Maryland Department of Housing and Community Development
Just Communities Data and Viewer Development
Methodology Report for Version 1.0

April 23, 2025

Eastern Shore Regional GIS Cooperative
Salisbury University

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Introduction

The Maryland Department of Housing and Community Development Division of Just Communities (DHCD) partnered with the Eastern Shore Regional GIS Cooperative (ESRGC) to develop a methodology, data analysis and viewer to support Maryland House Bill 241/State Bill 308. The purpose of the data and viewer is to provide data-driven evidence for Maryland policy makers to identify opportunities for collaboration, track progress, and participate in the co-creation of livable, just places. All decisions made through the data development process reflect the goals of the Division of Just Communities - to build and strengthen partnerships in communities by acknowledging and accepting responsibility for negative effects of past policy decisions that have adversely impacted socioeconomically marginalized and minoritized communities for multiple generations.

This methodology document provides details on the selection of data sources and analysis used to select the indicators and threshold of Just Communities.

Geographic Coverage

As a project supporting State-wide decision-making, the geographic focus of this project is the State of Maryland. Although it is important to recognize not all data sources selected for this project are available consistently across Maryland, the historic nature of some data sources and the legislative directive requires the data to be included. Spatial data developed during this project will assist in the identification of areas that meet the definition of Just Communities.

Technical Note

All analysis for this project was completed using Esri ArcGIS Pro 3.4.x. The ESRGC developed models to streamline the data analysis process.

Determining Criteria & Identifying of Authoritative Data Sources

Legislative Criteria

In an effort to align the authoritative data sources with the reference legislation, DHCD explored data source options by asking, “What is the legislatively mandated criteria corresponding to Just

Communities?" This approach required the criteria, referenced from the legislation, to include Priority Funding Areas. DHCD separated the legislation into the following criteria:

1. Priority Funding Areas
2. Homeownership
3. Property value trends
4. Commercial/Residential vacancy trends
5. Business or Housing investment trends
6. History of Redlining
7. History of exclusionary zoning
8. History of racially restrictive covenants
9. History of demolition of residential neighborhoods via eminent domain
10. History of demolition of residential neighborhoods via State of federal funds
11. State imprisonment rate
12. Proximity to Superfund site
13. Exposure to lead-based paint
14. Rates of asthma among adults

Authoritative Data Sources

The ESRGC reviewed the legislated criteria provided by DHCD and researched potential data sources to be included. Research included the original list of data sources provided in the early project planning stages and other data sources that may align more appropriately with the legislated criteria. The ESRGC researched data sources by asking, "What data will be used?" and "Who manages the data?" The ESRGC selected the following authoritative data sources to support the criteria:

Legislatively Mandated Criteria	Authoritative Data Source	Data Owner/Manager
Priority Funding Area	Maryland Priority Funding Areas	MD MDP
Homeownership	ACS Housing Occupancy	US Census Bureau
Property Value Trends	ACS Housing Occupancy	US Census Bureau
Commercial/Residential Vacancy	ACS Housing Occupancy	US Census Bureau
Business or Housing Investment	-	-
Redlining	Home Owners' Loan Corporation	University of Richmond
Exclusionary Zoning	-	-
Racially Restrictive Covenants	-	-
Demolition via Eminent Domain	-	-
Demolition via State/Federal Funds	-	-
State Imprisonment Rate	Prison Policy	Prison Policy
Proximity to federal Superfund site	Climate & Economic Justice Screening Tool	White House Council on Environmental Quality
Exposure to Lead-Based Paint	Deteriorated Paint Index	US Department of Housing and Urban Development
Rates of Asthma Among Adults	Climate & Economic Justice Screening Tool	White House Council on Environmental Quality

Table 1: Authoritative Data Sources

Criteria Lacking Authoritative Data

Researching data sources to support the legislatively mandated objectives highlighted four criteria where data is not currently available. The criteria include business or housing investment trends, areas with a history of exclusionary zoning, areas with a history of racially restrictive covenants, areas with a history of demolition of residential neighborhoods via eminent domain, and areas with a history of residential neighborhoods via State or federal funds. Although this data was not readily available for this project, it may become available for a future analysis and project update. Recognizing a need to develop a recommended Just Communities threshold, DHCD determined the project and analysis would continue with all available data.

Data Access Note

DHCD and the ESRGC aimed to identify authoritative data sources managed or owned by organizations with a long-standing reputation of stability and responsible data management. As of January 22, 2025 the Climate & Economic Justice Screening Tool is no longer available on the White House website. The ESRGC completed downloading all project data when the tool was still publicly available. Although the data is not available through the White House Council on Environmental Quality, many institutions (including GitHub) continue to support this tool and make this data available for download.

Legislatively Mandated Definitions

Two of the criteria identified in legislation include a definition of what data should be included. The State imprisonment rate is defined as areas with an imprisonment rate higher than 750 per 100,000 persons. The rates of asthma among adults are defined as areas asthma rates among adults that are higher than the 90th percentile for the State. The ESRGC maintained these legislatively mandated data definitions for the project.

The Just Communities legislation also mentions "Proximity to a federal Superfund site." In response to national attention to human and environmental health risks from contaminated hazardous waste, Congress established the Comprehensive Environmental Response, Compensation and Liability Act (informally called Superfund) in 1980. The US Department of Housing and Urban Development defines proximity to Superfund sites as "the proportion of a neighborhood located within one kilometer or 0.62 miles of a superfund site that was active in 2014." This definition was used for this analysis as a higher proximity to a Superfund site will have a negative impact on a community.

Non-continuous Data Sources

Not all data included in the Just Communities analysis is spatially consistent, meaning not all data is available across Maryland. Two of the data sources selected for this analysis do not have data that covers the entire state: the data selected to represent a history of redlining and the data selected to represent exposure to lead-based paint.

Redlining

Between 1935 and 1940, the federal government's Home Owners' Loan Corporation (HOLC) created maps for over 200 cities – maps that rate the supposed risk related to mortgage lending in these neighborhoods. The maps graded neighborhoods based on race and ethnicity, citing "infiltration of inhabitants" and "detrimental influences" making it near impossible for people in these areas to access financing through a mortgage. The HOLC maps focused on cities with a population of at least 40,000. At the time Baltimore City met this criteria in Maryland, identifying Baltimore as the only city in Maryland

with HOLC data available. The University of Richmond's Mapping Inequality: Redlining in New Deal America project created spatial data based on the Baltimore City HOLC map and the ESRGC used this data to represent areas with a history of redlining for the Just Communities project.

