FLOOD WISE COMMUNITIES

Enroll Today!

floodwisecommunities.org

Contact:

ProjectTeam@floodwisecommunities.org

The National Academies of SCIENCES ENGINEERING MEDICINE

GLISA A NOAA RISA TEAM

SCIPP A NOAA RISA TEAM

Stanford University

adaptation international

HEADWATERS ECONOMICS

NATIONAL ASSOCIATION of COUNTIES NACo®

NLC NATIONAL LEAGUE OF CITIES

Sea Grant Texas AT TEXAS A&M UNIVERSITY

NADO NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS

Webinar Logistics

Zoom Platform:

- **Audio & Video** →
  - Disabled for all attendees.

- **Q&A box** →
  - Please enter all questions here.

- **Chat Box** →
  - Poll answers & moderator use only.

- **Webinar Recording** →
  - Live recorded & available online.

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Before We Begin...

In *seven* words or less:

1. **Describe your community** *(e.g. small, medium, urban, rural, coastal, inland, Gulf-side, Atlantic-side, etc.).*

2. **How many extreme weather events or impacts** w/ in the last 5 years? (major storms, floods, etc.)

3. **Your biggest concern or priority** for local stormwater infrastructure, management or planning.

"small, inland, 3 floods, budget limitations"

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Today's Agenda

1. **Introduction**

2. **About the Project**

3. **Project Design and Expectations**
   - Design
   - Time commitment
   - Support & resources
   - Eligibility

4. **About the Assessment Tool**
   - Climate data profiles
   - Socioeconomic data profiles

5. **Practitioner Perspectives**

6. **Discussion**

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Today's Speakers

Teal Harrison
Climate Resilience Specialist
Adaptation International
FloodWise Communities
teal@floodwisecommunities.org

Sascha Petersen
Founder and Director
Adaptation International
FloodWise Communities
sascha@floodwisecommunities.org

Mark Shafer
Associate Professor
SCIPP – University of Oklahoma
FloodWise Communities
mshafer@mesonet.org

Matthew Naud
Senior Consultant
adapt.city
GLISA Practitioner in Residence
mnaud@recycle.com

FLOOD WISE COMMUNITIES

About the Project

The FloodWise Team

FloodWise Communities is a National Academy of Sciences Gulf Research Program Thriving Communities grantee.

Our Project Partners

- **NOAA RISA Teams** (Regional Integrated Sciences and Assessments)
  - *GLISA (Great Lakes Integrated Sciences and Assessments)*
  - *SCIPP (Southern Climate Impacts Planning Program)*
- **Stanford University**
- **Headwaters Economics**
- **Adaptation International**

GULF RESEARCH PROGRAM
PROGRAM AREAS

The National Academies of SCIENCES ENGINEERING MEDICINE
GULF RESEARCH PROGRAM

Our Endorsements

National League of Cities

National Association of Counties

National Association of Development Organizations

Texas Sea Grant

Our Areas of Expertise

Extreme Weather Impacts

Environmental and Social Risk

Co-producing Knowledge

Adaptation Planning

Public Policy

Stakeholder Engagement & Collaboration

FloodWise Communities, or "FloodWise," is a nationally- and regionally-backed project developed to help communities better prepare for storms, floods & extreme weather events.

FloodWise provides FREE and tailored stormwater system vulnerability assessments that are:

- Collaborative

- Accessible to every community

- Technology-assisted

- Community-centered

- Widely applicable

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Our 3 Main Goals

1. **Support** cities, counties and parishes in assessing extreme weather-related vulnerabilities of local stormwater systems.

2. **Test** how technology can increase collaboration among practitioners & researchers to assess vulnerability and increase community resilience.

3. **Explore** how technology-based assessments can be widely-used by communities throughout the United States.
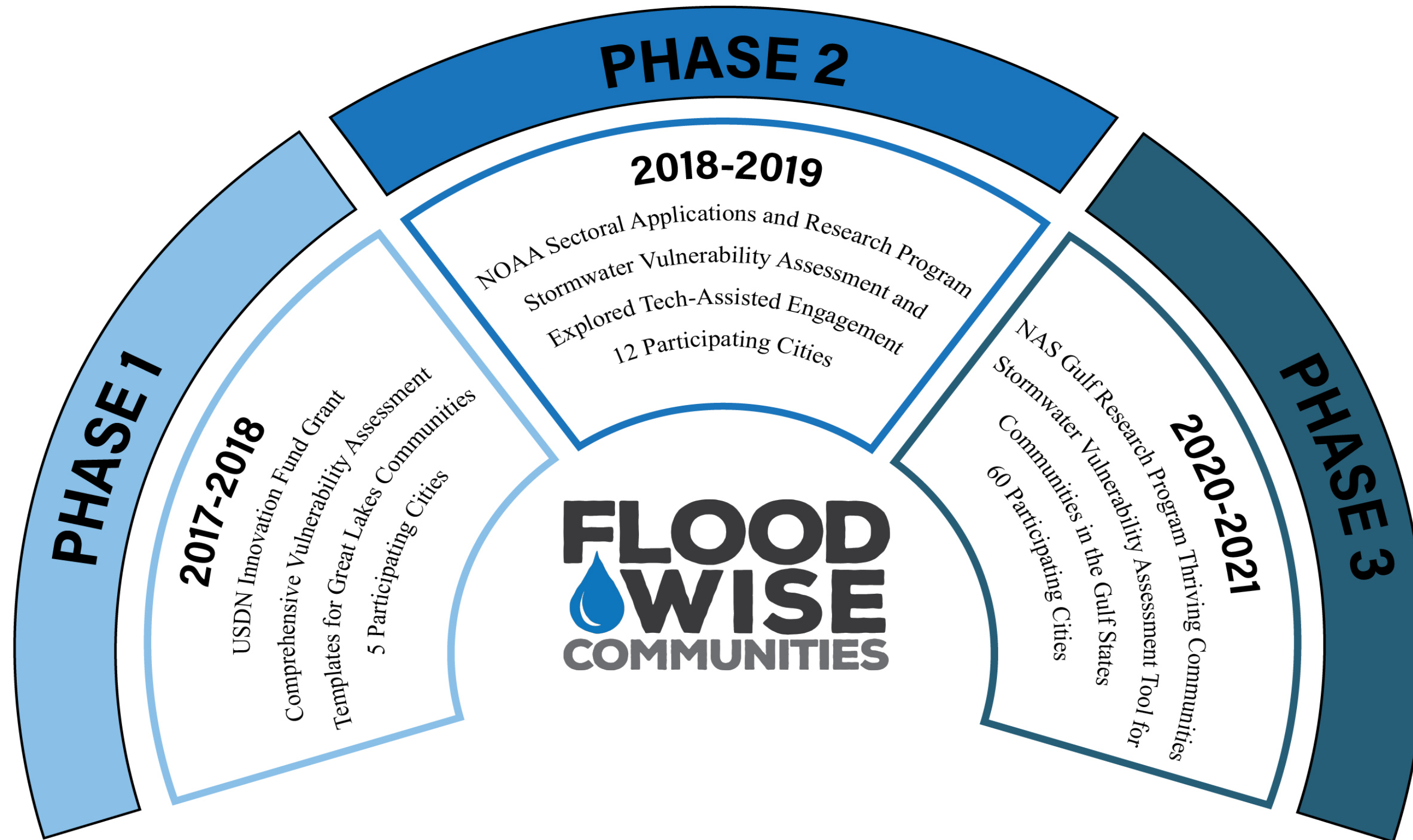
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Vulnerability:

