

Data Dictionary: HICAHS Data Hub

Who We Serve

External Sources:

Resource Name	Source	Dates	Link	About
CroplandCROS (1997-2023)	U.S. Department of Agriculture	1997-2023	link	Online web map generated by USDA detailing seasonal crop growth over the years. Filter this map by county, state, or crops. Conduct analysis directly on website if you want to learn more about the quantity of crops produced in any given area!
USDA Crop Acreage: Downloadable Data (2007-2023)	U.S. Department of Agriculture	2007-2023	link	Data generated by USDA outlining all cropland use on farms that: 1) receive marketing assistance loans, 2) receive loan deficiency payments, or are 3) involved in Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs
Census of Agriculture 2017: Downloadable Data	U.S. Department of Agriculture	2017	link	<p>Tells the story of U.S. agriculture through downloadable data. 2023 Census of Agriculture data projected to be available Summer 2025. Examples of categories of data included:</p> <ul style="list-style-type: none">• County Summaries• Farm Production Expenses• Hired Farm Labor- Workers and Payroll• Harvested Cropland by Size of Farm and Acres Harvested• Irrigation• Cow, Pig, Sheep, Goat, Equine, Poultry, Bee, Aquaculture Inventory and Sales• Production of Crops, Vegetables, Fruits, Seeds, etc.• Land Use Practices• Fertilizers and Chemicals Applied• Organic Agriculture• Producer Demographics
Census of Agriculture 2022: Downloadable Data	U.S. Department of Agriculture	2024	link	<p>Tells the story of U.S. agriculture through downloadable data.</p> <p>“The complete census includes over 260 separate commodities. This dataset is a subset of 23 commodities selected for publishing”</p> <p>Examples of categories of data included:</p>

				<ul style="list-style-type: none"> • Animal Totals • Barley • Cattle • Chickens • Corn • Cotton • Crop Totals • Govt Programs • Grain • Hay • Hogs • Labor • Rice • Sorghum • Soybean • Wheat • Winter Wheat
DOL H-2A Employer Data Hub	U.S. Department of Labor	2015-2023	link	Data released by the US Department of Labor detailing submitted petitions to employ H-2A nonimmigrant workers from 2015-2023. Includes information about employers, wages, and more.

Internally Generated Maps:

Census of Agriculture 2017

Layer Name	Source (Date)	About	Link
Sales and Equipment	United States Department of Agriculture (USDA), 2017 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating total farm and ranch sales plus number and value of machines and trucks owned by operators	Living Atlas 2017 Census
Hay Production Winter Wheat Production	United States Department of Agriculture (USDA), 2017 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating: Hay Production- Total production in tons Winter Wheat Production- Total area harvested in acres	Living Atlas 2017 Census

Rice	United States Department of Agriculture (USDA), 2017 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating total sales of following crops in US Dollars: <ul style="list-style-type: none"> Rice, Dairy, Cotton, Wheat, Hog, Cattle, Corn, Soybean 	Living Atlas 2017 Census
Dairy			
Cotton			
Wheat			
Hog			
Cattle			
Corn			
Soybean			
Federal Payments	United States Department of Agriculture (USDA), 2017 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating US dollar amount of payments made to producers by the Federal government	Living Atlas 2017 Census

Census of Agriculture 2022

Layer Name	Source (Date)	About	Link
Sales	United States Department of Agriculture (USDA), 2024	Data published by the USDA indicating total crop sales in US dollars	Living Atlas 2022 Census

	Layer obtained from ArcGIS living atlas		
Cotton Production	United States Department of Agriculture (USDA), 2024 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating:	Living Atlas
Hay Production		Cotton Production- Production, measured in bales	2022 Census
Hay-Alfalfa Production		Hay Production- Total production in tons	
Winter Wheat Production		Hay-Alfalfa Production- Total production in tons Winter Wheat Production- Production, Measured In Bushels (BU)	
Barley	United States Department of Agriculture (USDA), 2024 Layer obtained from ArcGIS living atlas	Data published by the USDA indicating total sales of following crops in US Dollars:	Living Atlas
Corn		<ul style="list-style-type: none"> • Barley • Corn • Grain • Soybean • Wheat • Sorghum • Rice 	2022 Census
Grain			
Soybean			
Wheat			
Sorghum			
Rice			
Animal Totals-Incl Products- Sales	United States Department of Agriculture (USDA), 2024 Layer obtained from ArcGIS living atlas	Animal Totals-Incl Products- Sales- Total sales measured in USD (\$) of animals and animal products	Living Atlas
Cattle, Cows, Beef- Operations with Inventory		Cattle, Cows, Beef- Number of operations with inventory	2022 Census
Chickens- Broilers, Layers, Roosters- Sales, Measured in Head		Chickens- total chicken sales measured in head	
Hogs- Sales		Hogs- Total sales measured in USD (\$)	
Govt Programs, Federal Receipts	United States Department of Agriculture (USDA), 2024	Data published by the USDA indicating US dollar amount of payments made to producers by the Federal government	Living Atlas 2022 Census

