REGIONAL CLIMATE ACTION PRIORITIES WORKSHOP

Day 1, Climate Adaptation and Resilience November 28, 2023





Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility chieving Increased Mobility vb Achieving Increased Mobility vb Ac



Goals for the day

- Understand context for building resilience in Northeast Ohio
 - Shared regional vision for the future
 - NOACA's regional Climate Risk and Vulnerability Assessment (CRVA)
 - Public engagement
 - Funding opportunities

Prioritize adaptation actions for the region



Agenda

Morning Session	
9:00 – 9:20 AM	Welcome
9:20 – 10:15 AM	Regional visioning warm-up activity
10:15 – 10:25 AM	Break
10:25 AM – 12:30 PM	Introduction to adaptation and NOACA's regional CRVA; small group discussions of CRVA results
12:30 – 1:00 PM	Lunch Break
Afternoon Session	
1:00 – 1:40 PM	Presentation on adaptation funding, goals, and actions
1:40 – 3:55 PM	Ranking regional adaptation actions activity (includes a 10-minute break)
3:55 – 4:15 PM	Participant commitments and workshop close-out

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What Is Visioning?

Helps communities define the resilient future they want

- What does the "ideal" future in this region look like?
- What do we value?

Touches on many community elements





Why Create a Vision?

- Helps us set common goals
- Inspires hope
- Generates creative thinking





Divide into groups of four.

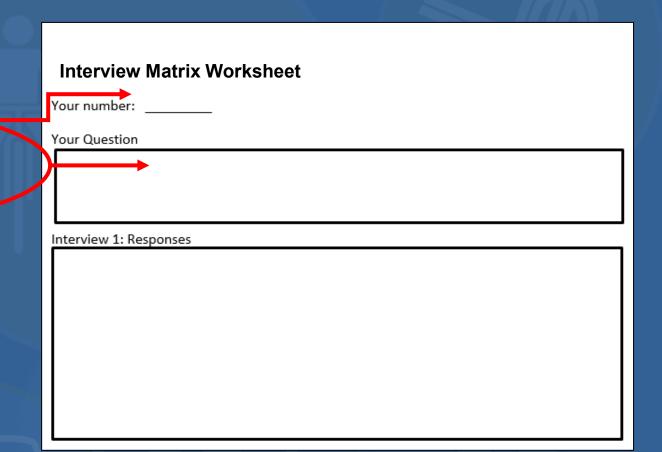
Each person will be assigned a number from 1 - 4 that corresponds with a numbered question

You're an interviewer – ask your question to the other three members of your group

- 1. What do you hope will be true about Northeast Ohio and surrounding areas in the future?
- 2. What about our region as it is today do you want to see preserved?
- 3. What about our region do you want to see improved, enhanced, or even created if it doesn't exist now?
- 4. Which stakeholders (national, state, regional, or local) do you think need to be in the room to advance resilience in Northeast Ohio?



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Interviewer _____ Interviewee

ROUND 1: 1-2, 3-4

ROUND 2: 2-3, 4-1

ROUND 3: 2-4, 3-1

ROUND 4: 3-2, 1-4

ROUND 5: 4-2, 1-3

ROUND 6: 2-1, 4-3



ROUND 1: 1-2, 3-4 2-3, 4-1 ROUND 2: 2-4, 3-1 ROUND 3: 3-2, 1-4 ROUND 4: 4-2, 1-3 ROUND 5: 2-1, 4-3 ROUND 6:



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What did you hear?

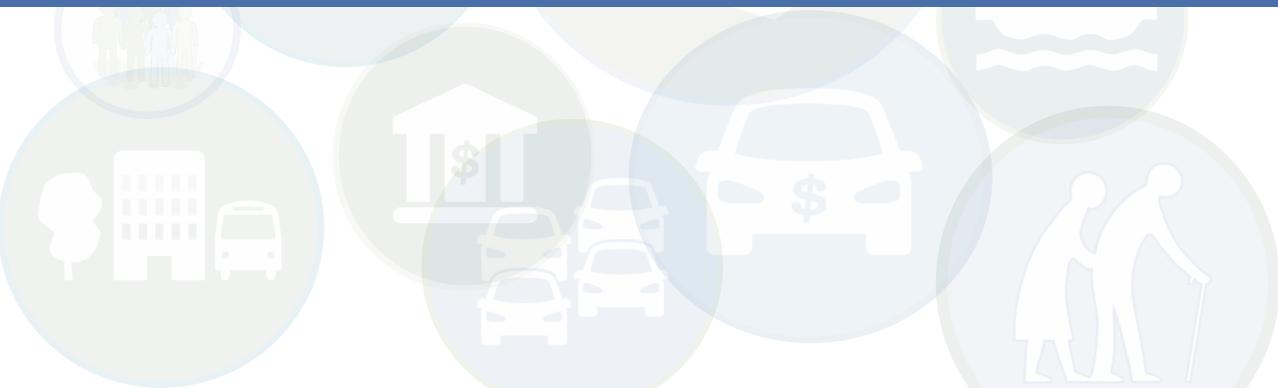
- All number 1's come together, all 2's come together, 3's and 4's.
- On flip charts identify:
 - Common themes
 - Outliers
 - Your own perspectives
- Facilitator presents key results/findings



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Climate Change Is a "Today" Problem

Climate change made Quebec's 2023 fire season 50% more intense



What it currently looks like vs. what it should look like. The wildfire smoke is so thick today. Smell is starting to make its way inside our apartment. #Cleveland #wildfires #CanadianWildfires



8:31 AM · Jun 28, 2023 · 2,319 Views



Source: <u>Barnes et al</u>; <u>NASA's Earth Observatory</u> Photos: Joe Romanish, X social media platform user