The degree to which a system is susceptible to (*sensitivity*) and able to cope with (*adaptive capacity*) adverse effects of extreme weather events.

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Vulnerability assessments help identify:

1. Projected changes in weather and climate.

2. Levels of exposure to these projected changes.

3. Sensitivity of infrastructure, systems, public services and residents to projected changes.

4. Capacity of infrastructure, systems, services and residents to adapt to projected changes.

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The FloodWise Communities stormwater system vulnerability assessment is **phase 3** of a multi-year & well-tested project initiated and designed **by local governments, for local governments**.

PHASE 2

2018-2019

NOAA Sectoral Applications and Research Program

Stormwater Vulnerability Assessment and

Explored Tech-Assisted Engagement

12 Participating Cities

PHASE 1

2017-2018

USDN Innovation Fund Grant

Comprehensive Vulnerability Assessment

Templates for Great Lakes Communities

5 Participating Cities

PHASE 3

2020-2021

NAS Gulf Research Program Thriving Communities

Stormwater Vulnerability Assessment Tool for
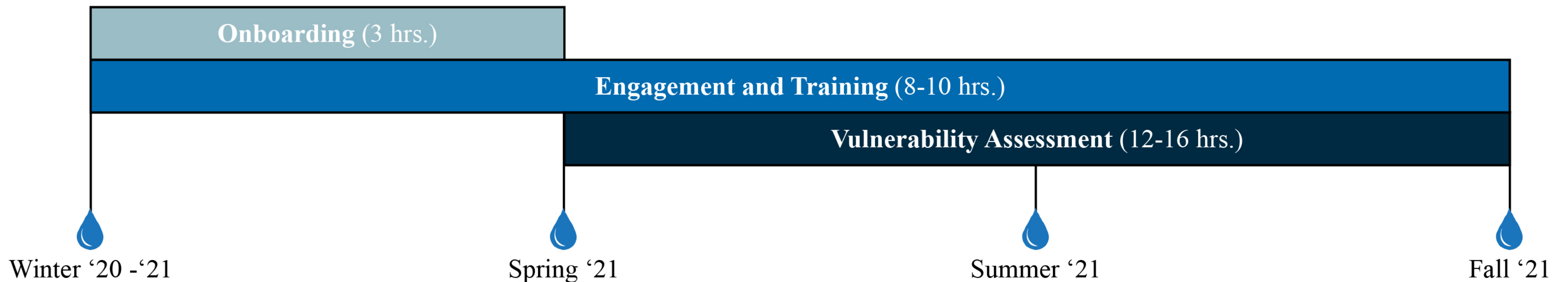
Communities in the Gulf States

60 Participating Cities

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PHASE 1

2017-2018

USDN Innovation Fund Grant

Comprehensive Vulnerability Assessment

Templates for Great Lakes Communities

5 Participating Cities

PHASE 2

2018-2019

NOAA Sectoral Applications and Research Program

Stormwater Vulnerability Assessment and

Explored Tech-Assisted Engagement

12 Participating Cities

PHASE 3

2020-2021

NAS Gulf Research Program Thriving Communities

Stormwater Vulnerability Assessment Tool for

Communities in the Gulf States

60 Participating Cities

All phases have yielded positive & tangible results!

- No-cost access to the <u>best available data</u>.

- Improved stormwater management, hazard mitigation, emergency management and adaptation <u>planning</u>.

- Data-backed grant, budget and project <u>proposals</u>.

- Effective <u>communication</u> across departments and with local decision makers.

- Improved stormwater system and community <u>resilience</u>.

- Advancement of <u>regional and national efforts</u> to build resilience.

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Project Design & Expectations

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Communities will work with the FloodWise team to complete their vulnerability assessment over approximately 24 hours, or 3 working days (non-consecutive).

FLOODWISE COMMUNITIES TIMELINE

Onboarding (3 hrs.)

Engagement and Training (8-10 hrs.)

Vulnerability Assessment (12-16 hrs.)

Winter '20 -'21   Spring '21   Summer '21   Fall '21

Participants will assess their local stormwater system vulnerabilities in one of three ways:

- In-person

- Webinar-assisted

- Self-guided

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All participants will receive:

1. Access to the FloodWise assessment tool.

2. Downscaled, high-resolution data profiles.

3. A custom training packet.

4. Access to an online dashboard and peer forum.

5. On-going professional support from the FloodWise team.

Formal Engagements & Continued Support

All cities will have FloodWise professional support to successfully complete their assessment after formal engagements.

COVID-19 Considerations & Contingency Plan

Participant health and safety is our priority!

- Follow each community's local guidance and best practices.

- Accommodate practitioners' comfort level w/ in-person assessments.

- Develop alternate strategies for all communities if necessary.

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Is my community eligible?

☑ Community in TX, LA, MS, AL or FL.

☑ Located within 100 miles the Gulf Coast.*

☑ Small or medium population size.

☑ Can assemble a team of 3-5 practitioners, local officials or partners.

☑ Can invest approx. 24 hours/person (~3 working days).

☑ Can host an on-site workshop.

Applications are accepted on a rolling basis and should be submitted by March 31st.

