



Census Block Urban/Rural Mapping

For Midwest SARS-Cov2 Phylodynamics



Purpose

- What We Have: Metadata on WI residents' SARS-Cov-2 strains including Zip codes, County FIPS codes, and Census Tracts
- Goal: phylodynamically analyze different strains in midwestern populations
 - My Goal: Sort each strain into urban and rural distinctions



US Census Depictions of Urban/Rural Areas

“For the 2020 Census, an urban area will comprise a densely settled core of census blocks that meet minimum housing unit density and/or population density requirements. This includes adjacent territory containing non-residential urban land uses. To qualify as an **urban area**, the territory identified according to criteria must encompass **at least 2,000 housing units or have a population of at least 5,000.**” (US Census Bureau)

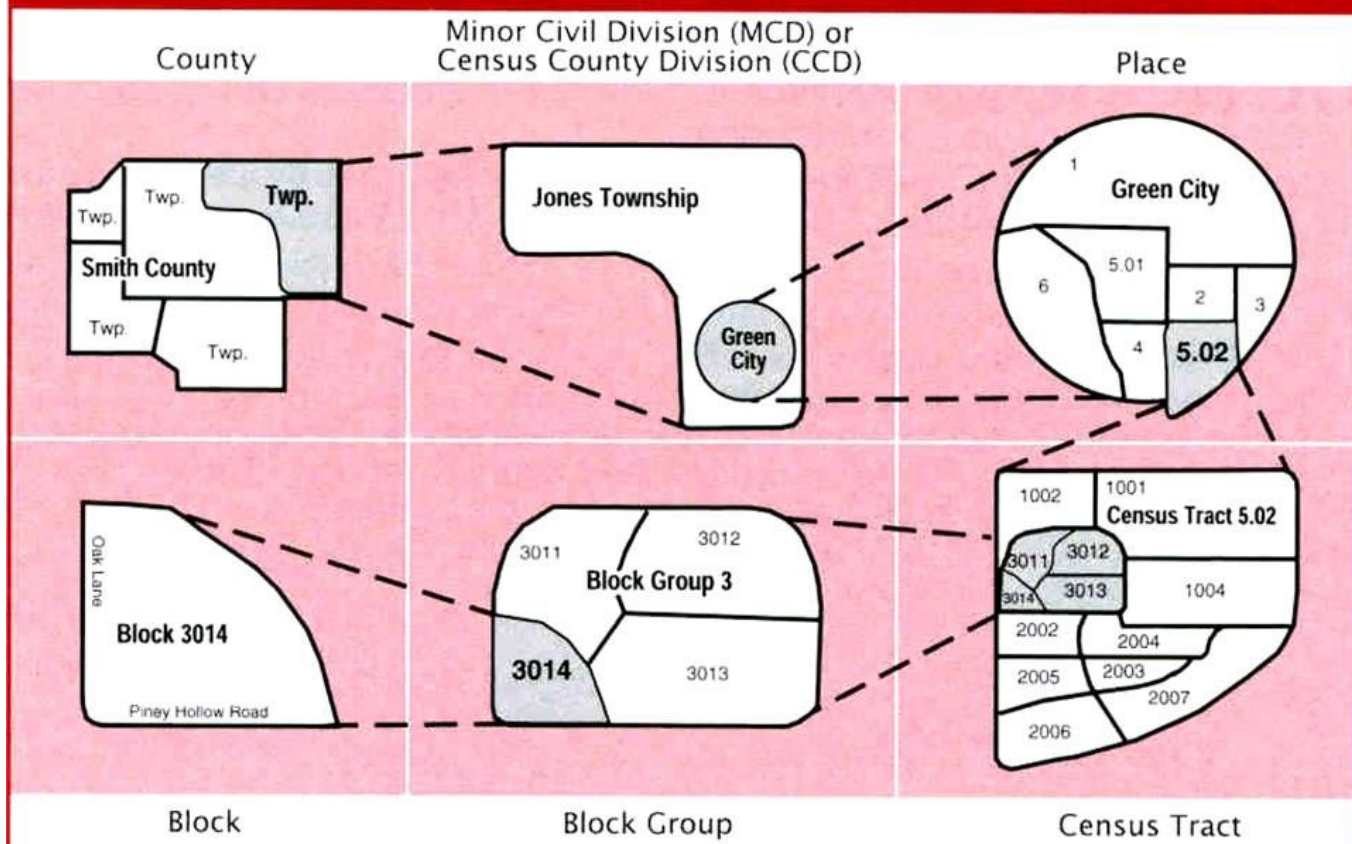


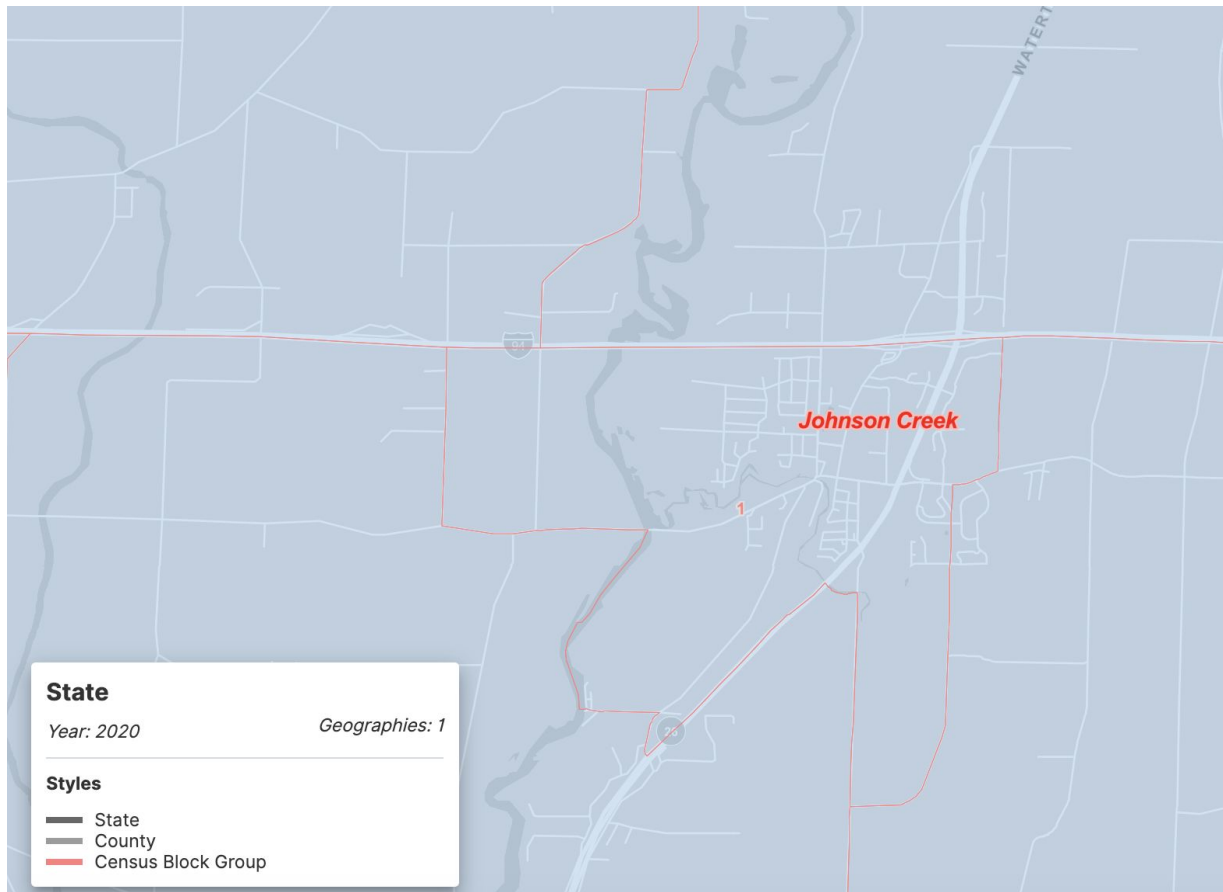
Some Background: Census Blocks with Urban Areas

- **Census Tracts:** boundaries are delineated with the intention of being stable over many decades, following relatively permanent visible features; the most commonly-used geography by statisticians and policymakers.
- **Census Block Groups:** statistical divisions of Census Tracts that contain a collection of Census blocks
- **Census Blocks:** the smallest geographic area for which the Bureau of the Census collects and tabulates decennial census data.

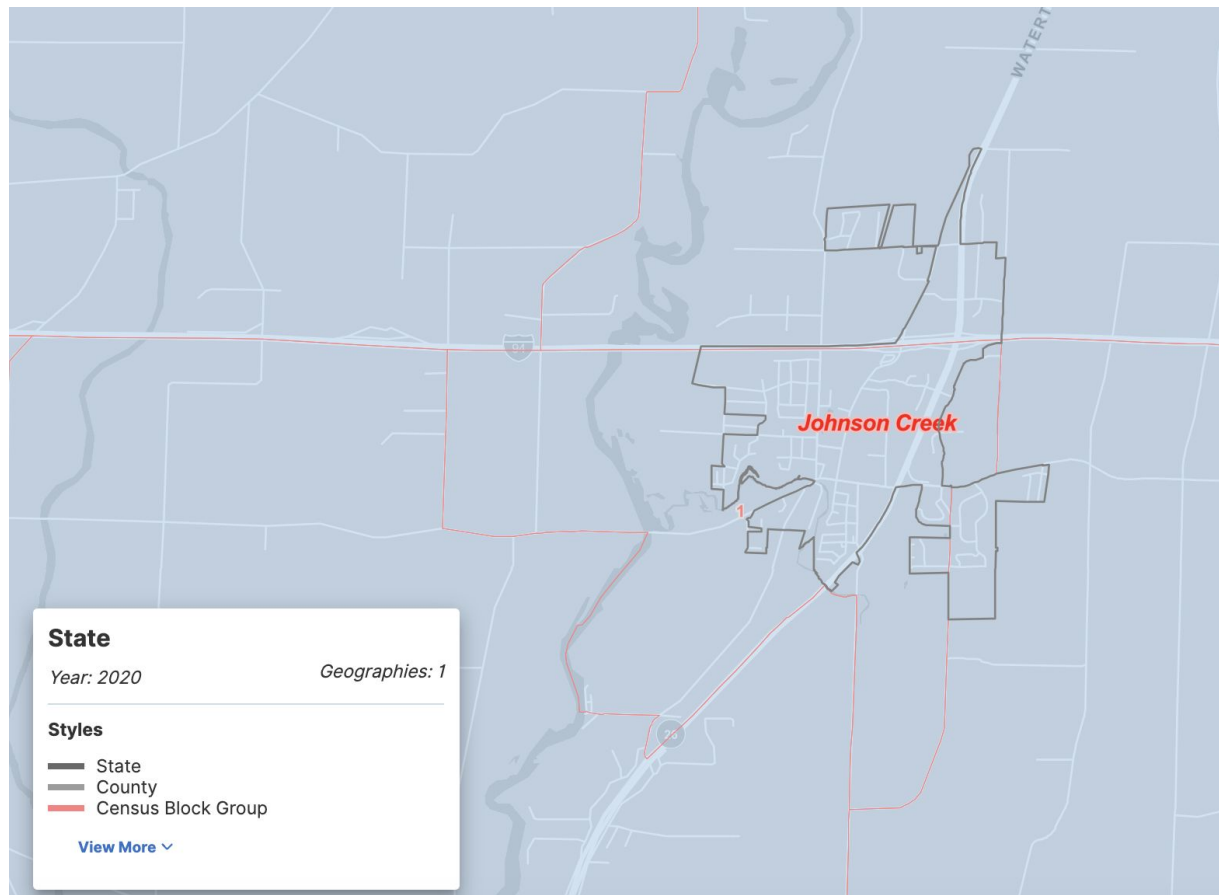
Census Small-Area Geography

Understanding the Relationships Among U.S. Census Bureau Geographic Entities





The above image shows the Census Block Group for this area in pink.



