![NSTARR - National Study of Treatment and Addiction RECOVERY RESIDENCES]

National Study of Treatment and Addiction Recovery Residences Report
Minnesota

The National Study of Treatment and Addiction Recovery Residences (NSTARR) constitutes the largest and most diverse study of recovery housing in the US to date. NSTARR compiled data from publicly available sources (e.g., Oxford House, National Alliance for Recovery Residences, and Substance Abuse and Mental Health Services Administration websites) and lists maintained by entities tracking recovery housing. Residences for which locating information was available were geocoded and linked with U.S. Census data on urbanicity, alcohol- and drug-involved mortality, and COVID vulnerability. Data collection began in January 2020 and is ongoing until June 2023. The NSTARR database currently contains information on 10,358 residences operated by 3,628 providers in all 50 states. For a detailed description of methods and national findings, please see Mericle et al., 2022.

KEY FINDINGS

The NSTARR team identified 190 recovery residences (3.42 houses per 100,000 population) in Minnesota (see Table 1). Compared to other states (which include DC), Minnesota ranked 20 in terms of recovery housing availability per capita. However, only 50% of residences in Minnesota could be geocoded for these analyses. Kanabec County, an adjacent rural county, had the most recovery residences per 100,000 population, and 65 counties had no identified recovery residences, representing a mix of rural-urban classifications; 83 had fewer than 5 recovery residences (see Figure 1).

We used geographic information systems to identify hot and cold spots in Minnesota. A hot spot is a cluster of high values (county with a high number of residences surrounded by other counties with high numbers of residences) and a cold spot is a cluster of low values (county with low counts surrounded by counties also with low counts). Our analyses found hot spots but no cold spots within the state (see Figure 2).

The age-adjusted alcohol- and drug-involved mortality rate (per 100,000 population) was 22.30 in Minnesota for the years 2009-2019. Minnesota ranked 18 on alcohol- and drug-involved mortality out of the 50 states and DC. Among the counties ranked, Mahnomen County had the highest alcohol- and drug-involved mortality rate and Nobles County had the lowest alcohol- and drug-involved mortality rate. Of the three counties that had the highest mortality rates in Minnesota (i.e., Mahnomen, Mille Lacs, and St. Louis), two of them also ranked in the top half recovery housing availability per capita, suggesting recovery housing is located in communities with greater need (see Table 1 and Figure 3).

COVID vulnerability was summarized using the county-level data from the Centers for Disease Control and Prevention's COVID Vulnerability Index (CCVI). The CCVI is a composite measure of seven social determinants of health, encompassing modified themes from the Centers for Disease Control and Prevention's Social Vulnerability Index in combination with COVID risk factors to identify communities in need of additional support during the COVID pandemic. No counties were classified as having very high vulnerability (see Table 1 and Figure 4).

190
RESIDENCES TOTAL

20
NATIONAL AVAILABILITY RANKING

65
COUNTIES WITHOUT RESIDENCES

Literature Cited: Mericle, A. A., Patterson, D., Howell, J., Subbaraman, M. S., Faxio, A., & Karriker-Jaffe, K. J. (2022). Identifying the availability of recovery housing in the U.S.: The NSTARR project. Drug and Alcohol Dependence, 230, 109188.

