Activity 1: *Climate Impacts at the Local Level*

Climate Health Adaptation Planning in Michigan

Benzie → Clark.

Instructions

Work with your table to answer the following questions. In the sidebar, jot down the key themes of your group discussion.

1. What climate impacts have you seen in your community? Has there been an impact to public health?

- Sewer Overflow
- Septic " "
  - ↳ Inland / Traverse Lake
  - ↳ Septic System & Work
- Indoor mold ⇒ 20↑ ppt. events
  - pipes ⇒ Fertilizer
  - Lawns
- Agricul ⇒ ↑ Frequency ↑ Early/later ⇒ ↓ Cherry ↳ Vineyard
- Vector borne ⇒ Lyme

3. Has your community had meaningful conversations about climate change? Are these issues difficult to bring up in your community? Why or why not?

Infrastructure ⇒ & support population
Agricultural tube → Suburb.

4. As a table, brainstorm some possible strategies to discuss climate change in the planning and public health context. What strategies do you feel would be most effective in your community?

Your Key Themes:

- 2 Winters ⇒ massive Power Outages
  - ↳ & ~~Contamination~~
  - ↳ Summer 8/2/15 event.
- ↓ Communications
- ↓ cell phone

input

Flooding in the Grand River (below), 2013.

Activity 2: *Using Scenarios to Develop Solutions*

Climate Health Adaptation Planning in Michigan

Winter

Climate change will likely impact all corners of the globe. However, each community and population within that community may experience these impacts differently. Impacts of climate change vary based on time of year, relative geography, resilience of the community, public infrastructure, demographics, and emergency response measures in place. Some of these factors cannot be changed, however, many of them can.

The **GOAL** of this exercise is to develop solutions to a series of potential climate future scenarios, which include (a) an Extreme Heat Scenario, (b) a Heavy Rain and Flooding Scenario, (c) a Drought and Wildfire Scenario, and (d) a Winter Storm Scenario. As a group, please discuss short-term and long-term resilience solutions as they relate to your scenario.

Discussion Questions

1.) Identify short-term concerns and solutions. Please consider the following:

1a) What are the most immediate needs to address?

- What are the primary public health concerns?
- Who are the most vulnerable populations?
- Is there critical infrastructure at risk?

1b) Are there overlapping areas of responsibility? How can resources, personnel, and communications be maximized to avoid duplication of services and maximize their effectiveness?

2. Identify strategies for increasing resilience and long-term recovery. Please consider the following:

2a) What key infrastructure investments are necessary to reduce vulnerabilities?

cell towers, cross-co collaboration [new development]

2b) What community initiatives are already addressing these types of issues?

- How can these efforts be expanded?
- Who else should be included?

emergency management community-response

2c) Are there opportunities for new efforts? Consider a range of options, such as natural resources, economic impacts, health, energy, and infrastructure opportunities.

ski

2d) How can our hazard mitigation planning and land use planning be better integrated?

3. Report Out!

Select one team member to:

- Read your group's scenario.
- Quickly summarize key strategies for increasing resilience and long-term recovery.
- List the top 3-5 projects based on your group's prioritization.

Activity 2: *Using Scenarios to Develop Solutions*

Climate Health Adaptation Planning in Michigan

A: EXTREME HEAT SCENARIO

The year is 2050. Average air temperatures in your Michigan community have risen approximately 5 degrees F. It's early August and 30 days have already exceeded 90 degrees this year – 11 of those occurred consecutively, culminating in a county-wide heat emergency. The past two days have climbed above 100 degrees. Nighttime cooling has diminished, with evening lows in the mid-80s, making it very difficult for residents to cool down. A number of residents have been hospitalized due to heatstroke and heat exhaustion.

Warmer temperatures have increased electricity demand for cooling and are causing a significant financial burden on families and businesses. Coupled with the heat, a partial power outage has knocked out air conditioning systems, putting the county's most vulnerable residents, from the elderly to the young, at risk. Unfortunately, many of the most vulnerable populations do not live or work in air-conditioned environments.

