

visioncny

Central New York
Regional Sustainability Plan
June 2013

OCPF Annual Planning Symposium
Has Sustainability Become a Dirty Word?
March 13, 2014



Central New York Regional Planning and Development Board



Today's Presentation



- **CNY RPDB**
- **What is Urban Sustainability?**
- **VisionCNY Regional Sustainability Plan**
 - Baseline: Energy Use and GHG Emissions
 - Energy and Climate Adaptation Focus Areas: Goals, Targets and Implementation Strategies
- **Sustainability in Practice, or
“Sustainability is Just Good Planning”**



The CNY RPDB



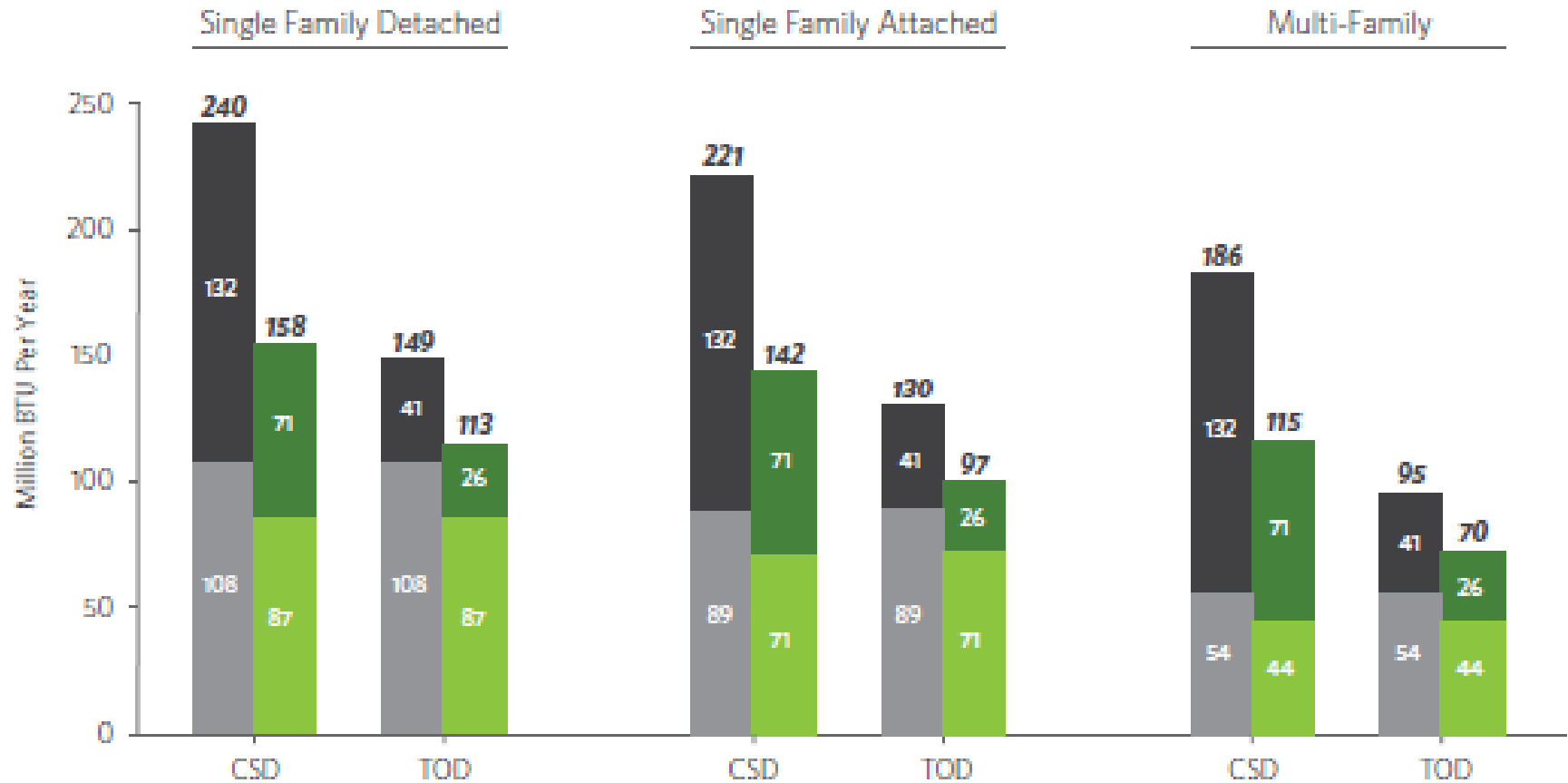
- A public agency established in 1966 by Cayuga, Cortland, Madison, Onondaga, and Oswego Counties
- Provides a range of services associated with the growth and development of Central New York communities with a focus on:
 - Comprehensive Planning/Community Development
 - Economic Development
 - Environmental Management
 - Information and Research Services
 - Transportation Planning
 - **Energy Management**
- Coordinate several energy initiatives in the region including:
 - CNY Climate Change Innovation Program (C₂IP)
 - NYSERDA Economic Development Growth Extension Program
 - Small Business Energy Efficiency Revolving Loan Fund
 - “CNY Solar Ready”
 - “My Wind”



Sustainability and Urban Planning



■ Transportation Energy Use ■ W/ Green Automobiles ■ Home Energy Use ■ W/ Green Buildings

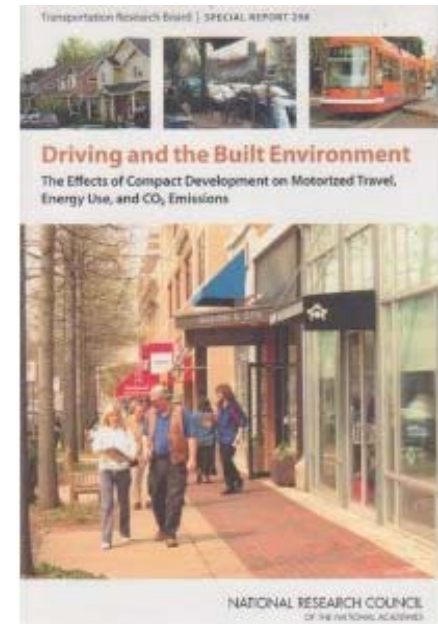
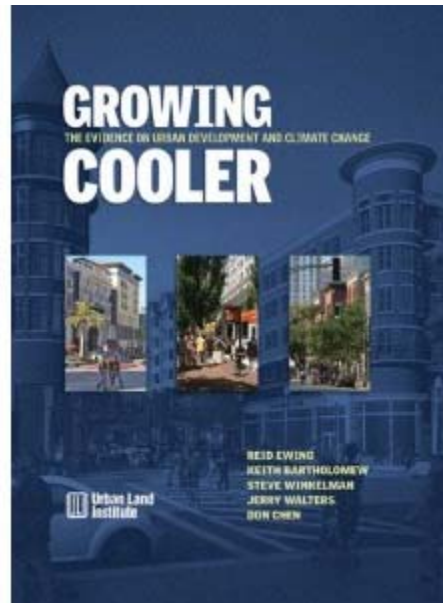
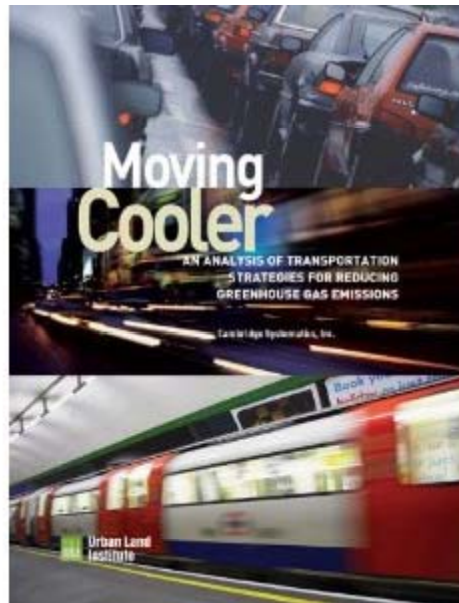


