Appendix G: Environmental Justice and Racial Equity Impact Analysis

This appendix provides more detailed information on the following aspects of racial equity impact analysis and equity-focused community engagement, including:

1) An overview of the proposed project.

2) Identification of Environmental Justice Census Tracts within / near the project area.

3) Identification of specific project elements that support or impact the Environmental Justice (EJ) populations.

4) Community Outreach and Public Engagement; and,

5) Summarized findings of this Analysis

Equitable Project Analysis

The Hickman-Fulton County Riverport and their partners have prepared the following analysis of the Bulk Commodity Infrastructure Revitalization and Expansion Project (the Project) to evaluate equitable distribution of project benefits and to identify any inequities that can be mitigated with the project.

This analysis presents a review of the socioeconomic characteristics in the study area (indicated in the map on next page) for the Hickman-Fulton County Riverport, Kentucky located in Fulton County, USA.

Data from the U.S. Census Bureau 2017-2021 American Community Survey (ACS) 5-year estimates has been utilized for the analysis of the study area. Please see the ACS website for more information, data limitations, and an explanation of the methodology used to obtain the data (https://www.census.gov/acs/www/).

This analysis is intended to be used as a first look study into the socioeconomic characteristics that exist within the study area. If, later specific projects and project locations are identified, a more in-depth analysis of the socioeconomic characteristics may be warranted.

The information and results are intended to assist the Port in making informed and prudent transportation decisions in the Project area, especially regarding the requirements of Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (signed February 11, 1994). Executive Order 12898 states:

"…each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…"

This report outlines 2017 – 2021 ACS 5-year estimates (ACS) for the project area using tables and maps from multiple US Agencies include EPA.

Statistics are provided on minority, low-income, elderly, and disabled populations for the census tracts and block groups near the project area, Fulton County, Kentucky, and the United States.

This analysis focuses on identifying any past inequities as well as addressing Climate Change and Environmental Justice for the planning, design, and construction/implementation of the projects. The project sponsors have used environmental justice tools such as EJSCREEN and other mapping programs and reports to identify Environmental Justice (EJ) populations adjacent to the Project and to evaluate any disproportionate effects on such populations and neighborhoods.

The project team also aligned these projects with KY Conservation Committee Initiatives and KY Climate Resiliency Action Plan which both give guidance on lowering greenhouse gas emissions. The planning and selection of the components align directly with these Climate Action Plans. The analysis looks to identify any inequities in the community that extend to climate impacts and pollution risks.

1. Project Overview

The Riverport is working toward completing the Conveyor Upgrade and Replacement Project.
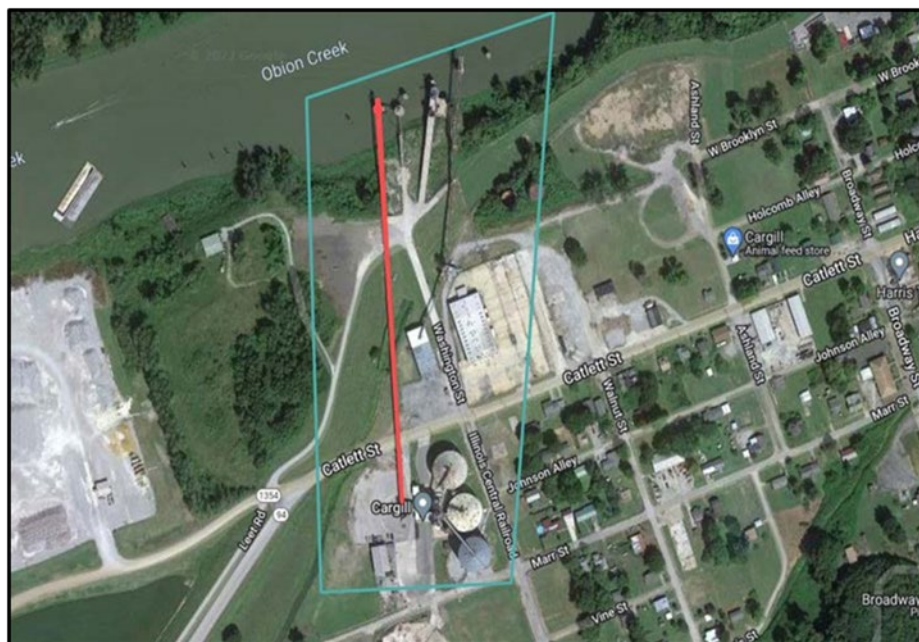
The requested capital Project includes the following improvements:

- Replaces the more than 30-year-old port owned conveyor system that is operated at or near maximum capacity speeds 24 hours per day between August and April annually to accommodate harvest requirements. The conveyor system is a public asset owned by the Riverport. Cargill Corporation is the current primary user of this facility.

- Makes high priority repairs to Mooring Cell 6 that are required due to severe corrosion and settlement.

- Increases capacity while improving safety and efficiency by upgrading the conveyor system from a 30-inch to a 48-inch system to meet rising demand and ensure reliability.

Benefits of the proposed Project are anticipated to:

- prevent delays and potential reroutes due to capacity limits of old conveyor equipment. The Equipment upgrade will provide increased operational capacity and increase efficiency of bulk agricultural commodity movements from truck, storage, and rail to barge.

- ensure continued support for multiple agricultural produces & jobs within the agriculture industry and supporting industries.

- ensure a dependable supply chain for bulk agricultural commodities providing economic stability for rural areas.

Planning efforts to date have determined that this project will be more energy efficient both in the fuel used by the cargo handling equipment but also reduction of reroutes to other river facilities when the equipment is out of service due to its age and condition.

2. Environmental Justice Analysis

Equity around the Project Area

Using the Kentucky Transportation Cabinet (KYTC) - Division of Planning's Environmental Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies as a basis and then enhancing the analysis with additional resources, the Planning Team reviewed Equity in the distribution of benefits and the impacts on the neighboring census blocks to ensure that state and federal funds programmed in for this Project avoids disproportionate negative impacts or denial of benefits to disadvantaged populations.

This finding is made on the Project as a whole, and with the understanding that individual improvement elements may result in negative impacts to disadvantaged populations given additional review. If such negative impacts are identified in further study, the National Environmental Policy Act (NEPA) process can identify methods or options to avoid and / or mitigate any negative environmental impacts identified.

Hickman-Fulton County Riverport Authority, Conveyor Upgrade and Replacement Project

The Project Planning Team's Equity methodology is to review the project against the following matrix:

<center>-   IMPACTS   +</center>

Negative Impacts Have Proportionate Impact at Community or Regional Scale	Direct Benefits to Disadvantaged Populations
Disproportionate Negative Impacts to Disadvantaged Populations	Benefits Limited to Non-Disadvantaged Populations

<center>+
BENEFITS
-</center>

To evaluate the overall result of the Project through an environmental justice framework, the project was evaluated individually against the following parameters used by other planning organizations within Kentucky.

Among the broad range of investment categories and transportation improvements, four specific categories of projects are automatically considered equitable based on the following types:

- Preservation & Maintenance projects that are prioritized based on empirical data that maximize the lifespan of the transportation system.
- Safety improvements that are prioritized by empirical data that maximize the reduction of risk factors and potential for injury or fatality on the transportation system as a whole, and at locations with a high frequency or severity of crashes.
- Accessibility improvements that are necessary for regulatory compliance and not in locations based on open discretion.
- Public Transportation formula funding utilized to sustain operations and asset management on a systemwide basis.

If the project does not meet the criteria for automatically being deemed equitable it is to be further reviewed. The project is then evaluated on its individual merits according to the following equity considerations:

- ✓ Project directly benefits disadvantaged populations.

- ✓ Project indirectly benefits disadvantaged populations.

- ✓ Project benefits and/or impacts are proportionately distributed across the community or region.

- ✗ Project benefits are limited to non-disadvantaged populations.

✖ Project results in disproportionate negative impacts to disadvantaged populations.

The following map represents the Project plotted on a map indicating Potential Disadvantaged Populations by Census Tracts.

The Climate and Economic Justice Screening Tool (CEJST) is a geospatial mapping tool to identify disadvantaged communities that are marginalized, underserved, and overburdened by pollution. The CEJST features a user-friendly, searchable map that identifies disadvantaged communities across all 50 states, the District of Columbia, and the U.S. territories, to the extent that the data for the U.S. territories is available. By helping Federal agencies identify disadvantaged communities, the CEJST seeks to fulfill the promise of the Justice40 Initiative. The CEJST was developed with Federal resource allocation purposes in mind.
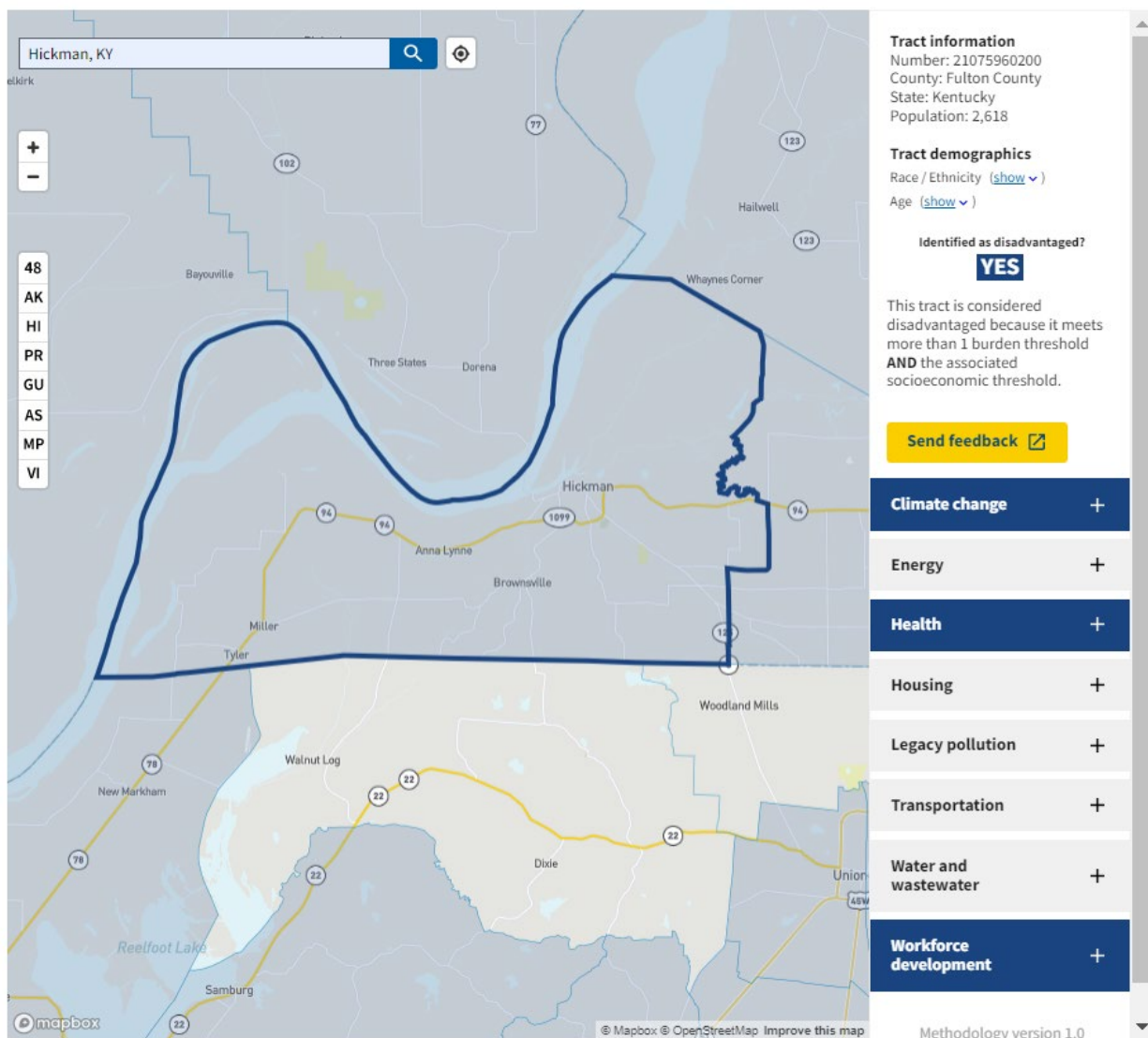
Source: https://screeningtool.geoplatform.gov/en/#10.53/36.5564/-89.2566

Hickman-Fulton County Riverport Authority, Conveyor Upgrade and Replacement Project

The Port has used the DOT's Transportation Disadvantaged Census Tract tool, EPA's Environmental Justice Screening Tool (EJSCREEN), and the Council on Environmental Quality (CEQ) Climate and Economic Justice Screening Tool (CEJST) planning tools to inform the planning and design of the Project.

From these planning tools, we know that Hickman, Ky (Tract number 21075960200) has a population of 2,618. This tract is considered disadvantaged because it meets more than one burden threshold AND the associated socioeconomic threshold.

The three characteristics are:

Climate Change, Health, and Workforce

Disadvantaged Census Tract Criteria

Characteristic	Element	Percentile	Description
Climate Change	Expected Population Loss Rate	95th percentile	Fatalities and injuries resulting from natural hazards each year – (above 90th percentile)
	& Low Income	88th percentile	People with less than or equal to twice the federal poverty level (above 65th percentile)
Health	Heart Disease	92nd percentile	Share of people ages 18 years and older who have been told they have heart disease (above 90th percentile)
	Diabetes	90th percentile	Share of people ages 18 years and older who have diabetes other than diabetes during pregnancy (above 90th percentile)
	& Low Income	88th percentile	People with less than or equal to twice the federal poverty level (above 65th percentile)
Workforce	Unemployment	95th percentile	Number of unemployed people as a part of the labor force (above 90th percentile)
	& High School Education	22nd percentile	Percent of people ages 25 years or older whose high school education is less than a high school diploma (above 10th percentile)

Methodology used in the Hickman Riverport Project Analysis

The Project was analyzed for the Affected Environment using multiple mapping websites such as Justicemap.org and EJScreen (epa.gov).as well as generic mapping software such as ARCGIS On-line that can display data such as the map below that shows Hickman Fulton County Riverport in Census Tract 21075960200 with an average annual income below $32,000.
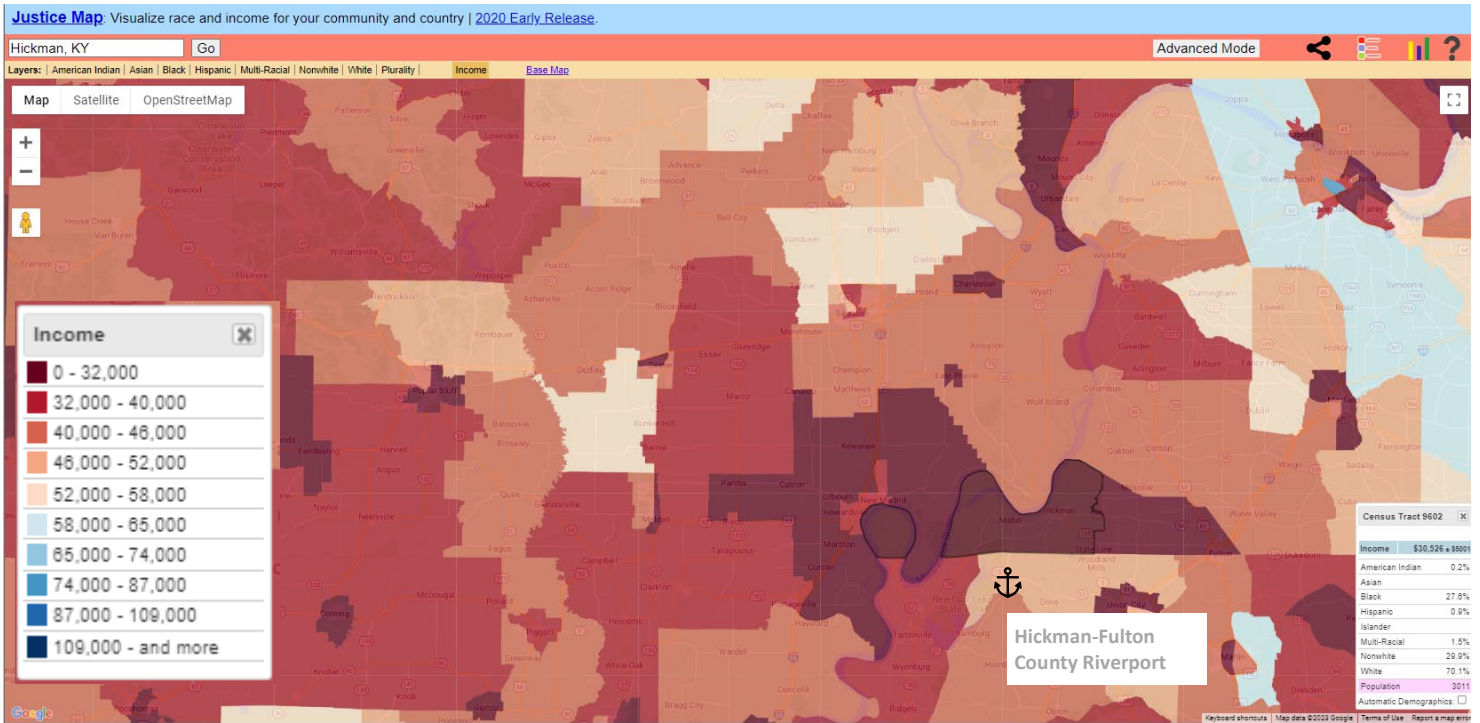
Source: www.Justicemap.org

All these tools are very helpful in understanding the demographics and community elements.