During project development, the ESRGC presented the redlining data to a larger stakeholder team at DHCD. A participant identified maps of Hagerstown and Frederick, from the Federal Housing Administration, which group neighborhoods by average monthly rental costs. This information was not included in the Just Communities project as the spatial data would need to be developed.

Exposure to Lead-Based Paint

The ESRGC identified the U.S. Department of Housing and Urban Development's Deteriorated Paint Index (DPI) data to represent areas with an estimated exposure to lead-based paint. This data uses a metric to predict potential exposure to lead-based paint for pre-1980 households using microdata from 2011 American Housing Survey and the 2009-2013 American Community Survey to develop a predicted risk measure. Some areas in Maryland do not have DPI coverage as these areas did not meet the index criteria.

Suggested Data Sources

The ESRGC initially selected Median Home Value data to support the legislatively mandated Property Value criteria. The concern with using this data is low Median Home Value may indicate an area with affordable housing rather than low income. A participant in a stakeholder team presentation suggested the newly released American Community Survey Severe House Cost Burden for Renters and Homeowners to better represent Property Value for this analysis. The ESRGC confirmed this data selection and updated the project details. The Weighted Quartiles approach is the only analysis to include this data.

Upon data review, DHCD requested the addition of Racially and Ethnically Concentrated Areas of Poverty (R/ECAP) data to include areas where a significant portion of the current population is both non-white and living below the poverty line. The ESRGC confirmed this data selection and updated the project details. The Weighted Quartiles approach is the only analysis to include this data.

Finalized Authoritative Data Source Details

Once the authoritative data sources were selected, the ESRGC identified how the data would support the analysis.

Legislatively Mandated Criteria	Data Definition
Priority Funding Area	Maryland Priority Funding Areas
Homeownership	Percent of Occupied House Units that are Owner Occupied
Property Value Trends	Severe House Cost Burden for Renters & Homeowners
-	Racially and Ethnically Concentrated Areas of Poverty (R/ECAPs)
Commercial/Residential Vacancy	Percent of Housing Units that are Vacant
History of Redlining	Home Owners' Loan Corporation
State Imprisonment Rate	Imprisonment Rate > 750/100,000 persons
Proximity to federal Superfund site	Superfund Proximity, 50 – 100 percentiles
Exposure to Lead-Based Paint	Percentage of Housing Units with Large Areas of Deteriorated Paint

Legislatively Mandated Criteria	Data Definition
Rates of Asthma Among Adults	Rate of Asthma Among Adults > 90th Percentile for the State

Table 2: Finalized Authoritative Data Source Details

See Appendix A for all data source details. See Appendix B for criteria and data definitions.

Determining Just Communities Criteria Weights

Once all authoritative data sources were finalized, the ESRGC began developing a matrix to analyze the data. This matrix will allow the project team to add significance to data layers. DHCD requested several options to review: Unweighted, Weighted Socioeconomic, Weighted Exposure, and Weighted Quartiles. Due to the fluid nature of this project and presentation of data sources to project stakeholders, not all data sources are represented in each matrix option.

Unweighted

The Unweighted approach treats all data layers treated equally, without any assigned importance. Unweighted data is appropriate when all data layers are considered equally important or when there is no reason to believe that some data should be given more weight than others.

For this analysis, each data layer is assigned a value of 1, the data is stacked on top of one another, and the overlapping areas are added together. This means areas with the most overlap will have the highest value. This approach highlights areas with multiple areas of overlap but does not allow data to be considered more or less significant.

Just Communities Criteria	Weight	Explanation
Percent of Occupied Housing Units that are Owner-Occupied below State Average	1	Homeownership trends indicate economic stability.
Median Home Value less than State Average	1	Property value trends significantly influence economic and housing equity.
Percent of Housing Units that are Vacant (Vacancy Rate), Vacancy Rate greater than State Average	1	Vacancy rates reflect community economic health.
Areas Deemed “Hazardous” in Historical Redlining	1	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed “Definitely Declining” in Historical Redlining	1	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed “Still Desirable” in Historical Redlining	1	Historical redlining is a foundational determinant of long-term inequality.
Superfund Proximity 95 - 100 percentile	1	Environmental contamination poses direct health risks.
Superfund Proximity 90 – 95 percentile	1	Environmental contamination poses direct health risks.
Superfund Proximity 80 - 90 percentile	1	Environmental contamination poses direct health risks.
Superfund Proximity 50 - 80 percentile	1	Environmental contamination poses direct health risks.

Just Communities Criteria	Weight	Explanation
Imprisonment rate > 750/100,000 people	1	Imprisonment rates highlight systemic social inequities.
Deteriorated Paint Index, >= 1.41% State Average	1	Exposure to lead-based paint has severe health impacts.
Rate of Asthma Among adults higher than 90th percentile	1	Health conditions, such as asthma, reflect direct environmental and public health issues.

Table 3: Unweighted Matrix

The output of the Unweighted analysis is a State-wide data layer with a Just Community Score. The Just Community Score is the value of the data weights in Table 4 added together. The final step in this process is to clip (or limit) the data results to areas within Maryland Priority Funding Areas.

The Just Communities Score for this Unweighted analysis ranges from 1 to 9, where a low Just Community Score analysis results indicate low significance and a high Just Community Score indicates high significance.