CSD - Conventional Suburban Development

TOD - Transit Oriented Development



Sustainability and Urban Planning



At a Glance: VMT and GHG Reduction Estimates from Compact Development (vs. Typical Suburban Development)

Study	VMT Reductions	GHG Reductions
<i>Moving Cooler</i>	20–60 percent	20–60 percent
<i>Growing Cooler</i>	20–40 percent	18–36 percent
<i>Driving and the Built Environment</i>	5–12 to 25 percent	5–12 to 25 percent

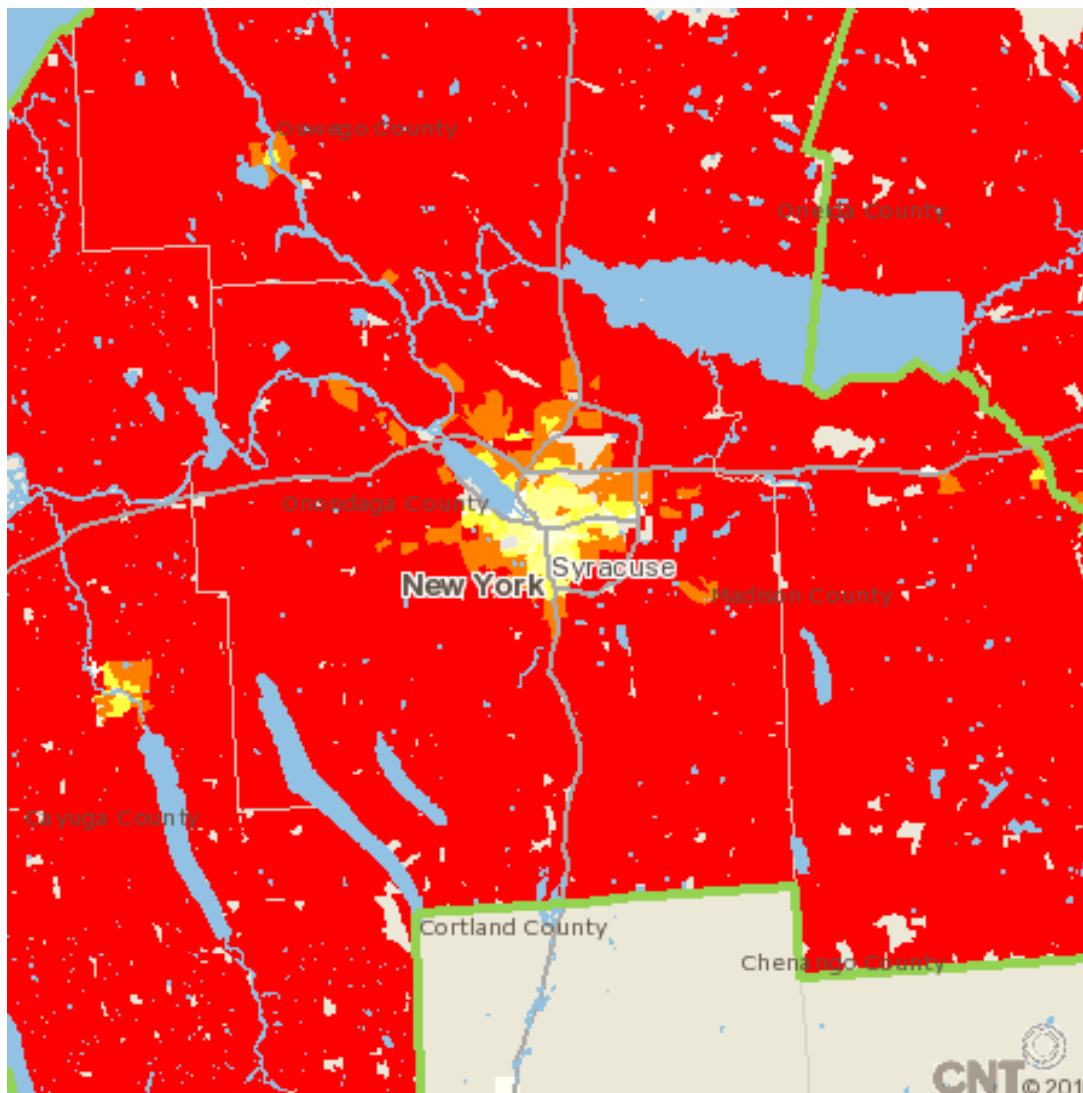
The studies show reductions in VMT of between 8 and 18 percent, on a national basis, when compact development makes up 60 percent or more of all future development between now and 2050.



