

# Adaptation and Resilience in the Hudson Valley

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Department of  
Environmental  
Conservation

Hudson River  
Estuary Program



# Agenda



- Introduction
- Climate change in our region
- Climate Smart Communities
- Climate-adaptive Design
- Flood Resilience Network

Photos courtesy of Maude Salinger, DEC

# The Hudson River Estuary Program



Working to achieve key benefits

- Robust fisheries & habitats
- Clean water
- **Climate-adaptive communities**
- Protected natural areas
- Informed & engaged public
- Accessible Hudson River for all

<https://www.dec.ny.gov/lands/4920.html>

# Climate Team at HREP



**Jesenia Laureano**  
Climate Adaptation Planning  
Specialist



**Libby Zemaitis**  
Climate Change  
Program  
Coordinator



**Lyndsey Cooper**  
Climate Outreach  
Specialist

# New York's climate is changing faster than national and global averages

## Climate hazards

Trends in our climate



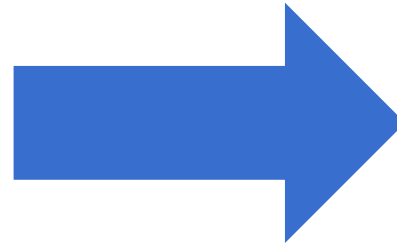
Increasing temperatures



Changing precipitation patterns



Rising sea level



## Climate risks

Impacts to humans



Heat waves



Short-term drought



Flooding

# Weather

Tells you what to wear each day



# Climate

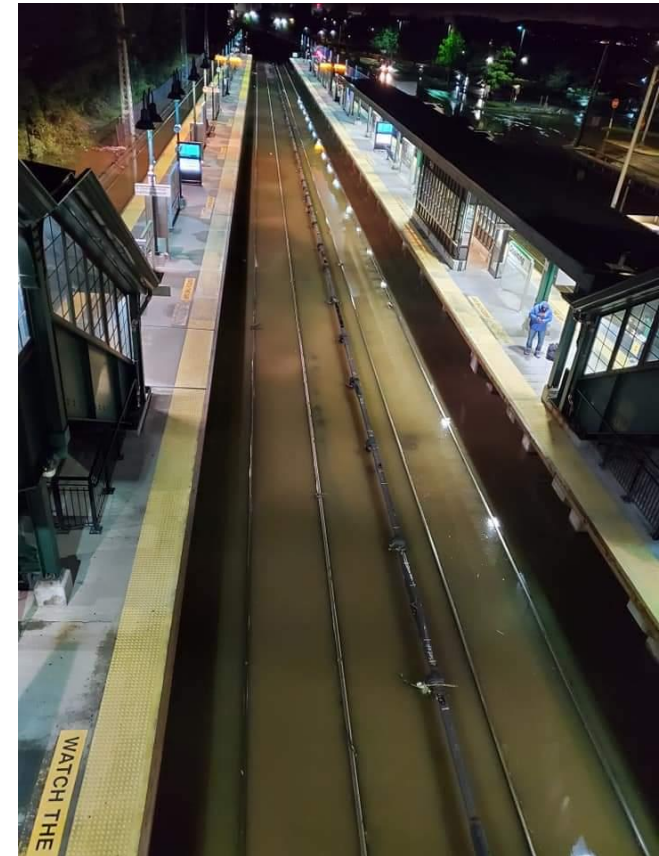
Tells you what types of clothes to have in your closet



# Focusing moments: Hurricane Irene, Tropical Storm Lee (2011) and Superstorm Sandy (2012)



Photo by Scott Cuppett



- 2020: record heat, wildfires and hurricane seasons
- 2021: the trend continues...Hurricane Ida and others

