

Wisconsin Flood Resilience Scorecard

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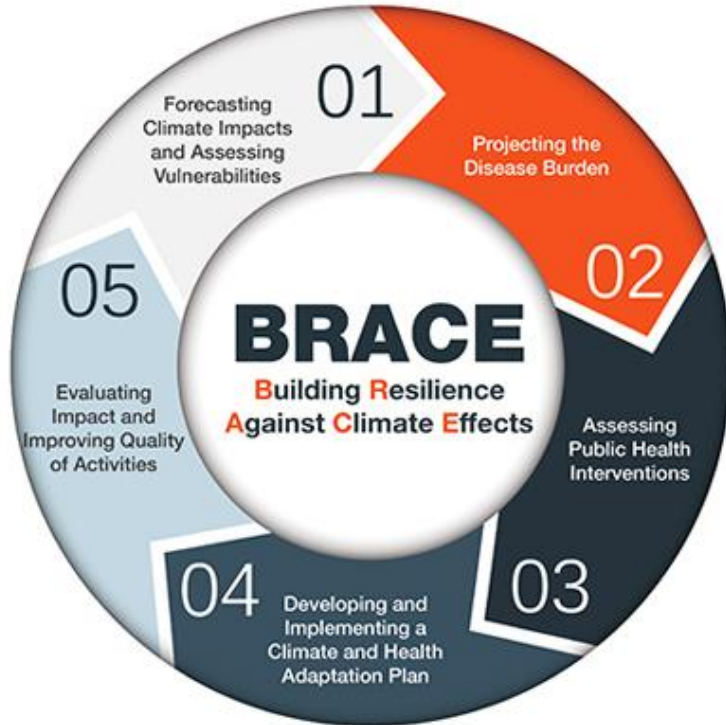
Agenda

- Climate and Health Program
- Flooding in Wisconsin
- Flood Resilience Scorecard Updates
 - ◆ Overview
 - ◆ Data Companion Document
 - ◆ Outreach to Municipalities
 - ◆ Preliminary Results

Climate and Health Program

- Study climate change impacts on public health
- Use best practices to identify: adaptation strategies, tools, and trainings to help communities address health outcomes climate change in an equitable way
- Raise public awareness on the connection between climate and health
- Build internal state agency capacity to address climate change within programmatic activities

Climate and Health Program

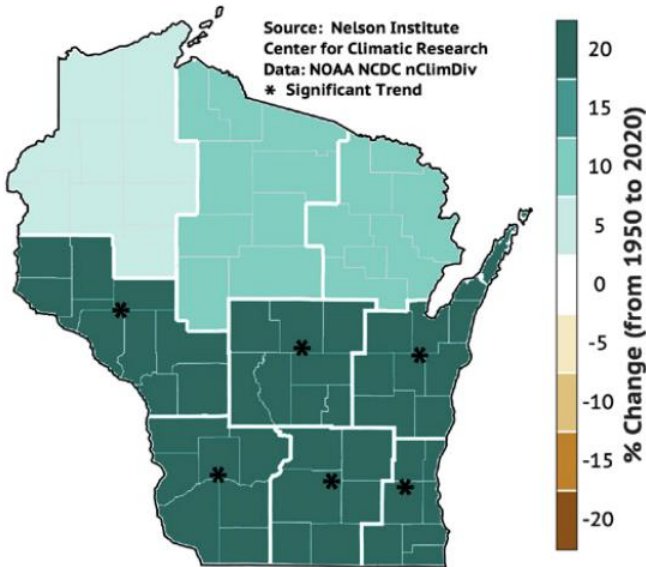


Five-step process health officials can use to develop strategies and programs to help communities assess and address the health effects of climate change.