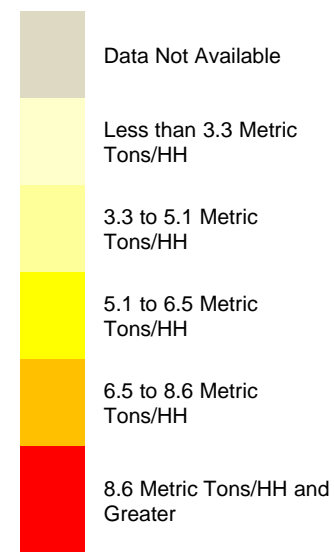
Sustainability Defined



CO₂ per Household from Auto Use

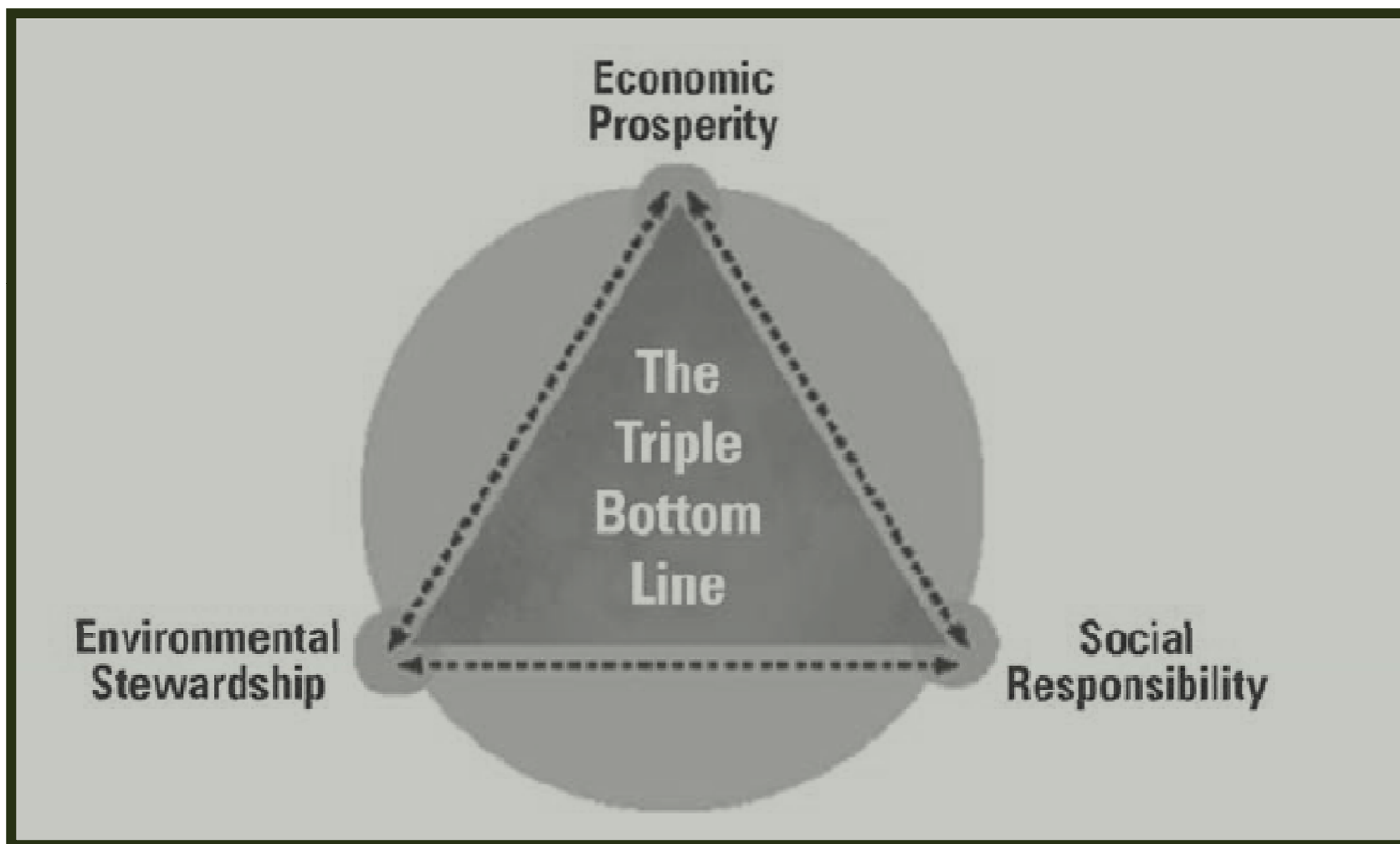


Center for Neighborhood Technology



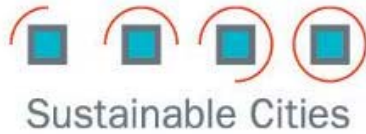


Sustainability Defined





Urban Sustainability Organizations





Cities and Sustainability



America's 50 Greenest Cities

1. **Portland, Ore.**
2. **San Francisco, Calif.**
3. **Boston, Mass.**
4. **Oakland, Calif.**
5. **Eugene, Ore.**
6. **Cambridge, Mass.**
7. **Berkeley, Calif.**
8. **Seattle, Wash.**
9. **Chicago, Ill.**
10. **Austin, Tex.**
11. **Minneapolis, Minn.**
12. **St. Paul, Minn.**
13. **Sunnyvale, Calif.**
14. **Honolulu, Hawaii**
15. **Fort Worth, Tex.**

Source: Popular Science
<http://www.popsci.com/environment/article/2008-02/americas-50-greenest-cities?page=1>

America's Most Walkable Neighborhoods

- 1 **San Francisco**- Chinatown, Financial District, Downtown
- 2 **New York**-Tribeca, Little Italy, Soho
- 3 **Boston** -Back Bay-Beacon Hill, South End, Fenway-Kenmore
- 4 **Chicago**-Loop, Near North Side, Lincoln Park
- 5 **Philadelphia** -City Center East, City Center West, Riverfront
- 6 **Seattle**-Pioneer Square, Downtown, First Hill
- 7 **Washington D.C.**-Dupont Circle, Logan Circle, Downtown
- 8 **Long Beach**-Downtown, Belmont Shore, Belmont Heights
- 9 **Los Angeles**-Mid City West, Downtown, Hollywood
- 10 **Portland**-Pearl District, Old Town-Chinatown, Downtown
- 11 **Denver**-Lodo, Golden Triangle, Capitol Hill
- 12 **Baltimore**-Federal Hill, Fells Point, Inner Harbor
- 13 **Milwaukee**-Lower East Side, Northpoint, Murray Hill
- 14 **Cleveland**-Downtown, Ohio City-West Side, Detroit Shoreway
- 15 **Louisville**-Central Business District, Limerick, Phoenix Hill

Source: <http://www.walkscore.com/rankings/most-walkable-cities.php>

Sustain Lane's 2008 City Rankings


1. **Portland, OR**
2. **San Francisco, CA**
3. **Seattle, WA**
4. **Chicago, IL**
5. **New York, NY**
6. **Boston, MA**
7. **Minneapolis, MN**
8. **Philadelphia, PA**
9. **Oakland, CA**
10. **Baltimore, MD**
11. **Denver, CO**
12. **Milwaukee, WI**
13. **Austin, TX**
14. **Sacramento, CA**
15. **Washington, DC**

Source:
<http://www.sustainlane.com/us-city-rankings/overall-rankings>


Sustainability Planning – Not Just for NYC and Seattle




Cities for Climate Protection Campaign
Keene, New Hampshire
Greenhouse Gas Emissions Inventory and Analysis Report



Prepared by:
City of Keene, New Hampshire
Cities for Climate Protection Campaign




KEENE, NEW HAMPSHIRE
Adapting to Climate Change:
Planning a Climate Resilient Community
November 2007

Prepared by:


In association with:
ICLEI
Local Governments
for Sustainability

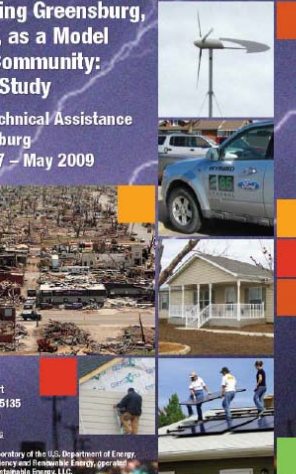
Rebuilding Greensburg,
KS, as a Model Green
Community: Case Study

<http://www1.eere.energy.gov/buildings/greensburg/inf/45135-1.pdf>
<http://greensburg.buildingscience.com/>

 National Renewable Energy Laboratory
Innovation for Our Energy Future

**Rebuilding Greensburg,
Kansas, as a Model Green
Community:
A Case Study**

NREL's Technical Assistance
to Greensburg
June 2007 – May 2009



Lynn Billman
Technical Report
NREL/TP-6A2-45135
November 2009
Link to Appendices

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.

Local Action Plan

Formally Adopted by City Council on:
February 19, 2004



Greensburg, Kansas
Pop. 1,389

Keene, New Hampshire
Pop. 22,893



Evolving Concepts



Sustainability

To meet present needs without compromising the ability of future generations to meet their needs¹

Adaptation

Adjustment in natural or human systems in response to projected effects of climate change²

Resilience

Ability of infrastructure and services to absorb and to continue functioning optimally despite all cumulative infrastructural stresses associated with climate change impacts³

Mitigation

As defined by PANYNJ in reference to sustainable design as “reducing the adverse environmental impacts of the design, construction, operation, maintenance and occupancy” of their operations through the development of sustainable design guidelines for buildings and infrastructure.”