The above image adds the constraint of an “Urban Area” to the same city. It is obvious that there is overlap between the distinctions

State	County	Population	House Count	Total Blocks	Urban Population	Population % Urban	Urban Blocks	Rural Population	Population % Rural	Rural Blocks
Wisconsin	Adams	20,654	16,692	1,756	0	0.00%	0	20,654	100.00%	1,756
Wisconsin	Ashland	16,027	9,407	1,588	7,225	45.08%	471	8,802	54.92%	1,117
Wisconsin	Barron	46,711	23,779	2,713	10,156	21.74%	334	36,555	78.26%	2,379
Wisconsin	Bayfield	16,220	13,238	1,941	0	0.00%	0	16,220	100.00%	1,941
Wisconsin	Brown	268,740	112,908	5,025	224,156	83.41%	3,532	44,584	16.59%	1,493
Wisconsin	Buffalo	13,317	6,506	1,389	0	0.00%	0	13,317	100.00%	1,389
Wisconsin	Burnett	16,526	15,201	1,602	0	0.00%	0	16,526	100.00%	1,602
Wisconsin	Calumet	52,442	21,511	1,740	24,842	47.37%	433	27,600	52.63%	1,307
Wisconsin	Chippewa	66,297	28,688	3,131	24,847	37.48%	857	41,450	62.52%	2,274
Wisconsin	Clark	34,659	14,755	2,768	0	0.00%	0	34,659	100.00%	2,768
Wisconsin	Columbia	58,490	26,565	3,092	19,745	33.76%	565	38,745	66.24%	2,527
Wisconsin	Crawford	16,113	8,658	1,540	5,961	36.99%	316	10,152	63.01%	1,224
Wisconsin	Dane	561,504	248,795	10,961	485,269	86.42%	7,476	76,235	13.58%	3,485
Wisconsin	Dodge	89,396	38,123	3,853	40,330	45.11%	820	49,066	54.89%	3,033
Wisconsin	Door	30,066	23,738	1,787	9,429	31.36%	338	20,637	68.64%	1,449
Wisconsin	Douglas	44,295	22,906	3,315	27,191	61.39%	1,034	17,104	38.61%	2,281
Wisconsin	Dunn	45,440	18,693	2,486	17,022	37.46%	398	28,418	62.54%	2,088
Wisconsin	Eau Claire	105,710	44,966	3,326	80,628	76.27%	1,968	25,082	23.73%	1,358
Wisconsin	Florence	4,558	4,601	483	0	0.00%	0	4,558	100.00%	483
Wisconsin	Fond du Lac	104,154	45,740	3,567	66,391	63.74%	1,625	37,763	36.26%	1,942
Wisconsin	Forest	9,179	8,604	1,252	0	0.00%	0	9,179	100.00%	1,252
Wisconsin	Grant	51,938	22,110	3,353	11,838	22.79%	229	40,100	77.21%	3,124
Wisconsin	Green	37,093	16,273	2,185	10,725	28.91%	402	26,368	71.09%	1,783
Wisconsin	Green Lake	19,018	10,671	1,224	5,202	27.35%	159	13,816	72.65%	1,065
Wisconsin	Iowa	23,709	10,905	1,827	4,898	20.66%	147	18,811	79.34%	1,680
Wisconsin	Iron	6,137	5,523	947	2,016	32.85%	158	4,121	67.15%	789
Wisconsin	Jackson	21,145	9,613	1,917	4,415	20.88%	184	16,730	79.12%	1,733
Wisconsin	Jefferson	84,900	36,376	3,248	47,119	55.50%	1,193	37,781	44.50%	2,055
Wisconsin	Juneau	26,718	14,441	2,232	0	0.00%	0	26,718	100.00%	2,232
Wisconsin	Kenosha	169,151	72,451	3,685	147,021	86.92%	2,904	22,130	13.08%	781

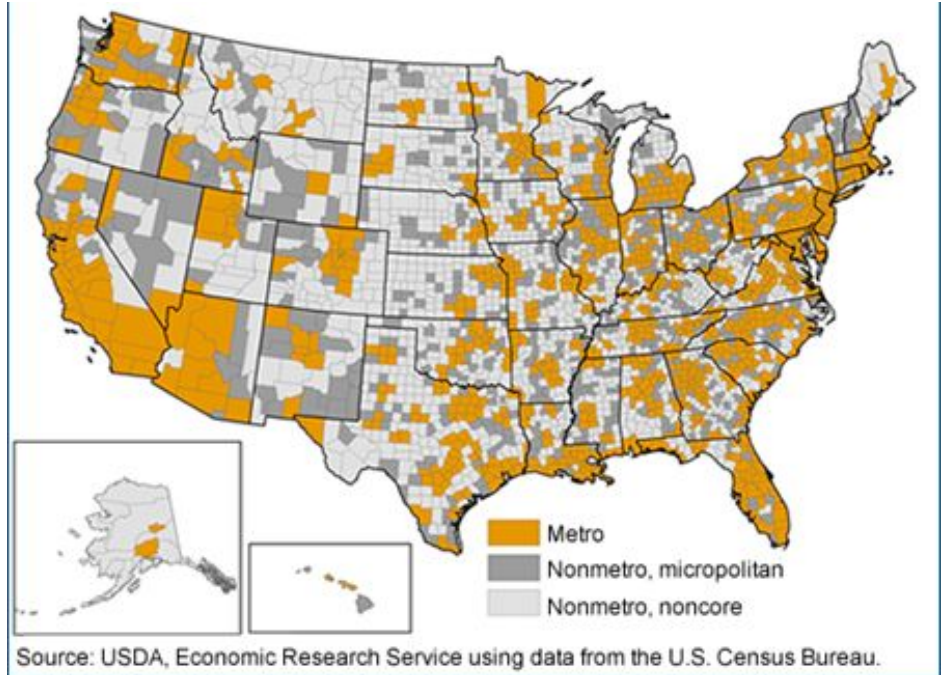
Above is a clip of a spreadsheet by county in Wisconsin that indicates the percentage of people living in “Urban” and “Rural” areas and how many urban/rural blocks were found in each county



