

# CONFRONTING CLIMATE CHANGE IMPACTS IN THE WATER SECTOR



CWWA and CT Section AWWA Fall Conference  
October 26, 2023

**RESILIENT**  
Land & Water  
Sustainable Solutions, Stream to Shoreline



**David Murphy, PE, CFM**  
Principal of Resilient Land And Water  
Director of Resilience Engineering, CIRCA

# AGENDA

- Climate Change Challenges in Connecticut
- Guidance from the State and Others
- What Do We Hear from the Towns?
- What's New with FEMA?
- Other Grant Programs
- What About Climate Action?
- Putting it All Together

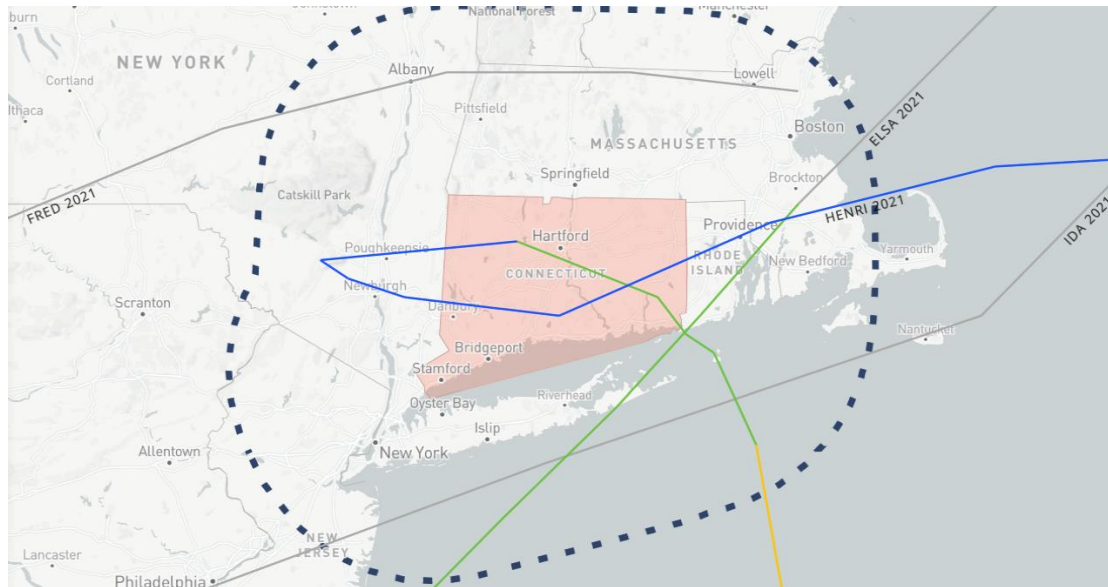




# CLIMATE CHANGE CHALLENGES

## Summer 2021

- TS Elsa – up to 5”
- Extratropical Storm Fred – up to 2”
- TS Henri – up to 4”
- Extratropical Storm Ida – up to 8”




# CLIMATE CHANGE CHALLENGES

**CT** LOCAL WEATHER INVESTIGATIONS NBC CT RESPONDS VIDEO ENTERTAINMENT NBC CT NEWSLETTERS TRAFFIC 57

FIRST ALERT WEATHER

## Round of Storms Cause Flooding, Damage to Parts of the State

Published July 17, 2021 • Updated on July 18, 2021 at 8:55 am



**Trending Stories**

- NEW HAVEN**  
Cleaning Underway After Bed Bugs Reported at Union Station
- MYSTIC**  
Man Accused of Driving 104 MPH in a 25 MPH Zone in Mystic
- MEDIA**  
Anchor Don Lemon Out at CNN
- NEWINGTON**  
Numerous Gunshots Fired Into Occupied Newington Home: PD

0:47 / 2:05

A bridge in Ashford has collapsed because of the severe storms that passed through the area.

**Josh Cingranelli** @WeatherJosh · Follow

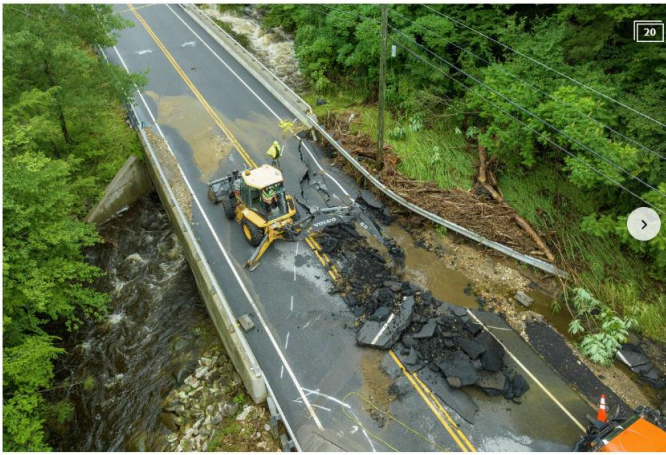
Newent Rd in Lisbon is flooded as rainfall totals exceed 5 inches in this area. **#nbcct**



NO SMOKING FASTEN SEAT BELT 0:06 / 0:07

**THE REGISTER CITIZEN**

Peter Yankowski, Jesse Leavenworth, Staff Writers  
July 10, 2023 | Updated: July 10, 2023 3:11 p.m.



1 of 20

Crews work on a section of Route 272 in Norfolk, Conn., on Monday, July 10, 2023, after heavy rains washed out a section of the road.

**CT INSIDER**

NEWS

## Six Connecticut families cut off from roads after two bridges collapse in Scotland, officials say

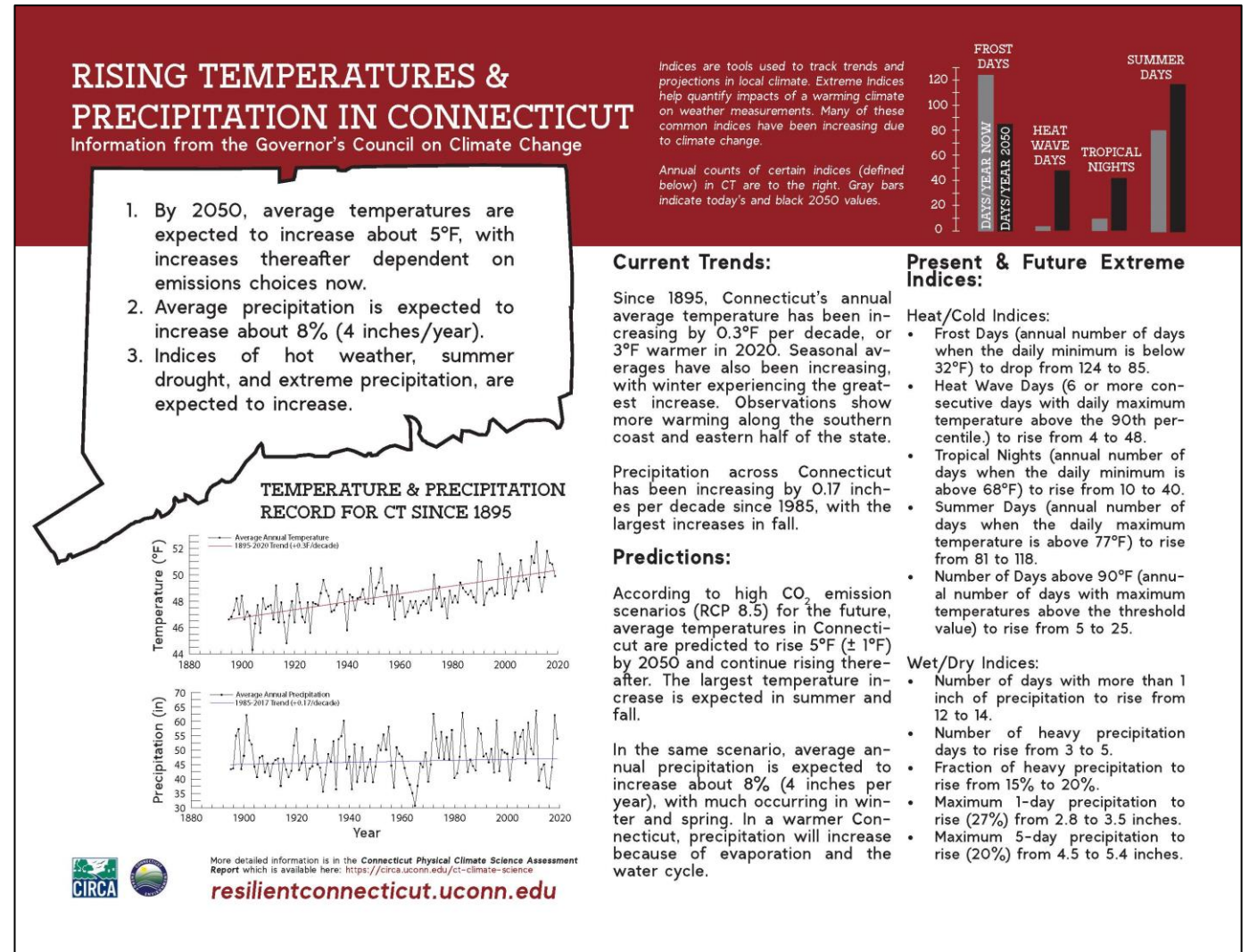
Josh LaBella, Jesse Leavenworth, Staff writers  
Sep. 15, 2023