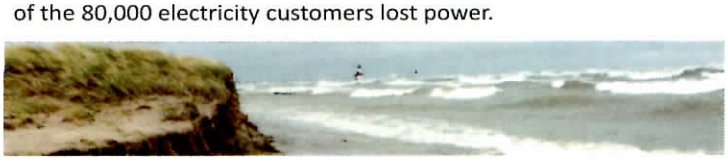


B: HEAVY RAIN AND FLOODING SCENARIO

It is the year 2050 and average annual precipitation in your Michigan community has increased by 3 inches, with the majority of the increase concentrated in the spring and fall. Twenty-five year storms now occur on average every other year, exceeding the capacity of storm sewer infrastructure and allowing polluted runoff into nearby rivers and lakes.

This February, an early thaw due to unusually warm weather was compounded by a heavy precipitation event, leading to urban flooding. Ten inches of rain fell, 5 of which came in the first six hours. Runoff resulting from this intense rainfall, compounded by heavy snow-pack melt and frozen soils, has flooded areas of the community that have not been flooded for decades.

So far, your county has incurred $60 million in road and bridge damage alone and another $6 million in property damages. Nearly 500 homes and over 20 businesses were damaged by floodwaters. There have also been reports of cars stuck in flooded underpasses and businesses having to pump water out of their stores. Much of your community is without power due to the wind and lightning impacts connected with the severe storm system that passed through the area. The majority of the 80,000 electricity customers lost power.



C: SEVERE DROUGHT AND WILDFIRE SCENARIO

The year is 2050 and recent droughts have been longer and more severe than in the past. This summer's drought has resulted in a decline of water quality in lakes and streams and increases in insect infestations and plant disease, stressing forests and native species. Droughts as well as invasive species have increased the risk and prevalence of wildfires in the region. Over 90 percent of your rural county is forested. With longer wildfire seasons, the existing firefighting capacity is being stressed.

It is April and a large wildfire is ripping through the community. Three weeks in, the wildfire has already burned 25,000 acres, destroying 70 homes and multiple power lines, with total damages estimated at almost $50 million. All county fire departments have responded, as well as fire departments from neighboring counties and MDNR.

Required evacuation is in effect for portions of several townships. Unfortunately there is only one active siren in the county, but broadcasts have also been made over television and radio. County wide, the particulate matter due to smoke is of particular concern for residents with pre-existing health conditions.

D: WINTER STORM SCENARIO

It's March 2050 and the average number of days below freezing has declined steadily. However, the severity and damage resulting from winter storms has increased. Reduced lake ice coverage and lake warming has resulted in more lake-effect snow, ice and sleet for your Michigan community.

Eight of the past 10 winters have seen severe winter storms, resulting in economic disruptions, power outages, high costs of cleanup, and business disruption. Primary roads, including major arterials, are in poor condition due to an increase in freeze-thaw events. Some local roads are even impassable.

In the past week, an ice storm hit your community, downing tree limbs and power lines, blocking roads, and causing widespread power outages. Approximately 1,000 homes and 40 businesses sustained damage or are without power, with losses estimated at nearly $1 million. A nearby nursing home has been using backup power now for 18 hours and is without running water.



Note: Scenarios used in this exercise were developed based on GLISA regional climate summaries and historic severe weather events in Michigan.

Activity 2: *Using Scenarios to Develop Solutions*

Climate Health Adaptation Planning in Michigan

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-Improve Communication => Issue => Cell Phones / etc. Lum.
-Esp. among the age
-Plan to V on elderly during electric outages => Map homes.
-Social services to homeless
-open public buildings => Warming/food

1b) Are there overlapping areas of responsibility? How can resources, personnel, and communications be maximized to avoid duplication of services and maximize their effectiveness?

-Open public buildings
-Emergency warnings for community
-Improve the window between departments

2. Identify strategies for increasing resilience and long-term recovery. Please consider the following:

2a) What key infrastructure investments are necessary to reduce vulnerabilities?

Better internet connectedness. Road infrastructure. Public transportation => Trains

2b) What community initiatives are already addressing these types of issues?

- How can these efforts be expanded?
- Who else should be included?

Neighborhood => Regular meeting plans

2c) Are there opportunities for new efforts? Consider a range of options, such as natural resources, economic impacts, health, energy, and infrastructure opportunities.

