



Innovative Geospatial Tools and Technologies To Empower NWS Service Equity Success

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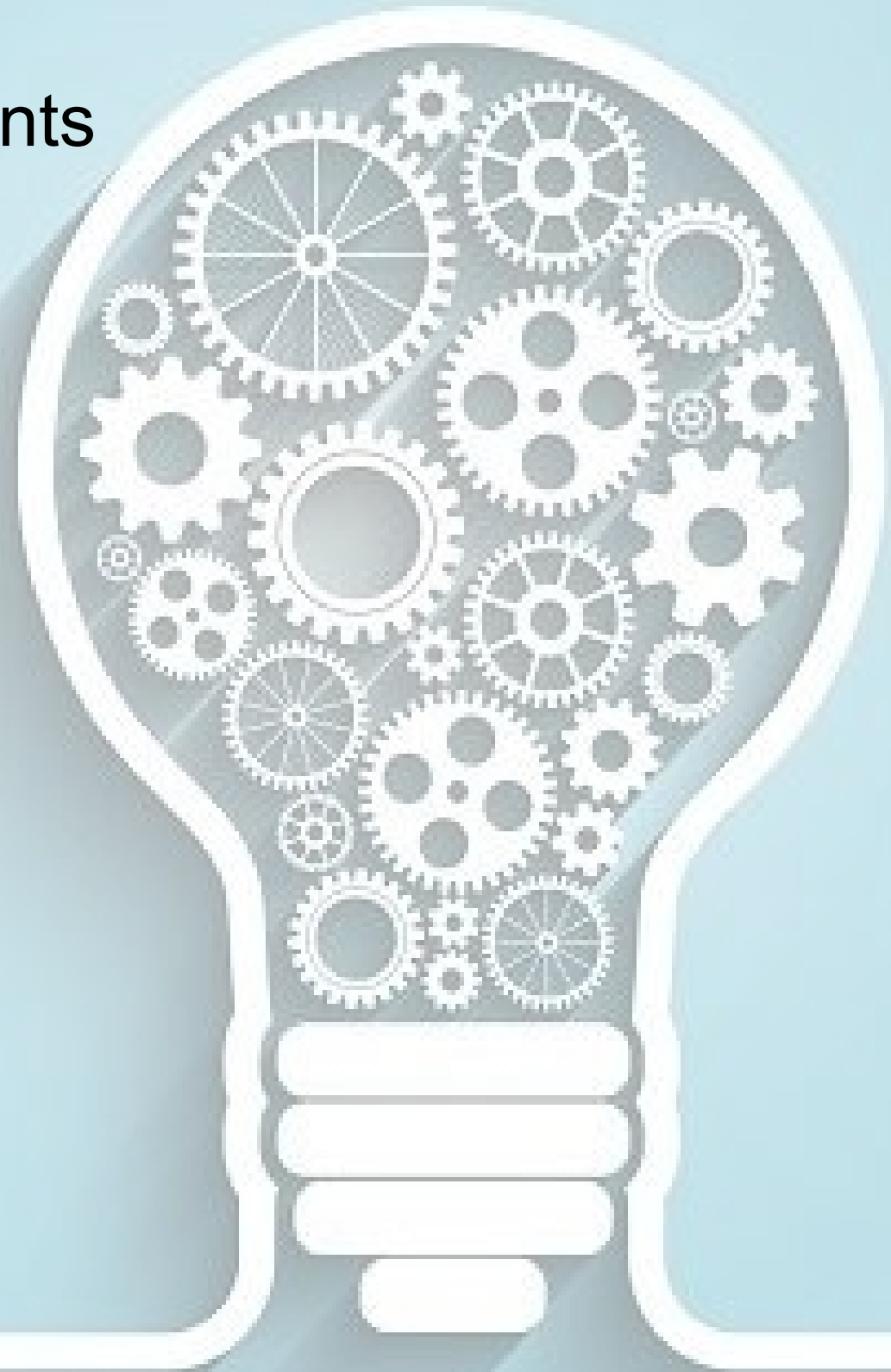
NOAA/NWS/St. Louis, MO



November 15, 2024

Overview

- Documenting Education & Outreach Events
 - Why?
 - How?
- Details of the CDC/ATSDR SVI
- Pros & Cons of the SVI
- Other Tools
- Final Thoughts