	Layer obtained from ArcGIS living atlas		
Labor	<p>United States Department of Agriculture (USDA), 2024</p> <p>Layer obtained from ArcGIS living atlas</p>	<p>Labor, Hired - Expense, Measured In US Dollars (\$) - Total spent on hired labor in USD</p> <p>Labor, Unpaid - Number Of Workers- Number of workers completing unpaid labor</p> <p>Labor, Migrant - Operations With Workers- Number of operations with migrant workers completing labor</p> <p>Labor, Migrant - Number Of Workers- Number of migrant workers completing labor across agriculture operations</p>	<p>Living Atlas</p> <p>2022 Census</p>

HICAHS Priority Population Data Map

Layer Name	Source (Date)	About	Link
H2A Worksite Locations and Physical Requirements, DOL (2023)	Department of Labor- H2A FY 2023 Disclosure Data	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> Data filters used: <ul style="list-style-type: none"> Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS Variables of focus: 	link

		<ul style="list-style-type: none"> ○ Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	
Density of Certified Agricultural H2A Workers per Zip Code, DOL 2023	Department of Labor- H2A FY 2023 Disclosure Data	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> • Data filters used: <ul style="list-style-type: none"> ○ Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS • Variables of focus: <ul style="list-style-type: none"> ○ Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	link
Density of Agricultural, Forestry, Fishing, Hunting, and Mining Workers per County, HRSA 2021	Health Resources and Services Administration, 2021	Data compiled from 2017-2021 Census American Community Survey. Obtained from Area Health Resource Files found on the HRSA website. Highlights the number of workers in the agriculture, forestry, fishing, hunting, and mining sectors	HRSA
HICAHS Partners as of January 2024	HICAHS	Name and address of HICAHS partners	

Priority Problems We Address

Climate & Environmental Impact Data

External Sources:

Resource Name	Source	Dates	Link	About
Climate Hubs, USDA (Current)	U.S. Department of Agriculture	2024	link	U.S. Department of Agriculture (USDA) published resources providing information on associations between climate factors and agriculture
EJ Screen: Environmental Justice Screening and Mapping Tool, EPA (Current)	United States Environmental Protection Agency	2024	link	Environmental justice mapping tool that produces maps and reports that summarize environmental and demographic data.
NOAA- Storm Events Database	National Oceanic and Atmospheric Administration	2024	link	Data published by the National Oceanic and Atmospheric Administration on storms and meteorological events that cause significant harm, generate media attention, or are an anomaly.

Internally Generated Maps:

Natural Disaster Risk & Impact

Layer Name	Source (Date)	About	Link
National Risk Index, FEMA (2023)	Federal Emergency Management Agency (FEMA) Obtained from ArcGIS Living Atlas	Data published by the Federal Emergency Management Agency indicating communities most at risk of being impacted by natural disasters overlayed with HICAHS's priority populations.	FEMA Living Atlas
Crop Land Use	Sentinel-2 10m Land Use/Land Cover (2022) Obtained from ArcGIS Living Atlas	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory’s deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year”</p> <p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	Link
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Drought, Moisture Surplus, and Agriculture Risk

Layer Name	Source (Date)	About	Link
USA Cumulative Drought Intensity, U.S. Drought Monitor (2000-Present)	U.S. Drought Monitor , National Drought Mitigation Center, GISData Download	<p>Weekly data updates revealing the extent of national drought conditions.</p> <ul style="list-style-type: none"> ● “The U.S. Drought Monitor is produced in partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the 	US Drought Monitor Data