Foster Northport Sustainable Renewable
-Look @ making Utilities more responsive to community ties

2d) How can our hazard mitigation planning and land use planning be better integrated?

Make it part of Public Works

3. Report Out!

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Activity 3: *Guidance on the MI-CHAP Adaptation Plan*

Climate Health Adaptation Planning in Michigan

water-borne

Proposed Adaptation Feedback Activity:
MICHAP needs your input to help determine their activities for the next five years. They must choose and implement interventions to reduce the harm to public health that can occur from the following climate-related environmental conditions: heat waves, poor air quality, and poor water quality.

Your working group will be assigned one of the health outcomes mentioned above to focus on for this exercise. **Choose one person to record your groups discussion in the spaces provided.**

For your group's Health Outcome, **consider the following and record the response from the different jurisdictions represented in your group (additional space on health outcome sheet):**

1. *Is there a need for intervention in your community related to your assigned health outcome? Explain (Consider what vulnerabilities might exist or if there are any currently ongoing activities related to those health outcomes)*

2. *If there is a need, which interventions would you support? (Indicate whether the intervention would be educational, emergency response, landscape changes, or policy **and** any specific intervention examples that you can think of related to that category)*

- point of sale septic inspections
- education around lakeowner opportunities

lake ~~or~~ life boatings

3. *Are there partners willing and able to support the intervention(s)? Please list.*

Lake association
local communication networks

real estate inspectors

4. *Are the selected interventions feasible? (Consider political, resource, mandate, or technical capacity realities.)*

-politically maybe not in rural Twps where BOA must enforce

b/c lack of awareness + motivated

Activity 3: *Guidance on the MI-CHAP Adaptation Plan*

Climate Health Adaptation Planning in Michigan

The MI-CHAP Strategic Plan was developed in 2010 to prepare the Michigan Public Health System to address the health consequences of climate change in a coordinated manner. The System includes the state and local health departments, and parts of government, academia, health care, professional organizations, non-profits and others whose work relates to public health and/or the environment. This planning effort built a statewide vision with a diverse, large group representing multiple perspectives and expertise. The original Plan's goals and priorities remain relevant. However, the 2016-2021 Plan Update will specify which health outcomes, adaptations, and vulnerable people and places will be the focus of Program activities over this time period.

The Plan Goals are:

Goal #1: Climate change will be recognized as a public health issue and integrated into public health practice.

Goal #2: Public health agencies will have the resources, tools and activities for responding to climate change impacts integrated/included in their existing programs.

Goal #3: Vulnerable populations and their needs will be explicitly considered in programs and policies addressing health impacts associated with climate change.

The Priority Health Outcomes of concern are:

1) Heat-related illness (and mortality)
2) Respiratory disease exacerbation (esp. asthma) related to poor air quality and increased pollen
3) Water-borne diseases (esp. related to rain events and runoff)
4) Vector-borne diseases (Lyme and West Nile)
5) Carbon Monoxide poisoning and other injuries related to extreme weather events

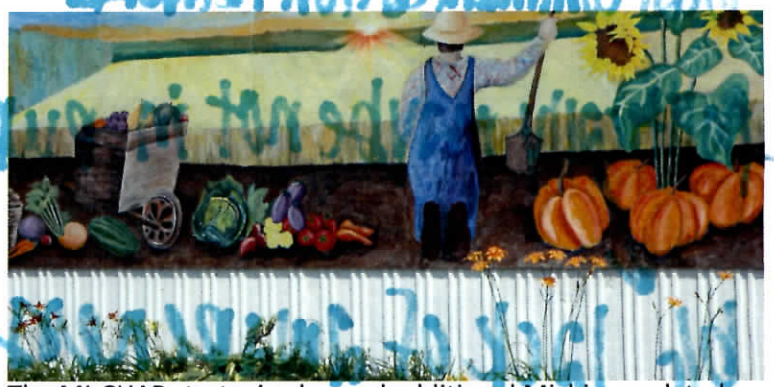
The ***MDHHS Climate and Health Program*** has monitored the magnitude and distribution of these outcomes in Michigan, identified key vulnerabilities, and characterized the current and projected changes in climate across Michigan. See *Michigan Climate and Health Report* for details (Cameron et. Al, 2015). The Program constructed maps to guide its work with Michigan communities to understand the factors influencing their risk. These maps indicate where we may find the people and places that are most vulnerable, and can help identify risk factors that may be amenable to intervention. The Program has reviewed the literature to determine which interventions have been shown to be effective.