Drivers of Equitable Service Delivery

- Executive Order 13985: *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*
 - “...the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment”
- NWS Service Equity Priority Actions 2023-2026
 - Implement GIS-based Social Vulnerability Impact Assessment Tool



How – Current Tool

- How we do it
 - NWS Policy Directive 10-1804
 - Long form & Short form options
 - Text based input and output

Home >> Verification >> NOEES

Add New Event (Long Form)

Using the form below, please log your event in the NOEES system. if you wish to enter an event into Short Form [go here](#)

[Mandatory Info >>](#) [Optional Info >>](#)

Booth (staffed) - 07/29/2011 13:00

Event Description

Event Type: Booth (staffed) [v]
Sub Event Type: Job/Career Fair/Workshop [v]
Event Name: Johnson High School Career Fair
Start Date/Time: 09/29/2011 13:00 [c] Time Zone: EDT [v]

Program Areas

Program Areas: Dissemination [v] Fire Weather [v] Hydrologic [v] Marine [v] Observing [v] Public Weather [v] [v] Climate [v]

Audience Type

Audience Type: Schools/Students [v]
Sub Audience Type: Minority Serving Institutions [v] School Officials [v] Students - College/University [v] Students - Grade School [v] Students - High School [v] Students - Middle School/Jr. High [v] [v] Students - High School [v]

Location Information

Venue State: Maryland [v]
My Saved Venues: MD - Columbia - Sheraton Hotel [v]
Venue Name: Sheraton Hotel
Venue Address: 14 Washington Bld
Venue City: Columbia [v] Zip Code: 20914 [v]

Details

Person Hours: 5 [v]

[Next >>](#)

[Save](#) [Cancel](#)

Home >> Verification >> NOEES

Add New Event (Short Form)

Using the form below, please log your event in the NOEES system. if you wish to enter an event into Long Form [go here](#)

[Mandatory Info >>](#) [Optional Info >>](#)

Interview - 09/02/2011 12:00

Event Description

Event Type: Interview [v]
Start Date/Time: 09/02/2011 12:00 [c] Time Zone: EDT [v]

Total Events

Total Events: [v]

Details

Person Hours: [v]

[Next >>](#)

[Save](#) [Cancel](#)

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How – Future Tool



Welcome to the NWS Social Vulnerability Impact Assessment Tool (SVIAT)

This tool tracks interactions and visualizes several socioeconomic datasets in order to aid NWS offices in identifying areas where service initiatives are needed.

Note: There is a new form that will populate a new layer on this tool. The old data will remain available for download and reference, but will not be filterable.

Please read the linked User Guide for details on the tool's features. For a feature/data request or technical assistance, please fill out [this form](#).

Created by [Matt Beitscher](#) (WFO LSX) and the NWS STI Social, Behavioral, and Economic Sciences Program.

Don't show this again

OK

- Map-based User Interface
- Revamping of the old system
- Spatial associations
- Multiple data layers

How – Future Tool

NWS Social Vulnerability Impact Assessment Tool
Socioeconomic data and interaction tracking to aid NWS service equity initiatives

Home Page | User Guide | Feedback/Bug Report

NOEESNext Interaction Points

WFO Filter: - All -

Date/Time Filter: [] and []

Event Type (Short Form) Filter: - All -

Event Type (Long Form) Filter: - All -

State Filter: - All -

Apply | Cancel

Census Tract SVI Percentile Filters

Socioeconomic Status SVI Filter: [] and []

Household Characteristics SVI Filter: [] and []

Racial/Ethnic Minority Status SVI Filter: [] and []

Housing Type/Transportation SVI Filter: [] and []

Overall SVI Filter: [] and []

Apply | Cancel

BGM: Public

Type/Entity Name: Spotter Talk - Susquehanna county Skywarn

When interaction occurred: April 17, 2023

Attendance (if available): 7

NWS entity: BGM

SVI value: 0.38 (low to moderate vulnerability)

Notes: No additional information provided.

Last edited by mitchell.gaines_noaa on 5/5/2023, 9:19 AM.

Full name: Jarrod Loerzel

User Name: jarrod.l.loerzel_noaa

User Email: jarrod.l.loerzel@noaa.gov

Event Location:*

Find address or place

Tip: This question will try to use your location. Press to continue.