USDA Depictions of Urban/Rural Areas using FIPS

- Metropolitan areas include central counties with one or more urbanized areas and outlying counties
 - Urbanized Areas: densely-settled urban entities with 50,000 or more people
 - Outlying Counties: included if 25% of workers commute to the central counties, or if 25% of the employment in the county consists of workers coming out from the central counties
- Nonmetro counties are outside the boundaries of metro areas and are further divided into micropolitan areas and non core counties

Metro, Nonmetro Micropolitan, and Nonmetro Noncore Counties, 2013

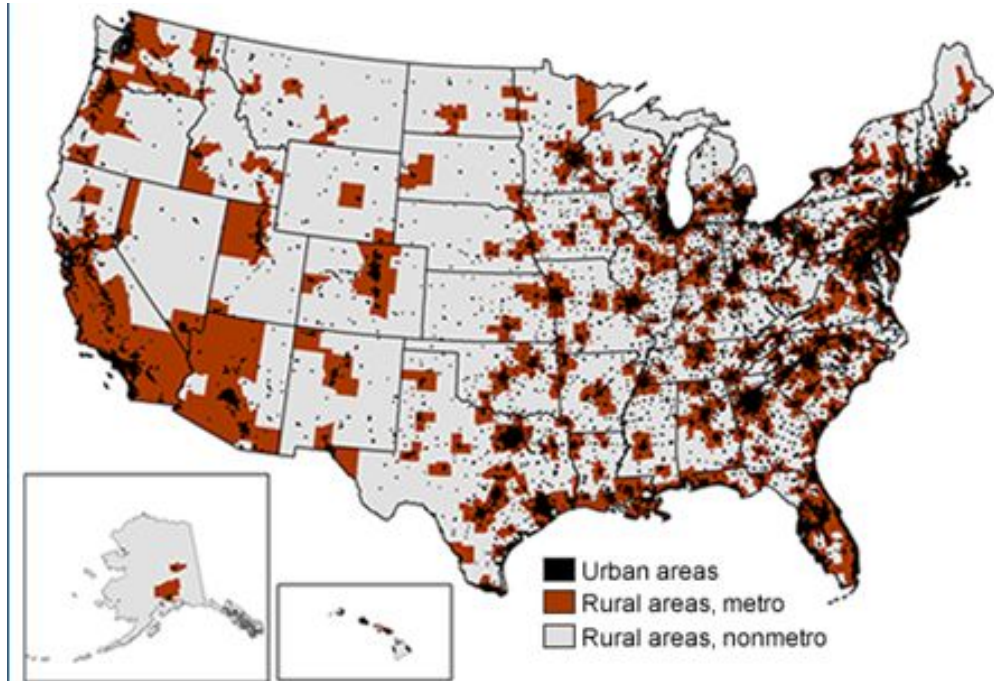




Census vs. USDA

- US Census: rural areas comprise open country and settlements with fewer than 2,500 residents while urban areas comprise larger places and densely settled areas around them
- The Office of Management and Budget "Nonmetro" and Census "Rural" provide different but equally useful perspectives on rural populations

Urban and Rural Territory, 2010, by Metro-Nonmetro Status



Source: USDA, Economic Research Service using data from the U.S. Census Bureau.



USDA: RUCA Code Analysis Using County FIPS Code and Census Tract Number

- Taking the County FIPS code, a 000 pad, and the Census Tract Number for each Census Block, gives a specified FIPS code that corresponds to USDA RUCA classification for urban/rural
- RUCA Codes: classify U.S. census tracts using measures of population density, urbanization, and daily commuting



Primary RUCA Codes, 2010

- 1: Metropolitan area core: primary flow within an urbanized area
- 2: Metropolitan area high commuting: primary flow 30% or more to an urban area
- 3: Metropolitan area low commuting: primary flow 10% to 30% to an urban area
- 4: Micropolitan area core: primary flow within an Urban Cluster of 10,000 to 49,000; large urban cluster
- 5: Micropolitan high commuting: primary flow 30% or more to a large urban cluster
- 6: Micropolitan low commuting: primary flow 10% to 30% to a large urban cluster
- 7: Small town core: primary flow within an urban cluster of 2,500 to 9,999; small urban cluster
- 8: Small town high commuting: primary flow 30% or more to a small urban cluster
- 9: Small town low commuting: primary flow 10% to 30% to a small urban cluster
- 10: Rural areas: primary flow to a tract outside of an urban area or an urban cluster
- 99: Census tract has zero population and no rural-urban identifier information

