

ELEVATE: Studies in Success

Moderated Panel

**Women's History Month
Women & Climate Change Summit
March 6, 2015**

NY State Renewables Policies and Maple Ridge Wind Farm



Herrings Hydroelectric Plant

Jefferson County, NY



Museum of Jewish Heritage

New York, NY



Hudson Solar Headquarters

Rhinebeck, NY



Maple Ridge Wind Farm

Lewis County, NY



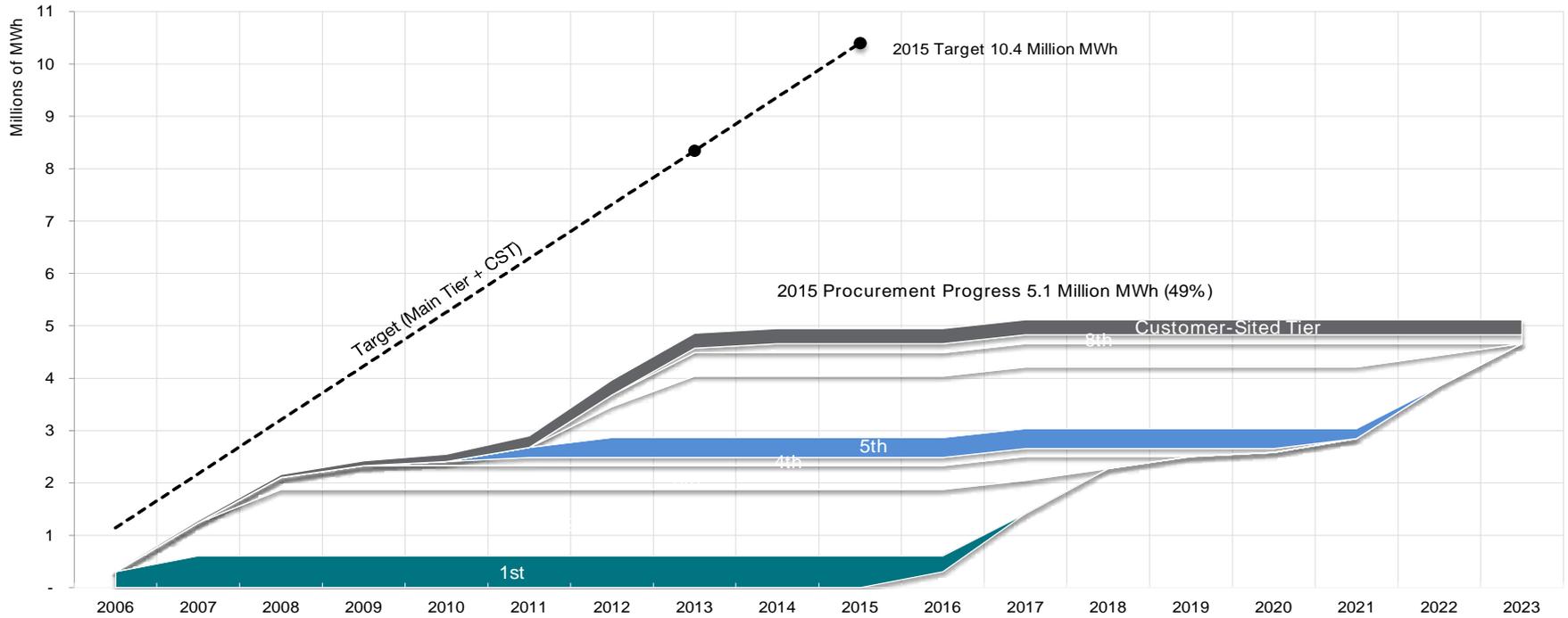
Maple Ridge Wind Farm

Lewis County, NY



Maple Ridge Wind Farm

Lewis County, NY



NYSEERDA Progress Toward 2015 Target

Cerbin, Et Al., Pace Energy And Climate Center, *New York's Renewable Portfolio Standard: Where To From Here?* P. 10 (2013).

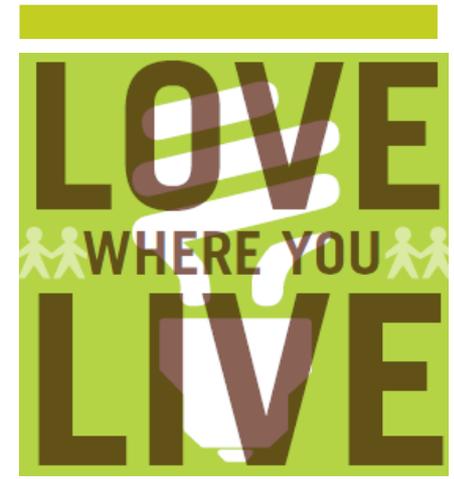
Resource		Projected Bounded Technical Potential Electricity Generation (GWh)	% of Projected Electricity Generation	Projected Economic Potential Electricity Generation (GWh)	% of Projected Electricity Generation
Hydro	<i>Conventional</i>	34,021	17%	31,668	16%
	<i>Hydro Kinetic</i>	2,118	1%	3.5	0%
Bioenergy	<i>Biomass</i>	1,396	1%	1213	1%
	<i>Biogas</i>	2,219	1%	1181	1%
Wind	<i>Onshore</i>	19,169	10%	10,113	5%
	<i>Offshore</i>	25,025	13%	2,571	1%
Solar	<i>Solar PV</i>	54,100	27%	13,320	7%
	<i>Solar Thermal</i>	928	0%	928	0%
Total		138,975	70%	60,998	30%

Renewable Energy Potential Electricity Generation (2030)

New York State Energy Research and Development Authority, *Energy Efficiency and Renewable Energy Potential Study of New York State: Summary*, P. 10 (2014).



GREEN CITY FORCE



Dual Imperatives Present Opportunity



Opportunity Youth



**Climate
Action Goals**

GCF catalyzes change

GCF engages **unemployed young adults...**

...in a **comprehensive** program...

...empowering them to **attend college** or **launch careers** related to the clean energy economy.