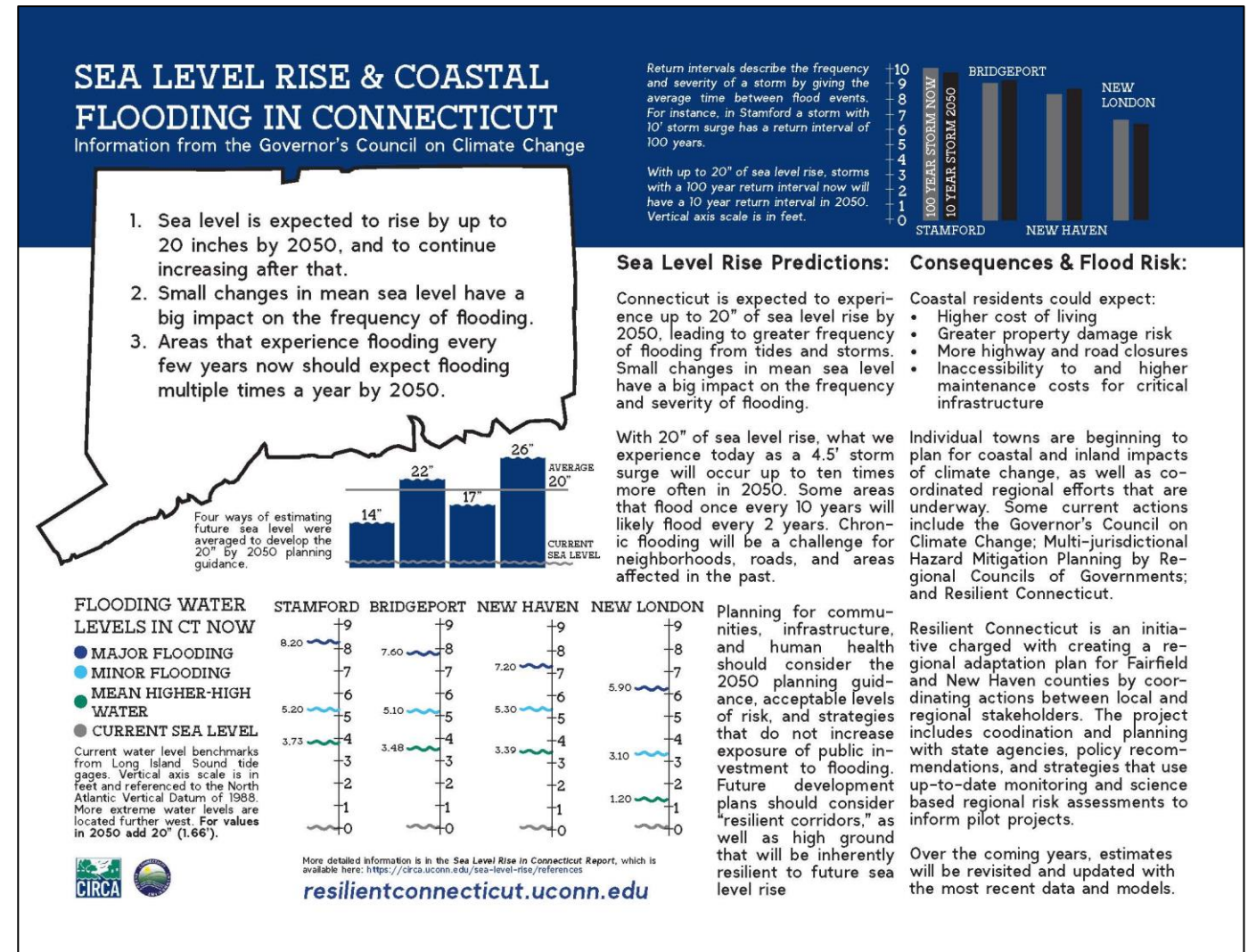
# GUIDANCE FROM THE STATE

- Number of days above 90 degrees to increase from 5 to 25 days
- Number of heat wave days expected to increase tenfold
- Average annual precipitation expected to increase 8%
- Number of days with heavy precipitation to rise from 3 to 5 days
- Maximum one-day precipitation to increase



# GUIDANCE FROM THE STATE

- The upper and lower bounds of projected sea level rise diverge, but confidence is high for a planning threshold of 20 inches by 2050
- State statute require using this figure for planning
- This is a **planning threshold**, not a projection
- Number of days of sunny day flooding will increase tenfold by 2050



# GUIDANCE FROM OTHERS

## 4<sup>TH</sup> National Climate Assessment

- The dominant trend in precipitation throughout the Northeast has been towards increases in **rainfall intensity**.
- Further increases in rainfall intensity are expected, with **increases in precipitation expected during the winter and spring with little change in the summer**.
- Monthly precipitation in the Northeast is projected to be about **1 inch greater for December through April** by end of century (2070–2100).
- Although future projections of major floods remain ambiguous, more intense precipitation events have increased the risk of some types of inland floods.


## NOAA NCEI State Climate Summaries

- Annual precipitation has been highly variable, with a slight increase since 1895.
- **Increases in the frequency and intensity of extreme precipitation events are projected, as are increases in winter and spring precipitation.**
- Increases in total precipitation and in the number of extreme precipitation events may increase inland flooding risks.



# GUIDANCE FROM OTHERS

## 4<sup>TH</sup> National Climate Assessment

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- Although future projections of major floods remain ambiguous, more intense precipitation events have increased the risk of some types of inland floods.

**Summer  
precipitation is  
*already*  
challenging  
enough!**

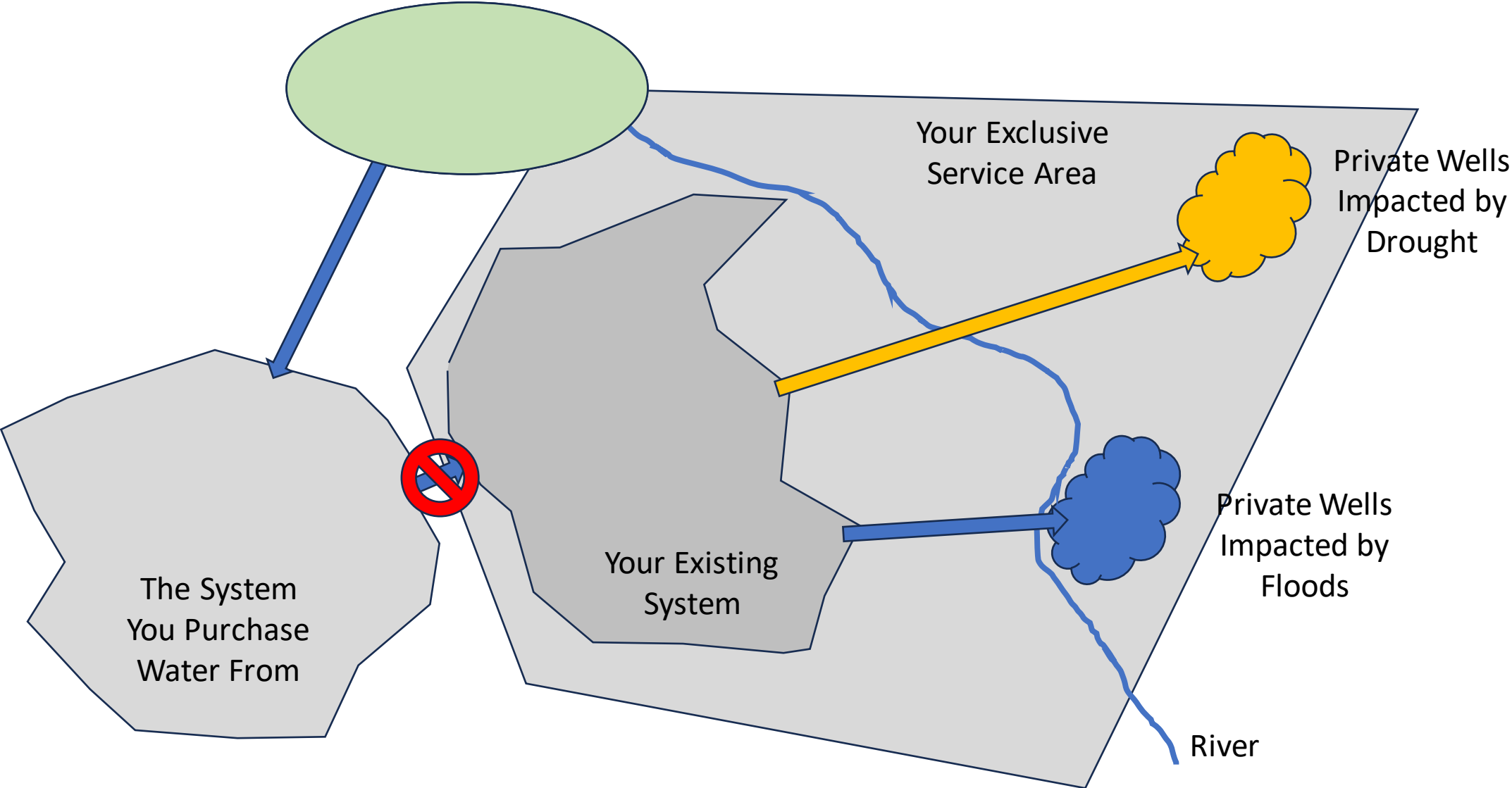




# PRIMARY IMPACTS

- **Rising Temperatures** – Longer and more frequent heat waves; less respite from heat at night
- **Changing Precipitation** – Flashy droughts and more intense rainfall causing floods, washouts, and dam overtopping
- **Severe Storms** – More intense wind and rain events, heavier wet snowfall (though we will have fewer snowy days)
- **Harmful Algal Blooms** – Increasing temperatures will affect internal circulation in lakes while intense precipitation washes more nutrients into lakes
- **Wildfires** – Potentially more risk during dry spring and flashy drought conditions
- **Invasive Species** – Conditions favorable for species shifting northward, changing forests and aquatic ecosystems
- **Sea Level Rise** – Higher daily high tides, more damaging king tides, more damaging storm surges when they occur, and shoreline change

