



Climate Health  
Adaptation Planning  
in Michigan

# CLIMATE HEALTH ADAPTATION PLANNING IN MICHIGAN

## *Training for Local Planners and Decision Makers*



June 2  
Lansing, MI

# Today's Presenters

Katie Sieb (ksieb@liaa.org)

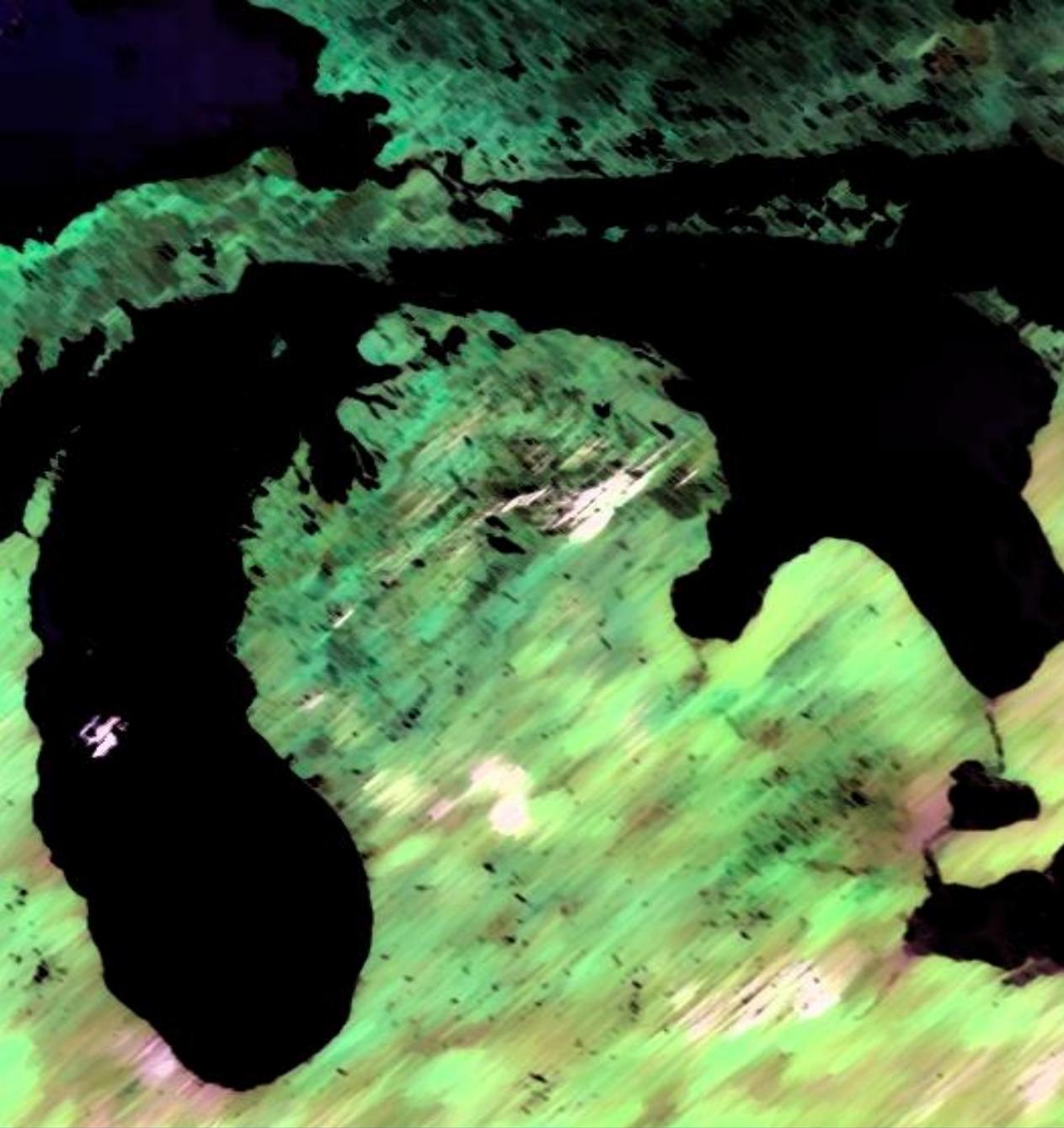
Community Planner at LIAA (Land Information Access Association)

In Traverse City, MI

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Program Manager, Climate & Health Adaptation Program

Michigan Dept. of Health and Human Services



# Planning for *Resilient* *Communities*

Learning, Adapting & Thriving

A new way of viewing the master plan process, focusing on adaptation in the face of changing conditions and circumstances.

*Resilient*  
**MICHIGAN!**

**LIAA**  
Land Information  
Access Association



# Michigan Climate & Health Adaptation Program

Preparing for the Public Health Impacts of Climate  
Change

Through support from the Centers for Disease Control and Prevention (CDC), MI-CHAP is building a climate-resilient public health system for Michigan at the state, local health department, and community levels.

# Climate and Health Implications for Michigan Communities



Extreme heat events  
Flooding  
Infectious disease  
Air quality issues  
Reductions in crop yield  
Negative impacts on trees  
Increased wildfire risk  
Waterborne diseases



# Overview of Today's Training

- Intersection of Planning and Public Health
- Climate Trends (National and Regional)
- Projected Health Impacts
- Tools for Planners and Health Officials to address Climate Challenges
- Ideas for Implementing Positive Public Health Outcomes (political realities, funding, etc.)
- Feedback on Michigan Health Adaptation Plan

## Goals for Today:

1. Gain familiarity of climate projections and health impacts.
2. Identify ways to advocate for positive public health outcomes.
3. Leave with implementable ideas for addressing public health issues in your community.

# Each Packet Includes:

- Agenda
- Handout describing the Climate Health Adaptation Training
- 1 copy of the presentation slides
- Activity #1: Climate Impacts at the Local Level
- Activity #2: Using Scenarios to Develop Solutions
- Activity #3: Guidance on the MI-CHAP Adaptation Plan
- HIAs to Enhance Health Outcomes – Examples from Three Michigan Communities
- Regional Climate Trends for Southwest Lower Michigan
- Site Plan Review Reference Guide (Monroe County)
- Resources Handout
- Training Feedback Form
- Master Citizen Planner Credit Request Form



# Historical origins of planning are rooted in Public Health

Late 1800's response to deplorable urban living conditions.

Concerned with water sanitation, minimum housing standards, light and air quality, industrial plant safety, welfare of employees.

Resulted in municipal regulation of land uses.



# Contemporary Land Use Decisions

Have resulted in many public health issues we face today.





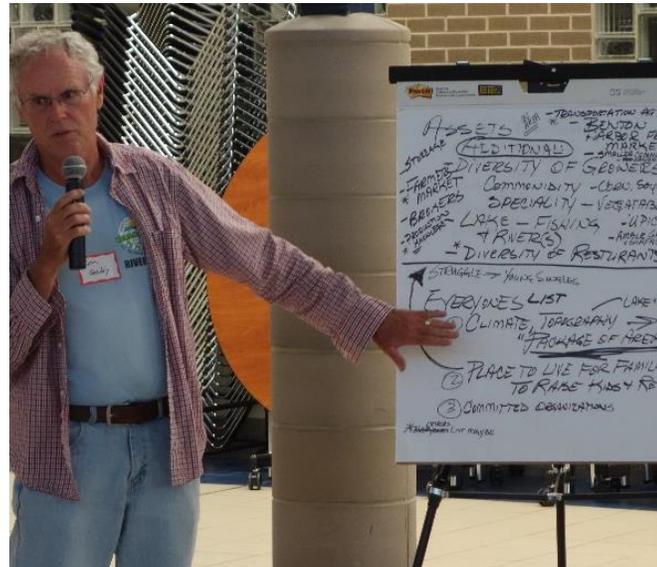
## EMERGING ISSUES 21<sup>st</sup> Century

- Aging Population
- Placemaking (places, to live, work and play)
- Move to Urban Centers
- Sustainable/Reuse
- Aging Infrastructure
- Health and Access to Food
- Global Economy
- Energy
- Climate Change
- Resilience and Adaptation

# Role of the Planner in Public Health

*Planner as a convener*

*Planner as an information sharer and policy practitioner*



# Role of Public Health Officials

*“We are the frontline in population-based public health, the community is our patient.”*

## **Public Health Departments in Michigan focus on:**

- 1. Prevention**- reduce or eliminate a health concern before an issue arises.
- 2. Response** - Protect the whole community including the people, land, and natural resources within that community. (population-based approach)
- 3. Partnerships** - form collaborative partnerships in the community to address health issues.