¹ Brundtland Commission Report (1983)

² IPCC AR4 (2007)

³ The National Infrastructure Advisory Council

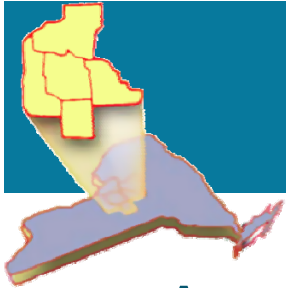


What Is Sustainability?



“Sustainability is living, operating and growing more efficiently, while using fewer resources. In adopting sustainable practices, we can meet the needs of our residents—both today and in the future. We can also foster communities that have **lower costs, more businesses and jobs, and improved quality of life.**”

- New York State Energy Research and Development Authority (NYSERDA)



NYSERDA Cleaner Greener Communities Program



- Announced by Governor Andrew M. Cuomo in his 2011 State of the State address
- Program empowers the region to create a local plan to support sustainable communities and create economic development opportunities
- Partner with public and private experts along with regional stakeholders
- Guide the implementation of initiatives that will significantly improve the economic and environmental health of the region





CGC Program Timeline



Phase 1:

2012: Regional Sustainability Planning Program

\$1M for region to prepare

- Tier II GHG Inventory Assessment
- Baseline Indicators
- Sustainability Goals and Targets
- Implementation Strategy

Phase 2:

2013: Project Funding Begins

- \$90M statewide, over 3 years
- Accessed through CFA process
- Funding projects/initiatives to advance Plan Implementation Strategies



Burritt Motors, Oswego



CNY Focus Areas



1. Energy
2. Infrastructure (Transportation, Water/Wastewater, Telecommunications, Energy)
3. Land Use
4. Environment (Air, Water, Wetlands/Soils, Forests)
5. Materials Management (Waste)
6. Economic Development
7. Climate Adaptation



