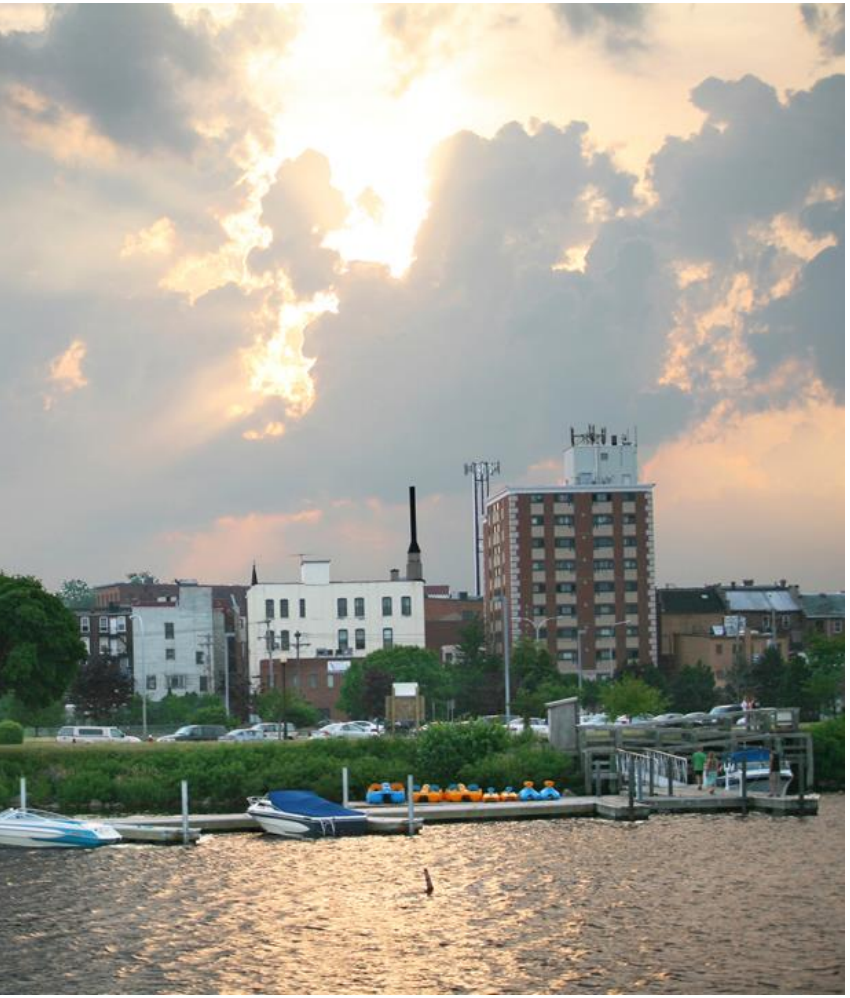


MEASURING SUSTAINABILITY OUTCOMES

PLANNERS WEBCAST SERIES

JOANNA NADEAU, AICP

HOW TO CHOOSE SUSTAINABILITY METRICS

- Locally relevant
- Practical to measure
- Linked to sustainability *goals* and *actions*




SUSTAINABLE COMMUNITIES PROGRAM

PROCESS ELEMENTS

1. Baseline assessment/checklist
   - ID constraints, priorities
2. Long-term plan of action
   - Improve sustainability performance/ratings
3. Implementation
   - Immediate and long-term strategies

FOCUS AREAS

- Agriculture
- Economic Development and Tourism
- Education
- Environmental Issues
- Governance
- Housing
- Open Space and Land Use
- Planning, Zoning, Building and Development
- Population
- Public Safety and Emergency Management
- Recreation
- Resource Use
- Transportation
- Volunteerism and Civic Engagement

Audubon International

External Assessment + Internal Priorities = LTSP

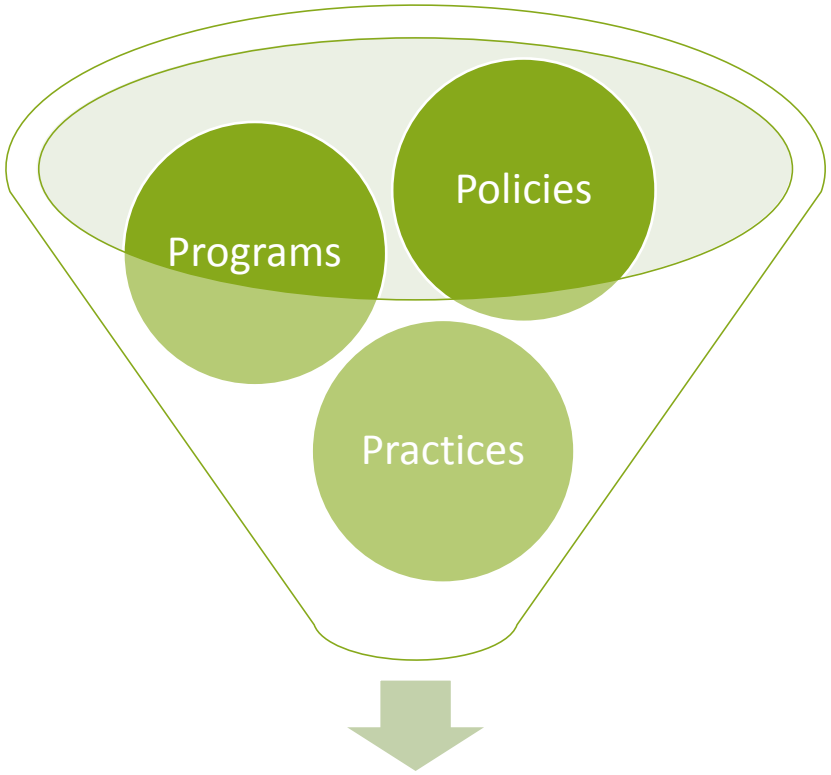
LONG TERM SUSTAINABILITY PLAN

- Goals
- Actions (immediate, MT, LT)
- Metrics/Indicators
- Targets

Focus Area: Economic Development & Tourism Walking the Walk	YES	NO	NOT APPLICABLE
• Establish a green job training partnership			
• Track green jobs and assess workforce capacity			
• Encourage the expansion of existing economic assets using existing infrastructure through incentive-based policy tools (*i.e., business loan programs, streamlined permitting, mainstreet incubators, etc.*)			
• Identify or create distinct neighborhoods with unique appeal			
• Identify or create special districts for a diverse set of focused investment (*i.e., arts district, waterfront district, etc.)*			
• Inventory local natural assets/amenities through work with local tourism departments, businesses, non-profits, and civic organizations			
• Highlight local and regional cultural assets through community sponsored public art and event nights			
• Operate historic and cultural preservation departments, or support local organizations			
• Fund or contribute to regional and local historic and cultural preservation efforts			
• Preserve scenic vistas through siting (*i.e., buildings, communication towers, signs, etc.*)			
• Stimulate local and regional economy by offering regular programming on public lands (*i.e., nature walks, artist retreats, ski or golf tournament*)			
• Purchase municipal operating goods from local sources (*i.e., paper products, signage, furniture, etc*)			
• Prioritize the redevelopment of lands with existing infrastructure and public services and the maintenance and rehabilitation of existing residential, commercial and industrial structures			
• Track amount of tourism that takes part in eco- kayakers, hikers, etc.)			
• Synchronize marketing efforts with local busine Development Authority marketing strategy to cr			

Baseline Assessment

SUSTAINABILITY ACTION PLAN



METRICS CAN MEASURE:

Outputs: Did we do X?

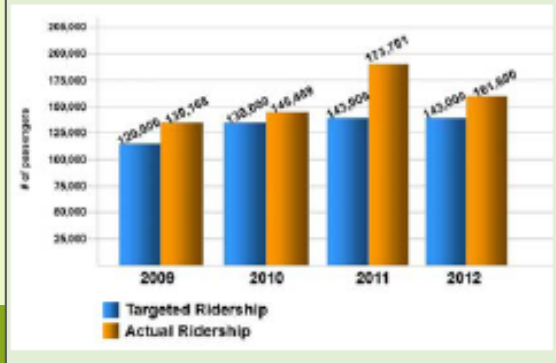
Outcomes: Did X achieve the goal?

SUSTAINABILITY ACTION PLAN

Goal	Strategy	Indicator	Target	Timeline
Protect water resources	BMPs on city properties	Acres managed with BMPs	900 acres	1-2 years
		Phosphorus concentration in receiving stream	0.06 mg/l	2-5 years
Protect air quality	Create incentives for transit use	Transit incentive program implemented	Y	2-3 years
		Total annual ridership on transit	180,000	3-5 years

City Shuttle Service

Each year, a total number for ridership is targeted for the shuttle service. Since 2009, the City has exceeded targeted totals with ridership steadily increasing as depicted below.



EXAMPLE AREAS TO MEASURE

The What, the How, the Why…

Environment: Water Resources

Goal “1”: Protect water resources in and around community

Possible Actions:

- Reduce negative impacts with best management practices (IPM, shoreline buffers, bioswales, etc.) on city lands
- Implement stormwater education program
- Require permeable pavement for new construction

Indicator “1A” and “1B”:

- % Fishable and swimmable lakes and river miles
  - Source: EPA/State reporting under CWA
- Water quality above ecological thresholds
  - Data available, or collect yourself (https://www3.epa.gov/myenv/MYENVIEW2.html)

Environment: Water Resources

Goal “1”: Protect water resources in and around community

Possible Actions:

- Manage city land with best management practices (IPM, shoreline buffers, bioswales, etc.)
- Implement stormwater education program
- Require permeable pavement for new construction

Indicators:

- % Fishable and swimmable lakes and river miles
- Water quality above ecological thresholds
- # Major flood events
- $ Loss from flood events
- Acres managed with BMPs
- % Impervious cover of watershed

Environment: Air

Goal “2”: Protect or improve air quality in community

Strategies/Actions:

- Plant trees on City land; give away native trees
- Expand transit options
- Use cleaner fuels in fleets

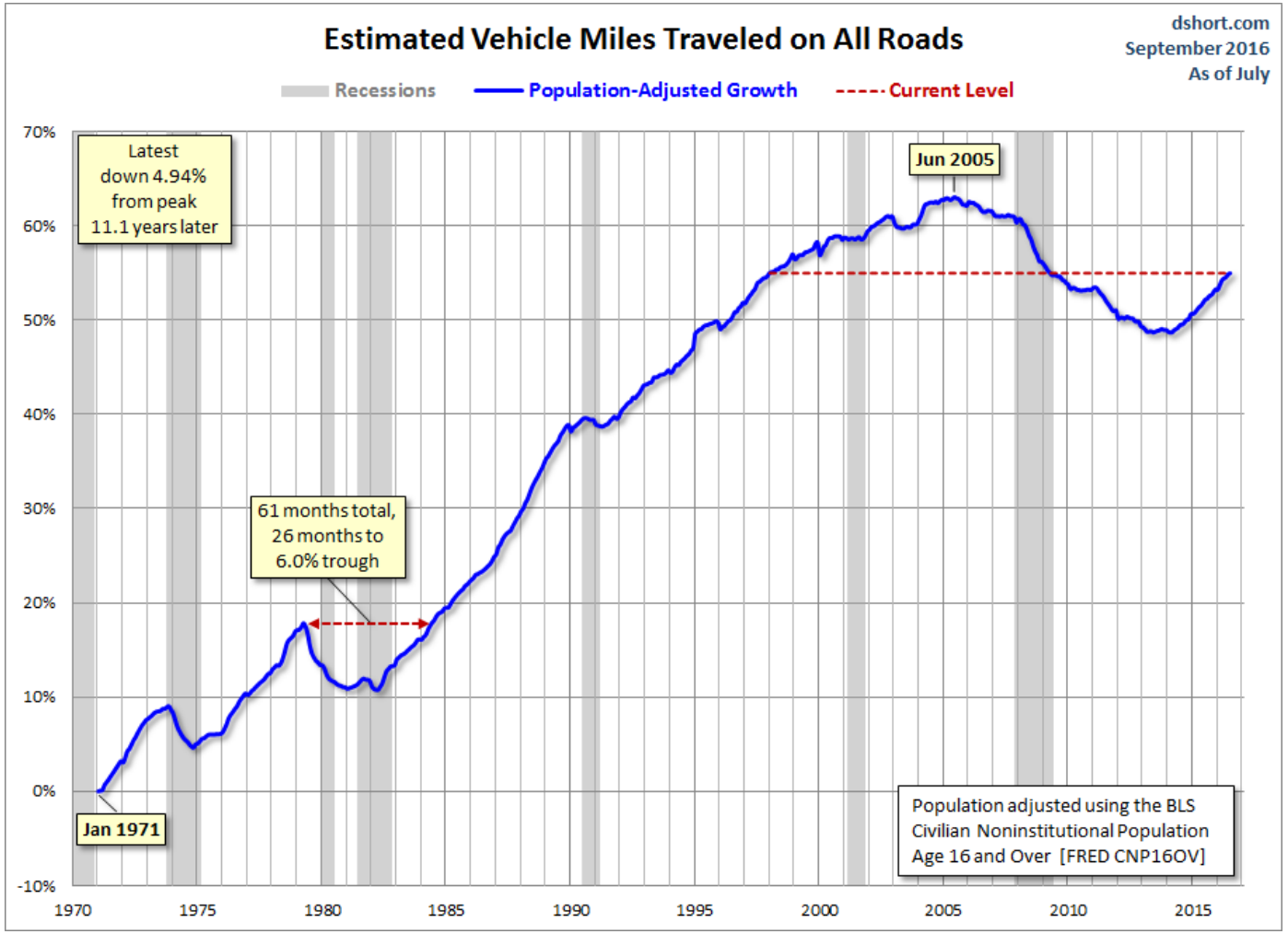
Output Indicators:

- Tree canopy coverage, % green space
- Annual ridership on transit (avg. and total)
- Gallons of fuel used (city)/# vehicles

Outcome Indicators:

- Vehicle miles traveled per capita
- # Days ozone levels exceed healthy levels

THE IMPORTANCE OF BENCHMARKING



Did your community's vehicle use increase while nationally vehicle use was going down?

Is your community driving less now than in 2012 while nationally it is going up?