State-County FIPS Code	Select State	Select County	State-County-Tract FIPS Code (lookup by address at http://www.ffiec.gov/Geocode/)	Primary RUCA Code 2010	Secondary RUCA Code, 2010 (see errata)	Tract Population, 2010	Land Area (square miles), 2010	Population Density (per square mile), 2010
27001	MN	Aitkin County	27001770100	10	10	2,327	458.9	5.1
27001	MN	Aitkin County	27001770200	10	10	2,336	461.8	5.1
27001	MN	Aitkin County	27001770300	10	10	3,268	33.4	97.8
27001	MN	Aitkin County	27001770400	10	10	3,052	460.1	6.6
27001	MN	Aitkin County	27001790501	10	10	1,957	294.3	6.7
27001	MN	Aitkin County	27001790502	10	10	3,262	113.2	28.8
27003	MN	Anoka County	27003050107	2	2	2,934	13.7	214.9
27003	MN	Anoka County	27003050108	2	2	4,750	10.5	452.5
27003	MN	Anoka County	27003050109	2	2	5,202	25.4	204.8
27003	MN	Anoka County	27003050110	2	2	2,715	9.5	284.4
27003	MN	Anoka County	27003050111	2	2	3,709	9.9	376.4
27003	MN	Anoka County	27003050114	2	2	2,803	10.9	256.7
27003	MN	Anoka County	27003050115	2	2	5,228	22.9	228.0
27003	MN	Anoka County	27003050116	2	2	4,443	33.6	132.4
27003	MN	Anoka County	27003050208	1	1	3,281	2.2	1,497.3
27003	MN	Anoka County	27003050210	2	2	3,914	44.9	87.1
27003	MN	Anoka County	27003050215	1	1	4,192	7.0	600.2
27003	MN	Anoka County	27003050216	1	1	5,474	14.4	380.2
27003	MN	Anoka County	27003050217	1	1	2,724	9.7	282.0
27003	MN	Anoka County	27003050218	1	1	3,220	6.6	484.7
27003	MN	Anoka County	27003050219	1	1	3,061	3.0	1,005.7
27003	MN	Anoka County	27003050220	1	1	6,534	5.4	1,212.6

Above: USDA Data that tracks County FIPS Codes with Census Tract Numbers and Corresponding RUCA Codes

GISAID_Name	WEDSS_DOC	WSLH_DOC	ZipCode	CountyFIPS	CensusTract	CensusBlock	VacDate1
hCoV-19/USA/WI-CDC-VSX-A349021/2023	6/15/2023		53223	55079	304	2011	
hCoV-19/USA/WI-CDC-VSX-A349021/2023	6/16/2023		53223	55079	304	2011	
hCoV-19/USA/WI-CDC-VSX-A348927/2023	6/12/2023		54521	55125	950500	3027	
hCoV-19/USA/WI-CDC-VSX-A348927/2023	6/11/2023		54521	55125	950500	3027	
hCoV-19/USA/WI-CDC-VSX-A336258/2023	5/30/2023		53704	55025	2200	2023	
hCoV-19/USA/WI-CDC-VSX-A336258/2023	5/31/2023		53704	55025	2200	2023	
hCoV-19/USA/WI-CDC-VSX-A348799/2023	5/20/2023		53711	55025	501	1005	
hCoV-19/USA/WI-CDC-VSX-A348799/2023	5/21/2023		53711	55025	501	1005	
hCoV-19/USA/WI-CDC-VSX-A348734/2023	5/16/2023		53097	55089	660201	1013	
hCoV-19/USA/WI-CDC-VSX-A348734/2023	5/17/2023		53097	55089	660201	1013	
hCoV-19/USA/WI-CDC-VSX-A348684/2023	5/14/2023		53719	55025	504	2006	
hCoV-19/USA/WI-CDC-VSX-A348684/2023	5/15/2023		53719	55025	504	2006	
hCoV-19/USA/WI-CDC-VSX-A348663/2023	5/11/2023		53402	55101	1504	2010	8/10/2021
hCoV-19/USA/WI-CDC-VSX-A348663/2023	5/10/2023		53402	55101	1504	2010	8/10/2021
hCoV-19/USA/WI-CDC-VSX-A348614/2023	5/10/2023		53916	55027	960800	3002	
hCoV-19/USA/WI-CDC-VSX-A348614/2023	5/11/2023		53916	55027	960800	3002	
hCoV-19/USA/WI-CDC-VSX-A336168/2023	5/10/2023		53718	55025	11401	3018	
hCoV-19/USA/WI-CDC-VSX-A336168/2023	5/9/2023		53718	55025	11401	3018	

Above: The Metadata we have, which consists of the CountyFIPS number and CensusTract number