Current hazards are getting worse

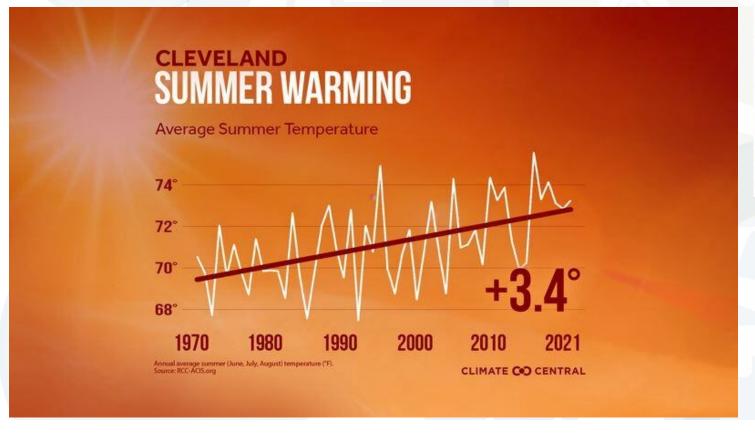


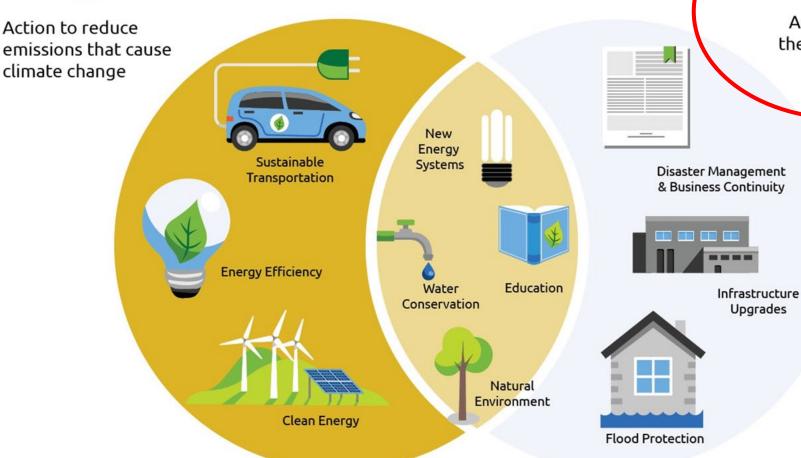


Image: 2003 Flooding in Gloria Glens - Source: Medina County EMA (All Hazard & Flood Mitigation Plan 2019 Medina County, OH)

2017-2022: The 5 most expensive hazard events (flooding, thunderstorms, wind) alone caused the region almost \$42 million in damage

Protecting Our Communities

Mitigation





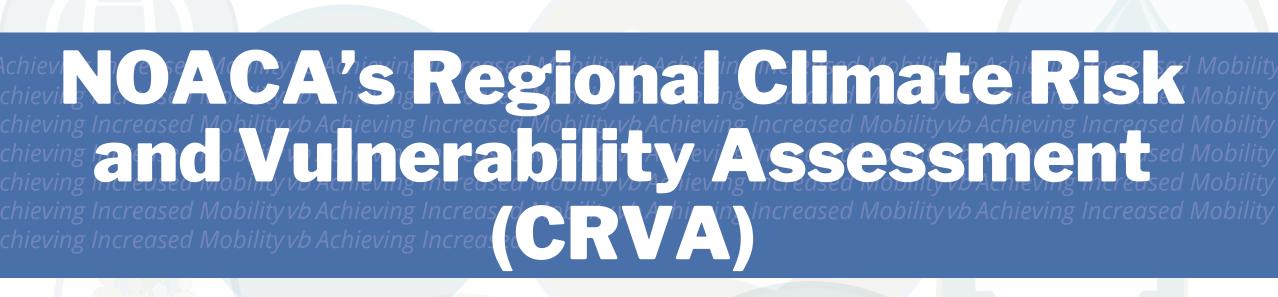
Action to manage the risks of climate change impacts



Adaptation vs Resilience

- The two terms are often used interchangeably
 - Adaptation: action to manage the risks caused by climate change
 - Resilience: often goes beyond climate a "resilient community" is one that is strong in many ways







What is a Climate Risk and Vulnerability Assessment (CRVA)?

An assessment of the ways in which a community or region is susceptible to the impacts of climate change



How was NOACA's CRVA developed?

- NOACA-convened CRVA Working Group set the key parameters and direction of the CRVA
 - Team of stakeholders from the five counties with wide-ranging expertise in policy, infrastructure, health, emergency management, and conservation



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Insights on the region's vulnerabilities to climate change



Best available research on current and future climate in the 5 counties



Public engagement across the 5 counties



Focal Hazards

Chosen by the CRVA Working Group after review of data

- Changing seasonal conditions
- Extreme heat
 - Drought
 - Severe winter weather
- Heavy precipitation and flooding
- Severe summer storms (thunderstorms, tornadoes, wind)
 - Impacts of climate change on Lake Erie

Community Systems

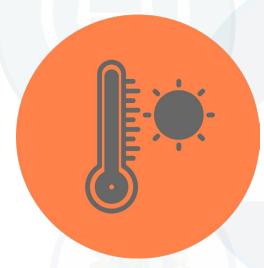
Foundational systems that keep our communities running & provide specific services







Hazard-System Pairings



Extreme Heat

- Health & wellness
- Energy systems
- Water & wastewater



- Water & wastewater
- Transportation
- Ecological systems



Severe Summer Storms

- Health & wellness
- Energy systems
- Transportation



How Is Risk Assessed?

Risk = likelihood x consequence

How likely is it that the hazard will occur?

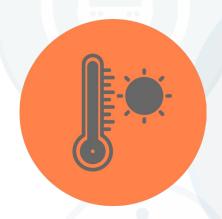
What are the known or estimated consequences of the hazard?