Resource Use: Waste

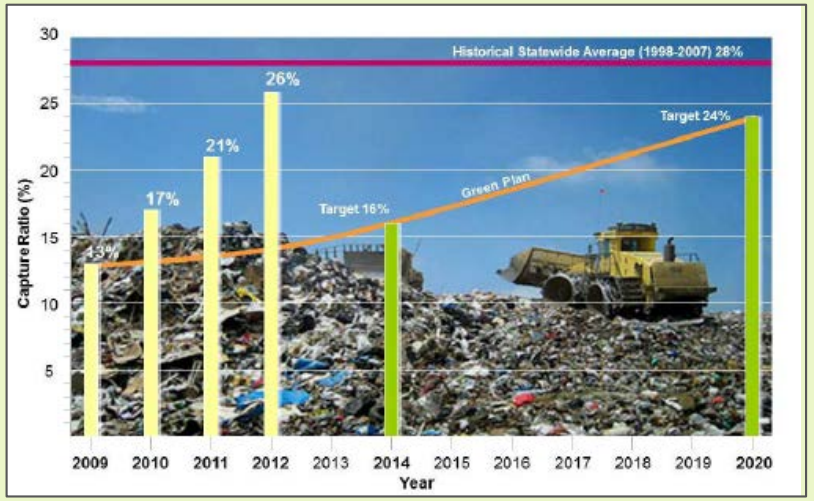
Goal “3”: Reduce waste and increase recycling

Strategies/Actions:

- Distribute information about availability of single stream recycling
- Create user-friendly composting education program

Indicators:

- # single stream recycling containers distributed
- # of properties using composting
- Average capture rate ratio (estimate)
  - % of recyclable or compostable material diverted from trash



Environment: Wildlife Habitat

Goal “4”: Conserve open space and wildlife habitat

Strategies/Actions:

- Plant trees on City land; give away native trees to community
- Map ecologically sensitive areas
- Establish greenway growth boundaries

Outcome Indicators:

- % Green space protected
  - Spatial distribution of land cover:
    - Corridors
    - Fragmentation
- % Native plants on city properties
- # Wildlife species observed

Health / Recreation

Goal “5”: Ensure all residents have opportunity for healthy lifestyles

Strategies/Actions:

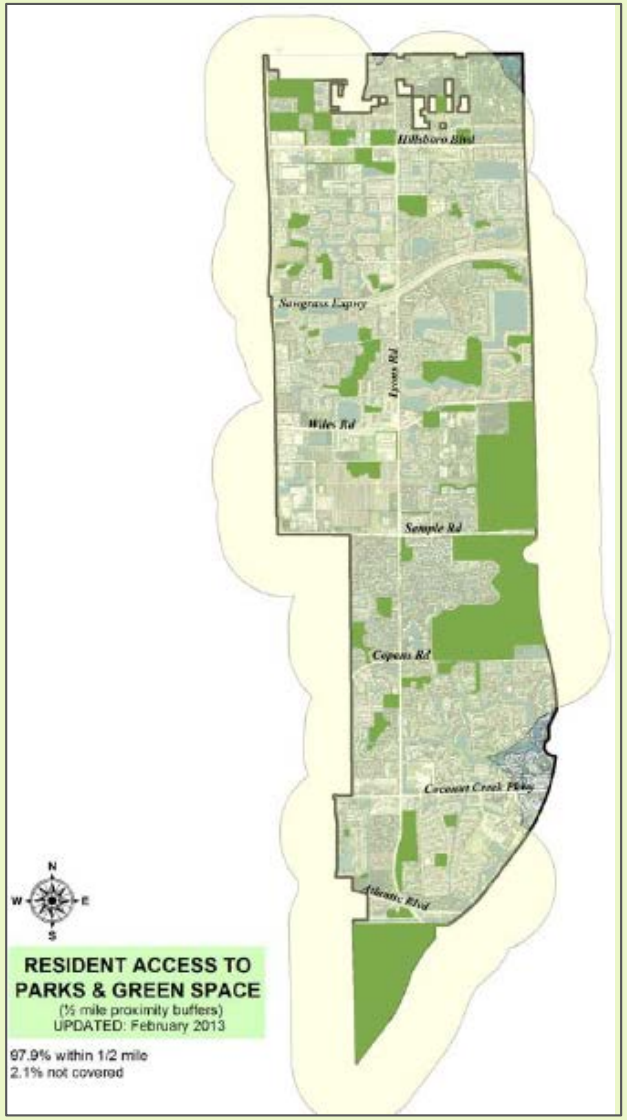
- Increase access to parks and green space by creating more parks

Output Indicators:

- % residents within ½ mile of parks/green space
- Miles of recreational paths and trails (non-auto)

Outcome Indicators:

- Obesity rates



Economic Development and Tourism

Goal: Promote economic development based on natural amenities

Short Term Indicators

- # Articles (and readers) featuring community's sustainability practices and natural amenities
- # New access points developed with amenities

Long Term Indicators

- Median home price
- % Occupancy in lodging
- % Profit increase in local businesses

Action Steps

Results of each action step under Category 1

	ACTION OBJECTIVE	ACTION SUMMARY	PERFORMANCE MEASURE	2009	2010	2011	2012	2013
1.1	Achieve LEED® Certification for all buildings in the Main Street Project Area with at least 15% certified at Silver, Gold, or Platinum level.	Status: ✓ In progress Target Date: 2020 Data Sources: Site Plans, USGBC *Note: (1) Results are based on # of buildings not by project (2) % certified is based on cumulative total of issued COs since 2009*	# of buildings constructed (based on issued COs)	2	0	1	2	0
			# of buildings seeking certification	12	0	0	0	1
			# of buildings certified (cumulative)	0	14	14	14	14
			% certified as Silver, Gold, or Platinum	0%	100%	93%	82%	82%
1.2	Achieve LEED® Certification or Florida Green Building Coalition (FGBC) Certification on 50% of buildings outside the Main Street Project Area.	Status: ✓ In progress Target Date: 2020 Data Sources: Site Plans, USGBC, FGBC *Note: (1) Results are based on # of buildings not by project (2) % certified is based on cumulative total of issued COs since 2009 (3) Other green building programs have been added to this action (see map).*	# of buildings constructed (based on issued COs)	7	11	7	6	23
			# of buildings seeking certification	2	0	0	1	0
			# of buildings certified (cumulative)	1	1	1	1	13
			% certified	14%	5%	4%	3%	24%
1.3	Achieve LEED® Certification for all new City constructed buildings, and, when feasible, strive for Silver, Gold, or Platinum certification level.	Status: ✓ In progress Target Date: 2020 Data Sources: Site Plans, USGBC *Note: City's Public Works Administration EOC Building received LEED® Silver in December 2013*	# of city projects proposed	0	1	1	1	0
			# of projects constructed (based on issued COs)	1	0	0	0	1
			# of buildings seeking certification	0	0	1	1	0
			# certified (cumulative)	0	0	0	0	1
1.4	Retrofit all City-owned buildings with green building techniques by 2020 and, where feasible, seek LEED® Existing Building Certification.	Status: ✓ In progress Target Date: 2020 Data Sources: Public Works Dept.	# of retrofitted buildings	4	3	2	0	0
			# of retrofitted buildings seeking certification	0	0	0	0	0
			# certified	0	0	0	0	0
1.5	Create a "green" checklist by 2010 for use on all City projects such as engineering or landscape projects, permits, etc.	Status: ✓ In progress Target Date: 2013 Data Sources: - *Note: This action is being developed by Green Team*	Date checklist was created	-	-	-	-	-
			# of city projects	-	-	-	-	-
1.6	Ensure 100% of new development projects throughout the City contain conspicuous displays of green technology that function in the project design while providing a social, artistic, and environmental value.	Status: ✓ In progress Target Date: 2020 Data Sources: Site Plans *Note: New projects include those under review and approved since 2009*	# of new projects	2	3	7	8	13
			# of green tech/art displays proposed (cumulative)	2	3	3	4	4
			# of green tech/art displays constructed	0	0	0	1	1
1.7	Create a Main Street Workforce Housing Incentive Program by 2010 in order to provide additional density for projects that demonstrate superior green building design while providing workforce housing, including those projects that seek LEED® Certification at Silver, Gold, or Platinum level.	Status: ✓ In progress Target Date: 2013 Data Sources: Site Plans, USGBC *Note: Program completed by staff waiting for final City Commission approval.*	# of projects under review	-	-	-	-	-
			# of projects with residential use	-	-	-	-	-
			# of projects seeking incentive	-	-	-	-	-
			# of additional units provide through incentive	-	-	-	-	-
1.8	Create an educational eco-village within the Main Street Project Area that can promote the dual-use of school facilities and provide for eco-cultural activities.	Status: ? Undetermined Target Date: 2020 Data Sources: -	# of school properties in MainStreet Area	1	1	1	1	1
			# of potential parcels	-	-	-	-	-
			# of proposed projects	-	-	-	-	-
1.9	Increase residential density and promote mixed-use for projects that support planned long-range transportation systems such as the U.S. 441/State Road 7 Corridor or Educational Corridor.	Status: ✓ In progress Target Date: 2020 Data Sources: Site Plans *Note: (1) New projects include those under review and approved since 2009 (2) % is based on new projects*	# of new projects (cumulative)	2	2	4	4	5
			# of projects higher density/mixed-use (cumulative)	1	1	3	3	4
			% of projects support action	50%	50%	75%	75%	75%

GEORGE C. HOMSY, PHD, AICP
GHOMSY@BINGHAMTON.EDU

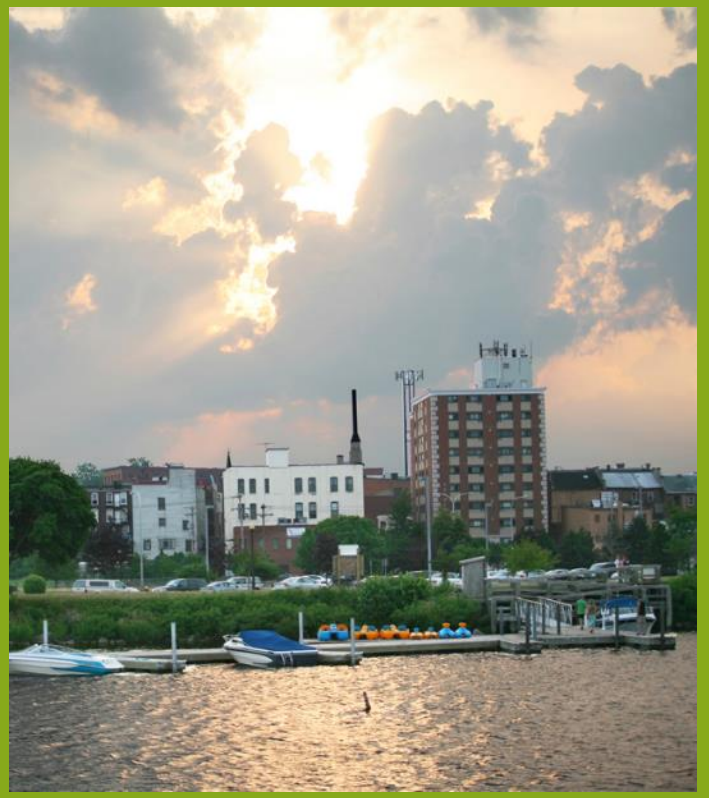
JIM YIENGER
MR_JJY@CLIMATETOOLS.COM

WAYNE FEIDEN, FAICP
WFEIDEN@NORTHAMPTONMA.GOV

JOANNA B. NADEAU, AICP
JOANNA@AUDUBONINTERNATIONAL.ORG

KIM LUNDGREN, ENV SP
KIM@KIMLUNDGRENASSOCIATES.COM

Thanks!



UTILITY ENERGY REGISTRY | NEW YORK
SUPPORTING SUSTAINABLE COMMUNITIES

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Innovations in Big Data for Sustainability Planning

Moving towards a National Energy Census: Crowdsourcing Energy Demographics from Utilities

APA Planning Series Webinar, September 23rd

JIM YIENGER

CLIMATE ACTION ASSOCIATES LLC

MR_JJY@CLIMATETOOLS.COM

CLIMATE ACTION ASSOCIATES LLC

New York Strategy

Local action is critical for meeting the state's energy and climate goals, and is supported by:

- Enabling local energy policy authority (NYSPSC)
- Providing communities support and resources (NYSERDA)

Reforming the Energy Vision (REV)

Led by the New York State Public Service Commission (NYSPSC)

- Represents a fundamental transformation of the utility operational paradigm in New York
- It will expand local government energy policy making authority
  - Authorizes Community Choice Aggregation and PACE financing
  - Enables micro-grids, community distributed generation, and solar through interconnection rules
  - Authorizes LED street lighting tariffs and buyback program
  - Expands energy data access

NYSERDA Clean Energy Fund

Established New Communities and Local Governments Team

- Focus on community support programming

Cleaner Greener Communities / Clean Energy Communities Programs

- Local policy development and capacity development
- Incentivizes ten high impact actions, from energy codes to clean fleets, and more

NYSERDA recognizes the nexus between community planning and energy sustainability

- Supports integration of energy and sustainability into comprehensive planning
- Funds smart growth, walkability and LEED ND oriented projects and plans
- Supported 10 Regional Sustainability Plans that cover all of New York