Lat: [] Lon: []

What type of office do you represent?*

Form | List/Export

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Housing Type/Transportation SVI Filter: [] and []

Overall SVI Filter: [] and []

Apply | Cancel

NOEESNext Interaction Points

Event Name:	Tompkins county Skywarn
Event Subtype:	
Event Type:	SKYWARN Spotter Training
Event Type:	
Full name:	mitchell gains
If applicable, provide external POC information:	Jake Chauplski
Interview Type:	
Number of attendees (estimate)?	25
Person Hours:	2.00
Please provide details regarding this virtual event (e.g., universities or groups that attended)	
Program Areas:	
Select which (if any) Special Emphasis Programs were targeted. Note: you may select more than one group. Click here for more details on the NOAA Special Emphasis Programs.	

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Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS | U.S. Census Bureau (USCB) | Powered by Esri

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Overall SVI Filter: [] and []

Apply | Cancel

Layers

- Political Boundaries
- Infrastructure
- Education Data
- American Indian, Alaska Native, and Native Hawaiian Data
- National Risk Index Census Tracts
- FEMA Resilience and Planning Tool (RAPT) Data
- CDC/ATSDR Social Vulnerability Index 2020 USA**
 - Overall SVI
 - Guam Social Vulnerability SVI 2019
 - Puerto Rico Tracts Social Vulnerability 2020
 - Theme 1 - Socioeconomic Status
 - Theme 2 - Household Characteristics
 - Theme 3 - Racial/Ethnic Minority Status
 - Theme 4 - Housing Type/Transportation

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Overall SVI Filter: [] and []

Apply | Cancel

Census Tract 1277, St. Louis city, Missouri

2020 Overall SVI Score: **0.92**
Possible scores range from 0 (lowest vulnerability) to 1 (highest vulnerability).
A score of 0.92 indicates a **high** level of vulnerability.

Most Populous Non-White Race/Ethnicity - **African American/Black: 98.5%**

Full documentation

Theme Rankings
Rankings for overall SVI and its four themes

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5
0.95	0.85	0.98	0.70	0.92

Selected overall variables
Population estimate, 2016- 2,271

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Rankings for overall SVI and its four themes

Percentile ranking for Socioeconomic Status theme: 0.95

Selected overall variables
Population estimate, 2016- 2,271

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Form | List/Export

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Apply | Cancel

National Risk Index Data

Tornado - Hazard Type Risk Index Score	99.08
Tsunami - Hazard Type Risk Index Score	
Volcanic Activity - Hazard Type Risk Index Score	
Wildfire - Hazard Type Risk Index Score	37.14
Winter Weather - Hazard Type Risk Index Score	99.79

Risk of Various Natural Disasters
100 is highest risk

Winter Weather - Hazard Type Risk Index Score: 99.79

Risk of Natural Disasters

Event Name:*

Event Date and Time:*

MM/DD/YYYY

hh:mm

Select which (if any) Special Emphasis Programs were targeted.
Note: you may select more than one group. [Click here for more details on the NOAA Special Emphasis Programs.](#)

-Please select-

Would you like to fill out the short form or the long form?

Short Form Long Form

Form | List/Export

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Overall SVI Filter: [] and []