Table 1. County-level Descriptive Statistics on Recovery Residences

County Name	Population[1]	RUCC Classification[2]	Number of Recovery Residences[3]	Recovery Residences Per 100,000 Population	Recovery Residences Availability per Capita (Rank)[4]	Age-Adjusted Alcohol/Drug Mortality[5] Rate per 100,000 Population	Mortality Rate (Rank)[6]	CCVI Quintile[7]
MINNESOTA	5,563,378		190	3.42	20	22.30	18	
Aitkin	15,834	Adjacent rural	0	0.00	87	54.50	6	Very low vulnerability
Anoka	350,253	Urban	0	0.00	87	35.00	28	Low
Becker	34,011	Adjacent rural	0	0.00	87	24.60	61	Low
Beltrami	46,403	Non-adjacent rural	1	2.16	17	44.50	10	Low
Benton	40,129	Urban	2	4.98	5	39.20	19	Moderate
Big Stone	4,996	Non-adjacent rural	0	0.00	87	41.00	16	Very low vulnerability
Blue Earth	66,795	Urban	2	2.99	13	22.60	70	Low
Brown	25,163	Adjacent rural	0	0.00	87	19.50	77	Very low vulnerability
Carlton	35,633	Urban	0	0.00	87	56.30	5	Very low vulnerability
Carver	101,949	Urban	5	4.90	6	22.50	71	Very low vulnerability
Cass	29,268	Non-adjacent rural	1	3.42	11	57.00	4	Very low vulnerability
Chippewa	11,953	Non-adjacent rural	0	0.00	87	25.80	58	Low
Chisago	55,315	Urban	0	0.00	87	34.30	30	Very low vulnerability
Clay	63,446	Urban	1	1.58	21	30.50	40	Low
Clearwater	8,821	Adjacent rural	0	0.00	87	52.30	7	Low
Cook	5,376	Non-adjacent rural	0	0.00	87	32.50	37	Very low vulnerability
Cottonwood	11,299	Non-adjacent rural	0	0.00	87	27.20	54	Very low vulnerability
Crow Wing	64,217	Adjacent rural	0	0.00	87	30.30	42	Very low vulnerability
Dakota	421,453	Urban	0	0.00	87	28.70	49	Low
Dodge	20,669	Urban	0	0.00	87	26.20	55	Very low vulnerability
Douglas	37,513	Adjacent rural	0	0.00	87	24.00	66	Very low vulnerability
Faribault	13,801	Adjacent rural	0	0.00	87	20.40	75	Very low vulnerability
Fillmore	20,949	Urban	0	0.00	87	24.10	64	Very low vulnerability
Freeborn	30,463	Non-adjacent rural	1	3.28	12	30.20	43	Low
Goodhue	46,246	Adjacent rural	1	2.16	16	35.30	27	Very low vulnerability
Grant	5,935	Non-adjacent rural	0	0.00	87	33.60	32	Very low vulnerability
Hennepin	1,245,837	Urban	20	1.61	20	42.10	15	Low
Houston	18,648	Urban	0	0.00	87	25.40	59	Very low vulnerability
Hubbard	21,019	Non-adjacent rural	0	0.00	87	29.30	46	Very low vulnerability
Isanti	39,430	Urban	0	0.00	87	33.10	34	Very low vulnerability
Itasca	45,141	Adjacent rural	2	4.43	8	49.30	9	Very low vulnerability