Record ID	GISAID_Name	WEDSS_DOC	WSLH_DOC	ZipCode	CountyFIPS	CensusTract	CensusBlock	VacDate1	Assigned-or-Unassigned-USDA-Classification	State-County-TractFIPSCode	State-County FIPS Code	Select State	Select County	Total-FIPS-Code	Primary RUCA Code 2010	Urban-or-Rural-USDA-Classification
0	hCoV-19/USA/WI-CDC-VSX-A349021/2023	6/15/2023		53223	55079.0	304	2011.0		Assigned	55079000304	55079.0	WI	Milwaukee County	55079000304.0	1.0	Urban
1	hCoV-19/USA/WI-CDC-VSX-A349021/2023	6/16/2023		53223	55079.0	304	2011.0		Assigned	55079000304	55079.0	WI	Milwaukee County	55079000304.0	1.0	Urban
2	hCoV-19/USA/WI-CDC-VSX-A348927/2023	6/12/2023		54521	55125.0	950500	3027.0		Assigned	55125950500	55125.0	WI	Vilas County	55125950500.0	10.0	Rural
3	hCoV-19/USA/WI-CDC-VSX-A348927/2023	6/11/2023		54521	55125.0	950500	3027.0		Assigned	55125950500	55125.0	WI	Vilas County	55125950500.0	10.0	Rural
4	hCoV-19/USA/WI-CDC-VSX-A336258/2023	5/30/2023		53704	55025.0	2200	2023.0		Assigned	55025002200	55025.0	WI	Dane County	55025002200.0	1.0	Urban
5	hCoV-19/USA/WI-CDC-VSX-A336258/2023	5/31/2023		53704	55025.0	2200	2023.0		Assigned	55025002200	55025.0	WI	Dane County	55025002200.0	1.0	Urban
6	hCoV-19/USA/WI-CDC-VSX-A348799/2023	5/20/2023		53711	55025.0	501	1005.0		Assigned	55025000501	55025.0	WI	Dane County	55025000501.0	1.0	Urban
7	hCoV-19/USA/WI-CDC-VSX-A348799/2023	5/21/2023		53711	55025.0	501	1005.0		Assigned	55025000501	55025.0	WI	Dane County	55025000501.0	1.0	Urban
8	hCoV-19/USA/WI-CDC-VSX-A348734/2023	5/16/2023		53097	55089.0	660201	1013.0		Assigned	55089660201	55089.0	WI	Ozaukee County	55089660201.0	1.0	Urban
9	hCoV-19/USA/WI-CDC-VSX-A348734/2023	5/17/2023		53097	55089.0	660201	1013.0		Assigned	55089660201	55089.0	WI	Ozaukee County	55089660201.0	1.0	Urban
10	hCoV-19/USA/WI-CDC-VSX-A348684/2023	5/14/2023		53719	55025.0	504	2006.0		Assigned	55025000504	55025.0	WI	Dane County	55025000504.0	1.0	Urban
11	hCoV-19/USA/WI-CDC-VSX-A348684/2023	5/15/2023		53719	55025.0	504	2006.0		Assigned	55025000504	55025.0	WI	Dane County	55025000504.0	1.0	Urban
12	hCoV-19/USA/WI-CDC-VSX-A348663/2023	5/11/2023		53402	55101.0	1504	2010.0	8/10/2021	Assigned	55101001504	55101.0	WI	Racine County	55101001504.0	1.0	Urban
13	hCoV-19/USA/WI-CDC-VSX-A348663/2023	5/10/2023		53402	55101.0	1504	2010.0	8/10/2021	Assigned	55101001504	55101.0	WI	Racine County	55101001504.0	1.0	Urban
14	hCoV-19/USA/WI-CDC-VSX-A348614/2023	5/10/2023		53916	55027.0	960800	3002.0		Assigned	55027960800	55027.0	WI	Dodge County	55027960800.0	4.0	Urban
15	hCoV-19/USA/WI-CDC-VSX-A348614/2023	5/11/2023		53916	55027.0	960800	3002.0		Assigned	55027960800	55027.0	WI	Dodge County	55027960800.0	4.0	Urban
16	hCoV-19/USA/WI-CDC-VSX-A336168/2023	5/10/2023		53718	55025.0	11401	3018.0		Assigned	55025011401	55025.0	WI	Dane County	55025011401.0	1.0	Urban
17	hCoV-19/USA/WI-CDC-VSX-A336168/2023	5/9/2023		53718	55025.0	11401	3018.0		Assigned	55025011401	55025.0	WI	Dane County	55025011401.0	1.0	Urban
18	hCoV-19/USA/WI-CDC-VSX-A336159/2023	5/9/2023		53725	55025.0	1300	2005.0		Assigned	55025001300	55025.0	WI	Dane County	55025001300.0	1.0	Urban
19	hCoV-19/USA/WI-CDC-VSX-A336159/2023	5/10/2023		53725	55025.0	1300	2005.0		Assigned	55025001300	55025.0	WI	Dane County	55025001300.0	1.0	Urban
20	hCoV-19/USA/WI-CDC-VSX-A336170/2023	5/10/2023		53704	55025.0	2301	1009.0	12/29/2020	Assigned	55025002301	55025.0	WI	Dane County	55025002301.0	1.0	Urban
21	hCoV-19/USA/WI-CDC-VSX-A336170/2023	5/9/2023		53704	55025.0	2301	1009.0	12/29/2020	Assigned	55025002301	55025.0	WI	Dane County	55025002301.0	1.0	Urban
22	hCoV-19/USA/WI-CDC-VSX-A336151/2023	5/10/2023		53589	55025.0	10600	4019.0		Assigned	55025010600	55025.0	WI	Dane County	55025010600.0	1.0	Urban
23	hCoV-19/USA/WI-CDC-VSX-A336151/2023	5/9/2023		53589	55025.0	10600	4019.0		Assigned	55025010600	55025.0	WI	Dane County	55025010600.0	1.0	Urban
24	hCoV-19/USA/WI-CDC-VSX-A348563/2023	5/8/2023		53549	55055.0	101000	1013.0		Assigned	55055101000	55055.0	WI	Jefferson County	55055101000.0	4.0	Urban
25	hCoV-19/USA/WI-CDC-VSX-A348563/2023	5/9/2023		53549	55055.0	101000	1013.0		Assigned	55055101000	55055.0	WI	Jefferson County	55055101000.0	4.0	Urban
26	hCoV-19/USA/WI-CDC-VSX-A348503/2023	5/8/2023		53012	55089.0	650300	4009.0		Assigned	55089650300	55089.0	WI	Ozaukee County	55089650300.0	2.0	Urban
27	hCoV-19/USA/WI-CDC-VSX-A348503/2023	5/9/2023		53012	55089.0	650300	4009.0		Assigned	55089650300	55089.0	WI	Ozaukee County	55089650300.0	2.0	Urban
28	hCoV-19/USA/WI-CDC-VSX-A348510/2023	5/9/2023		53158	55059.0	2000	2032.0		Assigned	55059002000	55059.0	WI	Kenosha County	55059002000.0	1.0	Urban
29	hCoV-19/USA/WI-CDC-VSX-A348510/2023	5/8/2023		53158	55059.0	2000	2032.0		Assigned	55059002000	55059.0	WI	Kenosha County	55059002000.0	1.0	Urban
30	hCoV-19/USA/WI-CDC-VSX-A336108/2023	5/9/2023		53403	55101.0	800	3021.0		Assigned	55101000800	55101.0	WI	Racine County	55101000800.0	1.0	Urban
31	hCoV-19/USA/WI-CDC-VSX-A336108/2023	5/8/2023		53403	55101.0	800	3021.0		Assigned	55101000800	55101.0	WI	Racine County	55101000800.0	1.0	Urban
32	hCoV-19/USA/WI-CDC-VSX-A336164/2023	5/8/2023		53532	55025.0	11402	3101.0	12/22/2020	Assigned	55025011402	55025.0	WI	Dane County	55025011402.0	1.0	Urban
33	hCoV-19/USA/WI-CDC-VSX-A336164/2023	5/7/2023		53532	55025.0	11402	3101.0	12/22/2020	Assigned	55025011402	55025.0	WI	Dane County	55025011402.0	1.0	Urban
34	hCoV-19/USA/WI-CDC-VSX-A348515/2023	5/8/2023		53597		0			Unassigned	0						Unknown
35	hCoV-19/USA/WI-CDC-VSX-A348515/2023	5/7/2023		53597		0			Unassigned	0						Unknown
36	hCoV-19/USA/WI-CDC-VSX-A348298/2023	5/5/2023		54914	55087.0	11102	1001.0	2/5/2021	Assigned	55087011102	55087.0	WI	Outagamie County	55087011102.0	1.0	Urban
37	hCoV-19/USA/WI-CDC-VSX-A348298/2023	5/4/2023		54914	55087.0	11102	1001.0	2/5/2021	Assigned	55087011102	55087.0	WI	Outagamie County	55087011102.0	1.0	Urban
38	hCoV-19/USA/WI-CDC-VSX-A348316/2023	5/5/2023		53705	55025.0	902	4014.0		Assigned	55025000902	55025.0	WI	Dane County	55025000902.0	1.0	Urban
39	hCoV-19/USA/WI-CDC-VSX-A348316/2023	5/4/2023		53705	55025.0	902	4014.0		Assigned	55025000902	55025.0	WI	Dane County	55025000902.0	1.0	Urban
40	hCoV-19/USA/WI-CDC-VSX-A348382/2023	5/4/2023		54911	55087.0	10300	3011.0	5/28/2021	Assigned	55087010300	55087.0	WI	Outagamie County	55087010300.0	1.0	Urban