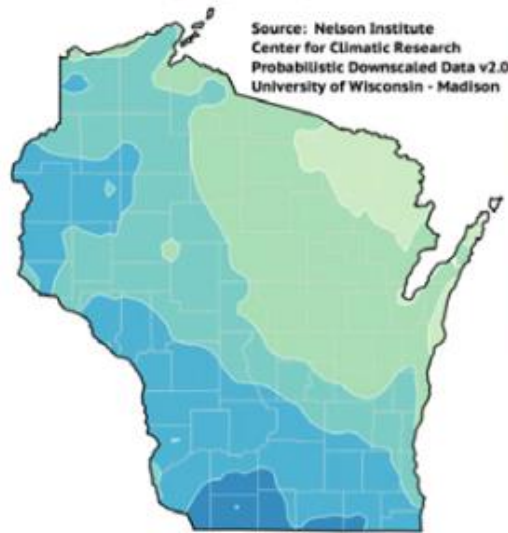
Flooding in Wisconsin

Frequency of >2inch rain events

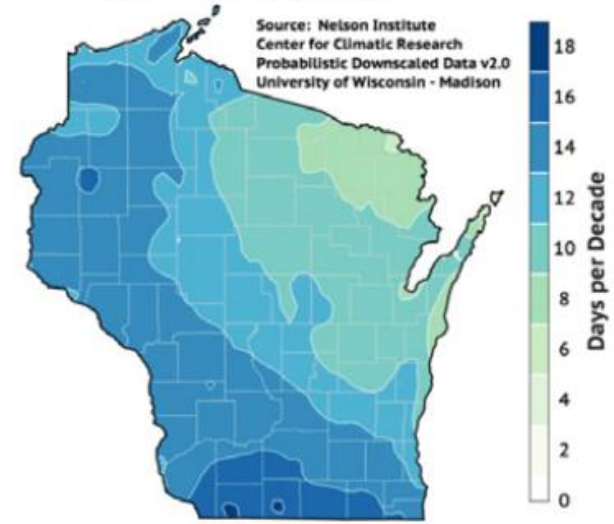
**Historical Change in Annual Precipitation
from 1950 to 2020**



HISTORICAL



MID-CENTURY



Public Health & Flooding

Health Impacts of Flooding (Du et al., 2010)

Immediate Consequences

- Drowning
- Electrocution
- Hypothermia
- Lack of access to medical records prescription drugs or electric medical equipment (e.g., respirators)
- Contact with sewage-related pathogens
- Contact with waterborne vectors (e.g., mosquitos)

Long-term Consequences

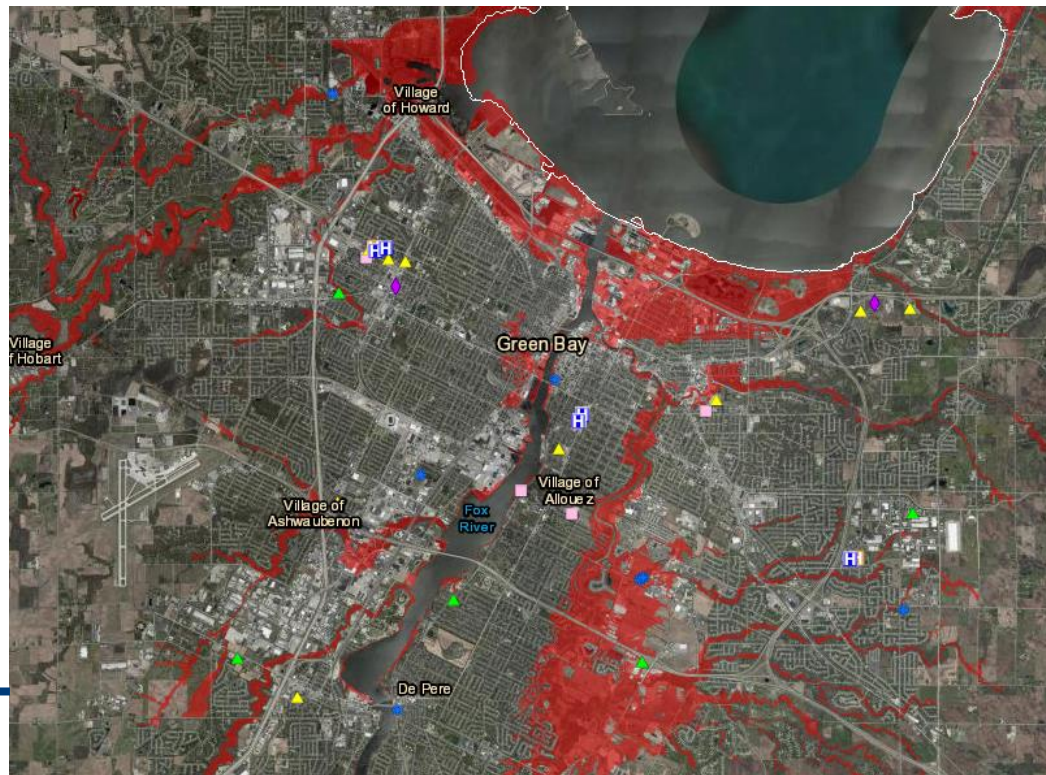
- Mold induced asthma
- Injuries while making repairs to flood damage
- Spread of communicable diseases in shelters
- Financial burden of recovery—strains resources for healthy food and routine healthcare
- Physiological effects
- Mental health and post-traumatic stress