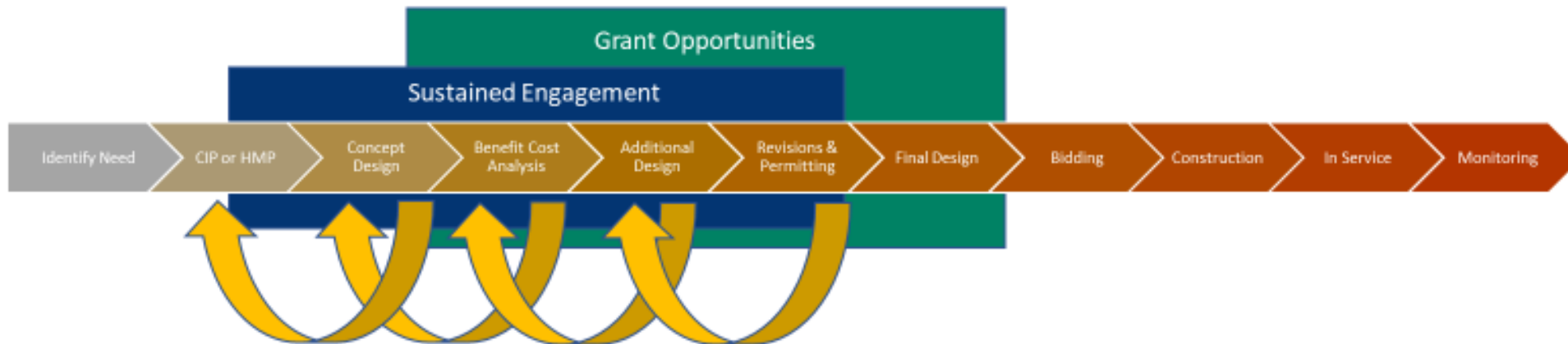
# CASCADING IMPACTS





# HOW CAN WE FOCUS AND WHAT CAN WE DO?

- EPA & CT DPH have previously provided guidance and requirements
- CIRCA and the Governor's Council on Climate Change (GC3) said to focus on:
  - Extreme heat, flooding, and environmental justice
- Executive Order 21-3 of December 16, 2021:
  - A loose recognition of the State's climate resilience "project pipeline"
  - Implication that State agencies and towns will be entering the pipeline



*Taking a step backward is possible and often will occur, in practice, along a project pipeline*

But how do we identify water utility projects for the project pipeline?

# WHAT DO WE HEAR FROM THE TOWNS?

*“WHAT ARE YOUR CLIMATE-RELATED CONCERNS?” (SCCOG)*





# WHAT DO WE HEAR FROM THE TOWNS?

## “WHAT ARE YOUR CLIMATE-RELATED CONCERNS?” (SCCOG)

SCCOG Town	Climate Concern #1	Climate Concern #2	Climate Concern #3
Bozrah	Livestock and chickens	Fitchville Dam condition	
Colchester	Vulnerable seniors (heat & flood)	Tree trimming/removal budget	Stream crossings
East Lyme	Water and sewer infrastructure	Limited egress in some areas	
Franklin	Drought impacts to agriculture	Drought impacts to private wells; lack of public water systems	Stream crossings
Griswold & Jewett City	Vulnerable seniors (heat & flood)	Lake Road septic systems	
Groton City	Coastal roads that flood	Impervious surfaces (heat and flood)	Urban forestry
Groton Town	Mystic density, flooding, etc.	Underpasses	Sewer pumping stations
Lebanon	Chicken farms	Tenmile River cutting off road	
Ledyard	Lantern Hill Road/Whitford Brook	Cooling center needs generator	
Lisbon	Newent Road flooding in 2022	Vulnerable seniors (heat)	Droughts
Montville	Expand public water systems	Stream crossings	Age restricted housing clusters
New London	Flooding related to drainage systems	Fort Trumbull development	Urban forestry interests
North Stonington	Lack of shelter inside the town	Private wells / lack of extensive PWSs	Lantern Hill Road/Whitford Brook
Norwich	Redevelopment of mill buildings in flood zones	Impervious surfaces (heat and flood)	Sewer separation
Preston	Power outages from storms	Water and sewer expansion	
Salem	Having appropriate response capabilities	Livestock and chickens	Stream crossings
Sprague	Senior housing AC does not run on generator	Paper Mill, Versailles Dams owned by town	Water and sewer infrastructure
Stonington Town	Mystic density, flooding, etc.	Three WWTPs	Masons Island & other causeways
Stonington Borough	Direct coastal flooding	Limited egress for Borough	WWTP
Waterford	Elderly and access to cooling	Areas that can be cut off by flooding	
Windham	Lack of standby power for town facilities	Willimantic Reservoir/WTP challenges	

# WHAT DO WE HEAR FROM THE TOWNS?

## *“WHAT ARE YOUR CLIMATE-RELATED CONCERNS?” (RIVERCOG)*

RiverCOG Town	Climate Concern #1	Climate Concern #2	Climate Concern #3
<b>Chester</b>	Chester Creek corridor	Private dams	Dock Road elevation
<b>Clinton</b>	Sea level rise affecting septic systems	Private dams	
<b>Cromwell</b>	FD and PD flooded in 2021	Underpasses that flood	Shadow Brook and Cromwell Creek
<b>Deep River</b>	Fire house next to Deep River	School is regional shelter; access risks	
<b>Durham</b>	Microgrid for town center	Hosting migrants from shoreline	
<b>East Haddam</b>	Sucker Brook corridor, Goodspeed, and WWTP	Rural road challenges	
<b>East Hampton</b>	Algal blooms closing Pocotopaug beach	Critical facilities next to Pocotopaug Creek	Private wells not running during outages
<b>Essex</b>	Ferry Street flooding	Bridges along Falls River	Choke point at Route 9
<b>Haddam</b>	Convert school to cooling center	Move DPW from floodplain	
<b>Killingworth</b>	Washouts into PWS reservoirs	Making the regional shelter more resilient	
<b>Lyme</b>	None!		
<b>Middlefield</b>	Flooding at small and blocked culverts	Debris in Coginchaug River floodplain	
<b>Middletown</b>	Sumner Brook corridor	Isolation risks for critical facilities in Mile Lane area	
<b>Old Lyme</b>	Sewer system expansions in beach communities	Swan Brook flooding and beach outfall	Underpasses and low roads
<b>Old Saybrook</b>	Coordinating many private beach actions	Underpasses that flood	Making "the loop" more resilient
<b>Portland</b>	Critical facilities that flood downtown	Fairground flooding and erosion	
<b>Westbrook</b>	Clearing clogged creeks	Wrights Pond Dam	Stormwater outfalls in tidal waters



# WHAT DO WE HEAR FROM THE TOWNS?

## *“WHAT ARE YOUR CLIMATE-RELATED CONCERNS?” (CRCOG)*

CRCOG Town	Climate Concern #1	Climate Concern #2	Climate Concern #3
<b>Andover</b>	Stream crossings	Generators for critical facilities	Limited egress for senior housing
<b>Avon</b>	Critical facilities in a floodplain	Tree management	Generators for critical facilities
<b>Berlin</b>	TBD	TBD	TBD
<b>Bloomfield</b>	Drainage-related flooding	Generator for cooling center	Maintenance of Park River flood control systems
<b>Bolton</b>	Power outages from storms	Stream crossings	DEEP-owned and privately owned dams
<b>Canton</b>	Tree management	Microgrid for critical facilities	Dams
<b>Columbia</b>	Stream crossings	Stormwater infrastructure	Limited egress for specific subdivision
<b>Coventry</b>	Harmful algal blooms in Coventry Lake	Tree management	Stream crossings and stormwater management
<b>East Granby</b>	Generators for critical facilities	“Wind corridor”	Stream crossings
<b>East Hartford</b>	Shelter capacity	Hockanum River flooding	Generators for critical facilities
<b>East Windsor</b>	Generators for critical facilities	Stream crossings	Agricultural fields (tobacco)
<b>Ellington</b>	Stream crossings	Generators for critical facilities	Limited egress for specific neighborhood
<b>Enfield</b>	Stream crossings	Agriculture	Historic resources
<b>Farmington</b>	Riverbank stabilization	Stream crossings	Backup Emergency Operations Center
<b>Glastonbury</b>	Stream crossings	Assisted living and low-income populations	Uranium in wells
<b>Granby</b>	Riverbank stabilization	Power outages from storms	Tree management
<b>Hartford</b>	Stormwater flooding	Flood management systems already in place	Shelter management challenges
<b>Hebron</b>	Water quality	Private wells	Sewer system
<b>Manchester</b>	Stream crossings	Stormwater infrastructure	Tree management

# WHAT DO WE HEAR FROM THE TOWNS?

## *“WHAT ARE YOUR CLIMATE-RELATED CONCERNS?” (CRCOG)*

CRCOG Town	Climate Concern #1	Climate Concern #2	Climate Concern #3
<b>Mansfield</b>	Power outages from storms	Road flooding/washouts	Public water and sewer systems
<b>Marlborough</b>	Stream crossings	Tree management	Vulnerable populations (elderly)
<b>New Britain</b>	Stormwater Management	Riverbank stabilization	Reservoir levels during droughts
<b>Newington</b>	Stream crossings over railroad	Stormwater infrastructure	Hotels that people are living in
<b>Plainville</b>	Power outages from storms	Unpredictable intense short-duration storms	WWTP
<b>Rocky Hill</b>	Shelter capacity	Vulnerable populations (assisted living, elderly)	Road elevation (Beach Rd)
<b>Simsbury</b>	Riverbank stabilization	Stream crossings	Stormwater infrastructure
<b>Somers</b>	Power outages from storms	Stream crossings	Tree management
<b>South Windsor</b>	Stream crossings	Power outages from storms	Generators for critical facilities
<b>Southington</b>	Flash flooding of roads	Properties in Quinnipiac River flood zones	Hotels without backup power
<b>Stafford</b>	Stream crossings	Generators for critical facilities, elderly housing	Fire station in floodplain
<b>Suffield</b>	Limited egress for specific neighborhood	Power outages from storms	Sewer system
<b>Tolland</b>	Unpaved roads	Stream crossings	Geographically-influenced winter weather
<b>Vernon</b>	Stormwater management	Generators for critical facilities	Sewer system
<b>West Hartford</b>	Stream crossings	Power outages from severe storms	Winter storms
<b>Wethersfield</b>	Stream crossings and stormwater management	Generators for critical facilities	Hotels that people are living in
<b>Willington</b>	Stream crossings	Generators for critical facilities	Treetop debris on ground
<b>Windsor</b>	Erodible soils with increasing precipitation		
<b>Windsor Locks</b>	Stream crossings and stormwater management	Many critical regional assets and infrastructure	Hotels that people are living in

# WHAT'S NEW WITH FEMA?

## *Accurate Accounting of Lifelines and Critical Facilities*

- FEMA grant applications ask the question “Which Lifelines will Benefit?”
- This include water systems



A lifeline enables the continuous operation of **critical government** and **business functions** and is essential to **human health** and **safety** or **economic security**.