- 18-24 year olds
- HS graduates or GED-holders
- Residents of public housing
- <\$2k average annual wages



- 6 months of rigorous service pursuing city sustainability goals
- Essential skills training in teamwork and communication
- Technical certifications and academic support



- Placement assistance into career track jobs, a path into the middle class
- Stipend and MetroCard while in the program

Love Where You Live : resident-to-resident driven education around changing key behaviors



Takeaways:

- Power of youth as credible messengers
- Highly branded “Challenge” between neighbors creates impetus for participation – 80% of residents opening their doors
- Other benefits beyond energy savings: Corps Members are positive role models in public housing communities



Growth potential: apply Love Where You Live approach to other critical environmental issues, including recycling, food...

Sustainable CUNY

Mapping the Way to Solar for all New Yorkers

March 6, 2015

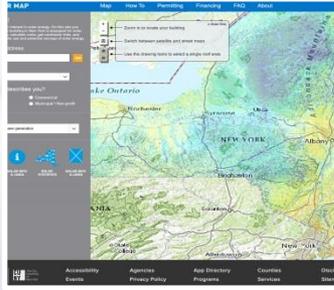


NYSolar Smart Focus Areas



Solar Infrastructure

- Permitting
- Zoning
- Grid Analysis
- Policy Support
- Installer Roundtable



Mapping the Way

- One stop Portal
- Solar Maps
- Data Analytics
- Roadmaps



Accessing Solar

- Group Purchasing
- Community Shared Solar
- Education
- NY Solar Summit



Resiliency

- Smart DG Hub
- Solar-plus-storage
- Critical Facility Support

\$ Solar Energy



\$ Traditional Energy

Strategy

Reduce soft costs

64 %

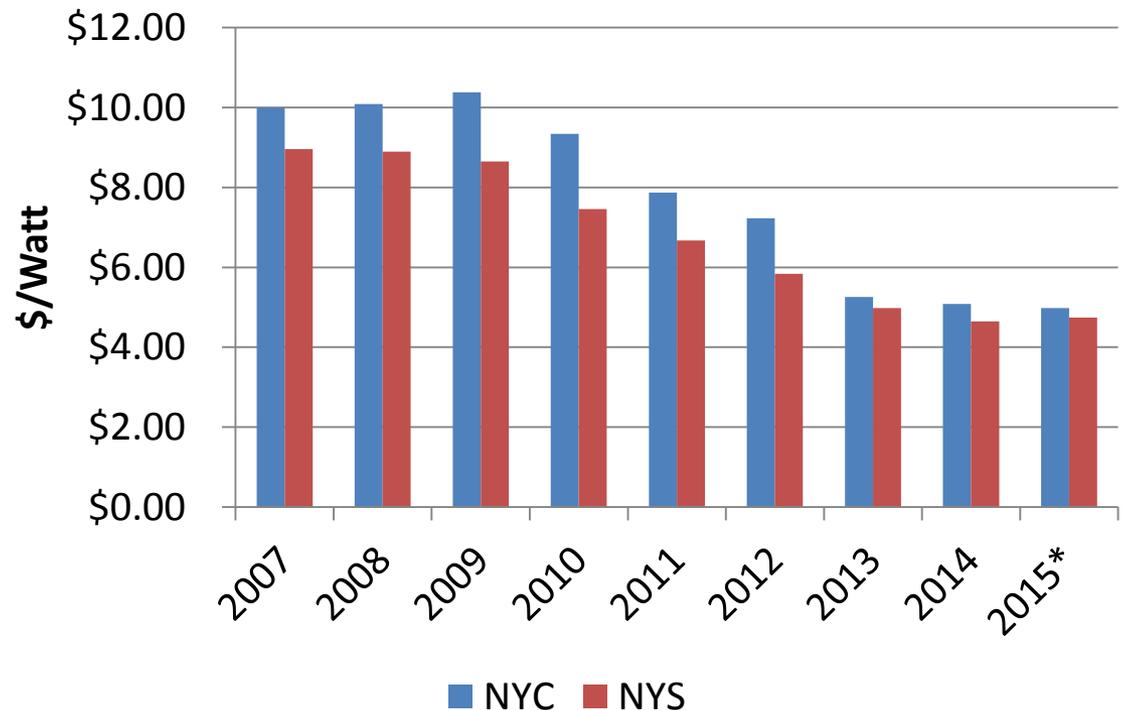
of the total
residential
installed
system price

- Customer Acquisition
- Financing & Contracting
- Permitting & Inspection
- Interconnection
- Installation & Performance
- Operations & Maintenance