	<p>Accessed Via ArcGIS Living Atlas</p> <p>Data is current</p>	<p>United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. It is the drought map that the USDA and IRS use to define which farms have been affected by drought conditions, defining who is eligible for federal relief funds.”</p> <table><tr><th>Class</th><th>Description</th><th>Possible Impacts</th></tr><tr><td>D0</td><td>Abnormally Dry</td><td>Going into drought: short-term dryness slows growth of crops/pastures. Coming out of drought: some lingering water deficits; drops/pastures not fully recovered.</td></tr><tr><td>D1</td><td>Moderate Drought</td><td>Some damage to crops/pastures; streams, reservoirs, or wells are low with some water shortages developing or imminent; voluntary water-use restrictions requested.</td></tr><tr><td>D2</td><td>Severe Drought</td><td>Crop/pasture losses are likely; water shortages are common and water retrictions are imposed.</td></tr><tr><td>D3</td><td>Extreme Drought</td><td>Major crop/pasture losses; widespread water shortages or restrictions.</td></tr><tr><td>D4</td><td>Exceptional Drought</td><td>Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies.</td></tr></table>	Class	Description	Possible Impacts	D0	Abnormally Dry	Going into drought: short-term dryness slows growth of crops/pastures. Coming out of drought: some lingering water deficits; drops/pastures not fully recovered.	D1	Moderate Drought	Some damage to crops/pastures; streams, reservoirs, or wells are low with some water shortages developing or imminent; voluntary water-use restrictions requested.	D2	Severe Drought	Crop/pasture losses are likely; water shortages are common and water retrictions are imposed.	D3	Extreme Drought	Major crop/pasture losses; widespread water shortages or restrictions.	D4	Exceptional Drought	Exceptional and widespread crop/pasture losses; shortages of water in reservoirs, streams, and wells creating water emergencies.	
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<p>Drought and Moisture Surplus for the Conterminous United States, National Forest Service 2022</p> <p>Drought and Moisture Surplus for the Conterminous United States, National Forest Service 2021</p> <p>Drought and Moisture Surplus for the Conterminous United States, National Forest Service 2020</p>	<p>National Forest Service, 2020-2022</p> <p>Accessed via Living Atlas.</p>	<p>“The Moisture Deficit and Surplus map uses moisture difference z-score datasets developed by scientists Frank Koch, John Coulston, and William Smith of the Forest Service Southern Research Station. A z-score is a statistical method for assessing how different a value is from the mean (average). Mean moisture values were derived from historical data on precipitation and potential evapotranspiration, from 1900 to 2022. The greater the z-value, the larger the departure from average conditions, indicating larger moisture deficits or surpluses. Thus, the dark red areas on this map indicate a five-year period with extremely dry conditions, relative to the average conditions over the past century.”</p>	link																		
<p>Drought: Expected Annual Agriculture Loss (\$), FEMA 2023</p>	<p>FEMA, National Risk Index Counties, March 2023.</p> <p>Agriculture data based on 2017 USDA Census of Agriculture</p>	<p>“In the National Risk Index, a Drought Risk Index score and rating represent a community's relative risk for Droughts when compared to the rest of the United States. A Drought Expected Annual Loss score and rating represent a community's relative level of expected agriculture loss each year due to Droughts when compared to the rest of the United States”</p>	FEMA																		

	Accessed Via ArcGIS Living Atlas	“A Drought is a deficiency of precipitation over an extended period of time resulting in a water shortage.”	
Crop Land Use	Sentinel-2 10m Land Use/Land Cover (2022) Accessed Via ArcGIS Living Atlas	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory's deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft's Planetary Computer, processing over 400,000 Earth observations per year”</p> <p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	Link
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Fire, Agriculture, and Human Risk Map

Layer Name	Source (Date)	About	Link
Wildfire: Historic Agriculture Loss Ratio (FEMA)- Percentage of agriculture value expected to be lost due to Wildfire occurrence	FEMA, National Risk Index Counties, March 2023. Agriculture data based on 2017 USDA Census of Agriculture Accessed via ArcGIS Living Atlas	Wildfire Historic Loss Ratio- “The Wildfire HLR is the representative percentage of a location’s hazard exposure that experiences loss due to a Wildfire occurrence, or the average rate of loss associated with a Wildfire occurrence.” Wildfire exposure value- “a community's building value (in dollars), population (in both people and population equivalence), and agriculture value (in dollars) exposed to Wildfires.” “The source of the boundaries for counties and Census tracts are based on the U.S. Census Bureau’s 2021 TIGER/Line shapefiles. Building value and population exposures for communities are based on FEMA’s Hazus 6.0. Agriculture values are based on the USDA 2017 Census of Agriculture.”	FEMA More info
USA Current Wildfires	Wildfire points- Integrated Reporting of Wildland-Fire Information (IRWIN) Wildfire perimeters- National Interagency Fire Center (NIFC) Accessed via ArcGIS Living Atlas	“This layer presents the best-known point and perimeter locations of wildfire occurrences within the United States over the past 7 days. Points mark a location within the wildfire area and provide current information about that wildfire. Perimeters are the line surrounding land that has been impacted by a wildfire” Map automatically updated every 15 minutes	Data Management & WFIT - Integrated Reporting of Wildfire Information (IRWIN) National Interagency Fire Center
Wildfire: Agriculture Value (\$) Exposure (FEMA)- Dollar value of crops and livestock exposed to wildfire hazard	FEMA, National Risk Index Counties, March 2023. Agriculture data based on 2017 USDA Census of Agriculture Accessed via ArcGIS Living Atlas	“Agriculture exposure is defined as the dollar value of the crops and livestock determined to be exposed to a hazard according to a hazard-specific methodology. This is derived from the United States Department of Agriculture 2017 Census of Agriculture county-level value of crop and pastureland.” “To find exposure value, the sum of the intersection areas of the Wildfire raster cells with each Census block developed area or agriculture is multiplied by the developed area building value density, the developed	FEMA More info

