**Texas Epidemic Public Health Institute**
**Vulnerable Populations**

TE?HI

TEXAS EPIDEMIC
PUBLIC HEALTH
INSTITUTE

# Social Vulnerability Index (SVI) - Texas

*Report and data were collected from open sources such as Texas Health and Human Services (HHS) and the Centers for Disease Control and Prevention Social Vulnerability Index (CDC SVI). Calculations were made based on the available data from year 2020-2021.*

## I. The Centers for Disease Control and Prevention (CDC) Social Vulnerability Index

**What is Social Vulnerability?**

Social vulnerability is the ability of communities to survive or thrive when confronted by external stresses on human health, including:

- Natural or human-caused disasters
- Disease outbreaks

**What is the CDC's Social Vulnerability Index (SVI)?**

CDC's SVI is a percentile-based index of a county-level vulnerability to disaster. The tool was created to identify communities that need the most support for emergencies like hurricanes or disease outbreaks.

SVI uses the US Census tracts data, subdivisions of counties for which the census collects statistical data. SVI ranks each tract on 15 social factors of vulnerability and groups them into four related themes:

- Socioeconomic status (below poverty, unemployed, income, no high school diploma)
- Household composition & disability (aged 65 or older, aged 17 or younger, older than age 5 with a disability, single-parent households)
- Minority status & language (minority, speak English "less than well")
- Housing type & transportation (multi-unit structures, mobile homes, crowding, no vehicle, group quarters)

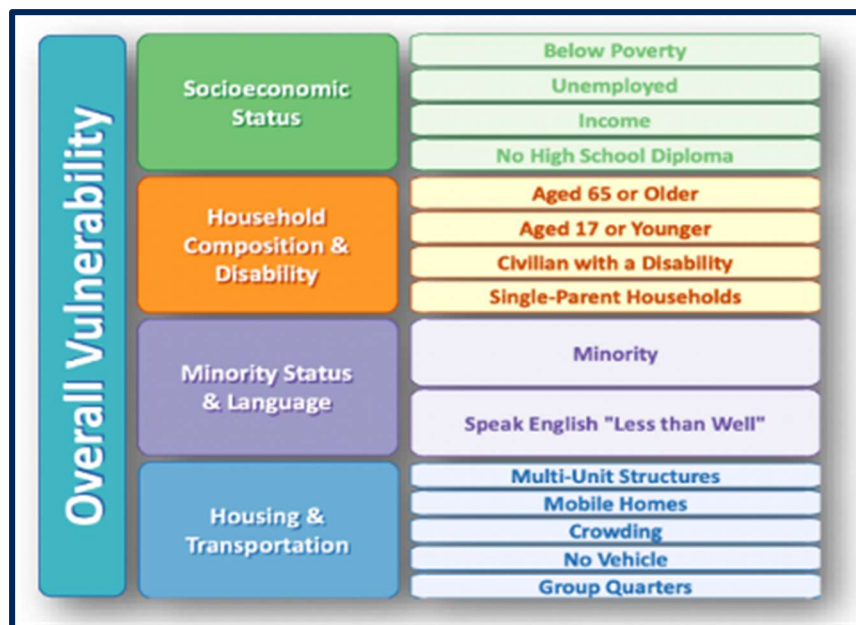Each tract received a separate ranking for the four themes and overall order.