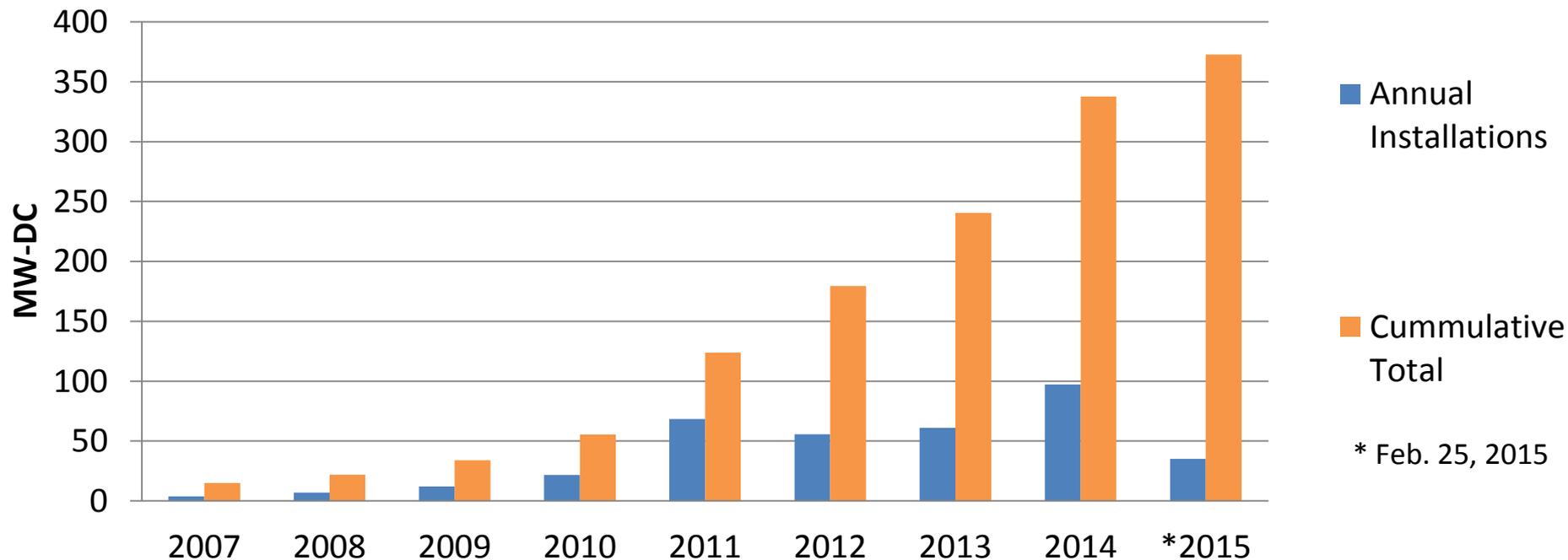
Sustainable CUNY Focus →

Declining Incentives to
Stimulate the Market

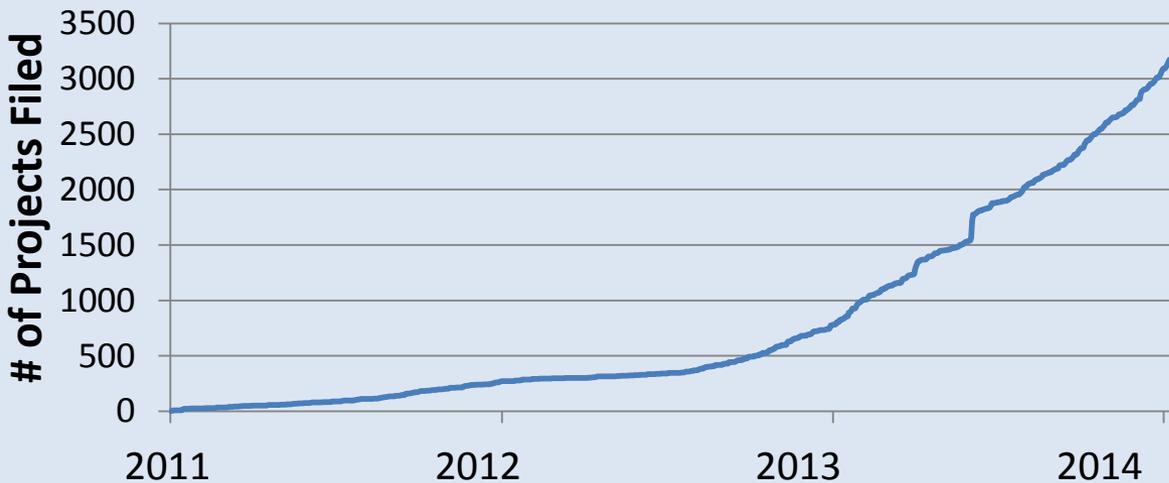
Weighted Avg. Installed Cost - NYC vs NYS