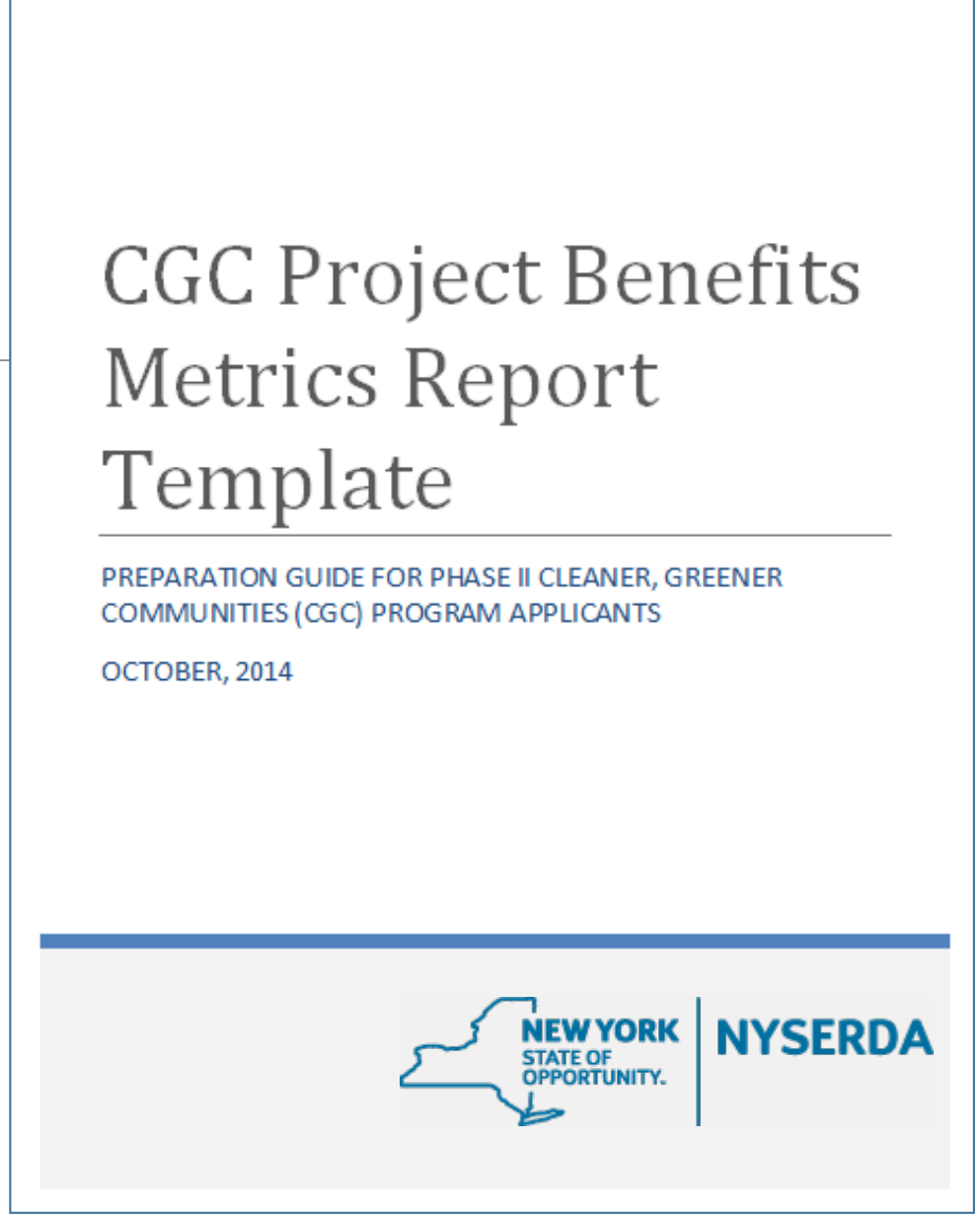
Measuring Impact

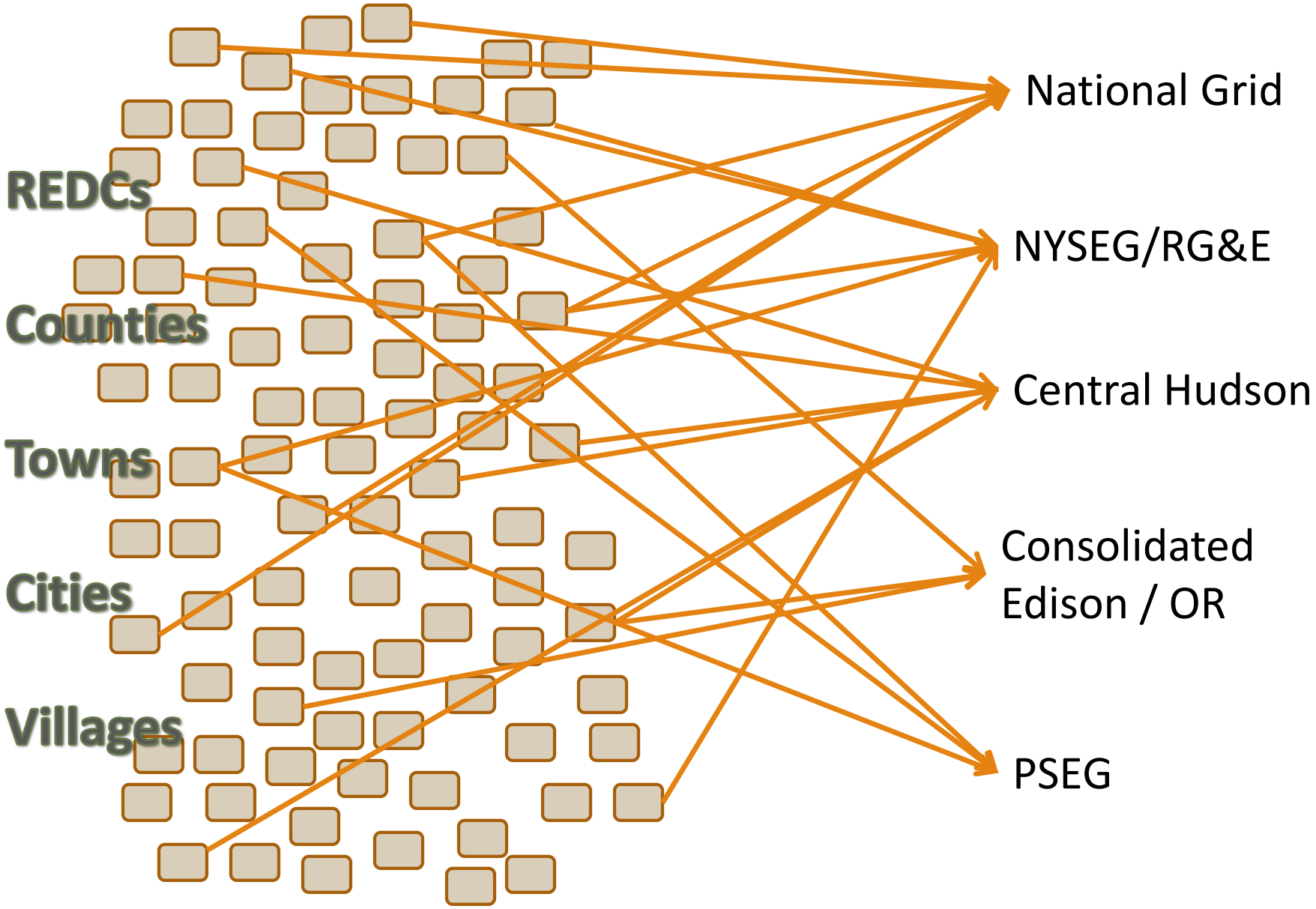
NYSERDA recognizes that community action must be:

- Locally driven
- Metrics driven
- Results oriented

CGC Projects Benefits Metrics Report Template

- Accompanies NYSERDA financial incentives
- Communities must report GHG emissions, energy, jobs, VMT, and other benefits of projects
- Responsibility is on communities to get their own data
- Lesson learned: getting data is hard, getting quality data even harder. "Easier said than done"





Inefficient.

Individual planners spend time and resources chasing data. One-off requests are chaotic, expensive, create bad data and can not be sustained. Data for the same community and same year is inconsistent because individuals in a utility may pull data differently.

It is practically *impossible* to track long term energy performance this way.

Why Not Open Energy Demographics?

Energy data about communities, zip codes, census tracts, etc.

- Energy consumption by sector
- Energy costs
- Peak loads
- Local energy mix, renewable capacity
- New Stuff: EV charging infrastructure, net-meter counts

Utilities are a critical partner in data

- Utility data is the gold standard
- Measure what leaves the grid- end of point metering
- Measure what enters the grid- DER

National Utility Data Challenges

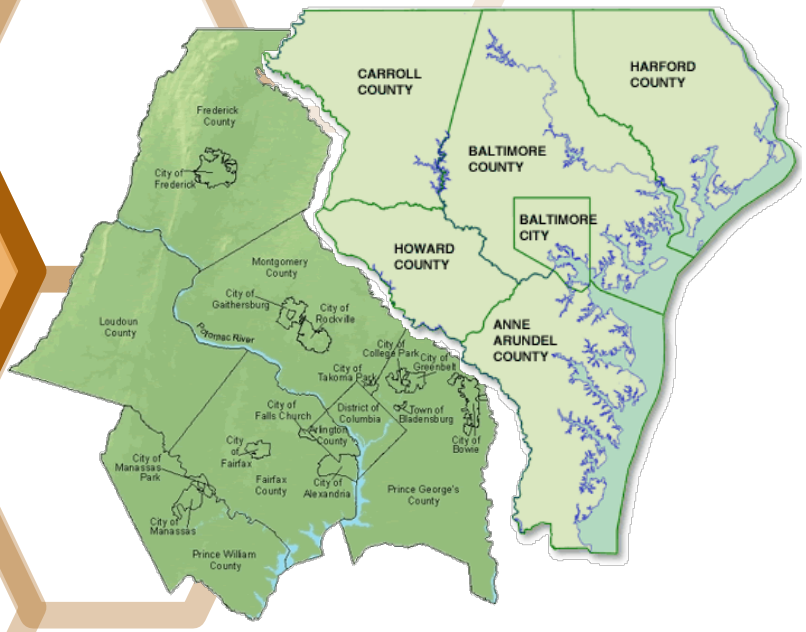
Sheer volume and complexity

- 3000 utilities in the USA
- 50,000+ cities, towns, villages, counties
- Data doesn’t align to communities
- Utilities not used to providing it

No standards in place for community energy demographics

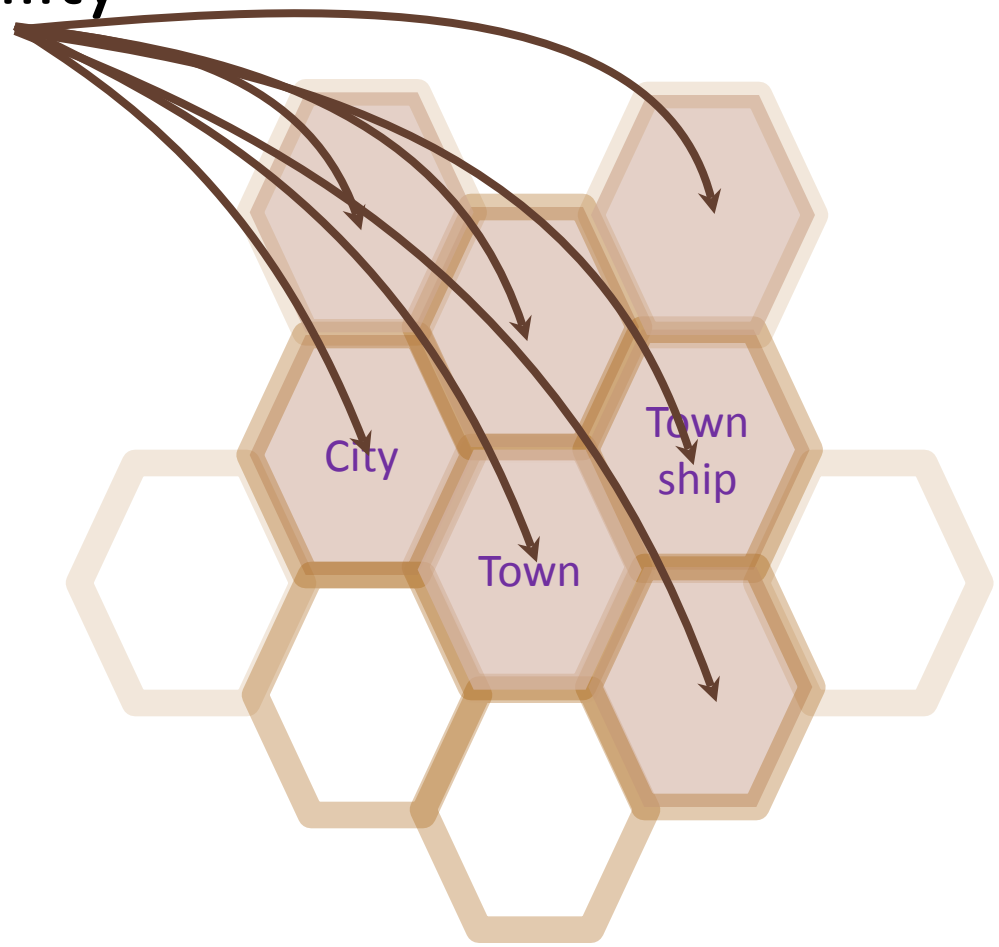
- We need industry-driven standards much like Green Button is for account-level data
- Data standardized by type, geography resolution, and reporting frequency
- Aligned to census boundaries for cross reference to census data