We encourage communities to apply even if they feel they can't meet all eligibility criteria (e.g. distance, # of team members, meeting space).

About the FloodWise Tool

The FloodWise tool is a step-by-step process walking users through examining the extreme weather and climate vulnerabilities of their community's stormwater system.
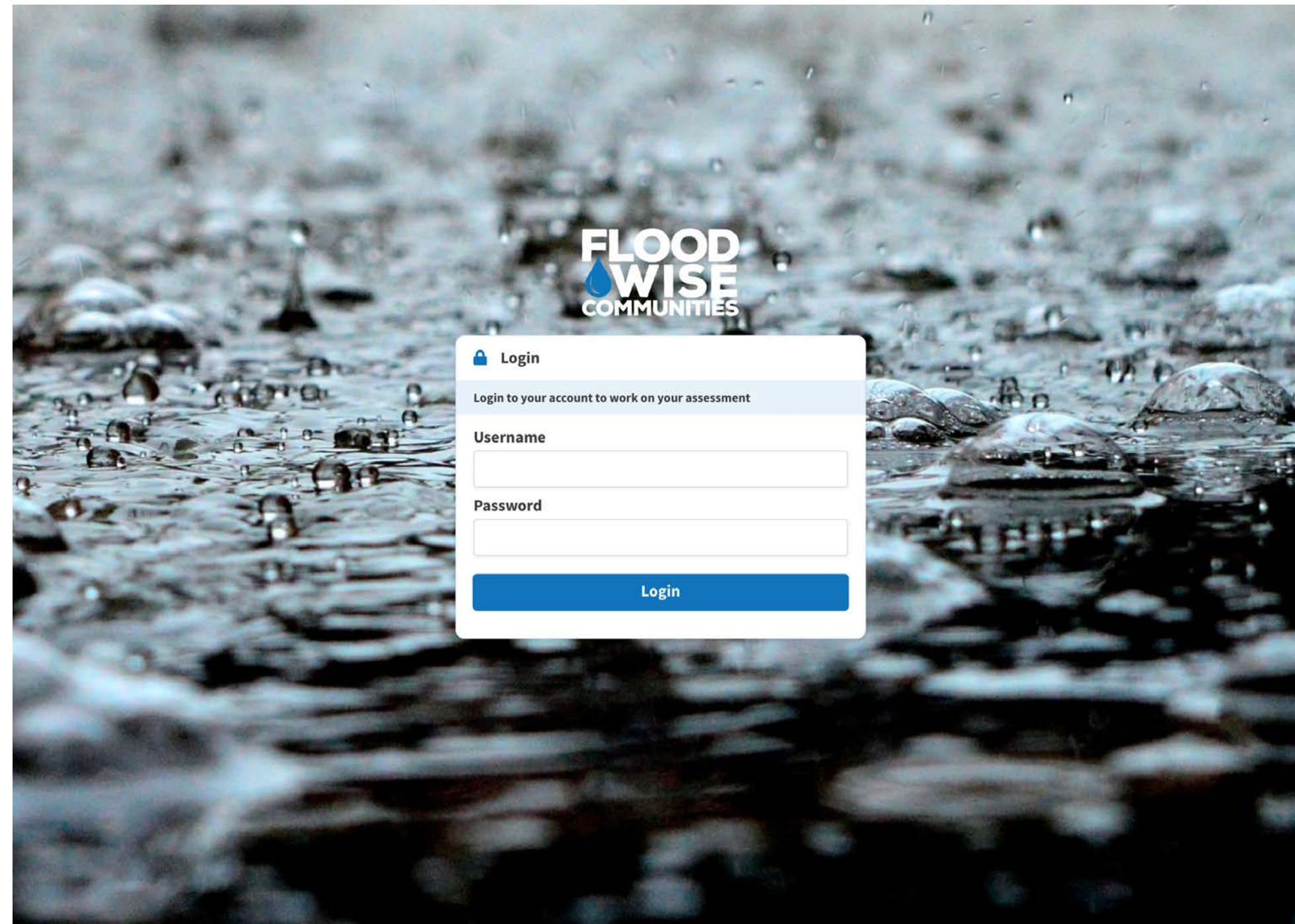
The FloodWise tool can assess:

- Open and closed systems

- Traditional infrastructure and natural systems

- High-risk infrastructure

- Critical infrastructure

- Operational capacities

- Emergency services

- Social vulnerability

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Welcome to the Mobile, AL stormwater vulnerability assessment

This assessment is designed for stormwater practitioners, local officials, local partners, and adaptation professionals who wish to collaboratively address the adaptive stormwater management, infrastructure, and municipal planning needs of their community. A guided, step-by-step tool, this vulnerability assessment examines the City of Mobile's stormwater system vulnerability to heavy precipitation and other extreme weather impacts.

As a member of the **Mobile, AL** team, you will complete a **webinar-assisted** stormwater vulnerability assessment, incorporating the best available weather and climate data and high-resolution socioeconomic mapping to produce a tailored, comprehensive evaluation of the stormwater-related risks, vulnerabilities and adaptive capacity of your community. To get started, or to continue Mobile's assessment, click below.

Open the assessment

There are 3 main components of the assessment:

1. Setting the foundation

2. Sensitivity & adaptive capacity assessment

3. Vulnerability scores

See example response

Save answers

▼ ⚓ **Adapative capacity**   *3 unanswered*

🗗 View related info

Where 1 is easy and 10 is hard, how much capacity does your community stormwater system have in each of the following areas:

Personnel

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Easy   Hard

Funding/Financial Capacity

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Easy   Hard

Information/Data

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Easy   Hard

Action Channels and Social and Political Support

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Easy   Hard

Infrastructure

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Easy   Hard

Stormwater systems assessment

Built systems

Add a built component +

Street gutters 🗑

✓ Sensitivity Assessment
4 of 4 sections complete

❗ Adaptive Capacity Assessment
1 of 3 sections complete

Evaluate

5
of 7

Impermeable pavement 🗑

✓ Sensitivity Assessment
4 of 4 sections complete

✓ Adaptive Capacity Assessment
3 of 3 sections complete

Evaluate

7
of 7

Pumps 🗑

❗ Sensitivity Assessment
3 of 4 sections complete

❗ Adaptive Capacity Assessment
0 of 3 sections complete

Evaluate

3
of 7

Swirl treatments 🗑

❗ Sensitivity Assessment
0 of 4 sections complete

❗ Adaptive Capacity Assessment
0 of 3 sections complete

Evaluate

0
of 7

Natural systems

Add a natural component +

Above ground storage - wetlands 🗑

❗ Sensitivity Assessment
3 of 4 sections complete

❗ Adaptive Capacity Assessment
0 of 3 sections complete

Evaluate

3
of 7

Street trees - residential 🗑

❗ Sensitivity Assessment
0 of 4 sections complete

❗ Adaptive Capacity Assessment
0 of 3 sections complete

Evaluate

0
of 7

Vulnerability scores

Print report 🖶

📊 Scores matrix

	S0	S1	S2	S3	S4
AC0					**1**
AC1			**1**		
AC2					
AC3		**2**			
AC4					

👥 Above ground storage - wetlands
👥 Street trees - residential
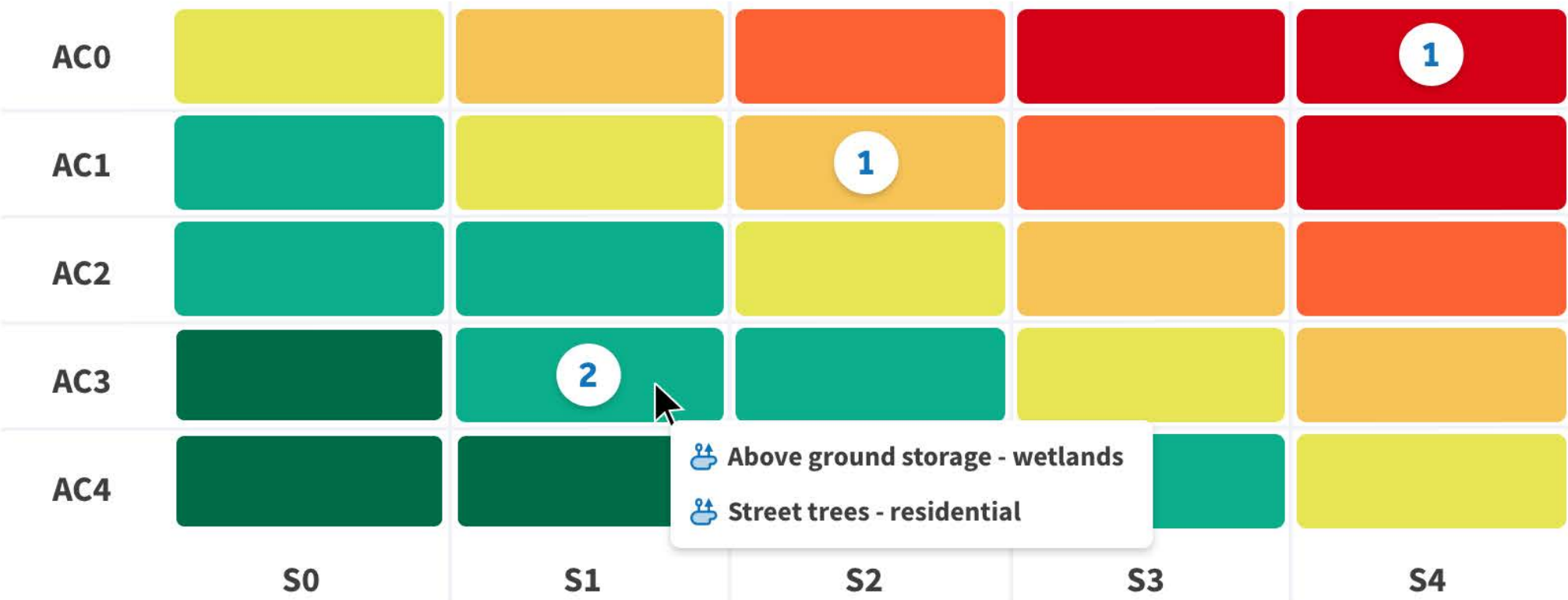
▦ Overview

Open full report

System component	Sensitivity score	Adaptive capacity score	Vulnerability score			
🔧 Street gutters	S4	AC0	🔴	Responses	✏	🗑
🔧 Impermeable pavement	S2	AC1	🟠	Responses	✏	🗑
👥 Above ground storage - wetlands	S1	AC3	🟢	Responses	✏	🗑

Background & Motivation

About FloodWise climate scientists

- Climatologists at SCIPP and GLISA.

- Years of experience; work on previous projects.

Motivation behind customized climate profiles

- Variable climate hazards along the Gulf Coast.

- Provision of community-specific climate info.

Purpose of the climate profiles

- Detailing historical and future climate change at the city/county level for better flood preparedness.

Data & Methodology

Types of Data and Sources

- Historical weather & climate observations (local) - _NOAA SRCC_.

- Future weather & climate projections (local) NA-CORDEX.

- Flood Risk & Sea Level Rise maps (city).

- Severe weather event reports (local) - _NOAA NCEI_.

- Historical climate trend (regional) - _SCIPP_

Methodology

- Balance of information and effective communication.

- Using data presentation that has worked before (i.e. Phase 2 and SARP).

> _FloodWise will provide data that has been evaluated and determined to be the best available for the Gulf region, saving time and ensuring data quality._

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What's Included:

Unique data profiles for all participating cities.

- Weather & climate summary (top)

- Temperature summary (middle)