Public Health & Flooding

Infrastructure Risks in Wisconsin²

- 1 in 5 road miles
- 1 in 5 critical facilities
- 1 in 10 residential properties

Wisconsin Risk Assessment Flood Tool (RAFT)




² First Street Foundation, 2021

Risk Assessment Flood Tool (RAFT)

- 32 data layers from 12 state and federal agencies
- FEMA flood hazard layer
- Social vulnerability data
- LIVE precipitation data, forecast, flood advisory, and river flood level status
- And more!





Wisconsin Flood Resilience Scorecard (FRS)



Wisconsin Flood Resilience Scorecard

A guided conversation for local officials to improve flood-related health outcomes in their community


 WISCONSIN DEPARTMENT
of HEALTH SERVICES
 

City of Rice Lake
Created: September 2021

Wisconsin Flood Resilience Scorecard
Data Companion


 WISCONSIN DEPARTMENT
of HEALTH SERVICES
 

City of Sheboygan
Created: October 2021

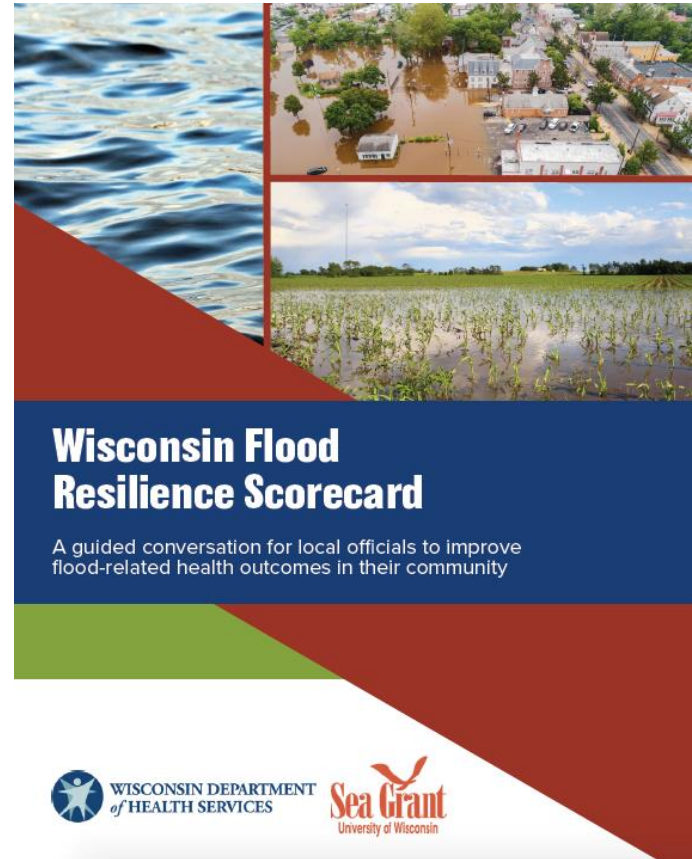
Wisconsin Flood Resilience Scorecard
Recommendations


 WISCONSIN DEPARTMENT
of HEALTH SERVICES
 

Flood Resilience Scorecard

Three modules:

- 1) Environmental
- 2) Institutional
- 3) Social



Module 1: Environmental



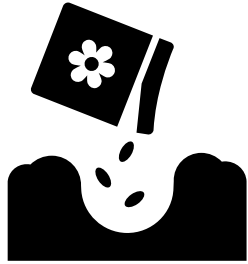
**Precipitation
Patterns**



**Slope and
Elevation**



**Land Use and
Future
Development**



Soils



**Agricultural
Practices**

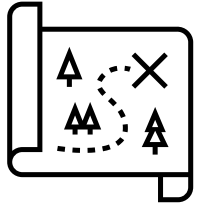
Module 1: Environmental

E-B2. Do critical structures (hospitals, wastewater treatment centers, police stations, etc.) fall within a floodplain?