# Mitigation vs. Adaptation

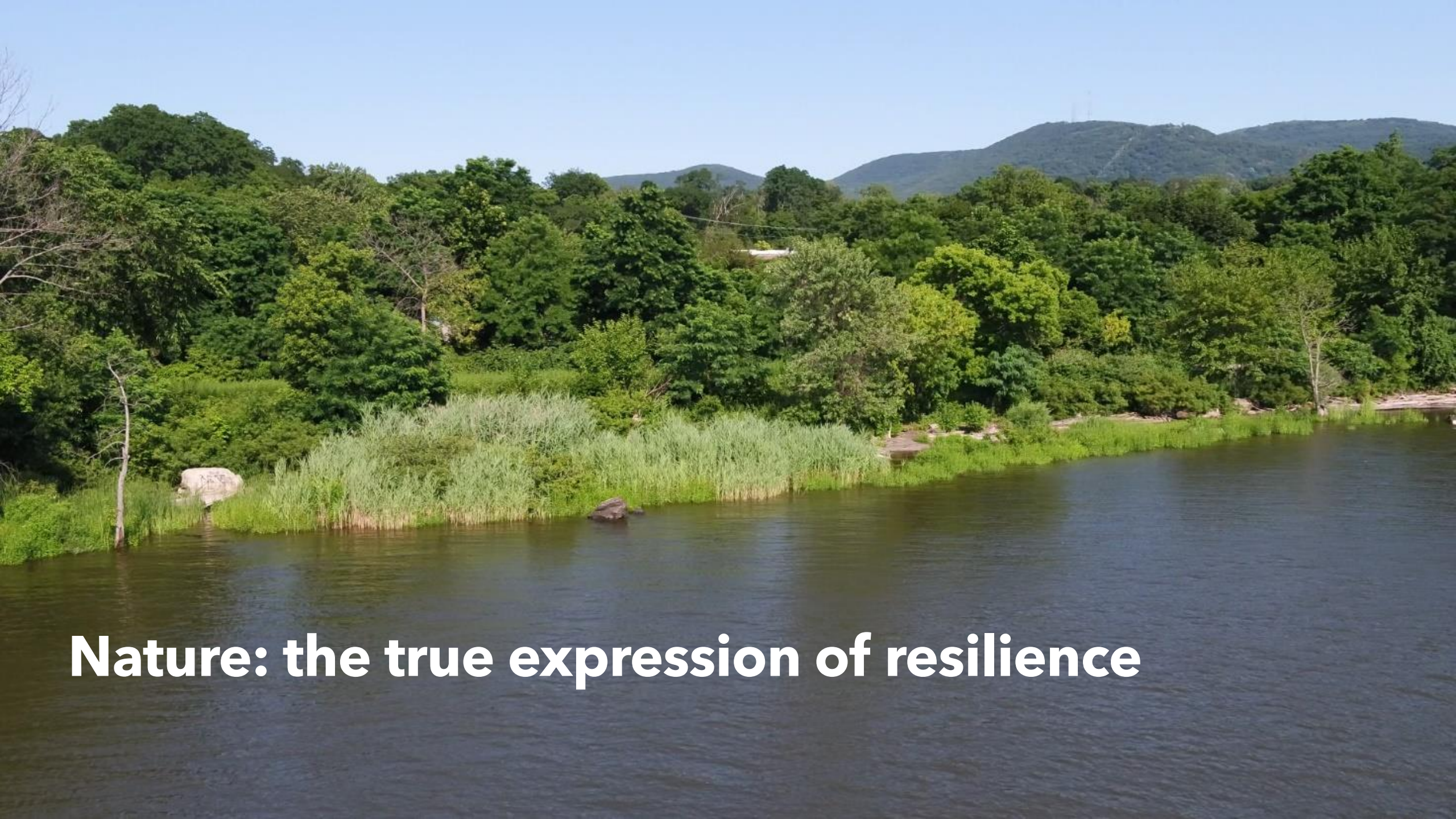
## Mitigation

- Reducing emissions of or stabilizing the levels of heat-trapping greenhouse gases
- Reducing **magnitude** of climate change
- Global effects