Based on past occurrence, climate projections

Based on research, local experts, stakeholders



Summary: Risk Assessment Results



Extreme Heat

Health & wellness
Energy systems
Water & wastewater

HIGH

HIGH

MOD. HIGH



Heavy Precip & Flooding

Water & wastewater
Transportation
Ecological systems

HIGH

HIGH

MOD. HIGH



Severe Summer Storms

Health & wellness
Energy systems
Transportation

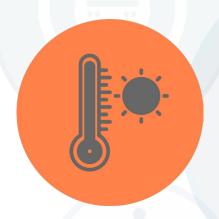
MOD. HIGH

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MOD. HIGH



Summary: Risk Assessment Results



Extreme Heat

Health & wellness
Energy systems
Water & wastewater

HIGH

HIGH

MOD. HIGH

Air quality added based on public engagement



Heavy Precip & Flooding

Water & wastewater
Transportation
Ecological systems

HIGH

HIGH

MOD. HIGH



Severe Summer Storms

Health & wellness
Energy systems
Transportation

MOD. HIGH

MOD. HIGH

MOD. HIGH



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Public Outreach



A TOTAL OF 29 COMMUNITY ENGAGEMENT SESSIONS



2 WORKSHOPS

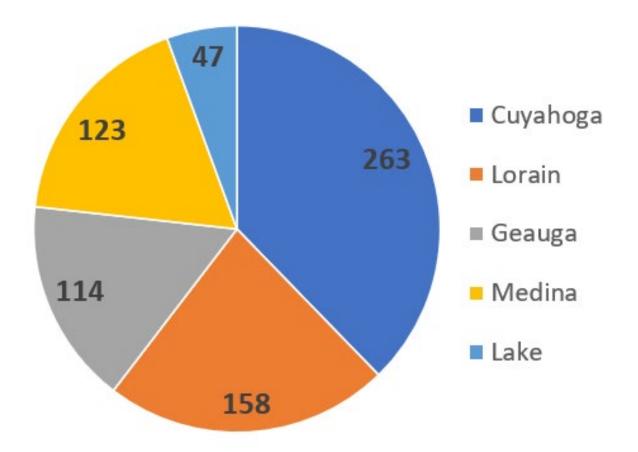


25 SESSIONS COMPLETED



2 ADDITIONAL SESSIONS SCHEDULED FOR LAKE COUNTY

Participants by County



Where We Met People



Some Themes We are Hearing From the 82% of Participants Who Are Supportive of Climate Action Planning

- •Extreme and unpredictable weather
- Air quality
- Concern about inaction
- Changing seasons/ impacts on trees and nature
- The future for the next generations
- •Top three concerns among all respondents to focus group questionnaires:
 - Air Quality Issues/Pollution
 - Flooding
 - Extreme Heat



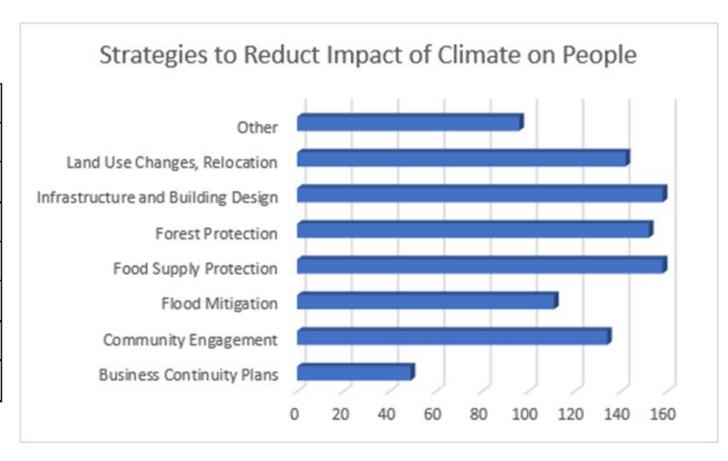
Some Themes We are Hearing from the 18% Who are Not Supportive of Climate Action Planning

- The Climate is not changing
- Humans are not responsible for any changes, but instead we are witnessing natural weather variability
- NOACA is the problem and should not be involved in Climate Action Planning

Focus Group Questionnaire Responses: Best Strategies to Reduce Impact of Climate on People

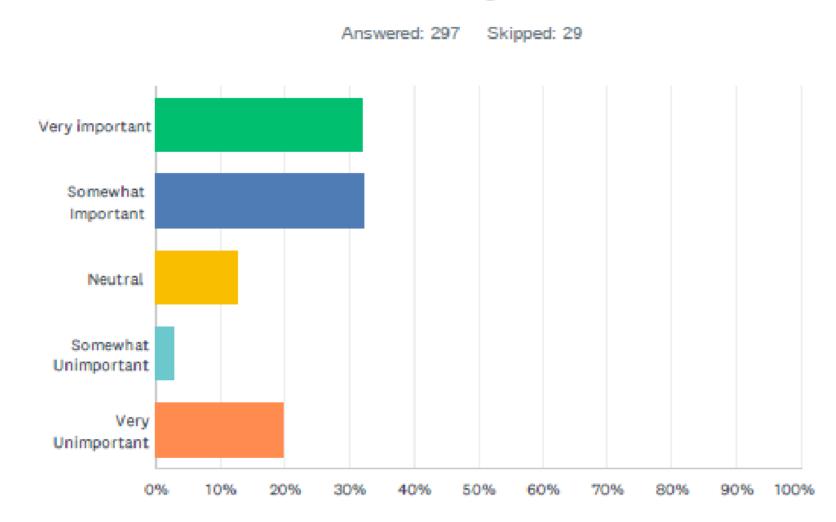
Question 6 Which three strategies to reduce the impact of climate on people are most important?

Business Continuity Plans	49
Community Engagement	134
Flood Mitigation	111
Food Supply Protection	158
Forest Protection	152
Infrastructure and Building Design	158
Land Use Changes, Relocation	142
Other	96



ONLINE INPUT RESPONSES

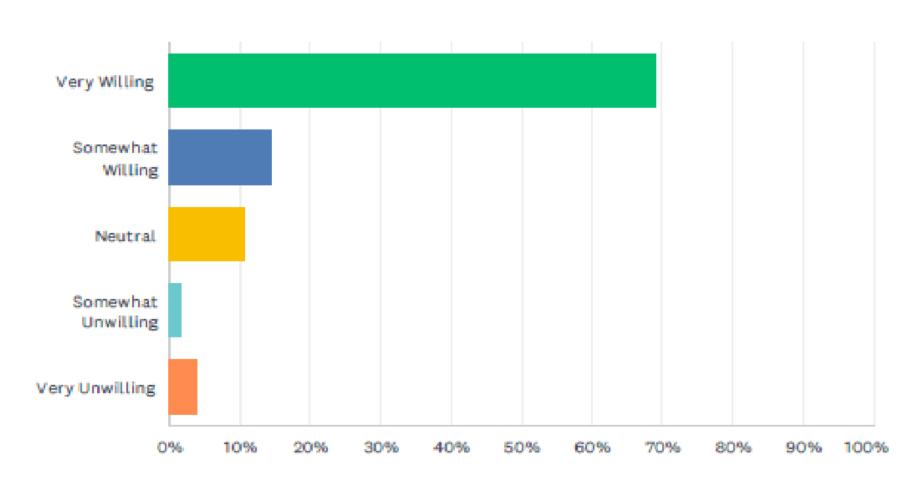
Q9 When you choose a place to live, how important is it to be in a green building?