		<p>area population density, and the agriculture area value density of the Census block to model exposure within the Census block”</p> <p>Equation 136: Census Block Wildfire Exposure</p> $Exposure_{WFIRCBldg} = \sum_{Fish}^{CB} IntsctArea_{WFIRFishCB} \times DevAreaDenc_{CBldg}$ $Exposure_{WFIRCBPop} = \left(\sum_{Fish}^{CB} IntsctArea_{WFIRFishCB} \times DevAreaDenc_{CBPop} \right) \times VSL$ $Exposure_{WFIRCBAG} = \sum_{Fish}^{CB} IntsctArea_{WFIRFishCB} \times AvgDenc_{CBAG}$ <p>where:</p> <p>$Exposure_{WFIRCBldg}$ is the building value exposed to Wildfire in a specific Census block (in dollars).</p> <p>$\sum_{Fish}^{CB} IntsctArea_{WFIRFishCB}$ is the sum of the intersected areas of Wildfire fishnet polygons within the Census block (in square kilometers) where the BP was greater than 0 and the value for the FIL of 5 or 6 is greater than 0.</p> <p>$DevAreaDenc_{CBldg}$ is the developed area building value density of the Census block (in dollars per square kilometer).</p> <p>$Exposure_{WFIRCBPop}$ is the population equivalence value exposed to Wildfire in a specific Census block (in dollars).</p> <p>$DevAreaDenc_{CBPop}$ is the developed area population value density of the Census block (in people per square kilometer).</p> <p>VSL is the VSL (\$11.6M per person).</p> <p>$Exposure_{WFIRCBAG}$ is the agriculture area value exposed to Wildfire in a specific Census block (in dollars).</p> <p>$AvgDenc_{CBAG}$ is the average agriculture value density of the Census block (in dollars per square kilometer).</p>	
Crop Land Use	<p>Sentinel-2 10m Land Use/Land Cover (2022)</p> <p>Accessed via ArcGIS Living Atlas</p>	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory’s deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year”</p> <p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	Link
H2A Worksite Locations and Physical Requirements, DOL (2023)	Department of Labor- H2A FY 2023 Disclosure Data	“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”	link

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Heat, Agriculture, and Human Risk

Layer Name	Source (Date)	About	Link
<p>July Max Temperature by County, NOAA 2023</p> <p>August Max Temperature by County, NOAA 2023</p>	National Oceanic and Atmospheric Association (NOAA), 2023	<p>Data pulled from- National Centers for Environmental Information</p> <p>Climate Monitoring: <i>Climate at a Glance County Mapping</i></p> <p>Data represents highest maximum temperatures recorded in July and August</p>	NOAA
Heat Wave Annual Frequency: FEMA National Risk Index per County, March 2023	<p>FEMA, National Risk Index Counties, March 2023. Agriculture data based on 2017 USDA Census of Agriculture Data</p> <p>Layer accessed via Living Atlas</p>	<p>“Source Data: National Oceanic and Atmospheric Administration’s National Weather Service Weather Alerts compiled and archived by Iowa State University’s Iowa Environmental Mesonet”</p> <p>“A Heat Wave annualized frequency value represents the average number of recorded Heat Wave hazard occurrences (event-days) per year over the period of record (16.9 years).”</p> <p>“A Heat Wave is a period of abnormally and uncomfortably hot and unusually humid weather typically lasting two or more days with temperatures outside the historical averages for a given area.”</p>	FEMA Living Atlas Layer

Crop Land Use	<p>Sentinel-2 10m Land Use/Land Cover (2022)</p> <p>Accessed via ArcGIS Living Atlas</p>	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory’s deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year”</p> <p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	Link
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Healthcare and Broadband Infrastructure Data

External Sources:

Resource Name	Source	Dates	Link	About
HRSA Map Tool	Health Resources & Services Administration	2023	link	Tool that allows you to “Select and plot health centers, grants, and other agencies' data on the map as separate data layers. Import data from the web or upload a CSV file.”

Internally Generated Maps:

Health Facilities & Priority Populations

Layer Name	Source (Date)	About	Link
Wyoming State Regulated Health Facilities, Wyoming Department of Health 2024	Wyoming Department of Health Data current	Map Variables: <ul style="list-style-type: none">• Critical Care Hospitals• Hospitals• Rural Health Clinics	Link
Utah State Regulated Health Facilities, Utah Geospatial Resource Center 2023	Data from Utah Department of Health and Human Services; Utah Geospatial Resource Center 2023	Map Variables: <ul style="list-style-type: none">• Hospital• Mental Health• Rural Health Clinic• Community Mental Health Centers• Urgent Care Clinic• Clinics	Link CSV Metadata
South Dakota State Regulated Health Facilities, South Dakota Department of Health 202	South Dakota Department of Health, 2024 Data current	Map Variables: <ul style="list-style-type: none">• Hospital• Rural Health Clinic• Critical Access Hospital	Link

North Dakota State Regulated Health Facilities	North Dakota Health and Human Services, 2024	Map Variables: <ul style="list-style-type: none"> Hospitals Rural Health Clinics 	Rural Health Clinics Hospitals
Montana State Regulated Health Facilities	Montana Primary Care Association, 2022 Montana Department of Public Health and Human Services Licensure Bureau, 2024	Map Variables <ul style="list-style-type: none"> Montana Community Health Centers Map Variables: <ul style="list-style-type: none"> Hospital Critical Access Hospitals Mental Health Centers 	Montana Primary Care DPHHS
Colorado State Regulated Health Facilities	Colorado Department of Public Health and Environment (CDPHE), Data dates: Previous 5 years- Current	Map Variables <ul style="list-style-type: none"> Facility Types Included: <ul style="list-style-type: none"> Hospitals Behavioral Health Entity Rural Health Clinics Community Integrated Health Community Clinic-Outpatient 	CDPHE Data
Indian Health Service Facilities	Indian Health Service, Current	Health facilities under the jurisdiction of Indian Health Service who supports tribes across the United States Map Variables: <ul style="list-style-type: none"> Hospital Behavioral Health Facility <ul style="list-style-type: none"> Alcohol Substance Abuse Treatment Facility Health Center <ul style="list-style-type: none"> Health Center Health Station Other 	Link