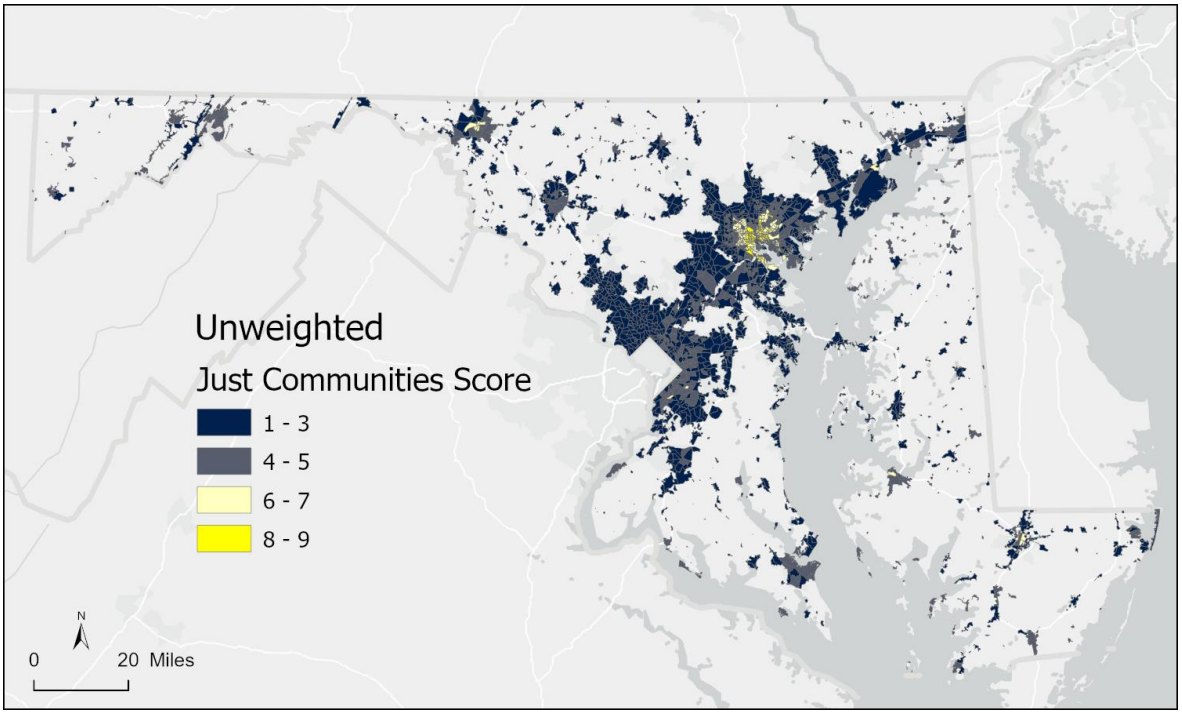

Figure 1: Unweighted Output

The Unweighted analysis proved to be a powerful visual tool for review. This approach highlighted the need for a weighted approach as not all data is considered to have the same relevance or significance. As shown in Figure 1 above, Baltimore City is the main region where the Just Community Score is greater than or equal to 7, meaning the available data is overrepresented in this area and underrepresented beyond Baltimore City. The Unweighted approach was not selected for the Just Communities project.

Weighted Socioeconomic

The Weighted Socioeconomic approach grouped data into categories of high, medium, and low significance. For this analysis, each data layer is assigned a value of based on high, medium, and low

significance, the data is stacked on top of one another, and the overlapping areas are added together. This means areas with the most overlap will have the highest value. This approach highlights areas of overlap and allows data to be considered more or less significant.

High Significance (≥9): Variables with significant and direct impacts on health, safety, or environmental justice, which are foundational to addressing disparities and inequalities.

Medium Significance (5 – 8): Variables that reflect socioeconomic conditions, systemic inequalities, or community well-being. These are important but have less immediate or direct effects compared to high-priority factors.

Low Significance (≤4): Variables that are indirect, represent secondary impacts, or provide contextual information. These variables often complement high- and medium-priority factors but are not standalone indicators of justice.

Just Communities Criteria	Weight	Category	Explanation
Percent of Occupied Housing Units that are Owner-Occupied below State Average	10	High	Homeownership trends indicate economic stability.
Median Home Value less than State Average	10	High	Property value trends significantly influence economic and housing equity.
Percent of Housing Units that are Vacant (Vacancy Rate), Vacancy Rate greater than State Average	9	High	Vacancy rates reflect community economic health.
Areas Deemed “Hazardous” in Historical Redlining	10	High	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed “Definitely Declining” in Historical Redlining	7	Medium	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed “Still Desirable in Historical Redlining	3	Low	Historical redlining is a foundational determinant of long-term inequality.
Superfund Proximity 95 - 100 percentile	10	High	Environmental contamination poses direct health risks.
Superfund Proximity 90 – 95 percentile	8	Medium	Environmental contamination poses direct health risks.
Superfund Proximity 80 - 90 percentile	6	Medium	Environmental contamination poses direct health risks.
Superfund Proximity 50 - 80 percentile	4	Low	Environmental contamination poses direct health risks.
Imprisonment rate > 750/100,000 people	9	High	Imprisonment rates highlight systemic social inequities.
Deteriorated Paint Index, >= 1.41% State Average	5	Medium	Exposure to lead-based paint has severe health impacts.
Deteriorated Paint Index, < 1.41% State Average	4	Low	Exposure to lead-based paint has severe health impacts.
Rate of Asthma Among adults higher than 90th percentile	5	Medium	Health conditions, such as asthma, reflect direct environmental and public health issues.

Table 4: Weighted Socioeconomic Matrix

The output of the Weighted Socioeconomic analysis is a State-wide data layer with a Just Community Score. The Just Community Score is the value of the data weights in Table 5 added together. The final step in this process is to clip (or limit) the data results to areas within Maryland Priority Funding Areas.

The Just Communities Score for this Weighted Socioeconomic analysis ranges from 4 to 72, where a low Just Community Score analysis results indicate a low significance and a high Just Community Score indicates high significance.

