New York's Climate Smart Communities Program

Jim Yienger

CSC Statewide Coordinator

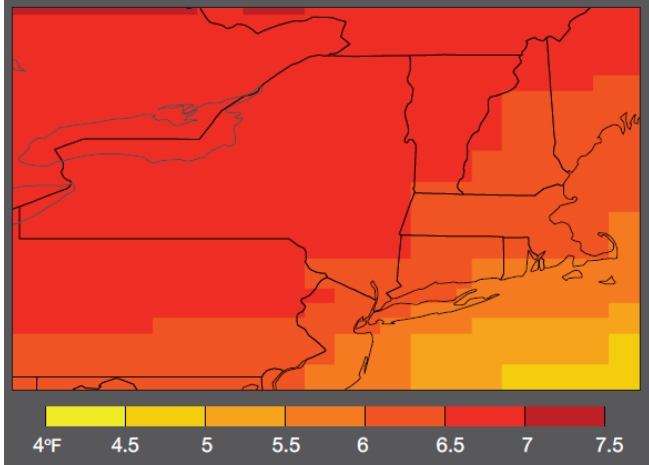
Climate Action Associates LLC

Independent contractor to NYSERDA

- NYS since 1970:
  - –Annual temp. ↑ 2.4.
- NYS projections, by 2080s:
  - – temp.↑4.0 – 9.0°F
  - – precip. ↑5-15%

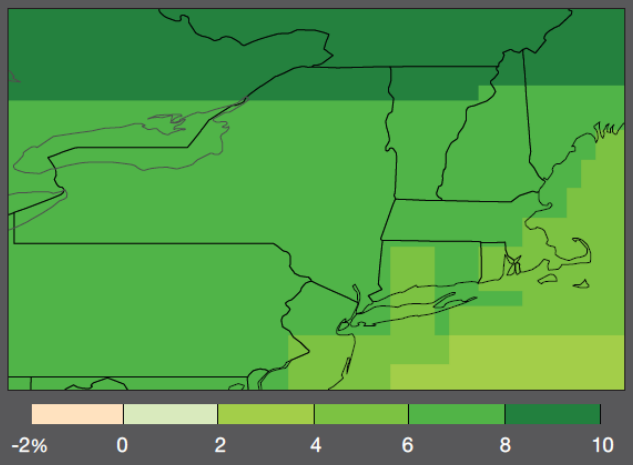
www.nyserda.ny.gov/climaid

Projected Annual Temperature Change, 2080s (°F)



Average annual temperatures are projected to increase by 4.0 to 9.0°F by the 2080s, with the lower end of this range projected under lower greenhouse gas emissions scenarios and the higher end under higher emissions scenarios. A mid-range emissions scenario, A1B, was used for the maps above, yielding temperature increases of about 7°F for most of the state. The A1B trajectory is associated with relatively rapid increases in emissions for the first half of this century, followed by a gradual decrease in emissions after 2050.

Projected Annual Precipitation Change, 2080s (%)



Precipitation across New York State may increase by approximately 5 to 15 percent by the 2080s, with the greatest increases in the northern parts of the state. Much of this additional precipitation may occur during the winter months as rain, while late summer and early fall precipitation could decline slightly. Both maps show the average across 16 global climate models.

- 16 global climate models
- 3 greenhouse gas emission scenarios
- Statistically downscaled projections to 7 regions
- 3 time slices: 2020s, 2050s, 2080s

NYS ClimAID

Climate Change Affects Everyone Locally

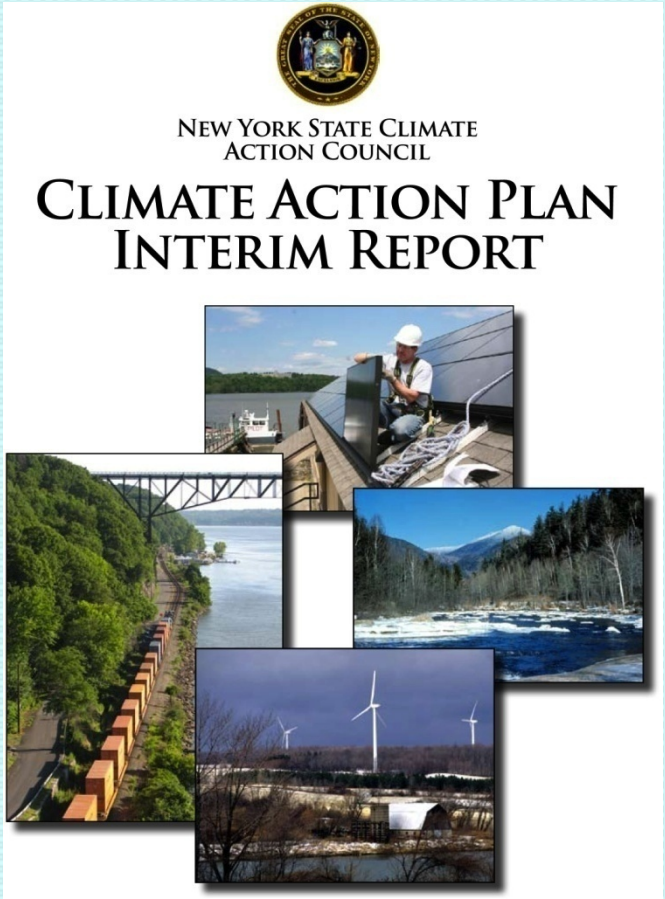
Public Health
Public Services

- Droughts & floods
- Sea level rise
- Extreme heat, storms

Economy

- Infrastructure
- Agriculture/tourism
- Flood & storm repairs

New York Climate Commitment



Mitigation and Adaptation

"reduce greenhouse gas emissions to 80% below 1990 levels by 2050"