*Figure 1: CDC's SVI Report 2018*

**What do the CDC's SVI Numbers Mean?**

The overall SVI score ranges from 0 (lowest vulnerability) to 1 (highest vulnerability). The four cutoff points for the SVI score are 0-0.25, 0.25-0.50, 0.50-0.75, and 0.75-1.0.
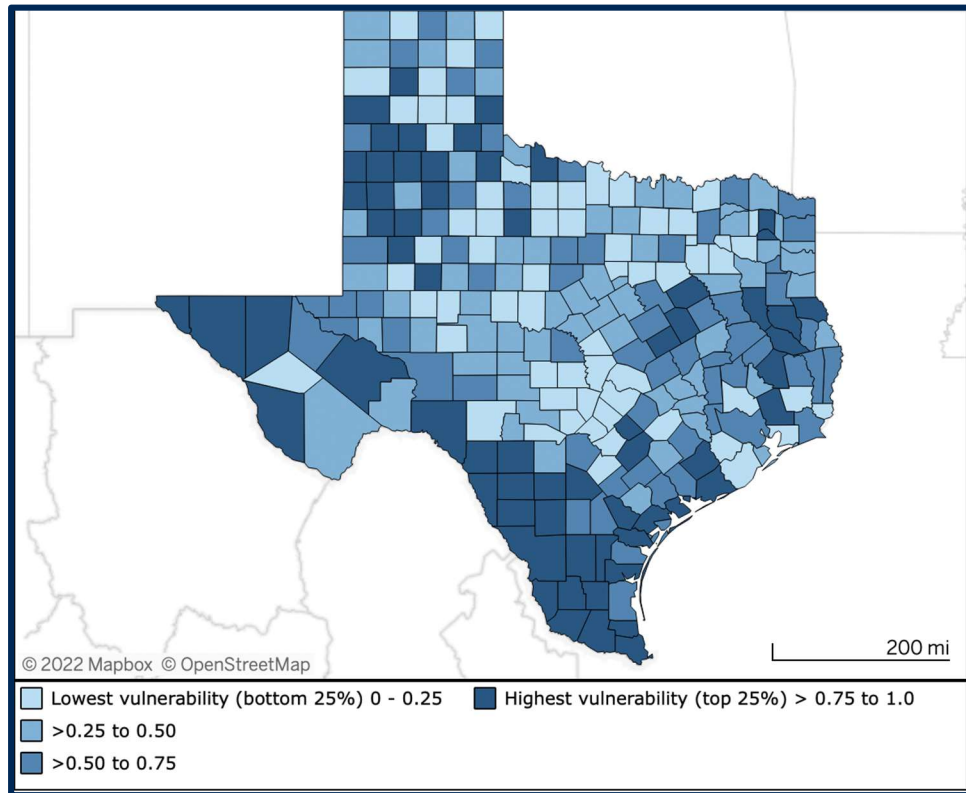


*Figure 2: Texas map with each county's SVI; Source: Texas Health and Human Services (HHS)*

**Uses of SVI:**

- To categorize communities that will need continued support to recover following an emergency or natural disaster
- To guide community-based health promotion initiatives
- To help public health officials and emergency response planners decide the number of emergency personnel needed, plan the best way to evacuate people, and account for socially vulnerable populations
- To identify areas in need of emergency shelters and estimate the amount of supplies needed

**Limitations of SVI:**

- SVI is based on survey responses and focuses on specific communities that could overlook the vulnerability of others
- Local information might be more accurate than these estimates and should always be considered when available
- SVI provides a single snapshot of a community which excludes events that may further impact a community's vulnerability

## II.    Texas SVI scores (Public Health Regions)

Texas has eight public health regions (PHRs) with regional offices that cover a total of 254 counties. The SVI scores presented in Table 1 are the regional averages for Texas. The range for each region is presented by the lowest SVI score and highest SVI score, along with the name of the respective counties. Region 11 has the highest average SVI score, which was 0.8456, compared to other regions, which means they are the most vulnerable and less equipped for disasters. Region 2/3 has the lowest average of the overall SVI, 0.3391, which means they are better equipped/prepared for disasters.

| TEXAS PUBLIC HEALTH REGIONS (# OF COUNTIES) | AVERAGE SVI SCORE | MINIMUM AND MAXIMUM SVI SCORE- COUNTY LEVEL | COUNTY NAME |
|---|---|---|---|
| Region 1 (41) | 0.5364 | 0 | Carson |
| | | 0.936 | Terry |
| Region 2/3 (49) | **0.3391** | 0.004 | Archer |
| | | 0.913 | Navarro |
| Region 4/5N (35) | 0.5467 | 0.126 | Rains |
| | | 0.905 | Angelina |
| Region 6/5S (16) | 0.4348 | 0.086 | Hardin |
| | | 0.849 | Liberty |
| Region 7 (30) | 0.4319 | 0.039 | Williamson |
| | | 0.897 | Falls |
| Region 8 (28) | 0.571 | 0.035 | Comal |
| | | 1 | Dimmit |
| Region 9/10 (36) | 0.4781 | 0.015 | Borden |
| | | 0.980 | Presidio |
| Region 11 (19) | **0.8456** | 0.533 | Live Oak |
| | | 0.992 | Brooks |

