NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE OF OPPORTUNITY | Climate Smart Communities

Assessing Your Community's Economic & Climate Resiliency

This webinar will start shortly.

Office of Climate Change
November 8, 2018

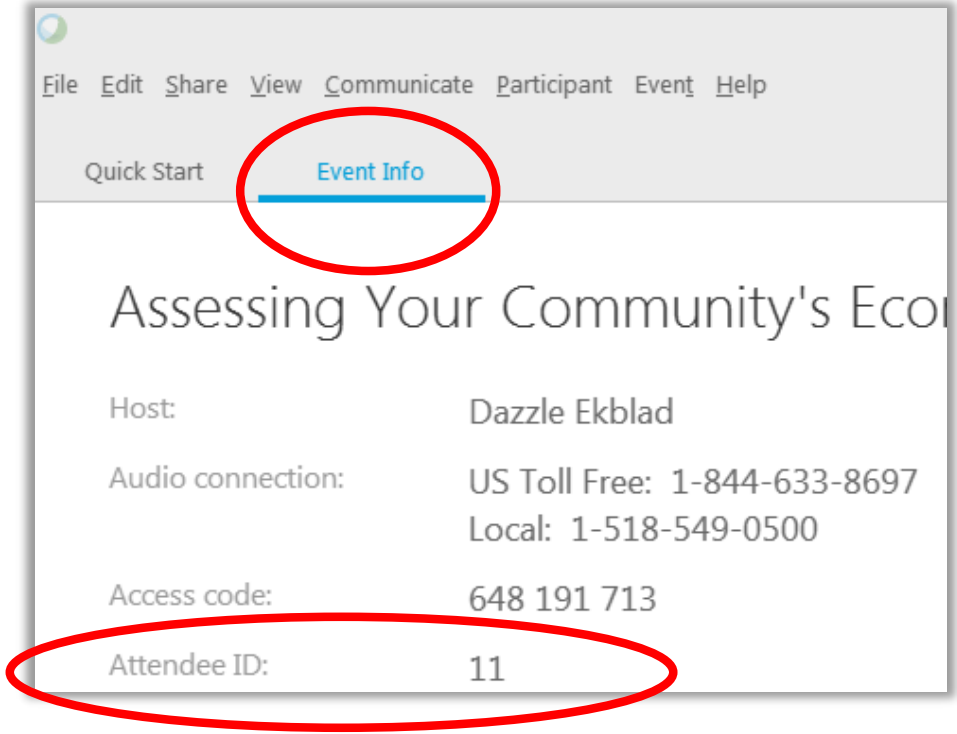
Welcome!

Today's webinar: Economic & Climate Resiliency

Connect to the audio with your phone:

1) Go to the "***Event Info***" tab for call-in details, and

2) Enter ***your unique attendee ID*** when prompted.



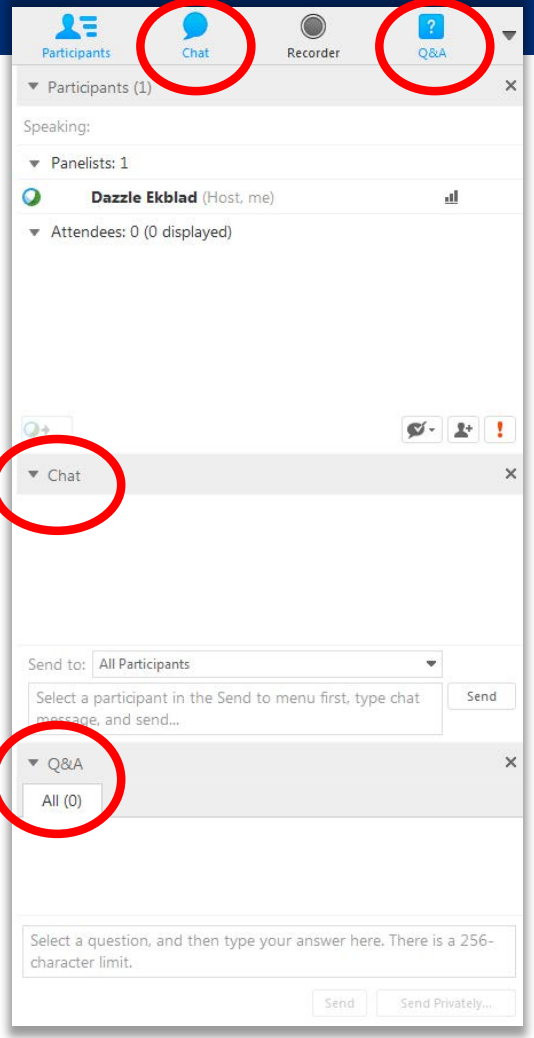
Today's webinar topic: *Economic & Climate Resiliency*

Problems or technical questions?

Use WebEx Chat

Content questions for speakers?

Use WebEx Q&A



NEW YORK STATE OF OPPORTUNITY. | Climate Smart Communities

Agenda

- **Announcements** - Dazzle Ekblad, DEC
- **Presentation** - Assessing Your Community's Economic & Climate Resiliency
  - Khris Dodson, Environmental Finance Center at Syracuse University
- **Q & A**

Funding Opportunities

NEW YORK STATE OF OPPORTUNITY. Climate Smart Communities

- **Funding for Municipal Food Scraps Reduction, Food Donation, & Food Scraps Recycling** from DEC DMM for outreach/education, equip. & construction, & for staff time; match required; max. $250k per project
  - Deadline: **March 1, 2019**
- **Municipal Clean Vehicle (ZEV) Rebates** from DEC OCC: **Now Open!**
  - No match; up to $5,000 per vehicle purchased or leased (in. 36 months)
  - Stackable w/ NYSERDA Drive Clean Rebates which offer up to $2k for plug-in hybrids or battery-powered cars
  - Deadline: **July 26, 2019**

NEW YORK STATE OF OPPORTUNITY Department of Environmental Conservation

Upcoming Events

- Nov. 10, Audubon Long Island Climate Conference, Brentwood
- Nov. 14, 1:00-2:30 PM, DEC Pre-Proposal Webinar on Hydrofluorocarbon Rulemaking (login info posted under 'Hydrofluorocarbons'):
  - Learn about potential regulatory actions to reduce hydrofluorocarbon (HFC) emissions (which are up to 4000 times more potent than carbon dioxide)
  - DEC is considering adopting prohibitions that were previously finalized by US EPA

Upcoming Events

- Nov. 15, 1 PM, Webinar on the NYS P2I Food Waste Reduction & Diversion Reimbursement Program (focus on large generators)
- Dec. 6, Sustainable Development as a Market Driver, Pace Univ. Land Use Law Center Annual Conference, White Plains
- Jan. 10, CSC Webinar: B-READY Tool - Assessing the Climate Vulnerability of Multi-Family Housing