- Rainfall summary & table

- Recent local severe weather events

- Flood risk summary

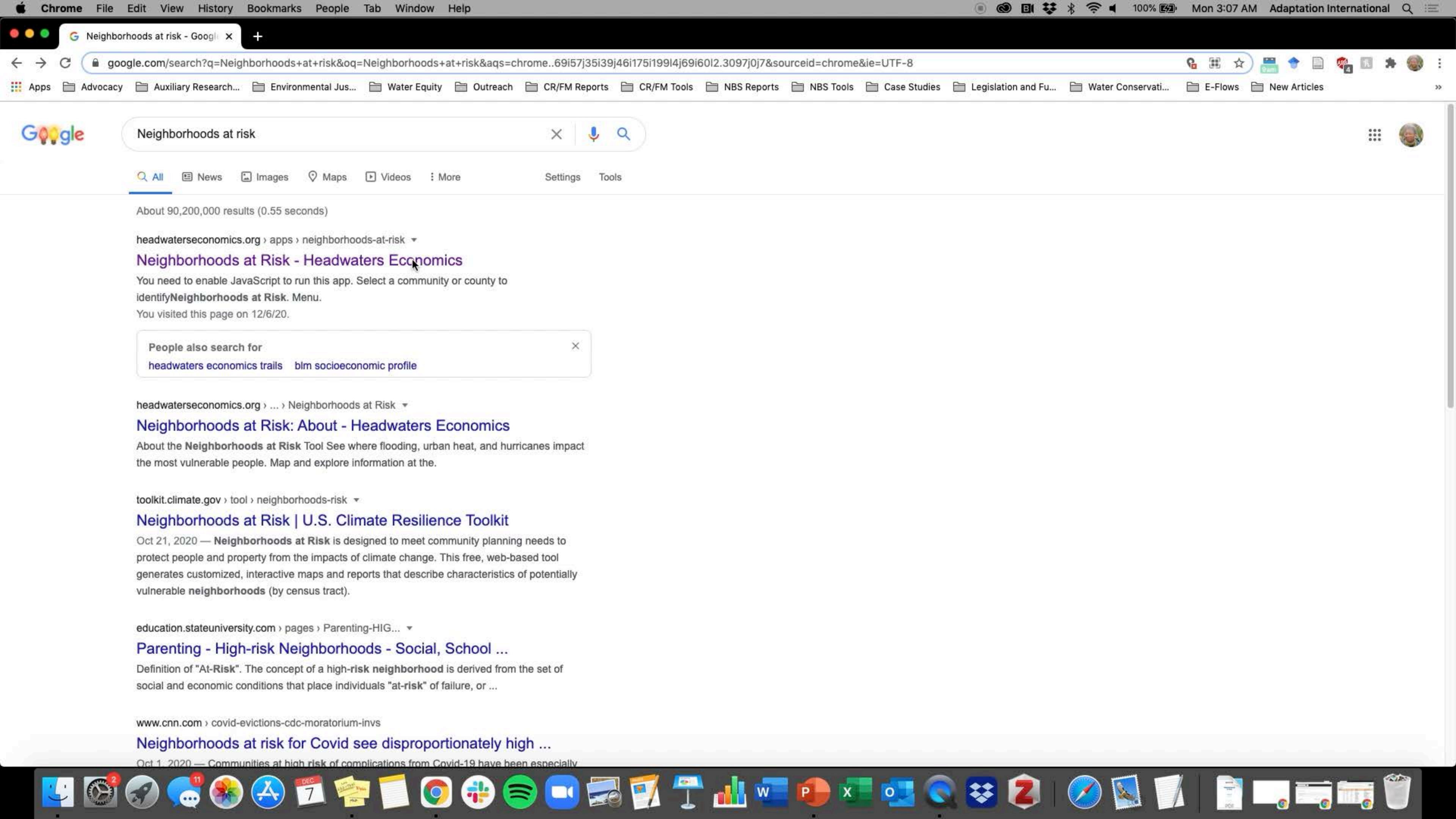- Sea level rise summary (if applicable)

Weather & Climate Profiles in Practice

Downscaled custom weather and climate data will be incorporated at several points as cities complete their assessment and can be applied to other contexts!
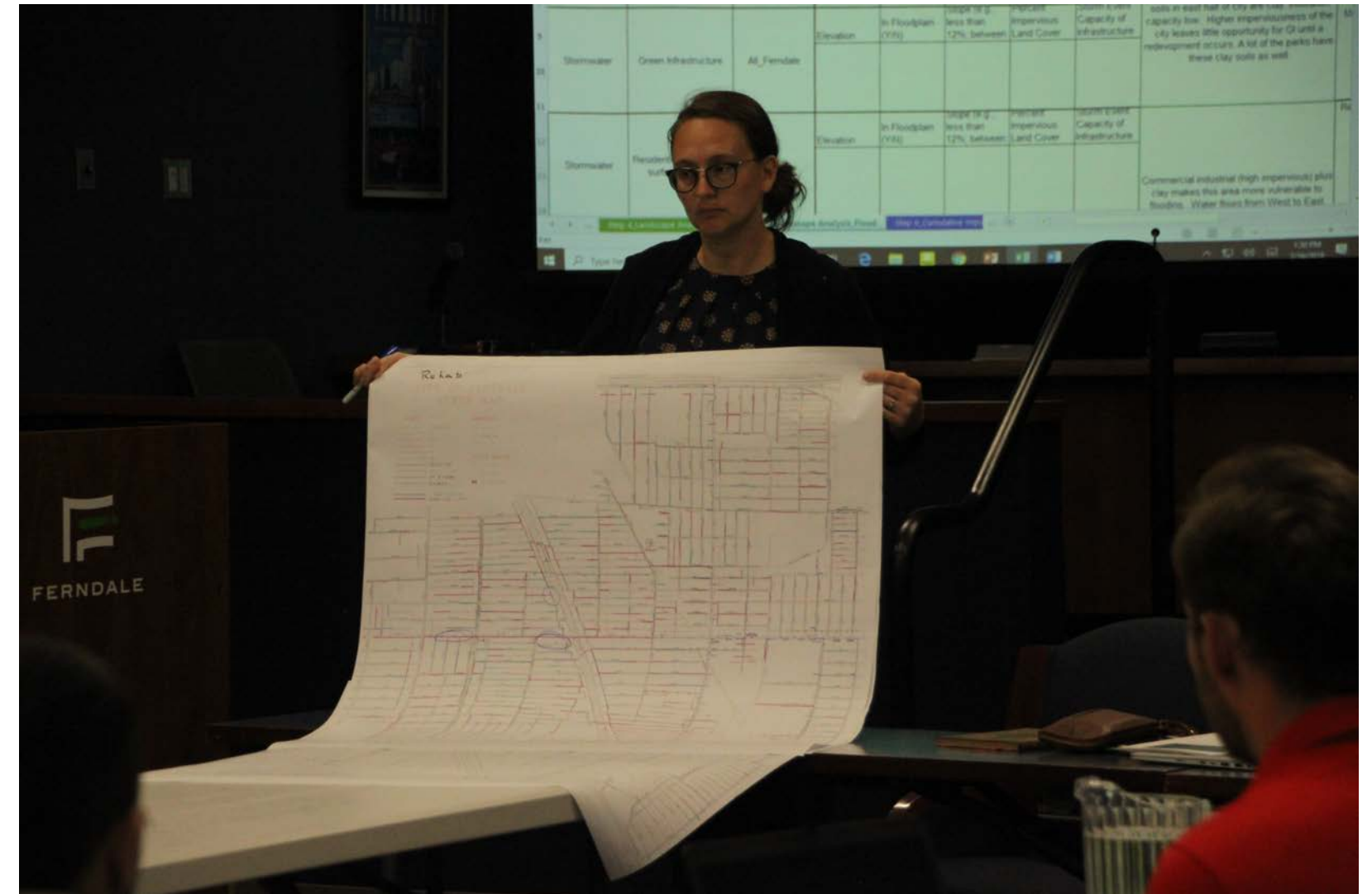
FloodWise Vulnerability Assessment Tool:

