling** | Single Stream Recycling | Complete | N/A | |
| | Anaerobic Digestion | Concept | N/A | |
| **Vehicle Fleet** | Fuel Additives | Complete | 20 | |
| | Green Fleet Procurement | Concept | 69 | |
| **Totals** | | | **344** | **6,539** |

**Annual Cost Savings**
**$138,000**

# Local Climate Action Planning

## Performance Contracting

$1.3 Million in total investment
$100,000 in annual savings
No out of pocket cost to City



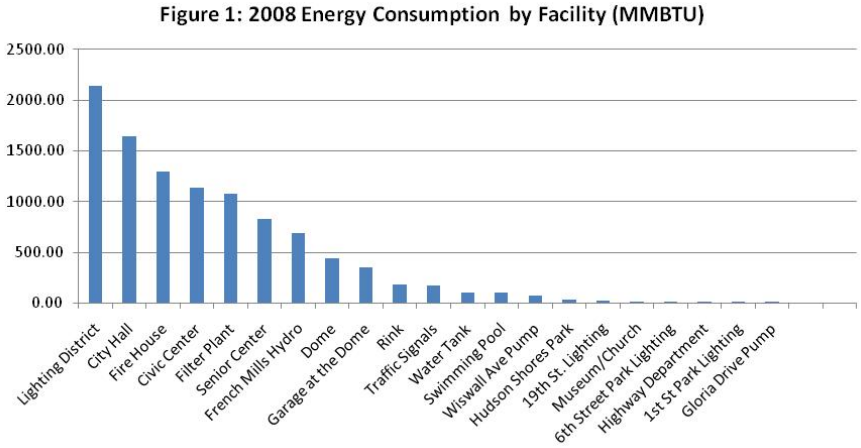




**Table 3: Phase I Projects (GHG savings in Metric Tons)**

| Project | KWH | Therms | $ saved | GHG saved |
|---|---|---|---|---|
| **Lighting Upgrades** | 294,419 | | $49,168 | 97 |
| **Park Lights** | 36,257 | | $6,055 | 12 |
| **boiler controls** | | 1289 | $1,601 | 7 |
| **VFD/Hydro Plant** | 128,792 | | $15,903 | 42 |
| **HVAC** | 15,449 | 1573 | $4,533 | 14 |
| **window film** | 12,635 | | $3,271 | 4 |
| **infiltration reduction** | | 5869 | $7,289 | 32 |
| **Total** | 487,552 | 8,731 | $87,820 | 208 |

# Local Climate Action Planning

## Renewable Energy

nyserda
Energy. Innovation. Solutions.

- Approval for 100 KW of Solar Power
  - (2) 37.5 KW Systems on municipal buildings
  - 30 KW System in River Park Boat House
  - Displaces 27 metric Tons / year
- Permitted/Pursuing License for 5 MW Hydro
  - Delta Dam, Rome, NY: FERC Project #13135
  - Will Displace ~6000 Metric Tons / Year

EPA GREEN POWER PARTNER

**Certificate of Partnership**

presented to

**City of Watervliet, New York**

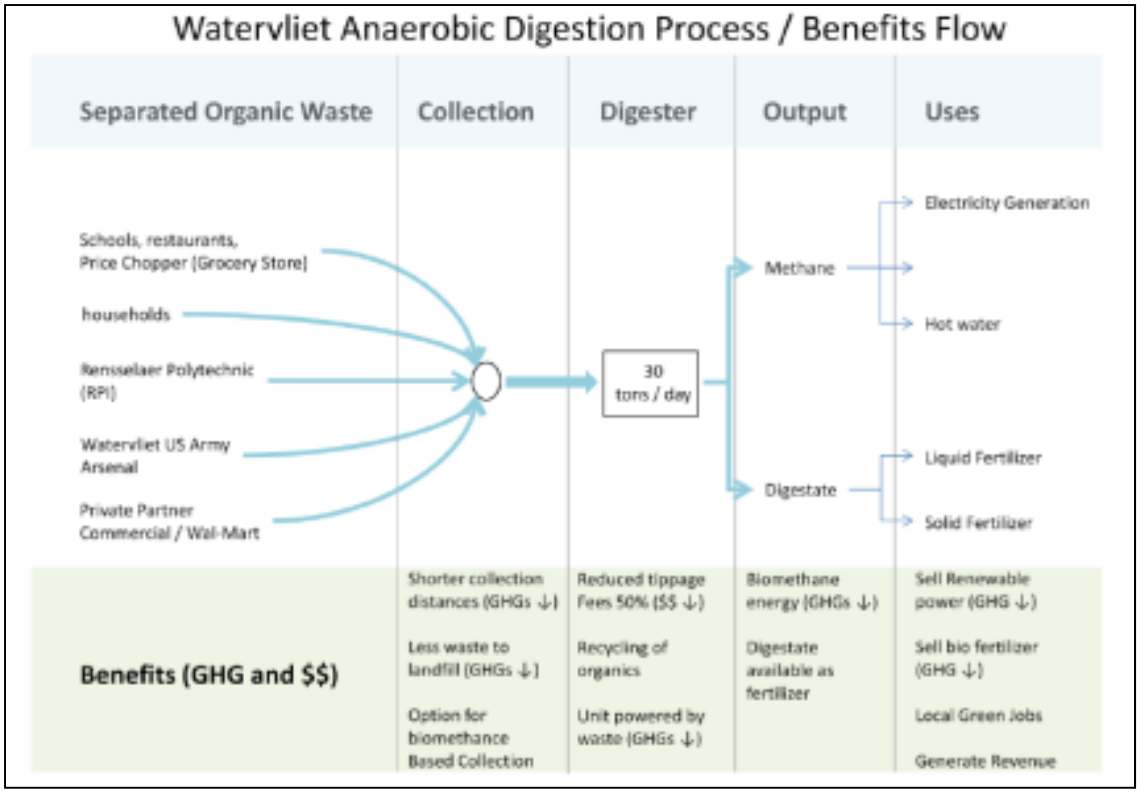
By the U.S. Environmental Protection Agency's Green Power Partnership in recognition of efforts to reduce the risk of climate change through green power purchasing.

Elizabeth Craig, Director
Climate Protection Partnerships Division, EPA

# Organic waste recycling: Anaerobic Digestion

Emission Reductions
600+ Metric Tons / Year

Coalition Building



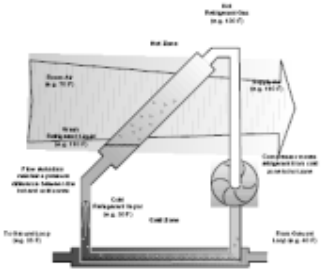
# Ideas, Ideas, Ideas……

- Joint Treatment Facility with Guilderland
  - Study Funded by NYS DOS Local Government Efficiency Grant
  - State of Art, Energy Efficient Operation

NEW YORK STATE DEPARTMENT OF STATE
Local Government Efficiency Program

- Green Roof Application City Hall
  - Part of overall Municipal Bldg Energy Plan
  - Flow to Private Buildings

- Geothermal Heating System for Cultural Center
  - Historic Dutch Reformed Church
  - Replace non-functioning oil fired boiler



# Thank You.

Contact Information
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