More information at Michigan Association for Local Public Health

<http://www.malphp.org/>

# Health and Planning Areas of Overlap

**TABLE 1. SUMMARY OF HEALTH TOPICS**

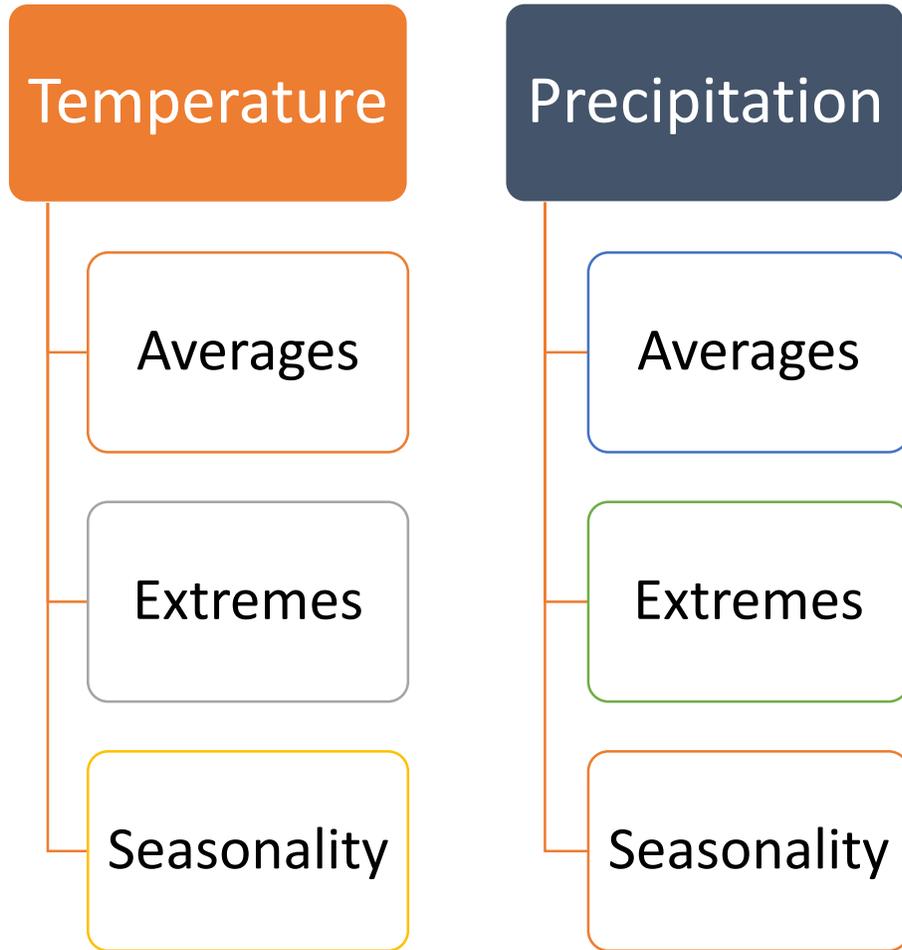
1. ACTIVE LIVING	
	Active Transport
	Recreation
	Injury
2. EMERGENCY PREPAREDNESS	
	Climate Change
	Natural and Human-caused Disasters
	Infectious Disease
3. ENVIRONMENTAL HEALTH	
	Air Quality
	Water Quality
	• Brownfields

4. FOOD & NUTRITION	
	Access to Food and Healthy Food Options
	Water
	Land Use
5. HEALTH & HUMAN SERVICES	
	Accessibility to Health & Human Services
	Aging
6. SOCIAL COHESION & MENTAL HEALTH	
	Housing Quality
	Green & Open Space
	• Noise
	Public Safety / Security

 Indicates a direct and indirect connection to impacts and issues that may be amplified by climate change

Source: Healthy Plan making, Final Report, APA

# Climate - *What has Changed?*

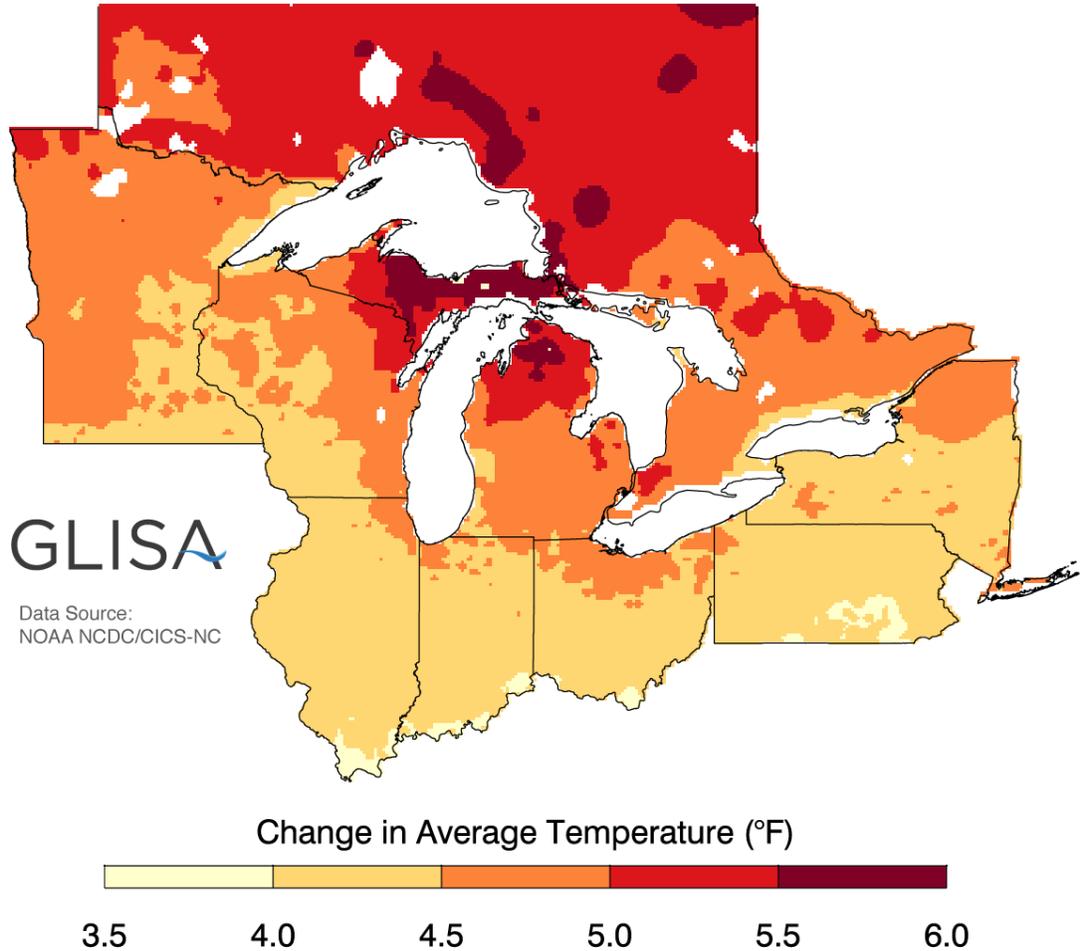


Scientists often discuss changes in terms of averages, but *our environments are managed in terms of extremes.*