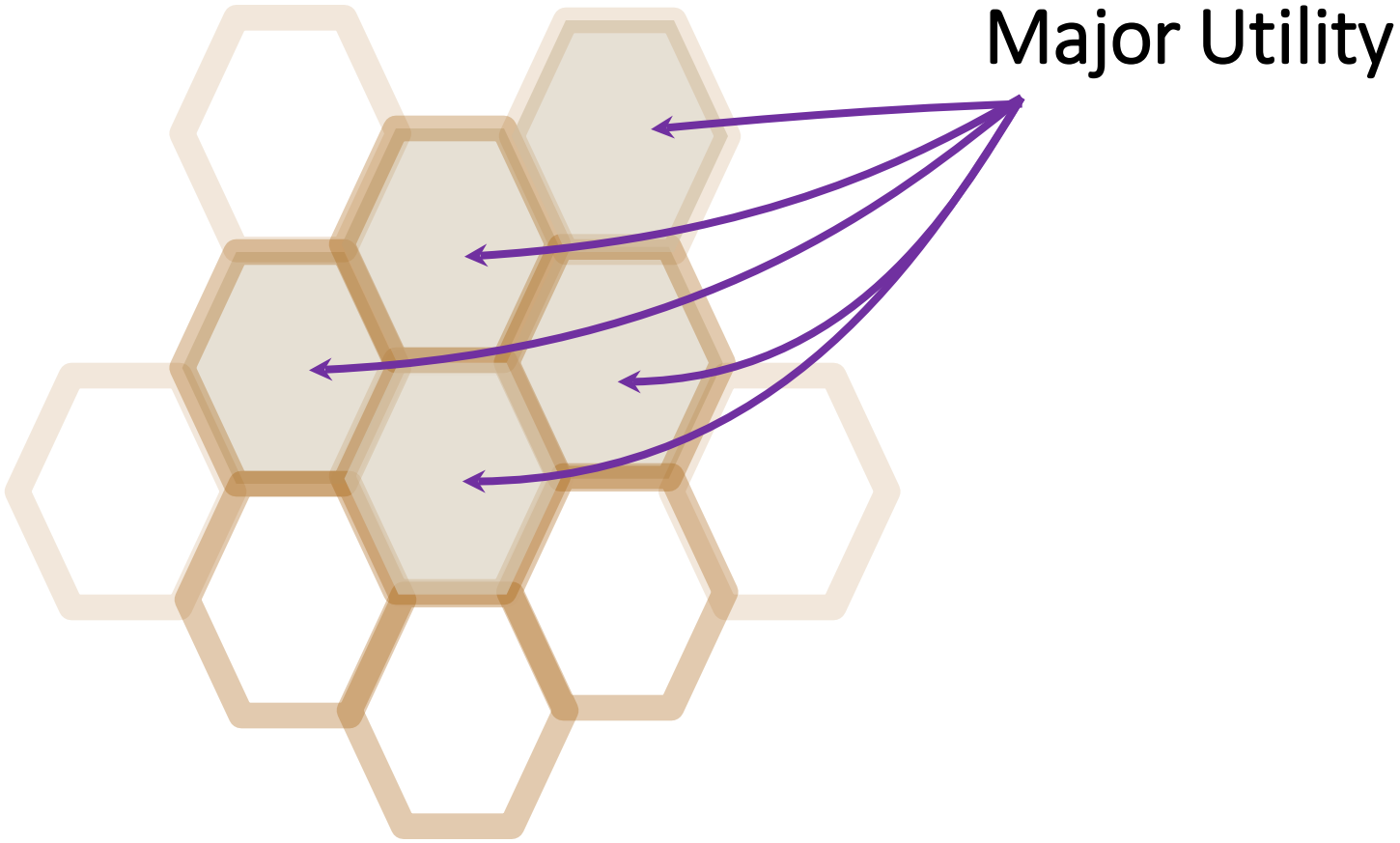
US Community Map

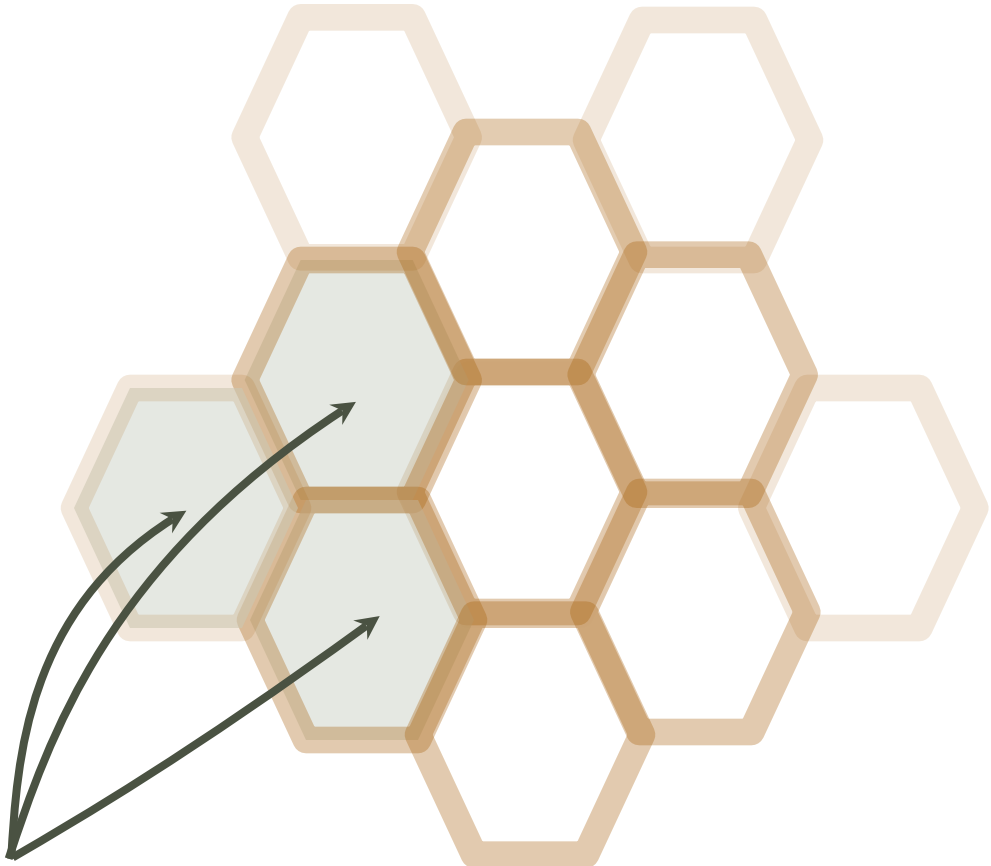


The USA each State is subset communities and local governments described by US census geography

Major Utility




Major Utility



Municipal Utility

(Energy Consumption)

What if we created a movement by which many, if not hundreds or thousands of utilities are reporting?

UER Pilot 2012-2015

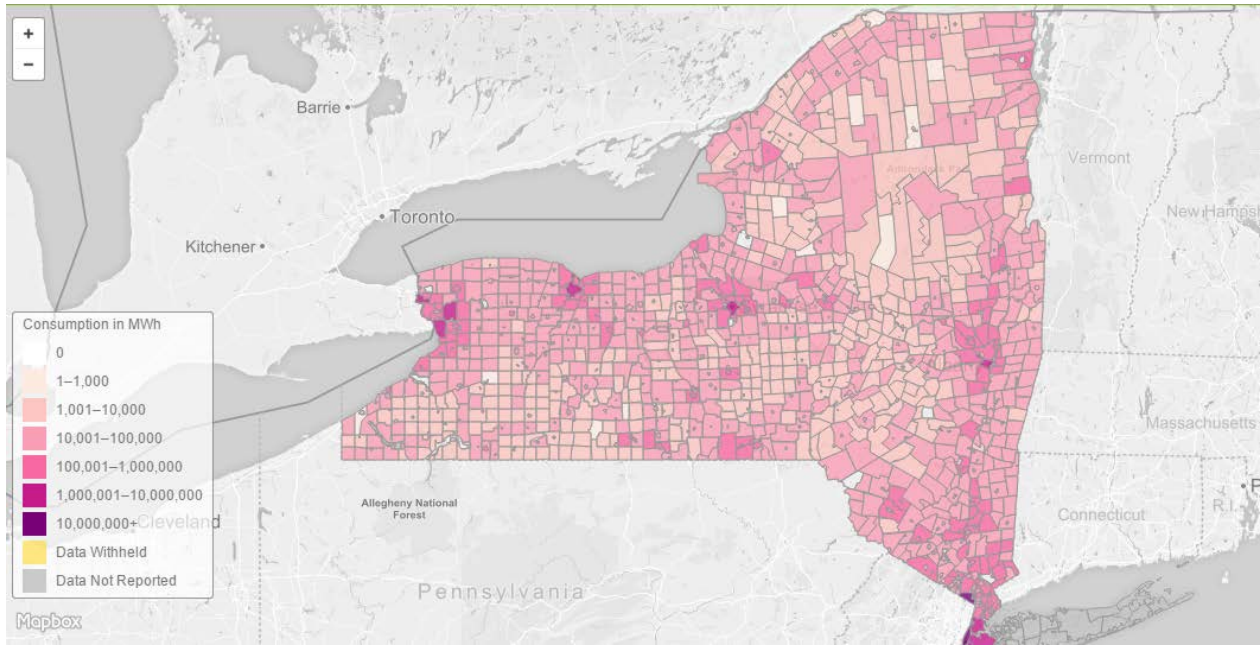
- First ever approach to standardize and coordinate production of aggregate high-quality community energy demographics for 1300+ cities, town, and villages
- All utility-supplied data
  - Completely voluntary – all major utilities approached participated. None said no.
  - Data for 1300 cities, towns, and villages was produced
- Developed first in the nation model to standardize access to market enabling energy data through an online registry

100% Voluntary

1. Create a joint win-win coalition
   - Convened communities / policymakers to create a joint “ask”
   - Demonstrated value to utilities for participating

2. Collective data requests
   - Designed data, formatting, process for updating
   - Approved through a utility working group
   - Provided technical support to utilities
   - Data for 1300 cities, towns, and villages

3. Designed process to automate data
   - The Utility Energy Registry
   - Five years and counting: 2010 – 2014



2016: REV Track 2 Order

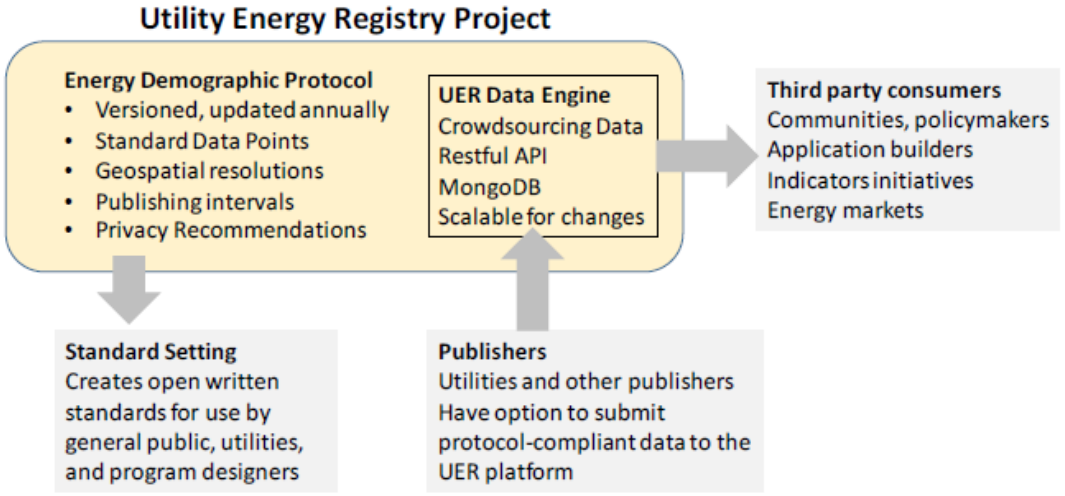
Order issued in Spring 2016

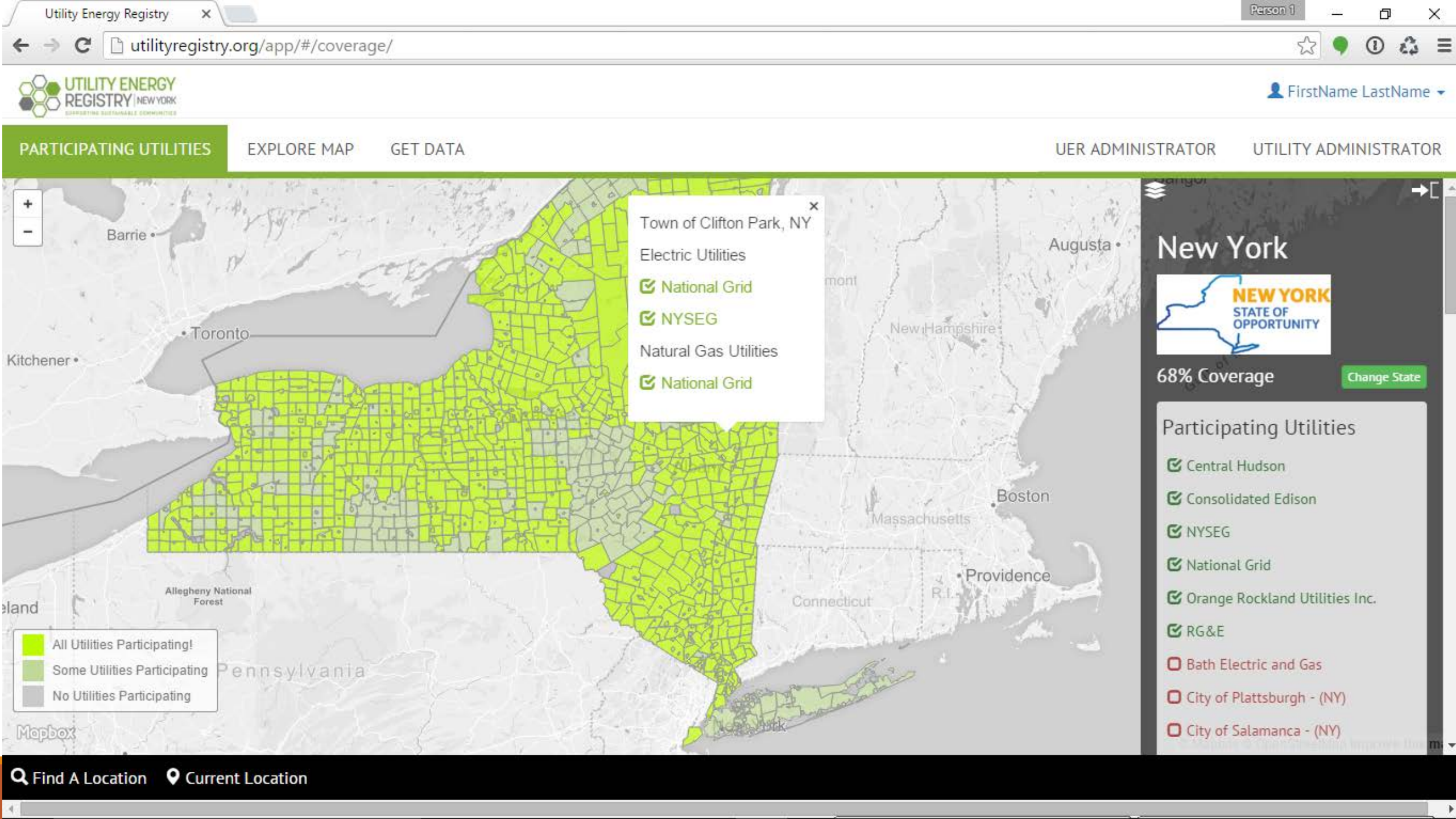
- Implementation framework for utility operational and tariff reforms under REV
- Formally recognizes the UER project
- Asks utilities and NYSERDA to collaborate on the UER
  - Creates a mandate to solve technical and policy issues
  - Goal to formalize UER data protocol, privacy thresholds, etc.
  - UER Working Group established and is underway

Utility Energy Registry Design

Two fundamental components

- Community Energy Protocol
  - Written common standards for the US, unique chapters for each state
  - Geography resolution, data points, and time interval reporting
- The UER Web Application
  - API-driven data engine for easy data access by consumers and developers
  - A simple website to render basic data
  - Designed to work in all states




Utility Energy Registry
Person 1
utilityregistry.org/app/#/coverage/
UTILITY ENERGY REGISTRY | NEW YORK
FirstName LastName
PARTICIPATING UTILITIES
EXPLORE MAP
GET DATA
UER ADMINISTRATOR
UTILITY ADMINISTRATOR
Town of Clifton Park, NY
Electric Utilities
National Grid
NYSEG
Natural Gas Utilities
National Grid
New York
NEW YORK STATE OF OPPORTUNITY
68% Coverage
Change State
Participating Utilities
Central Hudson
Consolidated Edison
NYSEG
National Grid
Orange Rockland Utilities Inc.
RG&E
Bath Electric and Gas
City of Plattsburgh - (NY)
City of Salamanca - (NY)
Barrie
Toronto
Kitchener
Augusta
New Hampshire
Boston
Massachusetts
Providence
Connecticut
R.I.
Allegheny National Forest
Pennsylvania
All Utilities Participating!
Some Utilities Participating
No Utilities Participating
Mapbox
Find A Location
Current Location

