



# Enhancing the Resilience of Seniors in Your Community

Jason Rhoades

October 18<sup>th</sup>, 2017

# + Outline



- Seniors and climate change
- Case Study: *Climate Resilient Seniors*
  - Process
  - Results (Vulnerability and Adaptation)
  - Lessons Learned







# CLIMATE CHANGE 2007

## IMPACTS, ADAPTATION AND VULNERABILITY



### Climate Change Impacts in the United States

### Exposed

Social vulnerability and climate change in the US Southeast



# + Contributing Factors



- Physiological and cognitive impairments
- Economic limitations
- Social isolation

# + Seniors and Adaptation Planning

- Most in need of adaptation support
- Have first hand knowledge and experience to contribute
- May have less voice in adaptation planning
  - Focus on “key stakeholders”
  - Limited ability to engage
  - Minority concerns
- *Risk failing to address their needs and concerns*





# Participatory Adaptation Planning with Vulnerable Groups



- Engage seniors in dedicated process then bring to larger community
  - Build understanding of issue and potential actions
  - Set individual and collective priorities
  - Find voice(s)
  - Enhance capacity to self advocate
  - Inform community efforts



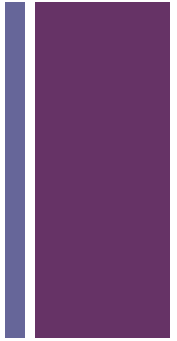
# Case study: *Climate Resilient Seniors*



- Socioeconomically diverse
- Multiple stressors
  - Heat waves
  - Air pollution
  - Flooding
  - Storms
  - Sea level rise



# + Participatory Adaptation Process



<b>Step in Process</b>	<b>Purpose*</b>
Initial planning meeting	Identify current and future climate changes relevant to the community Consider resources, challenges, needs Design outreach and engagement
2 Vulnerability assessment meetings	Assess vulnerability of the senior community
Vulnerability survey	Prioritize vulnerabilities to address
2 Adaptation planning meetings	Develop and prioritize adaptation strategies

\*adapted from NRC (2010) *Adapting to the Impacts of Climate Change*. National Academic Press.



# + Initial Planning Meeting



## ■ Attending

- City Staff (Bridgeport DOA and OEMHS)
- AUNE Researcher
- Support organizations
- Seniors

## ■ Focus

- Review the landscape (resources, stressors, needs, opportunities)
- Design structure & outreach for project process and specific meetings

# + Vulnerability Meetings



- Promoted through senior centers
- 55 participants
- Kept demographic records



# Vulnerability Meetings

## *Starting point vulnerability analysis*



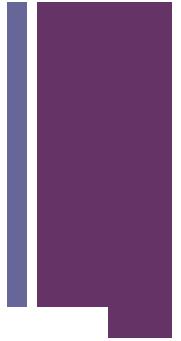
- Initial presentation on historical climate trends
- Break out group discussions
  - How you are currently impacted?
  - What factors contribute to your vulnerability to those impacts?
  - How do you prepare for, cope with, recover?
- Presentation on predicted trends
- Discussion
  - How would predicted changes impact you?

# + Impacts



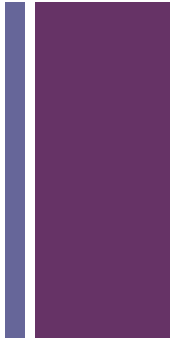
Climate Related Stressors	Current Impacts
Extreme heat and air pollution	General pain and discomfort including difficulty breathing and difficulty sleeping
	Mental upset including anxiety, depression, irritability
	Illness and hospitalization
	Isolation
	Difficulty doing essential tasks
Flooding and Storms	Property damage
	Loss of electricity leading to difficulties cooking, heating, running medical equipment, or leaving apartment, also leading to loss of refrigeration and spoilage of food and medicines (i.e. insulin)
	Physical injury
	Illness and hospitalization
	Difficulty doing essential tasks
	Caregivers unable to access patients

# + Vulnerability – Personal Characteristics



<b>Personal Characteristics</b>	<b>Contributing factors/examples</b>
Chronic health conditions	Diabetes
	COPD
	Asthma
	Lung infections
Physical/cognitive impairments, disabilities	Alzheimer's
	Confinement to a wheelchair
	Poor hearing/vision
Social Isolation	Difficulty traveling
	Diminished social circle
	Living alone
Economic limitations	Retired or working part time with low/fixed income
	Minimal savings
	Poor credit
Marginalization	Poor English speaking ability
	Minority status
	Educational attainment
	Low income levels