Source: GLISA

# Projected Change in Average Temperature

Period: 2041-2070 | Higher Emissions: A2



## Rising Average Temperatures



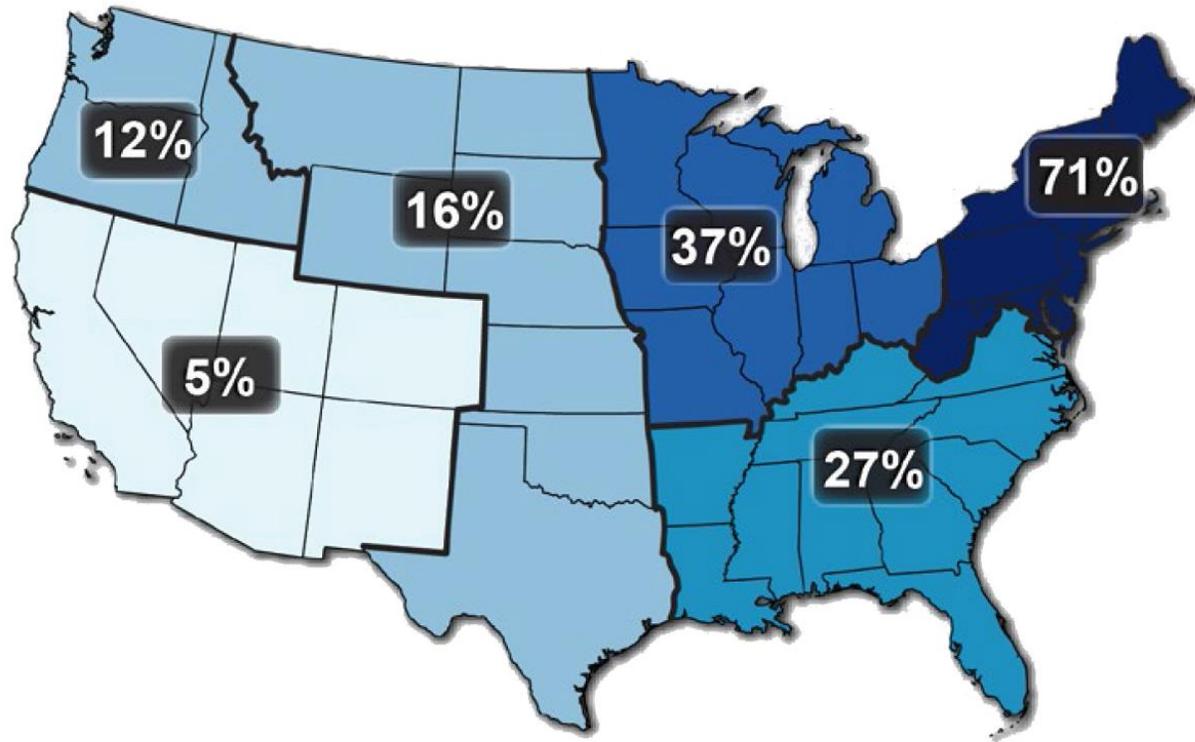
**2.0°F**

Observed  
1900-2012



**3.5 - 6°F**

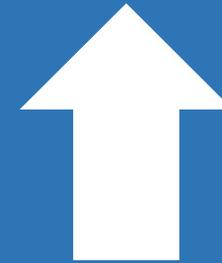
Projected  
2041-2070



From the 3<sup>rd</sup> National Climate Assessment, 2014

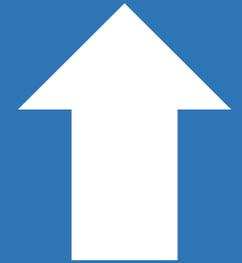
Slide Source: GLISA

# Increases in Extreme Precipitation



**37%**

Observed  
Precipitation  
Increase in the  
Highest  
1% of Storms  
1958-2012



**37-46%**

Projected Increase  
in Number of Days  
with 2 Inches or  
More of  
Precipitation by  
2050



Michigan State Climatologist, Dr. Jeff Andresen, speaking at a public meeting in St. Joseph.

# Tips for Talking about Climate Change

- Focus on data, not politics (not why its happening, but what is happening)
- Talk about **impacts** of climate change without saying the word climate change (e.g., increased stormwater runoff)
- Focus on **local solutions** to global issues
- Visual cues of recent events (i.e. flooding damage, etc.)
- Stakeholders can describe how the climate is **impacting their job** (e.g. farmers, public works officials)
- Focus on identifying actions of no regret and non-climate benefits of actions
- Acknowledge the uncertainty of climate science

# Sources for Climate Data

## International Resources:

International Panel on Climate Change: <http://www.ipcc.ch/>

Union of Concerned Scientists: [http://www.ucsusa.org/global\\_warming](http://www.ucsusa.org/global_warming)

## National Resources

NOAA: <http://www.education.noaa.gov/Climate/>

National Climate Assessment: <http://nca2014.globalchange.gov/>

AAAS (American Association of the Advancement of Science): <http://whatwewknow.aaas.org/get-the-facts/>

Climate Adaptation Knowledge Exchange (CAKE) features a wide variety of case studies: <http://www.cakex.org/>

U.S. Global Change Research Program: <http://www.globalchange.gov/>

## Midwest Resources

GLISA – Headquarters for all climate data in the Midwest region: <http://glisa.umich.edu/>

## Michigan Resources

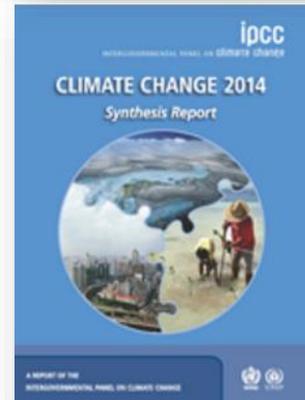
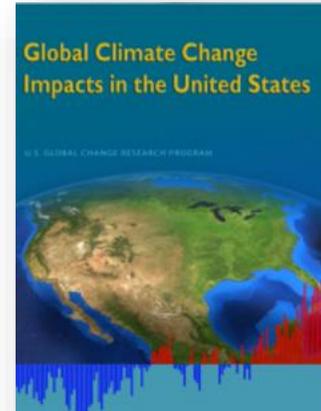
Michigan Climate Coalition: <http://miclimatecoalition.org/>

Hazard Mitigation: [Michigan Hazard Mitigation Plan](#)

Community Health: [Michigan Health Adaptation Plan](#)

Agriculture: [http://shop.msu.edu/product\\_p/bulletin-e3149pdf.htm](http://shop.msu.edu/product_p/bulletin-e3149pdf.htm)

Energy: <http://glc.org/energy/glew/pdf/GLEW-Phase-I-Report-FINAL.pdf>



# Activity #1

Please refer to the handout in your packet to answer the following questions:

1. What climate impacts have you seen in your community? Has there been an impact to public health?
2. Has your community had meaningful conversations about climate change? Are these issues difficult to bring up in your community? If so, why?

# The Climate and Public Health Connection

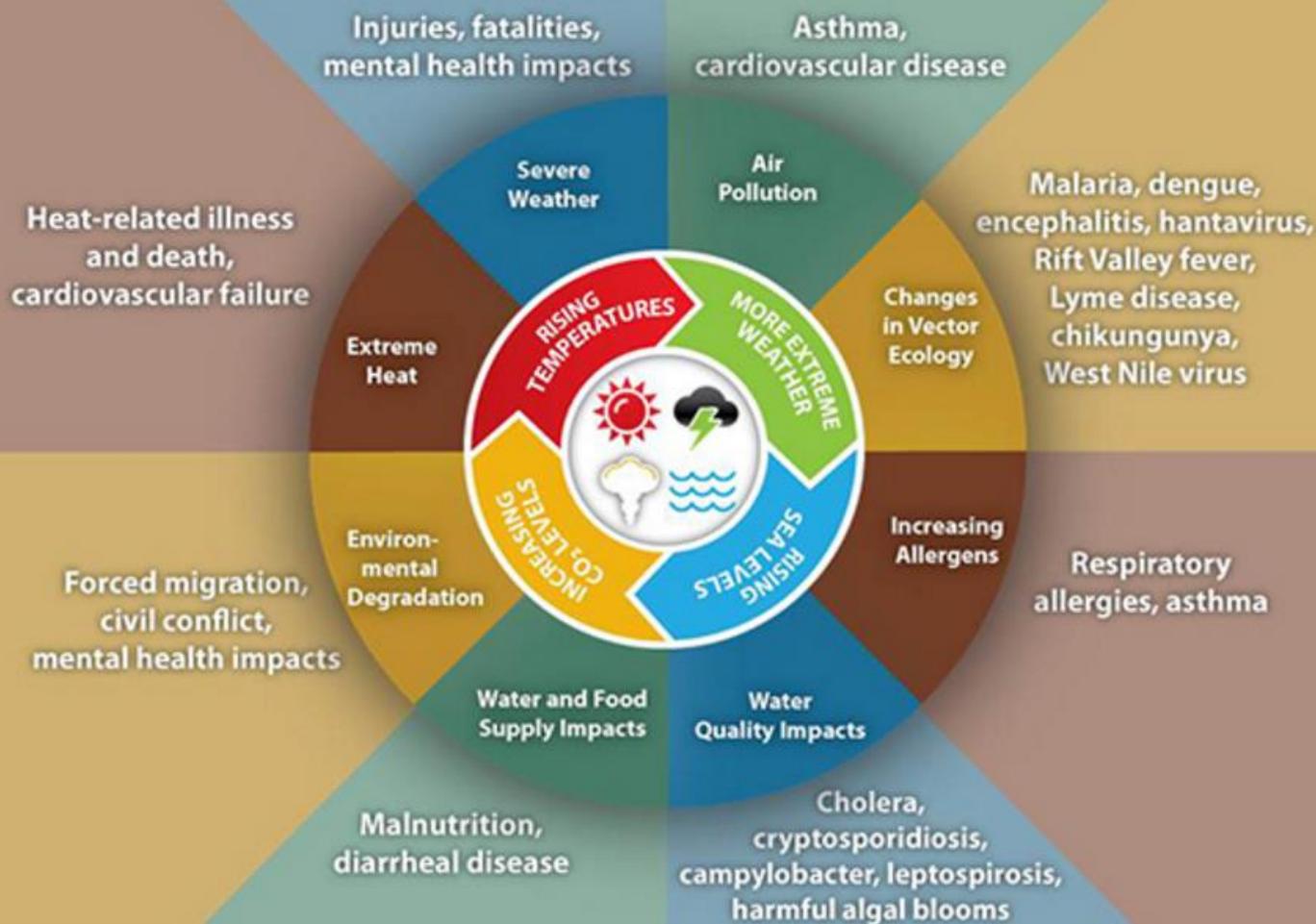


Source: MICHAP

“Climate change is one of the most serious public health threats facing our nation. Yet few Americans are aware of the very real consequences of climate change on the health of our communities, our families and our children.”