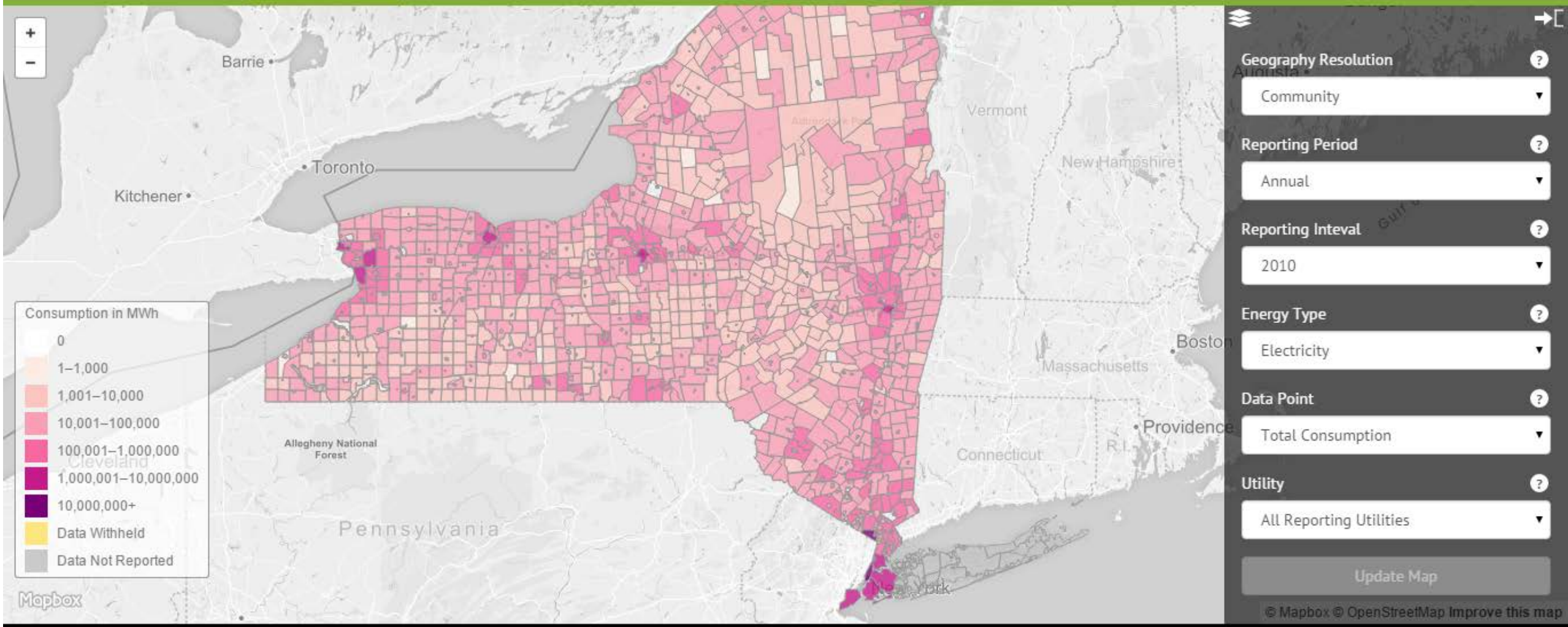
Utility Energy Registry

utilityregistry.org/app/#/explore/

UTILITY ENERGY REGISTRY | NEW YORK

FirstName LastName

PARTICIPATING UTILITIES | EXPLORE MAP | GET DATA | UER ADMINISTRATOR | UTILITY ADMINISTRATOR



Geography Resolution: Community

Reporting Period: Annual

Reporting Inteval: 2010

Energy Type: Electricity

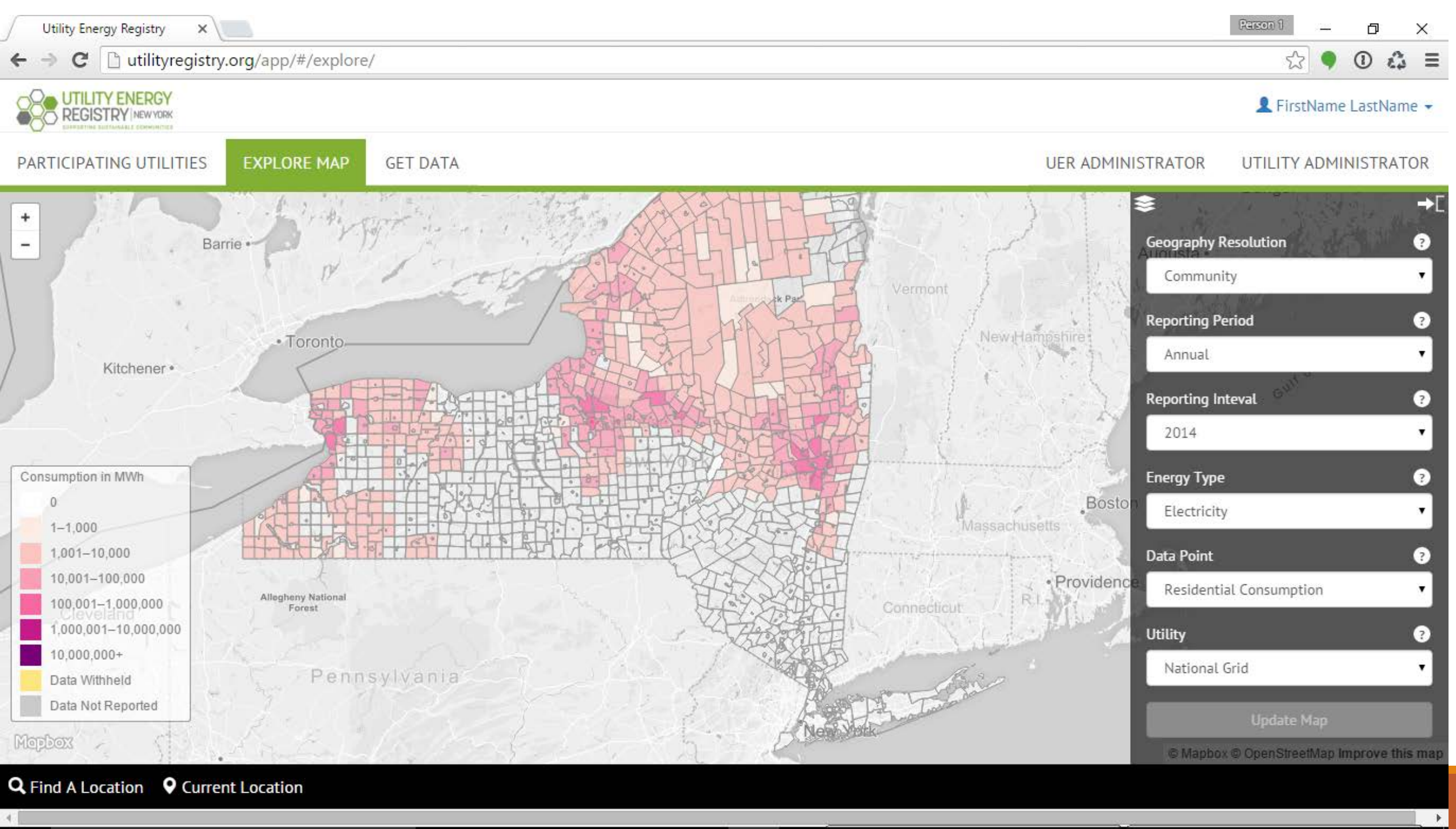
Data Point: Total Consumption

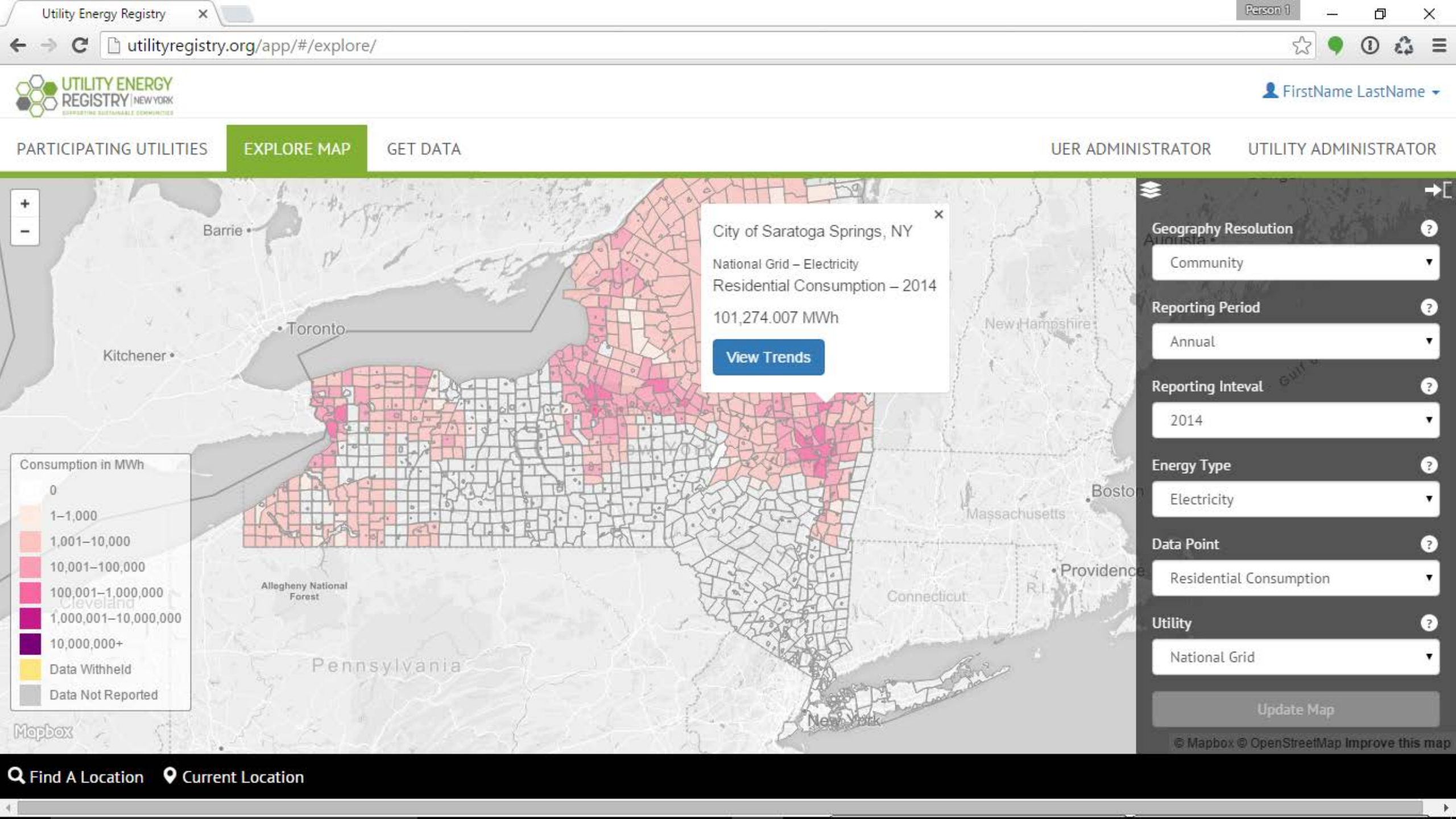
Utility: All Reporting Utilities

Update Map

© Mapbox © OpenStreetMap Improve this map

Find A Location | Current Location


Utility Energy Registry
Person 1
utilityregistry.org/app/#/explore/
UTILITY ENERGY REGISTRY NEW YORK
FirstName LastName
PARTICIPATING UTILITIES
EXPLORE MAP
GET DATA
UER ADMINISTRATOR
UTILITY ADMINISTRATOR
Barrie
Toronto
Kitchener
Vermont
New Hampshire
Boston
Massachusetts
Providence
Connecticut
R.I.
Allegheny National Forest
Cleveland
Pennsylvania
New York
Consumption in MWh
0
1–1,000
1,001–10,000
10,001–100,000
100,001–1,000,000
1,000,001–10,000,000
10,000,000+
Data Withheld
Data Not Reported
Mapbox
Geography Resolution
Community
Reporting Period
Annual
Reporting Inteval
2014
Energy Type
Electricity
Data Point
Residential Consumption
Utility
National Grid
Update Map
© Mapbox © OpenStreetMap Improve this map
Find A Location
Current Location

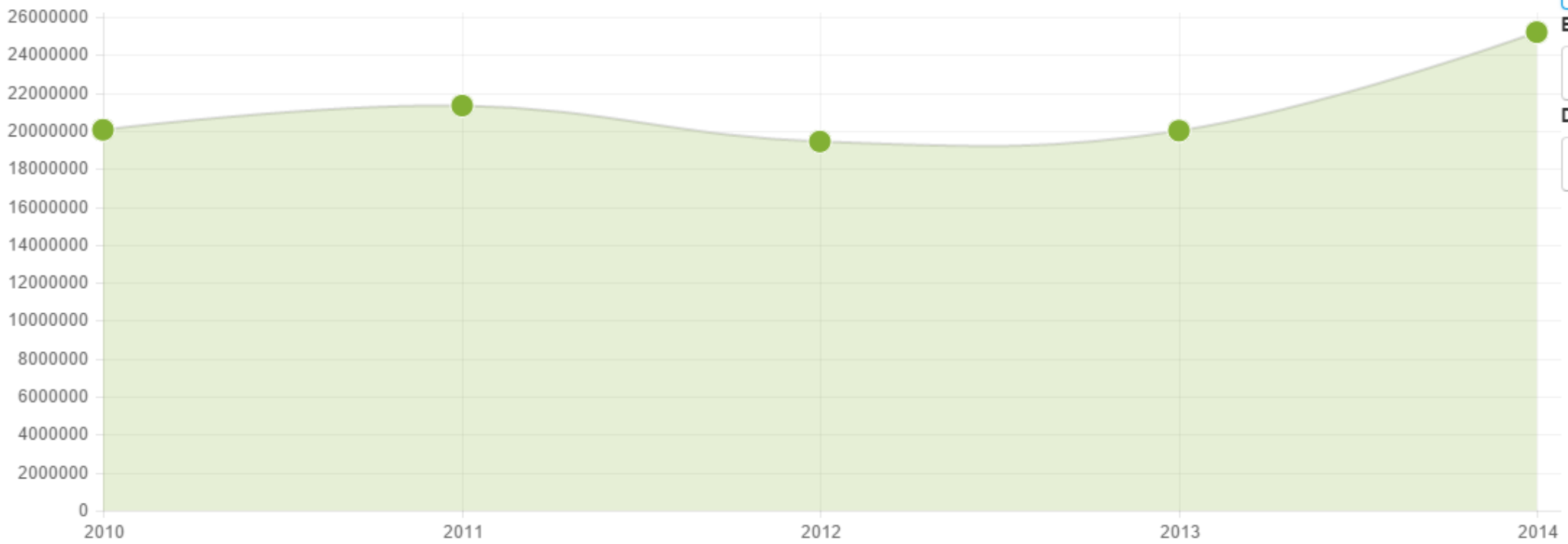

Utility Energy Registry
utilityregistry.org/app/#/explore/
UTILITY ENERGY REGISTRY NEW YORK
FirstName LastName
PARTICIPATING UTILITIES
EXPLORE MAP
GET DATA
UER ADMINISTRATOR
UTILITY ADMINISTRATOR
City of Saratoga Springs, NY
National Grid – Electricity
Residential Consumption – 2014
101,274.007 MWh
View Trends
Consumption in MWh
0
1–1,000
1,001–10,000
10,001–100,000
100,001–1,000,000
1,000,001–10,000,000
10,000,000+
Data Withheld
Data Not Reported
Geography Resolution
Community
Reporting Period
Annual
Reporting Inteval
2014
Energy Type
Electricity
Data Point
Residential Consumption
Utility
National Grid
Update Map
Find A Location
Current Location

