



Department of
Environmental
Conservation

Community Risk and Resiliency Act

Mainstreaming climate change in New York State

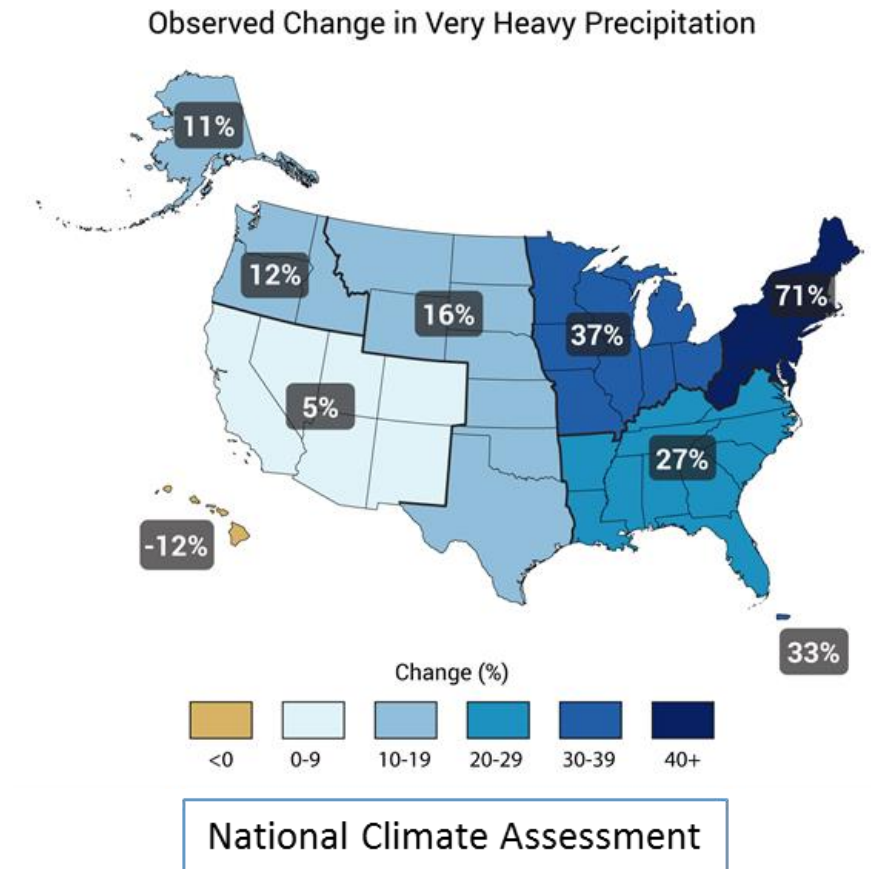
Oct. 19, 2016

Dazzle Ekblad

Office of Climate Change

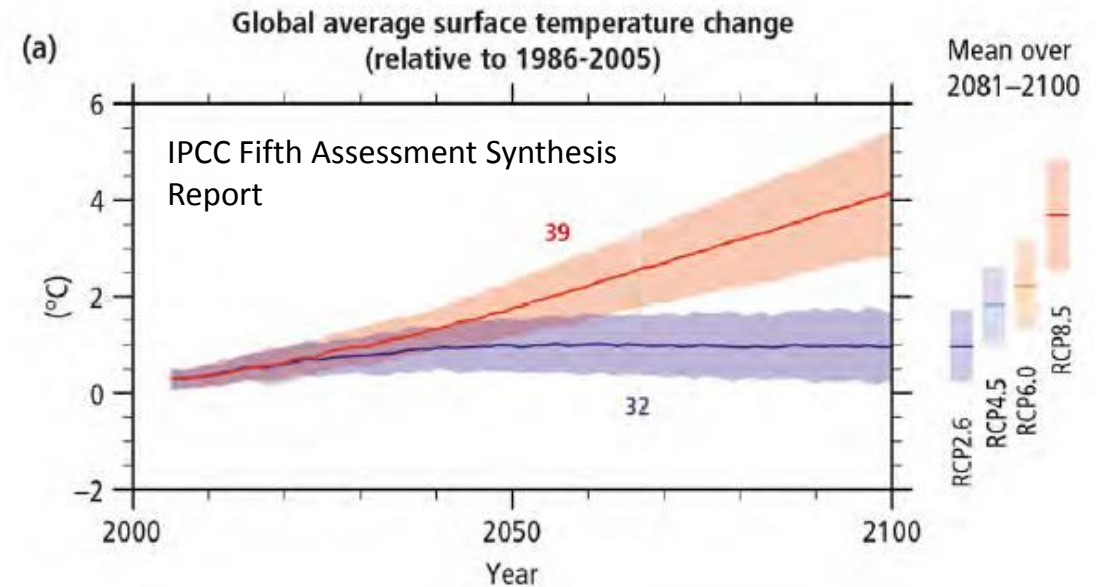
More Extreme Precipitation & Flooding

- Observed: modest increases in annual precipitation in most regions since 1900
- Projected: up to 26% increase in annual precip. by 2100 in some regions of NYS