Georges Benjamin, MD, Executive Director  
American Public Health Association

# Impact of Climate Change on Human Health

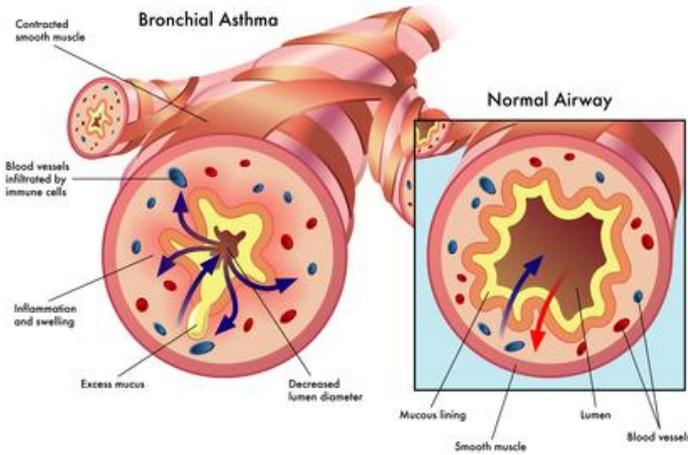


<http://www.cdc.gov/climateandhealth/effects>

The Michigan Climate Health Profile identifies 5 priority Health Outcomes due to Climate Change:

1. Respiratory Diseases
2. Waterborne Diseases
3. Vector-borne Diseases
4. Carbon Monoxide (CO) Poisoning
5. Heat Related Illnesses

# Respiratory Diseases



Overall, projected conditions favor increased air pollution and worsening respiratory disease. Climate projections also favor an earlier and longer growth period for plants indicating increased pollen levels, which could increase allergies and exacerbate symptoms including asthma.

# Waterborne Diseases



April 2013 Grand Rapids Flooding Event – mlive.com

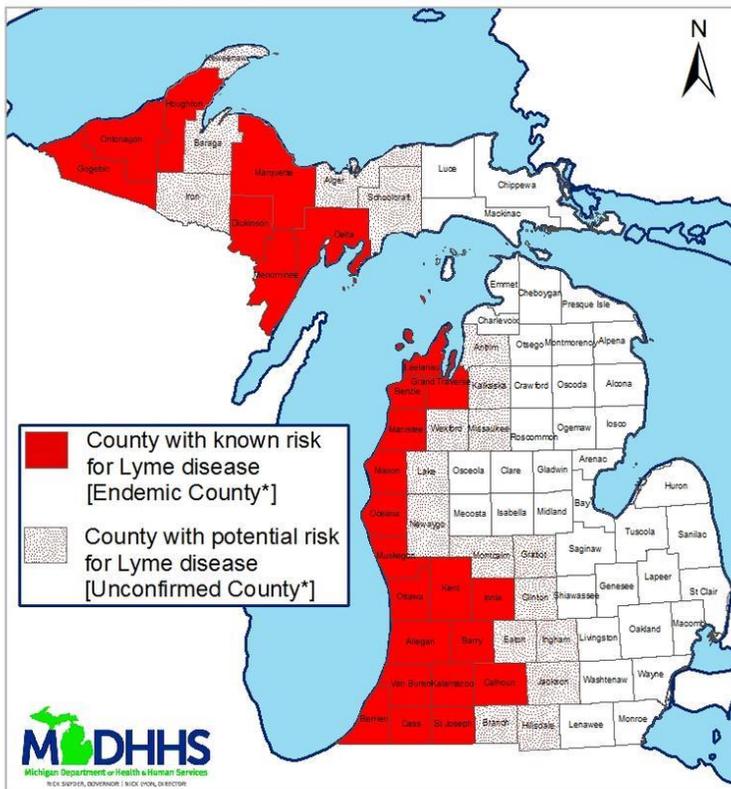


Lake Erie Algal Bloom, 2013

In general, climate conditions leading to flooding will be the same or more intense in the future. This leaves areas vulnerable to sewage/septic failures and runoff at increased risk for waterborne diseases and in certain areas, development of harmful algal blooms.

# Vector Diseases

Michigan Lyme Disease Risk Map: 2015



\* Lyme disease risk in this map is based on known, field confirmed populations of infected blacklegged ticks, or laboratory confirmed human cases.

a) Counties labeled "endemic" are counties where infected tick populations have been confirmed - and/or -

Two or more laboratory confirmed human cases have been identified with local exposure.

b) Counties labeled "unconfirmed" are counties bordering endemic counties, but which do not meet the above criteria for "endemic" counties.

MDHHS Emerging & Zoonotic Infectious Diseases Section: Revised April, 2015



Projections point to warmer winters, earlier springs, and warmer summers. Each of these are conditions suitable for West Nile Virus and its mosquito vector. Similarly, current and future conditions are suitable for Lyme disease and its tick vector although there is greater difficulty in projecting the burden based on the complex sequence of climate conditions and the tick's life cycle needs.

# Carbon Monoxide (CO) Poisoning



Extreme weather events conducive to power outages are projected to increase, especially in winter, leading to increased use of generators and thus increased risk of CO poisoning. Clean up after an event by using power washers may also increase risk of CO poisoning. Freezing rain and flooding increases will raise traumatic injury risk.

# Heat-Related Illnesses

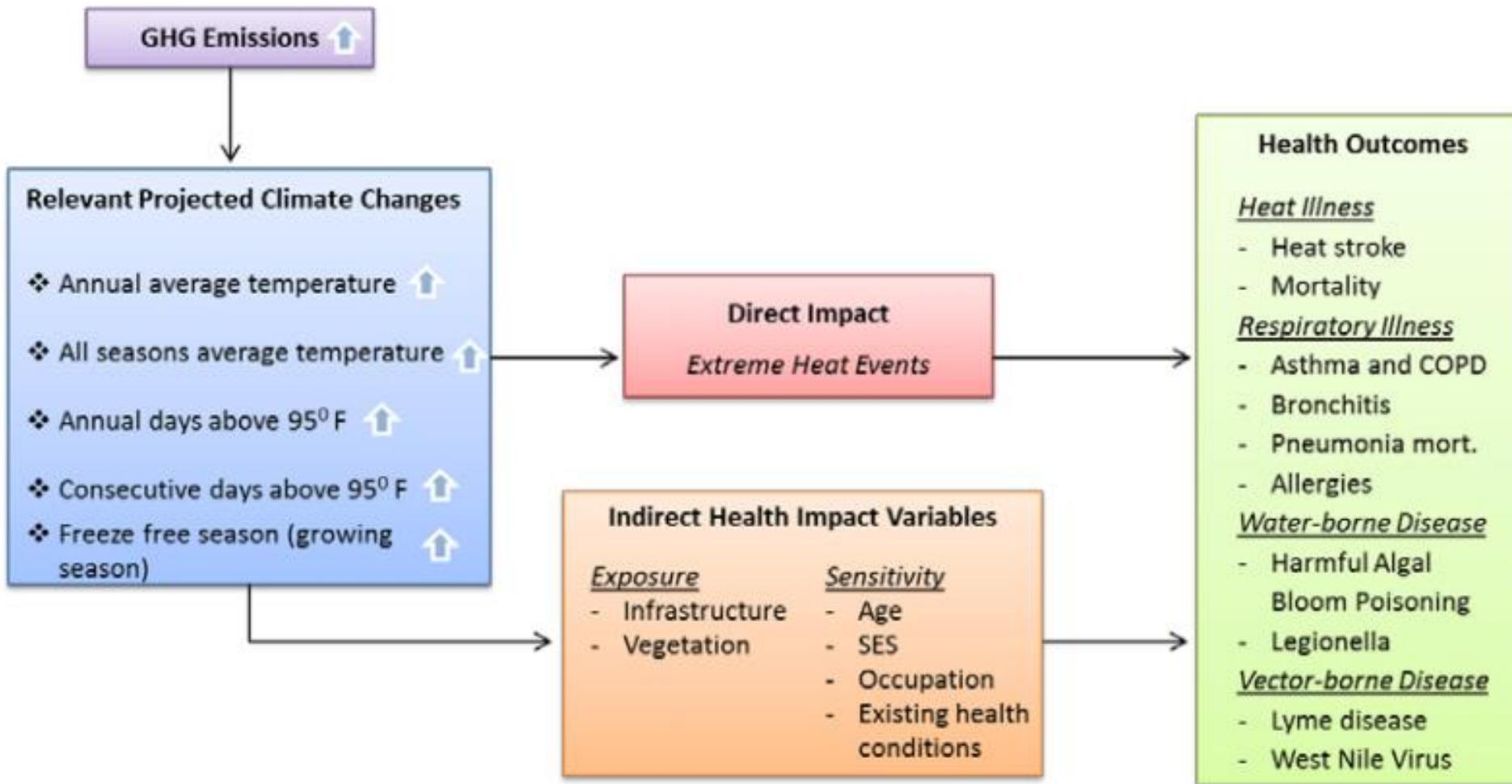
HEAT EXHAUSTION	OR	HEAT STROKE
Faint or dizzy		Throbbing headache
Excessive sweating		No sweating
Cool, pale, clammy skin		Body temperature above 103° Red, hot, dry skin
Nausea or vomiting		Nausea or vomiting
Rapid, weak pulse		Rapid, strong pulse
Muscle cramps		May lose consciousness
<ul style="list-style-type: none"><li>• Get to a cooler, air conditioned place</li><li>• Drink water if fully conscious</li><li>• Take a cool shower or use cold compresses</li></ul>	<b>CALL 9-1-1</b>	<ul style="list-style-type: none"><li>• Take immediate action to cool the person until help arrives</li></ul>

SacramentoReady.org  @SacramentoOES



Air mass stagnation events may increase in frequency if high humidity occurs with high temperature and low winds, leading to increased heat stress-related morbidity and mortality. Projected increasing numbers of high heat days by mid-century suggest there will likely be large direct impacts on human health, especially if occurring simultaneously with other variables such as urban heat island effect.