Neighborhoods at Risk
Socioeconomic Profiles

Neighborhoods at risk - Google

google.com/search?q=Neighborhoods+at+risk&oq=Neighborhoods+at+risk&aqs=chrome..69i57j35i39j46i175i199l4j69i60l2.3097j0j7&sourceid=chrome&ie=UTF-8

Apps   Advocacy   Auxiliary Research...   Environmental Jus...   Water Equity   Outreach   CR/FM Reports   CR/FM Tools   NBS Reports   NBS Tools   Case Studies   Legislation and Fu...   Water Conservati...   E-Flows   New Articles

Google

Neighborhoods at risk

All   News   Images   Maps   Videos   More   Settings   Tools

About 90,200,000 results (0.55 seconds)

headwaterseconomics.org › apps › neighborhoods-at-risk

Neighborhoods at Risk - Headwaters Economics

You need to enable JavaScript to run this app. Select a community or county to identify **Neighborhoods at Risk**. Menu.
You visited this page on 12/6/20.

People also search for

headwaters economics trails   blm socioeconomic profile

headwaterseconomics.org › ... › Neighborhoods at Risk

Neighborhoods at Risk: About - Headwaters Economics

About the **Neighborhoods at Risk** Tool See where flooding, urban heat, and hurricanes impact the most vulnerable people. Map and explore information at the.

toolkit.climate.gov › tool › neighborhoods-risk

Neighborhoods at Risk | U.S. Climate Resilience Toolkit

Oct 21, 2020 — **Neighborhoods at Risk** is designed to meet community planning needs to protect people and property from the impacts of climate change. This free, web-based tool generates customized, interactive maps and reports that describe characteristics of potentially vulnerable **neighborhoods** (by census tract).

education.stateuniversity.com › pages › Parenting-HIG...

### Parenting - High-risk Neighborhoods - Social, School ...

Definition of "At-**Risk**". The concept of a high-**risk neighborhood** is derived from the set of social and economic conditions that place individuals "at-**risk**" of failure, or ...

www.cnn.com › covid-evictions-cdc-moratorium-invs

Neighborhoods at risk for Covid see disproportionately high ...

Oct 1, 2020 — Communities at high **risk** of complications from Covid-19 have been especially
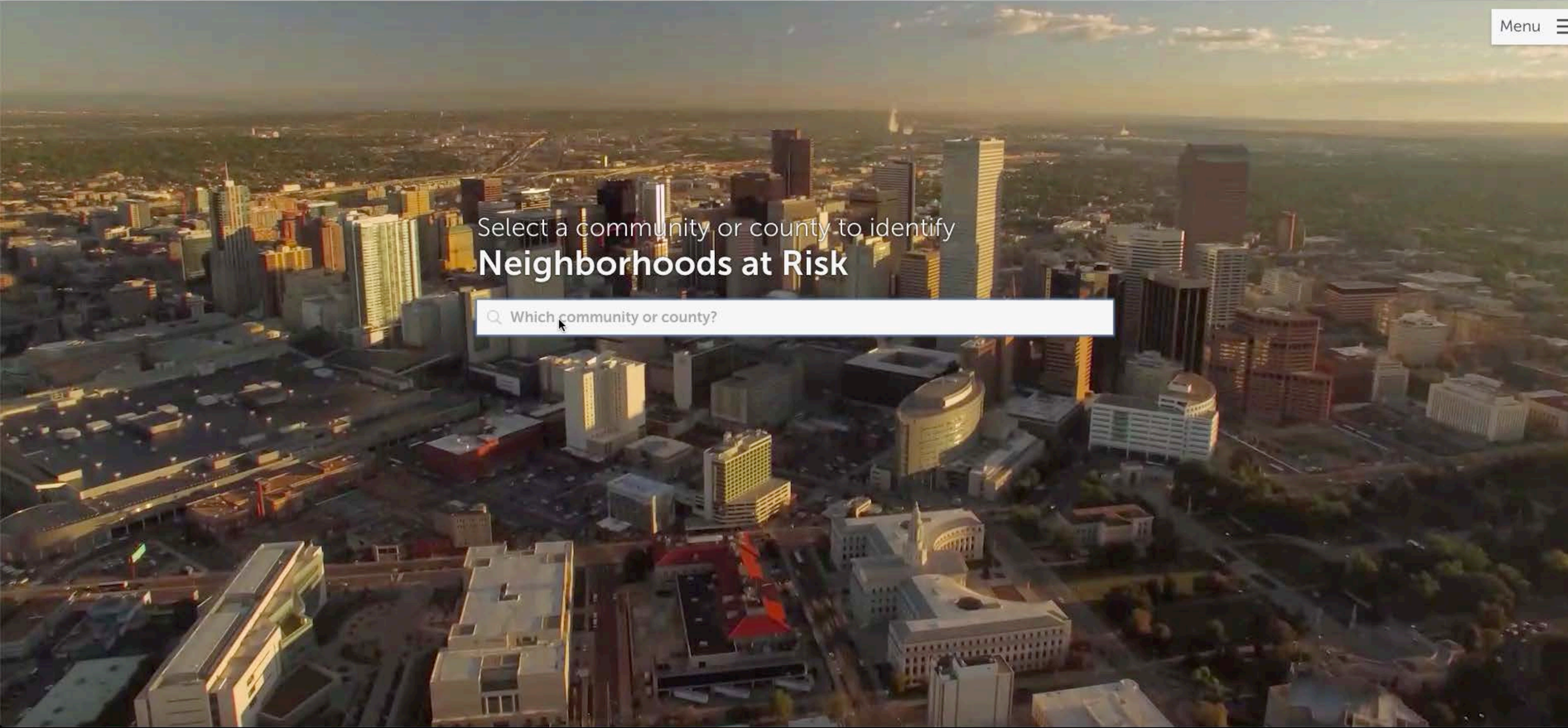
Select a community or county to identify

Neighborhoods at Risk

Which community or county?