- ❑State Policy
- ❑Support Local and Regional Action, with focus on Regional Economic Development

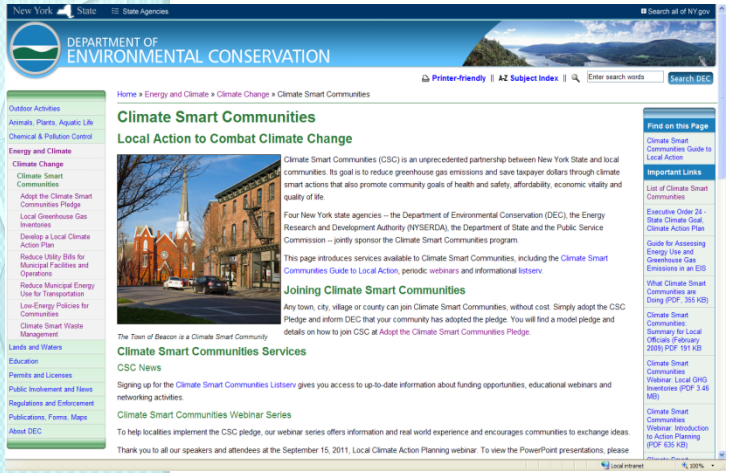
New York's Communities are Crucial

- Control facilities, land use, services
- Consume energy
- Manage solid waste
- Lead citizens
- Prepare for and respond to weather emergencies

CLIMATE SMART COMMUNITIES
NEW YORK STATE

Climate Action Can Help Any Community Realize Its Goals

- Health, safety, security
  - Low pollution, energy security, climate resilience
- Affordability
  - Buildings, transportation, taxes
- Economic prosperity
  - Jobs, local commerce and production
- Quality of life
  - Sustainability, attractiveness,
  - convenience



Climate Smart Communities

Support for Localities

- **Information:** webinars, online guidance, listserv
- **Standards:** Climate planning tools, GHG Tools, protocols, etc.
- **Technical assistance:** CSC coordinators, Economic Development Growth Extension (EDGE)
- **Financial support**: Preference for state funding
- **Tools:** Climate Smart Resiliency Planning, certification, land-use toolkit
- http://www.dec.ny.gov/energy/50845.html

Climate Smart Communities (CSC)