# Pathways – Example for Extreme Heat Events



Extreme heat related direct and indirect conceptual human health impact pathway based on climate changes resulting from increased Greenhouse Gas Emissions (GHG).

# Public Health Interventions

Primary	Secondary	Tertiary
Reduce or <b>eliminate exposures</b> projected to occur with climate change.	Aims to <b>prevent the onset</b> of adverse health outcomes related to a climate exposure.	Measures to <b>reduce long-term impairment</b> and minimize suffering caused by existing disease.
Ex) Redesigning water and waste water systems to reduce flooding and contamination thereby increasing resilience to increasing precipitation and more frequent and extreme events.	Ex) Strengthening disease surveillance programs to provide early intelligence of the emergence or re-emergence of vector-borne disease.	Ex) Proper identification and treatment of health impacts related to or exacerbated by heat illness and stress.

There are a variety of public health *Adaptation* *Preventions* that range from reducing the environmental exposure to lessening the impact of an existing disease.

Source: MDHHS, MAP 2015 Conference

# Public Health and Planning Co-Benefits

Many adaptation interventions for positive health outcomes have substantial community planning benefits as well.

Intervention	Public Health Benefit	Community Planning Benefit
<b>Increase access to and diversify transit opportunities</b>	<ul style="list-style-type: none"> <li>- Increased physical activity</li> <li>- Reduced localized air pollution including ozone</li> <li>- Greater access to social services and health care</li> </ul>	<ul style="list-style-type: none"> <li>- Reduced traffic congestion</li> <li>- Increase customer access to businesses</li> <li>- Support market based, high density, multi-use development</li> </ul>
<b>Utilize “complete streets” design strategy</b>	<ul style="list-style-type: none"> <li>- Increase tree canopy coverage for shade</li> <li>- Increase walkability and bike-ability</li> <li>- Reduction in CSO and sewer backup events</li> </ul>	<ul style="list-style-type: none"> <li>- Storm-water management from green infrastructure</li> <li>- Reduce wear and tear on infrastructure</li> <li>- Place based economic development</li> </ul>
<b>Energy diversification and reduction strategies</b>	<ul style="list-style-type: none"> <li>- Reduced regional and localized mercury, SOx &amp; NOx, particulates</li> <li>- Reduced opportunity for power outage related impacts</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce stress on vulnerable energy systems</li> <li>- Stabilize and even reduce energy costs</li> </ul>

Source: MDHHS, MAP 2015 Conference

# Actions of No Regret

Public health climate adaptation actions make communities better, more vibrant places to live.



Select a Ranking:

HEALTH OUTCOMES  
OVERALL RANK



## Saginaw (SA)

County Snapshot | [Additional Measures](#)

Areas to Explore  ON  OFF

Rank	County
1	<a href="#">Ottawa (OT)</a>
2	<a href="#">Leelanau (LL)</a>
3	<a href="#">Alger (AG)</a>
4	<a href="#">Houghton (HO)</a>
5	<a href="#">Charlevoix (CH)</a>
6	<a href="#">Clinton (CN)</a>
7	<a href="#">Livingston (LI)</a>
8	<a href="#">Grand Traverse (GT)</a>
9	<a href="#">Washtenaw (WA)</a>
10	<a href="#">Midland (MD)</a>
11	<a href="#">Missaukee (MI)</a>
12	<a href="#">Chippewa (CI)</a>
13	<a href="#">Allegan (AE)</a>
14	<a href="#">Emmet (EM)</a>
15	<a href="#">Gogebic (GO)</a>
16	<a href="#">Luce (LU)</a>

	Saginaw County	Trend	Error Margin	Top U.S. Performers*	Michigan	Rank (of 82)
<b>Health Outcomes</b>						<b>72</b>
<b>Length of Life</b>						<b>65</b>
Premature death	8,023		7,566-8,479	5,200	7,218	
<b>Quality of Life</b>						<b>78</b>
Poor or fair health	15%		12-17%	10%	14%	
Poor physical health days	3.9		3.3-4.4	2.5	3.6	
Poor mental health days	3.8		3.2-4.4	2.3	3.7	
Low birthweight	9.8%		9.4-10.3%	5.9%	8.4%	
<b>Health Factors</b>						<b>68</b>
<b>Health Behaviors</b>						<b>67</b>
Adult smoking	19%		16-22%	14%	20%	
Adult obesity	39%		35-42%	25%	32%	
Food environment index	7.0			8.4	7.2	
Physical inactivity	26%		23-30%	20%	23%	

# Public Health Data Sources

- Robert Wood Johnson County Health Rankings
- National Environmental Public Health Tracking Network
- Refer to the Community Health Needs Assessment conducted by your local hospital
- Local Health Assessments

National Environmental Public Health Tracking Network

<http://ephtracking.cdc.gov/showHome.action>

Non-profit Hospitals conduct a Community Health Needs Assessment:

<http://www.astho.org/Programs/Access/Community-Health-Needs-Assessments/>

## Two Valuable Tools for Planners, Policy Makers, and Health Officials:

1. Vulnerability Assessment
2. Health Impact Assessment



## Identify the Risk

Both types of assessments promote good planning policies, regardless of climate change predicted impacts

# Community Vulnerability Assessments

## *Vulnerability = Sensitivity + Exposure*

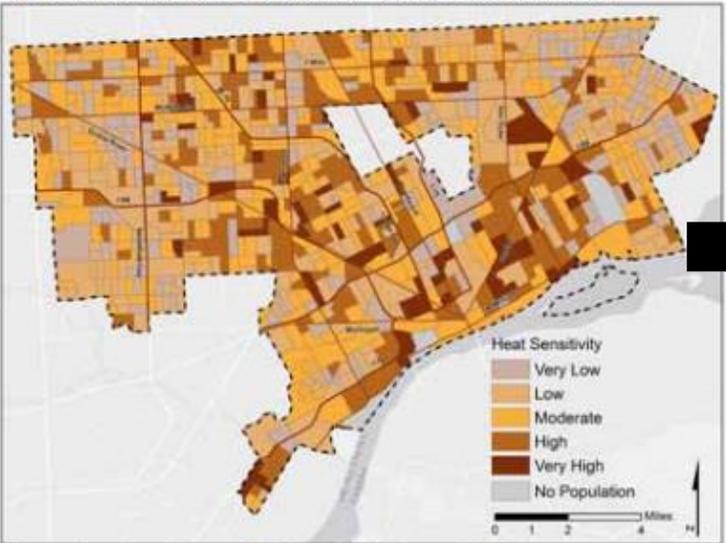
1. Identify community vulnerabilities that can be addressed to increase resilience. Key concerns are in respect to public health/welfare, property values and infrastructure, and natural resources.
2. Serve as a tool to assist community officials in choosing policy options that foster resilience in the face of unforeseen challenges.