*Table 1: Texas Public Health Regions (PHR) and their average SVI score; green = low vulnerability and red = high vulnerability*
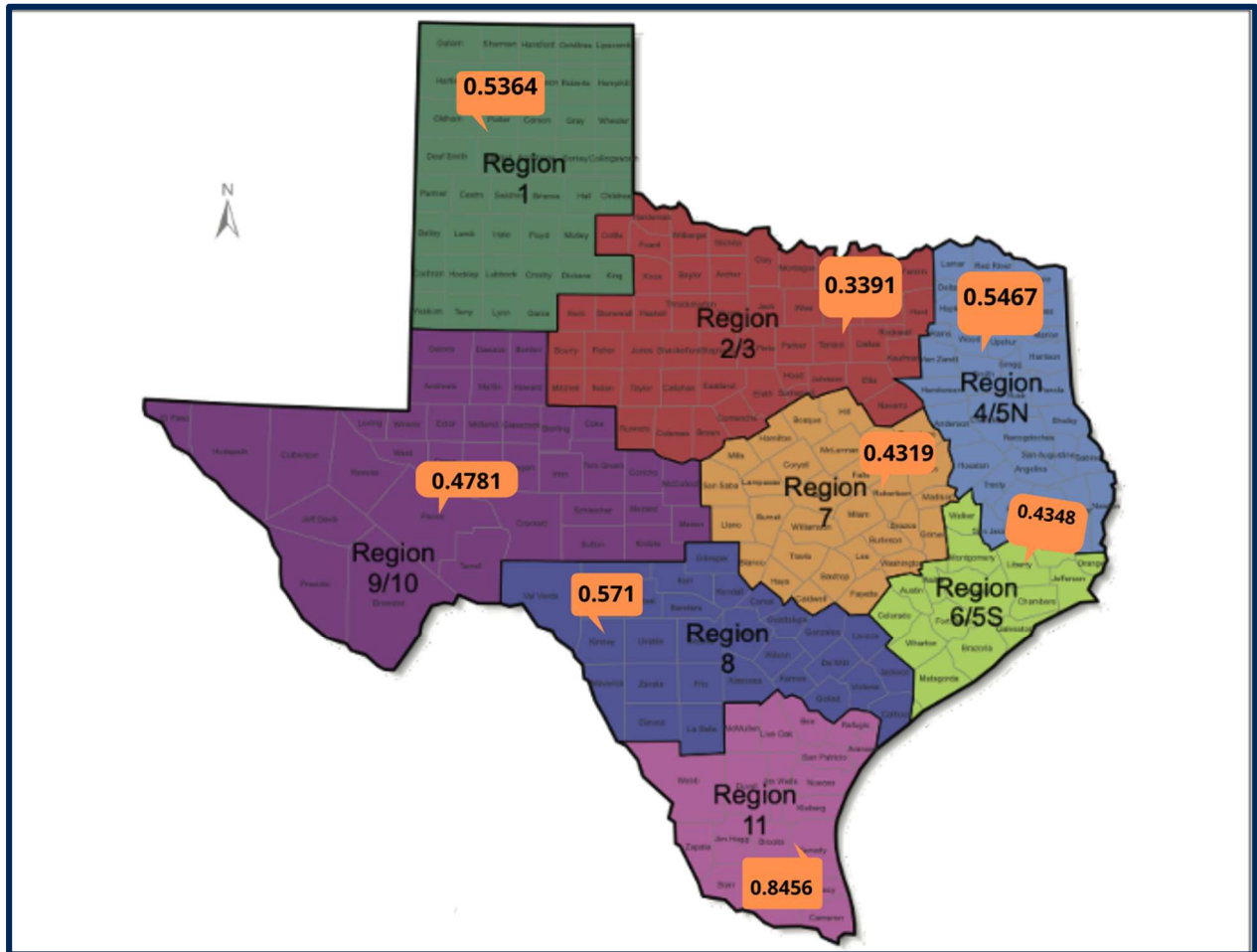
*Figure 3: Texas public health regions with their average SVI scores*

The Texas Health and Human Services Commission (HHSC) focused on five selected vulnerability characteristics juxtaposed to the COVID-19 pandemic fatality rates. These five vulnerabilities are vital characteristics to focus on as Texas prepares for the next epidemic or natural disaster, including:

- Unemployment rate
- Percentage of people living 200% below poverty,
- Percentage of people age 65 years or older,
- Percentage of black/African American, and
- Percentage of the Hispanic population.