Jointly sponsored by

NYS Department of Environmental Conservation

NYSERDA

The New York Department of State

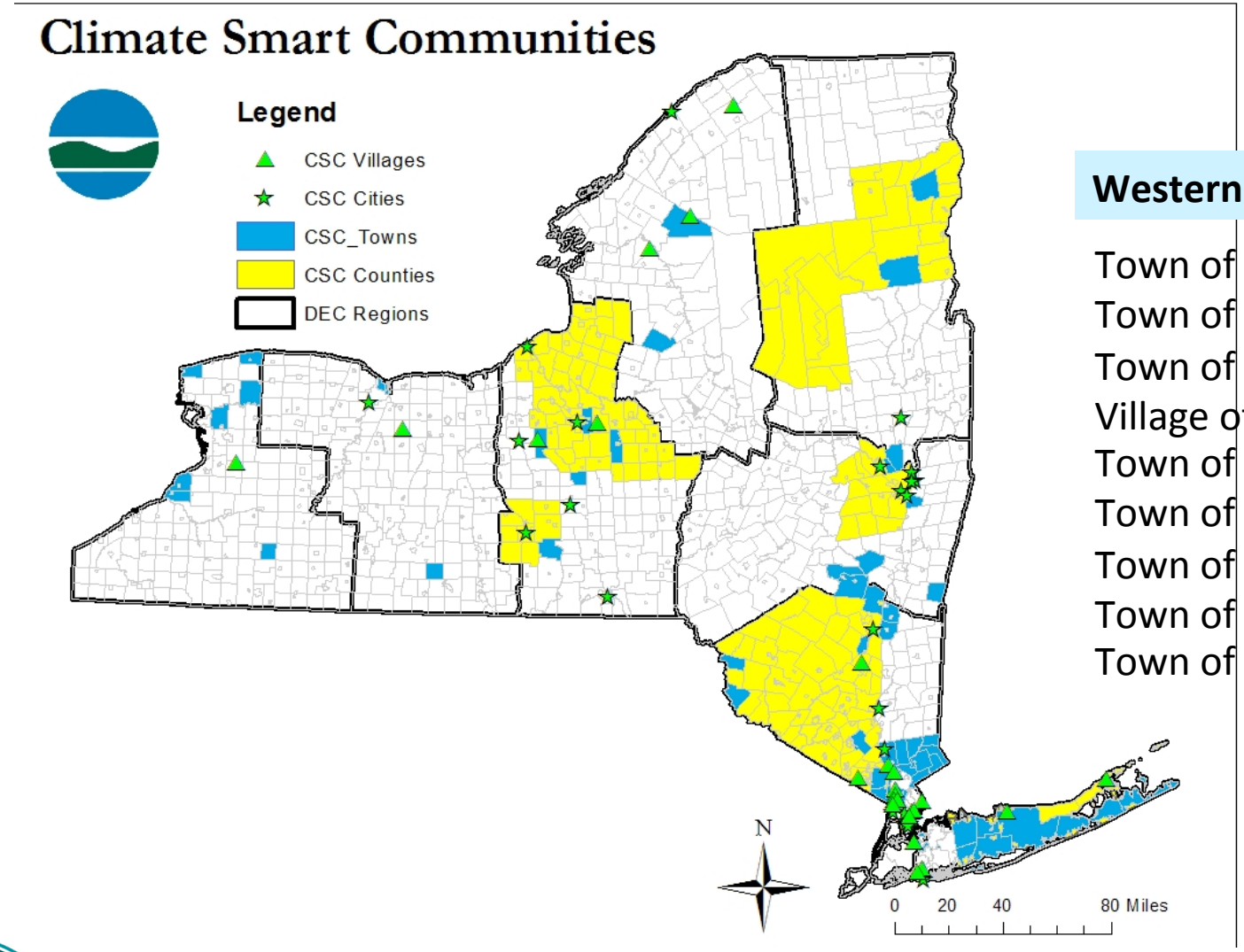
NYS Public Service Commission

NYS Department of Transportation

NYS Department of Health

Climate Smart Communities Pledge

1. Pledge to Combat Climate Change
2. Set Goals, Inventory Emissions, Move to Action
3. Decrease Energy Demand for Local Government Operations
4. Encourage Renewable Energy for Local Government Operations
5. Realize Benefits of Recycling and Climate Smart Solid Waste Management
6. Promote Climate Protection Through Community Land Use Tools
7. Plan for Adaptation to Unavoidable Climate Change
8. Support a Green Innovation Economy
9. Inform and Inspire the Public
10. Commit to an Evolving Process



Western NY REDC

Town of Amherst,
Town of Brant
Town of Evans,
Village of East Aurora
Town of Lewiston
Town of Porter
Town of Royalton
Town of Somerset
Town of Lyndon

Keys to Success

- **Pledge** to become a Climate Smart Community through executive or legislative resolution.
- **Appoint** a climate coordinator or establish an energy or climate task force to assess local resources and issues, galvanize community support and develop an energy or climate plan.
- **Create a plan.** Identify sources of greenhouse gases in the community and set goals to save money and reduce emissions.
- **Implement** your plan. Most communities begin by reducing emissions from their own facilities, vehicles or programs; some move at the same time to reduce emissions in the community at large.
- **Cultivate** champion elected and staff officials.