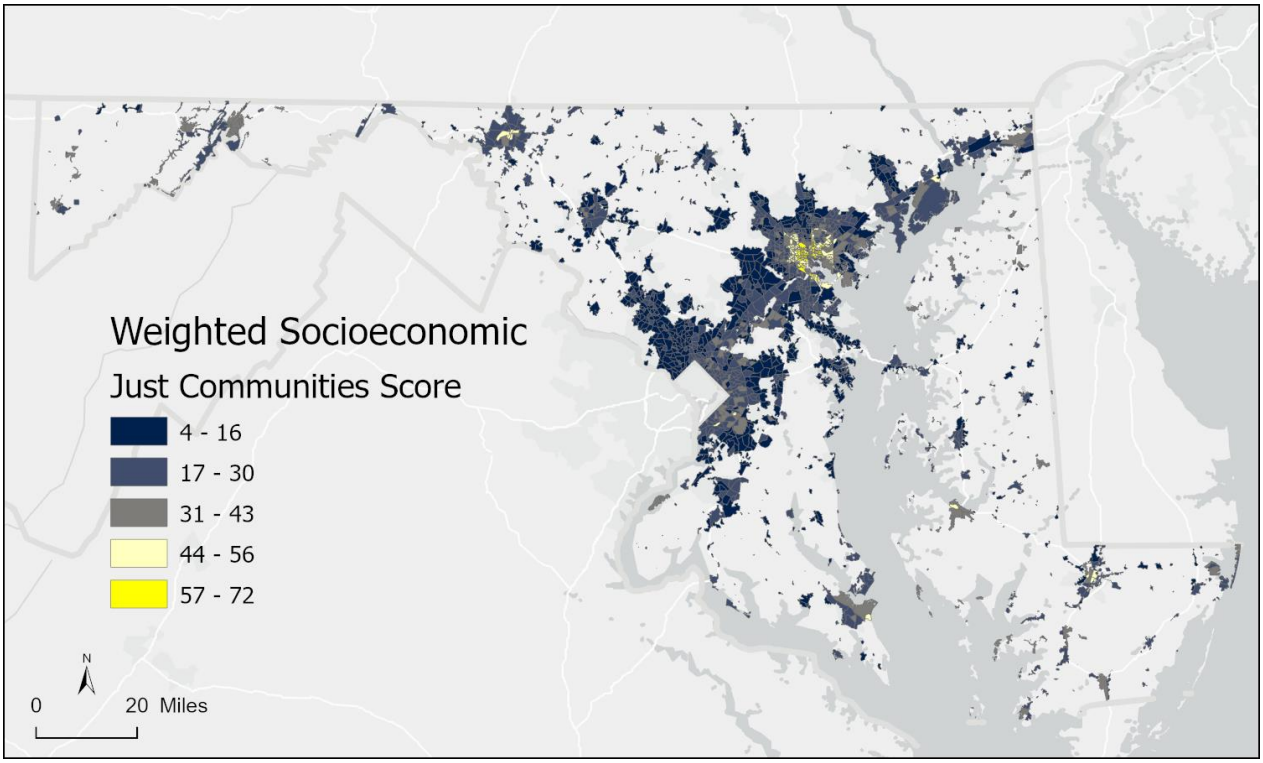

Figure 2: Weighted Socioeconomic Output

The Weighted Socioeconomic analysis was the first attempt to include weights for the identified criteria. This approach reinforced the need for a weighted approach as not all data is considered to have the same relevance or significance. As shown in Figure 2 above, the Just Community Scores have a greater range with higher Just Community Scores across Maryland. The Weighted Socioeconomic approach was not selected for the Just Communities project.

Weighted Exposure

The Weighted Exposure approach grouped data into categories of high, medium, and low significance based on variables most of the population is exposed to. For this analysis, each data layer is assigned a value of based on high, medium, and low exposure significance, the data is stacked on top of one another, and the overlapping areas are added together. This means areas with the most overlap will have the highest value. This approach highlights areas of overlap and allows data to be considered more or less significant based on exposure to variables.

High Significance (≥9): High importance is determined by the exposure to a variable most of the population is exposed to.

Medium Significance (5 – 8): Medium importance is determined by the proximity to a variable only some of the population is exposed to.

Low Significance (≤4): Low importance is determined by the proximity to a variable a limited population is exposed to.

Just Communities Criteria	Weight	Category	Explanation
Percent of Occupied Housing Units that are Owner-Occupied below State Average	12	High	Homeownership trends indicate economic stability.
Median Home Value less than State Average	14	High	Property value trends significantly influence economic and housing equity.
Percent of Housing Units that are Vacant (Vacancy Rate), Vacancy Rate greater than State Average	8	Medium	Vacancy rates reflect community economic health.
Areas Deemed "Hazardous" in Historical Redlining	8	Medium	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed "Definitely Declining" in Historical Redlining	4	Low	Historical redlining is a foundational determinant of long-term inequality.
Areas Deemed "Still Desirable in Historical Redlining	2	Low	Historical redlining is a foundational determinant of long-term inequality.
Superfund Proximity 95 - 100 percentile	9	Medium	Environmental contamination poses direct health risks.
Superfund Proximity 90 – 95 percentile	8	Medium	Environmental contamination poses direct health risks.
Superfund Proximity 80 - 90 percentile	4	Low	Environmental contamination poses direct health risks.
Superfund Proximity 50 - 80 percentile	2	Low	Environmental contamination poses direct health risks.
Imprisonment rate > 750/100,000 people	10	High	Imprisonment rates highlight systemic social inequities.
Deteriorated Paint Index, >= 1.41% State Average	10	High	Exposure to lead-based paint has severe health impacts.
Rate of Asthma Among adults higher than 90th percentile	12	High	Health conditions, such as asthma, reflect direct environmental and public health issues.

Table 5: Weighted Exposure Matrix

The output of the Weighted Exposure analysis is a State-wide data layer with a Just Community Score. The Just Community Score is the value of the data weights in Table 6 added together. The final step in this process is to clip (or limit) the data results to areas within Maryland Priority Funding Areas.

The Just Communities Score for this Weighted Exposure analysis ranges from 1 to 86, where a low Just Community Score analysis results indicate a low significance and a high Just Community Score indicates high significance.