Apply | Cancel

Event Location:*

1345 East West Hwy, Silver Spring

Lat: 38.993150 Lon: -77.031735

What type of office do you represent?*

-Please select-

- WFO
- Regional HQ
- RFC
- CWSU

MM/DD/YYYY

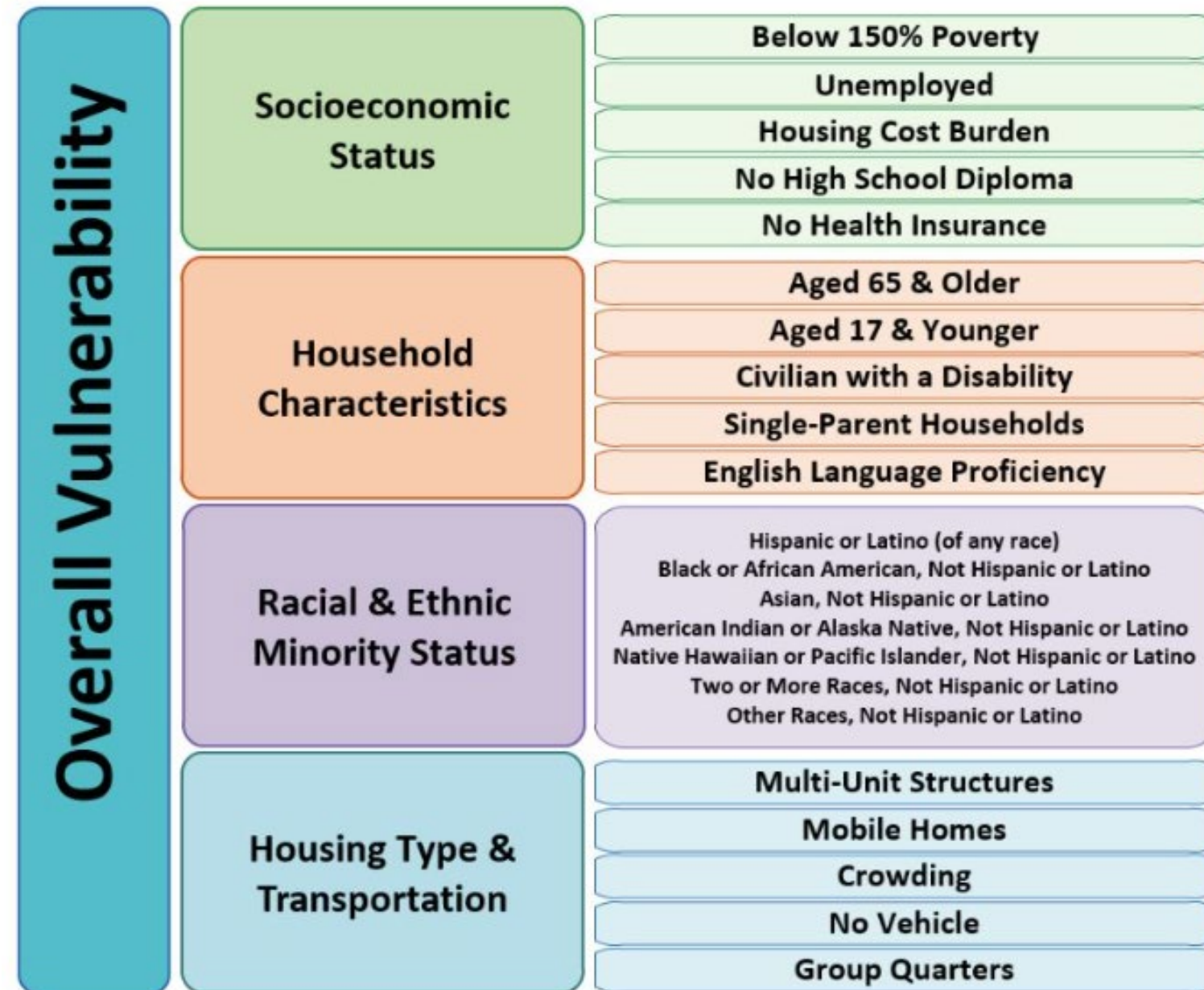
hh:mm

Form | List/Export

Details of the CDC/ATSDR SVI

CDC/ATSDR Social Vulnerability Index

- 4 Themes
 - Socioeconomic
 - HH Composition/Disability
 - Minority Status and Language
 - Housing Type and Transportation
 - Overall Score
- Generally uses the ACS data
- Additive, Percent Ranking Index
 - 0-1 Index (0 = Low to 1 = High)