Jackson	9,954	Non-adjacent rural	0	0.00	87	18.90	79	Very low vulnerability
Kanabec	16,089	Adjacent rural	4	24.86	1	22.40	73	Very low vulnerability
Kandiyohi	42,841	Adjacent rural	0	0.00	87	26.00	56	Low
Kittson	4,311	Non-adjacent rural	0	0.00	87	Suppressed	-	Very low vulnerability
Koochiching	12,515	Adjacent rural	0	0.00	87	38.50	21	Very low vulnerability
Lac qui Parle	6,719	Non-adjacent rural	0	0.00	87	30.50	40	Very low vulnerability
Lake	10,560	Adjacent rural	0	0.00	87	40.70	17	Very low vulnerability
Lake of the Woods	3,771	Non-adjacent rural	0	0.00	87	38.90	20	Very low vulnerability
Le Sueur	28,242	Urban	0	0.00	87	23.30	68	Very low vulnerability
Lincoln	5,677	Non-adjacent rural	0	0.00	87	43.60	12	Very low vulnerability
Lyon	25,758	Non-adjacent rural	1	3.88	9	18.30	80	Low
Mahnomen	5,501	Adjacent rural	0	0.00	87	116.90	1	Moderate
Marshall	9,372	Adjacent rural	0	0.00	87	25.10	60	Very low vulnerability
Martin	19,852	Non-adjacent rural	0	0.00	87	29.20	47	Very low vulnerability
McLeod	35,832	Adjacent rural	0	0.00	87	28.50	51	Very low vulnerability
Meeker	23,105	Adjacent rural	0	0.00	87	34.20	31	Low
Mille Lacs	25,865	Urban	2	7.73	2	61.10	2	Moderate
Morrison	33,064	Adjacent rural	0	0.00	87	34.50	29	Very low vulnerability
Mower	39,807	Adjacent rural	0	0.00	87	37.80	22	Moderate
Murray	8,296	Non-adjacent rural	0	0.00	87	24.50	62	Very low vulnerability
Nicollet	33,954	Urban	0	0.00	87	19.10	78	Low
Nobles	21,734	Non-adjacent rural	0	0.00	87	15.20	82	Moderate
Norman	6,520	Adjacent rural	0	0.00	87	36.60	24	Very low vulnerability
Olmsted	154,809	Urban	7	4.52	7	28.70	49	Very low vulnerability
Otter Tail	58,195	Adjacent rural	2	3.44	10	33.60	32	Very low vulnerability
Pennington	14,183	Adjacent rural	0	0.00	87	36.60	24	Very low vulnerability
Pine	29,223	Adjacent rural	0	0.00	87	42.60	14	Low
Pipestone	9,191	Adjacent rural	0	0.00	87	Suppressed	-	Low
Polk	31,521	Urban	0	0.00	87	35.90	26	Low
Pope	11,048	Adjacent rural	0	0.00	87	22.50	71	Very low vulnerability
Ramsey	544,442	Urban	28	5.14	4	33.10	34	High
Red Lake	4,015	Adjacent rural	0	0.00	87	Suppressed	-	Very low vulnerability
Redwood	15,261	Non-adjacent rural	0	0.00	87	29.00	48	Very low vulnerability
Renville	14,652	Adjacent rural	0	0.00	87	43.00	13	Very low vulnerability
Rice	66,185	Adjacent rural	0	0.00	87	29.70	45	Moderate
Rock	9,402	Adjacent rural	0	0.00	87	23.50	67	Very low vulnerability

Roseau	15,361	Non-adjacent rural	0	0.00	87	30.80	39	Very low vulnerability
Scott	145,275	Urban	0	0.00	87	24.50	62	Low
Sherburne	94,463	Urban	0	0.00	87	29.80	44	Low
Sibley	14,892	Urban	0	0.00	87	37.40	23	Very low vulnerability
St. Louis	199,759	Urban	4	2.00	18	57.50	3	Very low vulnerability
Stearns	158,452	Urban	4	2.52	15	28.10	52	Low
Steele	36,683	Non-adjacent rural	0	0.00	87	32.10	38	Low
Stevens	9,789	Non-adjacent rural	0	0.00	87	Suppressed	-	Very low vulnerability
Swift	9,359	Non-adjacent rural	0	0.00	87	39.60	18	Very low vulnerability
Todd	24,494	Adjacent rural	0	0.00	87	27.90	53	Low
Traverse	3,311	Non-adjacent rural	0	0.00	87	51.30	8	Very low vulnerability
Wabasha	21,537	Urban	0	0.00	87	21.70	74	Very low vulnerability
Wadena	13,654	Non-adjacent rural	1	7.32	3	43.80	11	Low
Waseca	18,740	Adjacent rural	0	0.00	87	17.00	81	Very low vulnerability
Washington	255,938	Urban	1	0.39	22	19.90	76	Very low vulnerability
Watonwan	10,972	Adjacent rural	0	0.00	87	24.10	64	Moderate
Wilkin	6,291	Adjacent rural	0	0.00	87	Suppressed	-	Very low vulnerability
Winona	50,725	Adjacent rural	1	1.97	19	32.90	36	Low
Wright	134,438	Urban	4	2.98	14	25.90	57	Very low vulnerability
Yellow Medicine	9,814	Non-adjacent rural	0	0.00	87	23.20	69	Very low vulnerability

[1]Population data were downloaded from tables in Social Explorer's ACS five-year estimate (2015-2019). American Community Survey 5-year Estimates, 2015-2019. Social Explorer tables, ACS 2015-2019. Social Explorer.