The three Environmental Justice Mapping Tools reviewed for this analysis include:

- EJSCREEN
- *Neighborhoods at Risk*
- USDOT's Grant Project Location Verification Tool

The following is a summary of the comparable data found using the *Neighborhoods at Risk* Tool. This tool appears to provide the best downloadable reports for the project area.

Summary of Mapping Tools:
EJSCREEN - EPA

EJSCREEN provides the same data as the other tools with different downloadable standard reports based upon how the user describes the investment using the drawing tool on the map. For example, the Project location can be drawn on the EJSCREEN mapping tool and a buffer around the location can be added. For this report, the location of the Project was added to the map. The standard reports were run for a buffer of 1 mile around the center of the Project area.

EJSCREEN uses maps and reports to present three kinds of information: Environmental indicators, demographic indicators, and EJ Indexes. An EJ Index summarizes how an environmental indicator and demographics come together in the same location.

An EJSCREEN map can display one indicator at a time. An EJSCREEN standard report which is attached to this narrative, presents all of the indicators in a single, printable report that covers any area you have selected. To understand EJSCREEN's reports and maps, it is helpful to learn more about the EJ Indexes, environmental indicators, demographic indicators as well as how they are presented in the standard report.

Purposes and Uses of EJSCREEN

EJSCREEN allows users to access high-resolution environmental and demographic information for locations in the United States and compare their selected locations to the rest of the state, the applicable EPA region, or the nation. The tool may help users identify areas with:

- Minority and/or low-income populations
- Potential environmental quality issues
- A combination of environmental and demographic indicators that is greater than usual
- Other factors that may be of interest

The EJ index is a combination of environmental and demographic information. There are eleven EJ Indexes in EJSCREEN reflecting the 11 environmental indicators. The 11 EJ Index names are[1]:

1. National Scale Air Toxics Assessment Air Toxics Cancer Risk

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[1] Environmental Justice Indexes in EJSCREEN | EJSCREEN: Environmental Justice Screening and Mapping Tool | US EPA

2. National Scale Air Toxics Assessment Respiratory Hazard Index
3. National Scale Air Toxics Assessment Diesel PM (DPM)
4. Particulate Matter (PM2.5)
5. Ozone
6. Lead Paint Indicator
7. Traffic Proximity and Volume
8. Proximity to Risk Management Plan Sites
9. Proximity to Treatment Storage and Disposal Facilities
10. Proximity to National Priorities List Sites
11. Wastewater Discharge Indicator

To calculate a single EJ Index, EJSCREEN uses a formula to combine a single environmental factor with the demographic indicator. It considers how much the local demographics are above the national average. It does this by looking at the difference between the demographic composition of the block group, as measured by the Demographic Index, and the national average (which is approximately 35%). It also considers the population size of the block group, although most block groups are similar in population size.

EJSCREEN calculates the EJ Index by multiplying together three items:

EJ Index =

(The Environmental Indicator)

X (Demographic Index for Block Group – Demographic Index for US)

X (Population count for Block Group)

Demographics in the EJ Index

The demographic portions of the EJ Index can be thought of as the additional number of susceptible individuals in the block group, beyond what you would expect for a block group with this size total population. The terms "susceptible" or "potentially susceptible individuals" are used informally in these examples, as a way to think of the Demographic Index times the population count in a block group. This is essentially the average of the count of minorities and count of low-income individuals1. It is easiest to think of the average of these counts as "the susceptible individuals" in these examples.

The number of potentially susceptible individuals (Demographic Index times population count) of course is typically less than the actual number who are minority, low-income or both. The demographic breakdown is not reported by block group –the ACS does not provide that level of resolution on the overlaps.

Overview of Demographic Indicators in EJSCREEN

EJSCREEN uses demographic factors as very general indicators of a community's potential susceptibility to the types of environmental factors included in this screening tool, as explained further in the

EJSCREEN Technical Documentation[2]. EJSCREEN has been designed in the context of EPA's EJ policies, including EPA's Final Guidance on Considering Environmental Justice During the Development of an Action (U.S. EPA, 2010). That guidance document explained EPA's focus on demographics as an indicator of potential susceptibility to environmental pollution.

There are six demographic indicators:

Percent Low-Income:

The percent of a block group's population in households where the household income is less than or equal to twice the federal "poverty level."

Percent People of Color:

The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The word "alone" in this case indicates that the person is of a single race, not multiracial.

Less than high school education:

Percent of people age 25 or older in a block group whose education is short of a high school diploma.

Linguistic isolation:

Percent of people in a block group living in linguistically isolated households. A household in which all members age 14 years and over speak a non-English language and also speak English less than "very well" (have difficulty with English) is linguistically isolated.

Individuals under age 5:

Percent of people in a block group under the age of 5.

Individuals over age 64:

Percent of people in a block group over the age of 64.

EJSCREEN includes an index that is based on the above demographic indicators:

A Demographic Index is based on the average of two demographic indicators: Percent Low-Income and Percent Minority.

Excess Risk

The EJ Index uses the concept of "excess risk" by looking at how far above the national average the block group's demographics are. For example, assume a block group with 1000 people in it. In that block group, one would expect 350 potentially susceptible individuals (1000 people here x US average of 35%). However, if the Demographic Index for that block group is 75%, well above the US average, then there is

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[2] Technical Documentation for EJSCREEN | EJSCREEN: Environmental Justice Screening and Mapping Tool | US EPA

the equivalent of 750 potentially susceptible people in that block group, or 400 more than expected for a block group with a population of 1000.

This formula for the EJ Index is useful because for each environmental factor it finds the block groups that contribute the most toward the national disparity in that environmental factor. It can highlight which locations are driving the overall net disparity. By "disparity" in this case we mean the difference between the environmental indicator's average value among certain demographic groups and the average in the rest of the US population.

Minority and low-income individuals live in older housing more often than the rest of the US population, for example. The EJ Index for lead paint (pre-1960 housing) tells us how much each block group contributes toward this "excess population risk" or "excess number" of people in older housing, for potentially susceptible individuals. "Excess" here simply means the number of potentially susceptible individuals in older housing is above what it would be if they were in older housing at the same rate as the rest of the U.S. population.

It should be noted that the EJ Index raw value itself is not reported in EJSCREEN reports– it is reported in percentile terms, to make the results easier to interpret. If one is calculating the actual raw values using the formula, it is clear that the EJ Index value can be a positive or negative number.

A positive number occurs where the local Demographic Index is above the US average, and this means the location adds to any excess in environmental indicator values among the specified populations (minority and low-income) nationwide.

A negative value occurs where the local Demographic Index is below the US average, and it means the location offsets the other locations, reducing any excess in nationwide average environmental indicator values among minority and low-income populations relative to others.

Most EJSCREEN users will not work directly with EJ Index raw values, however, and positive raw values for an EJ Index will be presented as higher percentiles and negative raw values will appear as lower percentiles.

How to Interpret a Standard Report in EJSCREEN

Block Groups
One key output from EJSCREEN is a standard printed report that describes a selected location. Sometimes the report might focus on a single Census "block group." A block group is an area defined by the Census Bureau that usually has in the range of 600-3,000 people living in it. The US is divided into more than 200,000 block groups.

Buffers
More typically, though, an EJSCREEN report will cover a "buffer" area, an area on the map that includes everyone who lives within a certain distance of a point, line, or polygon. A point might be a factory seeking an emissions permit, for example, and the report could focus on the demographics and environmental conditions within approximately 1 mile of that factory.

In EJSCREEN, buffers can be drawn up to 10 miles around a point, line, or polygon. If you have selected a geographic point, the tool will apply a buffer around that point. The buffer ring will aggregate

appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation, and dispersion of the population in the block groups within it. For each indicator, the result is a population-weighted average, which equals the block group indicator values averaged over all residents who are estimated to be inside the buffer.

EJSCREEN's report shows:
All 11 of the EJ Indexes

All 11 of the environmental indicators

The Demographic Index
All six of the demographic indicators

The first page of EJSCREEN's report shows the state, regional and national EJ Indexes for the selected area in tabular form and in a bar chart. "Percentiles" are an important part of EJSCREEN. Every indicator in EJSCREEN is put into perspective by showing its associated percentiles.

The second page shows a map of the selected area and the third page shows:

- 11 environmental indicators
- Demographic Index
- six demographic indicators

The report includes the state, regional and national percentiles for each of the environmental and demographic indicators and for the demographic index. The state, regional and national averages for each of the environmental indicators and demographic indicators are also included as a reference point.

11 Environmental Indicators
As can be seen in the EJScreen report below, the area in the 1-mile buffer around the center of the Project when compared to the 11 EJ Environmental Indexes exceeds all USA Percentiles, and exceeds the State Percentile in all categories except Wastewater Discharge Indicator

Demographic Index
The area within the 1-mile buffer with a Demographic Index of 47% is in the 90th percentile[3] of the State of KY and in the 72nd percentile of the US. For low income, this area of 58% is in the 82nd percentile of the State of KY and the 86th percentile of the US.

People of Color Index at 36% (which is over two times the State demographic mix) is in the 87th percentile for the State, and 56th percentile for the US.

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[3] A percentile of 80 means that you scored equal to or better than 80% of people who took the test. In EJSCREEN, if your results indicate that an area is 48% minority and is at the 69th national percentile, this means that 48% of the area's population is minority, and that is an equal or higher % minority than where 69% of the US population lives. For more information: How to Interpret a Standard Report in EJSCREEN | EJSCREEN: Environmental Justice Screening and Mapping Tool | US EPA

Based upon these observations, it will be important to consider any elements of the Project that will have an undue impact on the area's minority or low-income population. Upgrading the conveyor equipment will improve air quality, which will benefit everyone in the area. Increasing the cargo volumes through the Riverport should create additional jobs in the area. Many of these new jobs could provide opportunities for the neighboring community which has a low income and has a higher-than-average population with less than a high school education.

The chart below compares the Project Area to the State EJ Profile

Comparison	Census Block Data		Area within 1 mile Buffer	
	21075960200	State Percentile		State Percentile
Demographic Index	35%	77	47%	90
People of Color	27%	81	36%	87
Low income	46%	66	58%	82
Unemployment	9%	78	9%	77
Limited English-Speaking Households	0%	0	0%	0
Less than high school Education	20%	76	32%	93
Underage 5	3%	29	2%	22
Over age 64	22%	74	27%	86

EPA United States Environmental Protection Agency
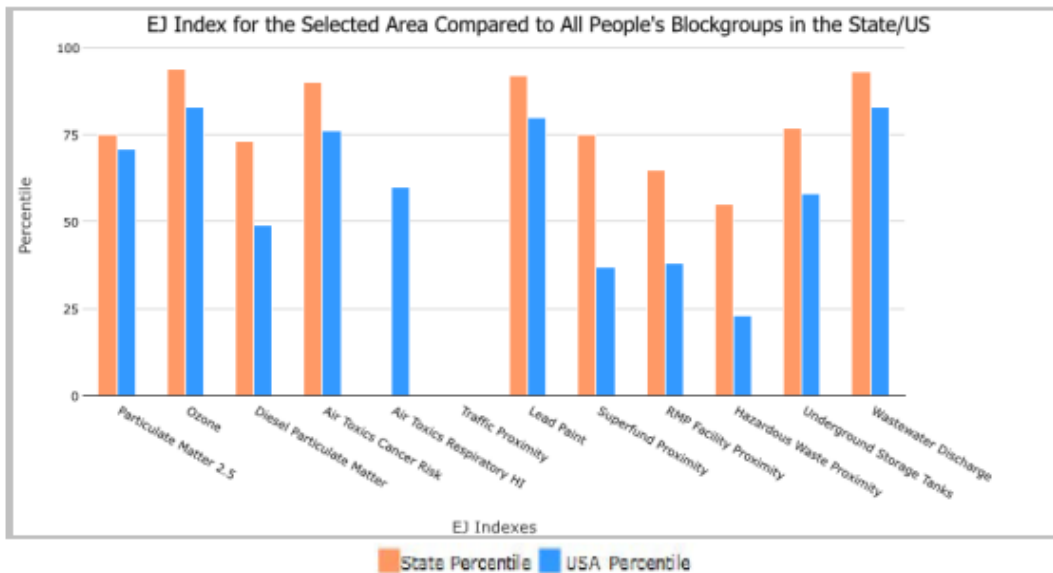
EJScreen Report (Version 2.1)

1 mile Ring Centered at 36.567534,-89.205765, KENTUCKY, EPA Region 4

Approximate Population: 387

Input Area (sq. miles): 3.14

HFCRA Conveyor Upgrade

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	75	71
EJ Index for Ozone	94	83
EJ Index for Diesel Particulate Matter*	73	49
EJ Index for Air Toxics Cancer Risk*	90	76
EJ Index for Air Toxics Respiratory HI*	0	60
EJ Index for Traffic Proximity	N/A	N/A
EJ Index for Lead Paint	92	80
EJ Index for Superfund Proximity	75	37
EJ Index for RMP Facility Proximity	65	38
EJ Index for Hazardous Waste Proximity	55	23
EJ Index for Underground Storage Tanks	77	58
EJ Index for Wastewater Discharge	93	83