HEADWATERS ECONOMICS

Neighborhoods at Risk

Selected Tracts

Selected Location(s):
Mobile, AL

Comparison Location:
U.S.

Produced by
Headwaters Economics'
Economic Profile System (EPS)
December 7, 2020

Families in Poverty

	Mobile, AL	Selected Tracts	U.S.
Total families for whom poverty status is determined, 2018*	43,356	62,247	78,697,103
Families in poverty	7,301	9,726	7,930,699
Families with children in poverty	5,618	7,441	5,909,657
Single mother families in poverty	4,544	5,679	3,563,666

Percent of Total, 2018*

|	Mobile, AL	Selected Tracts	U.S.
Families in poverty	16.8%	15.6%	10.1%
Families with children in poverty	13.0%	12.0%	7.5%
Single mother families in poverty	10.5%	9.1%	4.5%

Change in Percentage Points, 2010*-2018*
For example, if the value is 3% in 2010* and 4.5% in 2018*, the reported change in percentage points is 1.5.

	Mobile, AL	Selected Tracts	U.S.
Families in poverty	-1.1	-0.9	0.0
Families with children in poverty	-1.4	-1.4	-0.4
Single mother families in poverty	-1.1	-1.2	-0.3

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

Families in Poverty, Percent of Total, 2018*

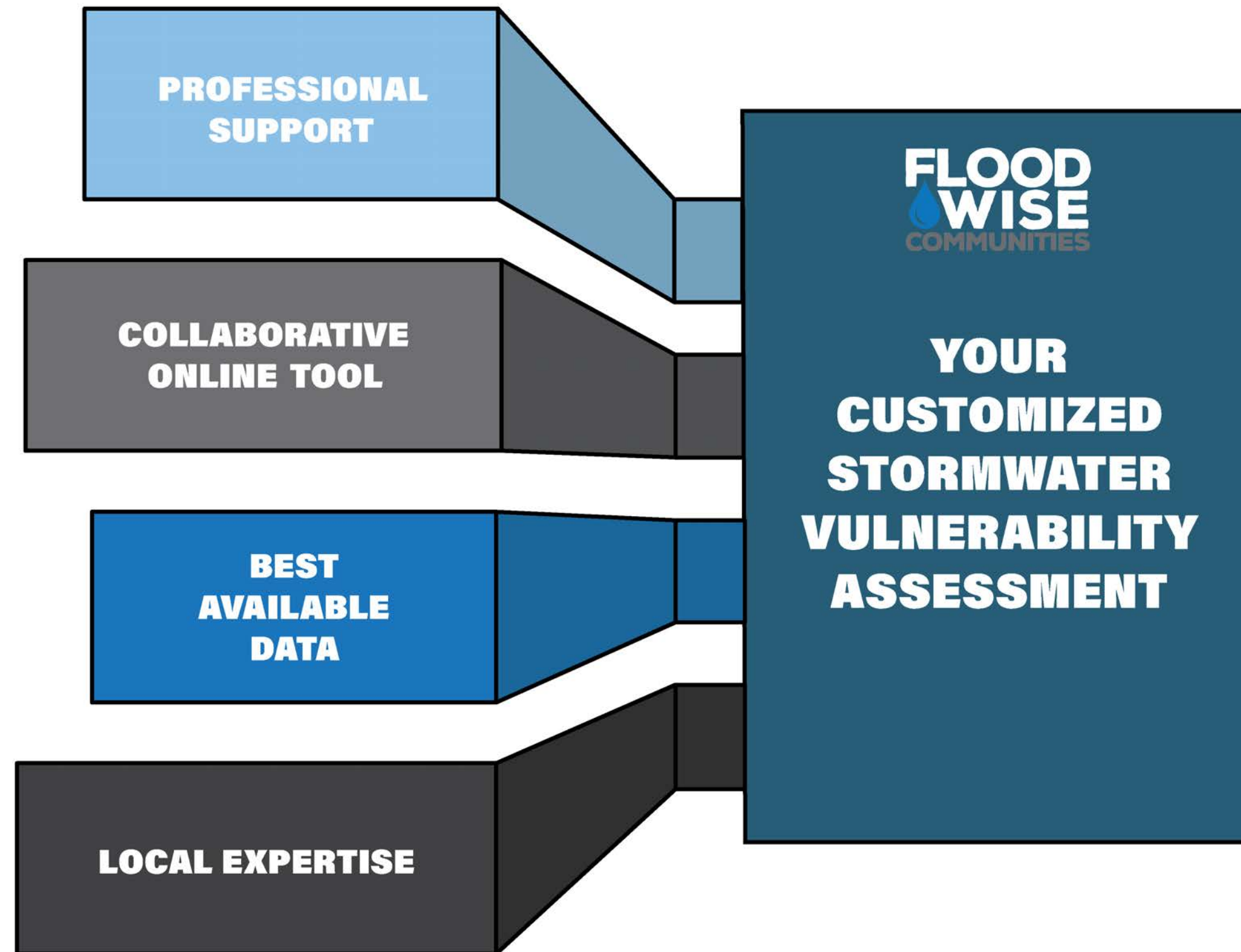- Mobile, AL has the largest share of single mother families in poverty (10.5%).
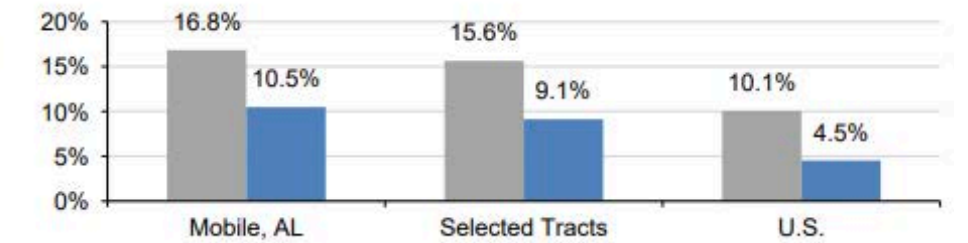
Families in Poverty, Change in Percentage Points, 2010*-2018*

- The largest change in the share of single mother familes in poverty occurred in Selected Tracts, which went from 10.4% to 9.1%.