Success means expressing Your Commitment in your own way

Energy Plan

- Cost
- Services
- Environment

Climate Action Plan

- Environment
- Cost
- Services

Sustainability / Comprehensive Plan

- Livability
- Environment
- Cost

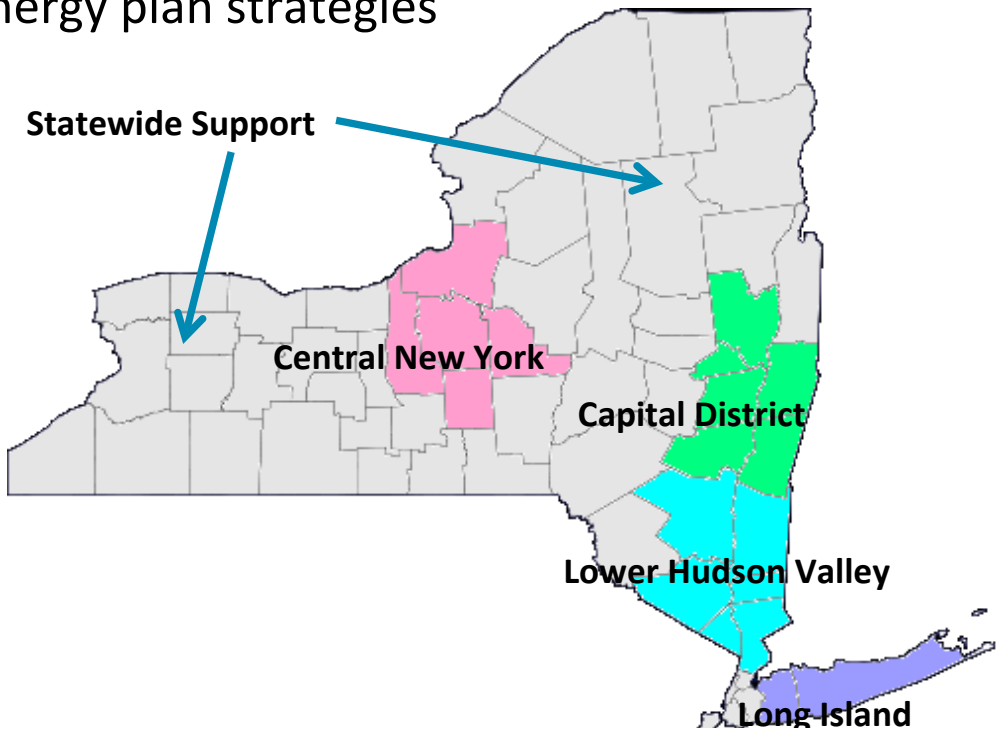
Town of Cary Strategic Energy Plan

Action equals savings to Taxpayers

Facility/Fleet Plan Savings Summary			
Energy Plan Policy Goals		**Annual Savings**	
Facility Energy Reduction Goal (reduce by)	30%	Cost ($)	$2,163,034
Drinking Water Process Efficiency (increase by)	10%	Energy (MMBTU)	85,578
Waste Water Process Efficiency (increase by)	10%	GHGs (MTCDE)	12,474
Renewable Energy Goal (increase by)	5%	GHG % below baseline	6.4%
Fleet MPG Goal (increase by)	20%	per capita reduction	15.2%
Fleet Renewable Goal (increase by)	20%		
Fleet Miles Driven Goal (reduce by)	5%		

CSC Coordinator Program

- On-call support and troubleshooting
- Inventory samples, calculation templates
- Webinars and on-site training
- Assistance with data collection
- Interpretation of protocols, etc.
- Guidance on climate/energy plan strategies

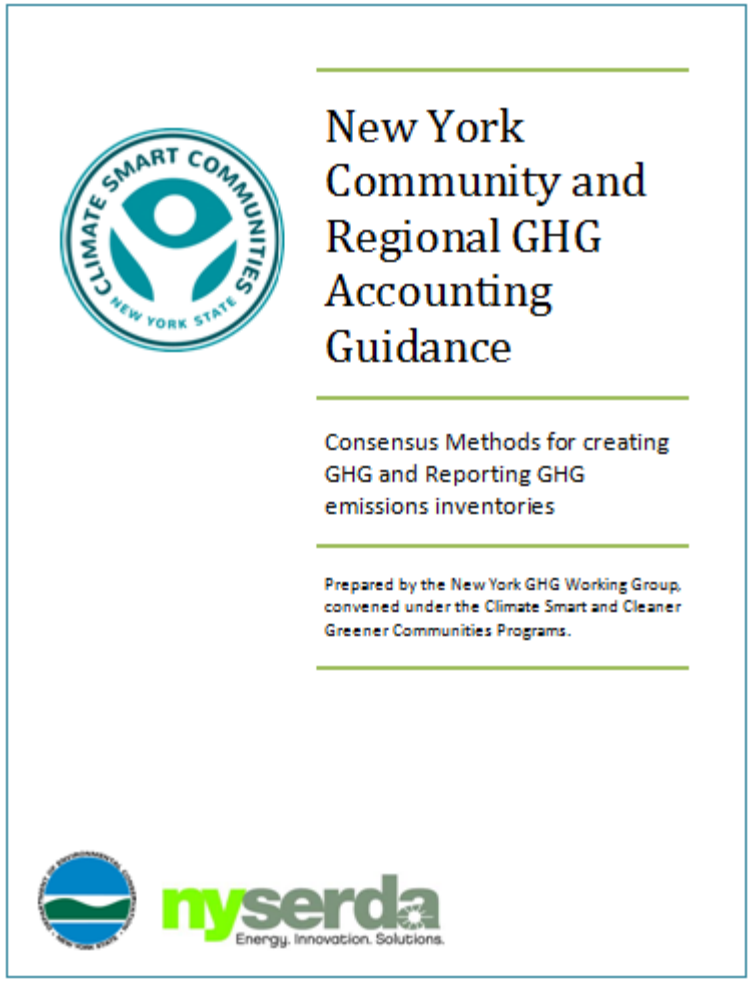


CGC Regional GHG Inventories

- 2010 Baseline
- Connected to Regional Sustainability Plans
- Inventories at the REDC level, and broken into all 62 counties
- Good starting point if you are outside of a CSC pilot region