Utility Energy Registry

UTILITY ENERGY REGISTRY NEW YORK

City of Saratoga Springs, NY

Annual Natural Gas Usage in Therms - Total Consumption



Reporting Period

Annual

Energy Type

Natural Gas

Data Field

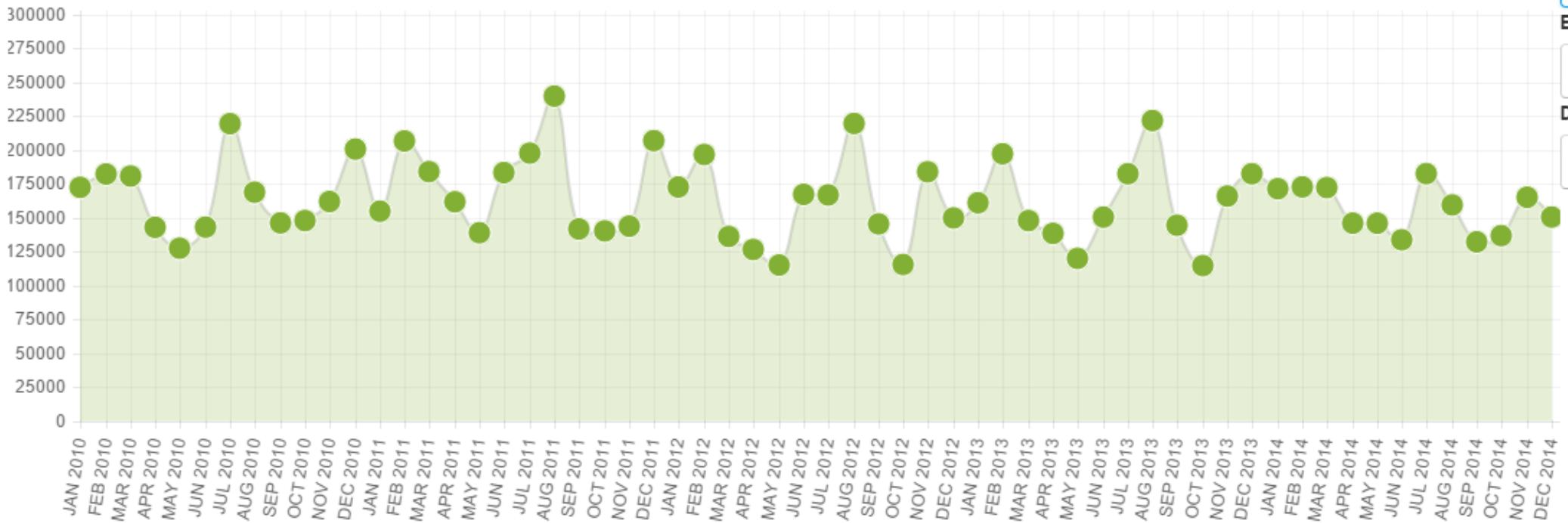
Total Consumption

Find A Location Current Location

UTILITY ENERGY REGISTRY NEW YORK

City of Rochester, NY

Monthly Electricity Usage in MWh - Total Consumption



Reporting Period

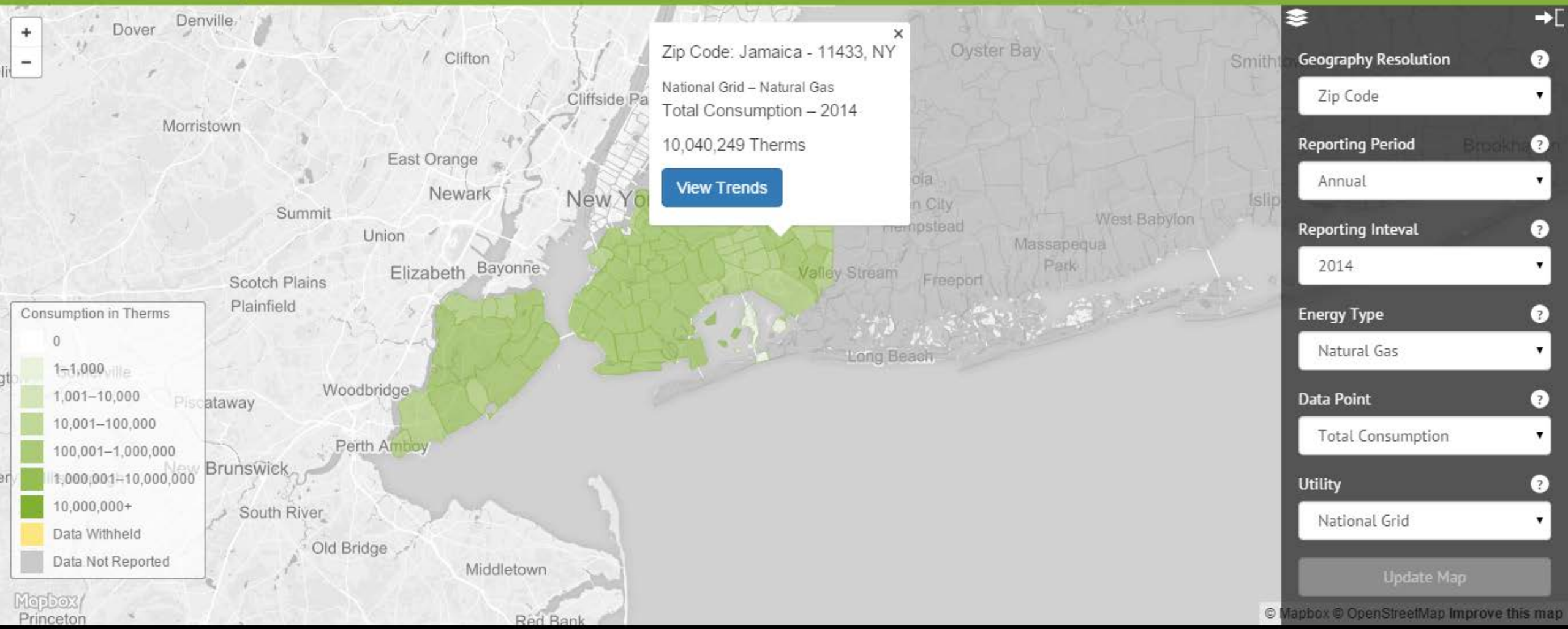
Monthly

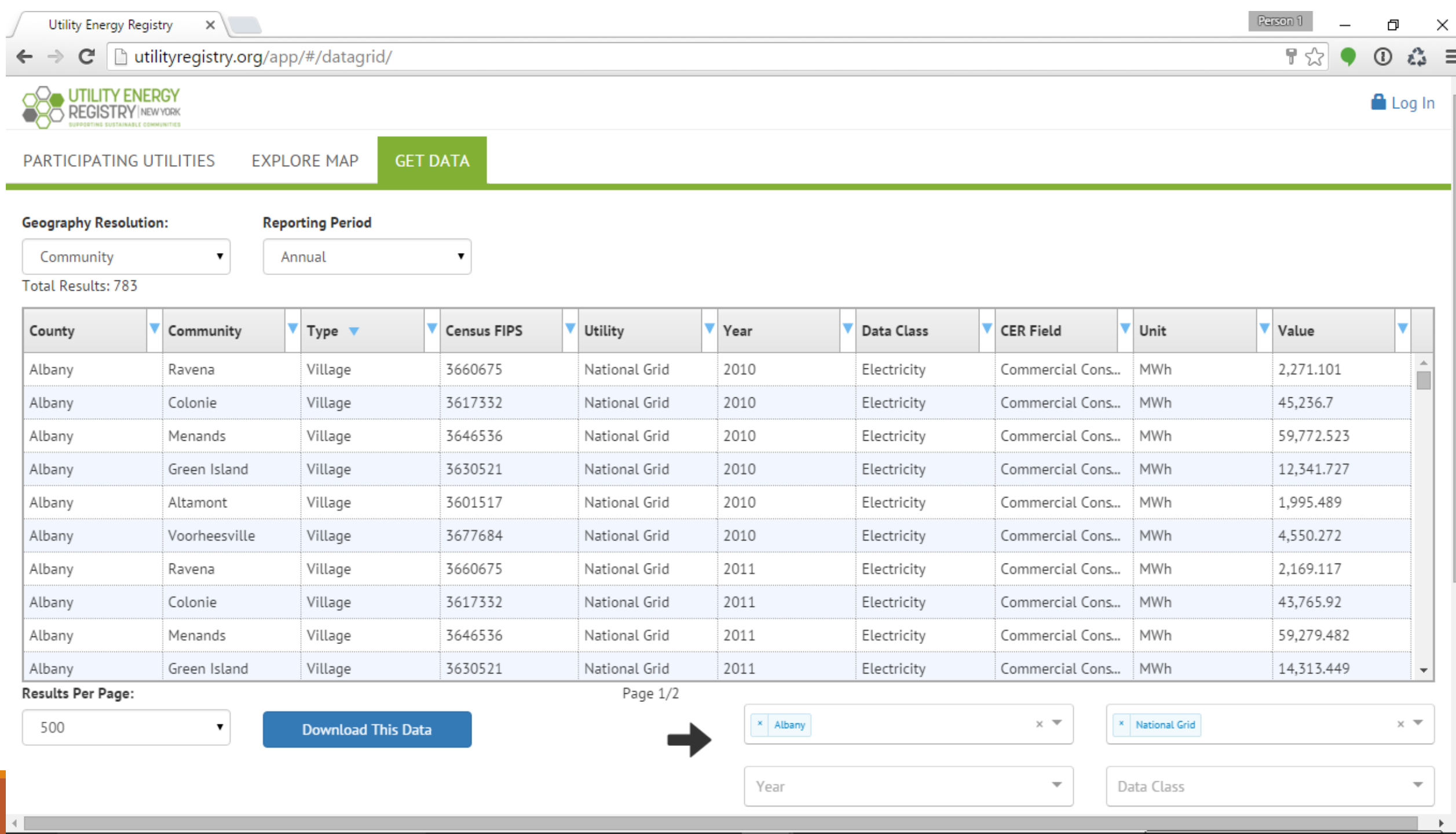
Energy Type

Electricity

Data Field

Total Consumption


Zip Code: Jamaica - 11433, NY
National Grid – Natural Gas
Total Consumption – 2014
10,040,249 Therms
View Trends
Consumption in Therms
0
1–1,000
1,001–10,000
10,001–100,000
100,001–1,000,000
1,000,001–10,000,000
10,000,000+
Data Withheld
Data Not Reported
Geography Resolution
Zip Code
Reporting Period
Annual
Reporting Inteval
2014
Energy Type
Natural Gas
Data Point
Total Consumption
Utility
National Grid
Update Map
Dover
Denville
Clifton
Cliffside Pa
Oyster Bay
Morristown
East Orange
Newark
Summit
Union
Elizabeth
Bayonne
Scotch Plains
Plainfield
Woodbridge
Perth Amboy
New Brunswick
South River
Old Bridge
Middletown
Princeton
Red Bank
Valley Stream
Freeport
Long Beach
West Babylon
Massapequa Park
Islip
Mapbox
© Mapbox © OpenStreetMap Improve this map


Utility Energy Registry
Person 1
utilityregistry.org/app/#/datagrid/
UTILITY ENERGY REGISTRY | NEW YORK
Log In
PARTICIPATING UTILITIES
EXPLORE MAP
GET DATA
Geography Resolution:
Community
Reporting Period
Annual
Total Results: 783
County
Community
Type
Census FIPS
Utility
Year
Data Class
CER Field
Unit
Value
Albany Ravena Village 3660675 National Grid 2010 Electricity Commercial Cons... MWh 2,271.101
Albany Colonie Village 3617332 National Grid 2010 Electricity Commercial Cons... MWh 45,236.7
Albany Menands Village 3646536 National Grid 2010 Electricity Commercial Cons... MWh 59,772.523
Albany Green Island Village 3630521 National Grid 2010 Electricity Commercial Cons... MWh 12,341.727
Albany Altamont Village 3601517 National Grid 2010 Electricity Commercial Cons... MWh 1,995.489
Albany Voorheesville Village 3677684 National Grid 2010 Electricity Commercial Cons... MWh 4,550.272
Albany Ravena Village 3660675 National Grid 2011 Electricity Commercial Cons... MWh 2,169.117
Albany Colonie Village 3617332 National Grid 2011 Electricity Commercial Cons... MWh 43,765.92
Albany Menands Village 3646536 National Grid 2011 Electricity Commercial Cons... MWh 59,279.482
Albany Green Island Village 3630521 National Grid 2011 Electricity Commercial Cons... MWh 14,313.449
Results Per Page:
500
Page 1/2
Download This Data
Albany
National Grid
Year
Data Class

Manage Reporting | Manage Service Territory

Central Hudson

Submit Community Energy Reports (CERs)

Select Publishing Resolution

Community

Edit Mode

	Annual Data - Incomplete		Monthly Data - Incomplete	
Year	Status	Action	Status	Action
2015	Not Published	Publish	Not Published	Publish
2014	Not Published	Publish	Not Published	Publish
2013	Not Published	Publish	Not Published	Publish
2012	Not Published	Publish	Not Published	Publish
2011	Not Published	Publish	Not Published	Publish
2010	Published	Un-Publish	Published	Un-Publish

Reporting Period Annual

Year 2010

Geography Resolution: Community

Reporting Period: Annual

Year: 2010

Download CER Template/Data

Upload CER

View/Edit/Download your Data

UTILITY ENERGY REGISTRY

A National Registry

START A MULTI-STATE MOVEMENT

State Energy Program (SEP) Funding

August 2016: SEP announces an intent to provide $423,000 funding to NYSERDA to implement the UER in three additional states:

- Key Partners: Maryland, Washington DC, and Minnesota
- Supporting partners: Connecticut and New Jersey
- Work implemented by state-designated partners- universities, regional planning agencies, and non profits
- Starting January 1st 2017

- Goal: Seed a common national standard, a “Green Button” for energy demographics

- Scope of Work
  - Support a UER National Working Group to define national policy and governance for the UER
  - Expand scope to non-utility energy, and to other sectors
  - Provide grants to local partners to implement standard state work plans
    - Organize state UER working group (energy office, regulatory commission, planners, energy market participants, etc.)
    - Define UER policy and rally utilities and start data development
    - Plug into UER national API-driven data publishing platform

Calling all APA Chapters – Get Involved!