[2]The Rural-Urban Continuum Code (RUCC) was used to classify each county as urban, adjacent rural, or non-adjacent rural. Urban counties are counties with codes 1 (Counties in metro areas of 1 million population or more), 2 (Counties in metro areas of 250,000 to 1 million population), and 3 (Counties in metro areas of fewer than 250,000 population). Adjacent rural counties are counties with codes 4 (Urban population of 20,000 or more, adjacent to a metro area), 6 (Urban population of 2,500 to 19,999, adjacent to a metro area), and 8 (Completely rural or less than 2,500 urban population, adjacent to a metro area). Non-adjacent rural counties are the remaining three codes - 5 (Urban population of 20,000 or more, not adjacent to a metro area), 7 (Urban population of 2,500 to 19,999, not adjacent to a metro area), and 9 (Completely rural or less than 2,500 urban population, not adjacent to a metro area). Rural-Urban Continuum Code (RUCC). https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx

[3]Recovery residences are from the NSTARR project and are current as of 2020. Ninety-five (95) recovery residences in the state were not successfully geocoded due to lack of adequate address information, and thus were not assigned to a county.

[4]Recovery residences availability per capita is ranked in order of decreasing recovery residence density per 100,000 population per county, with 1 (highest number of residences per 100,000) to 87 (lowest number of residences per 100,000 population). Counties without recovery residences were all assigned a tied rank of 87.

[5]Alcohol- and drug-involved mortality included all deaths as underlying causes of death and selected ICD-10 codes mentioning or attributed to alcohol or drugs as contributing cause of death. Data from the Centers for Disease Control and Prevention, 2020. CDC Wonder (Wide-ranging Online Data for Epidemiologic Research). U.S. Department of Health and Human Services, Atlanta, GA. Available at: https://wonder.cdc.gov/. For more information on coding multiple causes of death, see: Centers for Disease Control and Prevention, About Multiple Cause of Death, 1999-2019. https://wonder.cdc.gov/mcd-icd10.html.accessed on August 9 2021.

[6]Mortality rate is ranked in order of decreasing alcohol- and drug-involved mortality from 1 (highest mortality per 100,000 population) to 82 (lowest mortality per 100,000 population).

[7]COVID-19 Community Vulnerability Index (CCVI) scores range in value from 0 – 1, with 0 being least vulnerable and 1 being the most vulnerable. Each county is ranked relative to all counties across the country, based on seven themes/domains. Each county was grouped into quintiles: very high (score of 0.8-1), high (0.6-0.8), moderate (0.4-0.6), low (0.2-0.4), and very low (0-0.2). For more information on how the CCVI I is calculated, see: COVID-19 Community Vulnerability Index (CCVI) methodology. Retrieved from https://covid-static-assets.s3.amazonaws.com/US-CCVI/COVID-19+Community+Vulnerability+Index+(CCVI)+Methodology.pdf