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/US
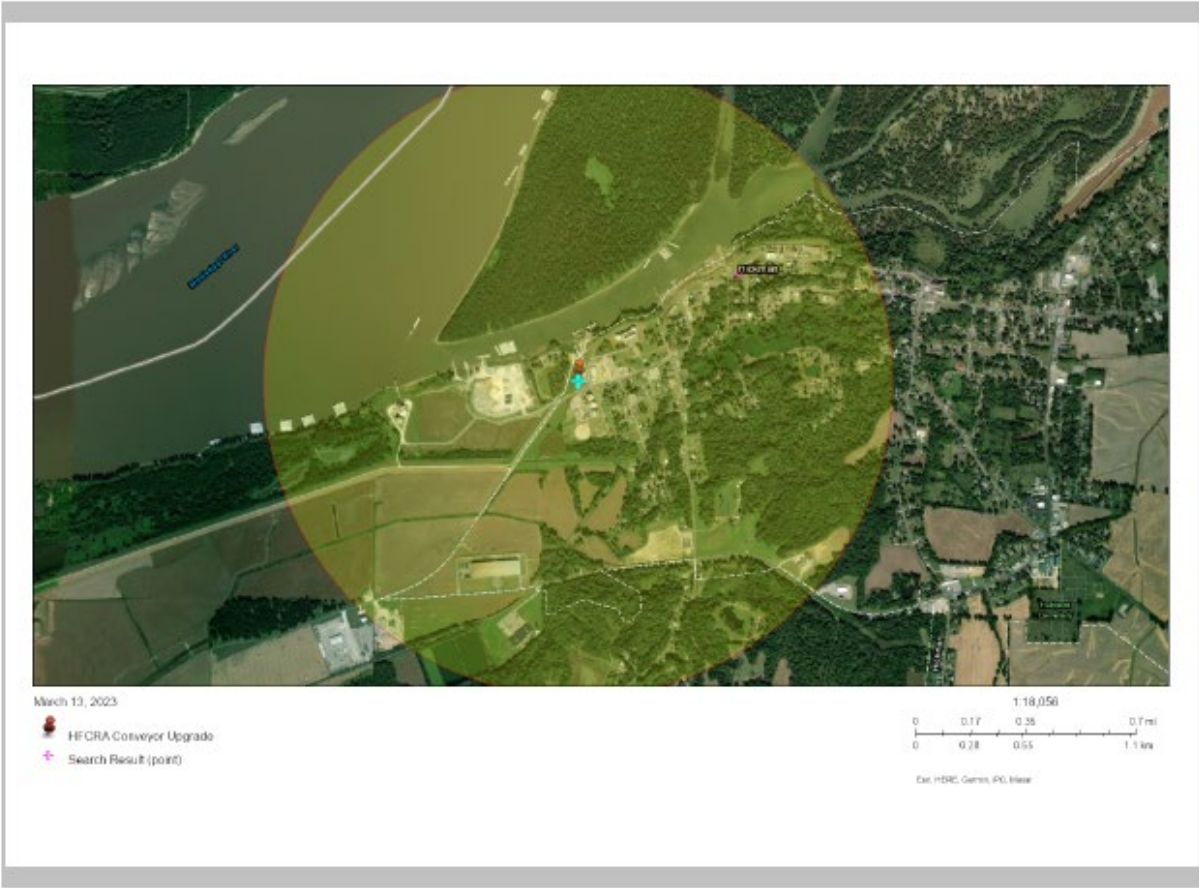
State Percentile / USA Percentile

This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

March 13, 2023

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March 13, 2023

HFCRA Conveyor Upgrade
Search Result (point)

1:18,056

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EPA United States Environmental Protection Agency

EJScreen Report (Version 2.1)

1 mile Ring Centered at 36.567534,-89.205765, KENTUCKY, EPA Region 4

Approximate Population: 387

Input Area (sq. miles): 3.14

HFCRA Conveyor Upgrade

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m³)	8.6	8.86	36	8.67	50
Ozone (ppb)	44.3	42.3	79	42.5	70
Diesel Particulate Matter* (µg/m³)	0.135	0.221	35	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	30	28	99	28	80-90th
Air Toxics Respiratory HI*	0.3	0.36	0	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	N/A	420	N/A	760	N/A
Lead Paint (% Pre-1960 Housing)	0.38	0.23	78	0.27	65
Superfund Proximity (site count/km distance)	0.018	0.039	39	0.13	16
RMP Facility Proximity (facility count/km distance)	0.099	0.69	29	0.77	16
Hazardous Waste Proximity (facility count/km distance)	0.045	0.76	20	2.2	8
Underground Storage Tanks (count/km²)	0.48	1.1	54	3.9	39
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.021	1.1	79	12	74
Socioeconomic Indicators					
Demographic Index	47%	26%	90	35%	72
People of Color	36%	16%	87	40%	56
Low Income	58%	36%	82	30%	86
Unemployment Rate	9%	5%	77	5%	78
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	32%	13%	93	12%	92
Under Age 5	2%	6%	22	6%	25
Over Age 64	27%	16%	86	16%	84

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

March 13, 2023

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Demographic Index 2020

The Demographic Index in EJSCREEN is created using the two demographic indicators that were explicitly named in EO12898, low-income and minority. For each Census block group, these two indicators are simply averaged together: Demographic Index = (% minority + % low-income) / 2

This map shows that the Project is in a census tract that is considered in the 60-70 percentile. An adjacent tract is shown to be in the 80-90 percentile.
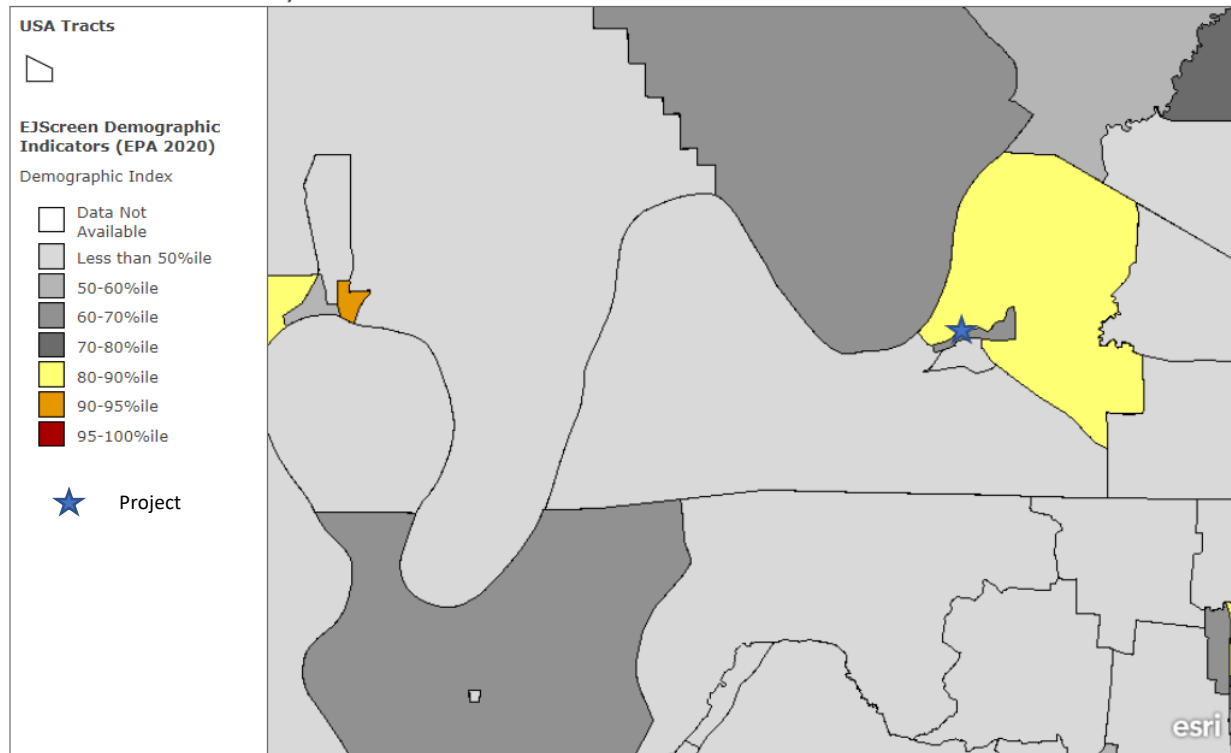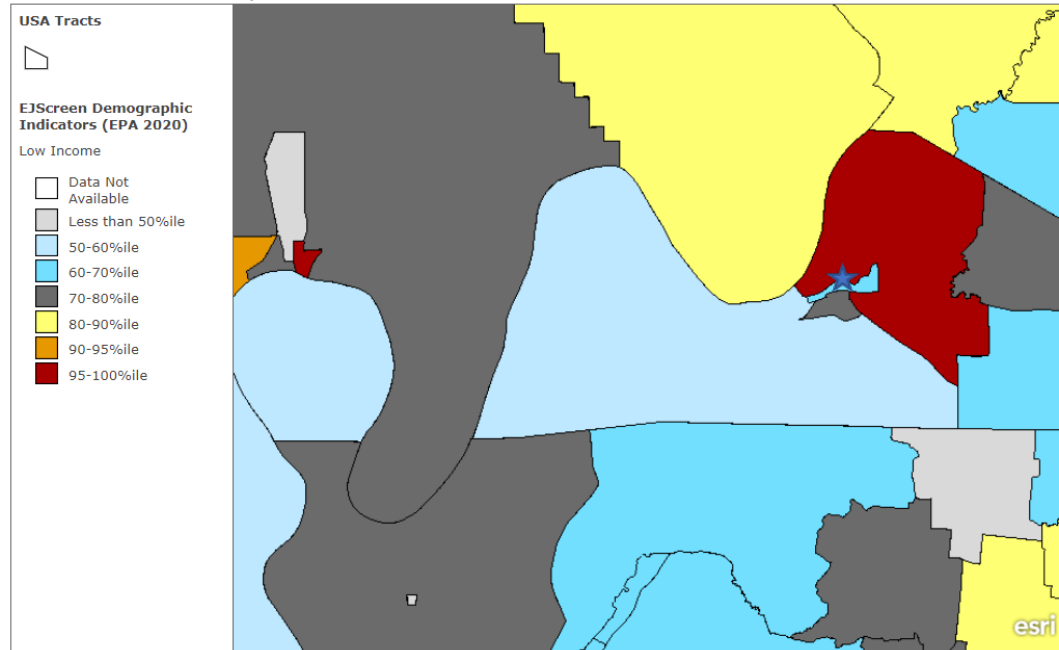

EPA EJScreen Demographic Index

Esri, NASA, NGA, USGS | Missouri Dept. of Conservation, Missouri DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA | U.S. Environmental Protection Agency, Headquarters | Source: U.S. Census Bureau | Esri, US Census

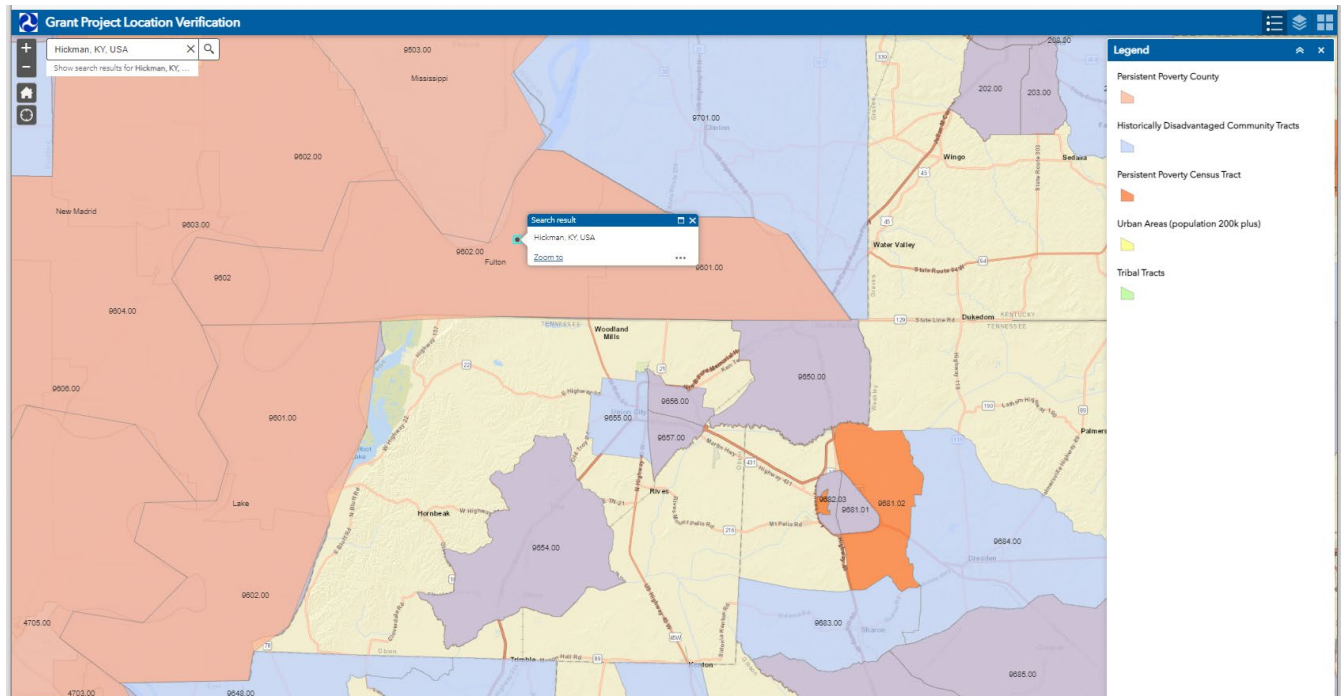### EJ Low Income

EPA EJScreen Demographic Index-Low Income 2020

Esri, NASA, NGA, USGS | Missouri Dept. of Conservation, Missouri DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA | U.S. Environmental Protection Agency, Headquarters | Source: U.S. Census Bureau | Esri, US Census

Grant Project Location Verification Tool

This Tool shows that Hickman in Fulton County is a Persistent Poverty County.

Neighborhoods at Risk Tool

Neighborhoods at Risk is a tool designed to meet community planning needs to protect people and property from the impacts of climate change. A free, web-based tool, *Neighborhoods at Risk* generates customized, interactive maps and reports that describe characteristics of potentially vulnerable neighborhoods (by census tract). Additionally, *Neighborhoods at Risk* provides community-level climate projections for temperature and precipitation.

The Analysis below is divided into People and Climate Exposure:

Neighborhoods at Risk	Area		
	Hickman, KY	Tract 9602	U.S.
# Selected Tracts	n/a	1	
Total Area Population (2021)	1,976	2,741	329,725,481
People			
People of color and Hispanics	40.5%	29.1%	31.8%
Households with no car	17.6%	12.2%	8.3%
People who don't speak English well	0%	0%	4.1%
Families in poverty	23.2%	13.4%	8.9%
People with Disabilities	19.6%	16.8%	12.6%
Housing units that are rentals	40.8%	30.7%	35.4%
People under 5	4.7%	5.1%	5.9%
People over 65 years	14.7%	10.0%	16.0%
Educational Attainment- No High School Degree	24.9%	21.1%	11.1%
Climate Exposure			
Properties with flood risk		12.6%	
Area lacking tree canopy		80.3%	
Area of impervious surface		0.9%	
Area in 500-yr floodplain		65.4%	

Source: U.S. Department of Commerce. 2021. Census Bureau, American Community Survey Office, Washington, D.C., as reported by Headwaters Economics' *Neighborhoods at Risk*. Retrieved March 2023 from https://headwaterseconomics.org/apps/neighborhoods-at-risk/

Legend

	Below US Average
	Above US Average
	Double or more than the US Average

Neighborhoods at Risk can be used to prioritize capital improvements, conduct vulnerability assessments, inform land use and policy decisions, and support FEMA Hazard Mitigation Plans and Carbon Disclosure Project reporting.