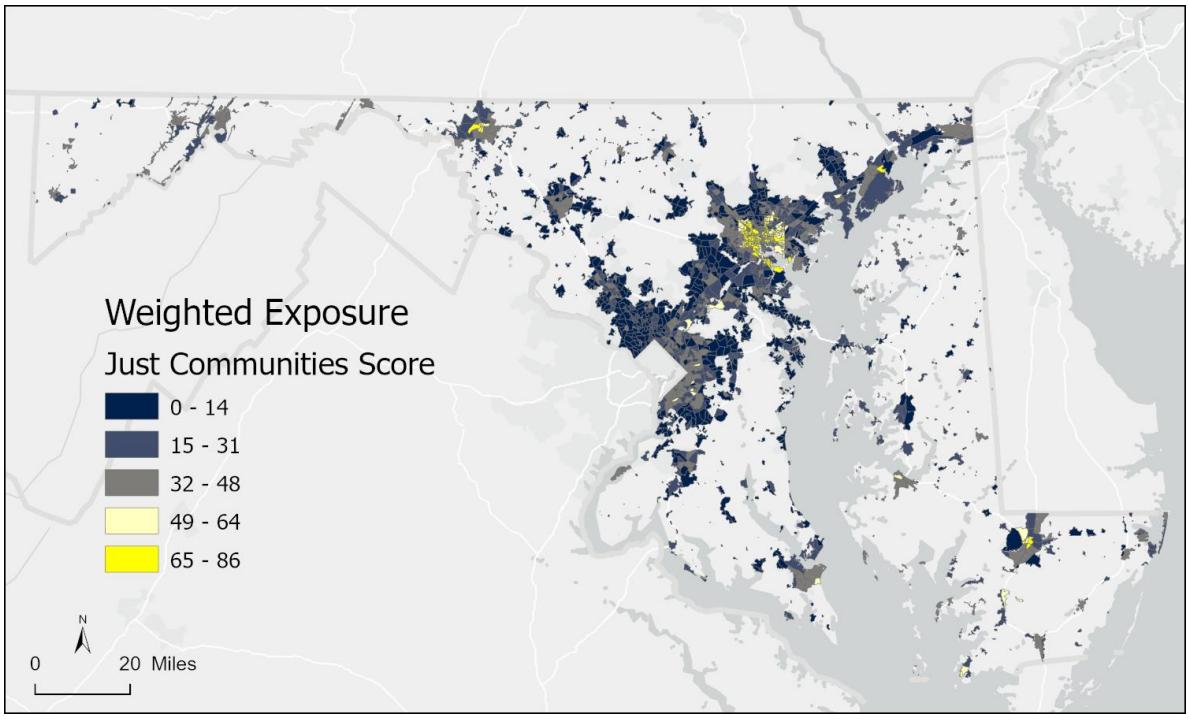

Figure 3: Weighted Exposure Output

The Weighted Exposure weighted analysis continued to be a valuable step in data review. This approach supported the need for a weighted approach to this analysis as not all data is considered to have the same relevance or significance. The Weighted Exposure approach was not selected for the Just Communities project.

Weighted Quartiles

The Weighted Quartiles approach grouped most data into quartiles, meaning the data is in four groups of more-or-less equal size. For this analysis, each data layer is assigned a value ranging from 0.5, indicating the criteria has less impact on an area, to 4, indicating the criteria has a significant impact on the area. Lower values of 0.5 – 1 were assigned to the first quartile and a higher value of 2 or 4 was assigned to the fourth quartile. Next, the data is stacked on top of one another and the overlapping areas are added together. This means areas with the most overlap will have the highest value. This approach highlights areas of overlap and allows a more balanced and defensible approach to weighting.

The Severe House Cost Burden for Homeowners and Renters was introduced for this analysis after a presentation with DHCD stakeholders. This data indicates homeowners and renters spending 30% and 50% of their income on housing by Census Tract. The project team determined the data with 50% of their incoming on housing would be the best fit for this analysis. After several reviews, this data was also separated into two categories, renters and homeowners, to prevent the house cost burden data overweighting the analysis. Because the data is available at the Census Tract, maintaining a whole number to the weight may overstate the importance of this data. To prevent this, the renter and homeowner house cost burden data used a half point system in the matrix.

The Racially/Ethnically Concentrated Areas of Poverty (R/ECAP) data was also introduced to the project at this stage. DHCD identified this data to indicate Census Tracts where a significant portion of the

population is both non-white and living below the poverty line. This definition is often used to identify areas where there is a concentration of poverty and racial/ethnic minorities to help inform policy decisions.

At this point in the project the ESRGC presented a new approach for the redlining data. Rather than maintain categories of the data, which continued to increase the significance of this data for Baltimore City, the ESRGC proposed using the data as one source and identifying any Census Tract that intersects or overlaps the redline data as "areas with a history of redlining." DHCD approved this suggestion.

Data Conversion

Two of the authoritative data sources selected for this project are available from the Climate and Economic Justice Screening Tool from the White House Council on Environmental Quality. The data developed for this tool was based on 2010 census tracts. This introduced an issue for the other data sources based on 2020 census tracts when the project team determined the resulting data should be based on census tracts. Slight changes of the census tract geometry between 2010 and 2020 required the ESRGC to adjust the 2010 data to 2020 census tract geometry for data consistency. For this process, if a 2010 census tract was split in the 2020 data, the required values were applied to both 2020 census tracts. If two 2010 census tracts were merged for the 2020 data the average of the two 2010 required values were applied to the 2020 census tract.

Just Communities Criteria	Weight	Explanation
Percent of Occupied Housing Units that are Owner-Occupied: >84 - 100	1	First quartile of percent of occupied housing units that are owner occupied
Percent of Occupied Housing Units that are Owner-Occupied: >67.9-84	2	Second quartile of percent of occupied housing units that are owner occupied
Percent of Occupied Housing Units that are Owner-Occupied: > 45.8-67.9	3	Third quartile of percent of occupied housing units that are owner occupied
Percent of Occupied Housing Units that are Owner-Occupied: 0 - 45.8	4	Fourth quartile of percent of occupied housing units that are owner occupied
Severe House Cost Burden - Renters (above 50% of income) % of households (0-1.59)	0.5	First quartile of severe house cost burden of renters
Severe House Cost Burden - Renters (above 50% of income) % of households (1.6-5.28)	1	Second quartile of severe house cost burden of renters
Severe House Cost Burden - Renters (above 50% of income) % of households (5.29-12.077)	1.5	Third quartile of severe house cost burden of renters
Severe House Cost Burden - Renters (above 50% of income) % of households (12.078-57.7)	2	Fourth quartile of severe house cost burden of renters
Severe House Cost Burden - Homeowners (above 50% of income) % of households (0-3.389)	0.5	First quartile of severe house cost burden of homeowners
Severe House Cost Burden - Homeowners (above 50% of income) % of households (3.39-5.37)	1	Second quartile of severe house cost burden of homeowners

Just Communities Criteria	Weight	Explanation
Severe House Cost Burden - Homeowners (above 50% of income) % of households (5.371-8.11)	1.5	Third quartile of severe house cost burden of homeowners
Severe House Cost Burden - Homeowners (above 50% of income) % of households (8.11-26.57)	2	Fourth quartile of severe house cost burden of homeowners
Racially or Ethnically Concentrated Area of Poverty (R/ECAP)	1	N/A
Percent of Housing Units that are Vacant: 0 - 2.5	1	First quartile of percent of housing units that are vacant
Percent of Housing Units that are Vacant: >2.5-5.3	2	Second quartile of percent of housing units that are vacant
Percent of Housing Units that are Vacant: >5.3-9.3	3	Third quartile of percent of housing units that are vacant
Percent of Housing Units that are Vacant: >9.3-90.7	4	Fourth quartile of percent of housing units that are vacant
Areas Identified as having a history of redlining	1	N/A
Superfund Proximity: 50 - 80 percentile	1	First quartile of proximity to a Superfund site
Superfund Proximity: 80 - 90 percentile	2	Second quartile of proximity to a Superfund site
Superfund Proximity: 90 - 95 percentile	3	Third quartile of proximity to a Superfund site
Superfund Proximity: 95 - 100 percentile	4	Fourth quartile of proximity to a Superfund site
Imprisonment Rate, >750 per 100,000 (>754 - 1009)	1	First quartile of imprisonment rate >750 per 100,000 people
Imprisonment Rate, >750 per 100,000 (1,010 – 1,383)	2	Second quartile of imprisonment rate >750 per 100,000 people
Imprisonment Rate, >750 per 100,000 (1,384 – 2,079)	3	Third quartile of imprisonment rate >750 per 100,000 people
Imprisonment Rate, >750 per 100,000 (2,080 – 8,000)	4	Fourth quartile of imprisonment rate >750 per 100,000 people
Exposure to lead based paint (>0.84 - 1.13%)	1	First quartile of predicted percentage of housing units with large areas of deteriorated paint
Exposure to lead based paint (>1.134 - 1.33%)	2	Second quartile of predicted percentage of housing units with large areas of deteriorated paint
Exposure to lead based paint (>1.331 - 1.69%)	3	Third quartile of predicted percentage of housing units with large areas of deteriorated paint
Exposure to lead based paint (>1.695 - 3.034%)	4	Fourth quartile of predicted percentage of housing units with large areas of deteriorated paint
Rate of Asthma Among Adults Higher than 90th percentile (0.9-0.93)	1	First quartile of 90th percentile of adults with asthma