Get Help from Regional Coordinators

- Coordinators provide free consulting services to local governments participating in NYSERDA's Clean Energy Communities Program
  - Approximately 50 hrs of free, on-demand technical assistance per municipality
  - Includes support for becoming a Certified Climate Smart Community
- Contact the coordinator in your region: https://www.nyserda.ny.gov/Contractors/Find-a-Contractor/Clean-Energy-Community-Coordinators

From left, CEC Coordinators for Mohawk Valley (Dan Sullivan), North Country (Jamie Rogers), Capital Region (Robyn Reynolds), and Mid-Hudson (Carla Castillo)

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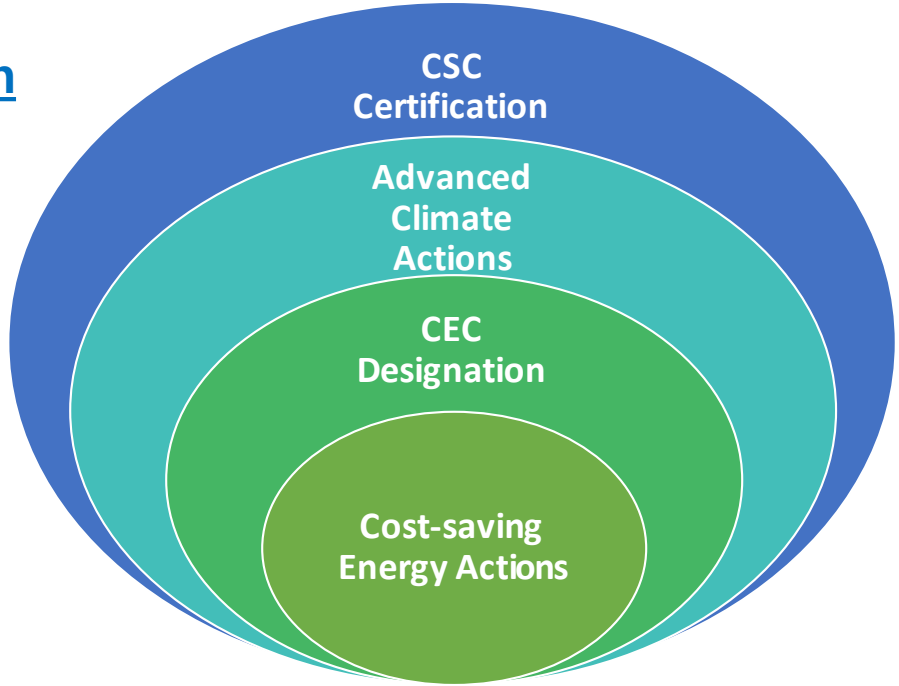
How are CSC & CEC related?

Climate Smart Communities Certification

- Comprehensive climate action program
- ~130 unique actions
- Improve score on CSC grant applications

Clean Energy Communities (NYSERDA)

- Focused on clean energy
- 10 high-impact actions
  - 1 of 10 is becoming a Certified CSC
- Complete 4 actions to access CEC grants



➢ **Earn points toward CSC Certification by doing CEC actions**
  ➢ **Do both!**

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New Certified Climate Smart Communities!

New Bronze Certified: Town of Tusten & Town of Bethel

New Certified Climate Smart Communities!

New Bronze: Town of Ulysses

New Silver: Tompkins County

https://climatesmart.ny.gov/actions-certification/participating-communities/

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Assessing Your Community's Economic & Climate Resiliency

Khris Dodson

What Will Your Community Look Like in 30 Years?

Assessing Your Community's Economic & Climate Resiliency

Khris Dodson, Associate Director
Syracuse University Environmental Finance Center
November 8, 2018

Environmental Finance Center
Syracuse University

www.efc.syr.edu

Community Resiliency Considerations

Community resiliency can include:

- Municipal financial health
- Community financial health
  - Is your "portfolio" diversified? Consider:
    - community demographics
    - commerce
    - relation to neighboring communities
- Environment:
  - water supply,
  - impacts from storms,
  - drought,
  - Adaptation to ~~Climate~~ Change
- Social and cultural changes

How would you answer these questions

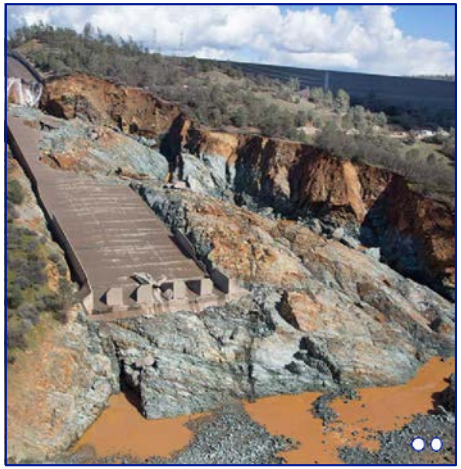
What makes, or would make, your community vibrant?

What does community vitality (now, or in the future) look like for you?

What do you think your community needs to be sustainable, or resilient, in the future?