These factors are also crucial as we work with communities likely to be disproportionately affected during disasters and emergencies.

Table 2 presents the average percentage for each public health region's five selected vulnerability characteristics. Region 11 reported the highest rate of people living 200% below the poverty level (49.17%), the highest unemployment (7.37%), and the highest percentage of the Hispanic population (71.59%). Region 6/5S has the highest African American population (14.09%), and region 4/5N has the highest rate of people aged 65 years and older (21.48%).

| REGIONS (# OF COUNTIES &) | UNEMPLOYMENT | PEOPLE LIVING BELOW 200% POVERTY LEVEL | PEOPLE AGED 65 AND OLDER | BLACK/AFRICAN-AMERICAN POPULATIONS | HISPANIC POPULATIONS |
|---|---|---|---|---|---|
| Texas Regional Averages | 5.20 | 38.74 | 19.67 | 6.65 | 38.3 |
| Region 1(41) | 4.07 | 39.71 | 18.95 | 3.34 | 41.32 |
| Region 2/3 (49) | 4.22 | 35.69 | 20.68 | 5.28 | 23.06 |
| Region 4/5N (35) | 5.65 | 40.87 | 21.48 | 14.07 | 14.28 |
| Region 6/5S (16) | 5.97 | 32.79 | 16.20 | 14.09 | 27 |
| Region 7(30) | 4.40 | 36.18 | 20.29 | 9.44 | 25.40 |
| Region 8 (28) | 4.87 | 38.92 | 20.04 | 2.91 | 51.72 |
| Region 9/10 (36) | 5.07 | 36.59 | 21.06 | 1.86 | 52.03 |
| Region 11 (19) | 7.37 | 49.17 | 18.72 | 2.25 | 71.59 |

*Table 2: Texas PHRs selected vulnerability characteristics; Footnote: green = below Texas regional average, red = above Texas regional average*
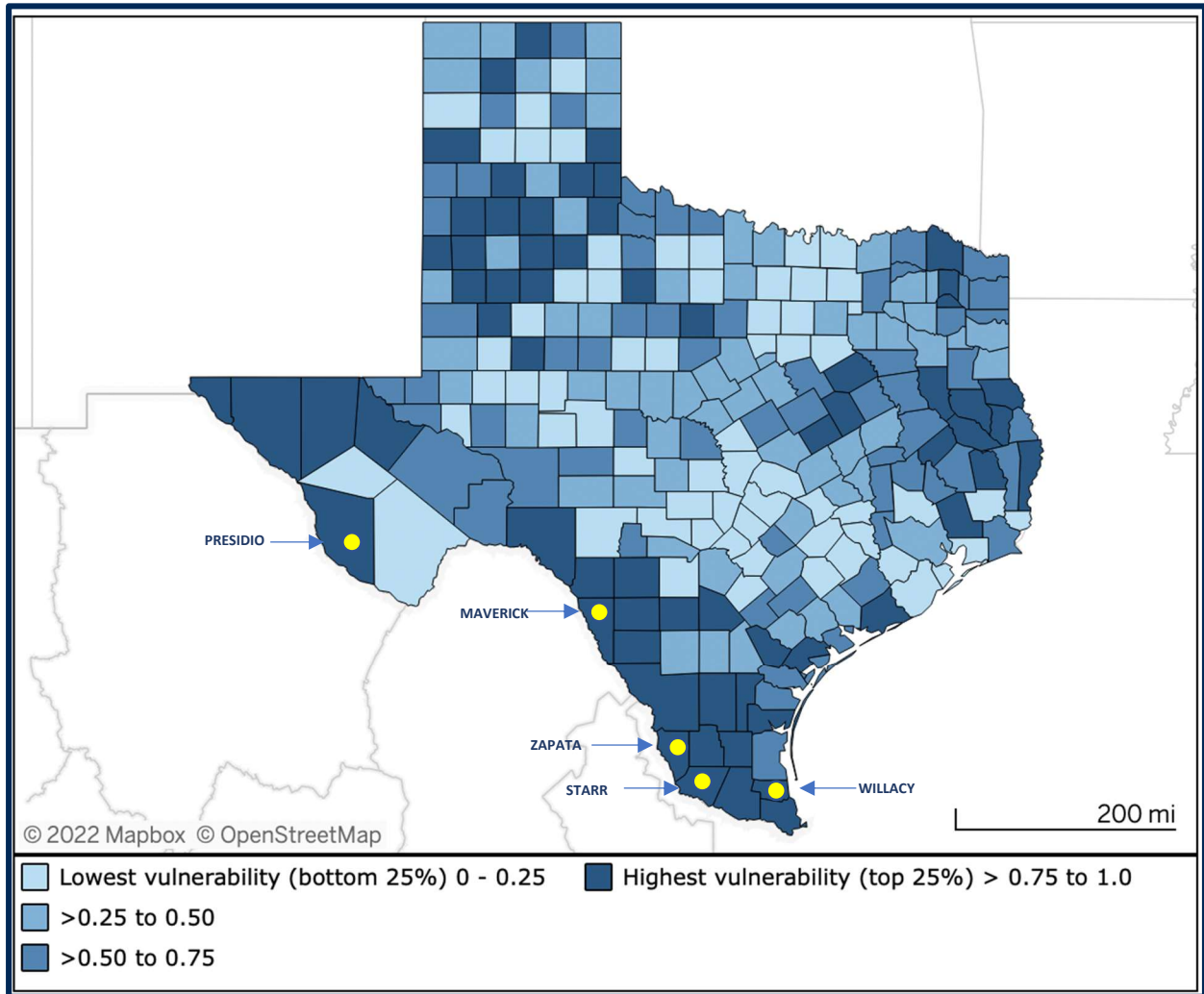
### III.    Texas and SVI's themes