ONLINE INPUT RESPONSES

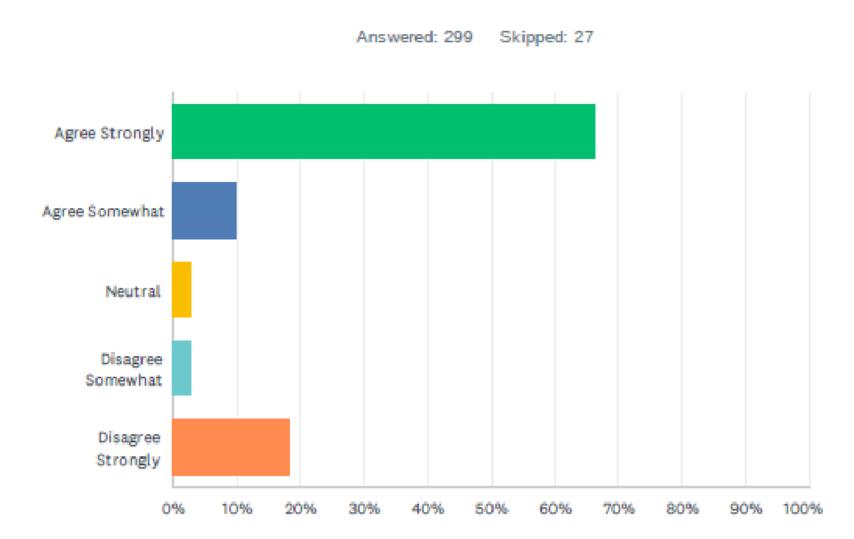
Q19 Are you willing to plant a new tree or two on your property to help expand tree cover?

Answered: 300 Skipped: 26



ONLINE INPUT RESPONSES

Q20 Do you agree or disagree that climate change impacts your personal health?



BACKGROUND

CAP Outreach & Engagement: Climate Fresk Workshops



- Interactive, climate education workshop
- 3-hour, game-style format
- Consultant-led, with regional data and engagement content tailored to Northeast Ohio regional climate planning process





BACKGROUND

Climate Fresk Implementation



Madison Senior Center, Lake County



Lantern of Chagrin Valley, Geauga County

- Eight (8) workshops held Aug 14 -Sept 14
- Hosts included senior and family centers, metroparks, and CMHA housing complexes
- 63 total attendees
- 26 discussion surveys submitted





BACKGROUND

Climate Fresk Participant Input – Key Takeaways

Engagement & Inclusion

Want to be part of the solution, desire for more information and education

Aware of economic disparity, curious how this is regionally addressed

Want to be updated on plan progress, how their feedback is incorporated

Concerns & Anxieties

Elderly worried about future generations/children

Awareness/concern about industrial pollution, air quality, asthma and chronic health diseases (Cleveland area)

Concern that leadership/elected officials are not part of the conversation, or communicating with their constituents

Accountability

Participants want to hold entities accountable

Expressed frustration that local, state and national government entities are not doing/acting enough

Broad societal shifts in the U.S. are needed, as well as international cooperation

Offered Solutions

Supportive of mass transit, intra-and inter-city connection

Stop vehicle idling

Establish regulations for conscious building, development

Establish regulations on emissions/pollutants from construction sites, new development Achieving Increased Mobility vb Achieving Increased

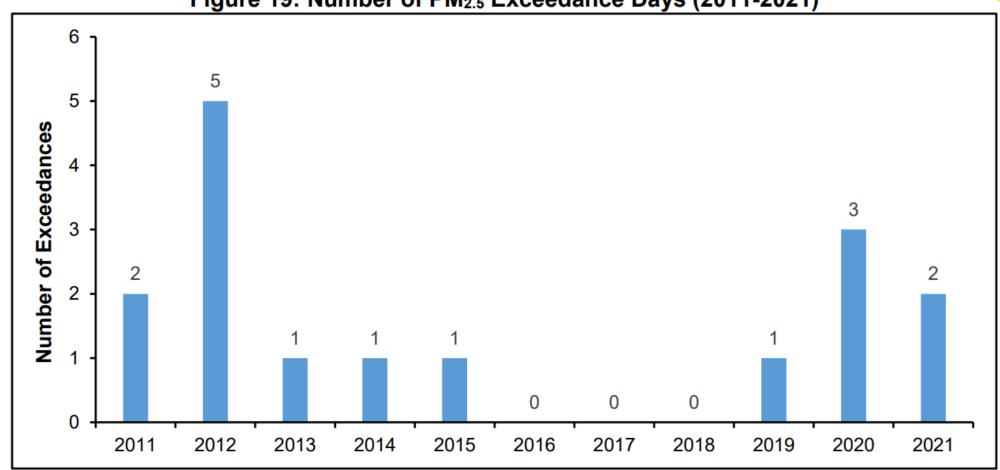


Air Quality

#1 concern in public engagement

JAC

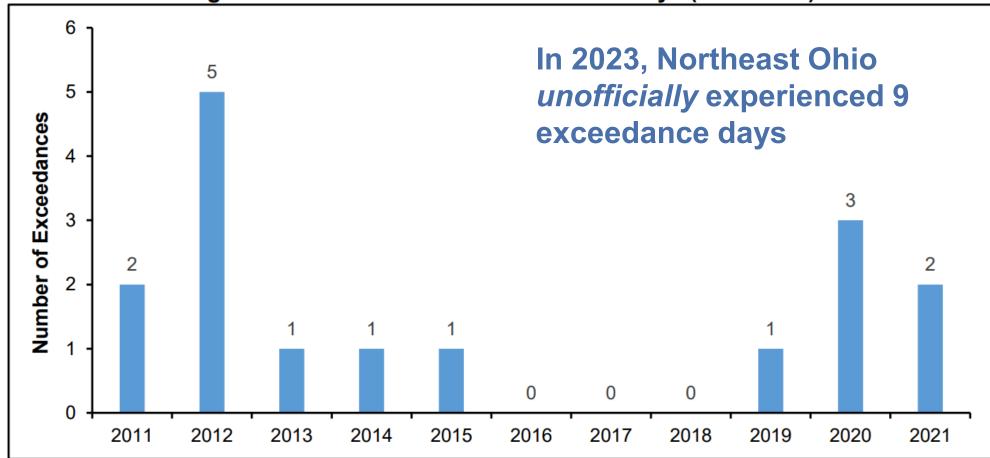
Figure 19: Number of PM_{2.5} Exceedance Days (2011-2021)



Source: U.S. EPA, "Air Quality System" data, https://www.epa.gov/aqs (accessed February 15, 2023).