Proactive Planning
vs.
Reactive Response

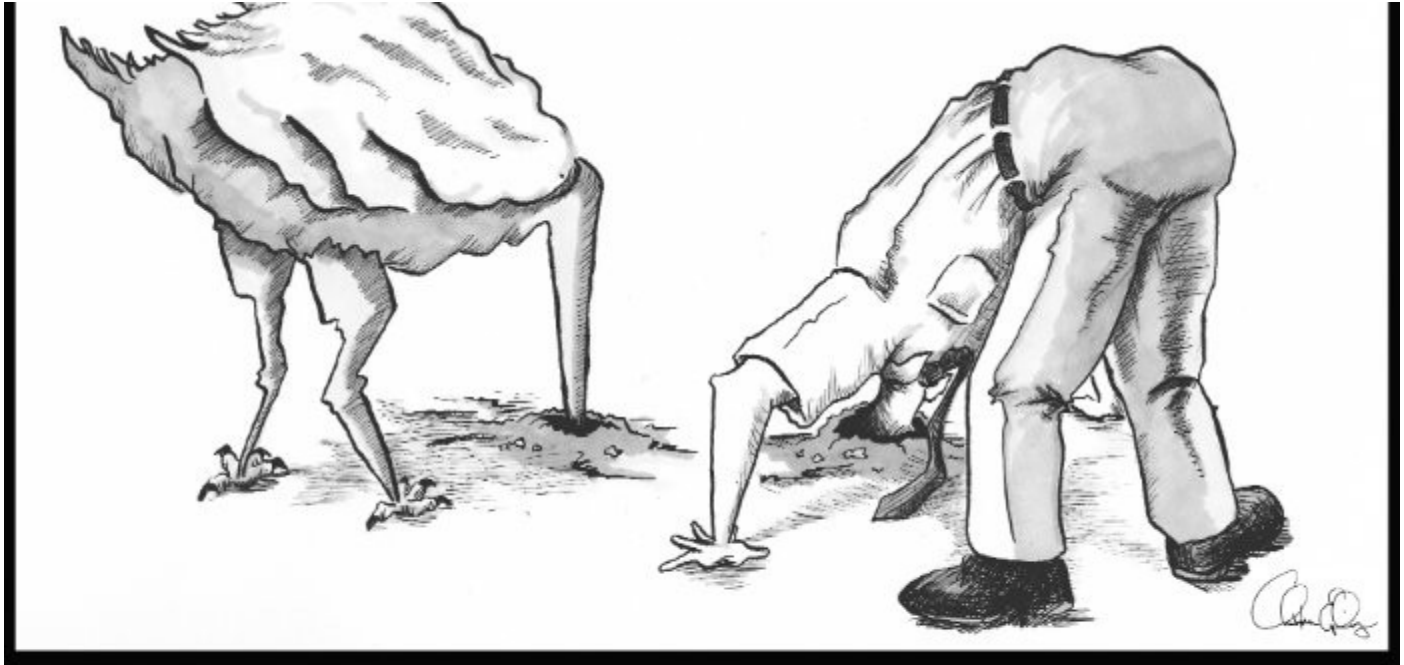
Waiting is Costly

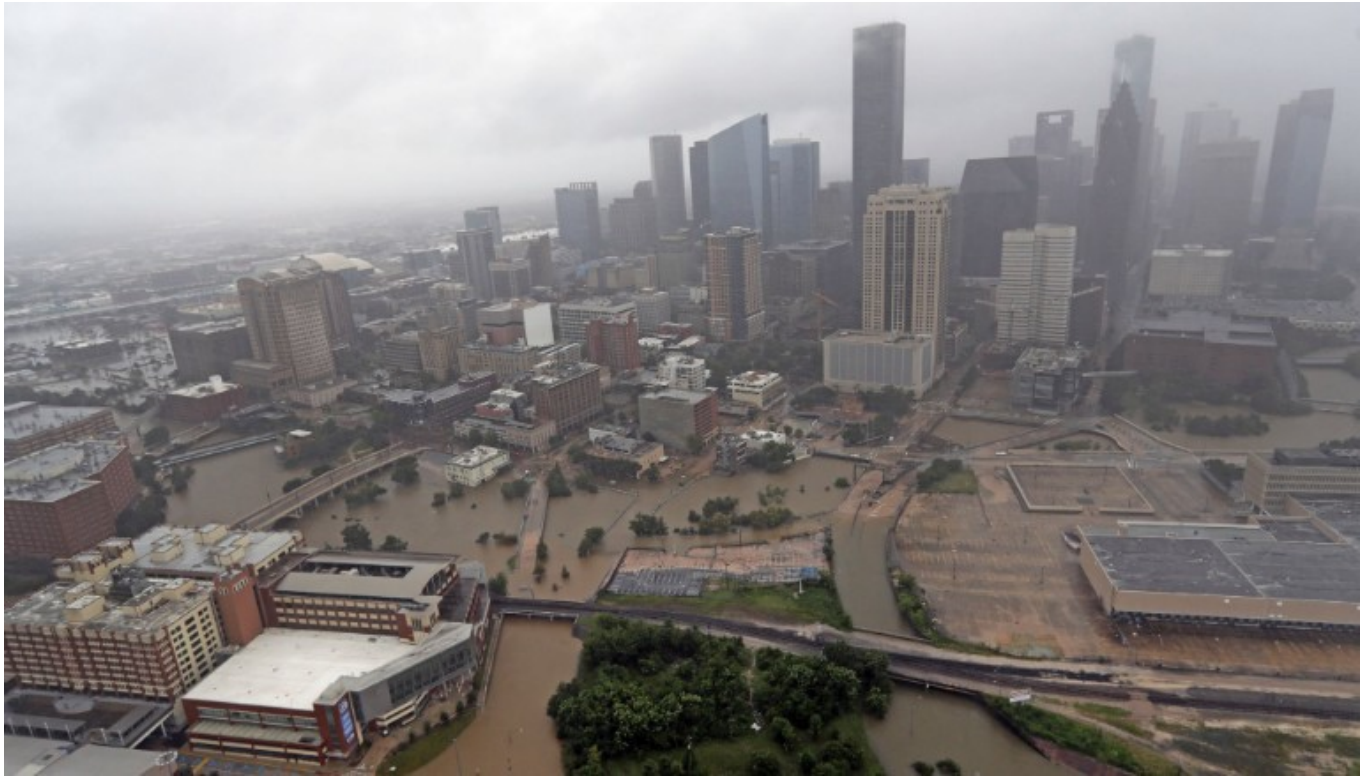


Katrina Oroville Dam Flint UCLA

The Hard Sell

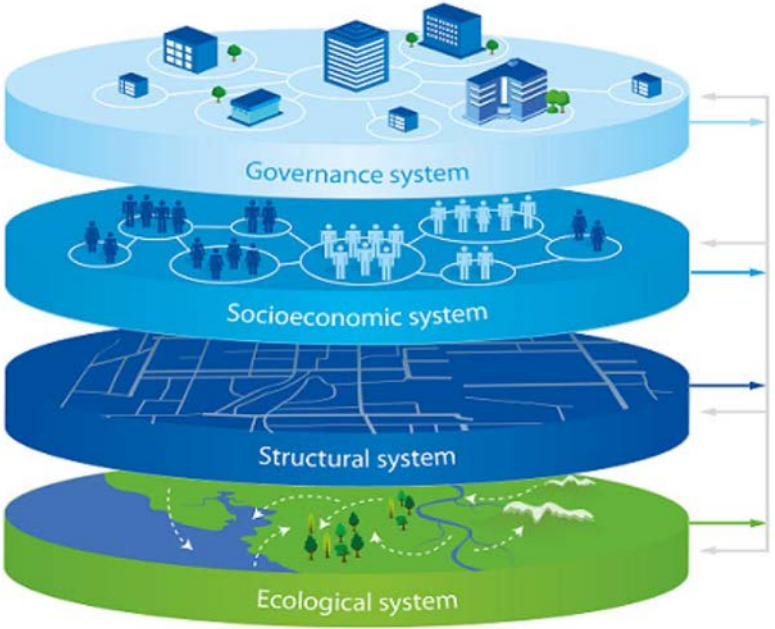
But, why bother?