# WHAT'S NEW WITH FEMA?

## ***FEMA Policy Guidance for Hazard Mitigation Plans***

- *The plan must provide documentation of an opportunity for stakeholders to be involved in the planning process. Documentation of this opportunity must identify how each of the following types of stakeholders were presented with this opportunity, as applicable.... include private utilities or major employers that sustain community lifelines.*



## **Local Mitigation Planning Policy Guide**

FP 206-21-0002

Released April 19, 2022, Effective April 19, 2023

OMB Collection #1660-0062



**FEMA**

# WHAT'S NEW WITH FEMA?

## *FEMA Grants Have Benefited Utilities*

- GHNWPCA – pumping station floodproofing in East Haven; **this necessitated that East Haven list pumping stations in the hazard mitigation plan**
- Deerfield, MA – riverbank stabilization to protect sewer
- Buckland, MA – stream crossing culvert replacement to protect sewer exposed beneath



## *Windham Water Works Resiliency*

- FEMA BRIC Scoping Grant for \$100,000
- Will evaluate resiliency facets of various needs such as:
  - ✓ Willimantic Reservoir dam
  - ✓ Sediment in the impoundment
  - ✓ Intake replacement
  - ✓ Energy needs of the WTP



# WHAT'S NEW WITH FEMA?

## *August 2023 Grant Announcements*

- Hillsborough, CA: new earthquake and fire-resistant **pipeline** will provide drinking water to three communities
- Colorado: Gold Hill Pipeline **connects treatment plants and enhances resilience** of the water systems
- Dunn, NC: Protect infrastructure and water supply with a **new raw water pipeline and pump station** project
- Medford, OR: Improve water system infrastructure and protect against risks of earthquakes and wildfire
- Oregon: Grants Pass WTP; **relocate water treatment plant** out of 500-year floodplain
- Mapleton, OR: acquire 396,000-gallon **water storage tank** to protect against flooding and improve water supply
- Walworth County, SD: upgrade **raw water intake system** for drought relief
- Richmond, VA: Feeder Channel **retaining wall to protect water treatment and distribution systems**
- Massachusetts: Emergency **interconnection pumping station** to improve resilience in three communities
- Nevada: Hobart Creek Reservoir **dam upgrades** to protect the water supply
- New Jersey Water Supply Authority: Dam **foundation grouting project** to protect water supply, downstream communities, and habitats
- **Generators** in Missouri, North Carolina, and Texas!



# WHAT'S NEW WITH FEMA?

## *Dams*

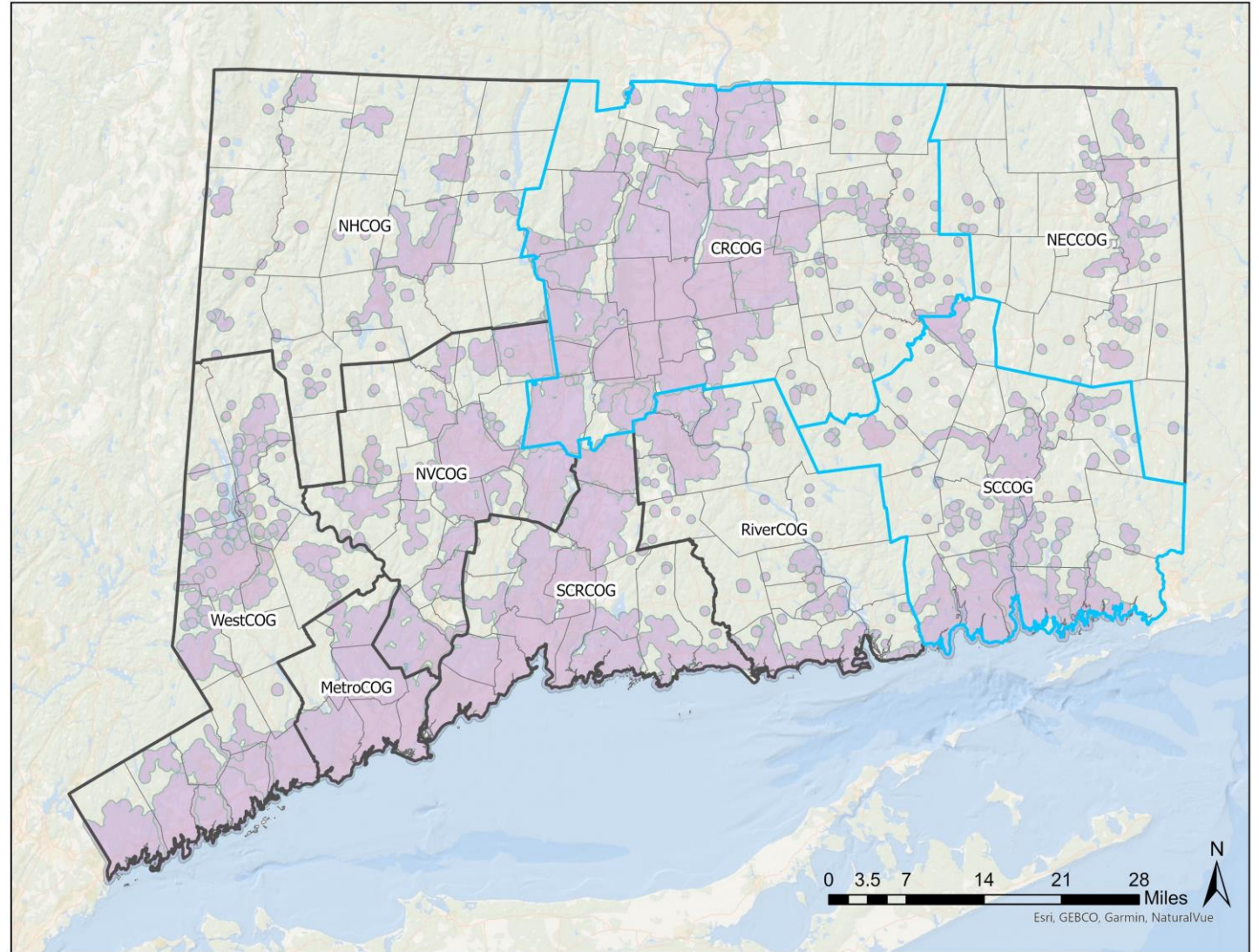
- The Rehabilitation of High Hazard Potential Dam (HHPD) Program allows municipalities to apply for FEMA funds to upgrade high hazard dams owned by others
- In Connecticut, we call these Class B and C dam
- To be eligible, the hazard mitigation plan must include dam owners in the planning process

### Other Subrecipient Eligibility Considerations

Subrecipient Group	Is It Eligible?
Lake associations or homeowner associations	The association must be classified as an eligible nonprofit organization (501c3). Please review the information from <a href="https://www.irs.gov">IRS.gov</a> and in the <a href="https://www.grants.gov">Grants.gov NOFO</a> for requirements.
Private dam owners (not owned by a nonprofit organization)	<p>A private dam owner cannot be a subrecipient of the grant.</p> <p>Eligible applicants of the grant must be a state or territory with an enacted dam safety program, the SAA, or an equivalent state agency. The SAA is responsible for submitting an application and administering the grant as a passthrough. They will receive the grant based on the statutory formula and be responsible for making subawards to subrecipients. The subrecipient must be a non-federal governmental organization. This could be a state office or a local governmental entity that is applying as a subrecipient.</p>
A city's municipal dam	If a city has a municipal dam that needs to be rehabilitated, they can apply to the state to receive the grant as a sub-recipient. There could also be a city that has a private dam that poses unacceptable risk, and the city may want to be the subrecipient that would work directly with the state to execute a subaward the rehabilitation of that dam. The jurisdiction must have a FEMA-approved mitigation plan that includes all dam risks.