*Figure 4: Socioeconomic status SVI scores; Source: Texas Health and Human Services (HHS)*

The social factors for the socioeconomic status of SVI include: living below the poverty level, unemployment, income level, and not having a high school diploma. In Texas, 64 counties have the highest socioeconomic status vulnerability (SVI score > 0.75) compared to other counties. Some of these counties include Starr (1), Willacy (0.996), Zapata (0.992), Presidio (0.988), and Maverick (0.984).
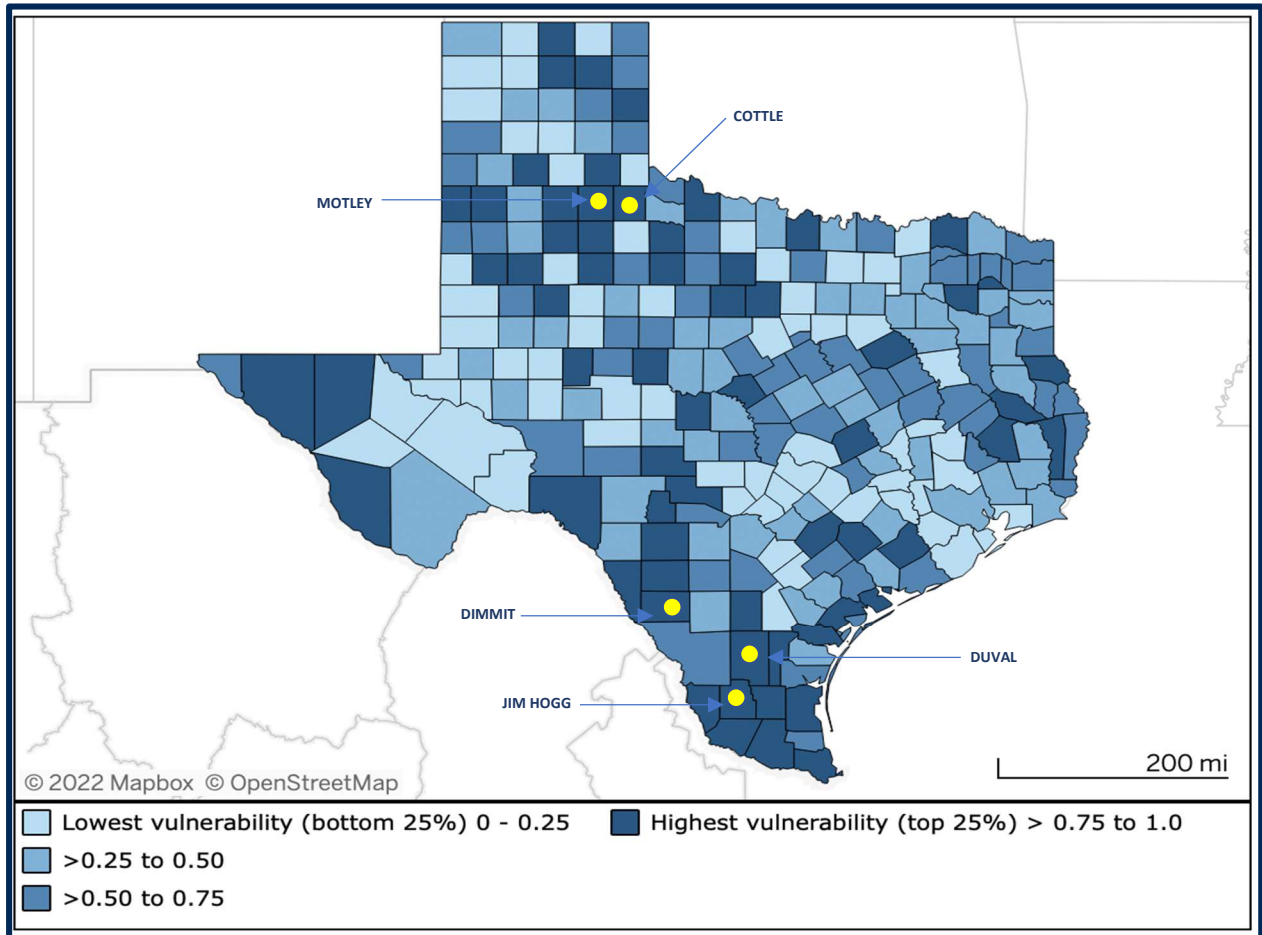
*Figure 5:Household composition and disability SVI scores; Source: Texas Health and Human Services (HHS)*