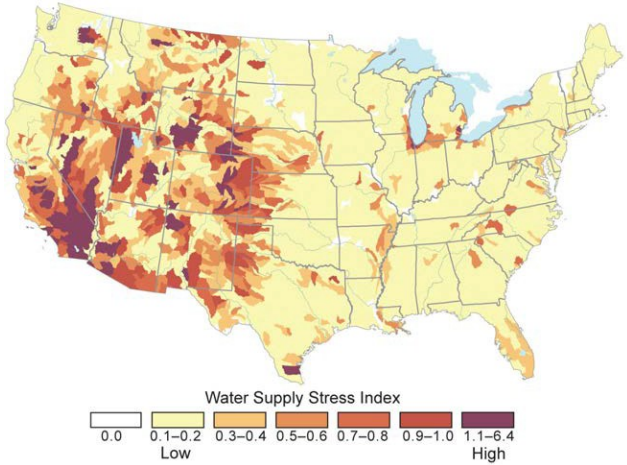
How do we know we'll 'bounce back'?

Multi-layered Systems Mindset



The multi-layered systems mindset in DNV GL's Systems & Urban Resilience Framework (SURF) model. The model views urban areas as systems with a unique profiles of mutually interconnected ecological, structural, socioeconomic, and governance systems.

Water Stress in the U.S.



Planning for the Future

- ✓ Comprehensive Plans
- ✓ Zoning & Codes
- ü Capital Improvement Planning
- ü Land Use Planning
- Asset Management Planning

RISK ASSESSMENT MATRIX				
SEVERITY / PROBABILITY	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

Flooding Impacts

- Regional interconnections
- Alternative power supplies
- Monitor and inspect infrastructure
- Elevate or flood-proof assets
- Join a mutual aid network

Changes in Seasonal Precipitation

- Incorporate predictions of snowpack and runoff changes into models
- Drought contingency plans
- Diversify water supplies
- Increase storage capacity

Increased Runoff

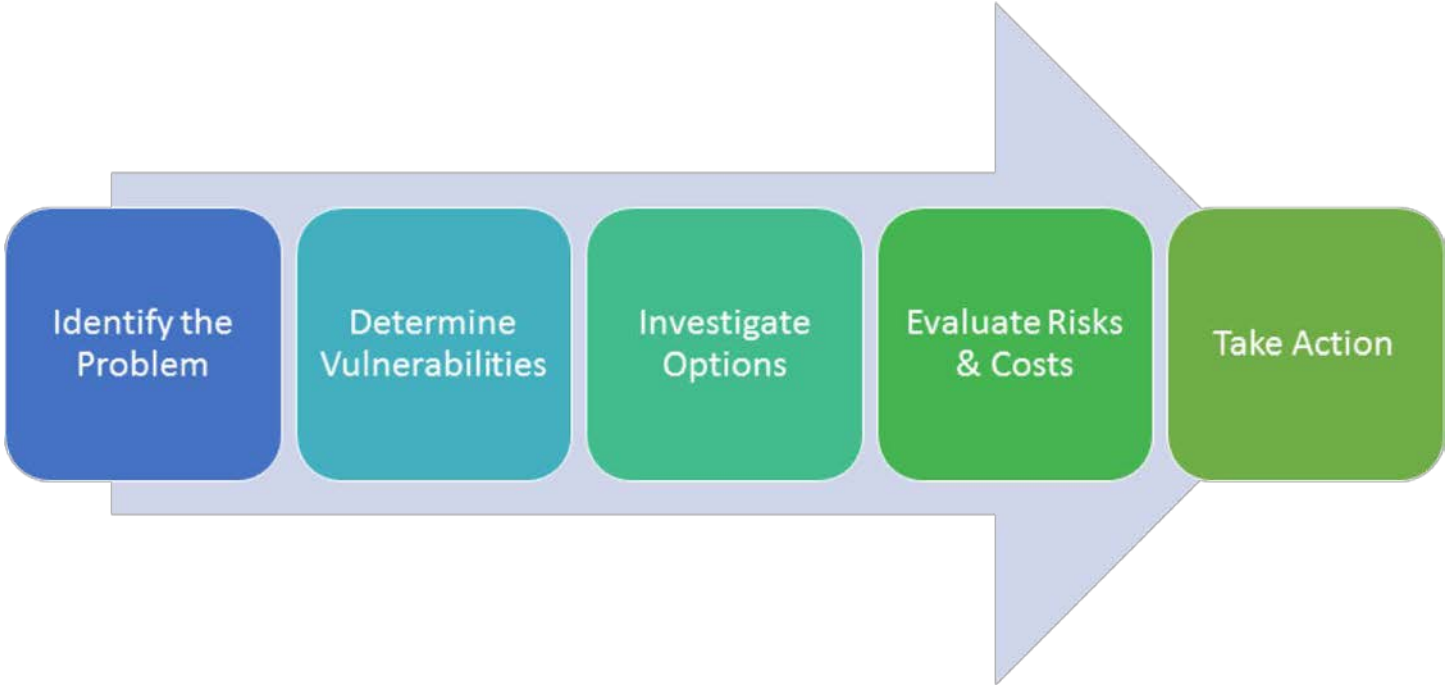
- Green infrastructure
- Watershed management
- Monitor runoff, vegetation and land use changes

Stressed Sewer Systems

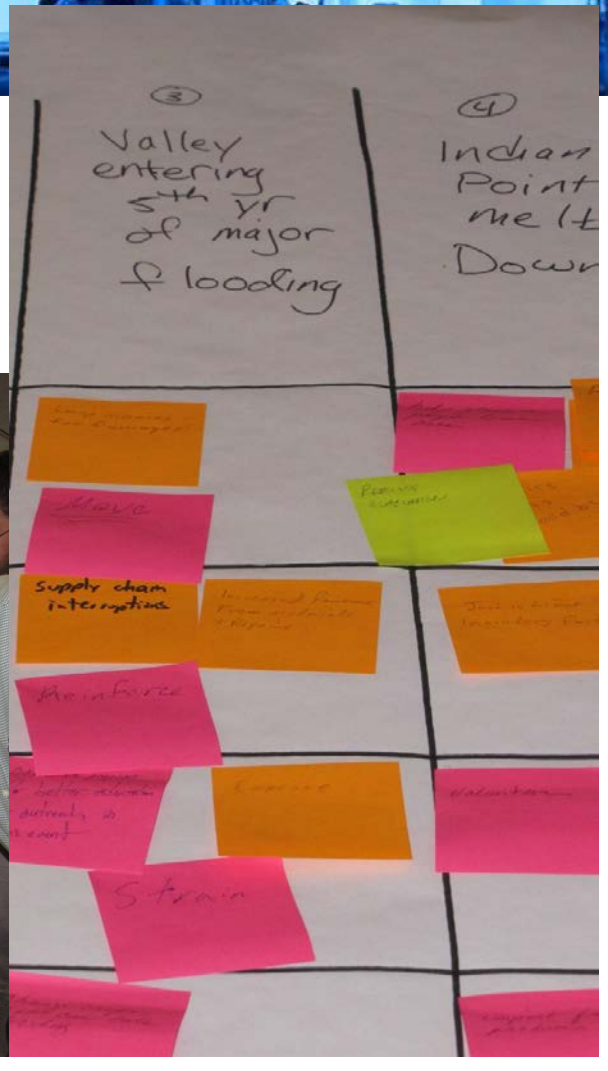
- Reduce infiltration and inflow by managing assets
- Increase capacity of wastewater treatment facilities