**“A vulnerability assessment is a first step in climate adaptation, just as a risk assessment is an early step in risk management.”**

Michigan DNR

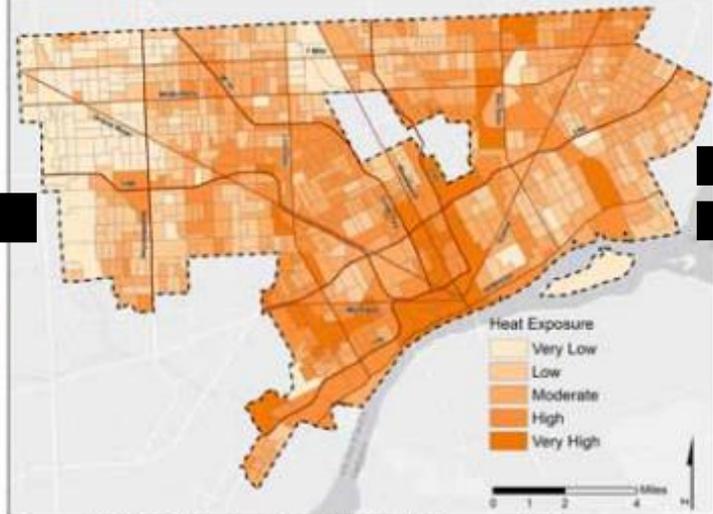
# Heat Vulnerability Assessment

Figure 8 :Detroit Sensitivity to Excessive Heat by Block Group 2010



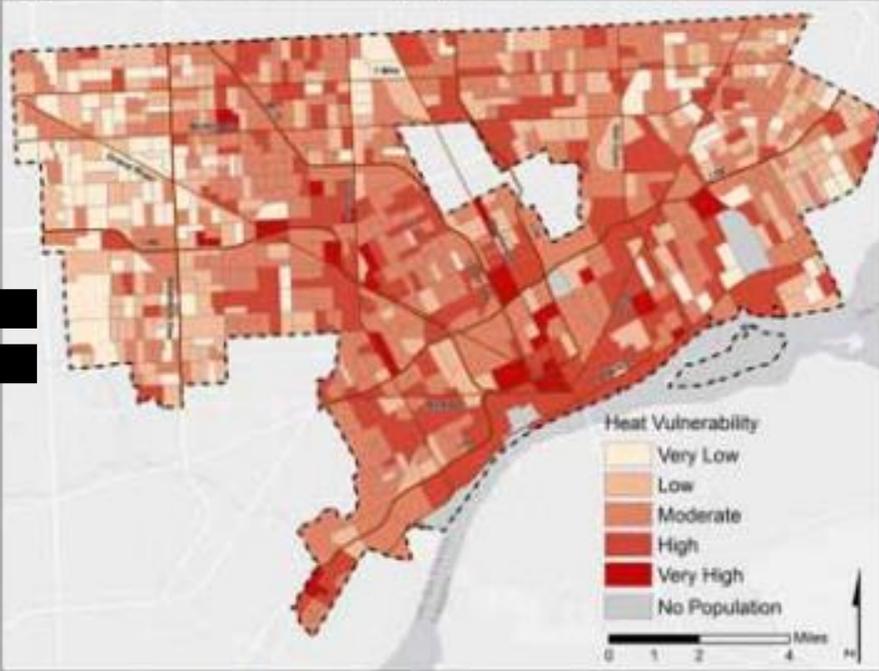
Source: American Community Survey; US Census 2010  
Map Prepared By: University of Michigan Detroit Climate Capstone

Figure 3: Detroit Exposure to Excessive Heat Based on Land Cover by Block Group 2010



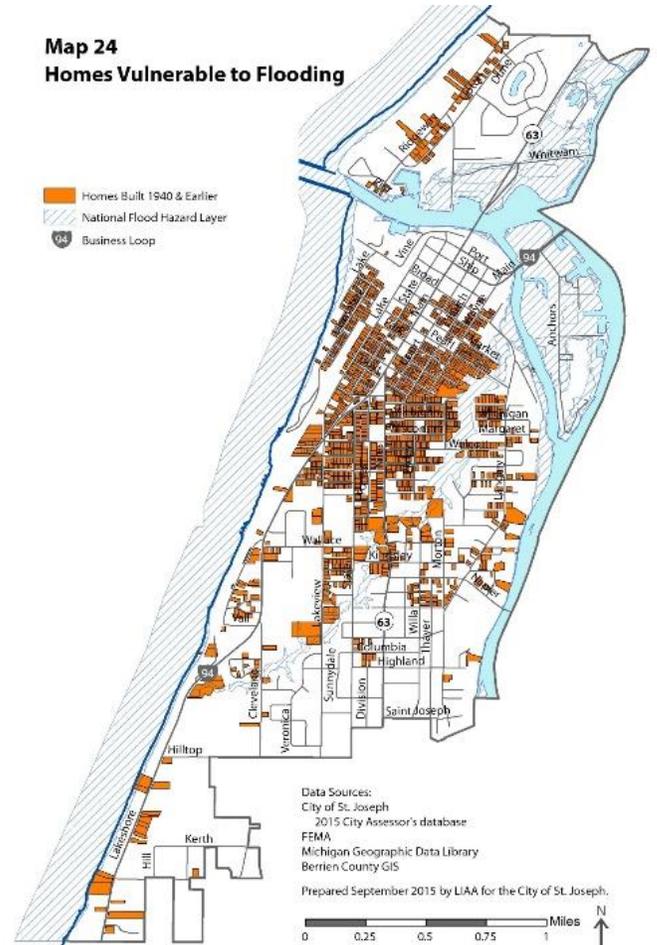
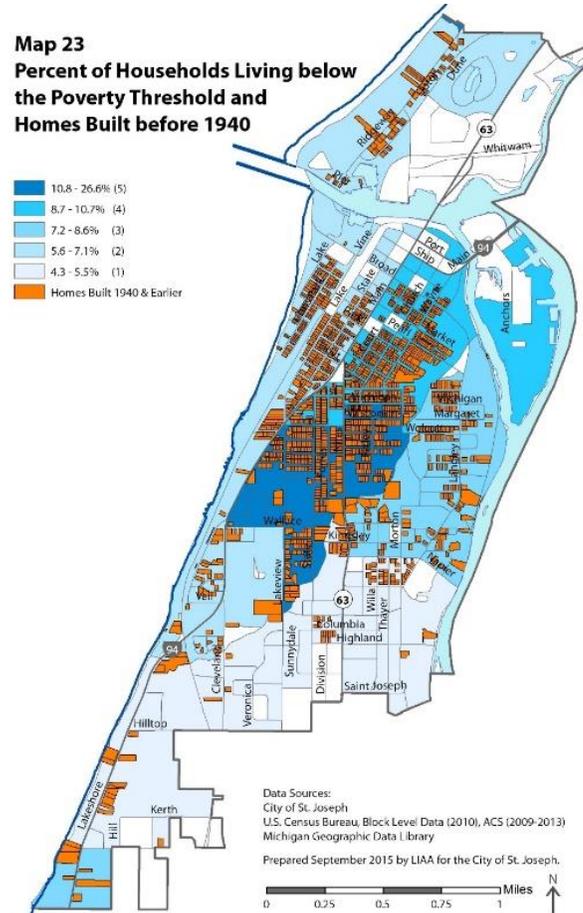
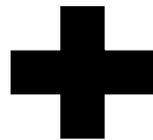
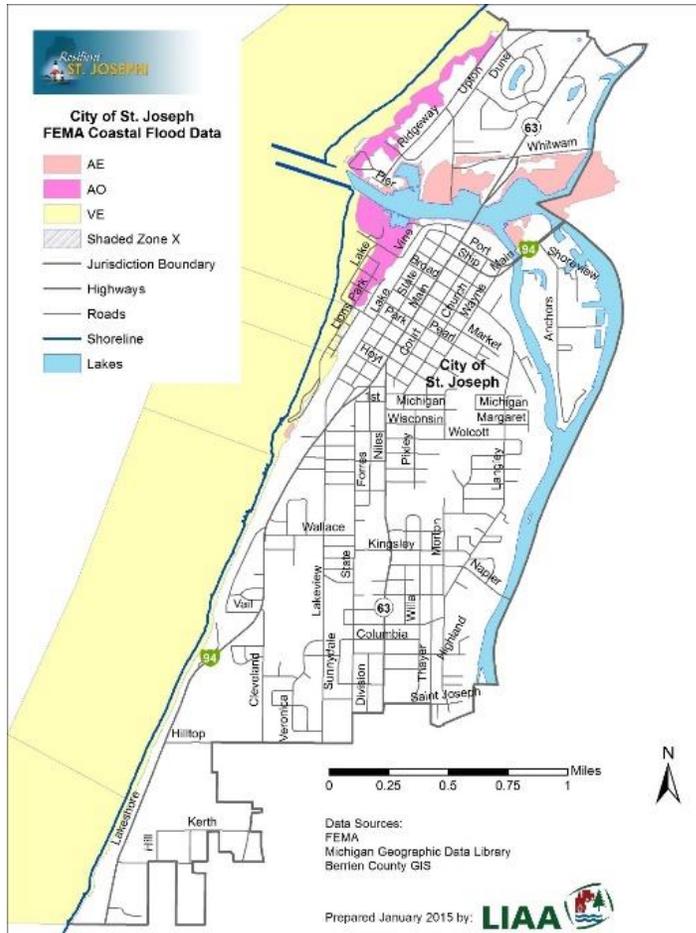
Source: USGS GloVis LandSat 7 ETM+; US Census 2010  
Map Prepared By: University of Michigan Detroit Climate Capstone

Figure 9: Detroit Heat Vulnerability by Census Block Group 2010



Source: USGS GloVis LandSat 7 ETM+;  
American Community Survey; US Census 2010  
Map Prepared By: University of Michigan Detroit Climate Capstone