The social factors associated with household composition and disability include those 65 or older, 17 or younger, civilians with disabilities, and single-parent households. In Texas, 66 counties have the highest household composition and disability vulnerability (SVI > 0.75) compared to other counties. Some of these counties include Cottle (1), Motley (0.996), Jim Hogg (0.992), Dimmit (0.988), and Duval (0.984).
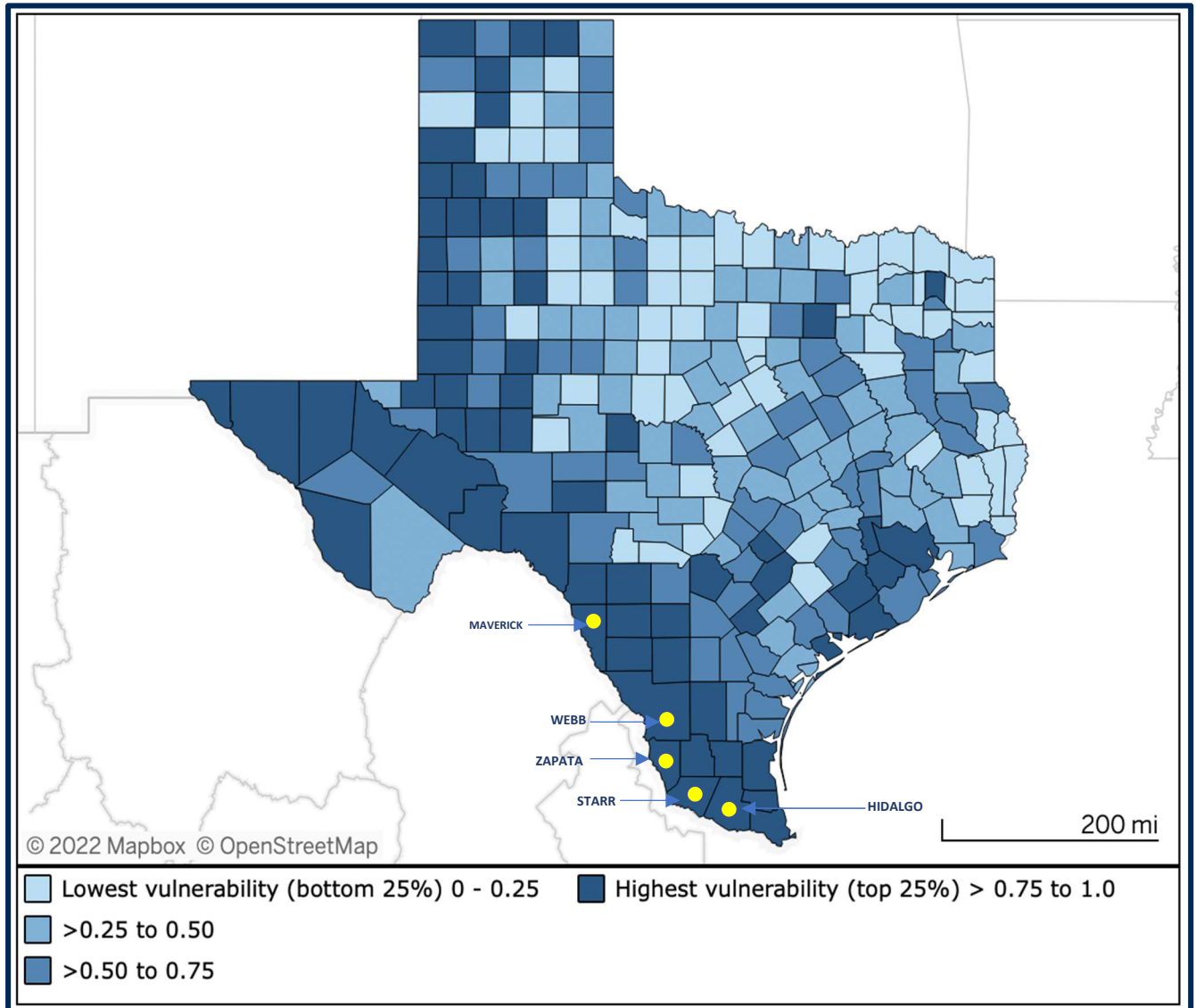
*Figure 6: Minority status and language SVI scores; Source: Texas Health and Human Services (HHS)*