School Based Health Clinics	School Based Health Alliance, Current	<p>Location data from National Census of School-Based Health Centers conducted by School Based Health Alliance</p> <p>Map Variables:</p> <ul style="list-style-type: none"> School-Based Health Centers- “SBHCs complement existing school health services by facilitating access to primary care and often behavioral health, vision, dental, and other services through school-community partnerships for children and youth nationwide who experience barriers to accessing care because of systemic inequities, their family income, or where they live” <p>Map tool:</p> <ul style="list-style-type: none"> “The user-friendly system is designed to identify and characterize medically underserved areas to support expansion of access to health services. Users can search, map, and download data about child health, education, and socioeconomic status at the county level and compare it to national figures. The tool can map, filter, and view critical characteristics of public schools, school-based health centers (SBHCs), and other health care facilities.” 	Data Map Tool
Migrant Health Center Site Locations, National Center for Farmworker Health 2022	National Center for Farmworker Health, 2022	<p>Map Variables</p> <ul style="list-style-type: none"> 2022 Migrant Health Center Site Locations 	NCFH Data
Primary Care Clinics Receiving Grant Funding Supporting Migrant Health, HRSA 2023	Health Resources and Services Administration (HRSA), 2023	<p>HRSA: Health Center Service Delivery and Look-Alike Sites Data Set</p> <p>Steps taken to filter data:</p>	HRSA

	<p>Data Set: Health Center Service Delivery and Look-Alike Sites, 2023</p>	<ul style="list-style-type: none"> Downloaded and filtered data for “yes” in “Migrant Health Centers HRSA Grant Subprogram Indicator” column <p>Migrant Health Centers HRSA Grant Subprogram Indicator Definition:</p> <ul style="list-style-type: none"> “This attribute represents the yes/no indicator that denotes whether a site is associated with a primary health center service delivery grantee organization that receives funding as a part of the Migrant Health centers sub-program. It is not possible to determine from this information whether a particular health center service delivery site offers services related to this program- the information is recorded at the grant level and not at the individual site level. Thus, all sites affiliated with a particular grant will have the same set of subprogram affiliations.” 	
<p>Total Agricultural, Forestry, Fishing, Hunting, and Mining Workers per County, HRSA 2017-2021</p>	<p>Health Resources and Services Administration (HRSA), 2023</p> <p>Data set: Area Health Resource Files, 2022-2023</p>	<p>Area Health Resource Files, 2022-2023</p> <p>Data Variables: ag_mine_wkers_21</p> <p>Number of Agricultural, Forestry, Fishing, Hunting, and Mining Workers in 2021 estimated from the 2017-21 American Community Survey Census.</p>	HRSA
<p>H2A Worksite Locations and Physical Requirements, DOL 2023</p>	<p>Department of Labor- H2A FY 2023 Disclosure Data</p>	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> Data filters used: <ul style="list-style-type: none"> Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS Variables of focus: 	link

		<ul style="list-style-type: none"> ○ Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	
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Healthcare Infrastructure & Priority Populations

Layer Name	Source (Date)	About	Link
Migrant Health Center Site Locations, National Center for Farmworker Health 2022	National Center for Farmworker Health, 2022	Map Variables <ul style="list-style-type: none"> • 2022 Migrant Health Center Site Locations 	NCFH Data
Primary Care Clinics Receiving Grant Funding	Health Resources and Services Administration (HRSA), 2023	HRSA: Health Center Service Delivery and Look-Alike Sites Data Set Steps taken to filter data:	HRSA

Supporting Migrant Health, HRSA 2023	Data Set: Health Center Service Delivery and Look-Alike Sites, 2023	<ul style="list-style-type: none"> Downloaded and filtered data for “yes” in “Migrant Health Centers HRSA Grant Subprogram Indicator” column Migrant Health Centers HRSA Grant Subprogram Indicator Definition: <ul style="list-style-type: none"> “This attribute represents the yes/no indicator that denotes whether a site is associated with a primary health center service delivery grantee organization that receives funding as a part of the Migrant Health centers sub-program. It is not possible to determine from this information whether a particular health center service delivery site offers services related to this program- the information is recorded at the grant level and not at the individual site level. Thus, all sites affiliated with a particular grant will have the same set of subprogram affiliations.” 	
Total National Health Service Corps Sites per County, HRSA 2023	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	Variable name- # NHSC Sites with Providers Source name- HRSA DNHSC “The 2023 National Health Service Corps (NHSC) Sites and Providers for Total, Primary Care, Dental, and Mental Health are from the Health Resources and Services Administration (HRSA)’s Division of National Health Service Corps, within the Bureau of Health Workforce” “The NHSC programs provide scholarships and student loan repayment for health care professionals engaged in providing comprehensive primary care medical, dental and mental health care in areas across the country with a shortage of health care professionals.”	Area Health Resource Files More info
Total Community Mental Health Clinics per County, HRSA 2022	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	Variable name- # Community Mental Health Ctrs Source name- CMS Provider of Services Definition- “A CMHC must provide 4 core services: Outpatient services, including specialized outpatient services for children, the elderly, individuals who are chronically ill, and	Area Health Resource Files More info