Neighborhoods at Risk reports are based on data from the U.S. Census Bureau, FEMA, Multi-Resolution Land Characteristics Consortium, First Street Foundation, and the Northeast Regional Climate Center's Applied Climate Information System.

The following is a summary of the comparable data found using the *Neighborhoods at Risk* Tool. This tool appears to provide the best downloadable reports for each of the project areas.

"**People**" in *Neighborhoods at Risk* are indicators of populations that are potentially more vulnerable to climate risk and climate-related disasters. Not all people who fit these criteria are more vulnerable, but research shows that these populations are, on average, more likely to experience difficulty during all phases of climate-related disasters including:

- Mitigation: reducing the potential risk
- Preparedness: getting plans and resources ready
- Response: protecting and rescuing
- Recovery: rebuilding

The downloadable *Neighborhoods at Risk* report provides detailed information and references documenting how each variable is associated with potentially higher risk to climate change.

The four characteristics and filters included under "**Climate Exposure**" in *Neighborhoods at Risk* are indicators of land areas that may experience more significant impacts from climate change. These variables (hurricane flood zones, floodplains, impervious surface, and lack of tree canopy) represent characteristics of our physical environment that make us vulnerable to climate change by affecting the likelihood of extreme heat and flood events.

Why is this measure important?

People

People of color and Hispanics

- Race and ethnicity are strongly correlated with disparities in health, exposure to environmental pollution, and vulnerability to natural hazards.
- Research consistently has found race-based environmental inequities, including the tendency for minority populations to live closer to noxious facilities and Superfund sites, and to be exposed to pollution at greater rates than predominantly white populations.
- Many health outcomes are closely related to the local environment. Minority communities often have less access to parks and nutritious food and are more likely to live in substandard housing.
- Minorities tend to be particularly vulnerable to disasters and extreme heat events. This is due to language skills, housing patterns, quality of housing, community isolation, and cultural barriers.

- Blacks and Hispanics, two segments of the population that are currently experiencing poorer health outcomes, are an increasing percentage of the US population.
- Research has identified measurable disparities in health outcomes between various minority and ethnic communities.
- Across races, the rates of preventable hospitalizations are highest among black and Hispanic populations. Preventable hospital visits often reflect inadequate access to primary care. These types of hospital visits are also costly and inefficient for the health care system.
- Relative to other ethnicities and races, Hispanics and blacks are less likely to have health insurance, but rates of uninsured are dropping for both groups.
- Compared to other races, blacks have higher rates of infant mortality, homicide, heart disease, stroke, and heat-related deaths.
- Hispanics have higher rates of diabetes and asthma.
- American Indians have a distinct pattern of health effects different from blacks and Hispanics. Native populations are less likely to have electricity than the general population. They have high rates of infant mortality, suicide, and homicide, and nearly twice the rate of motor vehicle deaths than the U.S. average.

Households with no car

Access to a car is linked with higher wages and more financial stability and can help families relocate or evacuate in the event of emergencies.

- People who own cars are more likely to be employed, work longer hours, and earn more than those who do not.
- Access to a car has measurable benefits for those receiving public assistance. Welfare recipients with access to a car were more likely to work more hours and get higher-paying jobs and had a greater chance of leaving welfare.
- During emergencies, natural disasters, and extreme weather events, people who do not have a car are less likely to evacuate or have access to emergency response centers.
- During heat waves, people without a car are less able to go to community cooling centers or cooler areas.
- Pedestrian fatalities are more than twice as likely in poor urban neighborhoods than in wealthier parts of cities.

People who don't speak English well

- Many aspects of life in the US assume basic fluency in English. Thus, people with limited language skills are at risk for inadequate access to health care, social services, or emergency services.
- A person's ability to act during an emergency is compromised by language and cultural barriers.
- Poor English skills can make it harder to follow directions or interact with agencies.
- Lack of language skills can also instill a lack of trust for government agencies.
- In many industries, poor English skills can make it harder for people to get higher wage jobs.
- Language barriers make it harder to obtain medical or social services; and make it more difficult to interact with caregivers.

- Limited English skills may result in isolation from other segments of the U.S. population, and social isolation is a health risk.
- However, some minority communities can be very tightly-knit and not isolated, so this risk factor cannot be generalized across all populations.

Families in poverty

Families in poverty may lack the resources to meet their basic needs. Their challenges cross the spectrum of food, housing, healthcare, education, vulnerability to natural disasters, and emotional stress.

- To save money, families with low incomes often have to make lifestyle compromises such as unhealthy foods, less food, substandard housing, or delayed medical care.
- Lack of financial resources makes families in poverty more vulnerable to natural disasters. This is due to inadequate housing, social exclusion, and an inability to re-locate or evacuate.
- Inadequate shelter exposes occupants to increased risk from storms, floods, fire, and temperature extremes. Households with low incomes are more likely to have unhealthy housing conditions such as leaks, mold, or rodents.
- The expense of running fans, air conditioners, and heaters makes low-income people hesitant to mitigate the temperature of their living spaces. Furthermore, those in high-crime areas may not want to open their windows.
- Families in poverty are disproportionately affected by higher food prices, which are expected to rise in response to climate change.
- Children in poor families, on average, receive fewer years of education compared to children in wealthier families.
- Low-income residents are less likely to have adequate property insurance, so they may bear an even greater burden from property damage due to natural hazards.
- Living in poverty can lead to a lack of personal control over potentially hazardous situations such as increased air pollution or flooding. Impoverished families may be less likely to take proactive measures to prevent harm.

People with Disabilities

Disabled people are subject to health complications that make environmental risks more consequential.

- Disabled people are less likely to have health insurance, compared to the non-disabled population.
- Being confined to a bed raises heat mortality.
- Extreme weather events or natural disasters may result in limited access to medical care. This is particularly consequential for those who already have compromised health.

People younger than 5 or over 65 years

Young children and older adults both are vulnerable segments of the population. Understanding the age profile of a community can help users determine the types of services likely to be needed.

Older adults also are at increased risk of compromised health related to environmental hazards and climate change.

- Age is the single greatest risk factor related to illness or death from extreme heat.
- The elderly are more likely to have pre-existing medical conditions or compromised mobility, which reduces their ability to respond to natural disasters.
- The likelihood of chronic disease increases with age.
- Older adults are more susceptible to air pollution such as ground level ozone, particulate matter, or dust. Increased dust is associated with drought, wildfires, and high wind events.

Educational Attainment- No High School Degree

High school completion is used as a proxy for overall socioeconomic circumstances. Lack of education is strongly correlated with poverty and poor health.

- People without a high school degree are more than twice as likely to live in inadequate housing compared to those with some college education.
- A study in California[4] found the lack of a high school degree was the factor most closely related to social vulnerability to climate change.
- Thirty-eight percent of Americans without a high school degree do not have health insurance, compared to 10 percent with a college degree.
- The rate of diabetes is much greater for those without a high school degree. The incidence of this disease is more than double the rate of those who attended education beyond high school.
- Binge drinking is the most severe among those without a high school degree. This demographic group had the highest risk of binge drinking across all measured categories (such as income, race, ethnicity, or disability status).[5]

Climate Exposure

These three categories for the project area represent characteristics of the physical environment that make the population within the area more or less vulnerable to climate change by affecting the likelihood of extreme heat and flood events.

- Area lacking tree canopy-
- Area of impervious surface
- Area in 500-yr floodplain

## 3. Specific Project Elements that support our Environmental Justice (EJ) populations

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[4] Heather Cooley, Eli Moore, Matthew Heberger, and Lucy Allen, Social Vulnerability to Climate Change in California (California Energy Commission Pub. # CEC-500-2012-013, 2012).

[5] Centers for Disease Control and Prevention, "CDC Health Disparities and Inequalities Report — United States, 2011," Morbidity and Mortality Weekly Report 60 Suppl. (January 14, 2011). http://www.cdc.gov/mmwr/pdf/other/su6001.pdf

Environmental injustice and climate change are about the fact that in many communities it is far easier to find a bag of Cheetos than a carton of strawberries and this only stands to get worse as drought and flooding impact the availability and affordability of nutritious food. This can be the case for EJ populations in Hickman, fresh fruits and other nutritious items are only found in local grocery stores. For Census Tract 9602, there is a supermarket about 13 miles away from the project area. The map below shows the limited access people in poverty have to a supermarket. It is noted that this project will not provide any direct transportation options to improve this vulnerability. It is important that the Riverport be aware of the characteristics of the area and make sure that their development plans improve the Quality of Life of their citizens versus disadvantages the underserved portion of the population even further.

HFCRA Improvements-Fy23 Supermarket Access
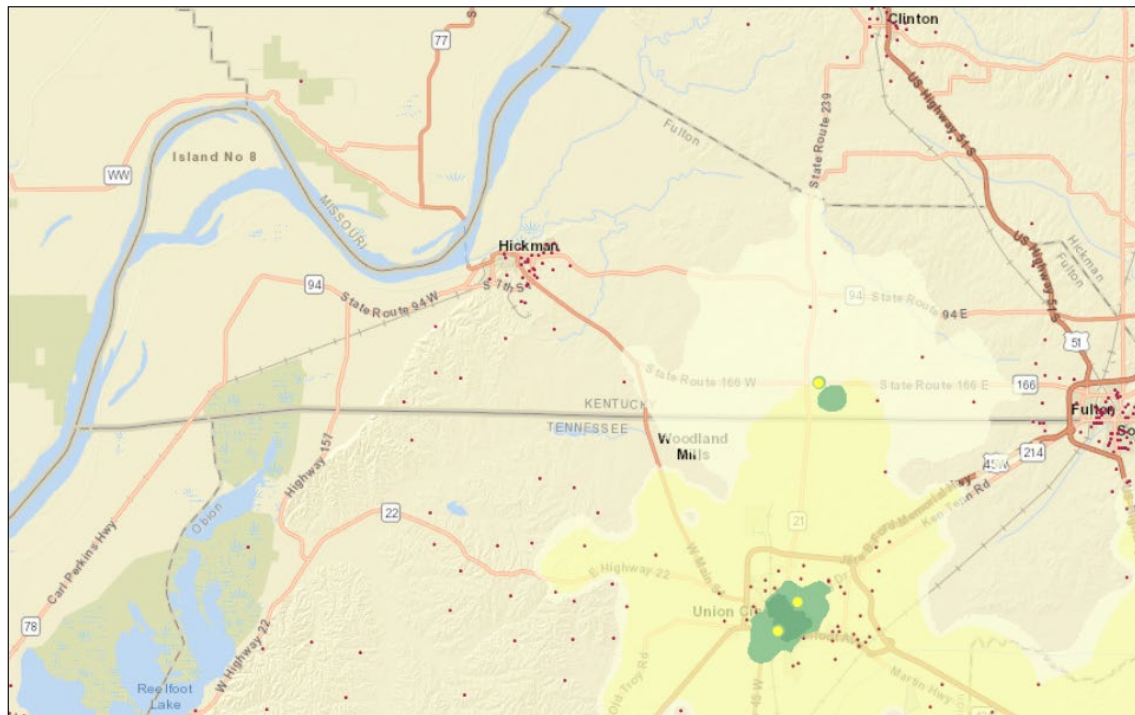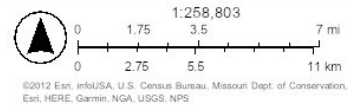
### 4.	Community Outreach and Public Engagement

Community Outreach

The Riverport and their partners began working with and providing ongoing outreach to agencies, tribes, businesses, and other community members in the early planning phases of the Project.

The Riverport will continue to engage interested parties through the following:

•	Presentations at local community group meetings

•	Meetings with interested parties and stakeholders

•	Mailings and email updates at key Project milestones

•	Media updates via radio and print ads for Project events

The Riverport will solicit feedback on the Project through the engagement types outlined above and will meaningfully engage the community through a participation process that is inclusive, effective, and accessible to all. The Riverport plans to continue to take community and stakeholder feedback into consideration as the Project advances.

## 5.	Conclusions and Next Steps

As can be seen from the results of the various EJ mapping tools and data collected, it is important to understand the Project and the potential impacts it may have on specific sections of the population. Using multiple lenses through the different Environmental Justice data tools helps refine the characteristics of the surrounding area. Fine tuning the scope of the analysis from the County level, the Census Tract to the Census Block and finally a 1-mile radius around the project area, helps to inform planners in developing their public outreach efforts. Using the characteristics of the populations near the project and evaluating project elements that could impact these underserved populations will help planners ensure negative impacts are identified and accounted for through mitigation efforts.

Once those impacts are identified, then specific outreach can be designed to inform the affected populations and develop mitigation options as appropriate.

As noted above Public Engagement and Outreach is a continuous process that will continue throughout the planning, design and implementation of this project. The Public Engagement will continue to inform the planning, design, implementation, procurement and/or construction and will enable the project to address any past inequities identified relating to access and barriers to opportunity, and climate change.

Although, current analysis indicates that the proposed project will improve multi-modal and non-motorized access to the adjacent EJ neighborhoods, at this point of the team's analysis it is believed that the same EJ population will not be disproportionately negatively impacted by the Project. Analysis and monitoring will continue as the Riverport, and its partners move through the phases of the project. All mitigation measures identified in the design and environmental review process will be implemented and monitored post-construction for compliance and community enhancement.