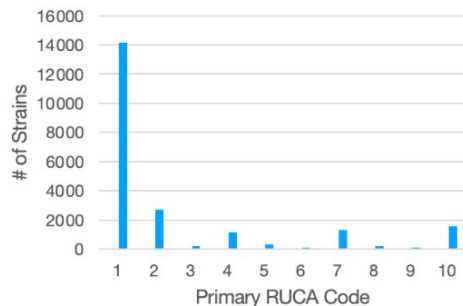
Data Interpretation



- 538 strains are “Unassigned”
- 21,734 strains have RUCA Codes and Urban/Rural Distinctions
- However, the metadata began with 22,527 strains; we’re missing 255 strains
- Some strains were lost because the individual lives on the Minnesota Border
 - Strain “hCoV-19/USA/WI-WSLH-222551/2021” has a zip code of 55947 and a full FIPS Code of 27055020100.
 - This zip code resides in La Crescent, MN, which is a border city
- These strains were not dropped from the final classification and instead are labeled as “Unknown”

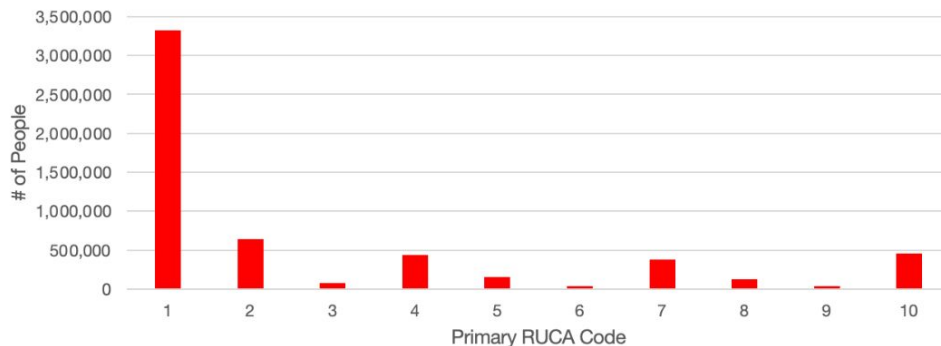
Primary RUCA Code	# of Strains	% Frequency
1	14177	65.22959418
2	2683	12.34471335
3	196	0.901812828
4	1157	5.323456336
5	308	1.417134444
6	99	0.4555075
7	1280	5.889389896
8	183	0.841998712
9	106	0.487715101
10	1545	7.108677648
	21734	100

Number of Strains vs. RUCA Code Frequency



Primary RUCA Code	# of Census Tracts (WI)	% Frequency	Tract Population	% Frequency2
1	820	58.82352941	3,320,626	58.38990987
2	131	9.397417504	644,840	11.33887089
3	20	1.43472023	80,445	1.41454542
4	95	6.81492109	438,647	7.713171793
5	39	2.797704448	154,244	2.712227531
6	10	0.717360115	40,500	0.712152272
7	85	6.097560976	382,097	6.718796213
8	38	2.725968436	124,506	2.18931434
9	14	1.004304161	42,640	0.749782046
10	142	10.18651363	458,441	8.061229621
	1394	100	5,686,986	100

Number of People vs. RUCA Code Frequency



NOTE: In 2010, WI had a population of 5.691 million, which is coherent w/data.