Air Quality

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2023

Air Quality and Health



Eye, lung, throat irritation

Premature death

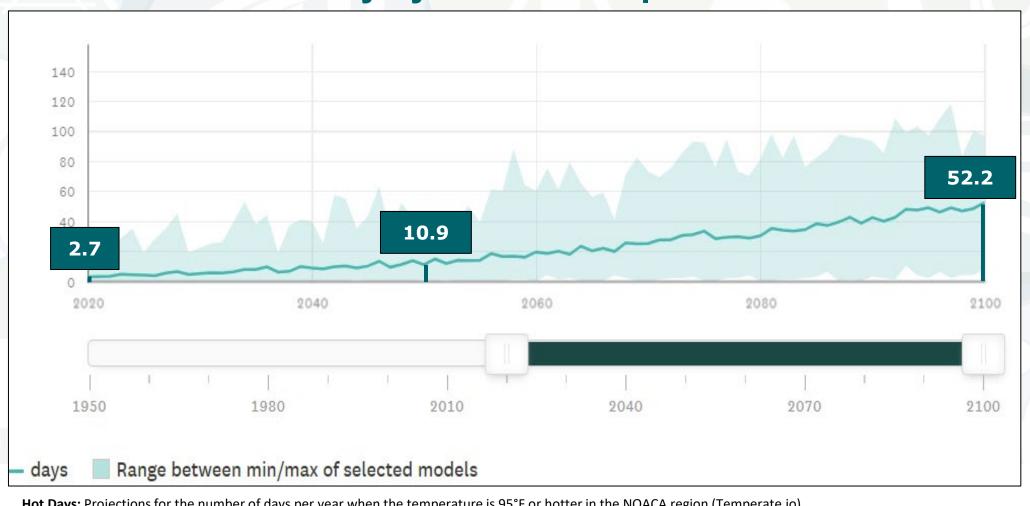
Heart disease effects worsened

CLIMATE CO CENTRAL

Extreme Heat

#2 concern in public engagement

Number of days/year with temps ≥ 95°F



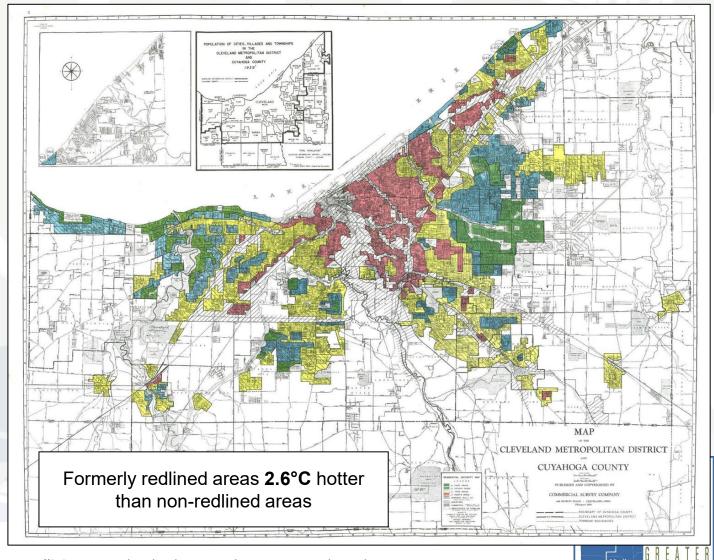
NOAC

Hot Days: Projections for the number of days per year when the temperature is 95°F or hotter in the NOACA region (Temperate.io)

Extreme Heat: Regional Impacts

Public Health & Wellness

- Disproportionate impacts on vulnerable groups, including children, older adults and people who have medical conditions
- People are exposed because of where they live or work:
 - Formerly redlined communities
 - People who don't have A/C, unhoused people
 - Outdoor workers, e.g.
 agricultural, construction jobs



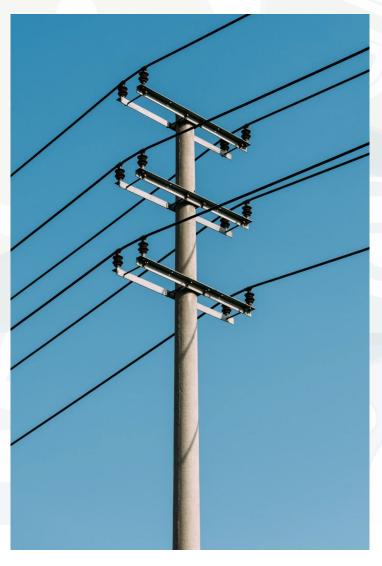
Redlining Map: Cleveland Metropolitan District and Cuyahoga County Home Owners' Loan Corporation (HOLC) map.