Figure 1. Distribution of Residences by Rural-Urban Classification
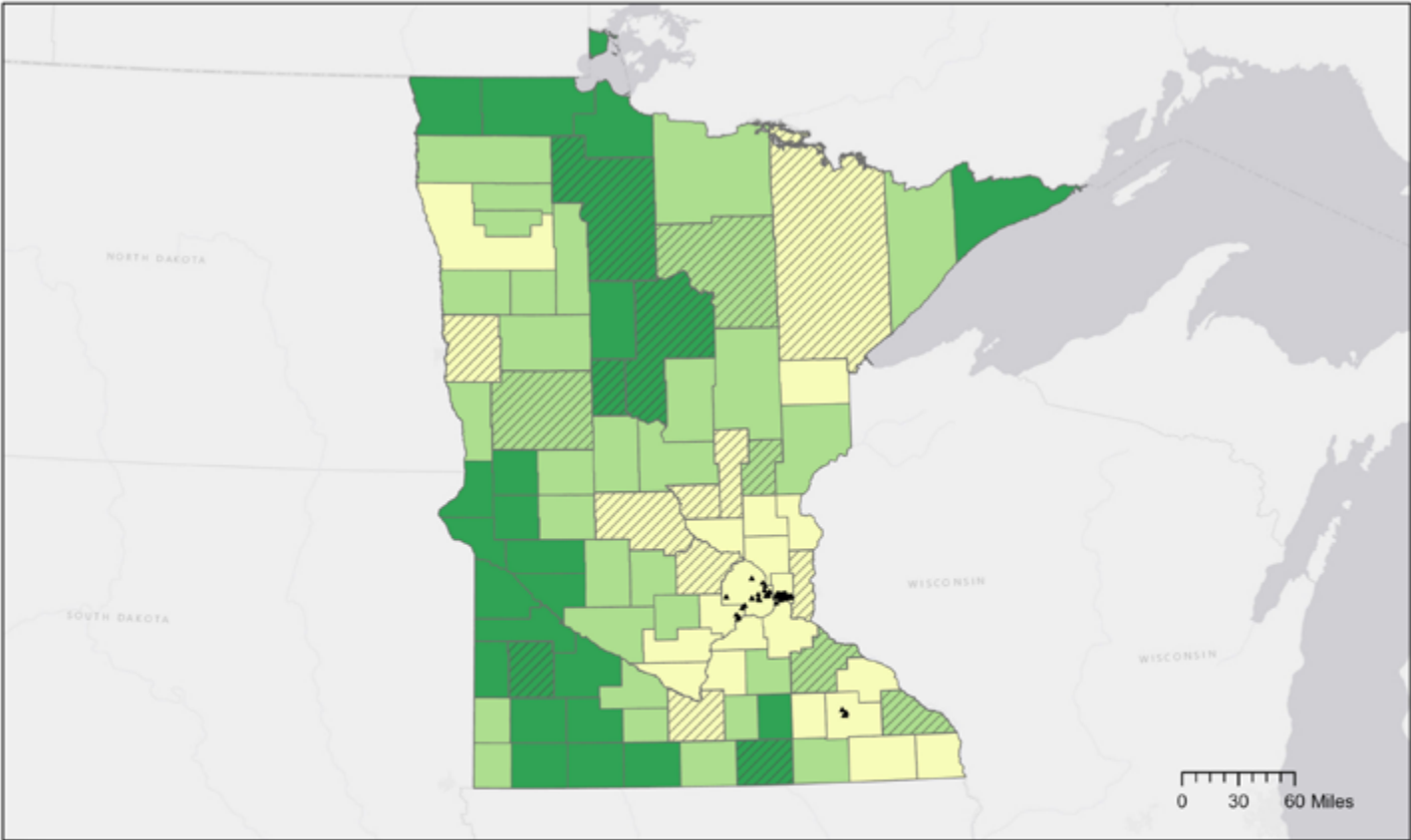
▲ Recovery residences

Rural-Urban Classification Code (RUCC)

- Urban
- Adjacent rural
- Non-adjacent rural
- ▨ Counties with residence locations suppressed
  (1-4 residences) to protect privacy

Data Credits: Esri, HERE, Garmin, USGS, EPA, NPS
Recovery residence locations: 2020
Created by: NSTARR Project (May 2022)