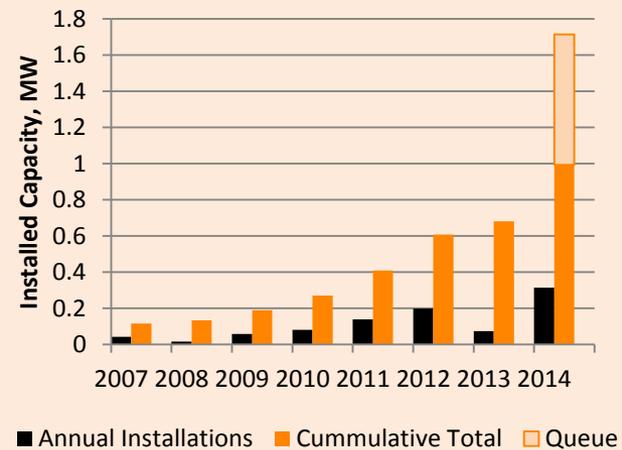
NY State Solar Growth & Analytics



Cumulative Projects Filed with NYC DOB since 2011



Poughkeepsie Snapshot

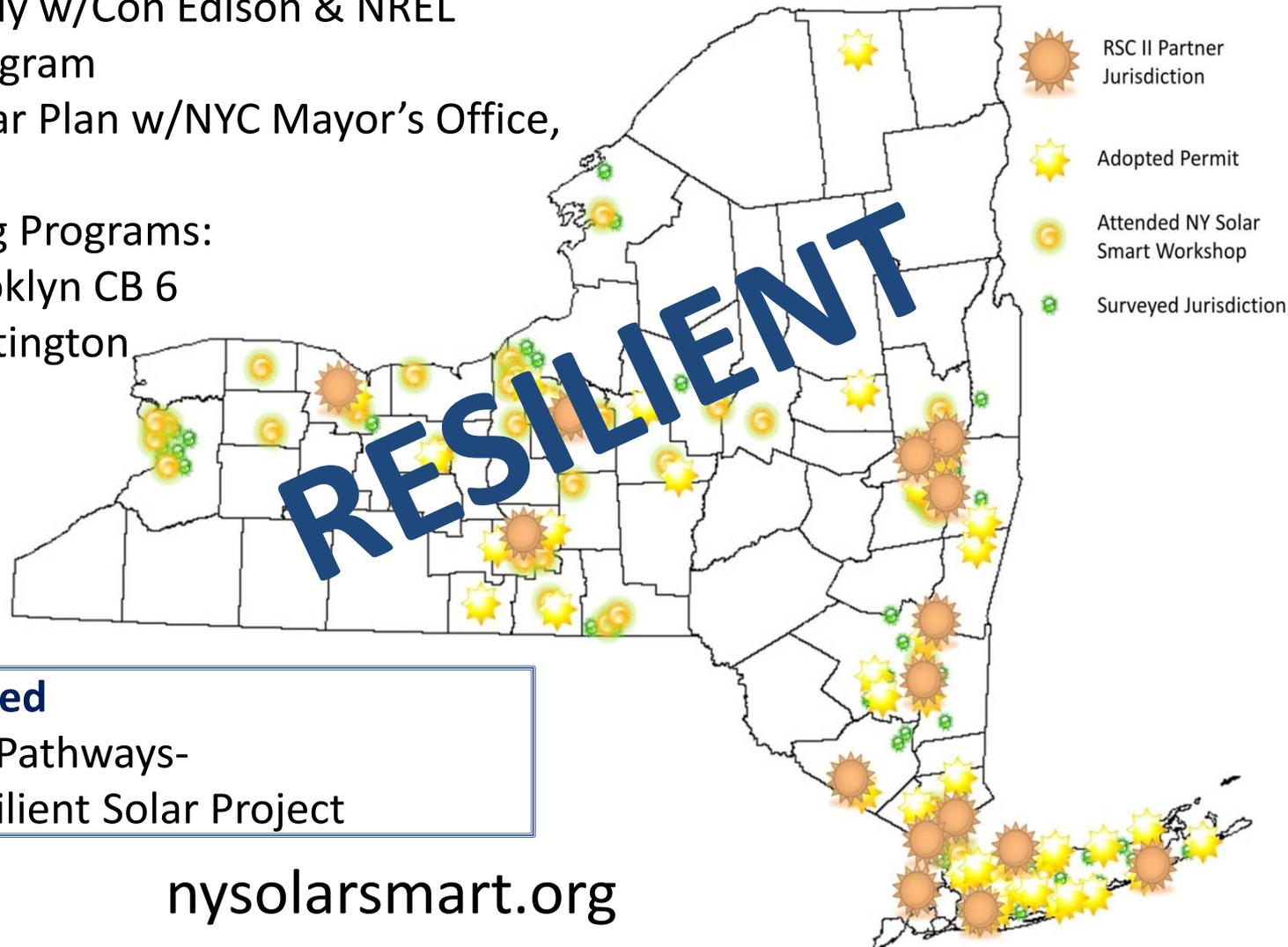




NYS Solar Smart

Current Projects

- DOE SunShot Initiative- RSC II w/NY's IOU's, 40+ partners
- NY-Sun Grid Ready w/Con Edison & NREL
- NY-Sun PVTN Program
- NYC One City Solar Plan w/NYC Mayor's Office, NYCEDC
- Group Purchasing Programs:
 - Solarize Brooklyn CB 6
 - Solarize Huntington
 - SunShare



Recently Announced

DOE Solar Market Pathways-
Smart DG Hub Resilient Solar Project

nysolarsmart.org



NYC Solar Map: Launched in 2011

NYC SOLAR MAP

Zoom to Borough

Find Address Go

Select Building

Draw Solar

Clear Selection

Legend

NYC SOLAR MAP

• Showcases existing installations

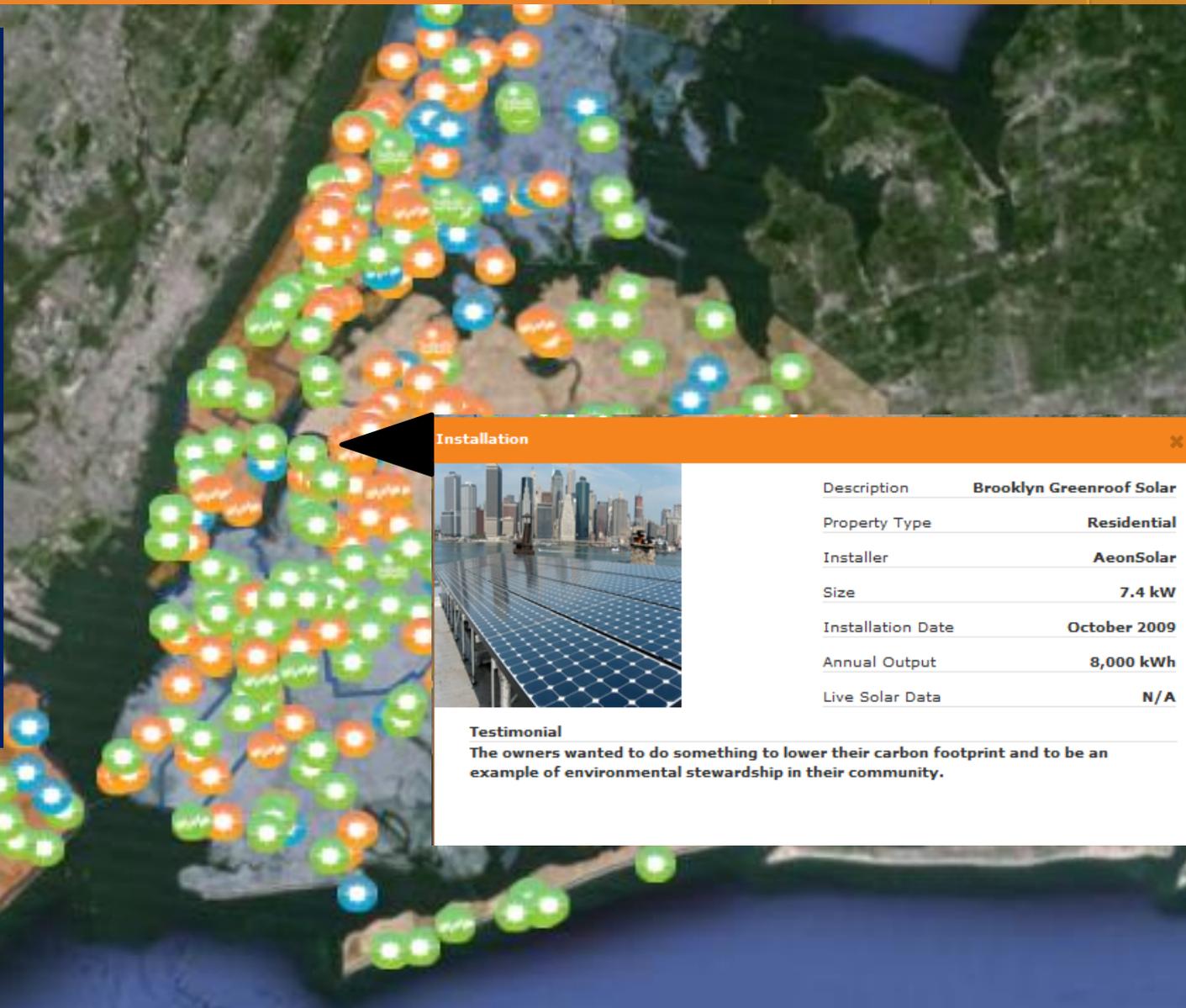
TOOLS

• LiDAR based PV potential for every rooftop in NYC

• Marketing tool for industry , ie customer acquisition

• Planning tool for utility

• Calculator



Installation ✕



Description	Brooklyn Greenroof Solar
Property Type	Residential
Installer	AeonSolar
Size	7.4 kW
Installation Date	October 2009
Annual Output	8,000 kWh
Live Solar Data	N/A

Testimonial

The owners wanted to do something to lower their carbon footprint and to be an example of environmental stewardship in their community.