- A. No critical structures are in a floodplain
- B. One or two critical structures are in a floodplain
- C. Multiple critical structures are in a floodplain



Module 2: Institutional



**Resource
Inventory and
Mapping**



**Plan Quality and
Coordination**



**Staff and
Technological
Capacity**



Tools



**Implementation
and
Enforcement**

Module 2: Institutional

I-B3. How many of your community's plans suggest restricting development in flood-prone zones, current or future?

- A. All of them
- B. Over half of them
- C. Less than half of them
- D. None



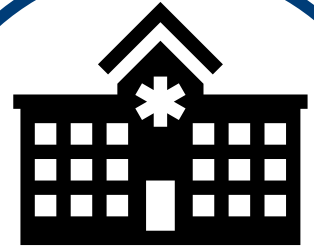
Module 3: Social



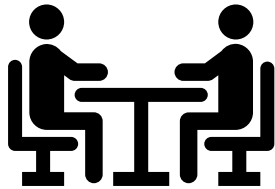
**Sociodemographic
Characteristics**



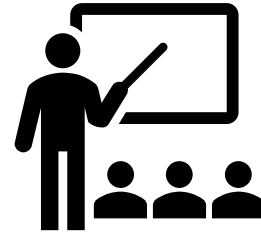
**Transportation
and Housing**



Health Indicators



**Community
Partnerships**



**Education and
Outreach**

Module 3: Social

S-C9. Are assisted living facilities or nursing homes in your community equipped with emergency supplies and generators to maintain care in the event of a flood?

- A. Yes, the community funds ample food, potable water and generators so that care is not disrupted during extreme weather events
- B. Yes, some facilities have access to some of these amenities, but largely through their own means of funding
- C. No, a majority of facilities are lacking in either food, potable water, generators or several of these



FRS Data Companion

- Addresses technical requirements for completing FRS

E-B3. What portion of your community (total area) is located on steep slopes (here meaning a slope greater than 10 degrees)?

- A. We have no steep slopes in our community
- B. Less than 10% of the community is on a steep slope
- C. Between 10-50% of the community is on a steep slope
- D. More than half of the community is on a steep slope



FRS Data Companion

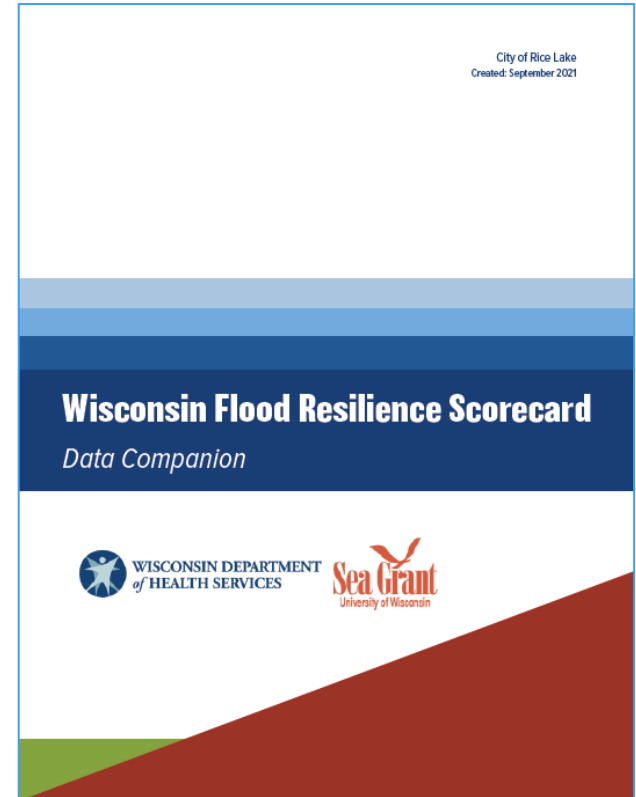
- 32 flood indicators
- Available for 600+ Wisconsin cities and villages and all 72 counties

Percentage in Floodplain	19.22%
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Source: Federal Emergency Management Agency, National Flood Hazard Layer