Attachments:

EJSCREEN Reports

The following EJSCREEN reports were run for the Hickman Fulton County Riverport Project with a 1-mile buffer as well as Census Tract 21075960200

- Standard Reports
    - EJSCREEN for 1 mile buffer Report
    - EJSCREEN for Census Report
    - ACS 20202 Report
    - Census 2010 sf Report

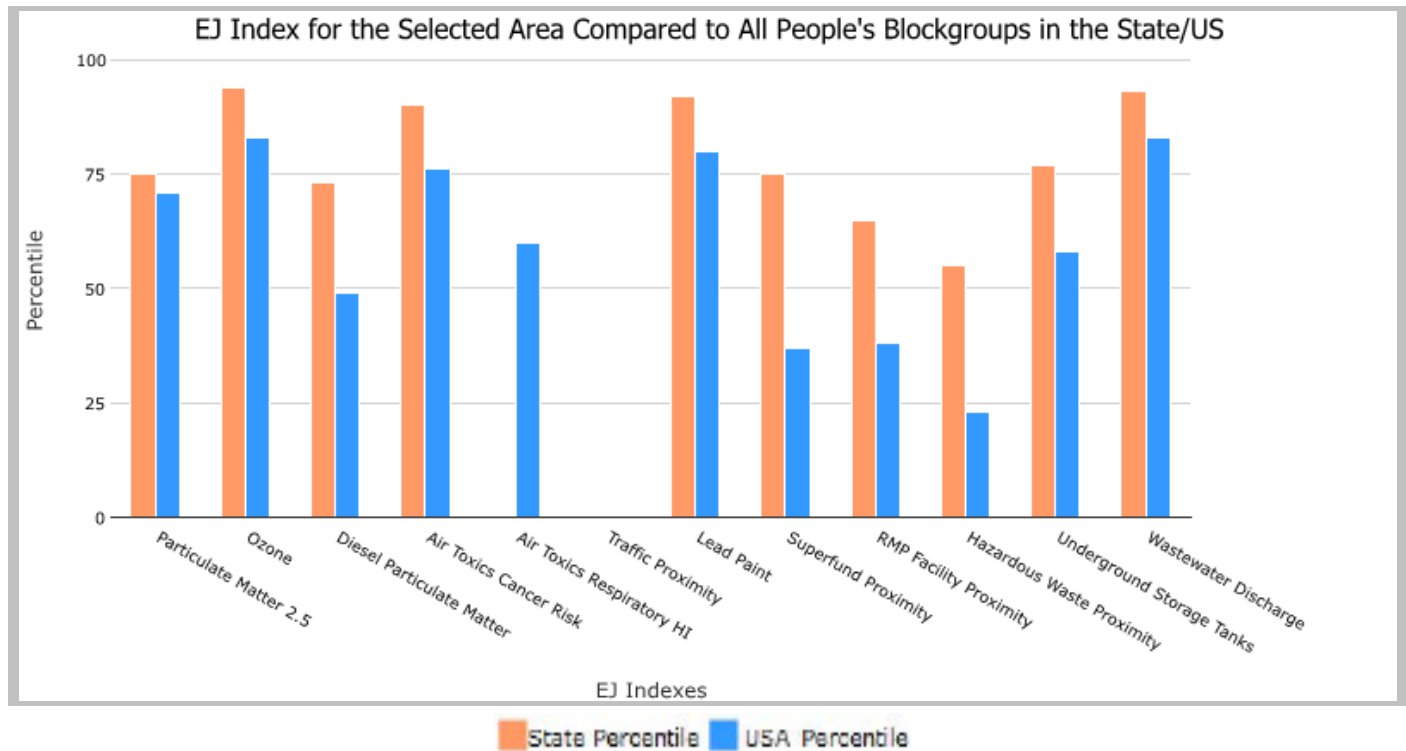*Neighborhoods at Risk* **Tool Summary Reports**

- Hickman, KY

1 mile Ring Centered at 36.567534,-89.205765, KENTUCKY, EPA Region 4

Approximate Population: 387
Input Area (sq. miles): 3.14
HFCRA Conveyor Upgrade

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	75	71
EJ Index for Ozone	94	83
EJ Index for Diesel Particulate Matter*	73	49
EJ Index for Air Toxics Cancer Risk*	90	76
EJ Index for Air Toxics Respiratory HI*	0	60
EJ Index for Traffic Proximity	N/A	N/A
EJ Index for Lead Paint	92	80
EJ Index for Superfund Proximity	75	37
EJ Index for RMP Facility Proximity	65	38
EJ Index for Hazardous Waste Proximity	55	23
EJ Index for Underground Storage Tanks	77	58
EJ Index for Wastewater Discharge	93	83

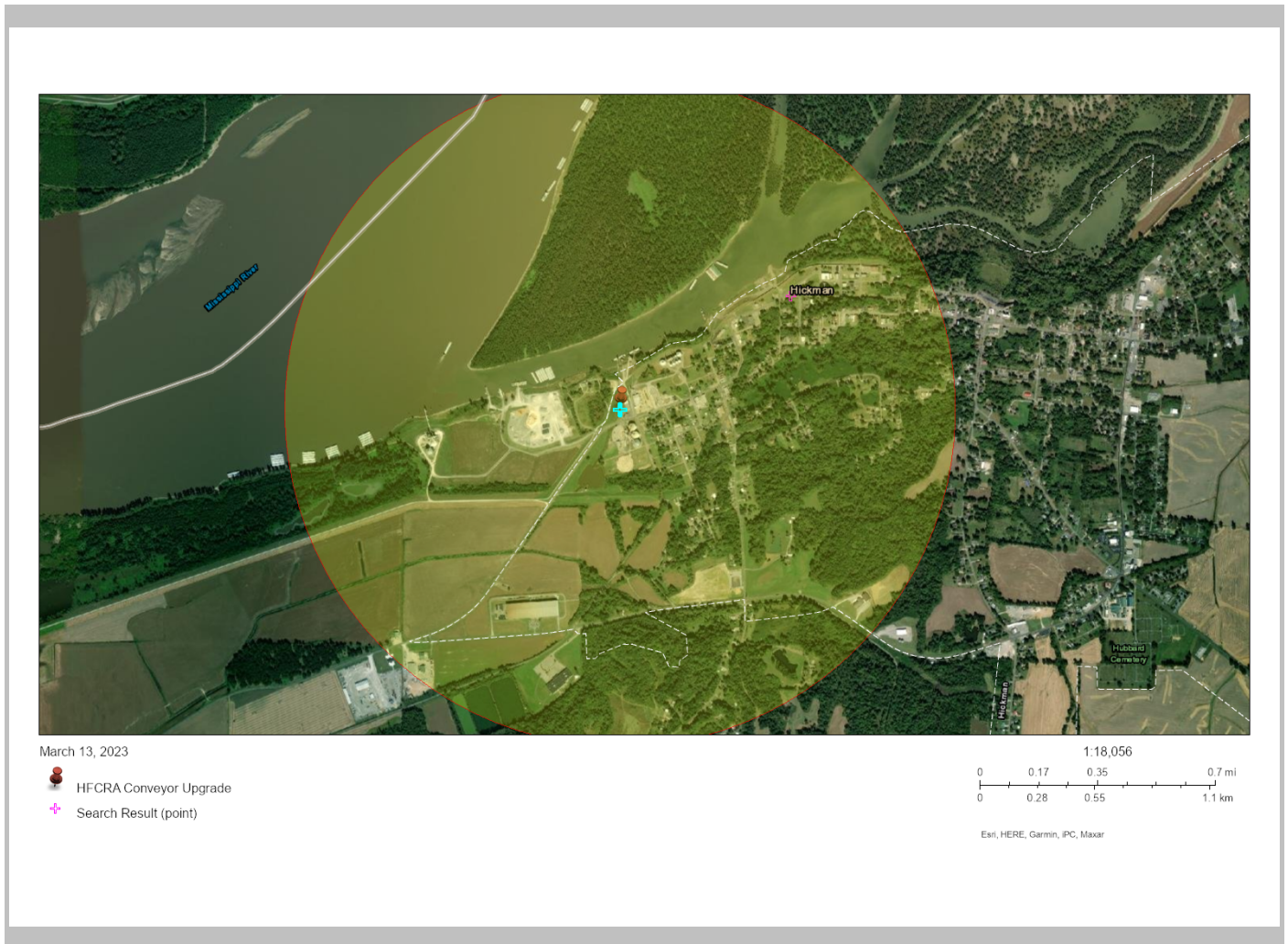EJ Index for the Selected Area Compared to All People's Blockgroups in the State/US

This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

March 13, 2023

![EPA United States Environmental Protection Agency logo]

EJScreen Report (Version 2.1)

1 mile Ring Centered at 36.567534,-89.205765, KENTUCKY, EPA Region 4

Approximate Population: 387
Input Area (sq. miles): 3.14
HFCRA Conveyor Upgrade

March 13, 2023

HFCRA Conveyor Upgrade
Search Result (point)

1:18,056

| 0 | 0.17 | 0.35 | 0.7 mi |
| 0 | 0.28 | 0.55 | 1.1 km |

Esri, HERE, Garmin, iPC, Maxar

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

1 mile Ring Centered at 36.567534,-89.205765, KENTUCKY, EPA Region 4

Approximate Population: 387
Input Area (sq. miles): 3.14
HFCRA Conveyor Upgrade

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (μg/m^3)	8.6	8.86	36	8.67	50
Ozone (ppb)	44.3	42.3	79	42.5	70
Diesel Particulate Matter* (μg/m^3)	0.135	0.221	35	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	30	28	99	28	80-90th
Air Toxics Respiratory HI*	0.3	0.36	0	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	N/A	420	N/A	760	N/A
Lead Paint (% Pre-1960 Housing)	0.38	0.23	78	0.27	65
Superfund Proximity (site count/km distance)	0.018	0.039	39	0.13	16
RMP Facility Proximity (facility count/km distance)	0.099	0.69	29	0.77	16
Hazardous Waste Proximity (facility count/km distance)	0.045	0.76	20	2.2	8
Underground Storage Tanks (count/km^2)	0.48	1.1	54	3.9	39
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.021	1.1	79	12	74
Socioeconomic Indicators					
Demographic Index	47%	26%	90	35%	72
People of Color	36%	16%	87	40%	56
Low Income	58%	36%	82	30%	86
Unemployment Rate	9%	5%	77	5%	78
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	32%	13%	93	12%	92
Under Age 5	2%	6%	22	6%	25
Over Age 64	27%	16%	86	16%	84

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

Selected Variables	State Percentile	USA Percentile
Environmental Justice Indexes		
EJ Index for Particulate Matter 2.5	64	62
EJ Index for Ozone	88	75
EJ Index for Diesel Particulate Matter*	63	41
EJ Index for Air Toxics Cancer Risk*	79	66
EJ Index for Air Toxics Respiratory HI*	0	50
EJ Index for Traffic Proximity	N/A	N/A
EJ Index for Lead Paint	81	68
EJ Index for Superfund Proximity	64	29
EJ Index for RMP Facility Proximity	58	33
EJ Index for Hazardous Waste Proximity	45	19
EJ Index for Underground Storage Tanks	56	45
EJ Index for Wastewater Discharge	85	74

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/US

This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.
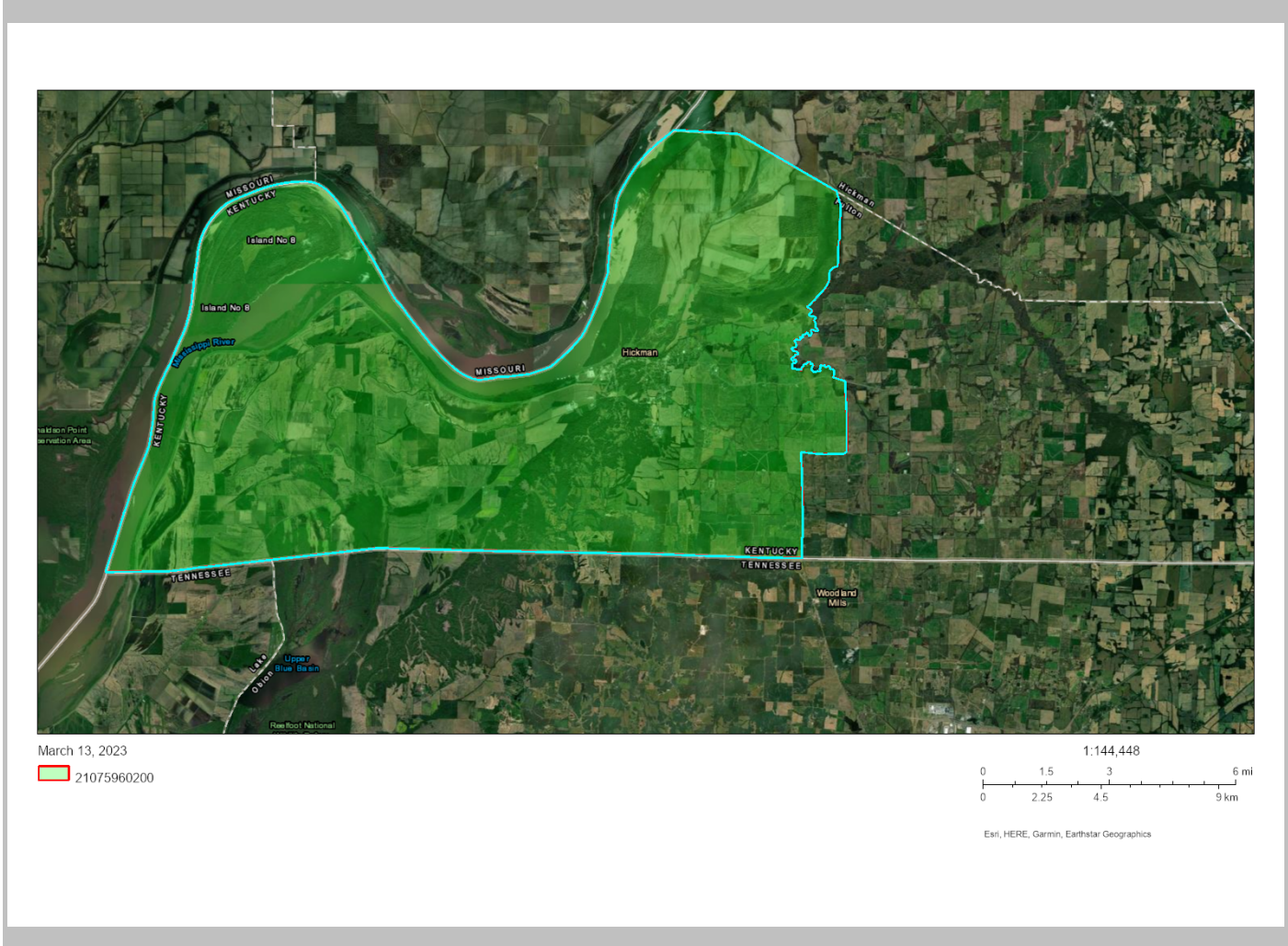
March 13, 2023

1:144,448

21075960200

| 0 | 1.5 | 3 | 6 mi |
| 0 | 2.25 | 4.5 | 9 km |

Esri, HERE, Garmin, Earthstar Geographics

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State Avg.	%ile in State	USA Avg.	%ile in USA
Pollution and Sources					
Particulate Matter 2.5 (µg/m³)	8.6	8.86	36	8.67	50
Ozone (ppb)	44.3	42.3	79	42.5	70
Diesel Particulate Matter* (µg/m³)	0.135	0.221	35	0.294	<50th
Air Toxics Cancer Risk* (lifetime risk per million)	30	28	99	28	80-90th
Air Toxics Respiratory HI*	0.3	0.36	0	0.36	<50th
Traffic Proximity (daily traffic count/distance to road)	N/A	420	N/A	760	N/A
Lead Paint (% Pre-1960 Housing)	0.23	0.23	61	0.27	51
Superfund Proximity (site count/km distance)	0.018	0.039	38	0.13	15
RMP Facility Proximity (facility count/km distance)	0.11	0.69	32	0.77	20
Hazardous Waste Proximity (facility count/km distance)	0.046	0.76	21	2.2	8
Underground Storage Tanks (count/km²)	0.17	1.1	41	3.9	31
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.015	1.1	77	12	72
Socioeconomic Indicators					
Demographic Index	35%	26%	77	35%	59
People of Color	27%	16%	81	40%	47
Low Income	46%	36%	66	30%	76
Unemployment Rate	9%	5%	78	5%	79
Limited English Speaking Households	0%	1%	0	5%	0
Less Than High School Education	20%	13%	76	12%	81
Under Age 5	3%	6%	29	6%	32
Over Age 64	22%	16%	74	16%	73

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

Location: User-specified point center at 36.567534, -89.205765

Ring (buffer): 1-miles radius

Description: HFCRA Conveyor Upgrade

Summary of ACS Estimates	2016 - 2020
Population	387
Population Density (per sq. mile)	262
People of Color Population	140
% People of Color Population	36%
Households	178
Housing Units	278
Housing Units Built Before 1950	73
Per Capita Income	20,929
Land Area (sq. miles) (Source: SF1)	1.48
% Land Area	96%
Water Area (sq. miles) (Source: SF1)	0.07
% Water Area	4%