NYC Solar Map

NYC SOLAR MAP

Zoom to Borough

Find Address

1558 Pitkin Ave, Brooklyn, NY 1

Go

Select Building

Draw Solar

Clear Selection



Calculator Output

Cost*

System Size	45.38 kW-DC
Total System Cost, Before Incentives ?	\$272,280
Cost After All Incentives and Taxes ?	\$54,728

Financial Metrics

Payback Period ?	6 yrs
Net Present Value	\$2,574
Internal Rate of Return	10%
Levelized Cost of Electricity w/Incentives ?	0.19 \$/kWh

Electricity Bill Savings

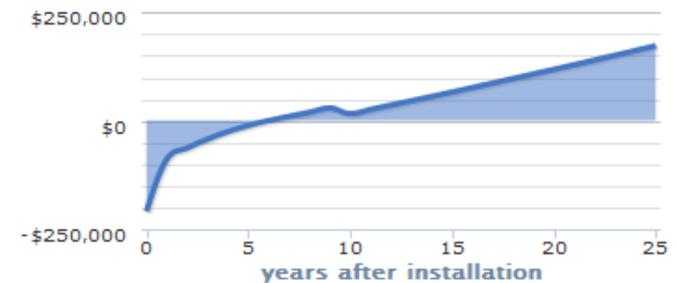
Energy Production	46,642 kWh/yr
Savings ?	\$9,795/yr

Environmental Impact

CO2 Emissions Reductions ?	32,113 lbs/yr
Trees Planted Equivalent	86 trees

*Note: A solar lease or power purchase agreement can reduce your upfront cost to zero! Ask your installer for details.

Cumulative Net Cash Flow



Incentives

NYSERDA/LIPA Incentives ?	\$63,532
Federal Tax Credit ?	\$81,684
NY State Tax Credit ?	\$0
NYC Property Tax Abatement ?	\$20,875
MACRS + 50% Bonus Depreciation in Year 1 ?	\$81,003

Steps for Installing Solar in NYC

GO TO MAP >>

NYS Solar Map: Launch Fall 2015

NY SOLAR MAP Map How To Permitting Financing FAQ About

Welcome!
Thank you for your interest in solar energy. On this site you can find out if your building in New York is equipped for solar energy installation, calculate costs, get contractor bids, and learn more about the use and potential savings of solar energy.

Enter your address
 GO

Or jump to:

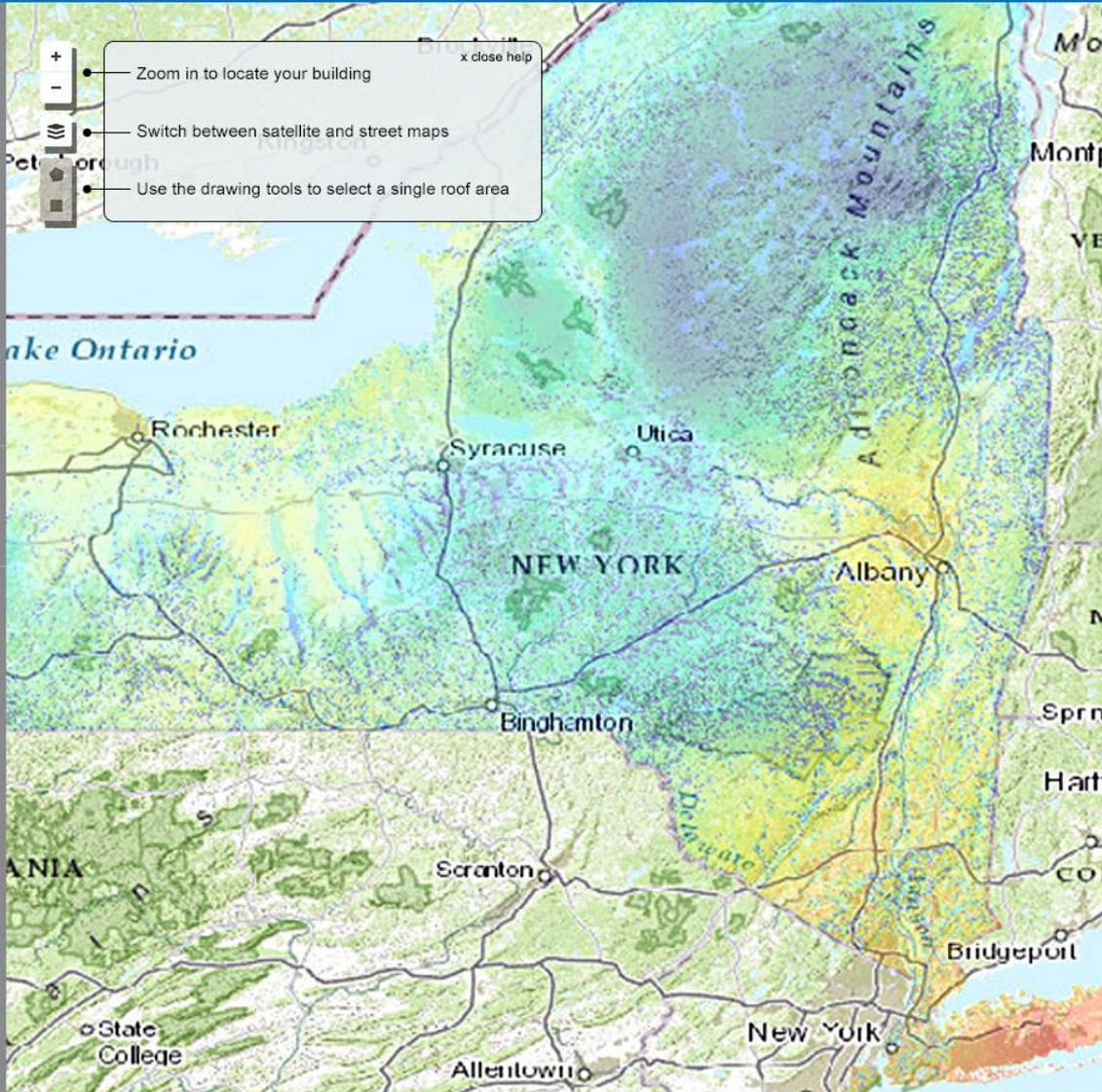
Which best describes you?
 Residential Commercial
 Installer Municipal / Non-profit