# SHOPPING FROM HAZARD MITIGATION PLANS

- All municipalities are part of COG-based multi-jurisdiction plans
- SCCOG and CRCOG are covered with new “hazard mitigation **and** climate adaptation plans” that were developed in parallel with CIRCA’s *Resilient Connecticut* and deployment of the DEEP Climate Resilience Fund





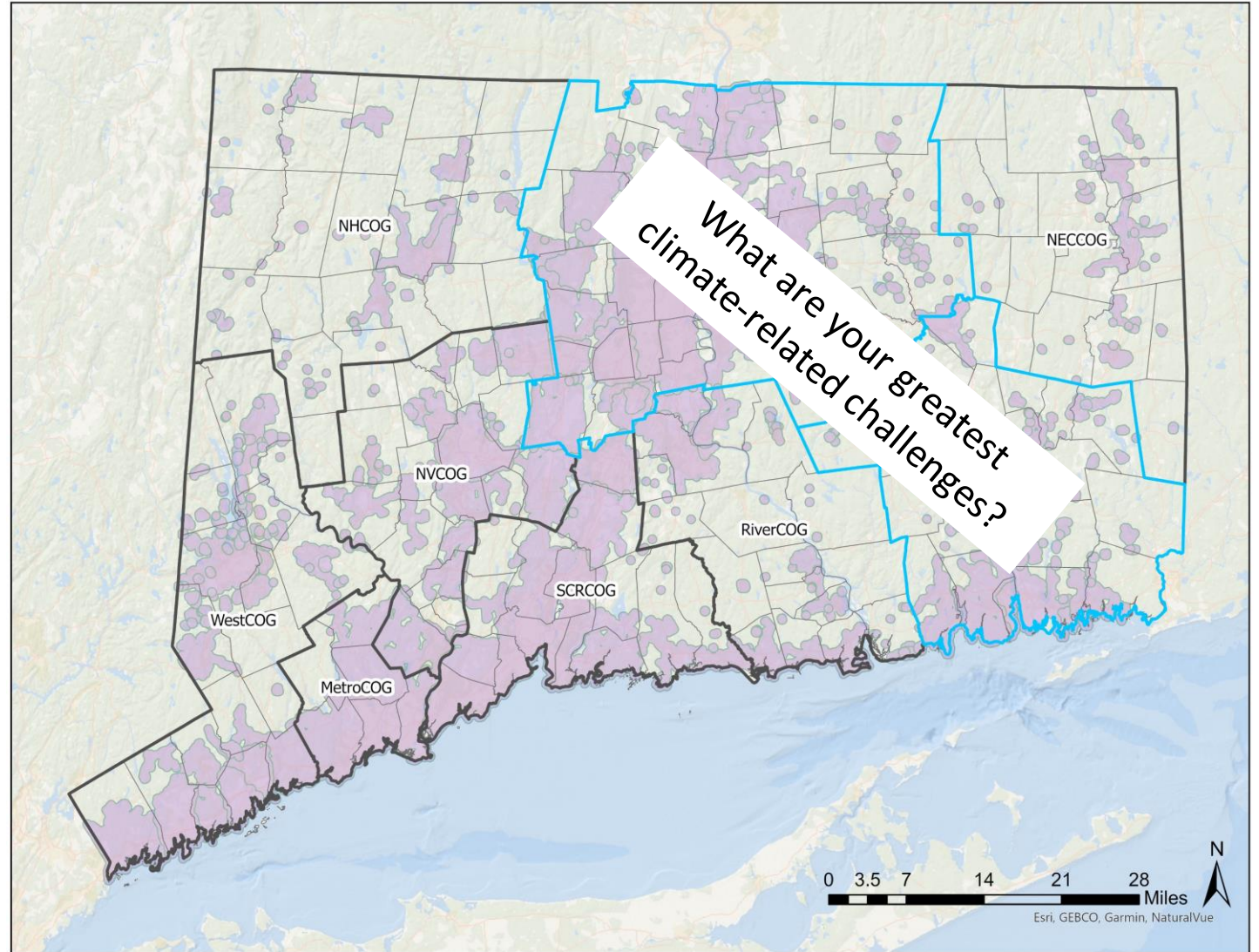
# SHOPPING FROM HAZARD MITIGATION PLANS

- The question changed from:

What would you do with unlimited hazard mitigation funds?

*to*

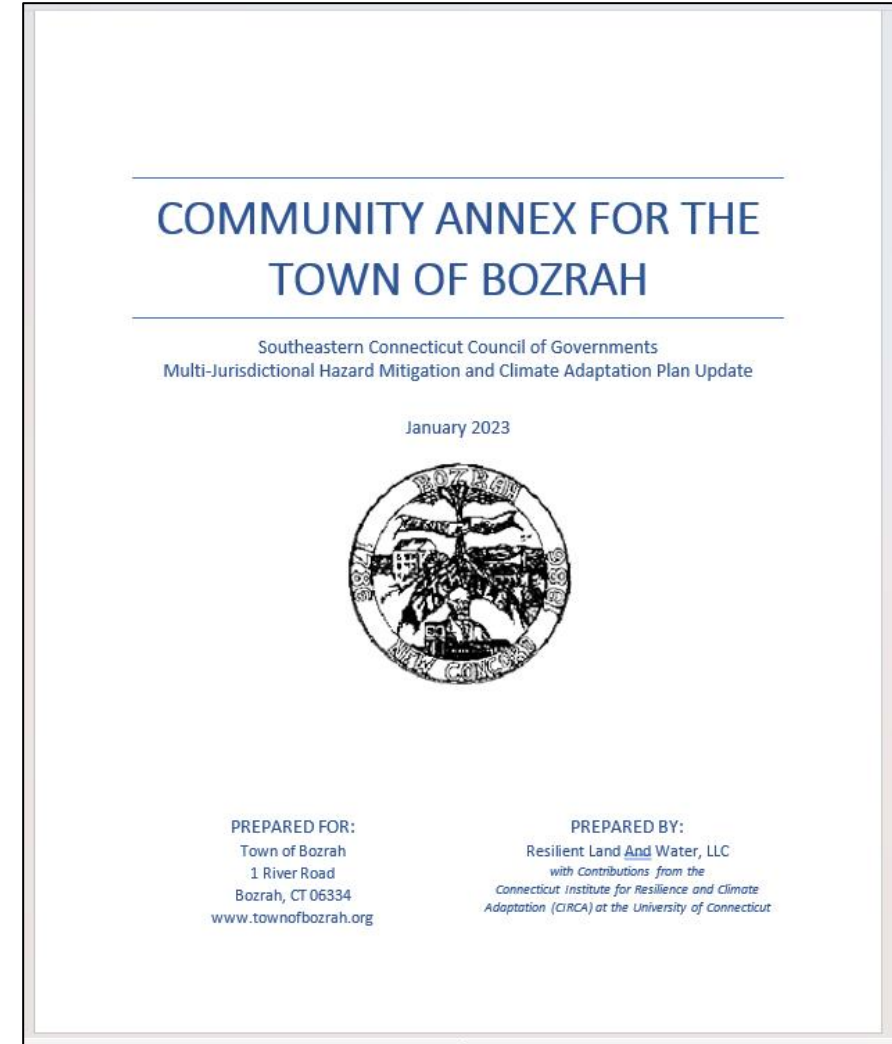
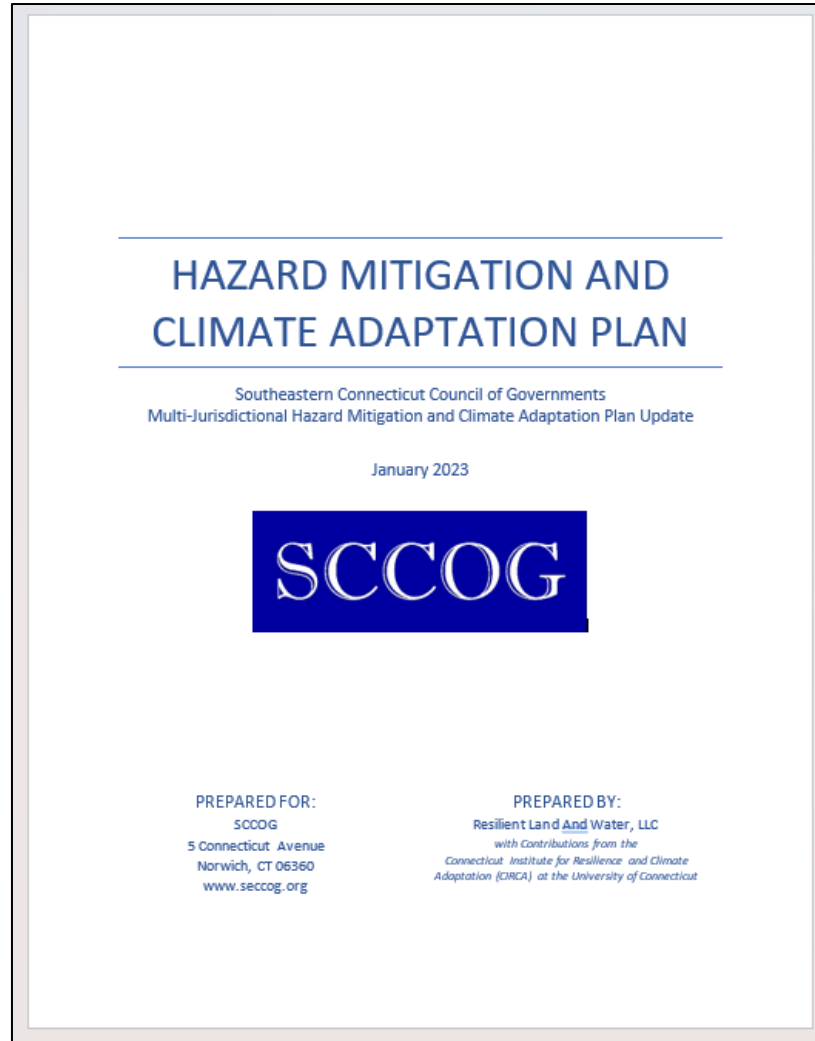
What are your greatest climate-related challenges to address?