		<p>residents of the CMHC's mental health services area who have been discharged from inpatient treatment at a mental health facility.</p> <p>24 hour-a-day emergency care services.</p> <p>Day treatment, or other partial hospitalization services, or psychosocial rehabilitation services.</p> <p>Screening for patients being considered for admission to State mental health facilities to determine the appropriateness of such admission."</p>	
Total Rural Health Clinics per County, HRSA 2022	<p>Health Resources and Services Administration (HRSA) data, 2023</p> <p>Area Health Resource Files, 2023</p>	<p>Variable name- # Rural Health Clinics</p> <p>Source name- CMS Provider of Services</p> <p>Year of Data- 2022</p> <p>Definition- "The Rural Health Clinic Services Act of 1977 was enacted to address an inadequate supply of physicians serving Medicare patients in rural areas and to increase the use of non-physician practitioners such as nurse practitioners (NPs) and physician assistants (PAs) in rural areas. An RHC is an outpatient center that provides medically necessary primary health services and qualified preventive health services furnished by a RHC practitioner. The clinic must be located in a medically underserved area that is not urbanized as defined by the U. S. Census Bureau."</p>	<p>Area Health Resource Files</p> <p>More info</p>
Total Hospitals w/ Suicide Prevention Services per County, HRSA 2021	<p>Health Resources and Services Administration (HRSA) data, 2023</p> <p>Area Health Resource Files, 2023</p>	<p>Variable name- # Hosp W/Suicide Prevent Serv</p> <p>Source name- AHA Survey Database 21</p> <p>Year of Data- 2021</p>	<p>Area Health Resource Files</p> <p>More info</p>
Total Hospital w/ Psych Emergency Services per	Health Resources and Services Administration (HRSA) data, 2023	Variable name- # Hosp W/Psych Emergency Serv	Area Health Resource Files

County, HRSA 2021	Area Health Resource Files, 2023	Source name- AHA Survey Database 21 Year of Data- 2021	More info
Total Hospital w/ Community Outreach program per County, HRSA 2021	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	Variable name- # Hosp W/Community Outreach Source name- AHA Survey Database 21 Year of Data- 2021	Area Health Resource Files More info
Total Sole Community Providers per County, HRSA 2021	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	Variable name- # Sole Community Providers Source name- AHA Survey Database 21 Year of Data- 2021 The term “sole community hospital” means any hospital— (I) that the Secretary determines is located more than 35 road miles from another hospital, (II) that, by reason of factors such as the time required for an individual to travel to the nearest alternative source of appropriate inpatient care (in accordance with standards promulgated by the Secretary), location, weather conditions, travel conditions, or absence of other like hospitals (as determined by the Secretary), is the sole source of inpatient hospital services reasonably available to individuals in a geographic area who are entitled to benefits under part A, or (III) that is located in a rural area and designated by the Secretary as an essential access community hospital under section 1820(i)(1) as in effect on September 30, 1997.”	Area Health Resource Files More info Sole Community Hospital Definition
Total Rural Referral Centers per County, HRSA 2021	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	Variable name- # Rural Referral Centers Source name- AHA Survey Database 21 Year of Data- 2021 “Rural Referral Centers are high-volume acute care rural hospitals that treat a large	Area Health Resource Files More info Rural Referral

		number of complicated cases. The Centers for Medicare and Medicaid Services classifies hospitals as Rural Referral Centers.”	Center Definition
Total Hospitals per County, HRSA 2021	Health Resources and Services Administration (HRSA) data, 2023 Area Health Resource Files, 2023	2021 Total Hospitals (HRSA, 2021) Variable name- Total Number Hospitals Source name- AHA Survey Database 21 Year of Data- 2021	Area Health Resource Files More info
Certified Agricultural H2A Workers per Zip Code, DOL 2023	Department of Labor- H2A FY 2023 Disclosure Data	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> Data filters used: <ul style="list-style-type: none"> Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS Variables of focus: <ul style="list-style-type: none"> Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	link
Total Agricultural, Forestry, Fishing, and Mining Workers per County, HRSA 2021	Health Resources and Services Administration (HRSA), 2023 Data set: Area Health Resource Files, 2022-2023	Area Health Resource Files, 2022-2023 Data Variables: ag_mine_wkers_21 Number of Agricultural, Forestry, Fishing, Hunting, and Mining Workers in 2021 estimated from the 2017-21 American Community Survey Census.	HRSA