Figure 2. Hot/Cold Spot Analysis of Recovery Residence Locations
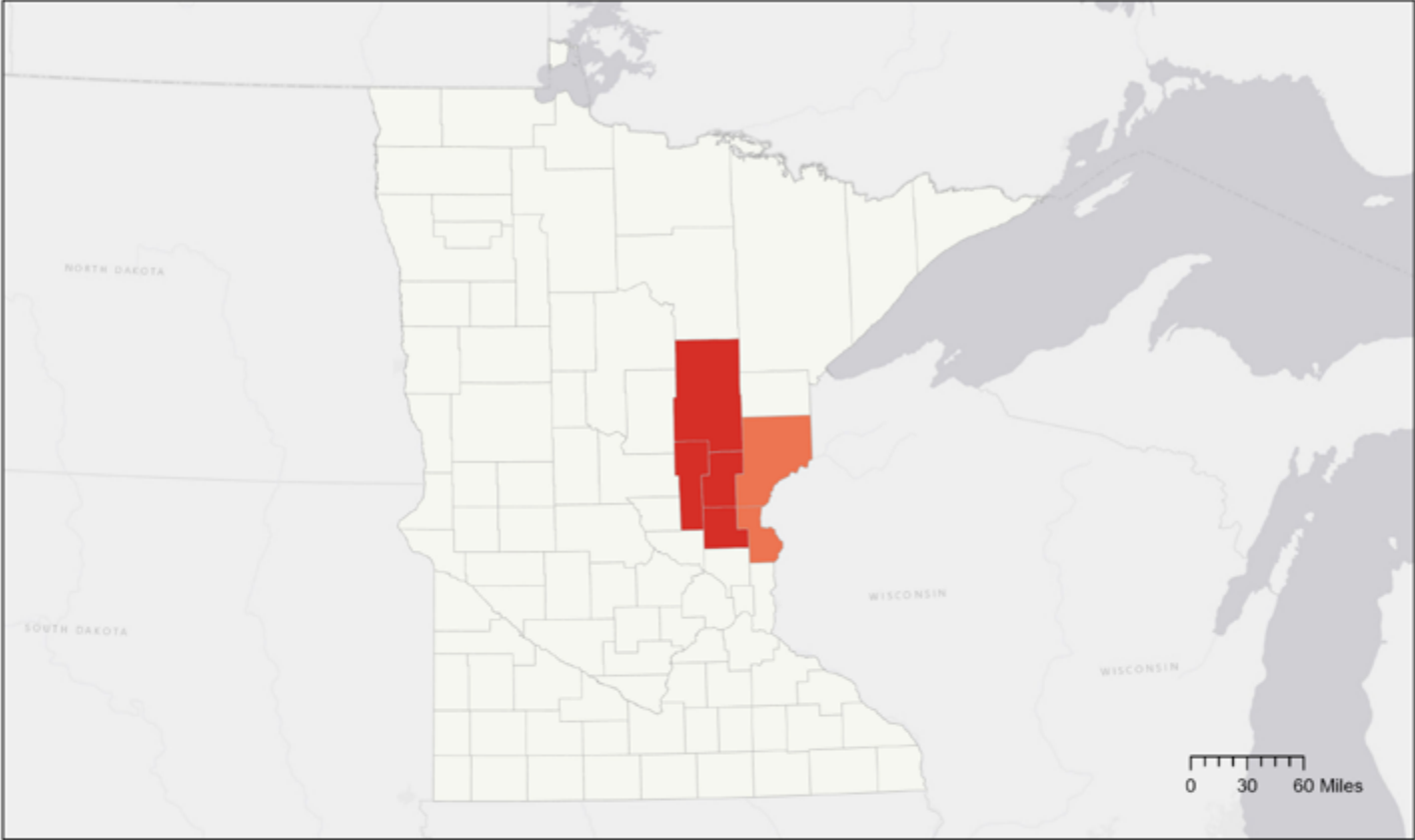
Hot Spot Analysis (Getis-Ord GI*)

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Data Credits: Esri, HERE, Garmin, USGS, EPA
Recovery residence locations: 2020
Created by: NSTARR Project (May 2022)