# SHOPPING FROM HAZARD MITIGATION PLANS

- The first combined hazard mitigation and climate adaptation plan in the state





# SHOPPING FROM HAZARD MITIGATION PLANS

- New summary sheets can provide ideas

Climate Change Summary Sheet for Town of Bozrah

<b>What are the Town's Top Climate Change Concerns?</b>	<p><b>Flooding:</b> The Yantic River flows through the town and poses risk to Stockhouse Road. Trading Cove Brook in the southeastern corner of the town is also a concern. The Town is concerned with dam conditions throughout Bozrah.</p> <p><b>Extreme Heat:</b> The Town has increasing concerns about the effects of extreme heat events on chicken and other agricultural and livestock operations. Avian flu and other health-related cascading impacts of extreme heat events.</p> <p><b>Others:</b> The Town wishes to address remaining needs related to critical facilities that are needed to help address impacts of climate change.</p>
<b>Which Hazard Mitigation and Climate Adaptation Actions Will Address Climate Change Concerns?</b>	<p><b>Flooding:</b> Partner with CT DEEP's Dam Safety team to deliver a unified message to dam owners that inspections and risk communication are necessary. Target year 1 for working with DEEP and year 2 for the messaging to dam owners.</p> <p><b>Extreme Heat:</b> Partner with chicken farms and other facilities to develop reliable, drought-resilience water supplies and standby power that is capable of operating cooling equipment.</p> <p><b>Others:</b> Pursue American Red Cross certification to make Fields Memorial School the primary shelter and a cooling center, and additional certifications for the back-up shelters which include both Bozrah Moose Lodge 950 (alternate shelter) and the Volunteer Fire Company.</p>

Climate Change Summary Sheet for Town of Windham

<b>What are the Town's Top Climate Change Concerns?</b>	<p><b>Flooding:</b> The wastewater treatment plant (WWTP) and a sewer pumping station are at risk of future riverine flooding which is projected to continue or worsen even with an upstream flood control dam in place.</p> <p><b>Extreme Heat:</b> The Town has a large socially vulnerable population that cannot be without access to viable cooling centers. The Town Hall and Senior Center, which are cooling centers, need standby power such as generators.</p> <p><b>Others:</b> The Town's water utility, Windham Water Works, has a complex set of climate change challenges related to sedimentation, water quality, the reservoir dam, and power redundancies.</p>
<b>Which Hazard Mitigation and Climate Adaptation Actions Will Address Climate Change Concerns?</b>	<p><b>Flooding:</b> Compare elevations of WWTP assets and the pumping station to the base flood elevations associated with the Natchaug River and Willimantic River plus applicable freeboard (likely two feet); and determine if funds should be set aside for resiliency projects.</p> <p><b>Extreme Heat:</b> Acquire generators for the Town Hall and the Community Center/Rec Center/Senior Center. Ensure that cooling centers are accessible using transit or alternate transportation options.</p> <p><b>Others:</b> Execute the FEMA BRIC Scoping Grant for Windham Water Works and determine appropriate next steps for climate resiliency strategies, whether related to sediment removal, dam and intake modifications, or other needs.</p>



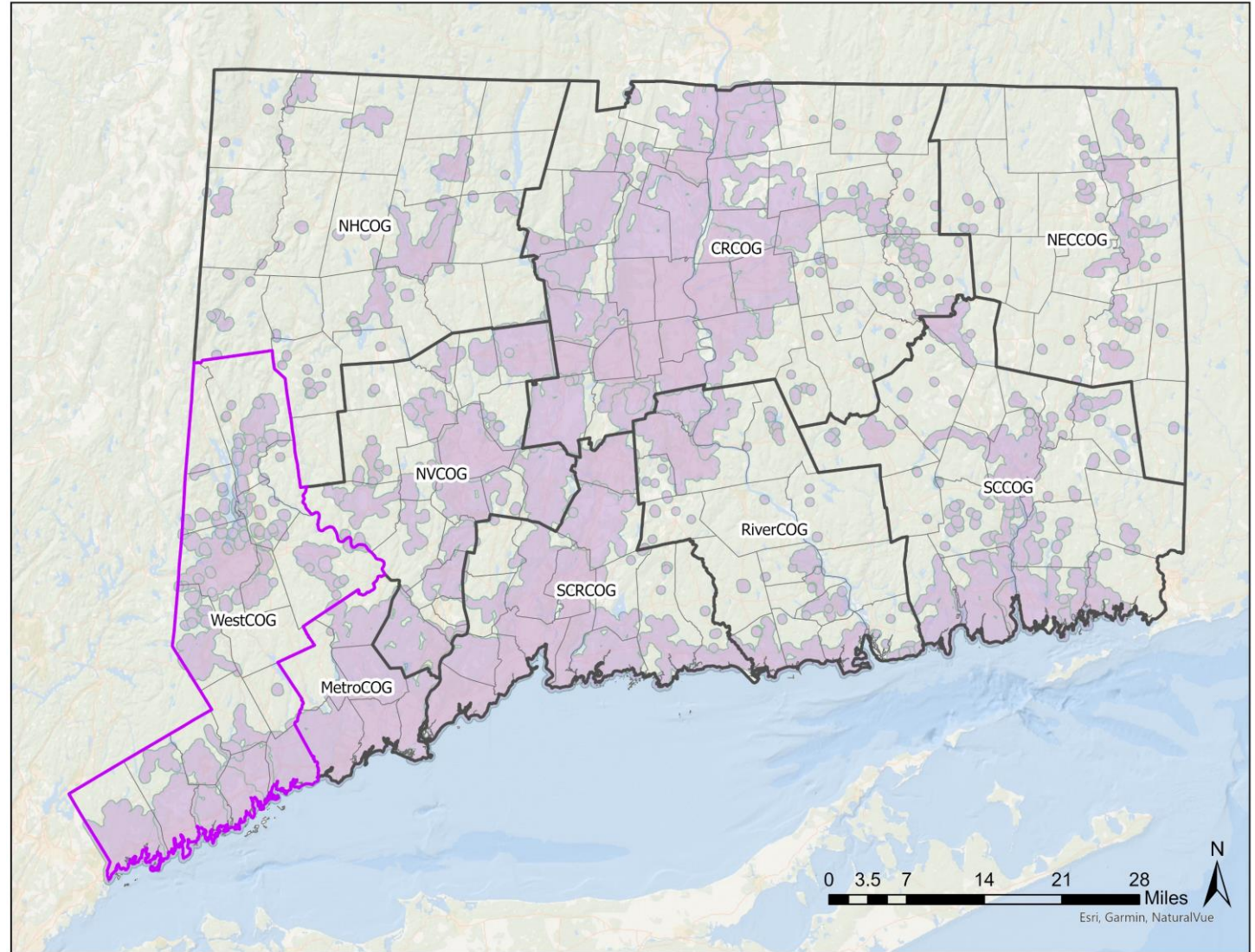
# SHOPPING FROM HAZARD MITIGATION PLANS

- Funding sources listed

Acronym or Name	Description
CIRCA MRG	Connecticut Institute for Resilience and Climate Adaptation (CIRCA) Municipal Resilience Grant
CWSRF	Clean Water State Revolving Fund
DEEP Climate Resilience Fund	DEEP Climate Resilience Fund - new for 2022-2023; anticipated for 2023-2024
DWSRF	Drinking Water State Revolving Fund
EPA 319	Environmental Protection Agency (EPA) grants through Section 319 water quality programs
HHMP	Rehabilitation Of High Hazard Potential Dam Grant Program
HMA	Hazard Mitigation Assistance
BRIC	Building Resilient Infrastructure and Communities
FMA	Flood Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
IJA	Infrastructure Investment and Jobs Act
AOP	National Culvert Removal, Replacement, and Restoration Grants (Culvert AOP Program)
BIP	Bridge Investment Program
BBFP	Buses and Bus Facilities Program
RFPBR	Restoring Fish Passage through Barrier Removal Grants - may have been 2022 only
SLCGP	State and Local Cybersecurity Grant Program
LISFF	Long Island Sound Futures Fund
LOTICIP	Local Transportation Capital Improvement Program
Municipal CIP Budget	Municipal Capital Improvement Program or equivalent local program
Municipal Operating Budget	Staff time or operational budgets
NOAA/NFWF	National Oceanic and Atmospheric Administration (NOAA) grants administered by the National Fish and Wildlife Foundation
NPU	Norwich Public Utilities
Save the Sound	Save the Sound is a resource for partnering to seek grant funds; Save the Sound also has some funding available
seCTer	Southeastern Connecticut Enterprise Region
SHPO	State Historic Preservation Office
STEAP	Small Town Economic Assistance Program
Transit District	The local transit district (this can vary from community to community, such as Southeast or Windham Region)
USDA/NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
WWW	Windham Water Works