Foreign Born Populations per County, HRSA 2021	Health Resources and Services Administration (HRSA), 2023 Data set: Area Health Resource Files, 2022-2023	<p>Area Health Resource Files, 2022-2023</p> <p>Data Variables: forgn_born_popn_21</p> <p>2017-2021 Foreign Born Population data are from the 2017-2021 American Community Survey (ACS) Summary File, U.S. Census Bureau</p> <p>“The ACS has an annual sample size of about 3.5 million addresses, with survey information collected nearly every day of the year. Data are pooled across a calendar year to produce estimates for that year. As a result, ACS estimates reflect data that have been collected over a period of time rather than for a single point in time as in the decennial census, which is conducted every 10 years and provides population counts as of April 1. The foreign born population includes anyone who was not a U.S. citizen at birth. This includes respondents who indicated they were a U.S. citizen by naturalization or not a U.S. citizen.”</p>	HRSA
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Broadband Connection, Agriculture, & Priority Populations

Layer Name	Source (Date)	About	Link
FCC Broadband Data Collection June 2023	<p>Federal Communications Commission, 2023</p> <p>Layer generated by ArcGIS Online Content Team at Esri. Found in the ArcGIS Living Atlas. Shows number of Broadband Serviceable Locations (BSLs) in a given geography by their corresponding speed tier for June 2023</p>	<p>“The Broadband Data Collection (BDC) shows fixed broadband availability for every Census Block and H3 Resolution-8 hexagonal area in the U.S. and outlying territories. This layer summarizes the June 2023 BDC data showing the number of served, underserved, and unserved Broadband Serviceable Locations (BSLs) by transmission technology in a given geography”</p> <ul style="list-style-type: none"> • <u>“Served</u> - low-latency Fiber, Cable, Copper, or Licensed Terrestrial Fixed Wireless offering of speeds greater than or equal to 100/20 Mbps. • <u>Underserved</u> - low-latency Fiber, Cable, Copper, or Terrestrial Licensed Fixed Wireless offering of speeds less than 100/20 Mbps, but greater than or equal to 25/3 Mbps. • <u>Unserved</u> - all service that is not low-latency or less than 25/3 Mbps, and all Geostationary Satellite, Non-geostationary Satellite, Unlicensed Terrestrial Fixed Wireless, and Other.” <p>Pop-ups: “configured to show the breakdown of Broadband Serviceable Locations by speed tier. They give the total number of BSLs, the FCC 2021 population estimate, and the percent and number of BSLs that are Served, Underserved, and Unserved.”</p>	<p>Living Atlas</p> <p>Data Collection</p> <p>Bead Program</p> <p>Raw Data</p>
Crop Land Use	<p>Sentinel-2 10m Land Use/Land Cover (2022)</p> <p>Accessed via ArcGIS Living Atlas</p>	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory’s deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year”</p>	<p>Link</p>

		<p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	
H2A Worksite Locations and Physical Requirements, DOL (2023)	Department of Labor- H2A FY 2023 Disclosure Data	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> • Data filters used: <ul style="list-style-type: none"> ○ Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS • Variables of focus: <ul style="list-style-type: none"> ○ Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	link

Occupational Injury and Fatality Data

External Sources:

Resource Name	Source	Dates	Link	About

Heat and Health Tracker	Centers for Disease Control and Prevention (CDC)	2024	link	Maps showing local heat and health information so communities can better prepare for and respond to extreme heat events. Maps resource provides information on: How extreme heat affects each county Populations who are at risk Response resources
State Occupational Safety & Health Surveillance Program	Centers for Disease Control and Prevention (CDC)	2021	link	State Occupational Safety & Health Surveillance Programs funded by National Institute for Occupational Safety and Health (NIOSH)
Centers for Agricultural Safety and Health	Centers for Disease Control and Prevention (CDC)	2023	link	Centers for Agricultural Safety and Health funded by National Institute for Occupational Safety and Health (NIOSH)

Internal Sources:

Health Outcomes, Agriculture, and Priority Populations

Layer Name	Source (Date)	About	Link
PLACES: Local Data for Better Health, CDC 2023	<p>CDC, 2023</p> <p>Layer generated by CDC. Found in the ArcGIS living atlas. Shows health outcomes across the U.S.</p> <p>Last Updated Oct 11, 2023</p>	<p>“Centers for Disease Control and Prevention (CDC) model-based estimates for 36 chronic disease related measures at county, place, census tract, and ZCTA levels”</p> <p>“PLACES (Population Level Analysis and Community Estimates) is an expansion of the original 500 Cities project and is a collaboration between the Centers for Disease Control and Prevention (CDC), the Robert Wood Johnson Foundation, and the CDC Foundation. The original 500 Cities Project provided city- and census tract-level estimates for the 500 largest US cities. PLACES extends these estimates to all counties, places (incorporated and census designated places), census tracts, and ZIP Code Tabulation Areas (ZCTA) across the United States. This service includes 36 measures for chronic disease related health outcomes (13), prevention measures (9), health risk behaviors (4), disability (7), and health status (3). Data were provided by CDC Division of Population Health, Epidemiology and Surveillance Branch. Data sources used to generate these measures include BRFSS data (2021 or 2020), Census Bureau 2010 census population data or annual population estimates for county vintage 2021 or 2020, and American Community Survey (ACS) 2017-2021, 2016-2020, or 2015-2019 estimates.”</p>	<p>Living Atlas</p> <p>CDC Places</p>
Crop Land Use	<p>Sentinel-2 10m Land Use/Land Cover (2022)</p> <p>Accessed via ArcGIS Living Atlas</p>	<p>“This layer displays a global map of land use/land cover (LULC) derived from ESA Sentinel-2 imagery at 10m resolution. Each year is generated with Impact Observatory’s deep learning AI land classification model, trained using billions of human-labeled image pixels from the National Geographic Society. The global maps are produced by applying this model to the Sentinel-2 Level-2A image collection on Microsoft’s Planetary Computer, processing over 400,000 Earth observations per year”</p>	<p>Link</p>