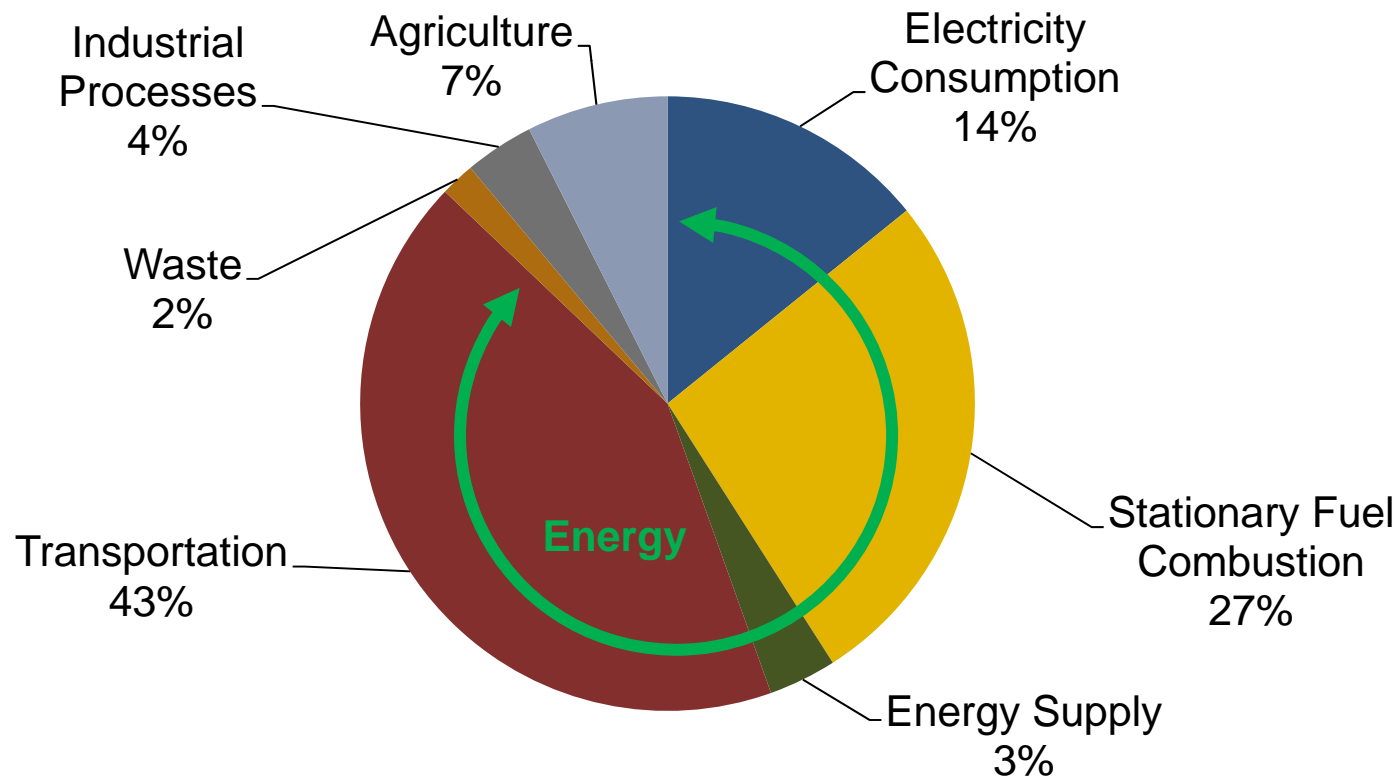


CNY GHG Emissions By Sector



- Total 2010 CNY gross emissions: **9.9 million metric tons CO₂e (MMTCO₂e)**

2010 Central New York Emissions by Sector



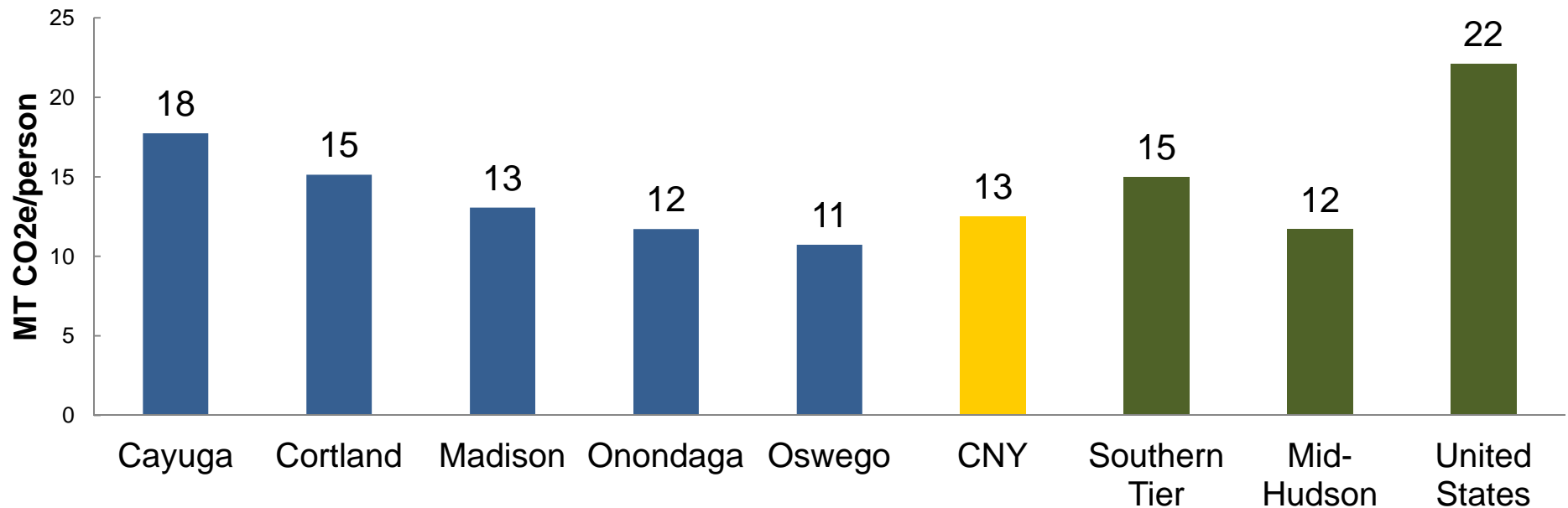


CNY Per Capita GHG Emissions



- CNY per capita emissions are well below the national average
- Primarily due to low electricity emissions (nuclear, hydro, and natural gas)

Per Capita Emissions Comparison





Energy Management



GOAL

Improve the region's energy management by increasing the efficiency of energy and fuel consumption, curtailing energy demand, and increasing the use of local clean energy sources in place of fossil fuels.

TARGETS

- Reduce regional per capita energy consumption by 40% (below 2010 levels) by 2030.
- Reduce regional per capita GHG emissions by 40% (below 2010 levels) by 2030.
- Increase electricity generated by renewable sources to 25% by 2030.

“Energy is the ‘oxygen’ of the economy and the life-blood of growth...this nexus [of resources] will come under huge stress as global growth in population and prosperity propel underlying demand at a pace that will outstrip the normal capacity to expand supply.”

World Economic Forum *Energy Vision Update 2012*



Energy Management



KEY STATS:

Region produced 25 million MWh of electricity

82% nuclear

15% natural gas

Average age of power generation facilities is 30 yrs

Region's electrical consumption is 6.2 million MWh, power load is about 717 MW

34% Industrial

30% Commercial

36% Residential

Regional energy costs: approx. \$2.45 billion (8% of GRP)

Per capita energy consumption is 213 MMBTUs per year

Key Strategies:

- Accelerate adoption of energy efficiency measures by promoting access to info. and incentives for customers at all income levels, for businesses of all sizes, and for difficult to reach property types
- Target major public facilities and infrastructure for energy improvements
- Ramp up deployment of renewable energy and distributed energy resources

Project Opportunities:

- Renewable Energy: 328 MW of new resource identified, 95 MW recommended
- Solar on public facilities – Metropolitan Water Board reservoir, Hancock International Airport, etc.
- Community wind farms
- Residential energy efficiency
- Efficient public lighting
- Net-zero demonstration projects
- Region-wide CHP deployment



Municipal Leadership



Preble Town Hall



Dewitt Town Hall





Municipal Leadership



Skaneateles Village Hall

- 216 Solar Photovoltaic Panels
- Solar Tubes
- LED Lighting
- Geothermal Heat Pump HVAC
- Upgraded Roof and Wall Insulation



Highlights:

- Net Zero Energy
- Half of the energy use compared to code building
- Adaptive reuse of a building “on the demo list”
- Avoidance of 46 metric tons of GHG emissions annually
- **First net zero municipal building in NYS!**