Just Communities Criteria	Weight	Explanation
Rate of Asthma Among Adults Higher than 90th percentile (0.93-0.96)	2	Second quartile of 90th percentile of adults with asthma
Rate of Asthma Among Adults Higher than 90th percentile (0.96-0.98)	3	Third quartile of 90th percentile of adults with asthma
Rate of Asthma Among Adults Higher than 90th percentile (0.98-0.99)	4	Fourth quartile of 90th percentile of adults with asthma

Table 6: Weighted Quartiles Matrix

The output of the Weighted Quartiles analysis is a State-wide data layer with a Just Community Score. The Just Community Score is the value of the data weights in Table 7 added together. The final step in this process is to clip (or limit) the data results to areas within Maryland Priority Funding Areas.

The Just Communities Score for this Weighted Quartiles analysis ranges from 1 to 26, where a low Just Community Score analysis results indicate a low significance and a high Just Community Score indicates high significance. This approach was the first analysis to convert the Just Community Score output to census tracts. The Weighted Quartiles analysis resulted in 1,439 census tracts. The following tables displays the number of census tracts in each Just Community Score:

Just Community Score	Number of Census Tracts
1	4
2	2
4	4
4.5	14
5	31
5.5	31
6	53
6.5	47
7	67
7.5	60
8	55
8.5	74
9	62
9.5	63
10	65
10.5	63
11	67
11.5	62
12	53
12.5	76
13	65
13.5	59
14	40
14.5	56
15	22
15.5	38
16	19

Just Community Score	Number of Census Tracts
16.5	25
17	10
17.5	18
18	8
18.5	15
19	8
19.5	12
20	10
20.5	14
21	7
21.5	8
22	11
22.5	10
23	8
23.5	8
24	3
24.5	3
25.5	2
25	1
26	1

Table 7: Weighted Quartiles Census Tracts

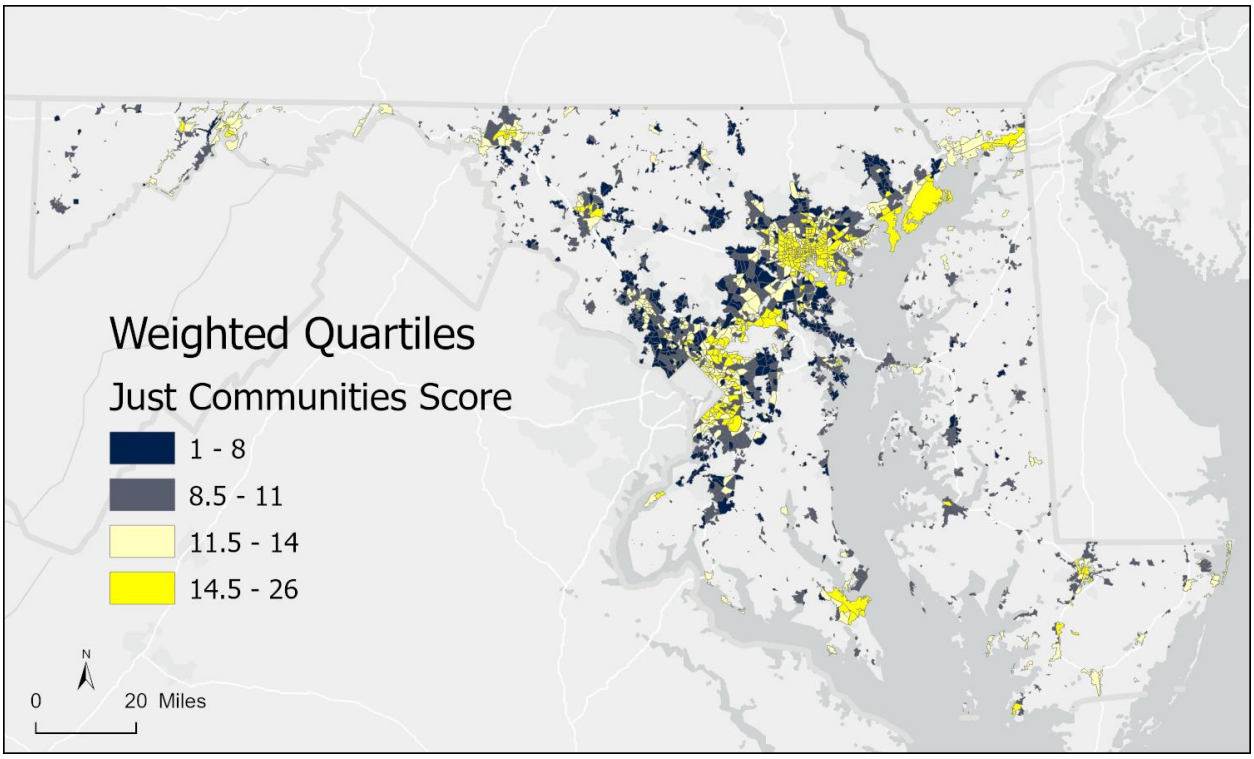

Figure 4: Weighted Quartiles Output

The Weighted Quartile approach provided a balanced approach to data analysis. This approach highlighted the need for a weighted approach to this analysis as not all data is considered to have the same relevance or significance. Creating categories for most of the data sources by quartiles created a defensible and easily repeatable approach for Just Communities data development. This approach was selected for the Just Communities project.