# FEMA HAZARD MITIGATION ASSISTANCE (HMA)

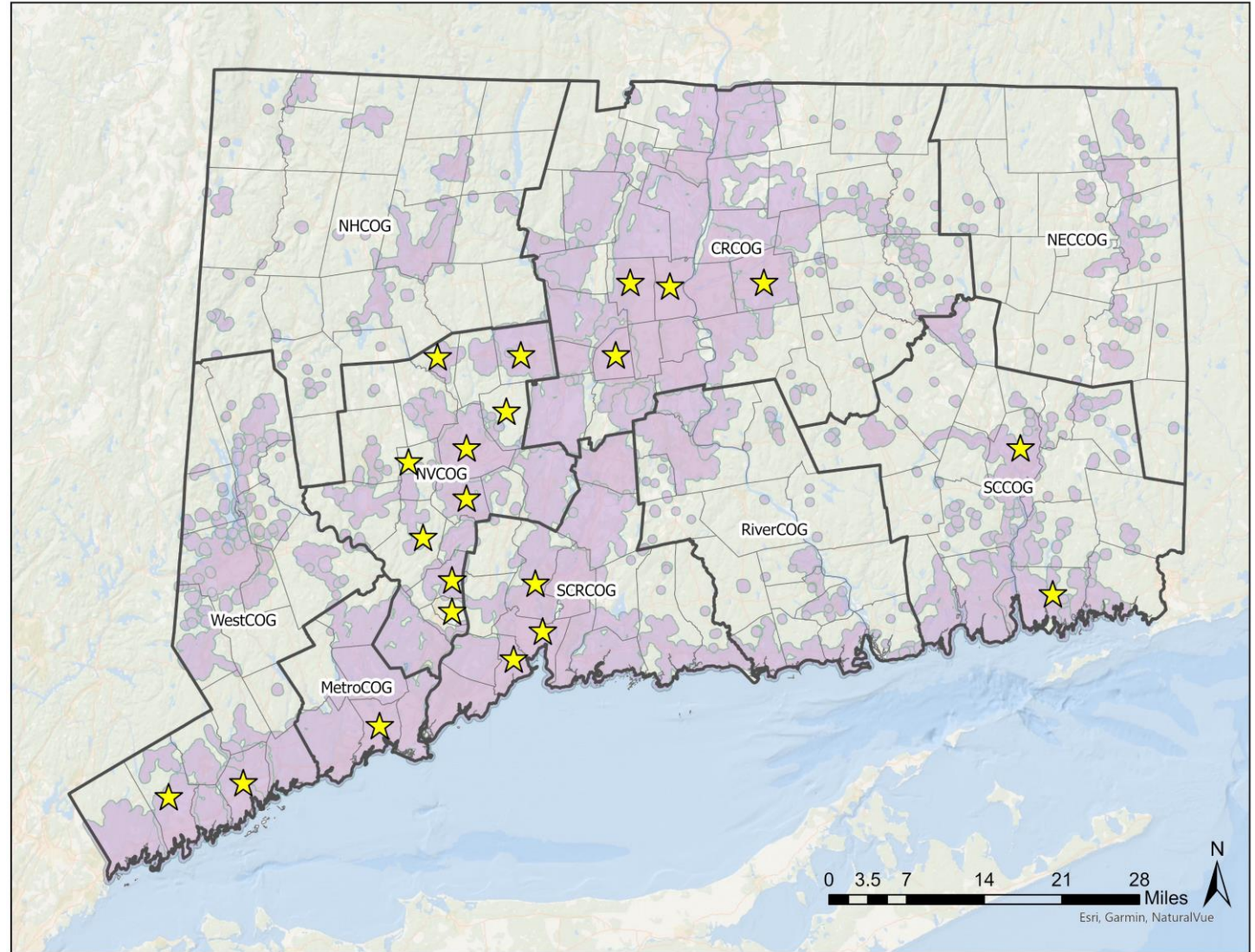
- FEMA HMA grants opened last week
- Applications are due to CT DEMHS on 1/9/2024
- All municipalities with active hazard mitigation plans are eligible
- WestCOG has a grant development program that is accepting requests **now**





# DEEP CLIMATE RESILIENCE FUND (DCRF)

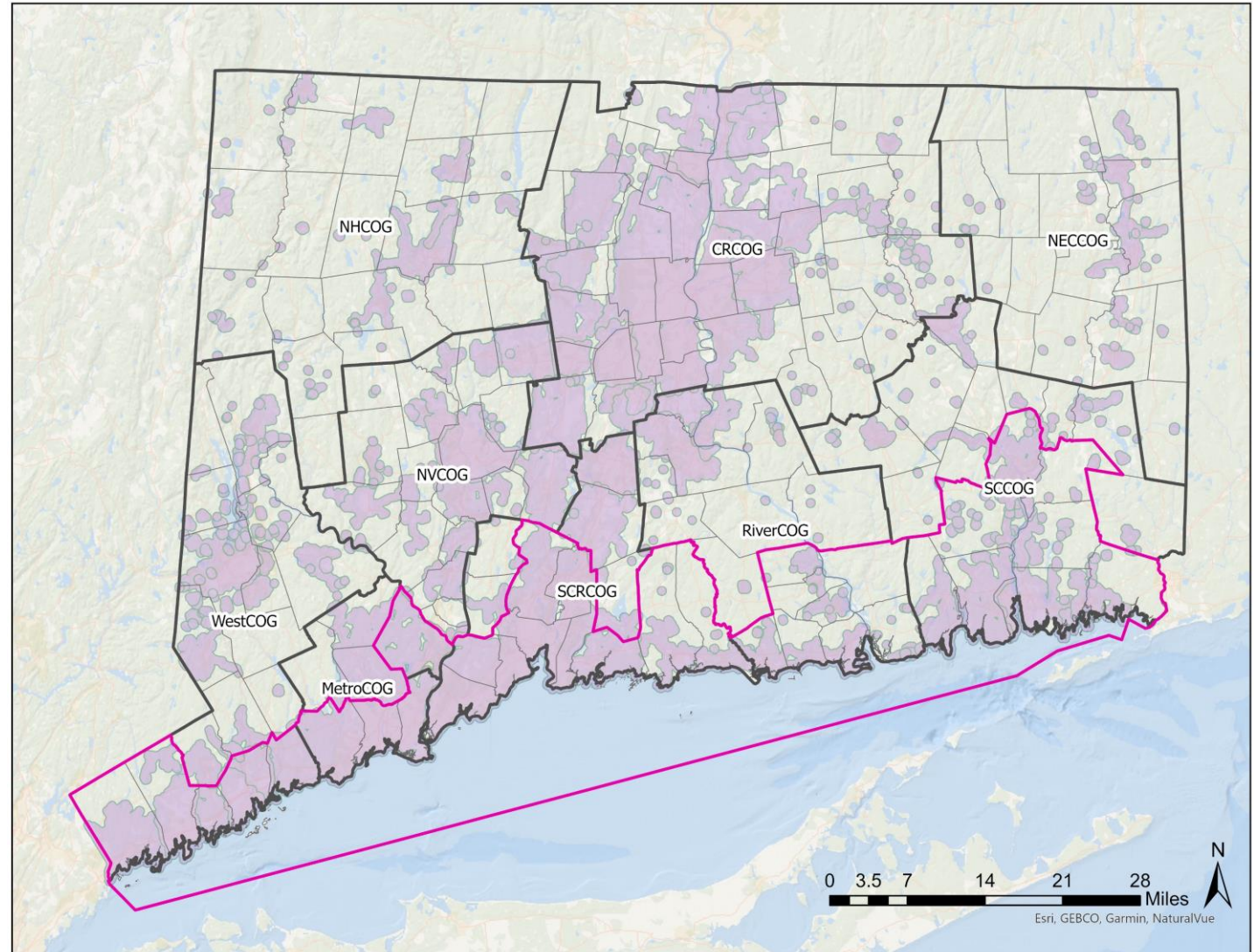
- Most of the recipients of the first cycle of grants were larger towns with EJ populations
- Smaller towns did well where they were bundled into a COG-based project
- We anticipate that a new grant cycle will open in 2024





# LONG ISLAND SOUND-RELATED GRANTS

- CT Sea Grant has two resilient community programs:
  - Track 1 (new) allows towns to submit letters of interest for climate vulnerability and adaptation plans and project development
  - Track 2 (already in place since 2022) lets towns choose a vendor to write a grant application for *existing* grant programs which are on the next page....



# LONG ISLAND SOUND-RELATED GRANTS

## Current/Upcoming Grant Opportunity List October 2023

### National/Regional Funding Opportunities

- Atlantic Coastal Fish Habitat Partnership **OPEN**
- Harry Chapin Foundation **OPEN**
- NOAA FY24 Marine Debris Interception Technologies under the Bipartisan Infrastructure Law **OPEN**
- NOAA FY24 Marine Debris Removal under the Bipartisan Infrastructure Law **OPEN**
- NOAA 2023 Inflation Reduction Act Climate Ready Workforce for Coastal States, Tribes, and Territories Competition **OPEN**
- NOAA 2024 Effects of Sea Level Rise Program **OPEN**
- NOAA Coastal Habitat Restoration and Resilience Grants for Tribes and Underserved Communities **OPEN**
- NOAA NERRS Habitat Protection and Restoration Bipartisan Infrastructure Law (BIL) Competition **OPEN**
- NOAA Restoring Fish Passage through Barrier Removal **OPEN**
- NOAA Restoring Tribal Priority Fish Passage through Barrier Removal **OPEN**
- NOAA Transformational Habitat Restoration and Coastal Resilience Grants **OPEN**
- National Sea Grant Bipartisan Infrastructure Law Marine Debris Challenge Competition **OPEN**
- RAE Long Island Sound Community Impact Fund **OPEN**
- USACE Pilot Program for Water Resources Projects for Small or Disadvantaged Communities **OPEN**
- USDA Natural Resource Conservation Service (NRCS) Programs **OPEN**
- USDA Water Grants and Loans Available to Water and Wastewater Utilities **OPEN**
- USEPA Water Infrastructure Finance and Innovation Act **OPEN**
- USEPA Water Technical Assistance **OPEN**
- USFWS National Fish Passage Funds **OPEN**
- USFWS North American Wetlands Conservation Act (NAWCA) Grants: US Small **OPEN**

# LONG ISLAND SOUND-RELATED GRANTS

## Current/Upcoming Grant Opportunity List October 2023

### National/Regional Funding Opportunities

Atlantic Coastal Fish Habitat Partnership **OPEN**

Harry Chapin Foundation **OPEN**

NOAA FY24 Marine Debris Interception

NOAA FY24 Marine Debris Removal and

NOAA 2023 Inflation Reduction Act Climate  
Competition **OPEN**

NOAA 2024 Effects of Sea Level Rise Pro

NOAA Coastal Habitat Restoration and

NOAA NERRS Habitat Protection and Re

NOAA Restoring Fish Passage through B

NOAA Restoring Tribal Priority Fish Pass

NOAA Transformational Habitat Restora

National Sea Grant Bipartisan Infrastruc

RAE Long Island Sound Community Imp

USACE Pilot Program for Water Resourc

USDA Natural Resource Conservation Service (NRCS) Programs **OPEN**

USDA Water Grants and Loans Available to Water and Wastewater Utilities **OPEN**

USEPA Water Infrastructure Finance and Innovation Act **OPEN**

USEPA Water Technical Assistance **OPEN**

USFWS National Fish Passage Funds **OPEN**

USFWS North American Wetlands Conservation Act (NAWCA) Grants: US Small **OPEN**

### Connecticut-specific Funding Opportunities

CT DECD Urban Act Grant Program **OPEN**

CT DEEP Community Forestry Small Grants Program *Upcoming*

CT DEEP State Energy Program **OPEN**

CT DEEP Urban and Community Forestry Planning Grant **OPEN**

CT DEEP Urban Forest Equity Grant *Upcoming*

CT DEEP Urban Forest Resilience Grant Program *Upcoming*

CT DEEP Urban Forested Natural Areas and Riparian Corridor Restoration Grant *Upcoming*