Community and Economic Impacts

- Evaluate local employment
- Look at volunteer civic needs
- Assess cultural and social resources
- Communicate activities and plans


Identify the Problem
Determine Vulnerabilities
Investigate Options
Evaluate Risks & Costs
Take Action

Vulnerability Assessment

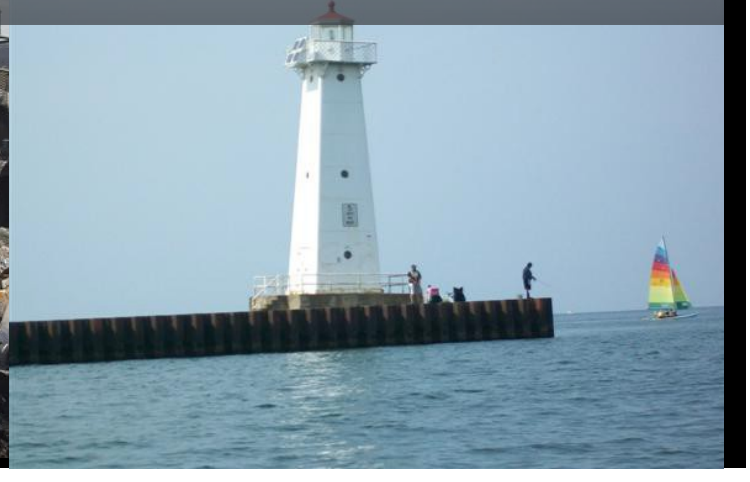


Scenarios

	5th summer drought	5th year of 60 days over 90 degrees	5th winter with no snow	Major Employer Closes
Built Environment				
Utilities/ Communication				
Transportation				
Nat				

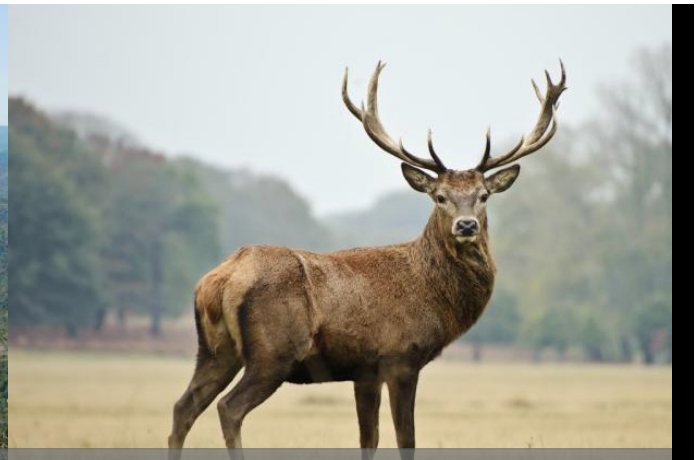
Your assets

Built Environment



Utilities

Transportation
Amtrak
145
Amtrak
CANADIAN



Natural Environment

Social Environment

Economy

Cultural?

- Military
- Refugee populations
- Amish
- Etc.

	5th summer of drought	**5th winter with no snow**

What does **your** community look like under various futures?

	5th summer of drought	5th winter with no snow
Natural Environment	Lake temperatures up 10 degrees Trout dying	Pest infestations due to warmer weather
Economic	Recreational businesses losing money	Ski resorts remain closed

Scenarios

	5th summer drought	5th year of 60 days over 90 degrees	5th winter with no snow	Major Employer Closes
Built Environment				
Utilities/ Communication				
Transportation				
Nat				

Your assets

Community Experience Snapshots

Reprieved New York plant drives local investment

06 February 2018

The James A Fitzpatrick nuclear power plant, which had been scheduled to close a year ago, is today driving significant investment in local businesses in New York State, Exelon said yesterday. More than $15 million was invested in 2017 in capital projects to support the plant for long-term operations.

Fitzpatrick (Image: Entergy)

Former plant owner Entergy announced in 2016 it would close the single-unit plant in January last year, despite being licensed to operate until 2034, because of economic conditions. However the state of New York

Related Stories

- New York State benefits from nuclear investment
- Entergy completes Fitzpatrick transfer
- Exelon to buy Fitzpatrick nuclear plant
- Entergy to retire FitzPatrick plant

WNA Links

- Fitzpatrick
- Nuclear Power in the USA

Related Links

- Exelon

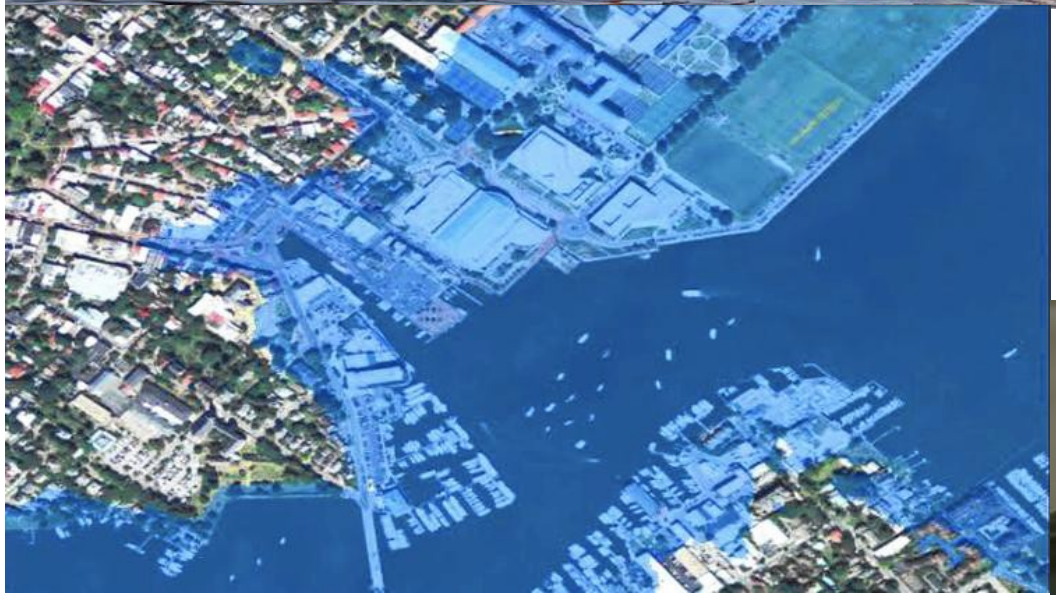
Severe storms led to historic flooding in Italy.