		<p>Processing: Used processing template “Crops Only, Shows only Croplands (class 5)”</p> <p>Crops= “Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.”</p>	
H2A Worksite Locations and Physical Requirements, DOL (2023)	Department of Labor- H2A FY 2023 Disclosure Data	<p>“This public disclosure file contains administrative data from agricultural businesses’ H-2A Applications, as provided by the employer or representative, for Temporary Employment Certification (Forms ETA-9142A and ETA-790A) and the final determinations issued by the Department’s Office of Foreign Labor Certification (OFLC), Employment and Training Administration (ETA), during the reporting period”</p> <ul style="list-style-type: none"> Data filters used: <ul style="list-style-type: none"> Case status (Certified or Partially Certified), Occupational title, Worksite state relevant to HICAHS Variables of focus: <ul style="list-style-type: none"> Worksite Zip Codes, Number of H2A Workers Certified, Tasks-Lifting Requirements, Heat exposure, Extensive pushing/pulling, Extensive sitting/walking, Frequent stooping/bending over, Repetitive movements 	link

Occupational Injury and Fatality Table:

Resource Name	Source	Dates	Link	About
Injuries, Illnesses, and Fatalities	U.S. Bureau of Labor Statistics	2018-2022	link	“State data presenting the number and frequency of work-related injuries, illnesses, and fatal injuries are available from two BLS programs: the BLS Survey of Occupational Injuries and Illnesses (SOII) and the BLS Census of Fatal Occupational Injuries (CFOI). SOII provides estimates for nonfatal cases of

				<p>work-related injuries and illnesses from participating States and Territories that are recorded by employers under Occupational Safety and Health Administration (OSHA) recordkeeping guidelines. CFOI publishes data on fatal cases of work-related injuries for all States, District of Columbia, New York City, and the U.S. territories of Puerto Rico, Virgin Islands, and Guam.</p> <p>Note: The number of States for which SOII data are available varies from year to year due primarily to changes in State participation in the SOII. Among participating States for which State-level estimates are available, the sample sizes often are not sufficient to generate estimates at the same level of detail as are available from the national estimates. The industries for which data are available also vary among States, primarily due to the differences in industry concentration and sample size from one State to the next.”</p>
				<p>Fatalities: NR= Not Reported Count = Total number of fatal occupational fatalities per industry per year by state Rate = Fatal Injury Rate ("depicts risk of incurring a fatal occupational injury") = Number of fatal occupational injuries per 100,000 full-time equivalent workers= (Ns/EHs) x 200,000,000 ; Ns= number of fatal work injuries in the state, EHs= total hours worked by all employees in the state during the calendar year, 200,000, 000 = base for 100,000 equivalent full-time workers (working 40 hours per week, 50 weeks per year) Fatal injury rate computation</p> <p>Fatal injury rates depict the risk of incurring a fatal occupational injury and can be used to compare risk among worker groups with varying employment levels. Since employment data are not collected by CFOI, fatal injury rates are calculated using CPS and LAUS data. Each state rate in the table above represents the number of fatal occupational injuries per 100,000 full-time equivalent workers and was calculated as:</p> <p>Fatality rate = (NS/EHS) x 200,000,000 where</p>

				<p>NS = number of fatal work injuries in the state</p> <p>EHS = total hours worked by all employees in the state during the calendar year</p> <p>200,000,000 = base for 100,000 equivalent full-time workers (working 40 hours per week, 50 weeks per year)</p> <p>State rates by industry were imputed by using national-level "average hours" and "at work" information from CPS to calculate the average annual number of hours for each employee, since these data are not available at the state level. EHS (total hours worked by all employees in the state during the calendar year) was calculated as:</p> <p>EHS = HWN x ES where ES = State employment (from LAUS) HWN = average annual number of hours for each employee at the national level (from CPS)</p>
				<p>Non-fatal Injuries:</p> <p>NR= Not Reported</p> <p>Count per 1,000 = Total recordable cases= Number of non-fatal occupational injuries per year per sector / 1,000</p> <p>Incidence Rate = number of injuries and illnesses per 100 full-time equivalent workers (N/EH) x 200,000 ; N= number of injuries and illnesses, EH= total hours worked by all employees during the calendar year, 200,000 = base for 100 fulltime equivalent workers (working 40 hours per week, 50 weeks per year)</p> <p>Reporting excludes farms with fewer than 11 employees.</p>