The social factors associated with the minority status and language include minorities and those who speak English "less than well." In Texas, 56 counties have the highest minority status and language vulnerability (SVI >0.75) compared to other counties. Some of these counties include Starr (1), Maverick (0.996), Webb (0.988), Zapata (0.988), and Hidalgo (0.984).
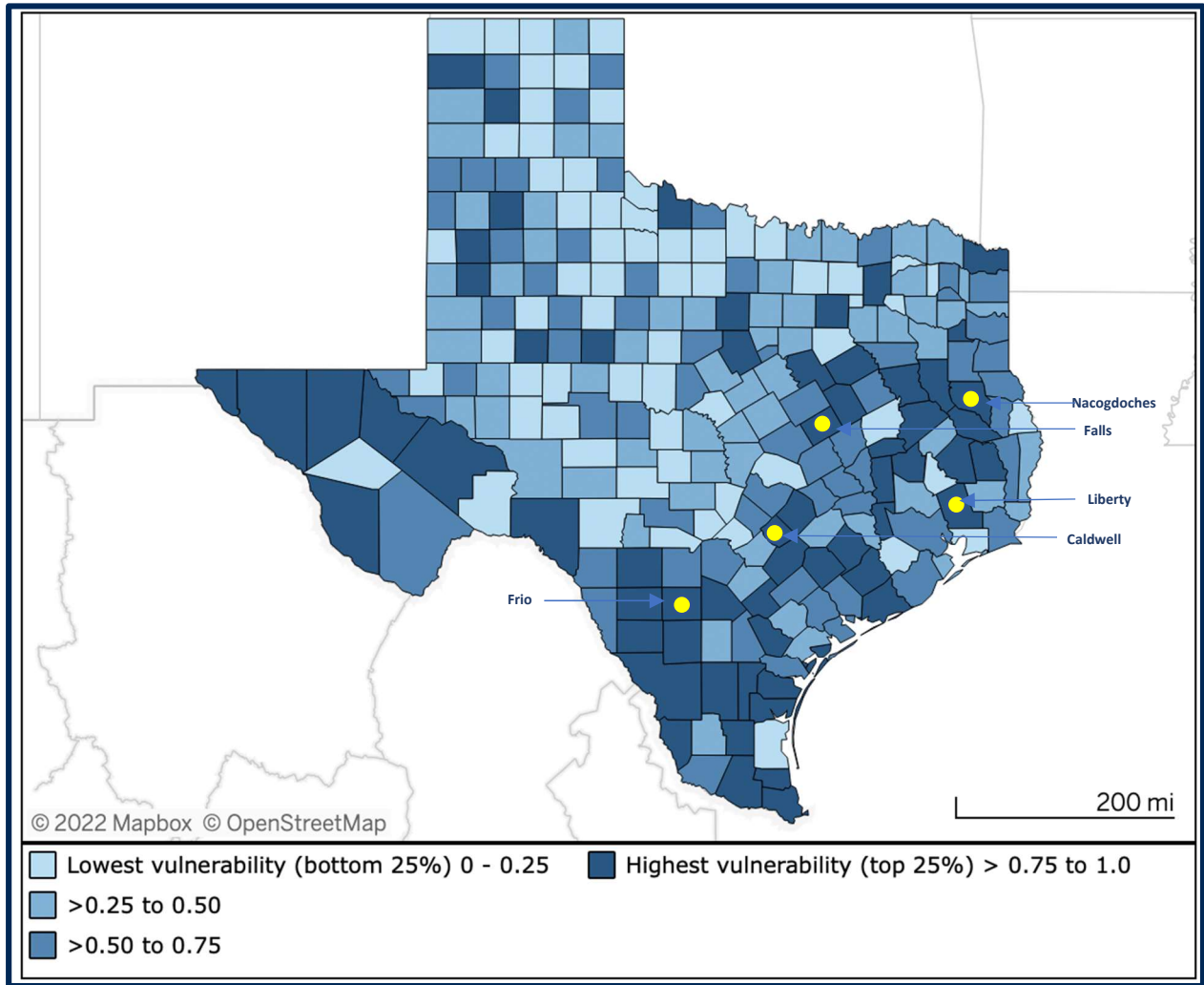
*Figure 7: Housing Type and Transportation SVI scores; Source: Texas Health and Human Services (HHS)*