Albany County GHG Emissions 2010						5,117,333 MTCDE
	GHG Emissions (MTCDE)					
Sector / Source	Scope 1	Scope 2	Scope 3	Biogenic	Rolled up?	(MMBT)
Residential Energy Consumption						
Electricity / Steam		181,769			Yes	2,701,766
Natural Gas	346,111				Yes	6,521,529
Propane / LPG	16,575				Yes	268,603
Distillate Fuel Oil (#1, #2, #4, Kerosene)	91,353				Yes	1,231,029
Coal	625				Yes	6,638
Wood	1,538			73,093	Yes	779,240
Commercial Energy Consumption						
Electricity / Steam		310,454			Yes	4,614,493
Natural Gas	281,503				Yes	5,304,172
Propane / LPG	7,879				Yes	127,679
Distillate Fuel Oil (#1, #2, #4, Kerosene)	58,403				Yes	787,002
Residual Fuel Oil (#5 and #6)	57,362				Yes	761,283
Coal	99				Yes	1,050
Wood	514			24,410	Yes	260,235
Industrial Energy Consumption						
Electricity / Steam		98,676			Yes	1,466,684
Natural Gas	254,734				Yes	4,799,783
Propane / LPG	1,073				Yes	17,001
Distillate Fuel Oil (#1, #2, #4, Kerosene)	12,769				Yes	172,070
Residual Fuel Oil (#5 and #6)	3,936				Yes	52,235
Coal	496,057				Yes	5,270,079
Petroleum Coke	48,468				Yes	472,122
Motor Gasoline (E-10)	6,456				Yes	91,617
Other Oils	35,307				Yes	475,518
Wood	269			12,763	Yes	136,065
Energy Generation and Supply						
Natural Gas	2,477,641				No	104,780,116
Distillate Fuel Oil (#1, #2, #4, Kerosene)	1,346				No	25,004
MSW	0			0	No	1,592,624
Landfill Gas	145			28,820	No	553,480
Electricity T/D Losses	30,692				Yes	463,739
Natural Gas T/D Losses	121,248				Yes	299,259
Industrial Processes						
Cement Production	544,401				Yes	
Pulp and Paper Manufacturing	0				Yes	
Product Use (HFC, ODS)						
Use of SF6 in the Utility Industry	8,090				Yes	
All Refrigerants- except SF6	112,914				Yes	
Transport: On-Road						
Motor Gasoline (E-10)	1,309,225			94,935	Yes	19,964,739
Diesel	187,525				Yes	2,485,457
Ethanol (E-85)	N/A				No	
Biodiesel	N/A				No	
Transport: Rail, Marine, Off-Road, Air						
Motor Gasoline (E-10)	32,317			3,487	Yes	509,507
Diesel	116,649				Yes	1,546,064
Residual Fuel Oil (#5 and #6)	59,882				Yes	794,725
Natural Gas	917				Yes	17,277
Propane / LPG	9,415				Yes	148,903
Jet Kerosene (Air)			150,131		Yes	1,989,840
Waste Management						
Landfill Methane	122,399		60,836		Yes (S3)	
MSW incineration			5,064		Yes (S3)	
Sewage treatment	29,554				Yes	
Agriculture						
Enteric Fermentation / Manure	13,536				Yes	
Soils / Fertilizer	13,008				Yes	
Totals by Scope	**6,911,934**	**590,899**	**216,032**	**237,507**		**171,488,628**

New York GHG Protocol



Upcoming CSC Innovation 2013-2014

- CSC Utility Data Collaborative/Sustainability Information System
- New York Land Use Toolkit
- Climate Resiliency Planning Toolkit (NYSEDC)
- CSC Certification Program
- Community / Regional GHG Protocol Guidance.

CSC Utility Data Collaborative

- Long term approach to providing energy consumption data
- Annual "Community Energy Reports"
  - Common format showing aggregate consumption, by sectors
  - Includes all community communities, reported separately by municipal boundary.
  - Prevents communities from having to request this information themselves.

nationalgrid

RG&E

NYSEG

People. Power. Possibilities.
Central Hudson
Gas & Electric Corporation

conEdison

Orange & Rockland

Annual Community Energy Report

- Produced by each utility separately
- Format standardized across utilities
- Residential, commercial, industrial electricity
- Produced routinely (annually, biannual, etc) and natural gas consumption