Percentage Pasture / Cropland	7.24%
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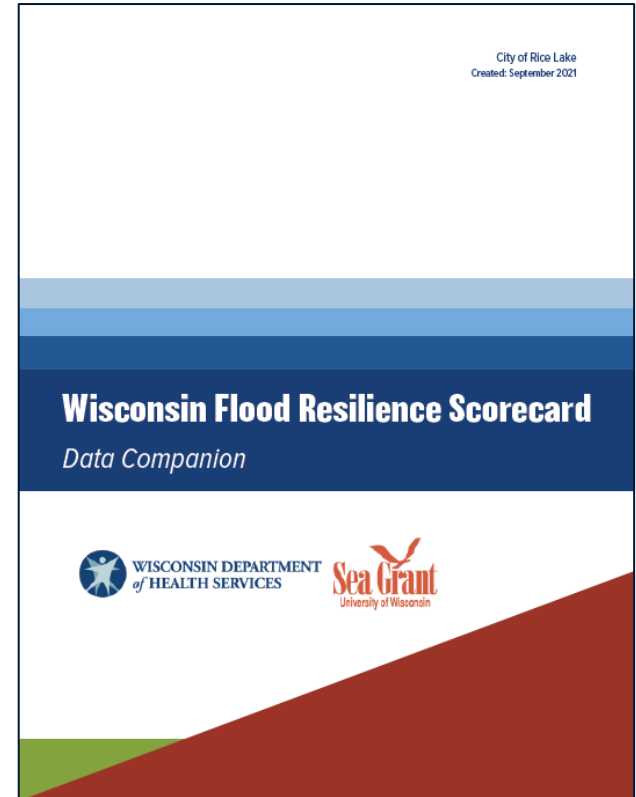
Source: National Land Cover Database 2016



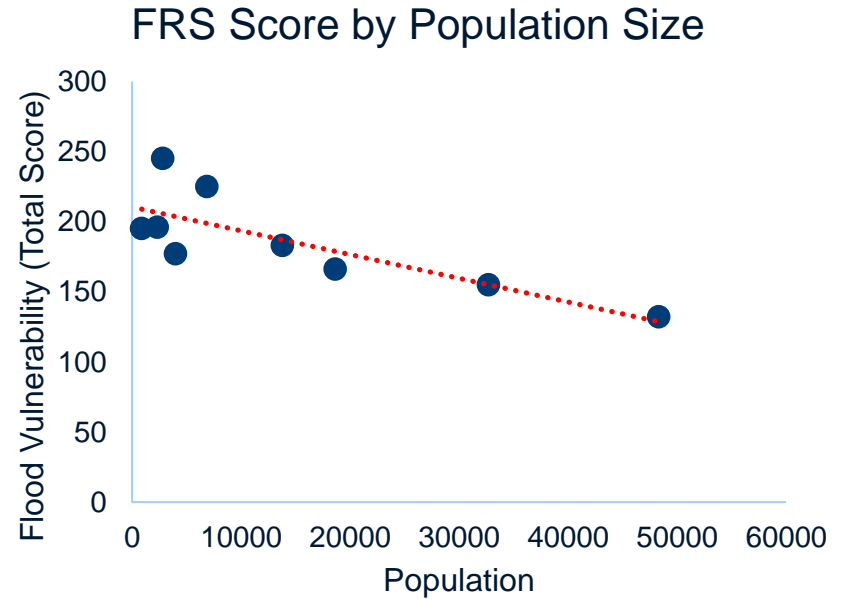
FRS Outreach

Data Companion provided to:

- 60 flood-prone cities and villages
- 2 counties (Monroe & Vernon)
- Menominee Tribal Nation



FRS Preliminary Results



FRS Preliminary Results

I-E1. Does your community have clear, regularly updated evacuation plans for all regions of your municipality?

- A. Yes
- B. Some, but not all regions
- C. No

S-B2. Has your community determined how these priority populations (those with poor housing quality and/or limited access to transportation) are spatially distributed?

- A. Yes
- B. Some, but not all regions
- C. No

FRS Preliminary Results

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FRS Preliminary Results

- Climate disaster preparedness is largely absent at the most local level
- Lack of available staff and resource limitations are the greatest barriers to flood preparedness and mitigation
- Smaller, rural or under resourced communities are less likely to participate in flood preparedness planning
- Public health should be a larger focus in conversations about flood resilience

Questions?

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Want a Data Companion?

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