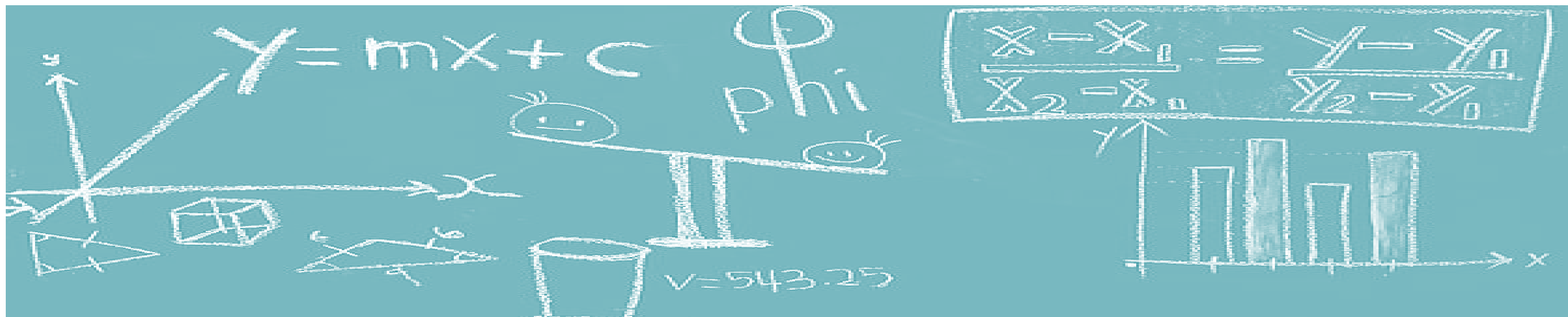


Calculating the CDC/ATSDR SVI

CDC/ATSDR Social Vulnerability Index

1. 15 variables* ranked highest to lowest across all Census tracts
2. Percentile rank calculated for each census tract & each variable
3. Tract-level percentile ranks calculated for four domains based on sum of percentile ranks of variables within that domain
4. Overall percentile rank for each tract calculated as the sum of the domain percentile rankings

*except per capita income



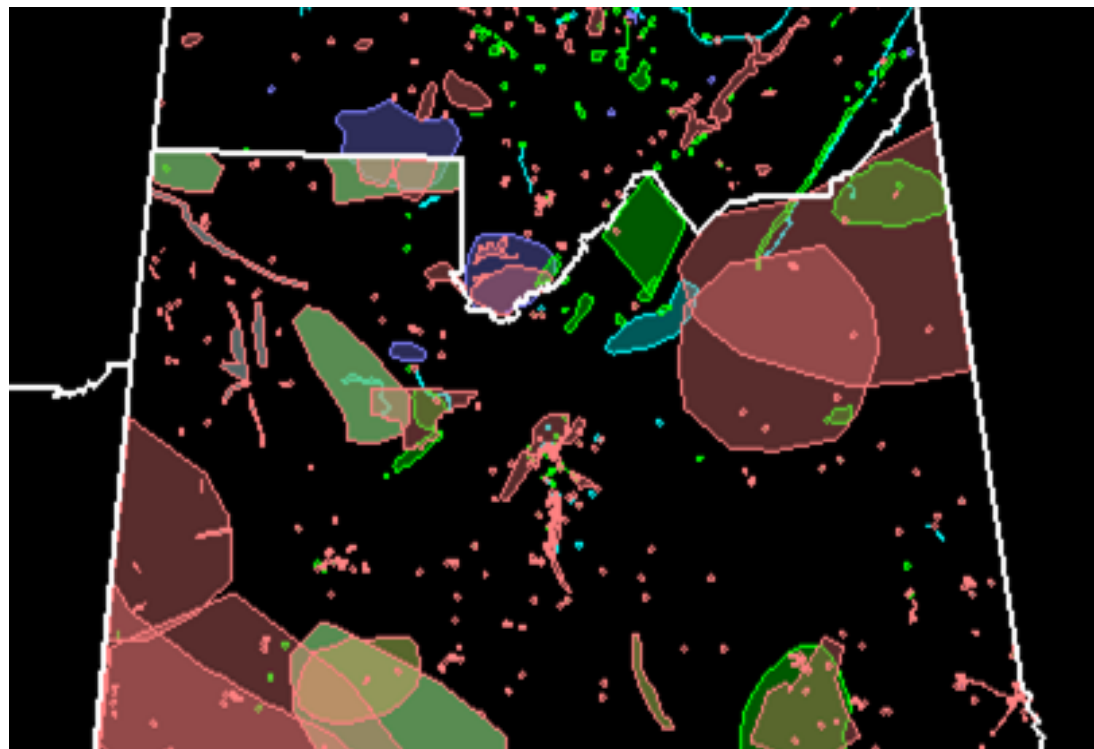
Pros & Cons of the CDC/ATSDR SVI

Pros	Cons
<ul style="list-style-type: none">○ Emergency prep○ Evacuation planning○ Community support○ Resource allocation	<ul style="list-style-type: none">○ Limited Data Sources/Highly correlated variables○ Lack of Granularity○ Static in Nature○ Interpretation Challenges○ Limited Applicability to Specific Events