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	387	100%	201
Population Reporting One Race	369	95%	350
White	247	64%	181
Black	121	31%	110
American Indian	0	0%	23
Asian	1	0%	12
Pacific Islander	0	0%	12
Some Other Race	0	0%	12
Population Reporting Two or More Races	18	5%	36
Total Hispanic Population	7	2%	14
Total Non-Hispanic Population	380		
White Alone	247	64%	181
Black Alone	121	31%	110
American Indian Alone	0	0%	23
Non-Hispanic Asian Alone	1	0%	12
Pacific Islander Alone	0	0%	12
Other Race Alone	0	0%	12
Two or More Races Alone	12	3%	31
Population by Sex			
Male	198	51%	151
Female	189	49%	105
Population by Age			
Age 0-4	10	2%	32
Age 0-17	80	21%	73
Age 18+	307	79%	197
Age 65+	103	27%	98

Location: User-specified point center at 36.567534, -89.205765

Ring (buffer): 1-miles radius

Description: HFCRA Conveyor Upgrade

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	284	100%	187
Less than 9th Grade	44	15%	51
9th - 12th Grade, No Diploma	46	16%	67
High School Graduate	111	39%	109
Some College, No Degree	47	17%	99
Associate Degree	15	5%	51
Bachelor's Degree or more	21	7%	60
Population Age 5+ Years by Ability to Speak English			
Total	377	100%	201
Speak only English	351	93%	211
Non-English at Home[1+2+3+4]	27	7%	52
[1]Speak English "very well"	18	5%	32
[2]Speak English "well"	9	2%	27
[3]Speak English "not well"	0	0%	12
[4]Speak English "not at all"	0	0%	12
[3+4]Speak English "less than well"	0	0%	12
[2+3+4]Speak English "less than very well"	9	2%	27
Linguistically Isolated Households*			
Total	0	0%	12
Speak Spanish	0	0%	12
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	0	0%	12
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	178	100%	105
< $15,000	53	30%	57
$15,000 - $25,000	29	16%	40
$25,000 - $50,000	55	31%	73
$50,000 - $75,000	24	14%	42
$75,000 +	17	9%	88
Occupied Housing Units by Tenure			
Total	178	100%	105
Owner Occupied	116	65%	109
Renter Occupied	62	35%	61
Employed Population Age 16+ Years			
Total	316	100%	202
In Labor Force	127	40%	150
Civilian Unemployed in Labor Force	11	4%	81
Not In Labor Force	189	60%	182

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified point center at 36.567534, -89.205765

Ring (buffer): 1-miles radius

Description: HFCRA Conveyor Upgrade

	2016 - 2020 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	651	100%	256
English	636	98%	265
Spanish	1	0%	5
French, Haitian, or Cajun	2	0%	12
German or other West Germanic	12	2%	59
Russian, Polish, or Other Slavic	0	0%	12
Other Indo-European	0	0%	12
Korean	1	0%	7
Chinese (including Mandarin, Cantonese)	0	0%	12
Vietnamese	0	0%	12
Tagalog (including Filipino)	0	0%	12
Other Asian and Pacific Island	0	0%	12
Arabic	0	0%	12
Other and Unspecified	0	0%	12
Total Non-English	16	2%	368

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2016 - 2020.

*Population by Language Spoken at Home is available at the census tract summary level and up.

March 12, 2023

EJSCREEN Census 2010 Summary Report

Location: User-specified point center at 36.567534, -89.205765
Ring (buffer): 1-miles radius
Description: HFCRA Conveyor Upgrade

Summary	Census 2010
Population	495
Population Density (per sq. mile)	321
People of Color Population	63
% People of Color Population	13%
Households	235
Housing Units	283
Land Area (sq. miles)	1.54
% Land Area	95%
Water Area (sq. miles)	0.08
% Water Area	5%

Population by Race	Number	Percent
Total	495	-------
Population Reporting One Race	484	98%
White	433	88%
Black	46	9%
American Indian	2	0%
Asian	0	0%
Pacific Islander	0	0%
Some Other Race	3	1%
Population Reporting Two or More Races	11	2%
Total Hispanic Population	6	1%
Total Non-Hispanic Population	489	99%
White Alone	432	87%
Black Alone	46	9%
American Indian Alone	2	0%
Non-Hispanic Asian Alone	0	0%
Pacific Islander Alone	0	0%
Other Race Alone	2	0%
Two or More Races Alone	7	1%

Population by Sex	Number	Percent
Male	246	50%
Female	249	50%

Population by Age	Number	Percent
Age 0-4	25	5%
Age 0-17	95	19%
Age 18+	400	81%
Age 65+	105	21%

Households by Tenure	Number	Percent
Total	235	
Owner Occupied	174	74%
Renter Occupied	61	26%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1.

Neighborhoods at Risk

Area of Interest

Selected census tract
Other census tract
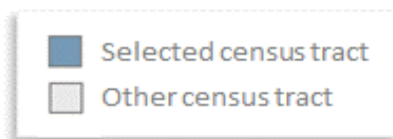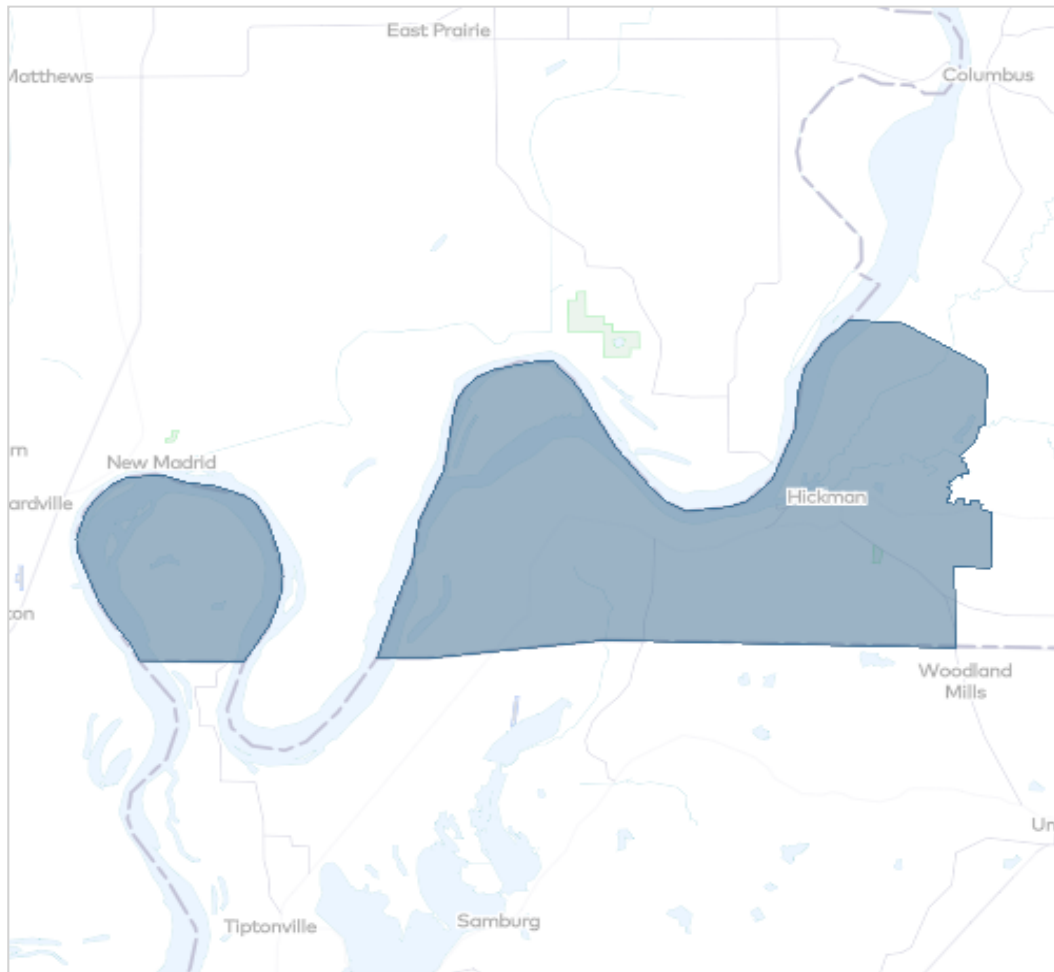
Headwaters Economics

Headwaters Economics is an independent, nonprofit research group that works to improve community development and land management decisions: **headwaterseconomics.org**.

Neighborhoods at Risk

Neighborhoods at Risk is a free, web-based tool that provides cities with neighborhood-level information about at-risk populations and their vulnerability to the impacts of climate change.

Free and easy-to-use: Quickly create maps and reports of socioeconomic and climate data.

Available nation-wide: Explore socioeconomic and climate data for any community or county in the nation.

Updated continuously: Make use of the latest available, published government data.

headwaterseconomics.org/apps/neighborhoods-at-risk

Table of Contents

Summary: This front page shows a quick comparison for many of the indicators covered in this report.

Click the links above for quick access to report sections.

Neighborhoods at Risk

Hickman, KY

Summary

Indicators 2021*	Combined	U.S.	Percent Difference Combined vs. U.S.
People under 5 years	5.1%	5.9%	-15%
People over 65 years	19.0%	16.0%	17%
People of color (including Hispanic)	29.2%	40.6%	-32%
People who don't speak English well	**0.0%**	4.1%	-200%
People without a high school degree	21.1%	11.1%	62%
Families in poverty	13.4%	8.9%	40%
Housing units that are rentals	30.7%	35.4%	-14%
Households with no car	**12.2%**	8.3%	38%
People with disabilities	16.8%	12.6%	29%
People without health insurance	6.8%	8.5%	-22%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to show that the sampling error is small.
Medium Reliability: Data with CVs between 12 & 40% are in orange. These values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

* ACS 5-year estimates: 2021 represents average characteristics from 2017-2021.

Summary

What do we measure on this page?

This page shows a quick comparison for many of the indicators covered in this report to highlight how the selected tracts differ from the United States as a whole.

The percent, or relative, difference between the selected tracts and the U.S. is calculated by dividing the difference between the values by the arithmetic mean of the values.

Why is it important?

These indicators are all measures of a population more likely to experience adverse outcomes from disruptions due to extreme weather events, climate change, pollution, or limited health care access.

Particularly high percentages for any of these indicators may highlight populations that are at higher risk and in need of outreach from disaster planning, public health, or social service organizations.

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed.
The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

Find more reports like this at headwaterseconomics.org/apps/neighborhoods-at-risk   Summary

Families in Poverty

	Hickman, KY	Combined	U.S.
Total families for whom poverty status is determined, 2021*	323	560	80,755,759
Families in poverty	75	75	7,181,779
Families with children in poverty	**60**	**60**	4,718,106
Single mother families in poverty	**60**	**60**	3,160,728

Percent of Total, 2021*

	Hickman, KY	Combined	U.S.
Families in poverty	23.2%	13.4%	8.9%
Families with children in poverty	**18.6%**	**10.7%**	5.8%
Single mother families in poverty	**18.6%**	**10.7%**	3.9%

Change in Percentage Points, 2010*-2021*

For example, if the value is 3% in 2010* and 4.5% in 2021*, the reported change in percentage points is 1.5.

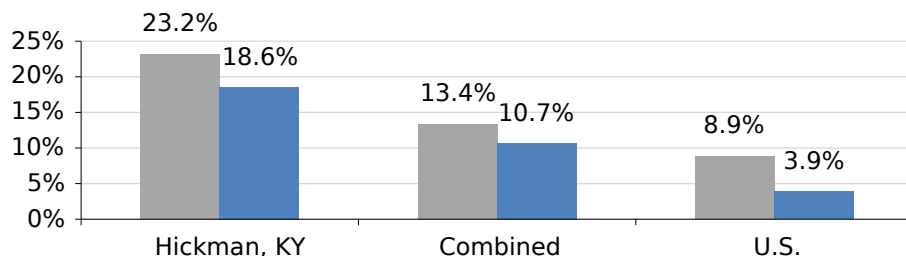|			
Families in poverty	7.4	-5.0	-1.2
Families with children in poverty	7.0	1.1	-2.0
Single mother families in poverty	12.1	4.6	-0.9

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
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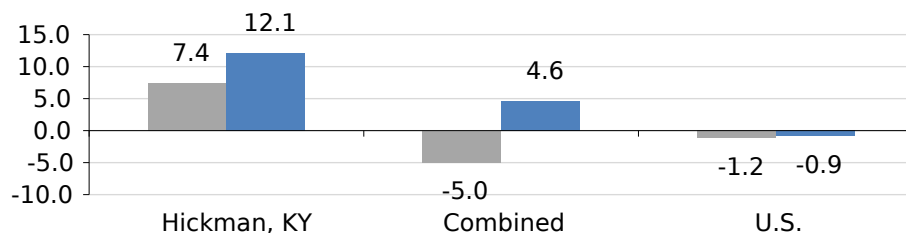### Families in Poverty, Percent of Total, 2021*

- Hickman, KY has the largest share of single mother families in poverty (18.6%).

Families in Poverty, Change in Percentage Points, 2010*-2021*

- The largest change in the share of single mother familes in poverty occurred in Hickman, KY, which went from 6.5% to 18.6%.

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Families in Poverty

What do we measure on this page?

This page describes the number of families living below the poverty line, and separately reports families with children and single mother families with children.

The Census defines a family as a group of two or more people who reside together and who are related by birth, marriage, or adoption.

The Census Bureau uses a set of income thresholds that vary by family size and composition to define who is poor. If the total income for a family or an unrelated individual falls below the relevant poverty threshold, then the family or an unrelated individual is classified as being "below the poverty level."

Why is it important?

Families in poverty may lack the resources to meet their basic needs. Their challenges cross the spectrum of food, housing, health care, education, vulnerability to natural disasters, and emotional stress.

To save money, families with low incomes often have to make lifestyle compromises such as unhealthy foods, less food, substandard housing, or delayed medical care.[1]

Lack of financial resources makes families in poverty more vulnerable to natural disasters. This is due to inadequate housing, social exclusion, and an inability to re-locate or evacuate.[11, 2]

Inadequate shelter exposes occupants to increased risk from storms, floods, fire, and temperature extremes.[2] Households with low incomes are more likely to have unhealthy housing such as leaks, mold, or rodents.[5]

The expense of running fans, air conditioners, and heaters makes low-income people hesitant to mitigate the temperature of their living spaces.[1, 2] Furthermore, those in high-crime areas may not want to open their windows.[2]

Families in poverty are disproportionately affected by higher food prices, which are expected to rise in response to climate change.[1]

Children in poor families, on average, receive fewer years of education compared to children in wealthier families.[12]

Low-income residents are less likely to have adequate property insurance, so they may bear an even greater burden from property damage due to natural hazards.[2]

Living in poverty can lead to a lack of personal control over potentially hazardous situations such as increased air pollution or flooding. Impoverished families may be less likely to take proactive measures to prevent harm.[11]

Superscript numbers refer to references provided at the end of the report.