Extreme Heat: Regional Impacts

Energy Systems

- Rolling blackouts, power rotation, with disproportionate impacts on communities of color reported
- Areas with older infrastructure face power rotation
- Costs: A/C cost, health, lost revenue for businesses



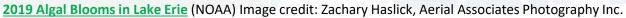


Extreme Heat: Regional Impacts



Water & Wastewater Management

- Lower water levels, higher water temps in Lake Erie
- Favors harmful algal blooms (HABs)
- Reduced groundwater recharge

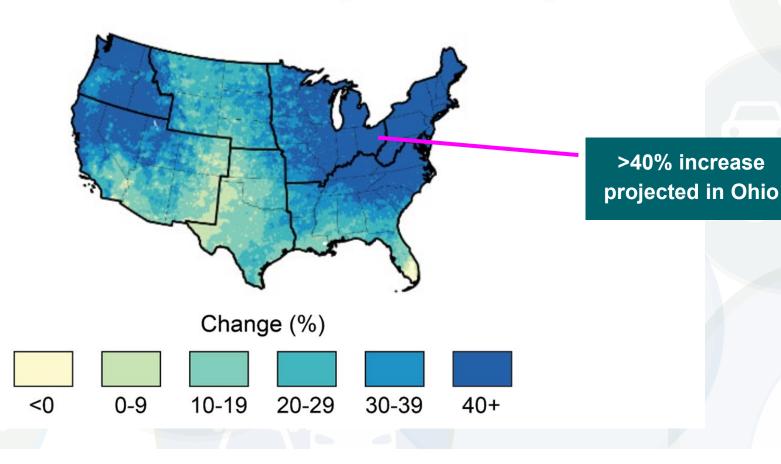




Heavy Precipitation and Flooding

Projected Change in Total Annual Precipitation Falling in the Heaviest 1% of Events by Late 21st Century

#3
concern in public
engagement

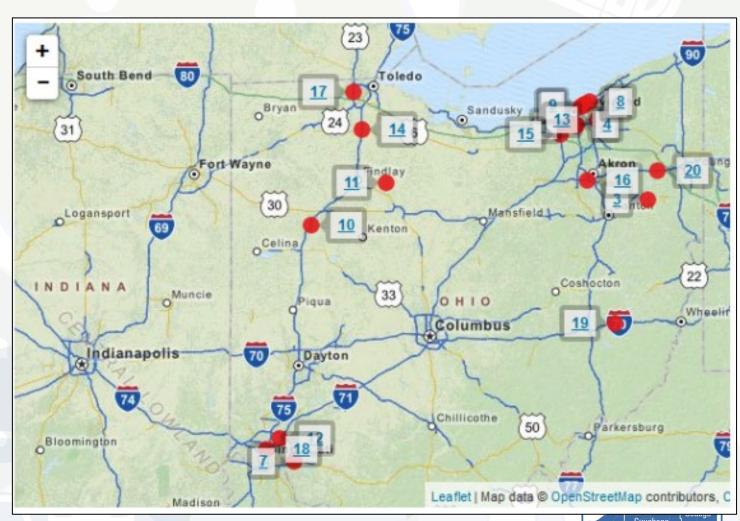




Precip & Flooding: Regional Impacts

Water & Wastewater Management

- Infrastructure is outdated, short staffed
- Distribution/collection infrastructure (e.g. pipes, storm drains, culverts) and treatment facilities are particularly vulnerable
- Vulnerable communities: Urban residents; rural communities that rely on wells, Amish communities



20 Most Vulnerable Culverts in Ohio (2016): Each numbered red circle is a culvert. *ODOT Infrastructure Resiliency Plan*.



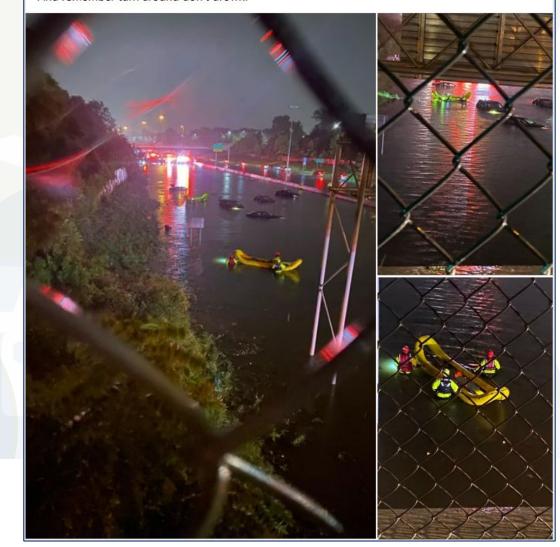
Precip & Flooding: Regional Impacts

Transportation Systems

- Roads and highways, bridges, and public transit already face flooding in today's heavy rainfall events.
- Increased flooding of rail lines and transit hubs
- Damage to vehicles, flooding at EV charging stations is a safety concern



All of Lakewood Fire and surrounding Westshore Departments are currently working on 190 BOTH east and west bound. As well as other incidents throughout the city. Please avoid the freeways. And remember turn around don't drown.



Precip & Flooding: Regional Impacts

Ecological Systems

- Altered stream courses
- Nutrients promote Harmful Algal Blooms (HABs)
- Water contamination threatens wildlife health, human use of water bodies
- Flooding and erosion threaten ecosystem services, including flood mitigation, water purification, and wildlife habitat

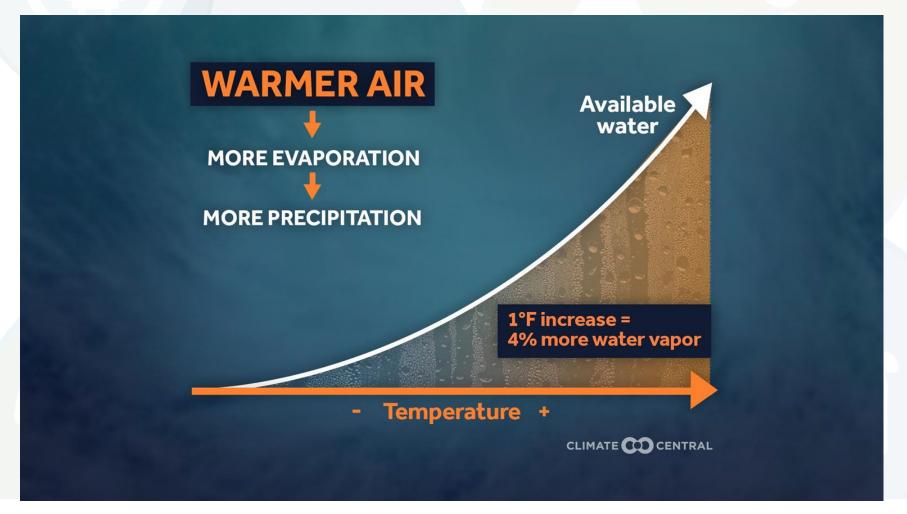


2011 Algal Blooms in Lake Erie: Blooms concentrated in the western basin (NOAA)



Severe Summer Storms

#5
concern in public engagement



It is likely that severe storm activity in the Midwest will become more intense as temperatures rise