 - Mostly in winter
- Projected increasing frequency, duration, intensity of extreme events



Current Mitigation Commitments are Insufficient to Avert Dangerous Change

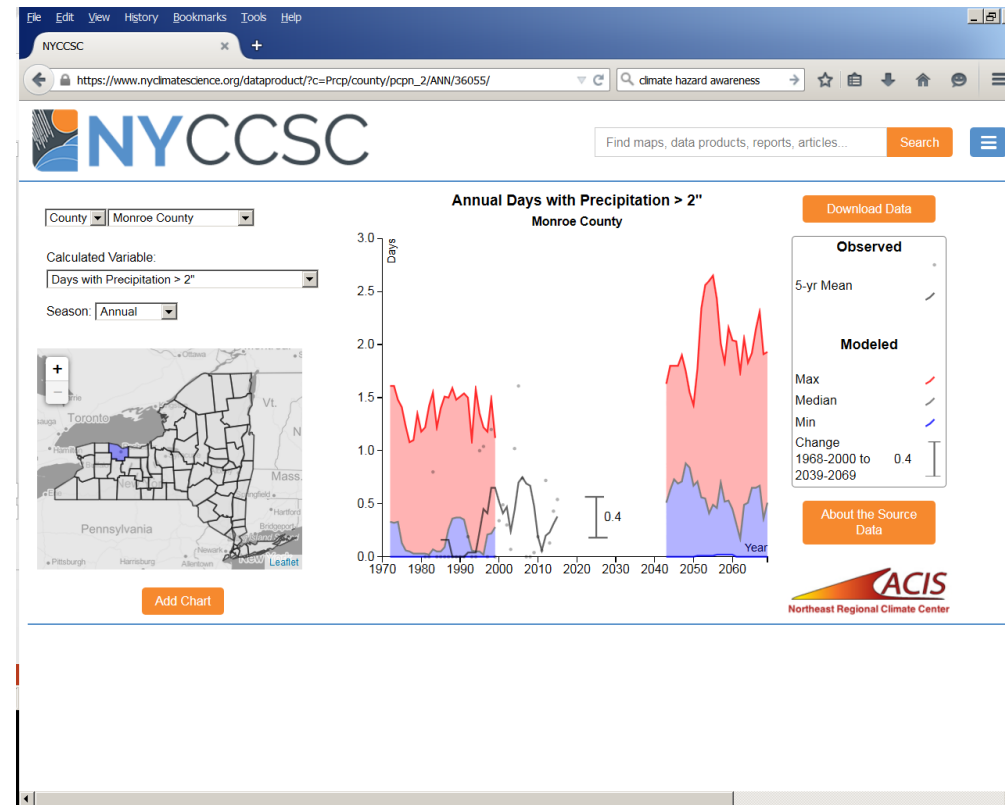
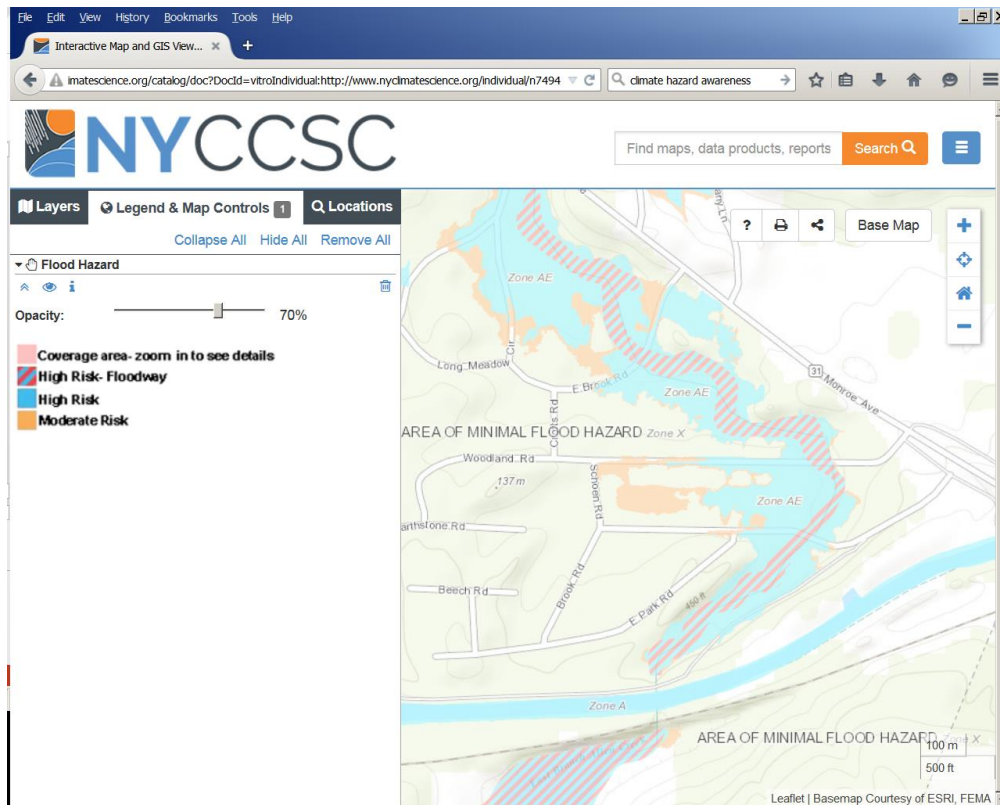
- On track to reach 560 ppm CO₂, mid to late 21st century
 - 2° (more likely 3°) to 4.5°C
- 3.5°C most likely by 2100
 - Up to 5.5°C possible
- COP21 Intended Nationally Determined Commitments
 - 2.7° to 3.5°C by 2100