## Adaptation

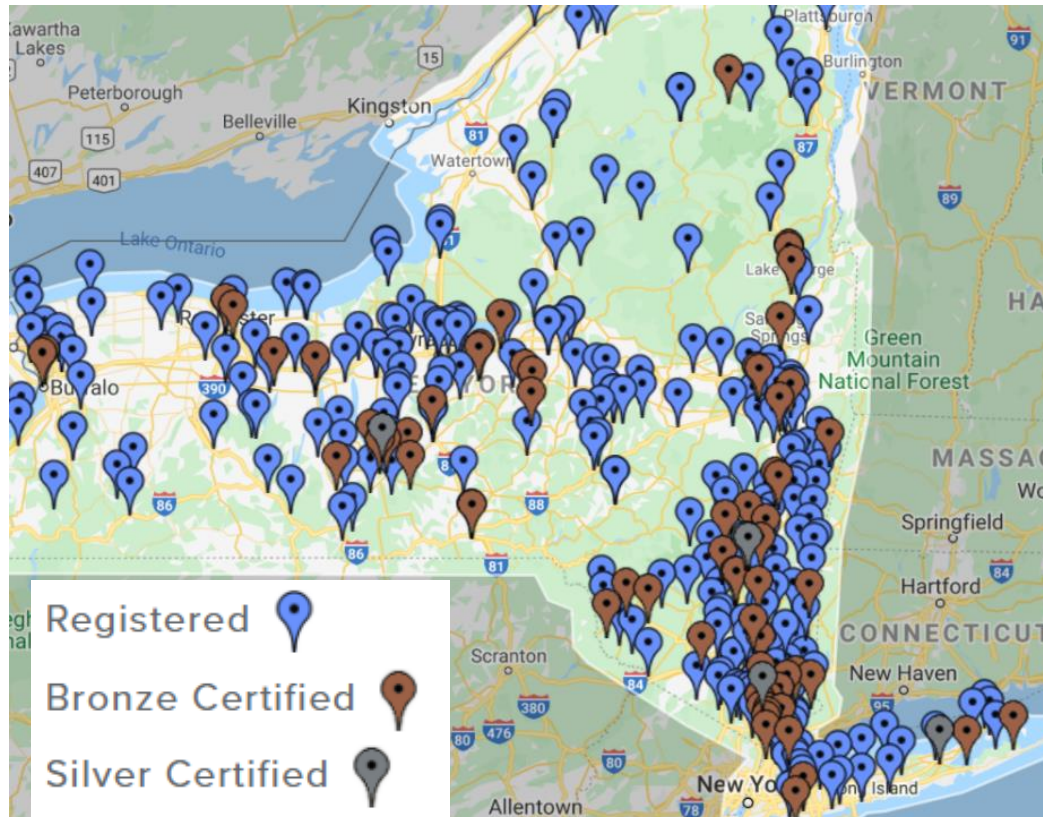
- Adjusting to the current and future effects of climate change
- Reducing our **vulnerability** to climate change
- Local effects





**Nature: the true expression of resilience**

# Hudson Valley is a leading region for Climate Smart Communities (CSC)



HV municipalities: 33 certified (13%), 120 pledged (47%)

HV counties: 5 certified (50%), 7 pledged (70%)

# CSC Pledge Element 7 covers climate adaptation & resilience

PE7 Action: Climate Vulnerability Assessment

4 Points

 Bronze Priority  Silver Priority

• THIS ACTION HAS VARIABLE POINTS: 4, 6, 16 • COMPETITIVE FUNDING AVAILABLE

- Climate Vulnerability Assessment
- Climate Adaptation Plan
- Hazard Mitigation Plan
- Heat Emergency Plan
- Shade Structures
- Cooling centers
- Watershed Assessment for Flooding
- Watershed Plan for Water Quality
- Floodplain and Riparian Buffers
- Conservation of Natural Areas
- Strategic Relocation
- Green Infrastructure
- Nature-based Shorelines
- Culverts and Dams
- Water Conservation and Reuse
- Water Smart Landscaping
- Source Water Protection
- **COMING SOON**: Inclusive Engagement

# Complete a Climate Smart adaptation action with your local Cornell Cooperative Extension

Participating Cornell Cooperative Extensions serve municipalities across **6** counties