Census Common Identifier					Electricity Consumption (MWh)			Natural Gas Consumption (MMBTU)		
Row	Community	Form	FIPS (county)	FIPS (place)	Residential	Commercial	Industrial	Residential	Commercial	Industrial
1	Albany	City	36001	01000	430,340	345,555	200,340	2,300,400	1,200,345	678,660
2	Amherst	Town	36065	32770	56,354	35,000	12,300	N/A	N/A	N/A
3	Ashton	Town	36040	87550	45,338	10,344	5,677	N/A	N/A	N/A
4	Bethlehem	Town	36001	06354	120,500	57,898	65,309	675,300	540,400	200,201
5	Brainard	Village	36039	15040	23,000	12,344	N/A	45,400	23,322	N/A
6	Catskill	Village	36039	13013	65,200	30,299	3,000	127,300	65,800	12,400
7	Columia	County	36021		2,303,500	3,200,500	1,200,450	24,500,350	12,340,300	16,740,004
8	Dublin	Town	36021	23200	18,540	12,400	N/A	76,700	56,100	N/A
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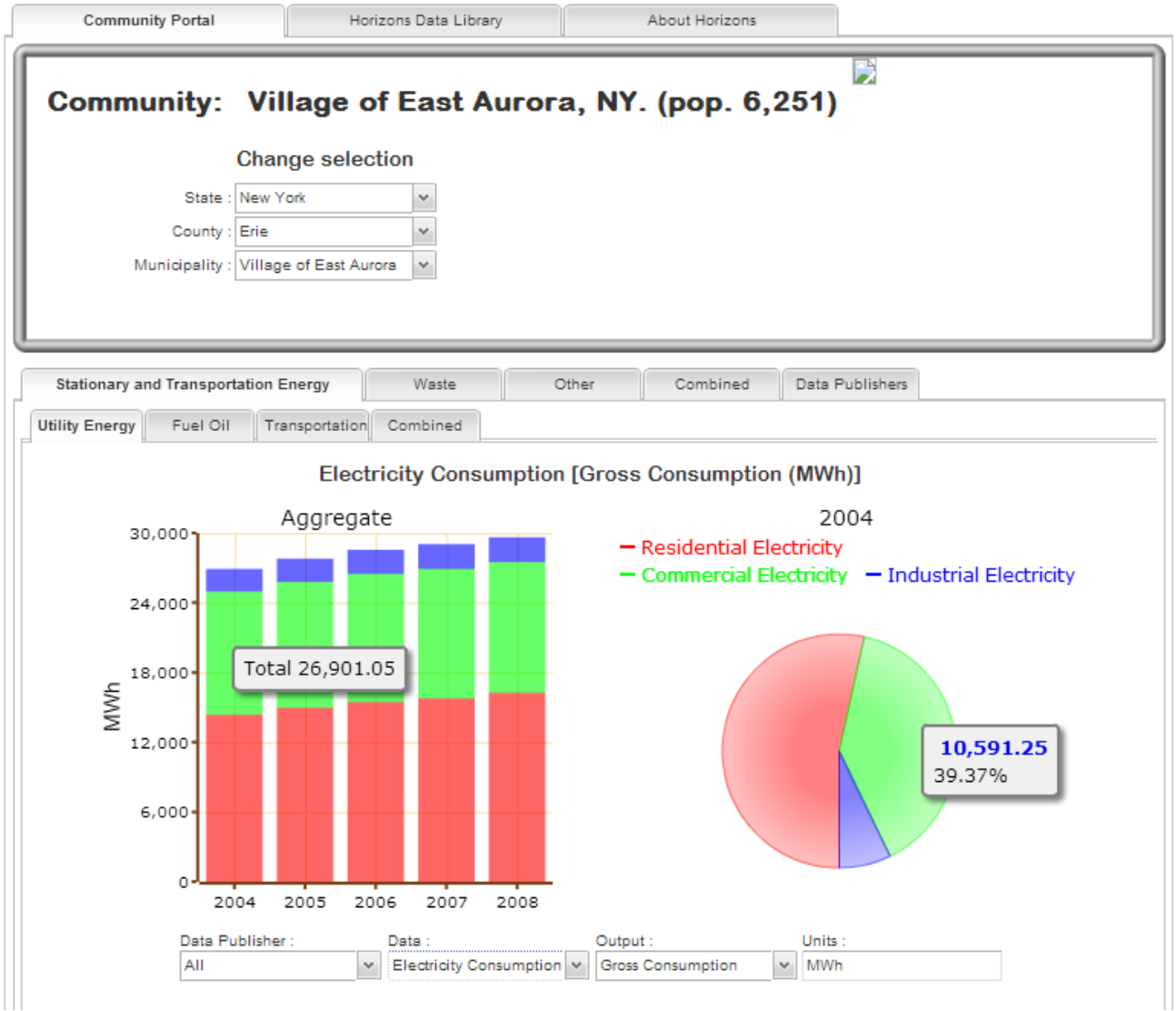
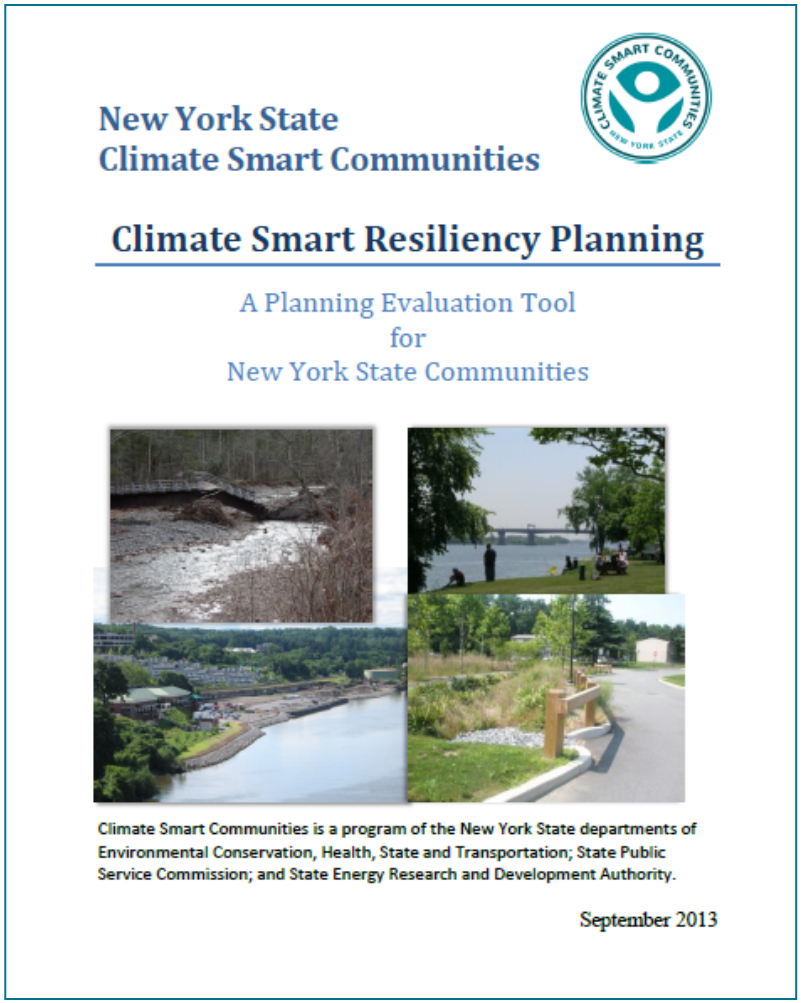
239	Victory	Town	36049	45440	132,899	234,400	235,300	1,400,500	1,130,870	1,340,000
240	Vista	Village	36049	45667	14,300	12,200	N/A	35,678	45,000	N/A
241	Watervliet	City	36001	78674	37,800	35,300	1,300,450	69,800	34,289	5,600
242	Weschester	County	36119		3,200,432	2,356,005	4,300,541	15,400,350	11,240,300	8,725,100