Great on their own, stronger together.

PROFESSIONAL SUPPORT

COLLABORATIVE ONLINE TOOL

BEST AVAILABLE DATA

LOCAL EXPERTISE

FLOOD WISE COMMUNITIES

YOUR CUSTOMIZED STORMWATER VULNERABILITY ASSESSMENT

Practitioner Perspectives

Matthew Naud

adapt.city

Resource Recycling Systems

Ann Arbor, MI

- **Senior Consultant**
  - adapt.city/recycle.com
- **Environmental Coordinator, Ann Arbor**
  - 2001-2018
- **Urban Sustainability Directors Network**
  - Michigan Green Communities
  - Great Lakes Climate Adaptation Network
  - 2010 – 2018
      - USDN Innovation Fund
      - Vulnerability Assessment Template
      - Neighborhoods at Risk

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- **Is there one template all cities can use?**
  - Common climate risk
  - Common stormwater elements
  - Solution sets will differ based on budget, staff capacity

- **How do we visualize extreme weather risk and equity?**
  - Neighborhoods at Risk

- **Begin with citywide review**
  - Macro analysis
  - How will climate affect service delivery

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Outputs
- Weather & climate, socioeconomic profiles
- Vulnerability and adaptive capacity matrix

What tools do you need to inform decision makers & local officials about extreme weather and climate risk?
- Do these tools help demonstrate why your budget should be funded?

What data do you need for system design and planning?
- Asset management
- Bond rating risk

Scalability to other city systems

The process is transferable:

- *Elements of <u>water distribution</u> system*

- *Affordable <u>housing</u> sites*

- *Are we managing more <u>trees</u> in wealthy areas than poor areas?*

- *Is <u>capital investment</u> equitably distributed?*

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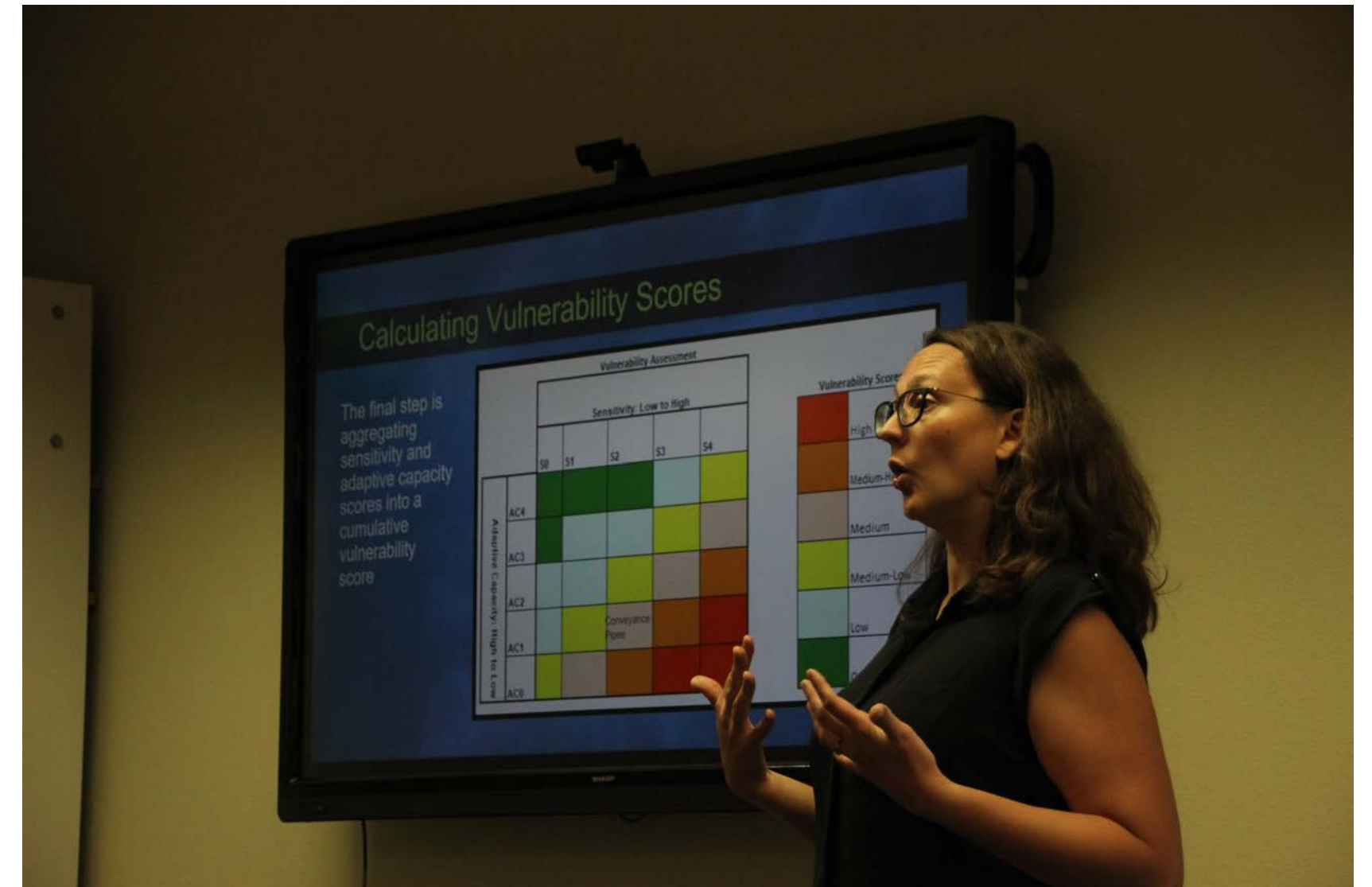
Learning from and with each other is the fastest way to solve for extreme weather impacts!

How to Enroll

- ✓ Visit floodwisecommunities.org.

- ✓ Click "Apply Today!"

- ✓ Fill out the enrollment form.

- ✓ Hit Submit!

Priority will be given to communities that apply by March 31st.

We encourage communities to apply even if they feel they can't meet all eligibility criteria or the enrollment deadline.

Questions? Contact:

ProjectTeam@floodwisecommunities.org

Questions & Comments?

Thank you!

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