Figure 3. Distribution of Residences by Age-adjusted Alcohol- and/or Drug-involved Mortality
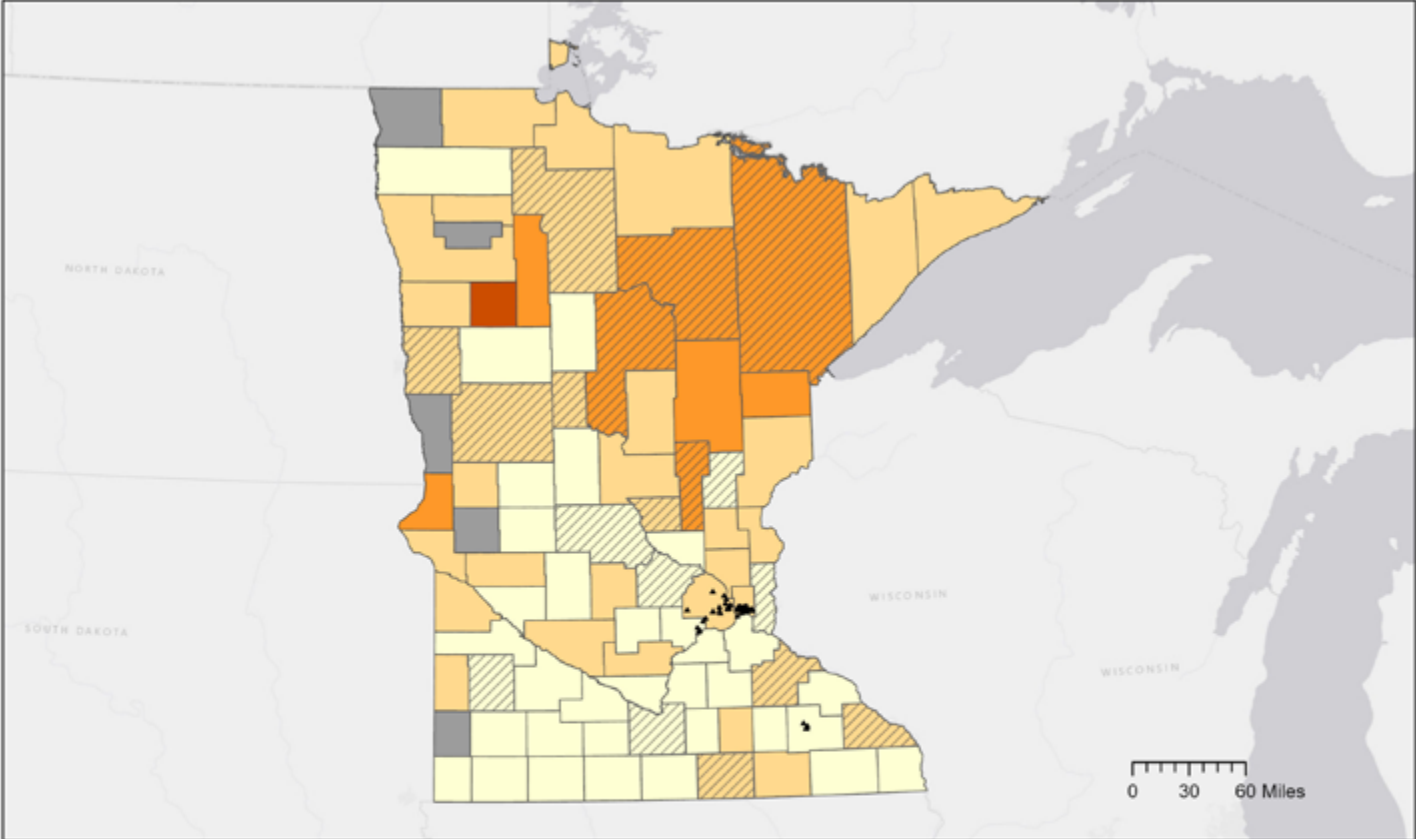
▲ Recovery residences
Age-adjusted alcohol and drug
mortality rate per 100,000 population

- 15 - 29
- 30 - 44
- 45 - 61
- 62 - 116
- Suppressed/Unreliable
- Counties with residence locations suppressed
  (1-4 residences) to protect privacy

Data Credits: Esri, HERE, Garmin, USGS, EPA, NPS
Recovery residence locations: 2020
Created by: NSTARR Project (May 2022)