CSC Sustainability Information System



Climate Resiliency Planning Tool

1. Risk and vulnerability assessments
2. Public outreach and engagement
3. Planning integration
4. Disaster preparedness and recovery
5. Hazard mitigation implementation



What does the Climate Smart Planning assessment look like?

Section 5 – Hazard Mitigation Implementation	Yes	No	Other	N/A
1.1 Has the municipality taken the Climate Smart Communities Pledge?	X			
1.2 Has the municipality created a local Climate Action Plan?	X			
1.3 Is the municipality active in the National Flood Insurance Program's Community Rating System?		X		
1.4 Has the municipality proposed the relocation of public buildings, critical facilities, or infrastructure out of flood hazard areas as a result of the multi-hazard mitigation plan or other planning tools?		X		
1.5 Has the municipality used its multi-hazard mitigation plan to propose retrofitting public buildings, critical facilities and other infrastructure to withstand flood damage?		X		
1.6 Do municipal building codes reflect the state's 2-foot freeboard above base flood elevation requirement?	X			
1.7 Do municipal building codes exceed the state's 2-foot freeboard above base flood elevation requirement?		X		

Contact Mark Lowery @ NYSDEC for more information.

The Land Use Toolkit

Developed by Rutgers University for New York State's Climate Smart Communities Program

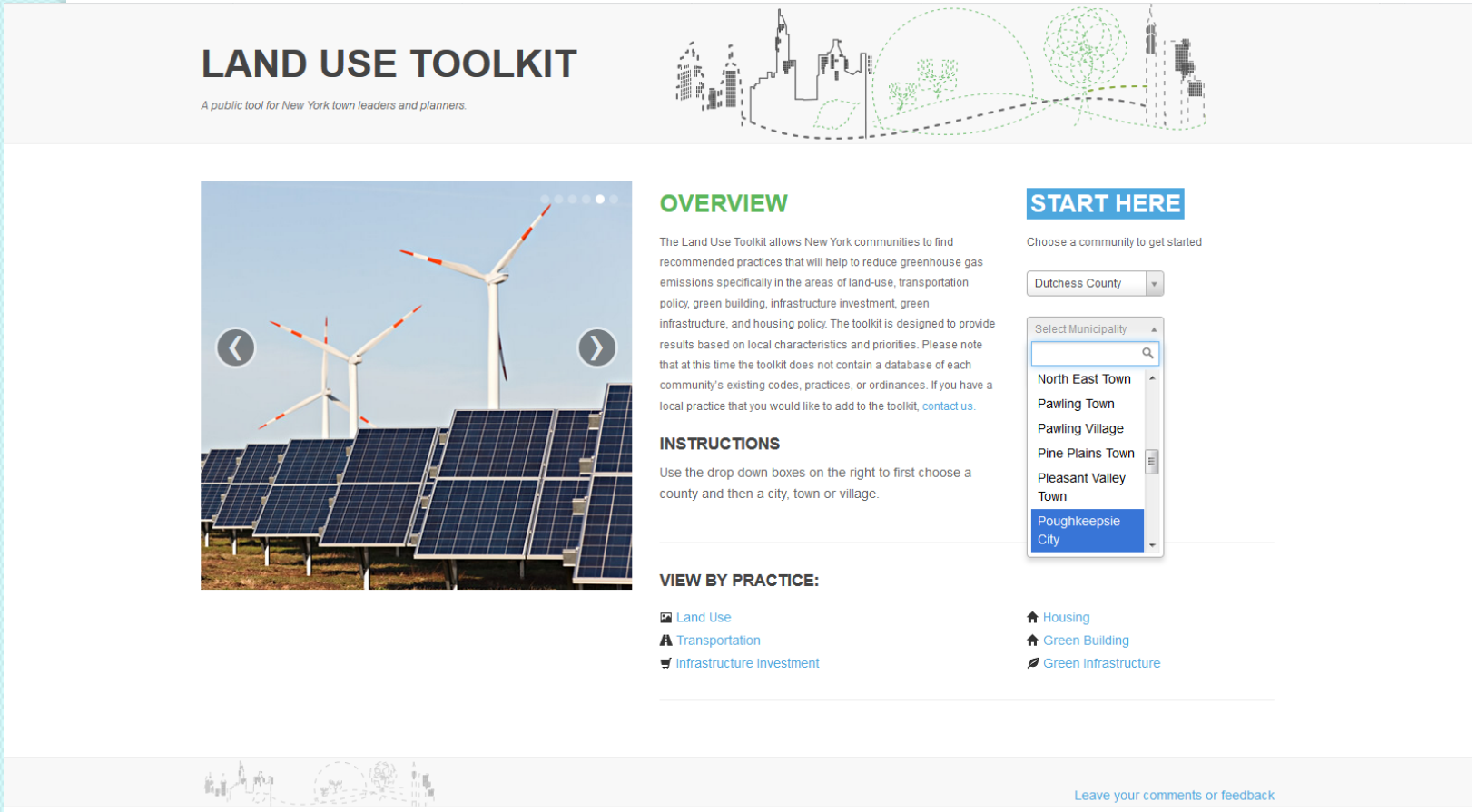
Veda Truesdale, Senior Research Associate, Environmental Analysis and Communication Group, Bloustein School, Rutgers University