Rental & Mobile Homes

|	Hickman, KY	Combined	U.S.
Total Occupied Housing Units, 2021*	647	932	124,010,992
Rental Units	264	286	43,858,831
Mobile Homes	**19**	**36**	6,509,758
Percent of Total, 2021*			
Rental Units	40.8%	30.7%	35.4%
Mobile Homes	**2.9%**	**3.9%**	5.2%
Change in Percentage Points, 2010*-2021*			
For example, if the value is 3% in 2010* and 4.5% in 2021*, the reported change in percentage points is 1.5.			
Rental Units	-4.5	-5.6	4.6
Mobile Homes	-7.0	-9.5	-0.4
Median Home Value (MHV), 2021* (2022 $s)	$55,188	$64,584	$264,492
Change in MHV, 2010*-2021* (2022 $s)	**-$16,206**	**-$4,932**	-$5,073,850

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
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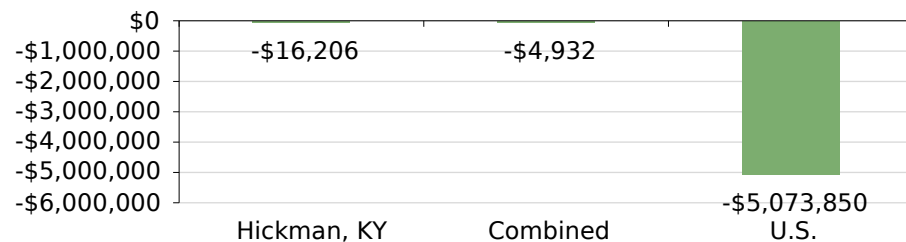
Rental Units and Mobile Homes as a Percent of Total Housing Units, 2021*

- Hickman, KY has the largest share of rental units (40.8%).

- The U.S. has the largest share of mobile homes (5.2%).
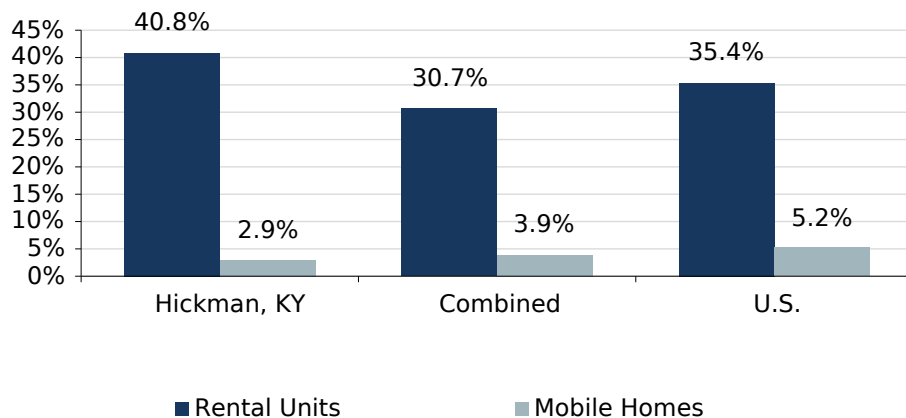
Change in Median Home Value, 2010*-2021* (2022 $s)

- The largest change in median home value occurred in the U.S., which went from $5,338,342 to $264,492.

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Rental & Mobile Homes

What do we measure on this page?

This page reports the numbers of housing units that are either rental units or mobile homes, and provides median home value.

Why is it important?

In general, home ownership contributes to well-being and stability. However, each type of living situation has its own risks and health concerns.

Home ownership is often associated with mental health benefits such as high self-esteem, a sense of control over one's living situation, and financial stability.[13]

The financial stress associated with losing one's home is heightened by people's emotional attachment to their home and their neighborhood.[14]

Homeowners typically pay a greater overall housing cost, but renters pay a larger proportion of their income. The high proportion of household costs for renters has further increased over the past 25 years.[15]

Rental homes are generally not maintained as well as those that are owned. Substandard housing conditions like dampness, mold, and exposure to toxic substances or allergens are linked with compromised health outcomes.[13]

Areas with high-density residences, such as urban areas, tend to have a greater proportion of renters.[1] High density living conditions and large, multistory apartment buildings exacerbate heat-related health stresses.[4]

Mobile homes are more likely to be damaged in extreme weather, which poses a risk for both the structure and the occupants.[4,11]

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed.
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People of Color and Hispanics

	Hickman, KY	Combined	U.S.
Total Population, 2021*	1,976	2,741	329,725,481
White alone	˙1,178	1,943	224,789,109
Black or African American alone	˙765	˙765	41,393,012
American Indian alone	¨2	¨2	2,722,661
Asian alone	¨0	¨0	18,782,924
Native Hawaii & Other Pacific Is. alone	¨0	¨0	615,557
Some other race alone	¨1	¨1	18,382,796
Two or more races	¨30	¨30	23,039,422
Hispanic or Latino (of any race)	10	10	60,806,969
Not Hispanic or Latino	1,966	2,731	268,918,512
Not Hispanic & White alone	1,175	1,940	196,010,370
People of Color and Hispanics	801	801	133,715,111

Percent of Total, 2021*

White alone	˙59.6%	70.9%	68.2%
Black or African American alone	˙38.7%	˙27.9%	12.6%
American Indian alone	¨0.1%	¨0.1%	0.8%
Asian alone	¨0.0%	¨0.0%	5.7%
Native Hawaii & Other Pacific Is. alone	¨0.0%	¨0.0%	0.2%
Some other race alone	¨0.1%	¨0.0%	5.6%
Two or more races	¨1.5%	¨1.1%	7.0%
Hispanic or Latino (of any race)	¨0.5%	¨0.4%	18.4%
Not Hispanic or Latino	99.5%	99.6%	81.6%
Not Hispanic & White alone	˙59.5%	70.8%	59.4%
People of Color and Hispanics	˙40.5%	29.2%	40.6%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

People of Color and Hispanics, Percent of Total, 2021*
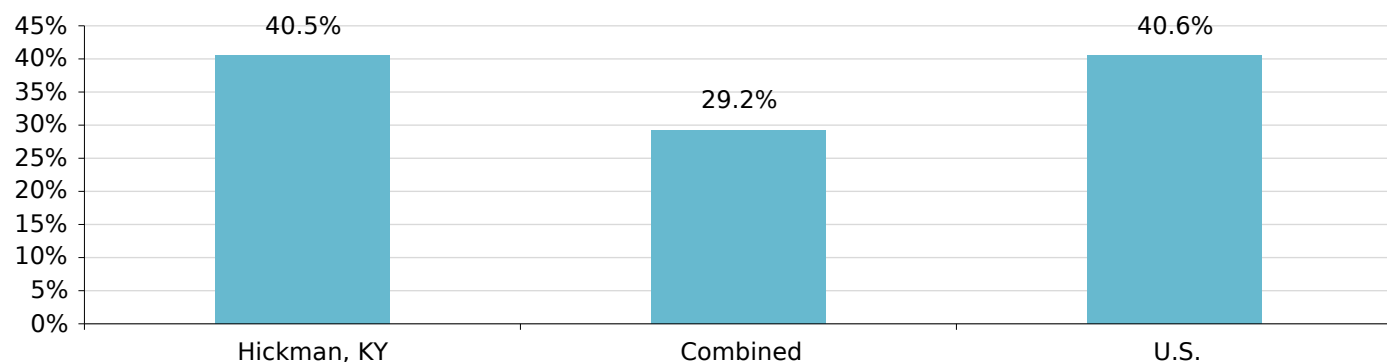
* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

People of Color and Hispanics

What do we measure on this page?

Race is self-identified by Census respondents who choose the race or races with which they most closely identify. Included in "Other Races" are "Asian," "Native Hawaiian or Other Pacific Islander," and respondents providing write-in entries such as multiracial, mixed, or interracial.

Ethnicity has two categories: Hispanic or Latino, and Non-Hispanic or Latino. The federal government considers race and Hispanic origin to be two separate and distinct concepts. Hispanics and Latinos may be of any race.

"People of Color and Hispanics" is calculated by subtracting those who identify as both "Not Hispanic or Latino" and "White alone" from "Total Population."

Why is it important?

Race and ethnicity are strongly correlated with disparities in health, exposure to environmental pollution, and vulnerability to natural hazards.[1]

Research consistently has found race-based environmental inequities, including the tendency for minority populations to live closer to noxious facilities and Superfund sites, and to be exposed to pollution at greater rates than whites.[7, 1]

Many health outcomes are closely related to the local environment. Minority communities often have less access to parks and nutritious food, and are more likely to live in substandard housing.[1]

Minorities tend to be particularly vulnerable to disasters and extreme heat events. This is due to language skills, housing patterns, quality of housing, community isolation, and cultural barriers.[8, 4]

Blacks and Hispanics, two segments of the population that are currently experiencing poorer health outcomes, are an increasing percentage of the US population.[1,9]

Research has identified measurable disparities in health outcomes between various minority and ethnic communities.

Across races, the rates of preventable hospitalizations are highest among black and Hispanic populations. Preventable hospital visits often reflect inadequate access to primary care. These types of hospital visits are also costly and inefficient for the health care system.[5]

Relative to other ethnicities and races, Hispanics and blacks are less likely to have health insurance, but rates of uninsured are dropping for both groups.[10]

Compared to other races, blacks have higher rates of infant mortality, homicide, heart disease, stroke, and heat-related deaths.[5]

Hispanics have higher rates of diabetes and asthma.[5]

American Indians have a distinct pattern of health effects different from blacks and Hispanics. Native populations are less likely to have electricity than the general population.[2] They have high rates of infant mortality, suicide and homicide, and nearly twice the rate of motor vehicle deaths than the U.S. average.[5]

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed. The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

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Language Proficiency

	Hickman, KY	Combined	U.S.
Population 5 years or older, 2021*	1,883	2,602	310,302,360
Speak English "not well"***	**0**	**0**	12,736,062
Speak English "not well"***, percent	**0.0%**	**0.0%**	4.1%
Speak English "not well"***, change in percentage points**, 2010*-2021*	**-0.3**	**-0.2**	-0.6

**For example, if the value is 3% in 2010* and 4.5% in 2015*, the reported change in percentage points is 1.5.

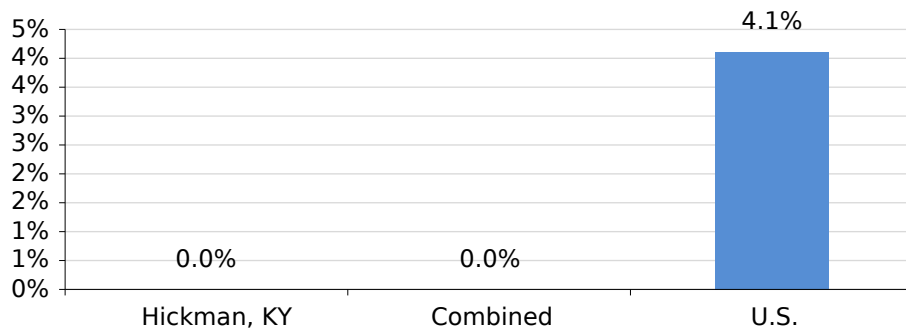*** Includes "not well" and "not well at all".

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
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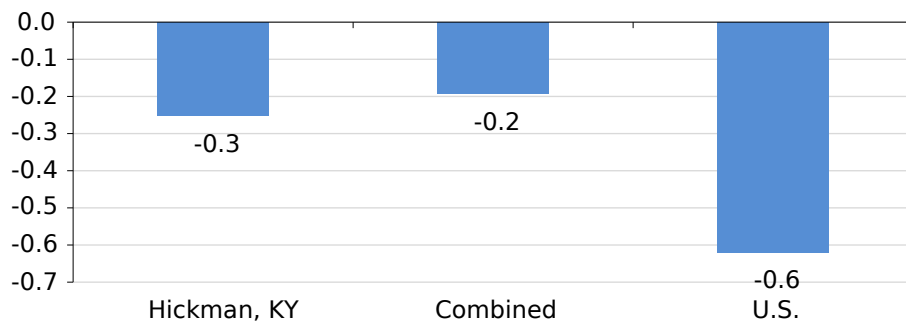
People Who Speak English "Not Well", Percent of Total, 2021*

- The U.S. has the largest share of people who speak English "not well" (4.1%).

People Who Speak English "Not Well", Change in Percentage Points, 2010*-2021*

- The largest change in the share of people who speak English "not well" occurred in the U.S., which went from 4.7% to 4.1%.

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Language Proficiency

What do we measure on this page?

This page reports the results of self-rated English-speaking ability questions in the American Community Survey.

Why is it important?

Many aspects of life in the US assume basic fluency in English. Thus, people with limited language skills are at risk for inadequate access to health care, social services, or emergency services.

A person's ability to take action during an emergency is compromised by language and cultural barriers.[4]

Poor English skills can make it harder to follow directions or interact with agencies.[4]

Lack of language skills can also instill lack of trust for government agencies.

In many industries, poor English skills can make it harder for people to get higher wage jobs.[1]

Language barriers make it harder to obtain medical or social services; and make it more difficult to interact with caregivers.[1]

Limited English skills may result in isolation from other segments of the US population, and social isolation is a health risk.[1] However some minority communities can be very tightly-knit and not isolated, so this risk factor cannot be generalized across all populations.

Young & Elderly Populations

|	Hickman, KY	Combined	U.S.
Total Population, 2021*	1,976	2,741	329,725,481
Under 5 years old	93	139	19,423,121
65 years and older	290	522	52,888,621
80 years and older	**22**	**33**	6,299,788
Percent of Total, 2021*			
Under 5 years old	4.7%	5.1%	5.9%
65 years and older	14.7%	19.0%	16.0%
80 years and older	**1.1%**	**1.2%**	1.9%
Change in Percentage Points, 2010*-2021*			
For example, if the value is 3% in 2010* and 4.5% in 2021*, the reported change in percentage points is 1.5.			
Under 5 years old	1.4	2.1	-0.7
65 years and older	-0.8	1.8	3.3
80 years and older	-0.4	**0.0**	0.2

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
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Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

Population by Group, Percent of Total, 2021*

- The U.S. has the largest share of people under 5 years old (5.9%).

- The U.S. has the largest share of people 80 years and older (1.9%).

■ Under 5 years old   ■ 65 years and older   ■ 80 years and older
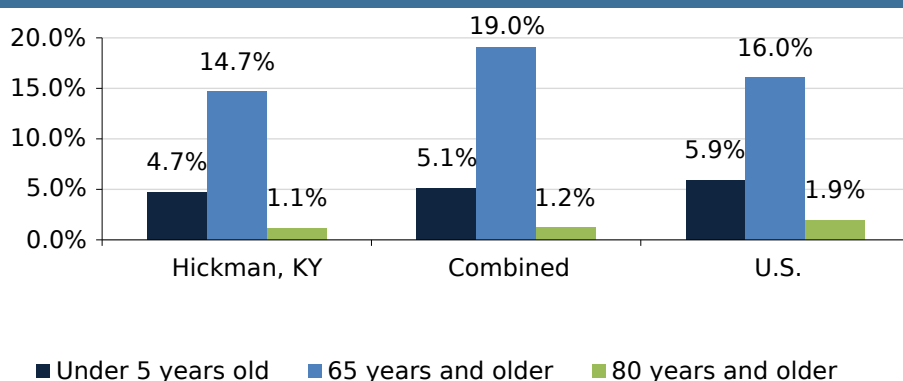
Population by Group, Change in Percentage Points, 2010*-2021*

- The largest change in the share of people under 5 years old occurred in Combined , which went from 2.9% to 4.7%.