- Participate in the UER National Working Group
- Promote the UER in your state
- Take charge: organize and host a “UER Chapter” in your state or region
  - NYSERDA will attempt to accommodate a few states in its current work plan starting January 1st 2017

Contact us to get UER going in your state!

Jim Yienger, Climate Action Associates, UER Coordinator (mr_jjy@climatetools.com)

Jennifer Manierre, NYSERDA Project Manager (Jennifer.manierre@nyserda.ny.gov)

Crowdsourcing a National Community Energy Census

Open Energy Demographics

Our nation has long realized that it is important to invest in providing open data on population, income, housing, employment, and transportation patterns as the backbone of community planning. It drives economic development by enabling businesses and innovators to evaluate markets for products and services.

As communities become sustainability-driven, they require open access to energy demographics to design policy that drives innovation in the local energy market. These data, like US Census demographics, are aggregate, non-private metrics that describe how communities consume and produce energy over time, and how much communities pay for energy. While efforts like Green Button focus on streamlining consumer access to data to drive a third-party energy services market, the UER will coordinate with utilities to deliver open energy demographics for community planning.

The Old Way vs the New Way

Traditionally, data limitations require communities to pursue sustainability in a fairly linear way. First, leaders decide to pursue sustainability. Then they request energy and related data from utilities and others. Then they set goals, design policies, and finally implement actions. In reality, like in any sector, sustainability innovation is not linear and cannot owned by a fixed group on a fixed schedule. Instead, communities and their leaders, residents and businesses, can leverage inspiration whenever and wherever it happens with access to open energy data that is simply *available* at all times. They can leverage the power of comparative analysis by looking at energy patterns in communities all around them.

How the Utility Energy Registry (UER) Works?

The model is simple and three-fold. The UER:

1. Defines, maintains, and evolves a set of data standards for community energy demographics.
2. Asks utilities to independently prepare and publish data to the standard (i.e., crowdsource it), and then make it easy and cost effective for utilities to keep it current.
3. Aggregates all data in an API-driven platform designed to enable utilities and consumers to move data in and out of the system seamlessly.

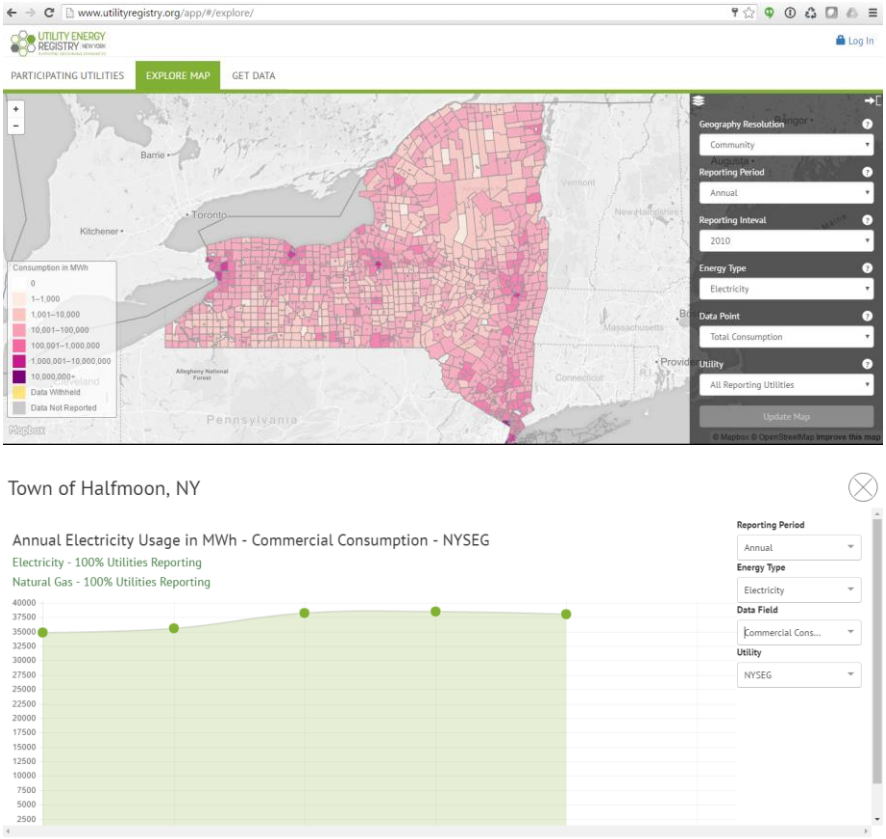
That's it. With more than 2000 utilities, regulated by 50 states, and serving 50,000 independent incorporated local governments, crowdsourcing is really the *only* way to solve this.

New York Pilot

The New York Energy Research and Development Authority (NYSERDA) developed the UER pilot and worked with the state's major utilities to develop energy demographics for 1300 cities, towns, and

villages for a period of five years. The application at http://www.utilityregistry.org/app is password projected for now, but NYSERDA can provide demonstrations to interested parties.

Example: Data by sector by community, and trends within individual communities



Expansion to More States – Towards a National Platform

The US Department of Energy's State Energy Program (DOE/SEP) announced its intent to support UER expansion in two states, Maryland and Minnesota, and in the District of Columbia. DOE/SEP funding will test a "state chapter" model by funding state teams comprising of energy office staff, utilities, academia, planning agencies and others to lead local UER implementation. Through a national working group, states will collaborate with the US DOE to design a UER governance and business plan to ensure this project is sustainable for the public good.

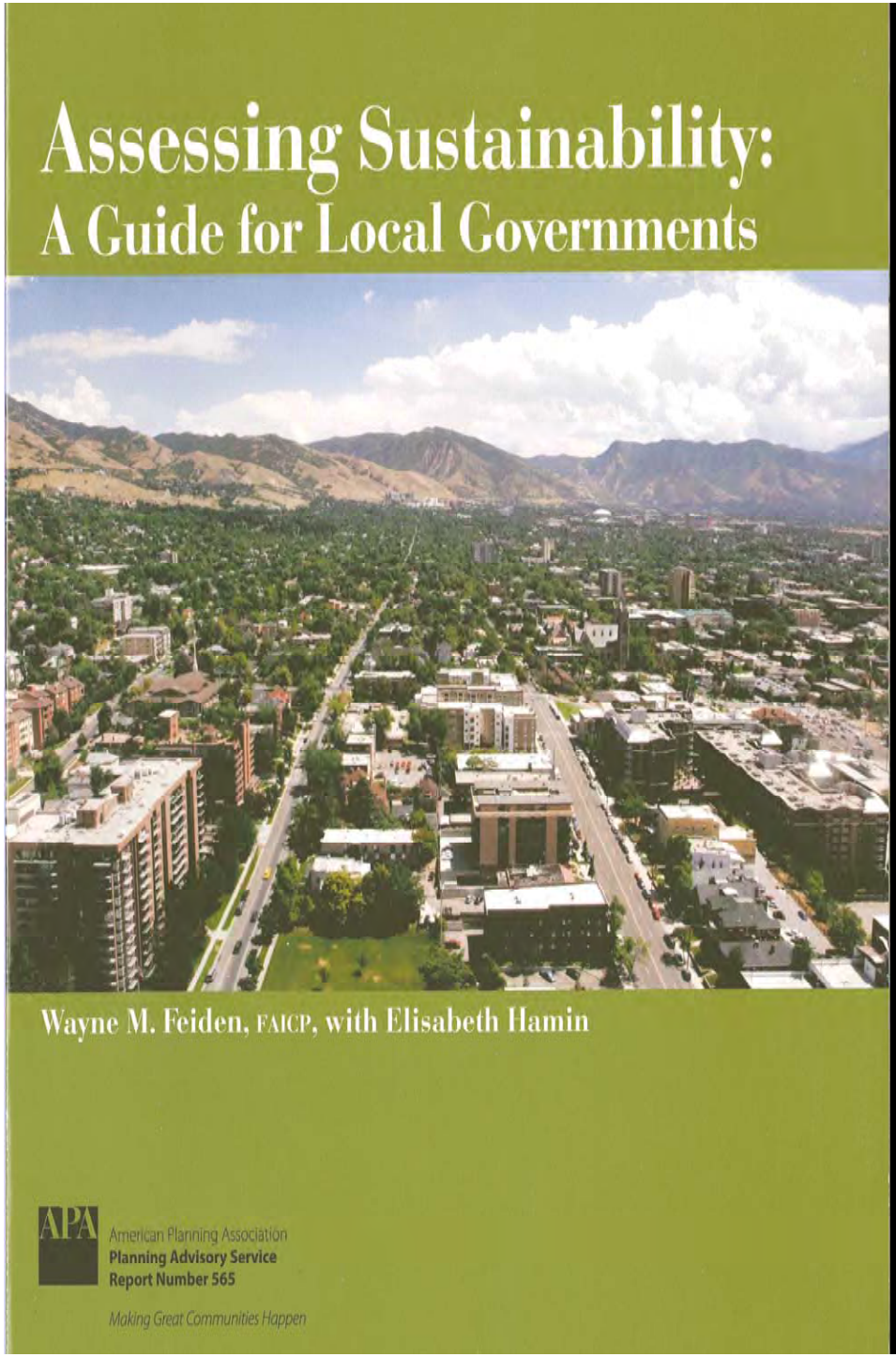
Get Your State Involved

The UER is designed for any state to plug in anytime. In fact, the goal is to accommodate up to three other state teams into the current DOE/SEP UER work plan as long as they have the ability to organize stakeholders and resource their efforts. **Contact Us!**

Jim Yienger, Principal, Climate Action Associates LLC, mr_jjy@climatetools.com, UER Project Coordinator
Jen Manierre, NYSERDA Project Manager, Jennifer.Manierre@nyserda.ny.gov, UER Principal Investigator

Measuring Sustainability Outcomes
Is sustainability a three-way Yin Yang?

Wayne Feiden, FAICP
Director of Planning and Sustainability
City of Northampton, MA



Lessons

- Accountability
- NO greenwashing
- Indicators needed
- Resonate w/public
- Local v. framework











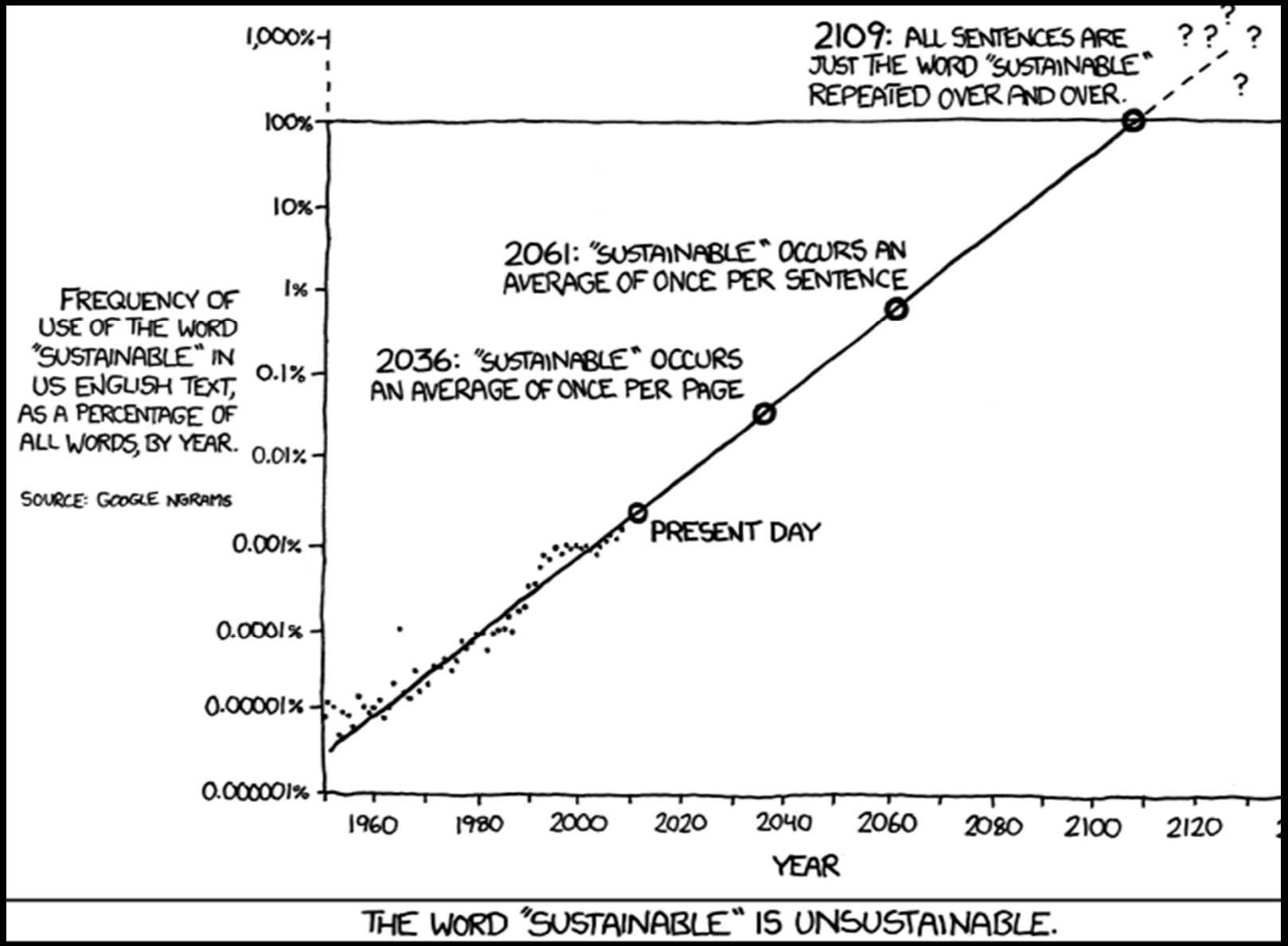
Is sustainability an approach? A lens to judge all actions?