Complete actions annually, including culvert management plans, flood guides, resilience into comprehensive planning, and more

In 2021: **21** adaptation actions + **12** certification assistance complete in **21** municipalities

Since 2018: **73** actions complete in **48** local governments

[www.climate-resilience-partnership.org](http://www.climate-resilience-partnership.org)

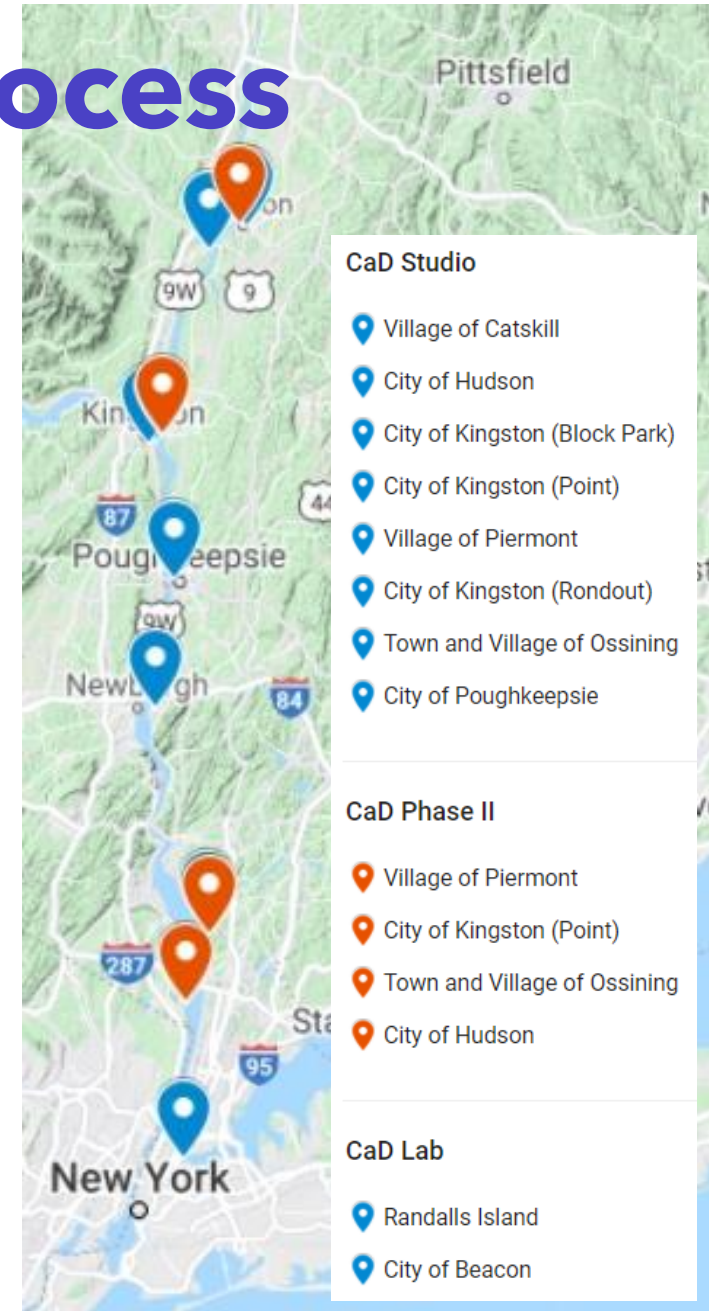


# The Climate-adaptive Design (CaD) Program

- Engaged Landscape Architecture Studio led by Professor Josh Cerra, Cornell University
- **8** CaD studio sites in **6** communities... and counting!
- **City of Poughkeepsie** hosted the 2021 studio
- Applications are open!
- <https://tinyurl.com/CornellCaD>

# The Climate-adaptive Design Process

- **Phase I:** Climate-adaptive Design Studio
  - Start a conversation & inspire adaptive thinking with student design concepts
- **Phase II:** Advancing Climate-adaptive Design
  - Develop designs, with the community, into a feasible adaptation projects
- **Phase III:** Implementing Climate-adaptive Design (future concept)
  - Final design and construction of an adaptation project