# + Vulnerability – Contextual Factors



Contextual Factors	Associated Challenges
Adequacy of transportation resources	Don't own a car
	Difficulty driving
	Inadequate public transportation
	Needing special accommodations
	Lacking money to pay for transportation
	Unaware of available resources
Effectiveness of warning mechanisms	Lack of technological fluency
	Isolation
	Poor English speaking ability
	Warnings difficult to understand
Availability of resources to promote safe shelter	Lack of money to pay for air conditioning or dehumidifiers
	Unable to conduct needed home repairs
	Lack of money to pay for emergency housing
	Insufficient shelters or cooling centers
	Difficulty accessing shelters or cooling centers
	Unaware of available resources
Adequacy of resources to aid in coping and recovery	Lack of mental health resources
	Difficulty accessing medical resources
	Difficulty performing essential activities
	Difficulty repairing damages to property
	Unaware of available resources

# + Current Strategies



<b>Climate Related Stressors</b>	<b>Current Strategies</b>	<b>Secondary Impacts/Limitations</b>
Extreme heat and air pollution	Stay inside	Leads to increased isolation and difficulty doing essential tasks
	Close windows and run AC/dehumidifier	Leads to increased electricity costs
	Travel to hospital	Costs money and time, causes mental and physical fatigue
Flooding and Storms	Stay in a hotel	Costs money
	Stay with family or friends	Only possible for seniors with family or friends nearby
	Pay for clean up/repair work	Costs money

# + Potential Climate Change Impacts

- Previously unaffected become affected
- Previous coping strategies no longer sufficient
- Misperception of severity of climate risks
- Adaptive capacity overwhelmed







# Survey

Bridgeport Department on Aging

Antioch University New England

## Extreme Weather Survey

### Thank you for taking time to complete this survey!

The following questions are intended to help understand the needs and concerns of seniors in relation to extreme weather including storms, floods, heat waves and air pollution. There are 42 questions in the survey and it should take you approximately 6 minutes to complete. Your responses are very important as they will be used in an effort to help make Bridgeport's seniors safer. Your identity will remain confidential. This survey is part of a larger project being facilitated by the City of Bridgeport Department on Aging and Antioch University New England.

If you have any questions about the survey or the project, you can contact Jason Rhoades at: jrhoades@antioch.edu / 603-499-3505

### Instructions

Please check the appropriate box to indicate how concerned you are about the following:

### The following questions are about receiving adequate warning.

<i>How concerned are you that...</i>	Unconcerned ←————→ Concerned				
	1	2	3	4	5
I will not receive warnings about severe weather (including storms, floods, heat waves, air pollution)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warnings about extreme weather won't have enough information about what I can do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warnings will be hard to understand (too fast, print too small, too confusing)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't speak English well and warnings will not be in my language	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your preferred way to receive warnings? \_\_\_\_\_

What language do you speak best? \_\_\_\_\_

Please add any other concerns you have about not receiving adequate warning of forecasted extreme weather:

---

---





# Survey Results

Table 9. Survey results showing respondents average level of concern over various issues associated with extreme weather (1=unconcerned; 5= very concerned) as well as the percentage of respondents that are highly concerned (ranking of a 4 or 5). For survey respondents, n= 164.

Receiving Adequate Warning	Average Level of Concern	% Highly Concerned
Won't receive warning	3.58	50%
Warning won't have enough info	3.74	62%
Warning will be hard to understand	3.48	51%
Warning won't be in my language	1.97	18%
<b>Staying Safe at Home</b>		
My house is unsafe and can't afford to fix	3.29	47%
Can't afford to run ac in heat wave	2.76	36%
Can't afford to run AC in air pollution	2.67	35%
<b>Having Adequate Transportation Resources</b>		
Lack of public transportation where I live	2.49	29%
Lack of ride sharing where I live	2.89	39%
Public transport is too expensive	2.46	26%
Can't afford transportation in emergency	2.54	27%
It is physically difficult for me to travel	2.29	19%
It is hard to travel because of equip needs or medicine	2.07	16%
<b>Finding Safe Shelter</b>		
Don't know where shelter is located	2.92	39%
Hard for me to get to shelter	3.01	46%
Shelters are unsafe	3.14	44%
Shelters are uncomfortable	3.08	40%
There are not enough shelters	3.45	57%
Hard for me to stay in shelter because of equip needs or medicine	2.48	28%