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Other Tools for Understanding the Population

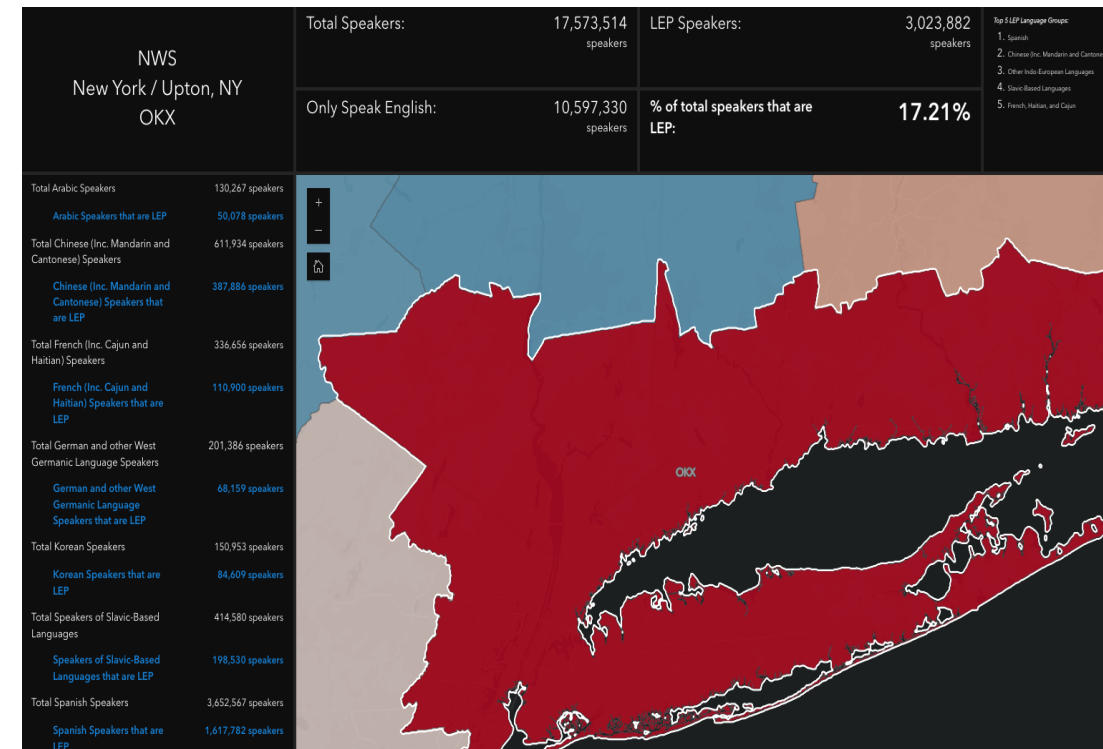
SVI isn't the silver-bullet vulnerability tool



Brief Vulnerability Overview Tool (BVOT)

- Uses knowledge-derived approach to vulnerability data
- Locally-developed to highlight unique vulnerabilities

Learn more about BVOT [here](#)



NWS LEP Dashboard

- Highlights Limited English Proficiency (LEP) groups across the nation by percentage of population within a County Warning Area (CWA)