75% of Venice was underwater. Worst since 1966.

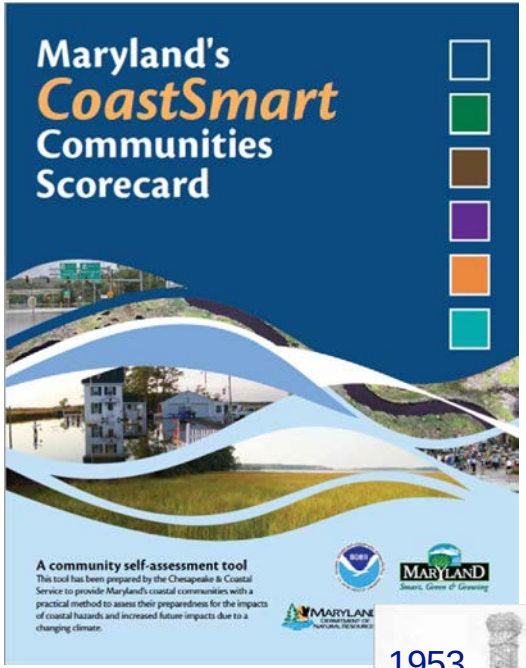
Florence also flooded.

Venice Italy Today

Annapolis, MD



50 tidal flooding events per year, when there used to be very few, if any.
The US Naval Academy is building a wall.


Maryland's
CoastSmart
Communities
Scorecard
A community self-assessment tool
This tool has been prepared by the Chesapeake & Coastal Service to provide Maryland's coastal communities with a practical method to assess their preparedness for the impacts of coastal hazards and increased future impacts due to a changing climate.
MARYLAND
Smart, Green & Growing

1953

2010

Endicott Johnson Shoes:

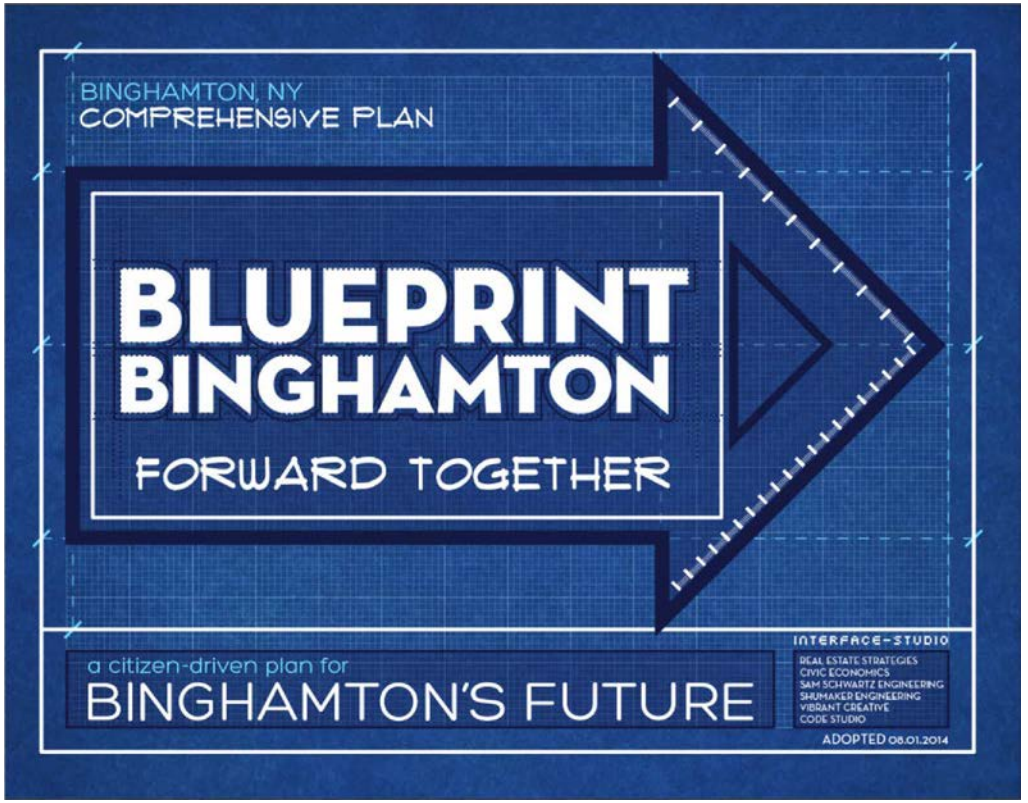
- Major employer in Binghamton area
- Welfare Capitalism: homes, schools, parks, infrastructure, jobs

2011: Lourdes Hospital, Binghamton

STOP

2002 Aerial Image
Home Buyout Area
Argonne Avenue, Town of Union
N
2011 Flood
0
150
300
450
Feet
Route 17W
Route 17E
Hopper Rd
Ardover Rd
Mains Ave
Ashworth Dr
Lane Ave
Farmers Ave
Kent Ave
Argonne Ave
Kensington Rd
Stack Ave
Buckingham Rd
Metz Ave
Verdun Ave
Chatham Rd
Malvern Rd
Argonne Ave
Argonne Ave

After repeated disaster came the planning



Building Resiliency

Update on efforts in Broome County to become a more flood smart community

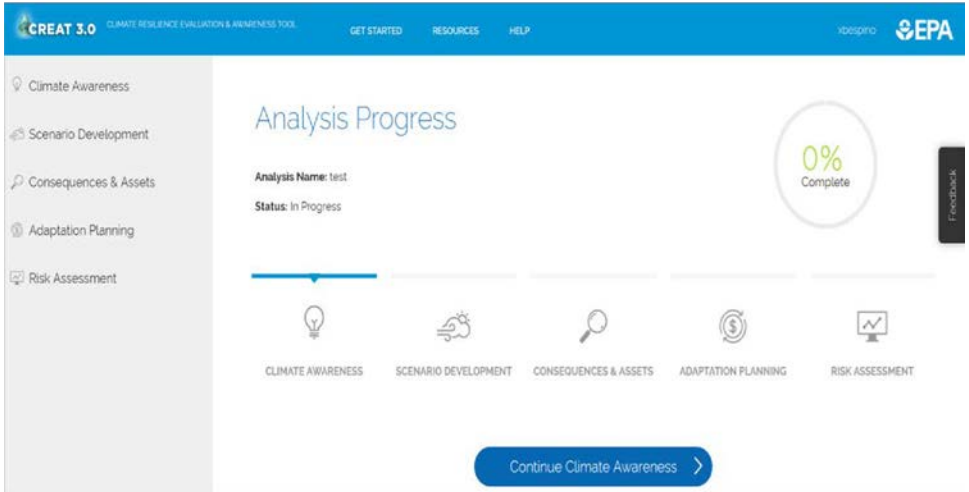
Prepared by
Broome County Department of Planning