Select a map layer:

 **CALCULATOR**  **SOLAR INFO & LINKS**  **SOLAR STATISTICS**  **SOLAR INFO & LINKS**

Map Features:
+ -    x close help

- Zoom in to locate your building
- Switch between satellite and street maps
- Use the drawing tools to select a single roof area



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Y2

Y3



Yonkers LED Street Light Project

Women & Climate Change Summit

March 6, 2015

Brad Tito

Director of Sustainability

City of Yonkers





Downtown Yonkers circa 1886



Yonkers Waterfront late 1800s



THE HAMILTON

VITAGRAPH
SPECIAL

MARSHALL & MATHESON CO.

DRY GOODS

MARSHALL & MATHESON CO.

DRY GOODS

JA

STOUT
\$1.25
90%
BUT

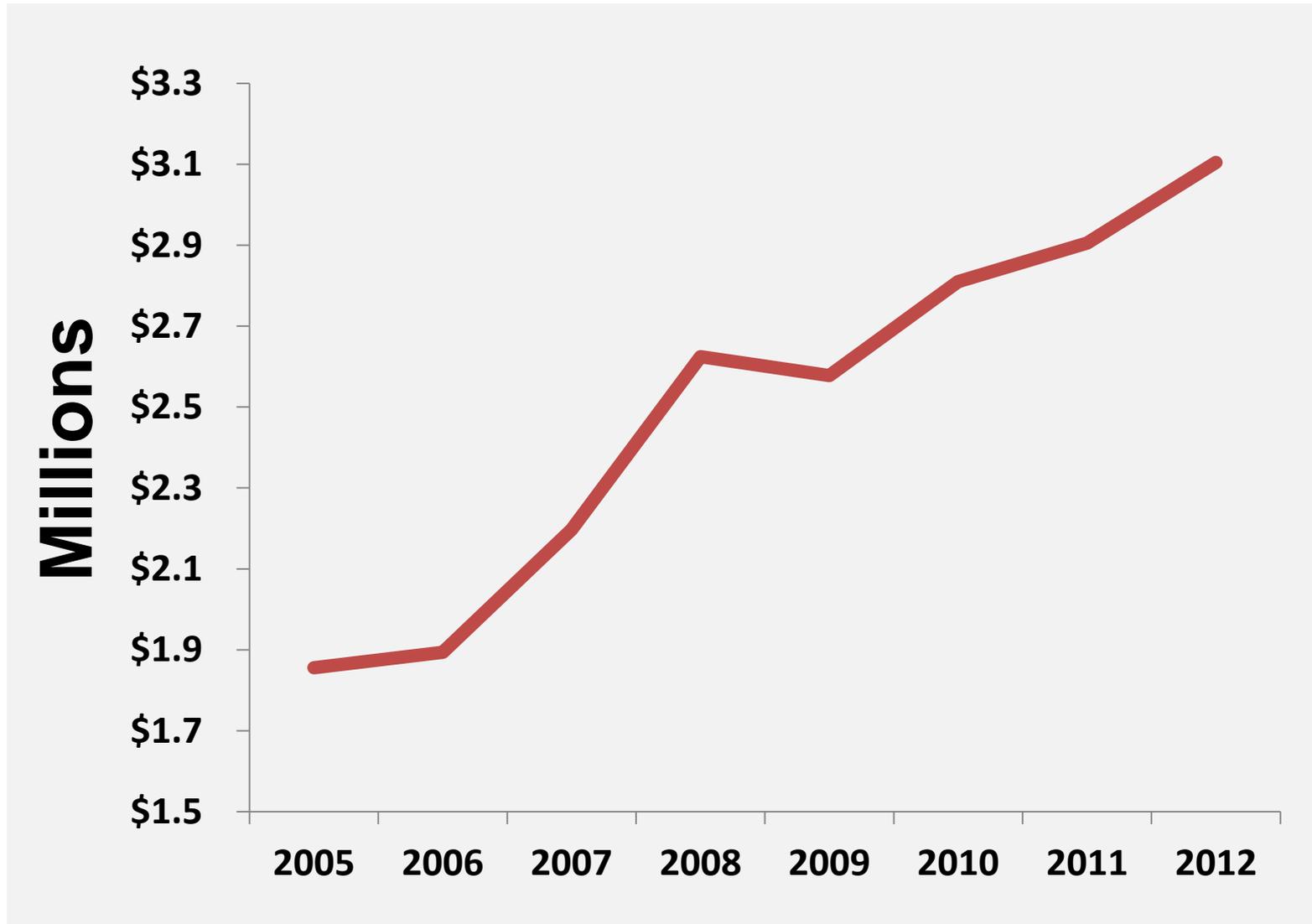
Downtown Yonkers circa 1910



Yonkers Street Light System



Yonkers Street Light Electricity Costs

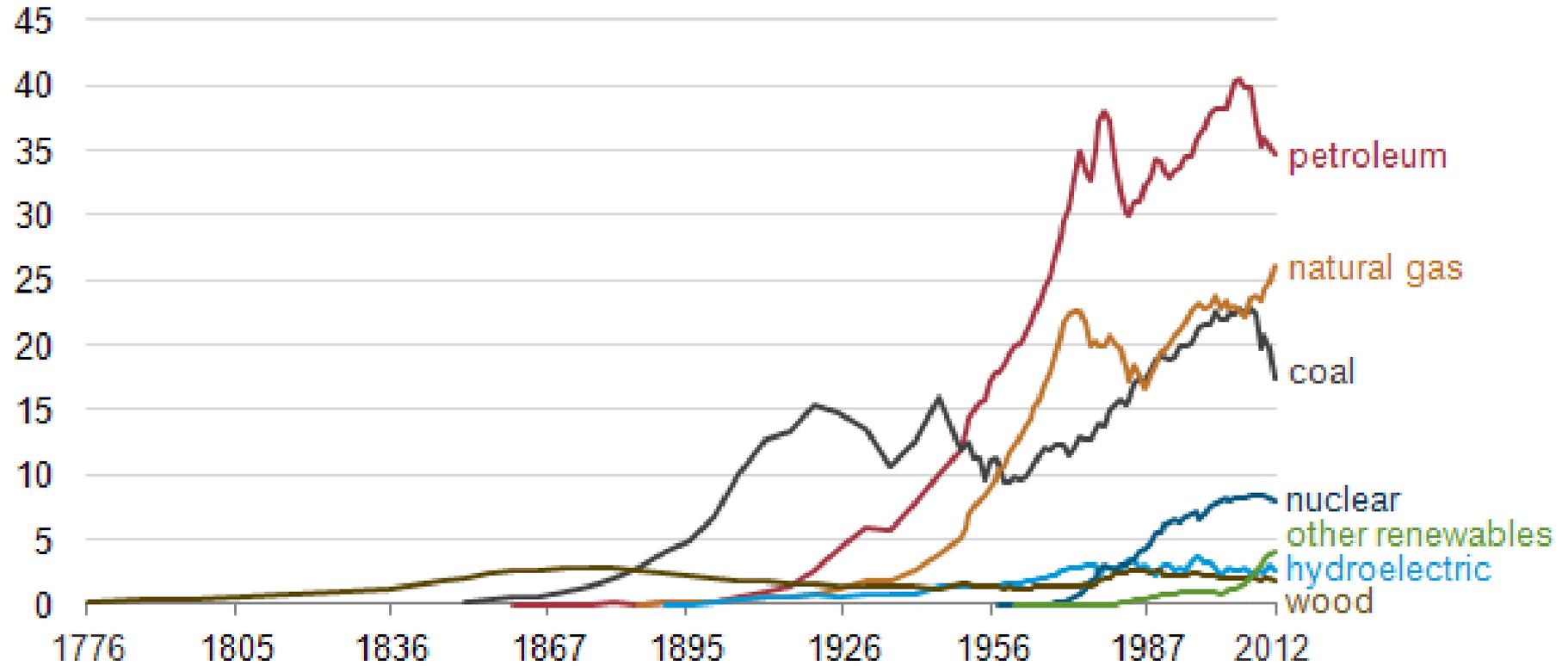




History of energy consumption in the United States (1776-2012)



quadrillion Btu



Source: U.S. Energy Information Administration, [AER Energy Perspectives](#) and [MER](#).