What's in the toolkit?

Practices including data collection, goal-setting, master planning, metrics, ordinances, and local agreements that will reduce greenhouse gas emissions in six areas:

- Infrastructure investment
- Building codes
- Land use planning
- Green infrastructure
- Housing policy (i.e., location)
- Transportation systems (including transit and freight)

Land Use Toolkit



http://nyslandusetoolkit.us

/// DEMOGRAPHICS

POPULATION

Total Population: 32,736

Area: 5.1 sq miles

Population Density: 6418.82 inhabitants per square mile

MUNICIPALITY STRUCTURE

Administrative Division: City

Community Type: Urban

/// WE WANT TO IMPROVE CHECK ALL THAT APPLY

SELECT	CATEGORY
☑	**GREEN BUILDING** Green buildings refers to the use of practices that minimize environmental impact and maximize the preservation of open space by designing, constructing, and operating buildings that are energy efficient, utilize recycled materials, provide clean air, and incorporate renewable and energy efficient power generation.
☐	**GREEN INFRASTRUCTURE** The term green infrastructure (GI) describes a variety of site design techniques and structural practices used by communities, businesses, homeowners and others for managing stormwater. On a larger scale, green infrastructure includes preserving and restoring natural landscape features (such as forests, floodplains and wetlands), and reducing the amount of land covered by impervious surfaces. On a smaller scale, GI practices include green roofs, pervious pavement, rain gardens, vegetated swales, planters and stream buffers. (taken from NYSDEC website http://www.dec.ny.gov/chemical/68199.html)
☑	**HOUSING** Practices in this category encourage green design and the development of housing in areas with a variety of transportation options provide both social benefits and reduce greenhouse gas emissions.
☐	**INFRASTRUCTURE INVESTMENT** Infrastructure investment practices that prioritize investments according to their long-term impact on greenhouse gas emissions
☑	**LAND USE** Land-use practices are those that influence the physical development and use of the land.

Click on Tools to convert files to PDF.

NYS Land Use Toolkit - Report Poughkeepsie City
Town Report by Practices

Green Building

1. **Name:** Offer Tax Incentives for Green Buildings

Description:

Offer tax credits and/or tax abatements to property owners that achieve LEED certification or an equivalent green building or energy efficiency measure. Tax credits reduce the property owners\' tax bill while abatements exempt property owners from taxes for a specified period of time.

Initial Investment: None.

Cost Benefits: Will depend upon existing local tax base and rate of development. These programs can be expensive to municipalities.

Share your experiences.

BETA: http://nyslandusetoolkit.us

Email veda.truesdale@ejb.rutgers.edu with examples of your local actions that you think should be included in the toolkit.

CSC Certification Program

- Point-based certification program for Climate Smart Communities
- Piloted in Mid Hudson Region CSC Program
- Points awarded for actions, policies, and results.

Certification Levels

Certification Level	Points Needed
Registered CSC	Sign Pledge
Certified CSC	150 – 274 Points
Certified CSC – Bronze	275 - 399 Points
Certified CSC – Silver	400-499 Points
Certified CSC – Gold	500+ points

Example: Pledge Element 6 Actions

#	Actions	Points	Requirements
Land Use and Building Codes			
6.2	Adopt a renewable energy ordinance	4	• Adopt a small-scale solar ordinance (1 pt) • Adopt a wind-power ordinance for very small, small, and large wind energy conversion systems (1 pt each) • *Reference: Columbia Law School Center for Climate Change Law Model Ordinances*
6.3	Establish green building codes	6	• Municipal buildings (1 pt) • Commercial buildings (2 pts) • High-rise multi-family residential buildings (1 pt) • One and two-family dwellings (1 pt) • Low-rise multi-family residential dwellings (1 pt)
6.4	Create sustainable site design guidelines	4	• Adopted sustainable design standards

Thank You.

Jim Yienger

Climate Action Associates LLC

mr_jjy@climatetools.com

CLIMATE ACTION ASSOCIATES LLC

Independent NYSERDA Contractor