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Climate Change Science Clearinghouse

- Maps, data and documents
- Designed for agency and municipal decision makers



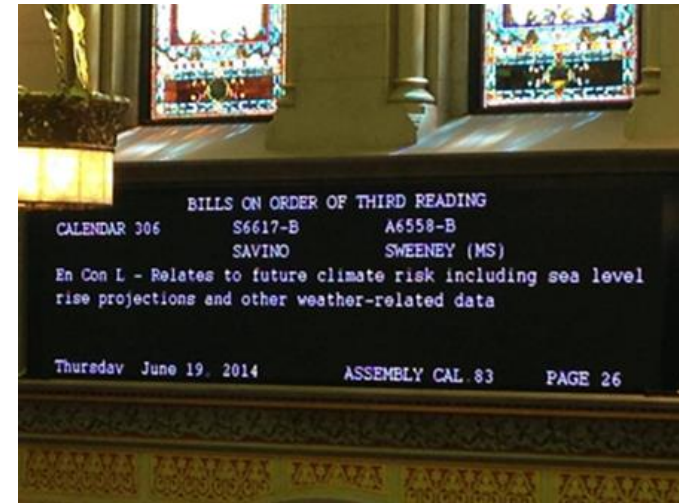
<https://www.nyclimatescience.org>



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Community Risk and Resiliency Act

- Requires sea-level rise projections (DEC)
- Requires applicant demonstration of consideration of sea-level rise, storm surge and flooding in specified facility-siting regulations, permits and funding programs, and guidance on implementation (DEC, DOS)
- Adds mitigation of sea-level rise, storm surge and flooding to Smart Growth Public Infrastructure Policy Act criteria (DEC, DOS)
- Requires model local laws to enhance resiliency (DOS, DEC)
- Requires guidance on use of natural resiliency measures to reduce risk (DEC, DOS)



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Regulatory Programs Covered by CRRRA

DEC Permits

- Oil & natural gas wells
- Major projects:
 - Protection of waters
 - Freshwater wetlands
 - Tidal wetlands
 - Coastal erosion hazard areas
- Mined land reclamation
- Sewerage service
- Liquefied natural gas & liquefied petroleum gas facilities