Storms: Regional Impacts

Public Health & Wellness

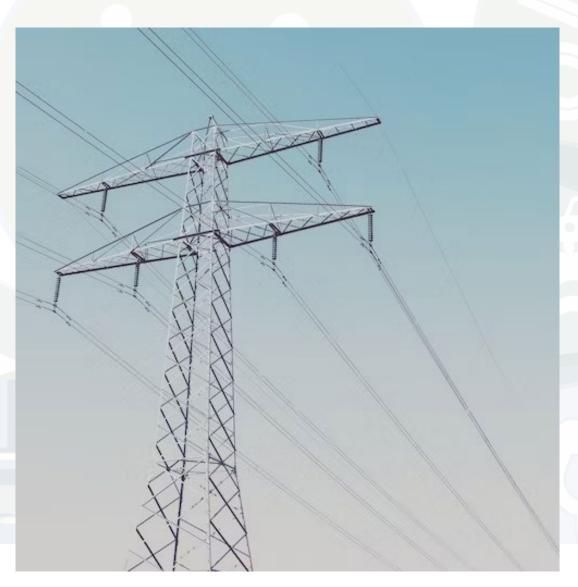
- People may underestimate risk
- Need to assist those at increased risk (nursing home residents, unhoused people, people with disabilities)
- Damage to homes, particularly substandard housing



Storms: Regional Impacts

Energy Systems

- Above-ground power lines, transformers, transmission lines can be damaged by strong winds, trees, debris
- Outages threaten health and cause community disruption





Storms: Regional Impacts



Transportation

- Debris, downed trees, utility polls, other road blockages compromise road safety and cause delays
- Dangerous driving conditions
- Public transit users are exposed



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Three, 20-minute rounds of discussion followed by facilitator report out

Table Options:

- 1) Extreme Heat
- 2) Heavy Precipitation and Flooding
 - 3) Severe Summer Storms
 - 4) Air Quality

ROUND 1

11:20 - 11:40 AM (20 minutes)



ROUND 2

11:40 AM - 12:00 PM (20 minutes)



ROUND 3

12:00 – 12:20 PM (20 minutes)





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Before Seeking Funding...

- ☐ Determine the size and scope of your financial need
- □ Understand state and local regulations (such as local procurement policies)
- ☐ Inventory your existing funding options
- ☐ Consider any implementation partners on private land
- ☐ Have resilience plans and strategies prepared
- ☐ Brainstorm co-benefits



Federal Assistance

- Grants
 - Formula
 - Competitive
- Loans
 - Ex. Water Infrastructure Finance Innovation Act: long-term, low-interest loans or loan guarantees to a wide variety of water infrastructure projects



Major Federal Grants for Resilience

FEMA

Flood Mitigation Assistance Grant Program

Hazard Mitigation Assistance Grants

Pre-Disaster Mitigation (PDM) Grant Program

Building Resilient Infrastructure and Communities (BRIC)

FHWA

- Promoting Resilient Operations for Transformative, Efficient, and Cost Saving Transportation (PROTECT)

For Great Lakes coastal resilience: GLRI, USFS, NOAA, NFWF have many grants available for near-shore projects

CEJST and Justice 40

- Justice 40 is an initiative designed to direct 40% of benefits from certain federal programs to disadvantaged communities
- A list of eligible programs can be found here
 - These include major FEMA grants like BRIC and Flood Mitigation Assistance
 - Also applies to State Revolving Funds
- Disadvantaged areas can be identified using the Climate and Economic Justice Screening Tool (CEJST)
- If your project falls within a disadvantaged area:
 - It may be prioritized for funding
 - Match requirements may be reduced or waived
- Always be sure to check CEJST before applying for federal funding
 - Even for non-Justice40 eligible programs, it can be used to strengthen grant applications

Leveraging Other Grant Programs for Resilience

- Many grant programs are not specifically for climate resilience but can be used for resilience projects
 - Climate change mitigation programs often allow for resilience actions to be included
 - CPRG implementation NOFO encourages projects to be designed with resilience cobenefits
 - Environmental conservation and outdoor recreation grants
 - Community Development Block Grants for disaster mitigation
- Longer-standing grant programs relating to environmental quality, flood and stormwater management, drinking water, etc often allow for these funds to be used for resilience projects
- Resilience projects have many co-benefits keep this in mind when seeking funding
 - You may be able to combine funding from multiple grants to cover larger projects



Regional, State, and Local Assistance

- State Revolving Funds
 - Clean Water and Drinking Water SRFs can be leveraged to <u>fund</u> resilience projects
- Ohio Coastal Management Program and other ODNR grants
- In lieu of or in order to match grant funding, other financing options may be available including:
 - General fund appropriations
 - Utility fees or enterprise funds
 - Special purpose districts
 - Market-based delivery and finance options
 - Public-private partnerships



IIJA, IRA, and Other Federal Funding Sources Will Continue to be Announced

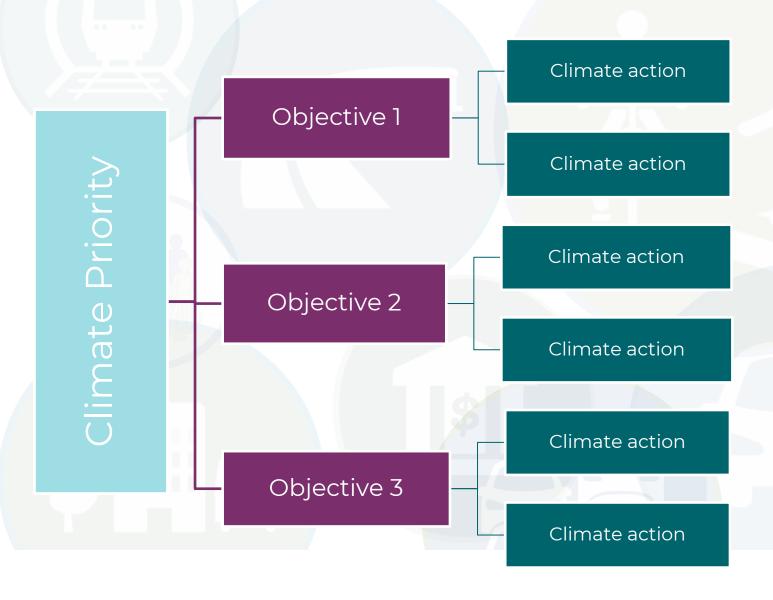
- There are a number of resources that can help you track and understand upcoming funding opportunities:
 - IIJA and IRA Funding Tracker
 - American Flood Coalition Flood Funding Finder
 - EPA Region 5's Environmental Finance Center (EFC) for Water Infrastructure
 - Funding Opportunities: US Climate Resilience Toolkit
 - 2023-2024 Federal Grant Funding Calendar



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From Priorities to Action



Objectives (or Goals) answer the question: What are we trying to achieve with our Plan?