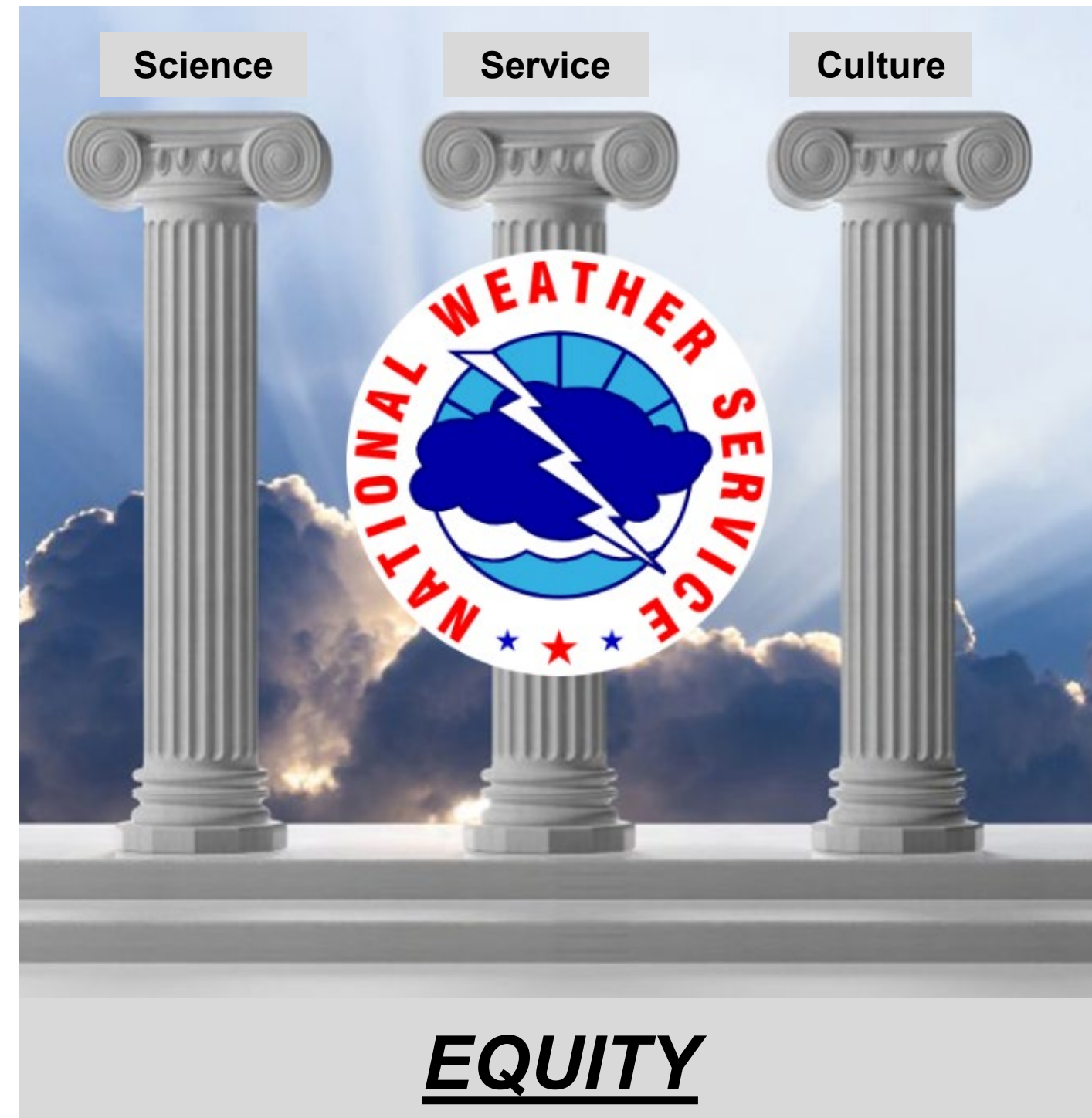
For more information, email monica.bozeman@noaa.gov

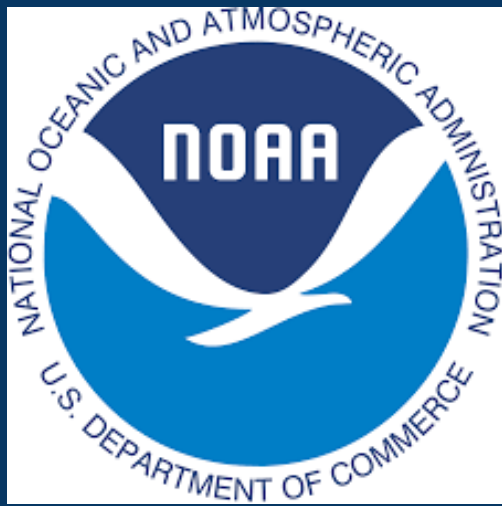
Final Thoughts

Equity is never automatic

- Internally or externally, we cannot ignore the importance of equity.
- The task is daunting, **but data and equity-informed actions based on that data can help us.**
- GIS tools and analysis are powerful tools to leverage: they can unveil vulnerabilities you never knew existed.

Nothing replaces human interaction: the data just gets you started!





Thank You!!

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Matt Beitscher – matthew.beitscher@noaa.gov



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