# Flooding Vulnerability Assessment



# Health Impact Assessment

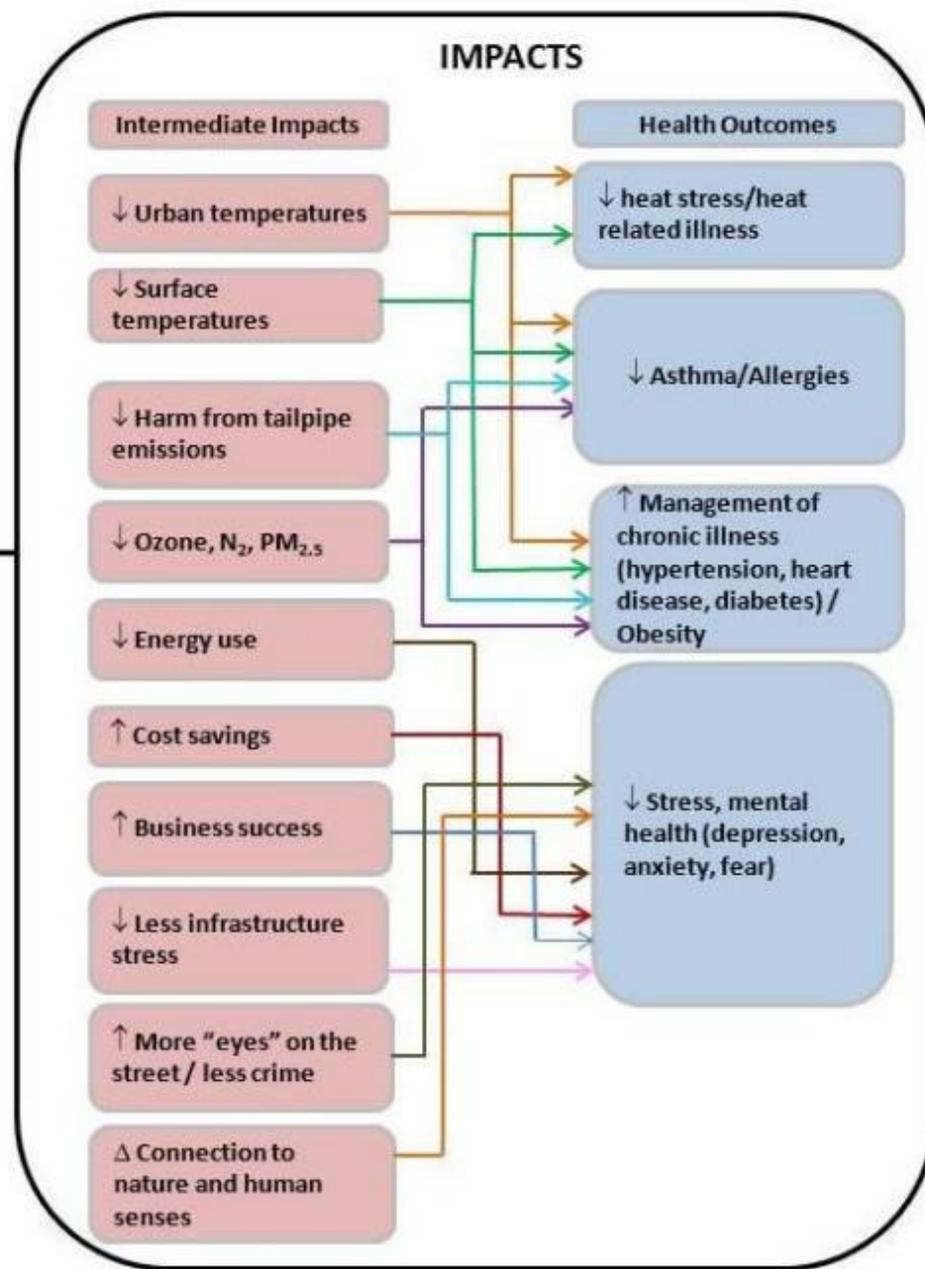
An HIA is a “means of assessing the health impacts of policies, plans, and projects in diverse economic sectors using quantitative, qualitative, and participatory techniques”



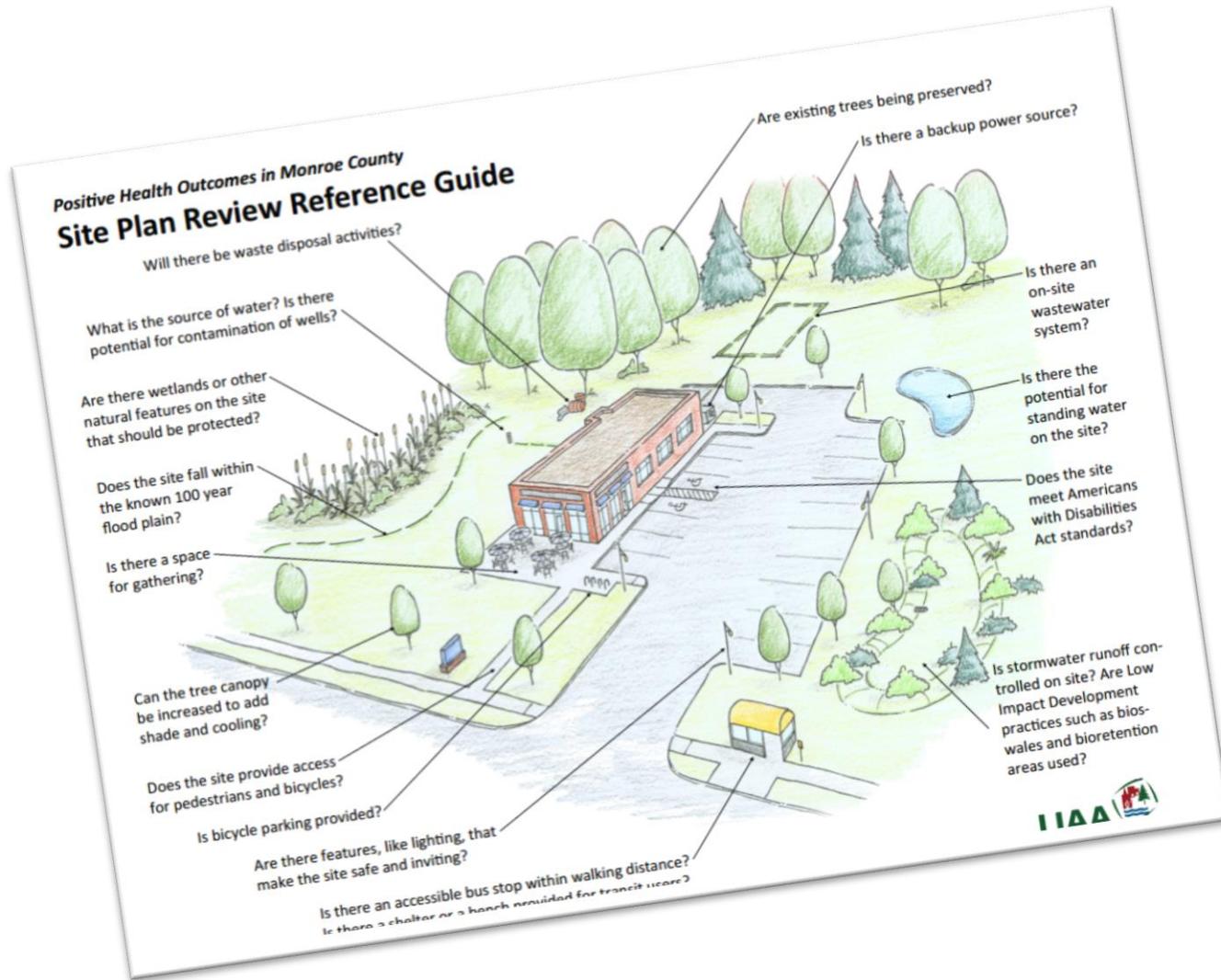
SOURCE: Adapted from: R. Bhatia, “Health Impact Assessment: A Guide for Practice,” Oakland, CA: Human Impact Partners, 2011.

# Tree Canopy HIA in Ann Arbor

“A spatial assessment to determine where increase in tree canopy would be most beneficial to residents’ health.”



# Monroe County HIA



*Project Goal:* How can planners make decisions that foster better positive health outcomes?

- Convened a series of Focus Groups with Planners, Local Health Officials, Social Service Agencies, and Others
- Site Plan Review Reference Guide
- Video for Planning Commissioners

# Activity #2: Using Scenarios to Develop Solutions

The GOAL of this exercise is to develop solutions to a series of potential climate future scenarios, which include:

1. Extreme Heat Scenario
2. Heavy Rain and Flooding Scenario
3. Severe Drought and Wildfire Scenario
4. Winter Storm Scenario

As a group, please develop short-term and long-term resilience solutions as they relate to your scenario.

Refer to the scenario handout in your packet for scenario descriptions and for corresponding questions regarding emergency response and long-term adaptation.