2016

Binghamton-Johnson City Joint STP

Climate Resilience Evaluation and Awarenes Tool (CREAT)

- Risk assessment tool
- Helps utilities in adapting to extreme weather events through a better understanding of current and future climate conditions.



https://www.epa.gov/crwu/build-resilience-your-utility

https://youtu.be/fa0oK_jE8Zw

Potential Adaptive Measures for Binghamton-Johnson City Joint Sewage Treatment Plant

	ADAPTIVE MEASURE	DESCRIPTION	ESTIMATED COST
	Back-up generators	Three (3) back-up generators and diesel storage tanks to provide power for the entire plant and related processes during future power outages.	$50,000 - $150,000
	Alternate wastewater capabilities	Develop redundant treatment processes. Development or replacement could include entire facility or just critical portions to support operations when damage or loss occurs.	$3,000,000 - $10,000,000
	Hydrologic barrier	Develop hydrologic barriers to counter flooding. Manipulating natural landscapes to absorb or redirect flooding is often more aesthetic than building structures. Construction and design must consider projected flood magnitudes and local hydrography.	$750,000 - $1,250,000
	Flood wall	Construct a flood wall for protection against high flow events. Construction and design is 1.5 feet of freeboard above the 2011 storm event level.	$1,750,000 - $4,000,000
	Submersible pumps	Install submersible pumps that will not be significantly impacted by flood waters entering the plant.	$1,500,000 - $3,000,000
	Raise electrical equipment	Raise electrical equipment above the 2011 flood level.	$50,000 - $100,000
	Raise VFDs	Raise the Variable Frequency Drives (VFDs) at least one foot above the 2011 flood level.	$50,000 - $100,000
	Flood risk management plan	Develop phased, adaptive risk management plan for urban flood risks and treatment requirements that will prioritize the ability to limit or prevent damage to the facility during floods. Integrating observations, process models and decision frameworks provides a powerful suite of tools to anticipate potential flood scenarios and deal with flood damage.	$7,500 - $10,000
	Water tight doors	Install water tight doors at critical infiltration points to mitigate impacts of flood waters on plant and equipment.	$200,000 - $500,000
	Permeable pavement	Install permeable pavement at the facility to allow for infiltration of stormwater through the pavement surface reducing runoff (and localized flooding). Could be constructed from porous asphalt, porous concrete, and interlocking pavers.	$100,000 - $350,000
	Flood models	Build integrated flood models for catchments and urban drainage. Beyond many current hydrologic and flood models, these new models should ensure that changing climate conditions can be accommodated in models and that these models include topographic information (GIS) and risk assessment components.	$35,000 - $75,000
	Quick disassembly	Retrofit existing pumps to make it easier to disassemble them and remove them in advance of a	$50,000 - $100,000

Paying for Resiliency

Studies have shown that every $1 spent equals $4 of future damages mitigated.

You can’t (necessarily) buy resiliency

But, you can become resilient by investing in things that will make you so.

- Infrastructure upgrades
- Community planning
- Building capacity
- Economic development

And you can do that through…

- Looking at local resources to get some initial work done
- Apply to Regional Economic Development Council CFA funding programs such as:
  - Climate Smart Communities
  - DEC Engineering planning grants
  - NYSERDA
  - DOS

Federal Funding Programs

Organization	Resource Title	Resource Details	Website
Federal Emergency Management Agency	Climate Resilient Mitigation Activities for Hazard Mitigation Assistance	Funding programs to support activities that reduce the risk of climate change such as Aquifer Storage and Recovery, Floodplain and Stream Restoration, Flood Diversion and Storage and Green Infrastructure	https://www.fema.gov/media-library/assets/documents/110202
	Flood Mitigation Assistance	Funding for measures to reduce or eliminate the risk of flood damage to buildings insured under the National Flood Insurance Program.	http://www.fema.gov/flood-mitigation-assistance-grant-program
	Hazard Mitigation Grant Program	Funding for long-term hazard mitigation measures following major disaster declarations.	http://www.fema.gov/hazard-mitigation-grant-program
	Pre-Disaster Mitigation Grant Program	Funding for measures to reduce or eliminate overall risk from natural hazards.	http://www.fema.gov/pre-disaster-mitigation-grant-program
	Public Assistance Grant Program	Federal funding after a presidentially-declared disaster to restore and repair facilities to its original state. The state and local government may be responsible for up to 25% of the eligible cost of the grant.	http://www.fema.gov/public-assistance-local-state-tribal-and-non-profit
U.S. Bureau of Reclamation	WaterSMART Grants	Grants to support water and energy efficiency, system optimization review, advanced water treatment pilot and demonstration and climate analysis tools development.	http://www.usbr.gov/watersmart/grants.html
U.S. Department of Agriculture - Rural Development Water and Environmental Program	Emergency Community Water Assistance Grants	Funding for rural residents who have experienced a significant decline in drinking water quantity or quality to obtain adequate quantities of water that meet the standards of the Safe Drinking Water Act.	http://www.rd.usda.gov/programs-services/emergency-community-water-assistance-grants
	Water and Waste Disposal Loan and Grant Program	Funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal and stormwater drainage to households and businesses in eligible rural areas.	http://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program
	Water and Waste Disposal Technical Assistance and Training Grants	Helps qualified, private non-profits provide technical assistance and training to identify and evaluate solutions to water and waste problems; assist applicants in preparing for loans or grants and assist associations in improving operation and maintenance of existing water and waste facilities in eligible rural areas.	http://www.rd.usda.gov/programs-services/water-waste-disposal-technical-assistance-training-grants
U.S. Small Business Administration	Business Physical Disaster Loans and Economic Injury Disaster Loans	Low-interest loans for private for-profit and private non-profit drinking water and wastewater utilities to help return infrastructure and operations to its pre-disaster operability.	https://www.sba.gov/loans-grants/see-what-sba-offers/sba-loan-programs/disaster-loans

Some popular funding programs

USDA Rural Development (not CFA)

- Water/wastewater
- Community Facilities
- Distance Learning Telemedicine
- Housing Loans/grants

Northern Border Regional Commission

REGIONAL COUNCILS
NORTH COUNTRY
FINGER LAKES
CENTRAL NEW YORK
MOHAWK VALLEY
CAPITAL REGION
WESTERN NEW YORK
SOUTHERN TIER
MID-HUDSON
LONG ISLAND
NEW YORK CITY

Regional Economic Development Councils (REDC) & YOU

Each Region created a strategic plan.