Why we need your input:

Over the next year, the Program will identify and design activities meant to reduce the top three priority health outcomes in vulnerable Michigan communities. These intervention activities will be carried out over the next five years, and evaluated for their effectiveness.

These activities can only succeed if they make sense and are acceptable to the community. We need your local knowledge and expertise to advise us as we choose the activities we will commit to for the next five years. We also need your help in identifying partners who would be willing to work with us to implement the interventions in your communities.

During the activity you will: 1. Review handouts summarizing the health outcomes of most concern, potential vulnerabilities, and examples of interventions. 2. Complete an exercise to identify which interventions are most needed, why they are important, who should be involved, and how they might be implemented.



The MI-CHAP strategic plan and additional Michigan related climate and health information can be found at www.michigan.gov/climateandhealth

5-12

Please give us your feedback!

1. Describe your interest in the training:

☐ Planning Commissioner ☒ Community planner ☐ Student ☐ Local Official
☐ Public Health official ☐ Other (Please Describe): _____

2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

climate change and impacts on human health

4. How could we have made this training more effective?

Background very compelling and effective discussion. Solutions feels weak, not very productive. If point is to hijack the existing systems, need to educate users about systems or direct programs toward experts in system

5. How did you hear about this training? Networks Northwest

Please give us your feedback!

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☒ Planning Commissioner ☐ Community planner ☐ Student ☐ Local Official
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2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

Climate Health

4. How could we have made this training more effective?

It was awesome. Please explain Rain gardens, etc. more.

5. How did you hear about this training? LPI email

Climate Health Adaptation Planning in Michigan
Training for Local Planners and Decision Makers

LIAA Climate Health Adaptation Planning in Michigan

Please give us your feedback!

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☐ Planning Commissioner ☐ Community planner ☐ Student ☐ Local Official
☐ Public Health official ☒ Other (Please Describe): _____

2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

4. How could we have made this training more effective?

Give out numbers / names of local officials

5. How did you hear about this training? MI Climate Action Network

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Training for Local Planners and Decision Makers

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2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

RELATIONSHIP between planning & HEALTH
EXCELLENT presentation

4. How could we have made this training more effective? ?

5. How did you hear about this training? Mailer Cert. PLANNER

Please give us your feedback!

1. Describe your interest in the training:

☐ Planning Commissioner ☐ Community planner ☐ Student ☐ Local Official
☐ Public Health official ☐ Other (Please Describe): leadership w. energy 501c3 + LWVLC & chair Energy + Natural Resources Comm

2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

lots of inform. + ideas

4. How could we have made this training more effective?

5. How did you hear about this training? _____

Please give us your feedback!

1. Describe your interest in the training:

☐ Planning Commissioner ☐ Community planner ☐ Student ☐ Local Official
☐ Public Health official ☒ Other (Please Describe): Renewable Energy Promoter

2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

How to engage people in health / climate issues
How to organize and recognize the importance of stakeholder
Various technical information on the climate impact

4. How could we have made this training more effective?

5. How did you hear about this training?

Climate Health Adaptation Planning in Michigan
Training for Local Planners and Decision Makers

LIAA Climate Health Adaptation Planning in Michigan

Please give us your feedback!

1. Describe your interest in the training:

☐ Planning Commissioner ☐ Community planner ☐ Student ☐ Local Official
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2. Did you gain any new information or ideas during the session? ☒ Yes ☐ No

3. What information was most useful to you?

It is always helpful to hear community members concerns & what the community feels is pertinent or issues that they feel should be addressed

4. How could we have made this training more effective?

Work to bring more of planning and public officials to the table. This is good interesting work but it needs to hit the ears of the decision makers

5. How did you hear about this training? _____

An email from fellow planning partners.

Climate Health Adaptation Planning in Michigan
Training for Local Planners and Decision Makers

LIAA Climate Health Adaptation Planning in Michigan

Nice work!!