# Institutionalize without Extra Funding

## Identify Opportunities to Integrate Health Actions into Existing Community Plans and Documents

- Examples:
  - Green Infrastructure Plan
  - Hazard Mitigation Plan
  - Climate Action Plans/Sustainability Plans
  - Resource Management Plans
  - Placemaking Initiatives

# The Master Plan Process

*“As planners have a stronger understanding of their role in shaping public health outcomes... they can contribute to creating built environments that support healthy living throughout the lifetime.”*

American Planning Association, Healthy Plan Making

Include a Community Health Profile in the Master Plan

- Example: Monroe, City of Lansing

Engage Diverse stakeholders with broad perspectives

- Social Service organizations (e.g. Red Cross, United Way, GoodWill)
- Emergency Managers (severe weather risks)
- Local Businesses (livable communities)
- Environmental Organizations (interested in air quality and storm water run off)
- Community organizers (often bring environmental justice perspective)

Weave health-concepts throughout the Master Plan



# Grand Rapids Sustainability Plan

This serves as a 5-year strategic plan for the City. Each department has specific goals and metrics, based on the triple bottom line.

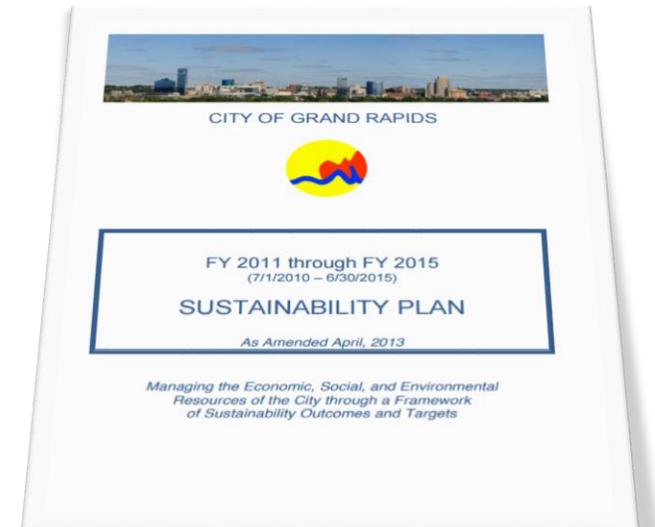
Specific Metrics that Relate to Public Health:

## 4. HEALTHY LIFESTYLES AND HEALTHY ENVIRONMENTS

- 4.1 Improve access to local food sources.
- 4.2 Increase and maintain human health and wellness.
- 4.3 Increase availability of recreational programs/facilities.

## 5. PUBLIC SAFETY

- 5.1 Reduce the occurrence of crime.
- 5.2 Reduce the loss of life and property from fire and emergency medical calls.
- 5.3 Ensure capacity for responding to emergencies and disasters.
- 5.4 Increase crime prevention, neighborhood public safety, and neighborhood-based leadership or involvement.



# Hazard Mitigation Planning

Used data developed by Great Lakes Integrated Sciences and Assessments to convene focus groups. Attendees included:

- hazard mitigation
- emergency response
- municipal planning professionals

Risk	By Mid-Century	By End of Century	Summary
<b>Convective Weather</b> (Severe Winds, Lightning, Tornadoes, Hail)	?	?	While extreme precipitation has increased dramatically in the region, specific severe weather types, such as tornadoes and hail, have remained relatively stable over time.
<b>Severe Winter Weather Hazards</b> (Ice/Sleet Storms and Snow Storms)	?	↓	Warmer, shorter winters will reduce the period of the year in which winter impacts are likely to happen, but some areas may see more ice, sleet, freezing rain, and wet snow with slightly warmer winter temperatures.
<b>Extreme Temperatures</b>	↑	↑ ↑	The number of extremely hot days, over 95°F, 100°F will likely increase, though not as fast as in areas farther south. Overnight lows have warmed faster than daytime highs, which may lessen opportunities for relief during heat waves.
<b>Flood Hazards: Dam Failures</b>	↑	↑ ↑	Stronger and more extreme precipitation events coupled with aging dam infrastructure will increase the probability of dam failure, if appropriate measures are not taken.
<b>Flood Hazards</b>	↑	↑ ↑ ↑	Stronger and more extreme precipitation events coupled will be more likely to overwhelm stormwater infrastructure without appropriate adaptation efforts.
<b>Fire Hazards: Wildfires</b>	?	↑	Summer drought and the number of consecutive dry days may increase in the future, despite more precipitation annually, increasing the risk of wildfires.
<b>Drought</b>	?	↑	Summer drought and the number of consecutive dry days may increase in the future, despite more precipitation annually.
<b>Infestation</b>	↑	↑	With shorter winters and longer growing seasons, the climate may become more suitable to invasive species and pests currently found elsewhere.



[www.hrwc.org/climate-resilient-communities](http://www.hrwc.org/climate-resilient-communities)

# Ongoing Monitoring and Evaluation

- 1. Build monitoring capacity into the project plan and budget**
- 2. Look for indicators with readily available data**
  - Health Outcomes and Health Factors – County Health Rankings
  - Miles of Bike Lanes or Transit Routes in your Community
  - Air Quality - The Environmental Protection Agency provides different types of air quality data (<https://www3.epa.gov/air/airpolldata.html>)
  - Water Quality (<http://water.usgs.gov/owq/data.html>)
  - Food Desert Mapping
  - Vulnerability Assessment Updates

# Example Indicator Tracking

**3,500**

**ACRES OF WETLANDS**  
in the Grand Haven Community. Each acre of wetlands can retain up to one million gallons of water!

**58%**

**TREE CANOPY**  
Over 13,400 acres of the Grand Haven Community is covered in trees. Beyond looking beautiful, trees help absorb flood water and provides habitat and shade. To maximize these benefits, research suggests that at least 40% of a community should be covered by trees.

**2,300**

**RESIDENTS**  
of the Grand Haven Community rode bikes for fun in 2014, 18% more than the national average!

**6,200**

**RESIDENTS**  
walked for leisure last year in the Grand Haven Community, 11% more than the national average!

**\$123**

**MILLIONS OF DOLLARS**  
may be at risk in property values during times of heavy flooding and average water levels on Lake Michigan.

**500**

**COMMUTERS**  
get to work in ways other than driving alone. This is a 95% increase since 2005-2009!

**0**

**CRITICAL SERVICES**  
like hospitals and schools are located in high risk flood areas.

**How Resilient is the Grand Haven Community in 2016?**

**15%**

**OF RESIDENTS**  
in the Grand Haven Community live within a 1/2 mile walk of a grocery store. Access to fresh food is a strong health benefit that addresses food deserts and increases local resiliency.

**11%**

**PAVED SURFACES**  
Over 2,500 acres of the Grand Haven Community is covered in impervious surfaces like driveways, buildings, and roads. Impervious surface in excess of 10% can degrade water quality, as stormwater runs off into lakes and rivers.

**334**

**STRUCTURES**  
may be at risk during times of heavy storms and average water levels.

Research on economic recovery has shown that communities with a high share of manufacturing jobs and with poorly educated populations are more susceptible to economic downturns. Additionally, when income gaps between rich and poor are high, economies are more likely to experience shocks and take longer to recover.

**MANUFACTURING**

**21%** of all jobs in the Grand Haven Community are in manufacturing compared to

**17%** of all jobs in the State.

**EDUCATION**

**65.9%** of adults in the Grand Haven Community have at least some college education compared to

**53.9%** of adults in the State overall.

**INCOME GAP COEFFICIENT**

**.41** in Ottawa.

**.40** in the State.

A '0' means everyone makes the same income and '1' means one person makes all the income and everyone else makes no income.

# Ideas for Funding

## Local Funding

- Tax Increment Financing
- Local Community Foundations

## U.S. Dept. of Housing and Urban Development

- Sustainable Communities Planning Grant Program
- Community Development Block Grants

## Transportation-related Funding

- Surface Transportation Block Grant (STBG) program
- Congestion Mitigation Air Quality Funding

## Infrastructure

- Stormwater, Asset Management, and Wastewater

## PACE (property-assessed clean energy) Program

## Center for Disease Control and Prevention

- Example: Community Transformation Grants (2011-2014)

## Healthy Communities grants

- Historically come from Kellogg Foundation, Kresge Foundation, and Robert Wood Johnson Foundation.

## Activity 3

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.

Please refer to the handout in your packet to answer each question.

# Guidance on the Michigan Climate and Health Adaptation Plan (2010-2015)

**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.

## Wrapping Up

- Public Health and planning professionals have the same overall goals for creating healthy communities.
- Severe weather events are increasing in frequency and intensity and have a broad range of impacts on human health. Planning policies can be used to mitigate these impacts.
- Politics and ideology associated with the climate change debate are not necessary to bring into the community conversation regarding positive public health outcomes.
- Positive public health outcomes can be fostered through a variety of planning processes.
- There are many opportunities for engaging public health professionals in planning processes.

## Next Steps:

1. Update the Michigan Department of Health and Human Services MICHAP
2. Interested in LIAA's Resilient Communities program? Please email [resilientmichigan@liaa.org](mailto:resilientmichigan@liaa.org)