Figure 4. Distribution of Residences by COVID-19 Community Vulnerability Index
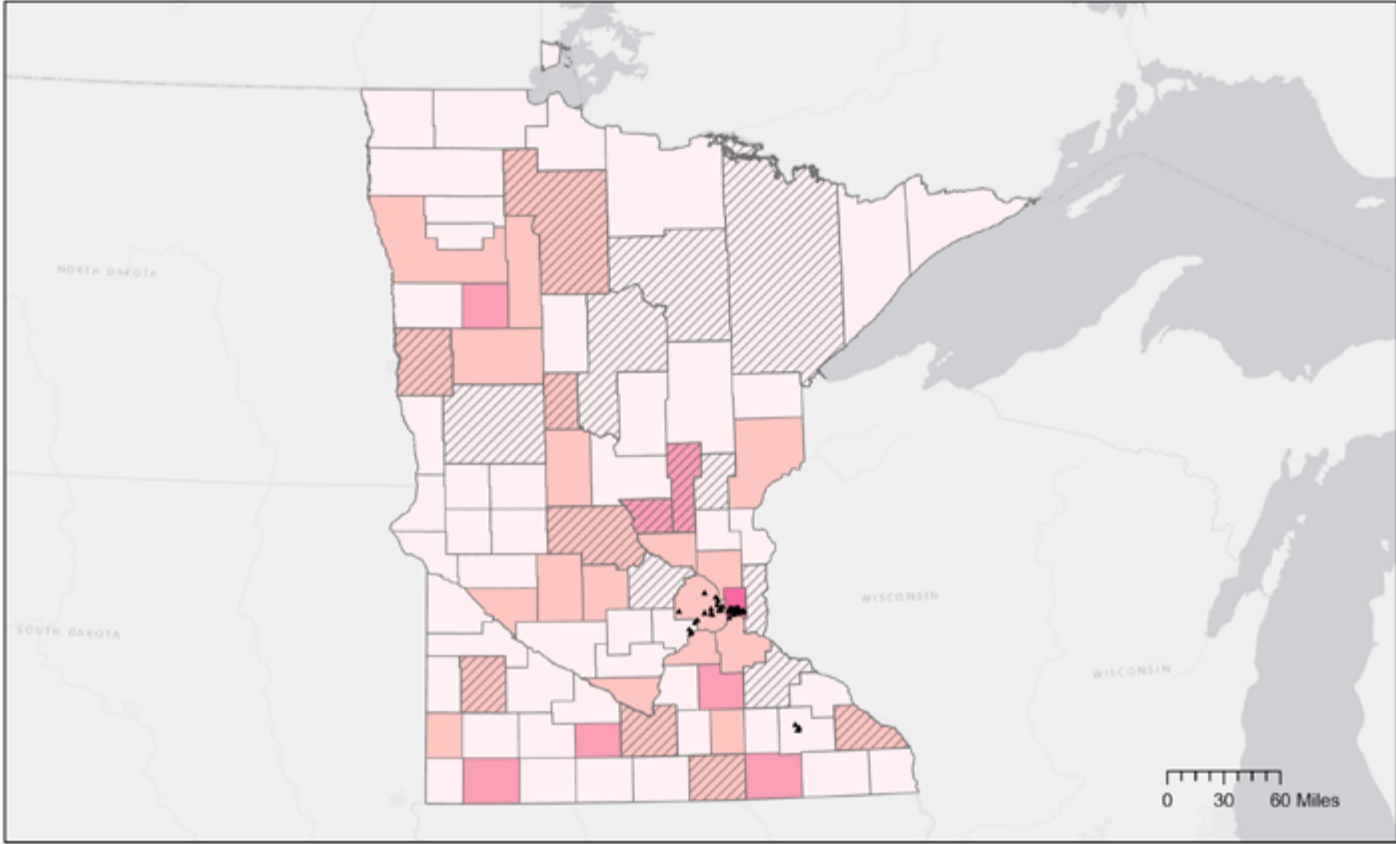
Recovery Residences

COVID-19 Community Vulnerability Index (CCVI)

- Very low vulnerability
- Low
- Moderate
- High
- Very high vulnerability
- Counties with residence locations suppressed (1-4 residences) to protect privacy

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Data Credits: Esri, HERE, Garmin, USGS, EPA, NPS
Recovery residence locations: 2020
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