Actions answer the question: How are we going to achieve this goal/objective?



Climate Adaptation Actions

Reduce Exposure

Help people & infrastructure get out of harm's way



Relocate critical infrastructure

Reduce Sensitivity

Harden against potential damage



Build a flood wall

Increase Capacity

to respond, prepare, adapt, and adjust



Early warning systems, neighborhood assistance networks

Types of Adaptation Actions

Building resilience can take many forms:

- Research and monitoring
- Early warning systems
- Hazard information provision
- Awareness raising and education
- Operations and practices
- Laws, policies or plans

- Infrastructure (hard and soft)
- Economic instruments (rebates, incentives, and taxes)
- Partnerships
- Supporting existing plans
- Conservation



"Co-Benefits" of Adaptation

The added benefits of climate action; when actions simultaneously help us meet multiple objectives



"Co-Benefits" of Adaptation

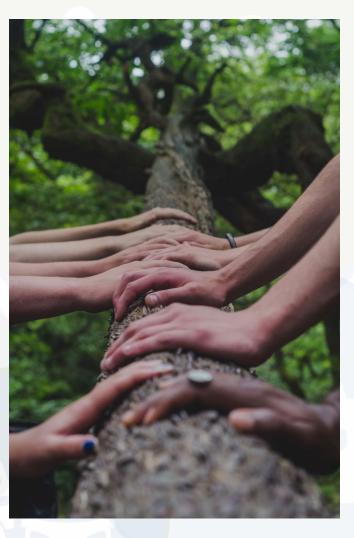
More Mitigation Measures, More Savings



One dollar invested in mitigation = 13 dollars U.S. saves in future costs



Cost savings for government, residents, businesses



Public health and wellbeing



Natural spaces for us & future generations



"Co-Benefits" of Adaptation



Ecosystems &biodiversity



Property values & development



Equitable & resilient communities



Achieving Increased Mobility vb Achieving Increased



NOACA Workstreams

Resilient People

- Prepare Northeast Ohio's residents and institutions for the impacts of a changing climate
- Strengthen the adaptive capacity of vulnerable communities
- Equity and inclusion for disproportionately impacted communities
- Local partnerships for clean energy jobs
- Facilitate regional policy changes and promote sustainability through effective lobbying efforts and collaboration





NOACA Workstreams

Resilient Environment

- Expand and protect natural carbon capture and sequestration
- Expand green infrastructure for stormwater management
- Make environmental improvements that promote climate resiliency for people
- Resilient lakefront





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To help the region work toward these goals, both workstreams proposed a list of adaptation actions for inclusion in the regional CAP

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- Work others at your table three 40-minute rounds
- Discuss each action and rate based on co-benefits and feasibility
- Once all actions rated, each table to choose 5 priority actions for the region (consider your ratings!)

Rankings:

Worksheet

HIGH

MEDIUM

LOW

Action	Potential Implementers	Co-Benefits?	Feasibility?	Justification, Comments, Questions
	Local gov'ts, air quality management districts, universities, Ohio EPA, nonprofits			
	GCP, Chambers, emergency management agencies, PUCO, FEMA			
Provide engagement opportunities with elected and public officials on climate change and disaster resilience (e.g. listening sessions, resident advisory committees)	Local gov'ts, NOACA, GCP, nonprofits			
Establish a community-led process to identify and rectify the impacts of past discriminatory policies, and allocate resources for equitable development	Local gov'ts, community development corps			
Establish and integrate existing community-based early warning	Local gov'ts, emergency management agencies, Ohio Committee for Severe Weather Awareness			

Resilient People Actions



After completing your worksheet, each table uses their 5 blue stickers to choose their top 5 priority actions for the region

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Resilient People Actions					
Action	Potential Implementers	Co-Benefits?	Feasibility?	Justification, Comments, Questions	
Identify air pollution hotspots to target for interventions	Local gov'ts, air quality management districts, universities, Ohio EPA, nonprofits			Action has some co-benefits (health, equity) and easy to implement	
Provide resources to households and small businesses to support emergency preparedness	GCP, Chambers, emergency management agencies, PUCO, FEMA			Very expensive and difficult to implement	
Provide engagement opportunities with elected and public officials on climate change and disaster resilience (e.g. listening sessions, resident advisory committees)	Local gov'ts, NOACA, GCP, nonprofits				
Establish a community-led process to identify and rectify the impacts of past discriminatory policies, and allocate resources for equitable development	Local gov'ts, community development corps				
Establish and integrate existing community-based early warning and response systems across the region to provide timely information about hazards like storms and flooding	Local gov'ts, emergency management agencies, Ohio Committee for Severe Weather Awareness				



ROUND 1: Resilient People

1:40 - 2:20 PM (40 minutes)



ROUND 2: Resilient Environment

2:20 - 3:00 PM (40 minutes)



Achieving Increased Mobility vb Achieving Increased Mobility chieving Increased Mobility vb Achieving Increased



ROUND 3: Resilient Infrastructure & Built Environment

3:10 – 3:50 PM (40 minutes)



Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility chieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility vb Achieving Increased Mobility chieving Increased Mobility vb Achieving Increased

Share 2 actions that you can commit to implementing at home



2 actions that you most support for the region

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NOACA will **STRENGTHEN** regional cohesion, **PRESERVE** existing infrastructure, and **BUILD** a sustainable multimodal transportation system to **SUPPORT** economic development and **ENHANCE** quality of life in Northeast Ohio.