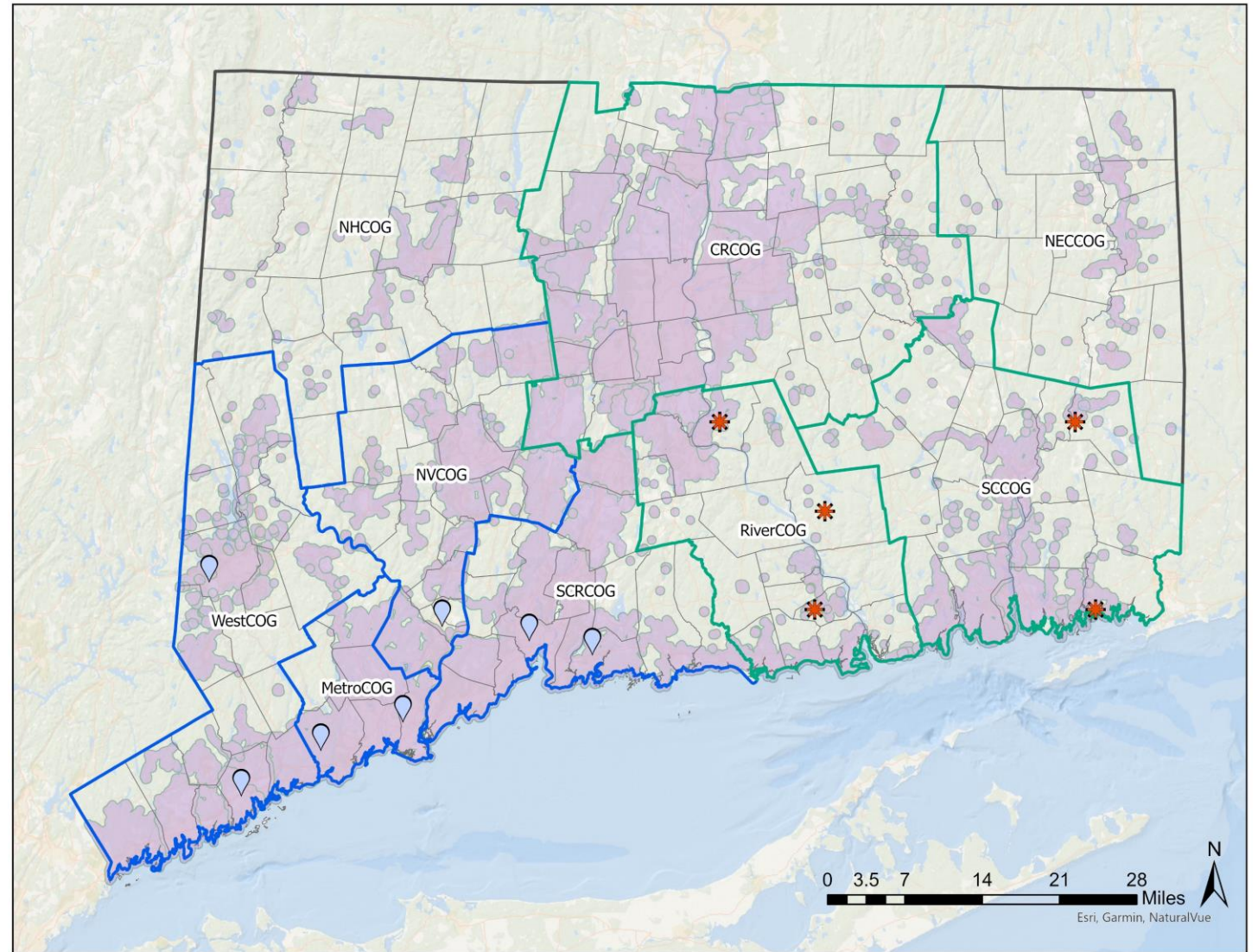
Sustainable CT Community Match Fund **OPEN**

Returning soon, everyone's favorite –  
the Long Island Sound Futures Fund  
which can be used for many things



# CIRCA'S RESILIENT CONNECTICUT

- Completed studies and concept designs:
  - Danbury, Norwalk, Fairfield, Stratford, Ansonia, New Haven, and Branford
- Studies and concept designs to begin this winter:
  - Portland: flooding of cooling center and PD
  - East Haddam: flooding of Goodspeed facilities and WWTP
  - Jewett City: flooding of housing and sewer P.S.
  - Mystic: numerous challenges



# PROTECT GRANTS (EXPECTED 2024)

- “Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation Program” (PROTECT)
  1. Planning grant phase
  2. Project grant phases
- COGs applied in teams:
  - WestCOG, MetroCOG, and SCRCOG
  - NVCOG, NHCOG, and CRCOG
- Road elevations and stream crossings!
  - Utilities in/on/along roads will need to participate
- Stay tuned for more on this

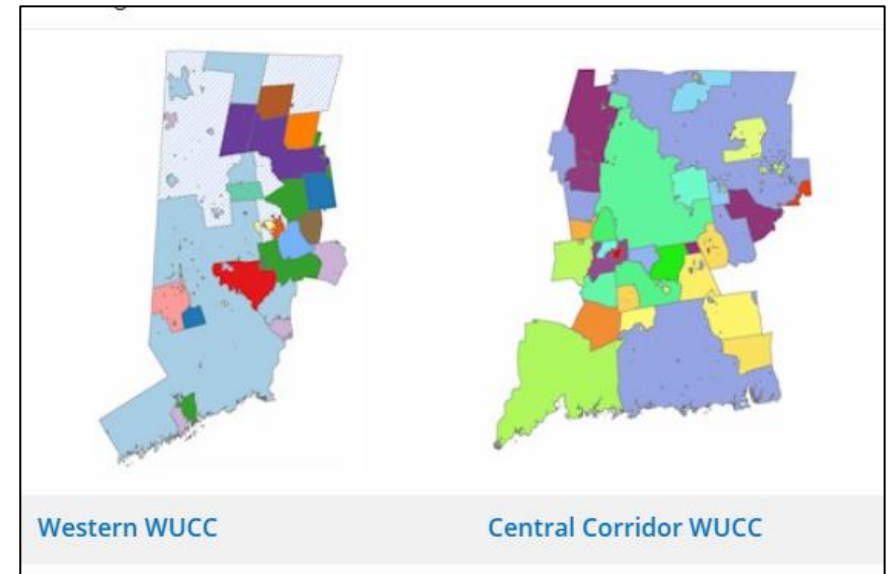
# WHAT ABOUT CLIMATE ACTION?

- **Develop actionable plans to reduce climate pollution (carbon emissions)**
- EPA has awarded grants to the MPOs in CT, which are managed by the COGs
  - WestCOG, MetroCOG, and NVCOG
  - SCRCOG
  - CRCOG and RiverCOG
- EPA guidance requires engagement with “environmental protection, energy, utilities, transportation, housing, waste management, and land use planning”
- But the first draft is due spring 2024 and the COGs have not started



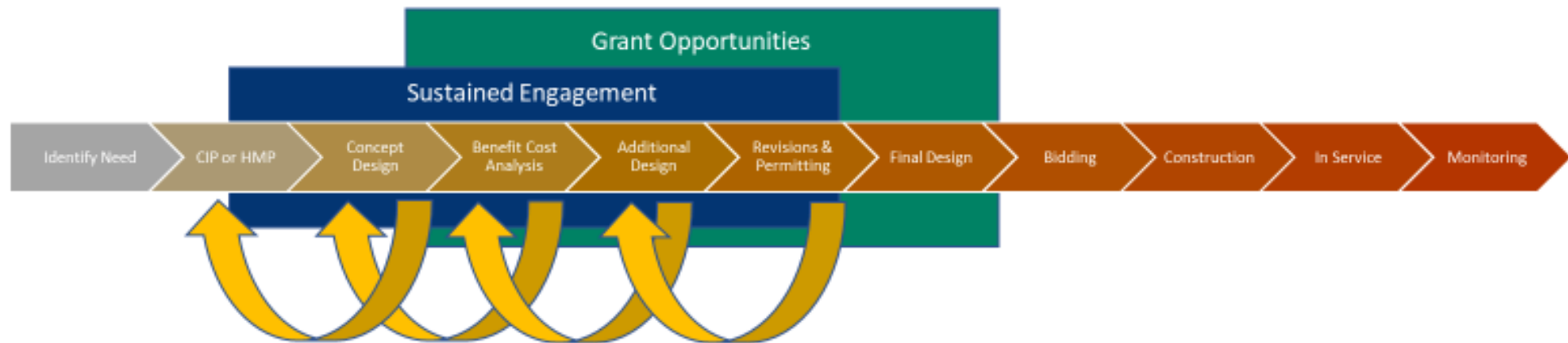
# WHAT ABOUT CLIMATE ACTION?

- Reaching each sector with one-stop shopping will be needed due to the very compressed timeframes
- Examples:
  - Water utilities – convene the West and Central WUCCs and invite all water utilities
  - Water resource stakeholders – convene the Water Planning Council and its work groups
  - Electrical utilities – put Eversource, Avangrid, SNEW, and Wallingford in the same room



# PUTTING IT ALL TOGETHER

- **What should go onto the project pipeline?**
  - Your sources of supply
  - Your infrastructure
  - Your standby power
  - The critical facilities that you serve
- **How should it get there?**
  - Partner with the Towns where your sources are located
  - Partner with the Towns that you serve
  - Partner with the State (DOT, DEMHS, etc.)
  - Partner with eligible applicants (TNC, Save the Sound, etc.)
  - Dream big



*Taking a step backward is possible and often will occur, in practice, along a project pipeline*

# ACKNOWLEDGMENTS



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# QUESTIONS



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