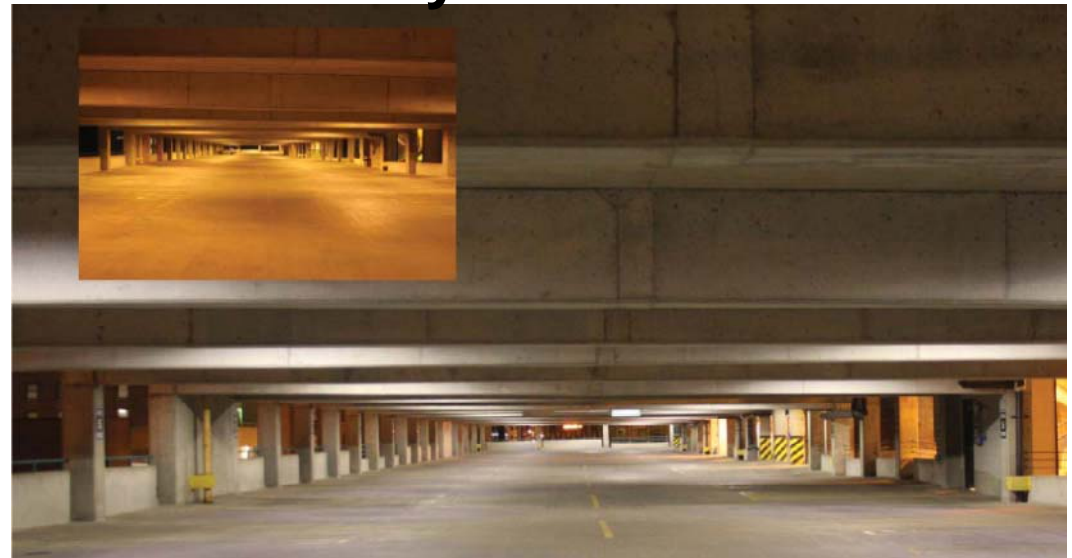


Energy Efficient Lighting

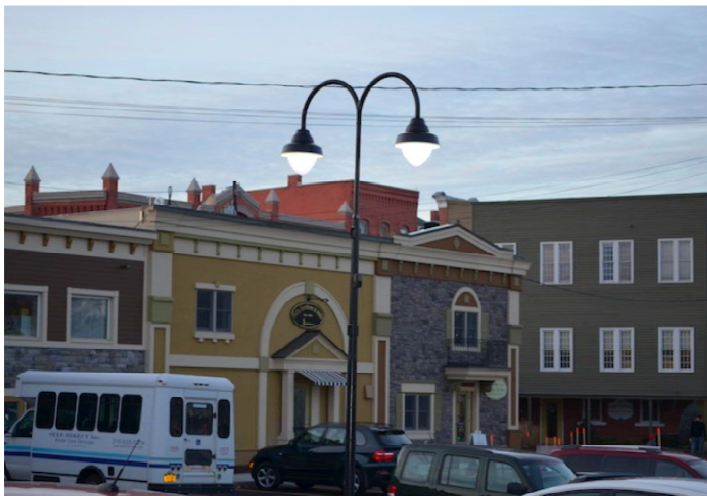


Municipal LED Projects

Syracuse



Baldwinsville



Auburn





Public Solar PV Projects

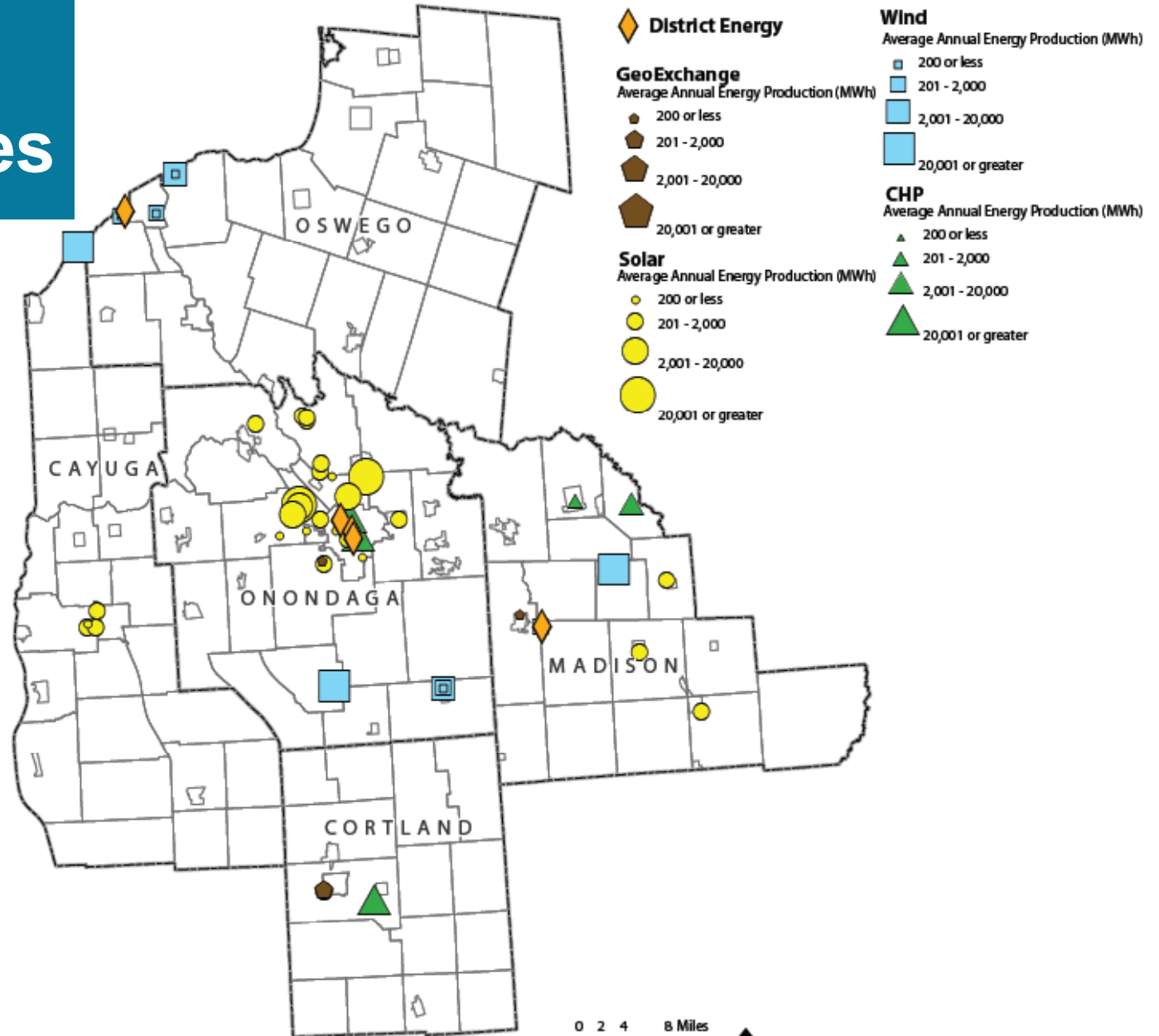


Hancock International Airport



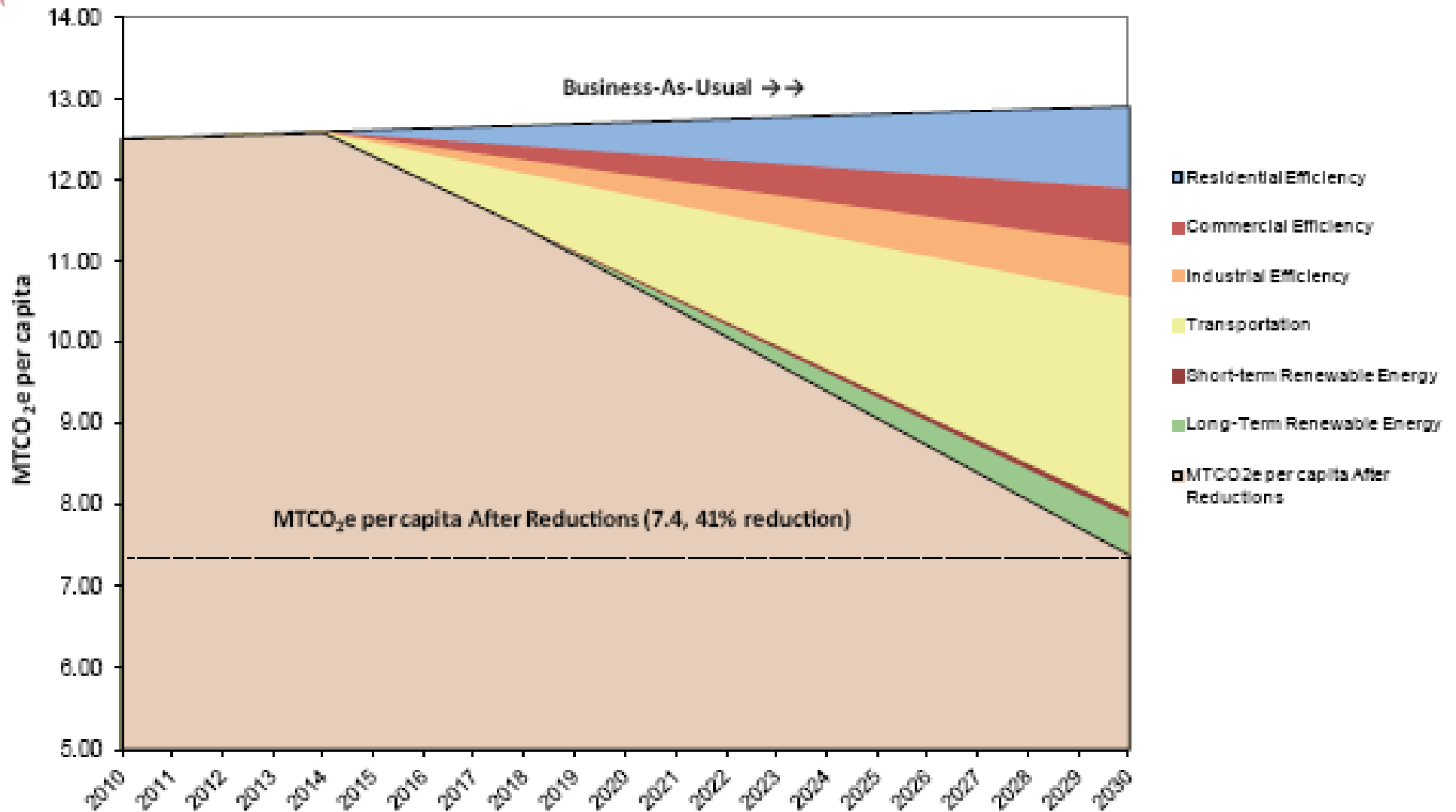
MWB Reservoir, Town of Clay

Identified Energy Opportunities

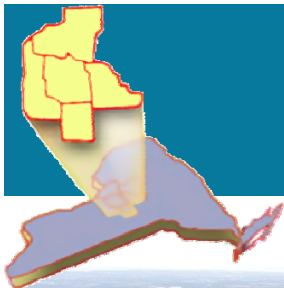




Energy Project Implementation



Climate Adaptation



Public health and safety, key responsibilities of every local government, today include adapting the community to a changing climate by increasing the resilience of its natural and human systems to climate hazards.