Just Communities Score

The Just Communities Scores provide a way to understand the overlapping criteria and visualize the results. After multiple reviews and internal discussions, DHCD identified the threshold at which areas may qualify as a Just Community is any area with a Just Community Score of 13.5 or greater. Areas that meet this threshold will be presented as suggested Just Communities to the Governor. Limiting the Just Communities Score to this threshold reduced the number of census tracts from 1,439 to 419.

Just Communities Score	Number of Census Tracts
13.5	59
14	40
14.5	56
15	22
15.5	38
16	19
16.5	25
17	10
17.5	18
18	8
18.5	15
19	8
19.5	12
20	10
20.5	14
21	7
21.5	8
22	11
22.5	10
23	8
23.5	8
24	3
24.5	3
25.5	2
25	1
26	1

Table 8: Just Communities Score Threshold Census Tracts

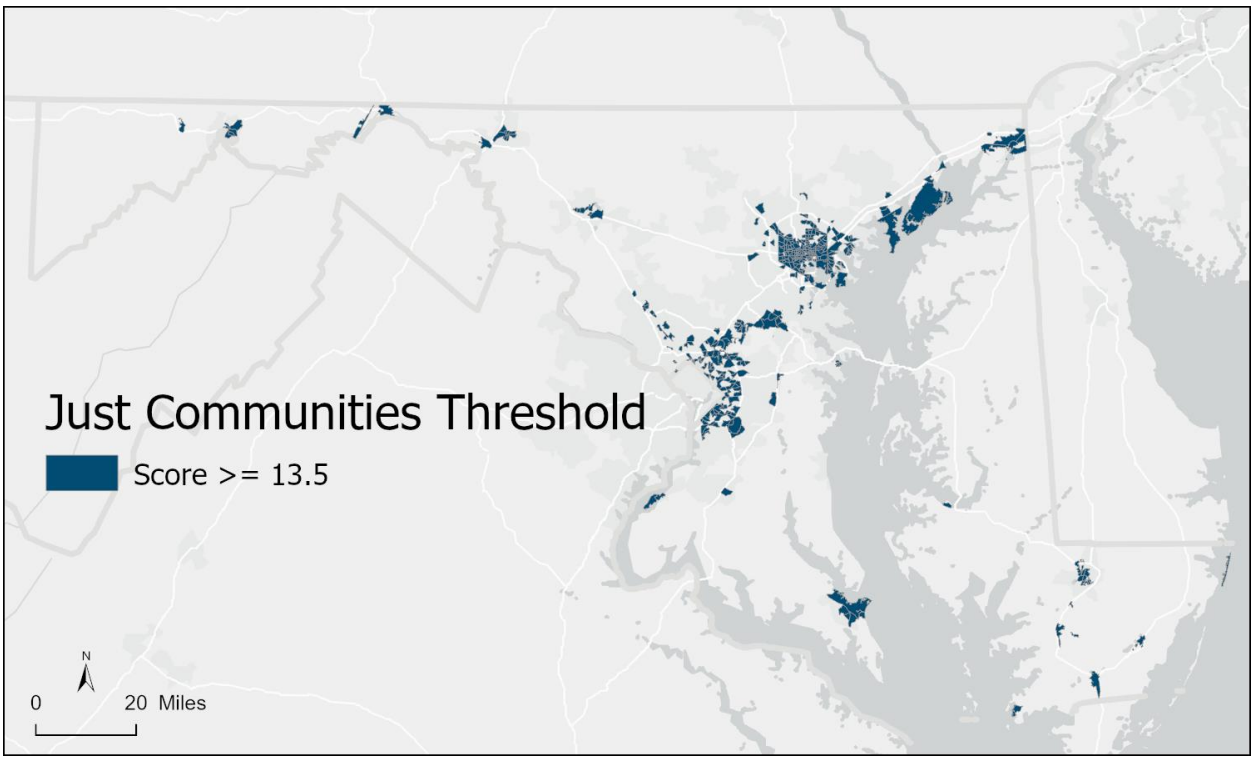

Figure 5: Just Communities Threshold

Just Communities Viewer

The ESRGC was tasked with developing a public facing viewer to display the Just Communities data results. The ESRGC elected to build the product using Esri Experience Builder as this product is highly configurable, built on the latest stable technology, and supports the needs of the project. This product was built on Maryland DHCD's ArcGIS Online organizational account.

The Just Communities Viewer includes three pages to help users better understand the project need and data analysis.

About Page

This is a landing page for the Just Communities Viewer and provides a brief introduction to the project.

Just Communities Viewer

This viewer page includes a map displaying the Just Communities data. Originally thought to include additional Maryland Incentive Zone and an "Add Data" widget, these items were removed to maintain focus on the Just Communities data. A splash screen appears upon opening as a guide for users and information about the Just Communities data development appears on-click to provide context. The Just Communities pop up was developed using Arcade. The ESRGC selected the purple line and fill colors on the Just Communities to represent justice.

Methods Page

This page was developed to provide a brief introduction to the project and overview of the data analysis process. Links provide access to the House and Senate Bill language for ease of access and a separate link leads to this methodology document.

All data sources included in the project are listed, with additional notes or definitions where appropriate, to support project development transparency. Project partners are also noted on this page.

Project Conclusion

The Just Communities legislation authorizes the Governor, based on the recommendation of the Secretary of Housing and Community Development, to designate specific areas as Just Communities. These areas will be selected according to certain criteria, likely based on factors such as need, equity, and community challenges. The purpose of this designation is to ensure that these Just Communities receive priority access to State funding, which will support their development, infrastructure, and well-being.

The goal of the Just Communities project is to address and visualize disparities in housing, economic opportunity, and neighborhood conditions across Maryland, through a lens of righting the wrongs of the past. The designation of Just Communities, based on data-driven criteria, will support the prioritization of State funding to promote fairness, combat discrimination, and build a more just society by taking intentional, proactive measures to correct past injustices.

The Just Communities Viewer was built to make the Just Communities data public. This methodology document was developed to provide transparency of the complex decision-making process to develop the Just Communities data.

The project team recognizes there are opportunities to include additional data or further develop the methodology for future analysis. The Just Communities data and Just Communities Viewer are presented as Version 1 with hopes to identify available data for the criteria lacking authoritative data at the time of development.