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nhgis0001_ds258_2020_tract

STATE	COUNTY	COUNTYA	TRACTA	U7I001	U7I002	U7I003	Urban Threshold	Rural Threshold
State (FIPS) Name	County (FIPS) Name	County (FIPS) Code	Census Tract Code	Total	Urban	Rural	Urban Threshold	Rural Threshold
Alabama	Autauga County	1	20100	1775	1497	278	84.3380281690141	15.661971830985
Alabama	Autauga County	1	20200	2055	2055	0	100	0
Alabama	Autauga County	1	20300	3216	3213	3	99.9067164179104	0.0932835820895
Alabama	Autauga County	1	20400	4246	4070	176	95.8549222797927	4.1450777202072
Alabama	Autauga County	1	20501	4322	4322	0	100	0
Alabama	Autauga County	1	20502	3284	3284	0	100	0
Alabama	Autauga County	1	20503	3616	3616	0	100	0
Alabama	Autauga County	1	20600	3729	3706	23	99.3832126575489	0.6167873424510
Alabama	Autauga County	1	20700	3409	3368	41	98.797301261367	1.2026987386330
Alabama	Autauga County	1	20801	3143	241	2902	7.66783328030544	92.332166719694
Alabama	Autauga County	1	20803	4635	0	4635	0	100
Alabama	Autauga County	1	20804	6064	4835	1229	79.7328496042216	20.267150395778
Alabama	Autauga County	1	20805	3122	678	2444	21.7168481742473	78.283151825752
Alabama	Autauga County	1	20901	3268	0	3268	0	100
Alabama	Autauga County	1	20902	3091	0	3091	0	100
Alabama	Autauga County	1	21000	2645	0	2645	0	100
Alabama	Autauga County	1	21100	3185	0	3185	0	100
Alabama	Baldwin County	3	10100	3745	0	3745	0	100
Alabama	Baldwin County	3	10200	3000	192	2808	6.4	93.6
Alabama	Baldwin County	3	10300	8380	768	7612	9.16467780429594	90.835322195704
Alabama	Baldwin County	3	10400	5722	268	5454	4.6836770360014	95.316322963998

0	GISAID_Name	ZipCode	CountyFIPS	CensusTract	CensusBlock	Assigned-or-Unassigned-USDA-Classification	State-County-TractFIPSCode	YEAR	TRACTA	U7I001	U7I002	U7I003	UrbanThreshold	RuralThreshold	Urban_or_Rural
2	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3105.0	0.0	3105.0	0.0	100.0	Rural
3	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3416.0	0.0	3416.0	0.0	100.0	Rural
4	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	1363.0	0.0	1363.0	0.0	100.0	Rural
5	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	5110.0	0.0	5110.0	0.0	100.0	Rural
6	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	2455.0	0.0	2455.0	0.0	100.0	Rural
7	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	2028.0	0.0	2028.0	0.0	100.0	Rural
8	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3233.0	3114.0	119.0	96.3192081657903	3.68079183420971	Urban
9	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	2613.0	203.0	2410.0	7.76884806735553	92.2311519326445	Rural
10	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	4408.0	4070.0	338.0	92.3321234119782	7.66787658802178	Urban
11	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	1895.0	0.0	1895.0	0.0	100.0	Rural
12	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3951.0	0.0	3951.0	0.0	100.0	Rural
13	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3417.0	3131.0	286.0	91.6300848697688	8.3699151302312	Urban
14	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	1948.0	0.0	1948.0	0.0	100.0	Rural
15	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	6312.0	501.0	5811.0	7.93726235741445	92.0627376425856	Rural
16	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	4146.0	0.0	4146.0	0.0	100.0	Rural
17	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	5697.0	2668.0	3029.0	46.8316657890118	53.1683342109882	Rural
18	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	1517.0	0.0	1517.0	0.0	100.0	Rural
19	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3830.0	2314.0	1516.0	60.4177545691906	39.5822454308094	Urban
20	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	5304.0	0.0	5304.0	0.0	100.0	Rural
21	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3690.0	1764.0	1926.0	47.8048780487805	52.1951219512195	Rural
22	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	2488.0	0.0	2488.0	0.0	100.0	Rural
23	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	5353.0	5070.0	283.0	94.7132449093966	5.2867550906034	Urban
24	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	4901.0	0.0	4901.0	0.0	100.0	Rural
25	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	4239.0	2043.0	2196.0	48.1953290870488	51.8046709129512	Rural
26	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	3439.0	0.0	3439.0	0.0	100.0	Rural
27	hCoV-19/USA/WI-CDC-VSX-A348927/2023	54521	55125.0	950500	3027.0	Assigned	55125950500	2020.0	950500.0	6008.0	3913.0	2095.0	65.12982689747	34.87017310253	Urban

ite-County-TractFIPSCode	YEAR	TRACTA	U7I001	U7I002	U7I003	UrbanThreshold	RuralThreshold	Urban_or_Rural
55125950500	2020.0	950500.0	3105.0	0.0	3105.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	3416.0	0.0	3416.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	1363.0	0.0	1363.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	5110.0	0.0	5110.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	2455.0	0.0	2455.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	2028.0	0.0	2028.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	3233.0	3114.0	119.0	96.3192081657903	3.68079183420971	Urban
55125950500	2020.0	950500.0	2613.0	203.0	2410.0	7.76884806735553	92.2311519326445	Rural
55125950500	2020.0	950500.0	4408.0	4070.0	338.0	92.3321234119782	7.66787658802178	Urban
55125950500	2020.0	950500.0	1895.0	0.0	1895.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	3951.0	0.0	3951.0	0.0	100.0	Rural
55125950500	2020.0	950500.0	3417.0	3131.0	286.0	91.6300848697688	8.3699151302312	Urban
55125950500	2020.0	950500.0	1948.0	0.0	1948.0	0.0	100.0	Rural