Getting Needed Assistance		
No one will check on me during or after extreme weather	2.90	30%
Don't know emergency numbers	2.86	38%
Won't be able to leave my building if power is out	2.19	19%
Will be difficult for caregivers to reach me in storm	2.65	32%
Will be difficult to get to hospital or get medicine during or after extreme weather	3.08	43%
Will be difficult to get food and supplies during or after extreme weather	3.25	47%
If electricity is out, will be difficult to do essential activities	3.45	51%
<b>Having Resource to Aid in Recovery</b>		
Difficulty coping with trauma and stress	3.05	36%
Difficult to travel to hospital for treatment if injured or sickened	3.27	47%
Difficult to afford medication or treatment if injured or sickened	2.93	34%
Won't have needed support to do daily tasks if injured or sickened if injured or sickened	2.94	32%
Difficult to do clean up or repairs to property	3.19	47%



# Adaptation Planning Meetings



- Review of results of survey
- Brief presentation on adaptation planning best practices
- Set adaptation goals
- Develop specific strategies
- Prioritize strategies based on impact and feasibility
- Share results with relevant support organizations

# + Adaptation Goals



- Encourage preparedness
- Provide effective warnings
- Provide seniors with resources for securing safe shelter.
- Provide transportation resources
- Provide resources to help seniors accomplish essential tasks
- Provide resources to aid seniors in the recovery process

# + Adaptation recommendations

- Emergency preparedness trainings
- Emergency preparedness informational materials
- Reverse 911 sign up drive
- Tailor warnings
- Tailor shelters
- Promote volunteer ridesharing
- Establish a telephone-based clearinghouse
- *Tailoring the city's ongoing efforts*





# Impact and Feasibility

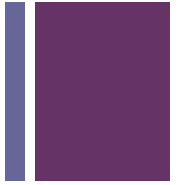


Adaptation Recommendations	Elderly Participants		City Staff	
	Impact	Feasibility	Impact	Feasibility
1. Provide emergency preparedness trainings specifically for seniors	4.6	4	4.7	3.7
2. Develop and distribute emergency preparedness informational materials specifically for seniors.	4.7	4.2	5	4.3
3. Conduct a reverse 911 sign up drive targeted at seniors.	4.5	4	4.3	3.6
4. Tailor warnings to meet seniors' needs.	4.6	4.5	4.7	4.7
5. Tailor shelters to meet seniors' needs.	4.3	4	4.3	4.4
6. Promote volunteer ridesharing and transportation assistance.	4.1	3.7	4.2	4.4
7. Establish a telephone-based clearinghouse for extreme weather/emergency resources for seniors.	4.5	4.2	4.6	4.7

n=35

n=7

# + Benefits



Evaluation Statements	Average level of agreement
The recommendations of this project reflect the concerns and needs of the elderly.	5.0
The recommendations of this project will help make Bridgeport's seniors safer.	5.0
As a result of this project, I am more aware of how changes in extreme weather may affect seniors in Bridgeport.	5.0
As a result of this project, I am more knowledgeable about how to protect myself from the impacts of extreme weather.	4.7
As a result of this project, I am better able to advocate for what I need to stay safe during extreme weather.	4.7

*And...*

n=35

- Recommendations have co-benefits
- Implementation by city
- Increased awareness among support agencies
- Increased communication between local partners
- Increased trust between older adults and support agencies



# Design Considerations

## *Lessons Learned*



- Fostering Accessibility and Inclusivity
- Using an Iterative Process
- Generating Initial Actions
- Building Partnerships





# Fostering Accessibility and Inclusivity



- Recognize diversity
- Accessibility of meetings and materials
- Multiple opportunities for engagement
- Connect issues with day-to-day concerns
- Maintaining a diversity of perspectives

# + Using an Iterative Process

- Build individual and collective understanding one step at a time
  - Fully understand system before developing interventions



# + Generating Initial Action

- Build initial action into the project/research timeline
  - Facilitates transition from planning to action
  - Success can generate additional actions





# Building Partnerships



- Complementary partnership between municipality and higher education
  - Filling gaps in expertise and resources
- Collaborate with multiple organizations
- Produce information useful to local organizations

# + Conclusions

- Seniors are highly vulnerable
- Changes could overwhelm adaptive capacity
- Support services are key
- Including seniors as participants has multiple benefits
- Opportunity for meaningful inclusion, increasing understanding, and building resilience
- Benefits of collaboration between municipalities and higher education



# + Resources, support, collaboration



- Contact me

- [jrhoades@antioch.edu](mailto:jrhoades@antioch.edu)



- Full description of research

- [https://etd.ohiolink.edu/pg\\_10?0::NO:10:P10\\_ETD\\_SUBID:113828](https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ETD_SUBID:113828)

- Journal article on vulnerability

- <https://academic.oup.com/gerontologist/article-abstract/doi/10.1093/geront/gnw167/2967601/Developing-an-In-depth-Understanding-of-Elderly?redirectedFrom=PDF>