# Focus on using nature-based and natural solutions



- Green infrastructure
- Living shorelines
- Wetlands
- Ecologically enhanced bulkheads + revetments

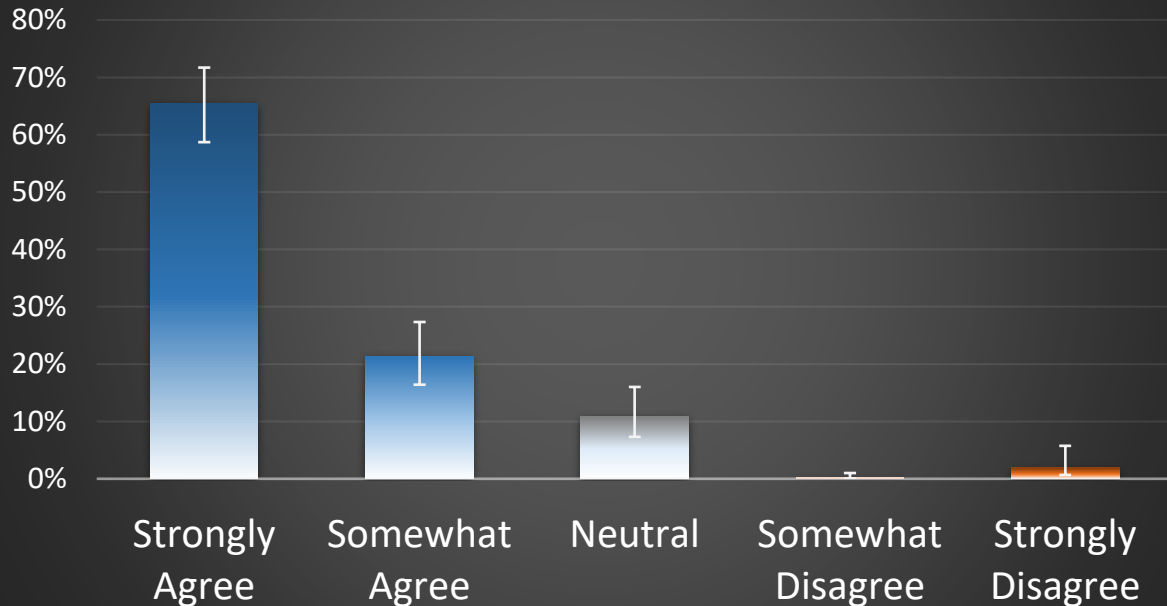


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### Support for Green Shorelines

Green Shoreline Example by Annette Frahm



I.T. Blair, Joseph Nocua Tole, John Aloysius Zinda

David L. Kay, Lindy B. Williams, Robin Blakely-Armitage, Sarah Alexander

Across the sample, an overwhelming majority support green shorelines.

“The municipal government invests in “living shorelines,” which restore natural features that protect against floods and “floodable” waterfront parks that can hold flood water.”



# Applications now open for CaD 2022 Studio!



Pre-application webinar on  
**Tuesday April 5 1:30-3:00pm**

<https://tinyurl.com/CaD2022Webinar>



Interested municipalities can submit a letter of interest to  
[Lyndsey.cooper@dec.ny.gov](mailto:Lyndsey.cooper@dec.ny.gov) by **5:00pm Monday May 2**



Learn more <https://tinyurl.com/CaD2022Instructions>

# Work together by joining the Flood Resiliency Network



- **14** local government members, goal to double by 2025
- Building relationships within and across local governments
- Supporting their adaptation and resilience journey
- Promoting Climate Smart Communities and other NYS programs
- <https://tinyurl.com/FloodRN>

**Thank you!  
Let's stay connected**



**Sign up for our Climate Resilience  
Newsletter!**

<http://goo.gl/6dwphW>

***Funding climate adaptation & resilience***

<https://tinyurl.com/NYSFunding>

***Resources for Adapting***

<https://tinyurl.com/NYresilienceresources>



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