DEC Facility-siting Regulations

- Hazardous waste transportation, storage & distribution facility siting
- Petroleum bulk storage (including conformity with the uniform fire prevention and building code)
- Hazardous substance bulk storage



Funding Programs Covered by CRRA

- Water Pollution Control Revolving Fund (EFC)
- Drinking Water Revolving Fund (DOH, EFC)
- Local Waterfront Revitalization (DOS)
- Open Space Acquisition (DEC, OPRHP)
- Agricultural and Farmland Protection (DAM)
- Landfill Closure Assistance (DEC)
- Coastal Rehabilitation Project Assistance (DEC)
- Open Space Project Operation and Maintenance Agreements (OPRHP)

| Acronym | Agency |
|---------|---|
| EFC | Environmental Facilities Corp |
| DOH | Department of Health |
| DOS | Department of State |
| OPRHP | Office of Parks, Recreation and Historic Preservation |
| DAM | Department of Agriculture and Markets |



CRRA Implementation: Step 1

Promulgate 6NYCRR Part 490, Projected Sea-level Rise

Inches of rise relative to 2000-2004 baseline

| | Region | Long Island | | | | | New York City/Lower Hudson | | | | | Mid-Hudson | | | | |
|---------------|------------|-------------|------------|--------|-------------|------|----------------------------|------------|--------|-------------|------|------------|------------|--------|-------------|------|
| | Descriptor | Low | Low-medium | Medium | High-medium | High | Low | Low-medium | Medium | High-medium | High | Low | Low-medium | Medium | High-medium | High |
| Time Interval | 2020s | 2 | 4 | 6 | 8 | 10 | 2 | 4 | 6 | 8 | 10 | 1 | 3 | 5 | 7 | 9 |
| | 2050s | 8 | 11 | 16 | 21 | 30 | 8 | 11 | 16 | 21 | 30 | 5 | 9 | 14 | 19 | 27 |
| | 2080s | 13 | 18 | 29 | 39 | 58 | 13 | 18 | 29 | 39 | 58 | 10 | 14 | 25 | 36 | 54 |
| | 2100 | 15 | 21 | 34 | 47 | 72 | 15 | 22 | 36 | 50 | 75 | 11 | 18 | 32 | 46 | 71 |



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CRRA Implementation: Step 2

Issue State Flood Risk Mgmt. Guidance

Available for incorporation into:

- CRRA topical guidance and CRRA program-specific guidance, regulations, etc.
- Programs not covered by CRRA
- 6 NYCRR Part 502
- DEC's model local law for flood damage prevention, optional additional language
- Uniform Fire Prevention and Building Code



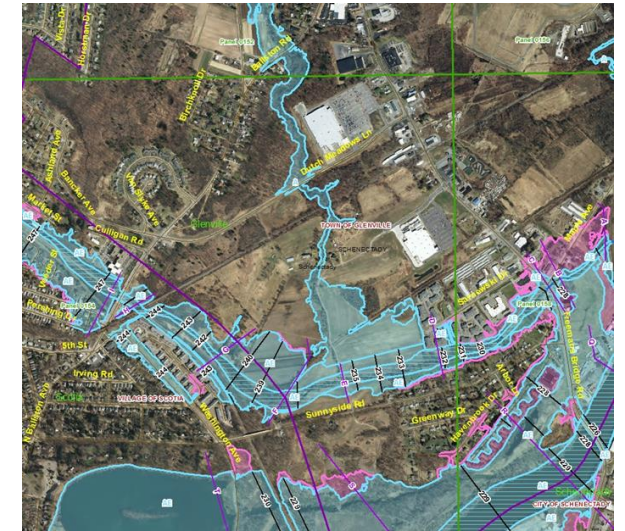
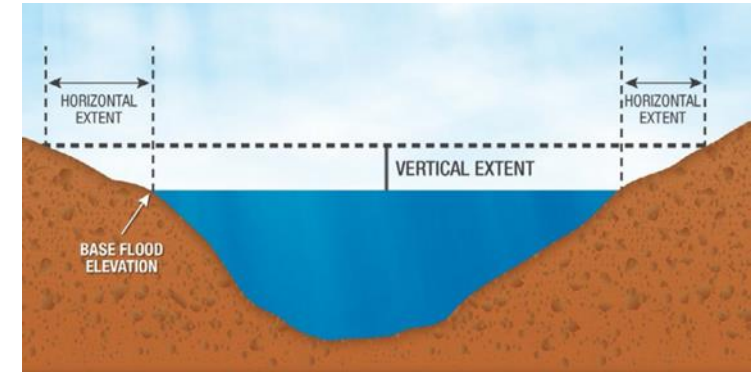
Proposed NYS Flood Risk Mgmt. Guidance