GOAL

Adapt successfully to a changing climate and improve the resilience of the region's communities, businesses, infrastructure and natural systems.

TARGETS

- Reduce per capita regional GHG emissions to 40% below 2010 levels by 2030.
- Reduce the percentage of the region's total land value located in floodplains from 14% to 10% by 2030.
- Double the number of municipalities adopting the NYS Climate Smart Communities to 26 by 2020 and 40 by 2030.



Climate Adaptation



KEY STATS

Total 2010 CNY gross emissions was 9.9 million metric tons CO₂e (MMTCO₂e)

Per capita emissions in CNY are 13 MT/capita, compared to 22 MT/capita nationally

HDDs have declined by 9% and CDDs have increased by 88% between 2000-01 and 2009-10

Approx. 14% of assessed value of the region's property located within parcels crossed by floodplains, including 9 WWTPs and 8 power plants

Key Strategies:

- Conduct vulnerability and risk assessments, and cost-benefit analyses in order to identify key areas for climate adaptation.
- Develop systems to prepare for and respond to more frequent flooding events.
- Develop and implement emergency and hazard mitigation plans.
- Create a central repository of regional climate data and provide channels for the distribution of climate information.

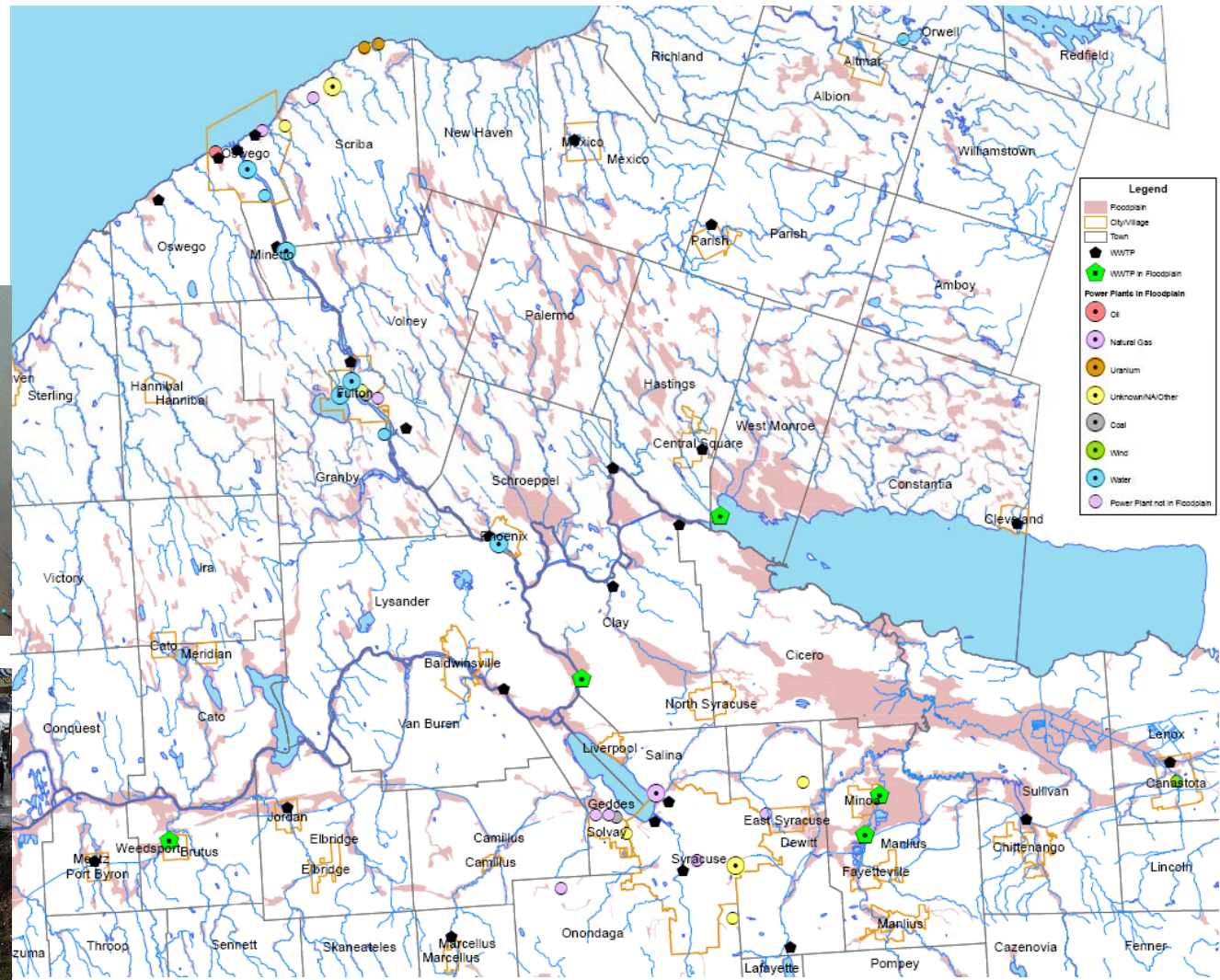
Project Opportunities:

- Regional infrastructure facility risk assessment.
- "Reverse 911" emergency notification system.
- Regional emergency shelter network.
- Regional network of CHP systems.
- Syracuse Urban Forest management program.
- Aquatic invasive species weed harvesting.
- Reconstruct Little York Dam.