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Climate Smart Community Spotlight

City of Kingston, NY



March 6, 2015

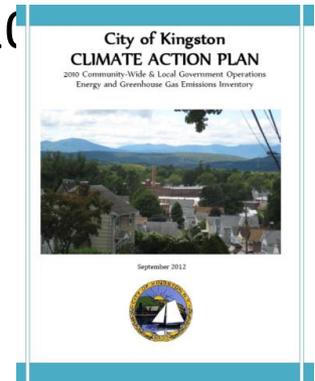
Julie Noble

Environmental Educator, City of Kingston



Kingston Climate Initiatives

- Climate Smart and Green Jobs Community Pledge and CAC, 2009
- Climate Smart and Green Jobs Task Force formed, 2010
- Climate Analyst (NYSERDA funding), 2011-2012
- Climate Action Plan, Oct 2012
- Waterfront Flooding Task Force, Dec 2012 – Dec 2013
- Climate Smart Kingston, Oct 2012 – present
- Certified Bronze Climate Smart Community, Earth Day 2014
- Environmental Educator/Climate Smart Community Coordinator 2007-present



Kingston's Waterfront: The motivation

- Sewage Treatment Plant
- Adjacent Businesses
- Residential Areas
- Parks and other amenities
- Structures in the Waterways
- Undeveloped Land
- Oil Storage Facilities
- Marinas and other Water Dependent Uses
- Cultural and Historical Buildings and Museums

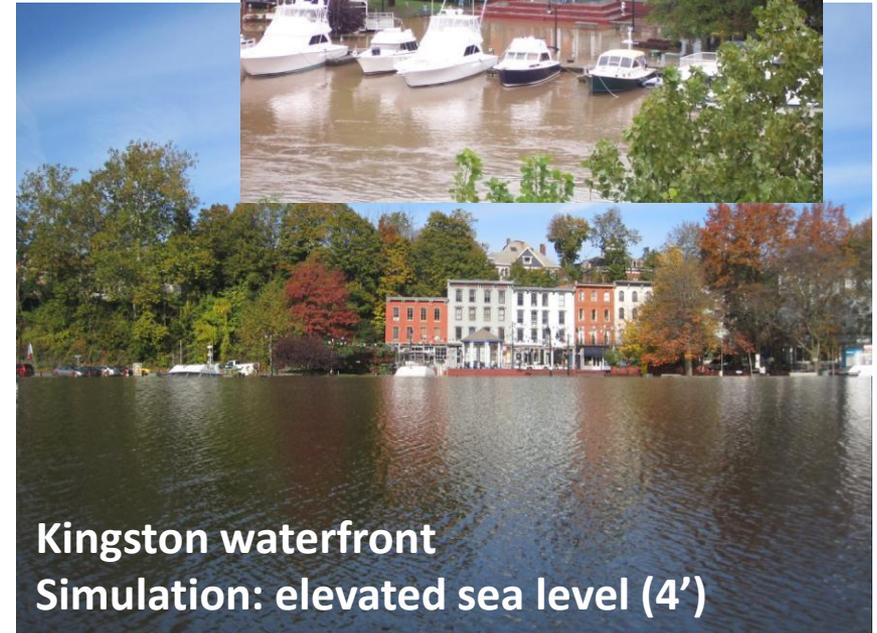


What does a flood-resilient Kingston waterfront mean to you?