Appendix A: Authoritative Data Source Details

Legislatively Mandated Criteria	Data Definition	Data Owner/Manager	Data Currency	Geography	Link to Data
Priority Funding Area	N/A	MD MDP	2019	Neighborhood/Community	Maryland iMap
Homeownership	Percent of Occupied House Units that are Owner Occupied	US Census American Community Survey Housing Occupancy and Tenure Unit Value Boundaries	2019 – 2023	Census Tract	Esri web service
Property Value Trends	Severe House Cost Burden for Renters & Homeowners		2019 – 2023	Census Tract	US Census Bureau
-	Racially and Ethnically Concentrated Areas of Poverty (R/ECAPs)	US Department of Housing and Urban Development	2023	Neighborhood/Community	US HUD GIS Helpdesk
Commercial/Residential Vacancy	Percent of Housing Units that are Vacant	US Census American Community Survey Housing Occupancy and Tenure Unit Value Boundaries	2019 – 2023	Census Tract	Esri web service
History of Redlining	Home Owners' Loan Corporation	University of Richmond	1937	Neighborhood/Community	Mapping Inequality
State Imprisonment Rate	Imprisonment Rate > 750/100,000 persons	Prison Policy Initiative	2020	Census Tract	Prison Policy
Proximity to federal Superfund site	Superfund Proximity, 50 – 100 percentiles	Climate and Economic Justice Screening Tool, White House Council on Environmental Quality	2010	Census Tract	CEJST* GitHub
Exposure to Lead-Based Paint	Percentage of Housing Units with Large Areas of Deteriorated Paint	US Department of Housing and Urban Development	2011, 2009 – 2013	Census Tract	US HUD GIS Helpdesk
Rates of Asthma Among Adults	Rate of Asthma Among Adults > 90th Percentile for the State	Climate and Economic Justice Screening Tool, White House Council on Environmental Quality	2010	Census Tract	CEJST* GitHub

Appendix B: Data Source Definitions

1. **Priority Funding Area** – This data is managed by the Maryland Department of Planning. Priority Funding Areas are existing communities and places where local governments want State investment to support future growth. The 1997 Priority Funding Areas Act capitalizes on the influence of State expenditures on economic growth and development. Funding for projects in municipalities, other existing communities, industrial areas, and planned growth areas designated by counties receive priority State funding over other projects. For more information on the PFA certification process and criteria, go to: 1997 Priority Funding Areas Act
2. **Percent of Occupied House Units that are Owner Occupied** – This data is developed and managed by the U.S. Census Bureau's American Community Survey (ACS). ACS provides the latest five-year estimates of data based on individuals surveyed between 2019 and 2023. The data represents Overall Homeownership Rate: Percent of Occupied Housing Units that are Owner-Occupied at the Census Tract. This data is included in the Just Communities project as it provides support for residential vacancy trends in Maryland. For more information about owner occupied housing visit Housing Vacancies and Homeownership.
3. **Severe House Cost Burden for Renters & Homeowners** – This data is developed and managed by the U.S. Census Bureau's American Community Survey (ACS). ACS provides the latest five-year estimates of data based on individuals surveyed between 2019 and 2023. Severe House Cost Burden is defined as households spending more than 50% of their income on housing costs. The data is represented as renters and homeowners at the Census Tract. The Severe House Cost Burden data is included in the Just Communities project as it provides a view of property value trends in Maryland. Learn more about the increase in housing costs from the U.S. Census Bureau.
4. **Racially and Ethnically Concentrated Areas of Poverty (R/ECAPs)** – To assist communities in identifying racially/ethnically-concentrated areas of poverty (R/ECAPs), U.S. Department of Housing and Urban Development has developed a census tract-based definition of R/ECAPs. The definition involves a racial/ethnic concentration threshold and a poverty test. The racial/ethnic concentration threshold is straightforward: R/ECAPs must have a non-white population of 50 percent or more. Regarding the poverty threshold, Wilson (1980) defines neighborhoods of extreme poverty as census tracts with 40 percent or more of individuals living at or below the poverty line. The R/ECAP data is included in the Just Communities project as the racial/ethnic concentration in impoverished areas has a long-term impact on communities. For more information about R/ECAPs visit Racially or Ethnically Concentrated Areas of Poverty (R/ECAP) 2020.
5. **Redlining: Home Owners' Loan Corporation** – Redlining was the legal practice of grading neighborhoods based on race and ethnicity making it near impossible for people in these areas to access financing through a mortgage. The HOLC maps graded the amount of risk associated with loans and mortgages between 1935 and 1940, dramatically affecting the wealth of neighborhoods. Redlining is included in the Just Communities project as the housing and wealth gaps from this practice continue to be felt today. For more information about Redlining visit Mapping Inequality: Redlining in New Deal America.

6. **State Imprisonment Rate** – The Prison Policy Initiative reports "Where People in Prison Come From: The Geography of mass incarceration" and the imprisonment rate per 100,000 people for each Census Tract. Maryland is one of the state specific reports available from the Prison Policy Initiative. The imprisonment rate is included in the Just Communities project as high prison rates are associated with other community concerns, such as life expectancy, mental health, and environmental dangers.
7. **Proximity to federal Superfund Site** - In response to national attention to human and environmental health risks from contaminated hazardous waste, Congress established the Comprehensive Environmental Response, Compensation and Liability Act (informally called Superfund) in 1980. The US Department of Housing and Urban Development defines proximity to Superfund sites as "the proportion of a neighborhood located within one kilometer or 0.62 miles of a superfund site that was active in 2014." Proximity to Superfund sites is included in the Just Communities project as exposure to the toxic pollutants found at Superfund sites may have negative health effects. Learn more about Superfund sites on the Superfund National Priorities List (NPL) Where You Live Map.
8. **Exposure to Lead-Based Paint** – The U.S. Department of Housing and Urban Development's Deteriorated Paint Index (DPI) data represents areas with an estimated exposure to lead-based paint. This data uses a metric to predict potential exposure to lead-based paint for pre-1980 households using microdata from 2011 American Housing Survey and the 2009-2013 American Community Survey to develop a predicted risk measure. Exposure to residential lead-based paint and dust is included in the Just Communities project as it continues to be a public health concern. Learn more about the Deteriorated Paint Index by Tract from the Department of Housing and Urban Development.
9. **Rates of Asthma Among Adults** – The White House Climate & Economic Justice Screening Tool identifies Census Tracts with rates of asthma among adults higher than the 90th percentile as a significant element to negative health conditions in disadvantaged communities. The rates of asthma among adults higher than the 90th percentile of the State is included in the Just Communities project as it highlights marginalized areas overburdened by pollution.

References

Wilson, William J. (1980). The Declining Significance of Race: Blacks and Changing American Institutions. Chicago: University of Chicago Press.