- Informed by Federal Executive Order 13690 and accompanying guidelines
- More specific to New York State
 - Select highest of relevant criteria
 - Guides use of sea-level rise projections and future conditions stream flow data
 - Project future flows (current flows X multiplier), calculate corresponding flood elevations



Proposed State Flood Risk Mgmt. Guidance

- General Guidance for All Flood Risk Areas
 - Avoid FEMA 1% special flood hazard area if possible
 - Site and design to the most restrictive of the following:
 - The elevation & horizontal flood hazard area resulting from adding an additional 2 ft. to the base flood elevation (BFE + 3 ft. for critical facilities)
 - The area and elevation of the 0.2% annual chance flood (500-year flood)
 - Climate informed science approach where applicable
- Specific criteria by structure type & tidal/nontidal



CRRA Implementation: Step 3

Issue Additional Required Guidance

- Model Local Laws
- Smart Growth Public Infrastructure Project Assessment Guidance
- Use of Natural Resiliency Measures Guidance



Natural Resilience Measures Team Charge

Develop “guidance on use of resiliency measures that utilize natural resources and natural processes to reduce risk.”

- Principles for use of natural resiliency measures
- Recommended practices
- Protective feature summaries



CRRA Implementation: Step 4

Issue Associated Guidance

- ✓ Observed and Projected Climate Change in NY
- ECL Article 15/CWA Section 401 Guidance (bridges & culverts)
- Tidal Wetland Migration Guidance
- Mitigation of Floodplain Encroachment
- Living Shorelines in the Marine District Guidance
- Coastal Consistency Review Guidance



Article 15/Section 401 Guidance

I. Guidance for review of bridges, culverts and other structures

a. General and specific design requirements

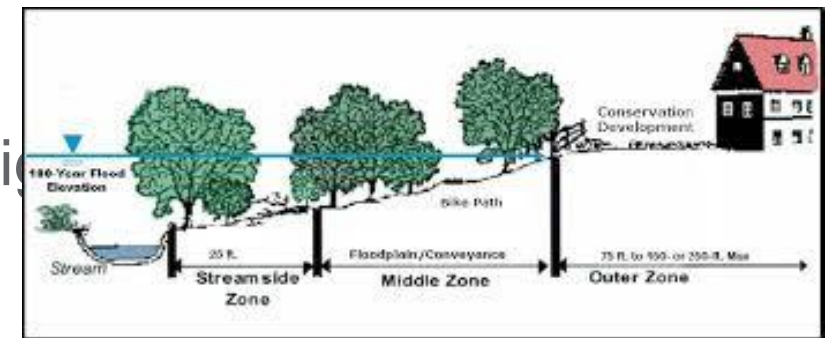
b. High-risk areas

i. Conditions requiring larger structures

c. Low-risk areas

II. Conditions where smaller structure, smaller height or less embeddedness may be allowed

III. Streamway setback recommendations



CRRA's Benefits

- Written standards and guidance
- Inter-regional and cross-program consistency for standards and permit requirements
- Standardization of data sources, decision-support tools
- Greater resiliency for communities, infrastructure and ecosystems
- Greater public and staff awareness of climate hazards and risk-reduction practices



Thank You

Dazzle Ekblad

Climate Policy Analyst

625 Broadway

Albany NY 12233-1030

Dazzle.Ekblad@dec.ny.gov



Connect with us:

- DEC: www.dec.ny.gov
- Community Risk and Resiliency Act: www.dec.ny.gov/energy/102559.html
- Climate Smart Communities: www.dec.ny.gov/energy/76483.html
- Facebook: www.facebook.com/NYSDEC
- Twitter: twitter.com/NYSDEC
- Flickr: www.flickr.com/photos/nysdec



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