- The largest change in the share of people 80 years and older occurred in Hickman, KY, which went from 1.6% to 1.1%.
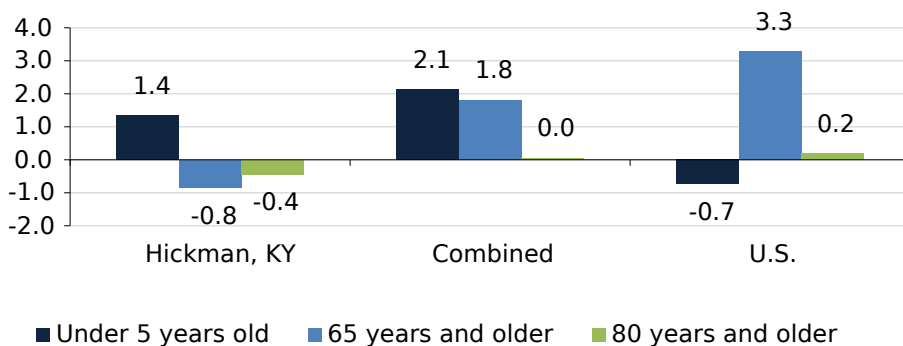
■ Under 5 years old   ■ 65 years and older   ■ 80 years and older

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Young & Elderly Populations

What do we measure on this page?

This page describes the number of people by specific age category.

The "Under 5 years old" category includes individuals younger than 5 years old. The "65 years and older" category includes individuals age 65 and older and the "80 years and older" category includes individuals age 80 and older. The "80 years and older" category is a subset of the "65 years and older" category.

Why is it important?

Young children and older adults both are vulnerable segments of the population. Understanding the age profile of a community can help users determine the types of services likely to be needed.[1]

Children's developing bodies makes them particularly sensitive to health problems and environmental stresses.[1]

Childhood lays the foundations for lifelong health. Poor health during childhood increases the likelihood of problems throughout adulthood.[2]

Because so many factors of a child's life are determined during pregnancy, infancy, and early childhood, children in poverty are an especially vulnerable population. Lack of adequate care through the early phases of life is more prevalent in poor populations.[2]

Children spend more time outside and have a faster breathing rate than adults, so they are more at risk for respiratory problems related to ground level ozone, airborne particulates, wildfire smoke, and allergens. Allergens are associated with climate change due to changing plant communities and longer pollen seasons.[3, 4]

Because their immune systems are not fully developed, children are more sensitive to infectious diseases. Natural disasters can breach public water supplies, compromise sanitation, and spread illness. Children are more vulnerable to these hazards compared to adults.[3]

Older adults also are at increased risk of compromised health related to environmental hazards and climate change.

Age is the single greatest risk factor related to illness or death from extreme heat.[4]

The elderly are more likely to have pre-existing medical conditions or compromised mobility, which reduces their ability to respond to natural disasters.[3]

The likelihood of chronic disease increases with age.[1, 5]

Older adults are more susceptible to air pollution such as ground level ozone, particulate matter, or dust. Increased dust is associated with drought, wildfires, and high wind events.[3, 6]

Educational Attainment

	Hickman, KY	Combined	U.S.
Total Population 25 years or older, 2021*	1,375	1,918	225,152,317
No high school degree	343	405	25,050,356
No high school degree, percent	24.9%	21.1%	11.1%
No high school degree, change in percentage points**, 2010*-2021*	-1.3	-6.0	-3.8

**For example, if the value is 3% in 2010* and 4.5% in 2021*, the reported change in percentage points is 1.5.

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
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Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.

Population with Less than High School Education, Percent of Total, 2021*

- Hickman, KY has the largest share of people with less than a high school education (24.9%).
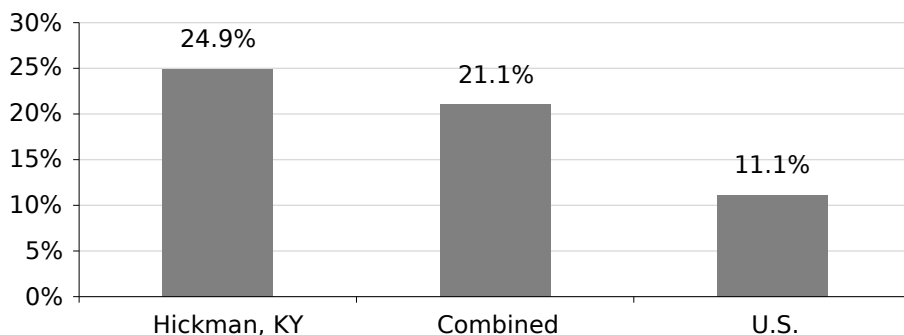
Population with Less than High School Education, Change in Percentage Points, 2010*-2021*

- The largest change in the share of people with less than a high school degree occurred in Combined , which went from 27.1% to 21.1%.
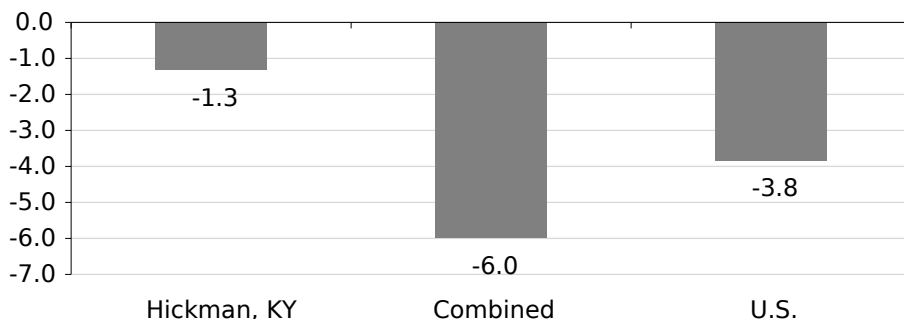
* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Educational Attainment

What do we measure on this page?

This page describes levels of educational attainment, which refers to the highest degree or level of schooling completed by people 25 years and over.

Why is it important?

High school completion is used as a proxy for overall socioeconomic circumstances. Lack of education is strongly correlated with poverty and poor health.

People without a high school degree are more than twice as likely to live in inadequate housing compared to those with some college education.[5]

A study in California found the lack of a high school degree was the factor most closely related to social vulnerability to climate change.[4]

Thirty-eight percent of Americans without a high school degree do not have health insurance, compared to 10 percent with a college degree.[7]

The rate of diabetes is much greater for those without a high school degree. Incidence of this disease is more than double the rate of those who attended education beyond high school.[5]

Binge drinking is most severe among those without a high school degree. This demographic group had the highest risk of binge drinking across all measured categories (such as income, race, ethnicity, or disability status).[5]

Potentially Vulnerable Households

	Hickman, KY	Combined	U.S.
Total Occupied Households, 2021*	647	932	124,010,992
People > 65 years & living alone	0	0	4,698,334
Single female households	151	160	15,273,279
with children < 18 years	133	133	9,436,548
Households with no car	114	114	10,349,174

Percent of Total, 2021*

	Hickman, KY	Combined	U.S.
People > 65 years & living alone	**0.0%**	**0.0%**	3.8%
Single female households	23.3%	17.2%	12.3%
with children < 18 years	20.6%	14.3%	7.6%
Households with no car	17.6%	12.2%	8.3%

Change in Percentage Points, 2010*-2021*

For example, if the value is 3% in 2010* and 4.5% in 2021*, the reported change in percentage points is 1.5.

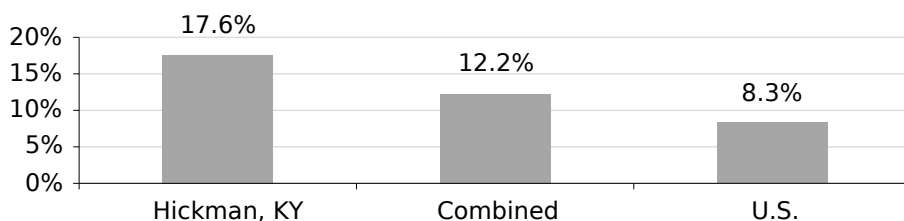|	Hickman, KY	Combined	U.S.
People > 65 years & living alone	-3.5	-3.7	-1.0
Single female households	9.7	2.7	-0.5
with children < 18 years	12.8	5.9	0.0
Households with no car	4.8	1.5	-97.0

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.
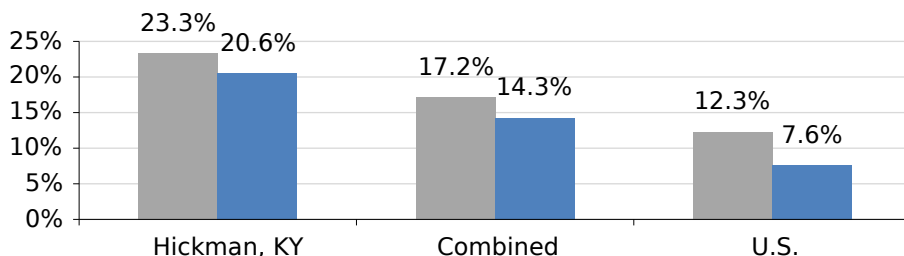
Households with No Car as a Percent of Total Households, 2021*

- The U.S. has the largest share of households with no car (3.8%).

Single Female Households as a Percent of Total Households, 2021*

- Hickman, KY has the largest share of single female households (23.3%).

- Hickman, KY has the largest share of single female households with children (20.6%).

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Potentially Vulnerable Households

What do we measure on this page?

This page describes household types that are associated with increased hardship, including the elderly living alone, single female households, single female households with children, and households without a car.

Why is it important?

Older adults are more likely to have compromised health and are less able to overcome disease. Living alone exacerbates health risks, and many health outcomes are worsened by social isolation.

Social isolation is strongly linked to poor health such as premature death, smaller chances of survival after a heart attack, depression, and greater levels of disability from chronic diseases.[2]

People 65 and older are particularly vulnerable to heat-related illness,[4] which is exacerbated by social isolation.

Households headed by women face challenges related to income, education, and food security. These factors make it more difficult to respond to health, environmental, or climate risks.

Female-headed households are more likely to be living in poverty. This is most prevalent among black, Hispanic, and Native American households.[16]

In 2014, 35 percent of female-headed households were food insecure, compared to 14 percent of all households.[17] Single mothers may be burdened by providing basic needs such as food and housing, which can make the urgency of other risks seem less important.[18]

Single-mother families are disproportionally exposed to hazardous levels of air pollution.[4]

Single mothers tend to be less educated and less affluent than the general population, which puts them at greater risk during natural disasters.[18]

Access to a car is linked with higher wages and more financial stability, and can help families relocate or evacuate in the event of emergencies.

People who own cars are more likely to be employed, work longer hours, and earn more than those who do not.[19]

Access to a car has measurable benefits for those receiving public assistance. Welfare recipients with access to a car were more likely to work more hours and get higher-paying jobs, and had a greater chance of leaving welfare.[20]

During emergencies, natural disasters, and extreme weather events, people who do not have a car are less likely to evacuate or have access to emergency response centers.[4]

During heat waves, people without a car are less able to go to community cooling centers or cooler areas.[4]

Pedestrian fatalities are more than twice as likely in poor urban neighborhoods than in wealthier parts of cities.[21]

Potentially Vulnerable People

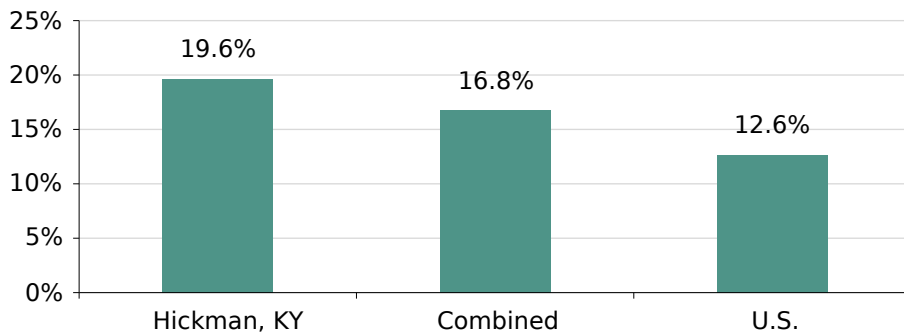|	Hickman, KY	Combined	U.S.
Total civilian noninstitutionalized population, 2021*	1,615	2,380	324,818,565
People w/ disabilities	317	399	41,055,492
People w/o health insurance	**87**	162	27,533,142
Percent of Total, 2021*			
Percent of people w/ disabilities	19.6%	16.8%	12.6%
Percent of people w/o health insurance	**5.4%**	6.8%	8.5%

High Reliability: Data with coefficients of variation (CVs) < 12% are in black to indicate that the sampling error is relatively small.
Medium Reliability: Data with CVs between 12 & 40% are in orange to indicate that the values should be interpreted with caution.
Low Reliability: Data with CVs > 40% are displayed in red to indicate that the estimate is considered very unreliable.
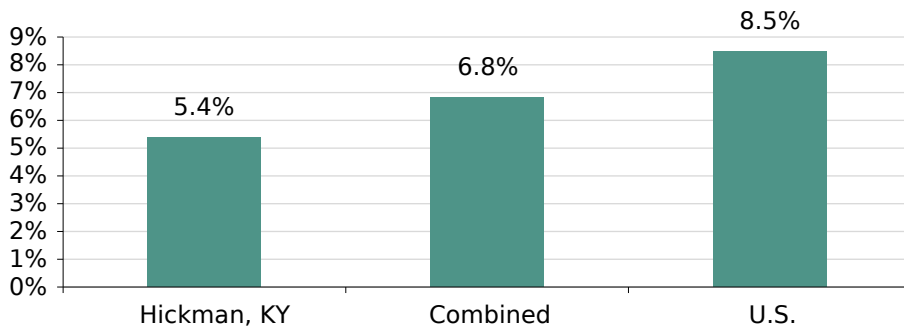
People with Disabilities, Percent of Total, 2021*

- Hickman, KY has the largest share of the noninstitutionalized population that is disabled (19.6%).

People without Health Insurance, Percent of Total, 2021*

- The U.S. has the largest share of the noninstitutionalized population without health insurance (8.5%).

* ACS 5-year estimates used. 2021 represents average characteristics from 2017-2021; 2010 represents 2006-2010.

Potentially Vulnerable People

What do we measure on this page?

This page describes groups of people that are associated with increased hardship, including people with disabilities and people without health insurance.

Why is it important?

Disabled people are subject to health complications that make environmental risks more consequential.

Disabled people are less likely to have health insurance, compared to the non-disabled population.[5]

Being confined to a bed raises heat mortality.[2]

Extreme weather events or natural disasters may result in limited access to medical care. This is particularly consequential for those who already have compromised health.[3]

People who lack health insurance are disadvantaged by several different mechanisms. They may avoid or delay diagnoses, treatment, and/or medication and thus may increase their odds of poor health. They do not have a regular place of care, and they are not benefitting from the standard of care that is afforded many Americans.

Households living in poverty are more likely to be uninsured. More than one quarter of uninsured households live in poverty.[10]

People with lower educational attainment are more likely to be uninsured.[5]

People without health insurance are less likely to have a regular source of care, and less likely to receive preventive, primary, and specialty care services.[32,33] This risk is particularly evident among racial and ethnic minorities.[5]

People without health insurance are more likely to use the hospital emergency department for standard health care needs.[5]

About 25% of uninsured adults report having either delayed or gone without care in the past year because of costs.[23]

Uninsured people are more likely to skip medications due to the costs, and some providers are less likely to prescribe medications to uninsured patients.[24]

People who do not have health insurance suffer greater health consequences from air pollution compared to those with insurance.[4]

CHANGES IN BOUNDARIES: Data describing change over time can be misleading when geographic boundaries have changed.
The Census provides documentation about changes in boundaries at this site: www.census.gov/geo/reference/boundary-changes.html

Find more reports like this at headwaterseconomics.org/apps/neighborhoods-at-risk   Data and Graphics | Page 21

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