SUSTAINABLE NORTHAMPTON

Comprehensive Plan, January 2008

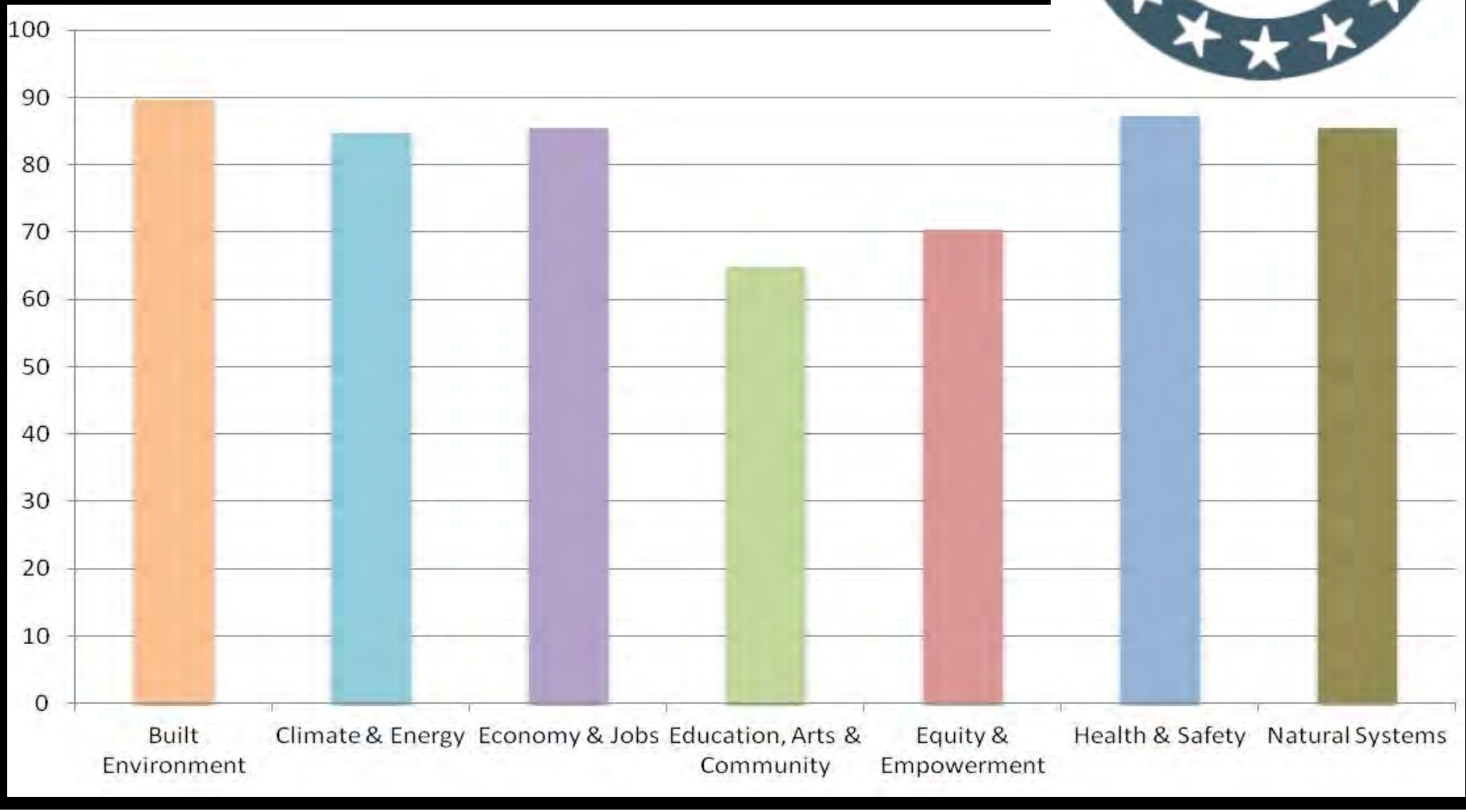
Nutrition Facts	
serving size 3 tbs	
servings per container: 24	
Amount per Serving	% daily value*
walkability	100%
sustainability	100%
creativity	100%
aesthetics	100%
functionality	100%
economy	100%
culture	95%
citizen input	80%
local character	80%
public art	55%
sprawl	0%
monoculture	0%
traffic *	5%

Sustainability in Operational Terms
“I know it when I see it”



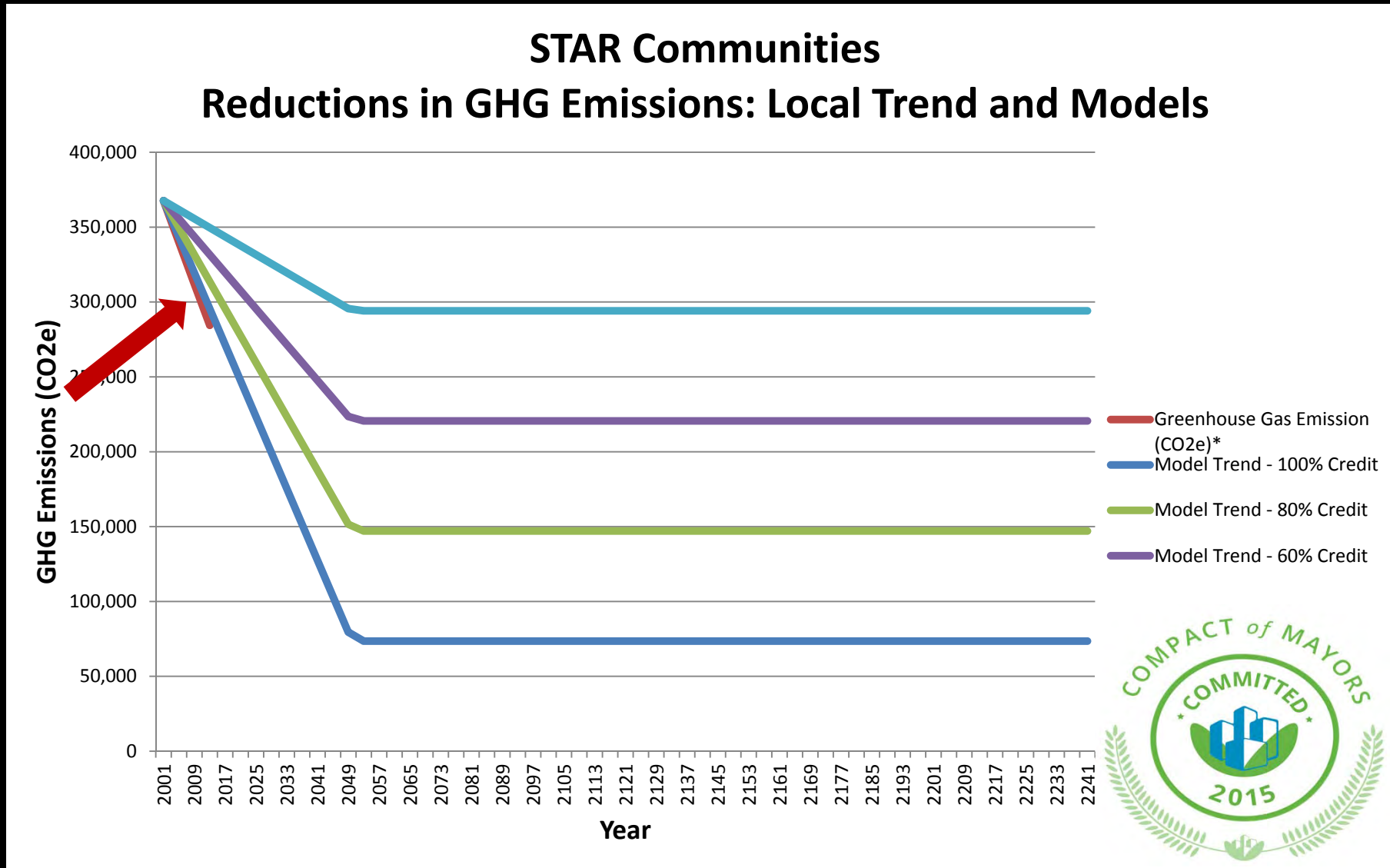
THE WORD "SUSTAINABLE" IS UNSUSTAINABLE.

STAR: Focus on all aspects
Outcomes AND Actions



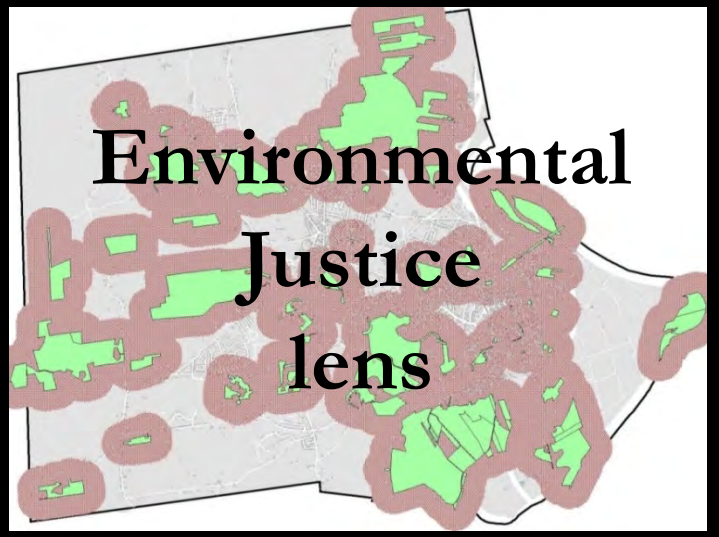
Climate and Energy

Be careful of trench lines



Equity and Empowerment

but always environmental focus



Built Environment: land use & transport

Context: e.g., single occupancy vehicles

small lot BIG IDEAS
a design competition

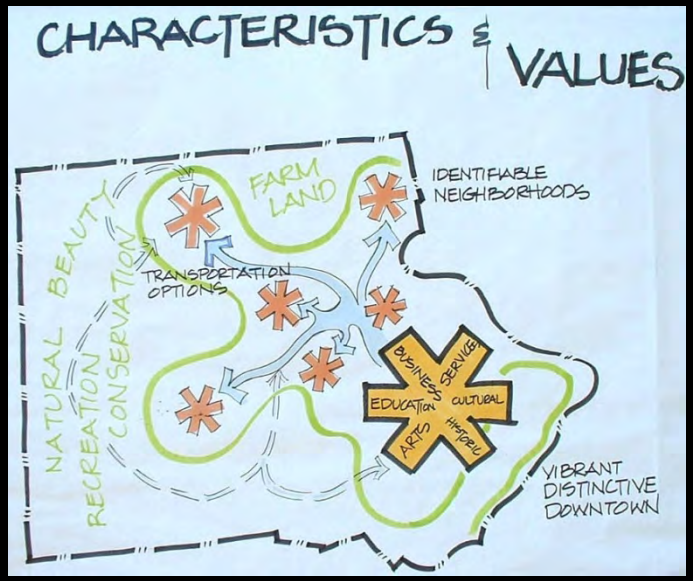
Economy and Jobs

Easier in urban areas

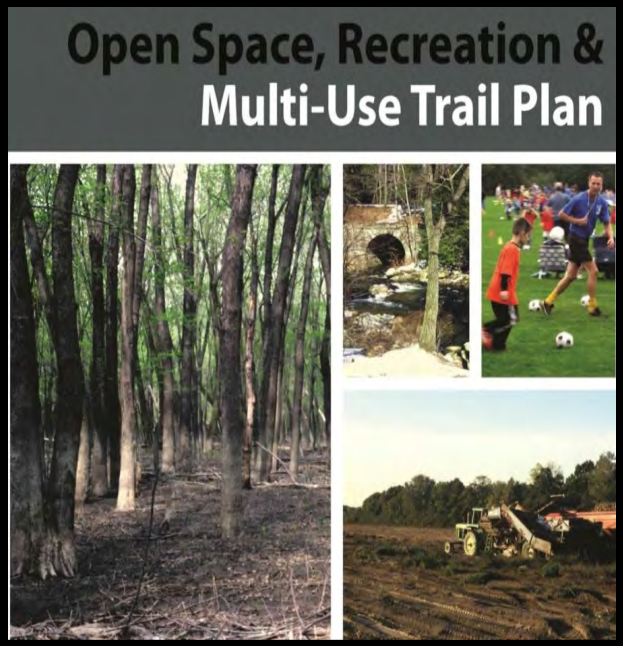
APA

GREAT PLACES IN AMERICA:
STREETS

The American Planning Association celebrates excellence in planning



Natural Systems:
green space and green infrastructure
Easier in rural areas



Health and Safety

Expected and unexpected (innovative)

HEALTHY HAMPSHIRE

Mass in Motion ©

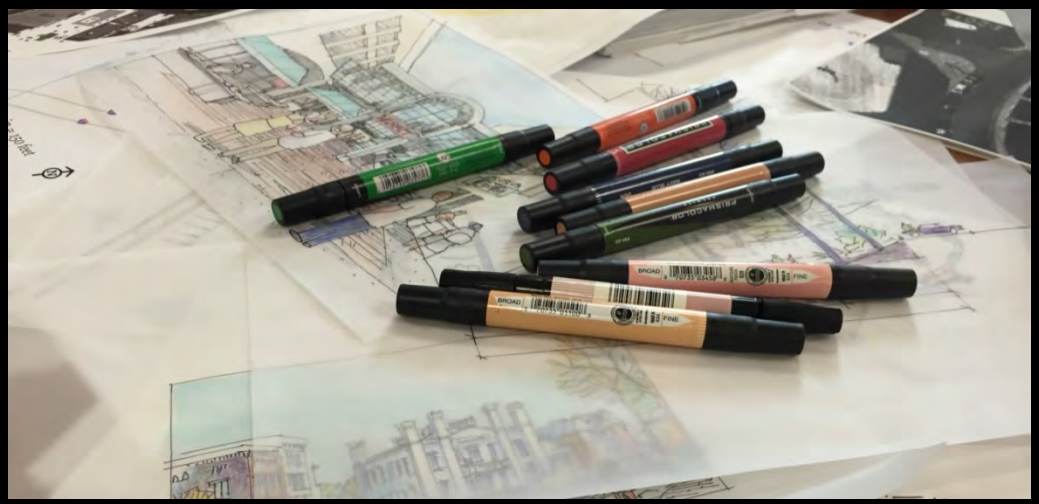
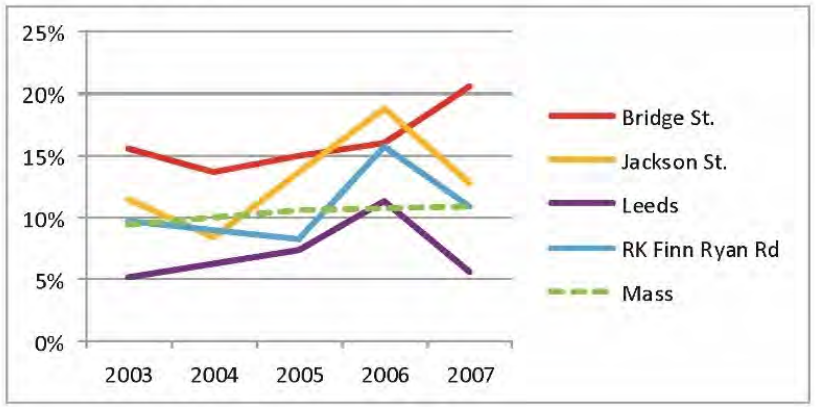


Chart 31: Percentage of Children with Asthma in Northampton Elementary Schools



Education, Arts & Community

Not on everyone's sustainability list

Sustainability Yin Yang
Sustainability Assessment Yin Yang