The social factors associated with Housing and Transportation include multi-unit structures, mobile homes, crowding, no vehicle, and group quarters. In Texas, 65 counties have the highest Housing type and transportation vulnerability (SVI >0.75). Some of these counties include Frio (1), Falls (0.996), Liberty (0.992), Nacogdoches (0.988), and Caldwell (0.984).

## IV.    Recommendations

- Average overall SVI scores depicted in this report help visualize the vulnerability of each region across Texas.
- This can further help inform the public health work being done in each region and allow for a more targeted approach to helping vulnerable populations by providing them with resources needed to combat an epidemic or natural disaster
- These averages can help local health departments know where they stand on the SVI index as a region
- To provide knowledge and information needed when creating regional offices and prioritizing resources and where to look for information
- To provide regional stakeholders and decision makers with their region's vulnerability characteristics/data, including the minimum and maximum SVI scores across counties
- To help people in the community by providing steps and resources for overcoming the public health challenges associated with each region
- However, it is essential to take a look at each county's SVI where further preparedness efforts are needed

## V. References

- County-level Vulnerability and COVID-19 Measures. Texas Health and Human Services (HHS). https://www.hhs.texas.gov/data/county-level-vulnerability-covid-19-measures
- Texas's Most Vulnerable Populations. (September 2020). Texas Demographic Center. Retrieved from https://demographics.texas.gov/Resources/publications/2020/20200918_ACS2019Brief_TexasMostVulnerablePopulations.pdf?dt=20200922
- CDC SVI Documentation 2018. (2020). Agency for Toxic Substances and Disease Registry. Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/documentation/SVI_documentation_2018.html
- CDC/ATSDR Social Vulnerability Index. (2022). Agency for Toxic Substances and Disease Registry. Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/index.html
- Texas COVID-19 Case Count and Vaccination Data. (2022). Texas Health and Human Services (HHS). Retrieved from https://www.hhs.texas.gov/services/health/coronavirus-covid-19/texas-covid-19-case-count-vaccination-data#dashboards
- Impact of COVID-19 on Vulnerable Populations in Texas. (2021). Texas Health and Human Services Commission. Retrieved from https://www.hhs.texas.gov/sites/default/files/documents/services/health/coronavirus-covid-19/impact-covid-19-vulnerable-populations-texas.pdf