Vulnerability Assessments

Critical energy and water infrastructure in floodplains





CSO Management Project



Harbor Brook Facility, Syracuse

Save the Rain

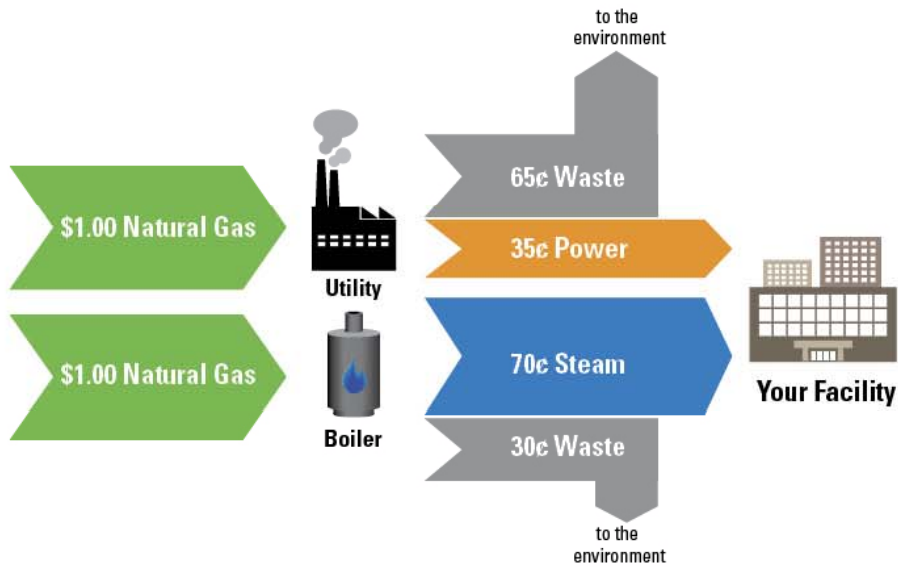




Combined Heat and Power



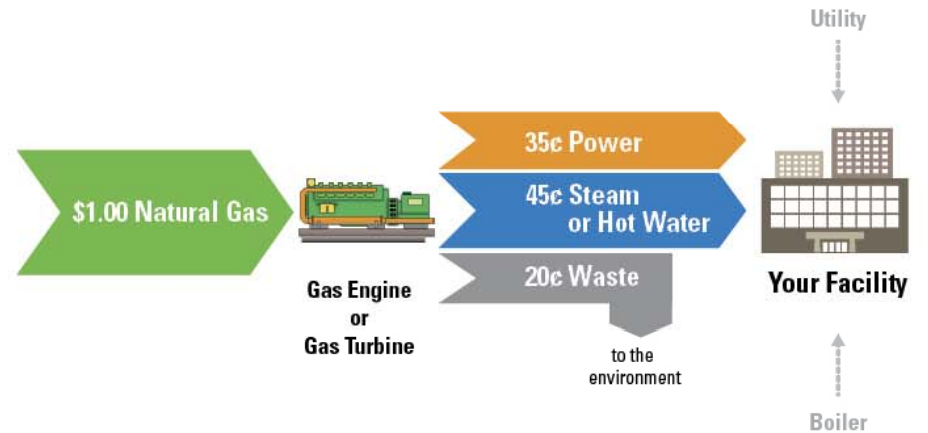
Traditional Generation



Investment	\$1.00
Useable Energy	\$.50
Waste	\$.50

50% EFFICIENT

Cogeneration



Investment	\$1.00
Useable Energy	\$.80
Waste	\$.20

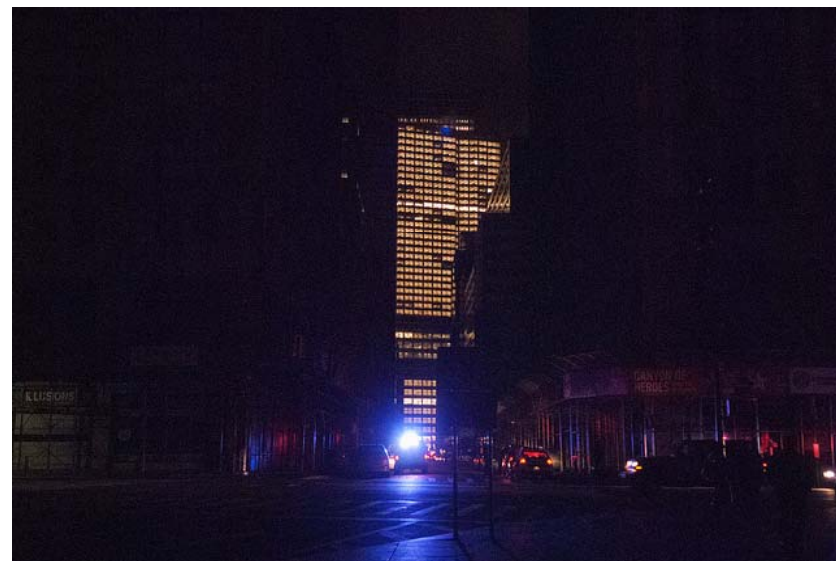
80% EFFICIENT



Combined Heat and Power



St. Joseph's Hospital, Syracuse



Three Things To Do Now

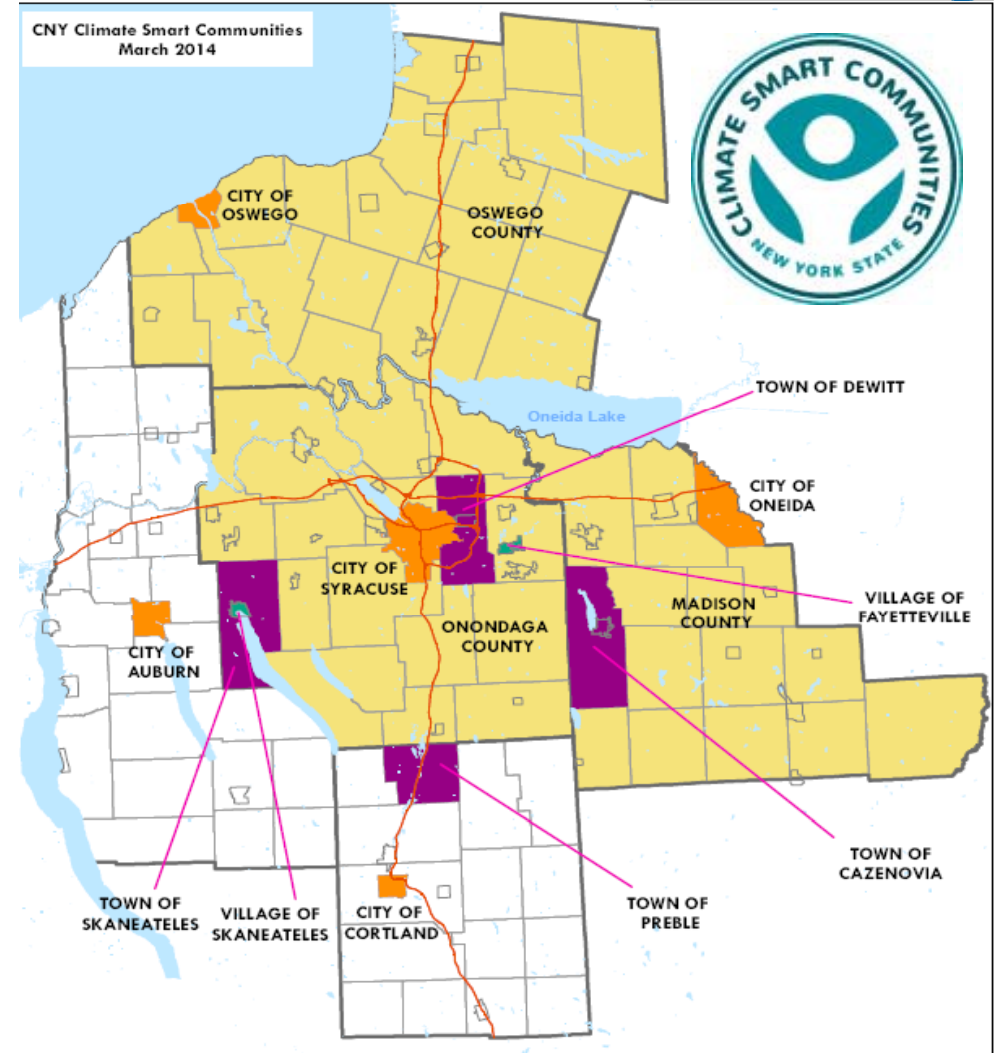
1. Join the NYS Climate Smart Communities Program

- ✓ GHG Inventory
- ✓ Climate Action Plan
- ✓ Demonstration Projects
- ✓ Community Education and Outreach

2. Cleaner Greener Communities Projects

3. Work with CNY RPDB to become “Solar Ready”

- ✓ Adopt the NYS Unified Solar Permit
- ✓ Collaborative procurement





Project website: visionnyny.org

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