Tools: CANVIS

West Strand in Kingston



<http://www.csc.noaa.gov/digitalcoast/tools/canvis>



New York State
Climate Smart Communities



Climate Smart Resiliency Planning

A Planning Evaluation Tool
for
New York State Communities



Climate Smart Communities is a program of the New York State departments of Environmental Conservation, Health, State and Transportation; State Public Service Commission; and State Energy Research and Development Authority.

December 2013

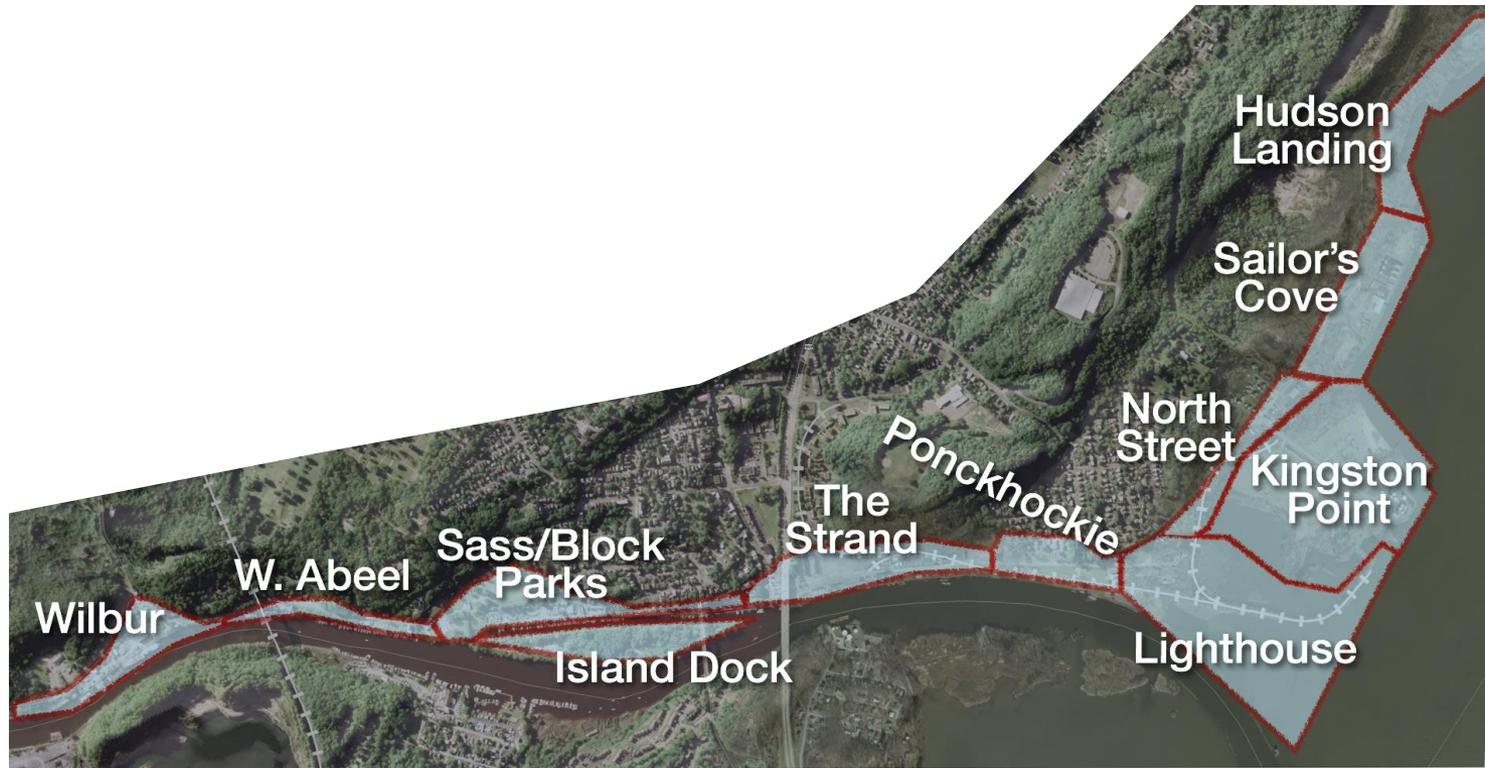
DEC Climate Smart Resiliency Planning tool

<http://www.dec.ny.gov/energy/82168.html>

http://www.dec.ny.gov/docs/administration_pdf/csrptool.pdf



Divided shoreline into neighborhoods to assess adaptation strategies



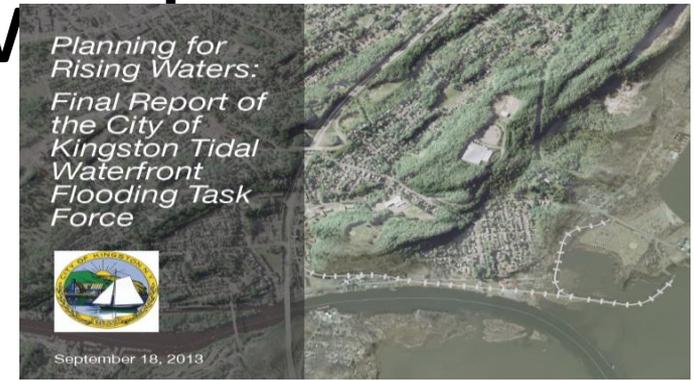
Final recommendations fall into 6 categories

- City operations, funding and decision-making
- Promotion of a waterfront economy and economic revitalization
- Resilient structures
- Emergency management
- Collaboration and public outreach
- Site-based recommendations



Moving Forward

- Stewardship of process forward by various community organizations
- Buy-in from community and municipal staff
- Integration of resiliency language into Comprehensive Plan
- Working with committee on Zoning Updates
- Projects Underway
 - Rondout Harbor Management Plan Update
 - Wastewater Treatment Plant Long Term Capital Plan
 - Brownfield Implementation Plan for 192 acres of waterfront



Find more about
Kingston's Sustainability Initiatives at

www.Kingston-ny.gov/CAC

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