- Main initiatives
- Critical issues
- Challenges
- Strategies and goals to improve economy

Have the support of your REDC – share your project idea as soon as you can.

Align community strategies with REDC strategies

Get the anticipated 20 points!

2018 State Priorities:

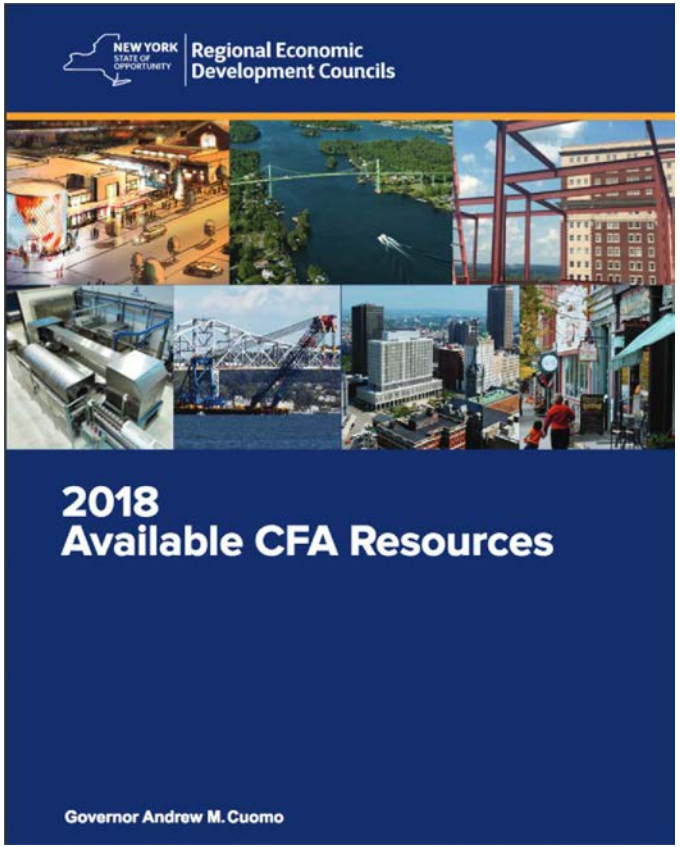
- Life Sciences
- Workforce Development and Veterans' participation in workforce
- Downtown Revitalization Initiative
- Project Pipeline
- Regional Cluster Plan
- Regional Hotspot
- Opportunity Agenda
- Local Government Engagement

REDC and the CFA

Selection Criteria for NYS DEC/EFC Wastewater Infrastructure Engineering Planning Grant from 2017		
	Points Assigned	Criteria
Regional Economic Development Priority	20	Alignment with the goals and priorities of its REDC
Performance Measures	40	Severity of existing water quality impairments
Strategies	24	Proposed project is required by a Consent Order, SPDES permit or TMDL
Process	8	Local commitment
Vision	4	Planning project is identified in a formally adopted plan
NYS DEC Regional Priority	4	Alignment with the goals and priorities of the DEC region that the project is located

Guidebook

- CFA Resources typically announced in May.
- Applications typically due end of July.
- Awards typically announced in early December.



http://regionalcouncils.ny.gov

Recently Funded Project Examples

Hounsfield Sewer Capital
Empire State Development
Town of Hounsfield
Award Amount:$2,000,000

Wastewater Disinfection Study
DEC Engineering Planning Grant
Village of Philadelphia
Award Amount: $37,500

Recently Funded Project Examples

Salt and Sand Storage Facility
Water Quality Improvement Project (WQIP) Program
Town of Lyme
Award Amount: $262,500

Emergency Feasibility Study / Engineering Analysis for the Salmon River
Climate Smart Communities Grants
Town of Malone
Award Amount: $17,000

Some popular funding programs

- ESD Grants
  - Infrastructure Investments, Economic Investments
  - Up to 25% of total project costs
  - ESD also funds strategic planning studies
- HCR
  - Community Development Block Grant (Public Infrastructure, Public Facilities, Planning) 50k-600k
  - New York Main Street – for targeted building renovations (up to 75%/500k) or technical assistance (up to 95%/20k)
- NYS DOS
  - Local Waterfront Revitalization Program – plan development or implementation; hamlets, downtowns, waterfronts
  - Canalway Grants – development along designated canals (50%)
  - Local Government Efficiency

Some popular funding programs

- NYSERDA
  - The Net Zero Energy for Economic Development Program
  - Technical Assistance, Energy Assessments, etc.
- NYS Climate Smart Communities
  - Certification and Implementation money
    - Adaptation planning actions such as: Vulnerability assessments, identification of climate adaptation
    - Land use planning actions such as: comprehensive plans with sustainability or smart growth principles, creating resource-efficient site design guidelines, conducting natural resource inventories
- OPRHP
  - Parks, Trails, Historic Preservation, Heritage Areas (Very competitive)
  - Recreational Trails (TBD in 2016)

Some popular funding programs

- NYS Environmental Facilities Corporation
  - *Wastewater Infrastructure Engineering Planning Grant
  - 30k for planning study (80% + $7,500 local match)
  - WQIP – up to 85% total costs for addressing local water quality improvements.
  - Green Innovation Grant Program (GIGP) – well-funded program for up t 90% of total costs for stormwater street trees, wetland construction, bioretention, stream daylighting, etc.
  - Integrated Solutions Construction Grant Program– Integrating green stormwater solutions into gray infrastructure funded by SRF. 50% construction costs grant

Thank you for participating in today's session!

www.efc.syr.edu

Khris Dodson

kadodson@syr.edu

315-443-8818

Environmental Finance Center
Syracuse University

OCC Contact Info

- Office of Climate Change
- NYS Department of Environmental Conservation
- 625 Broadway

  Albany NY 12233-1030
- climatechange@dec.ny.gov
- 518-402-8448

Webinar slides & recordings available at
http://www.dec.ny.gov/energy/84359.html

CSC Certification Portal:
https://climatesmart.ny.gov

CSC Funding Programs:
http://www.dec.ny.gov/energy/109181.html

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Twitter: https://twitter.com/NYSDEC

Flickr: www.flickr.com/photos/nysdec

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