MLDS CENTER
Maryland Longitudinal Data System

Better Data • Informed Choices • Improved Results

E-ZPass or Toll Booth: Linking Student Address Census Data

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Overview

- What is Census data and why does Maryland collect it?

- How did two Maryland agencies collaborate to collect Census data?

- How does Census data inform Maryland policy and how can the data be used for research purposes?

Measuring Poverty

- Understanding poverty assists educators and policymakers in **allocating funding and resources** to students and schools.

- The current measure of poverty has limitations:

  - FARMs eligibility status is used as a proxy for income.

  - Using free and reduced price meals (FARMs) eligibility status treats all students as experiencing the **same level** of poverty.

  - FARMs eligibility may **not correctly identify** students experiencing poverty.

- Using the American Community Survey (ACS), Census tract and block numbers can be used to investigate and develop a more **accurate measure of socioeconomic status**.
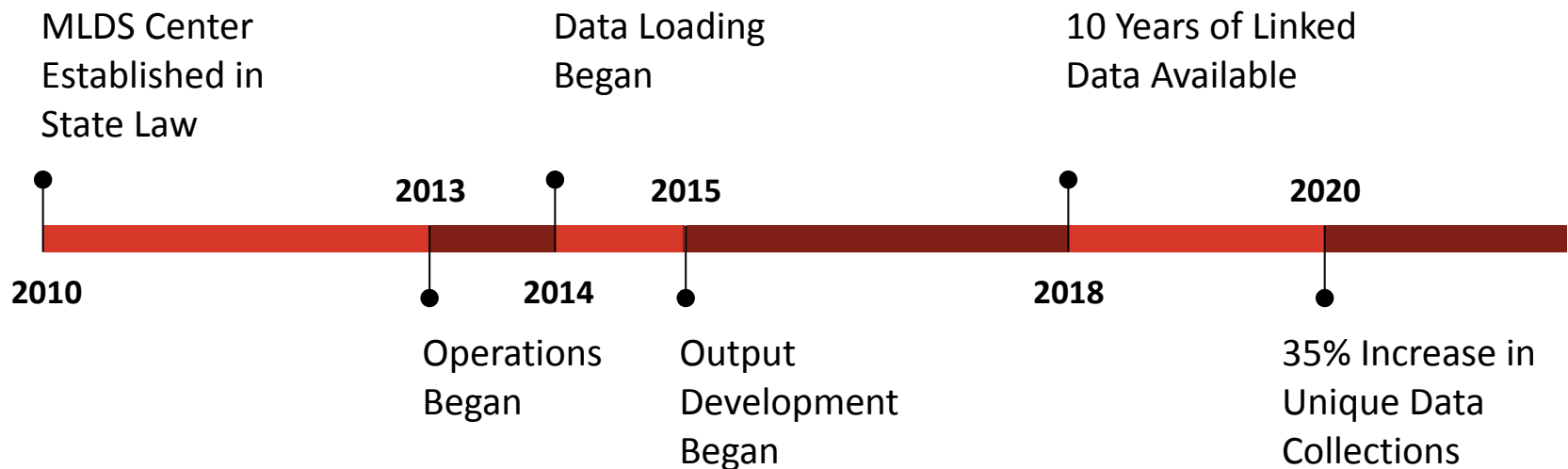
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Relevant Statutes

- Maryland Longitudinal Data System Center - Data Matching - HB 1206 (2019)

  - Requires each LEA to **convert student home addresses** into a U.S. Census Bureau tract or block number using a process developed by the MLDS Center.

- Blueprint for Maryland's Future - HB 1300 & 1372 (2020 & 2021)

  - MSDE shall submit a report to the AIB on **incorporating neighborhood indicators of poverty** to determine a school's eligibility for the compensatory education program and the concentration of poverty grant based on the study.

- Blueprint for Maryland's Future - HB 1450 (2022)

  - MSDE shall **collect the data necessary** to implement the neighborhood poverty indicator methodology and submit a report on the data collection.

Census Tract and Block Numbers

Block 2012

Block Group 2

Tract 220100

County 510

State 24
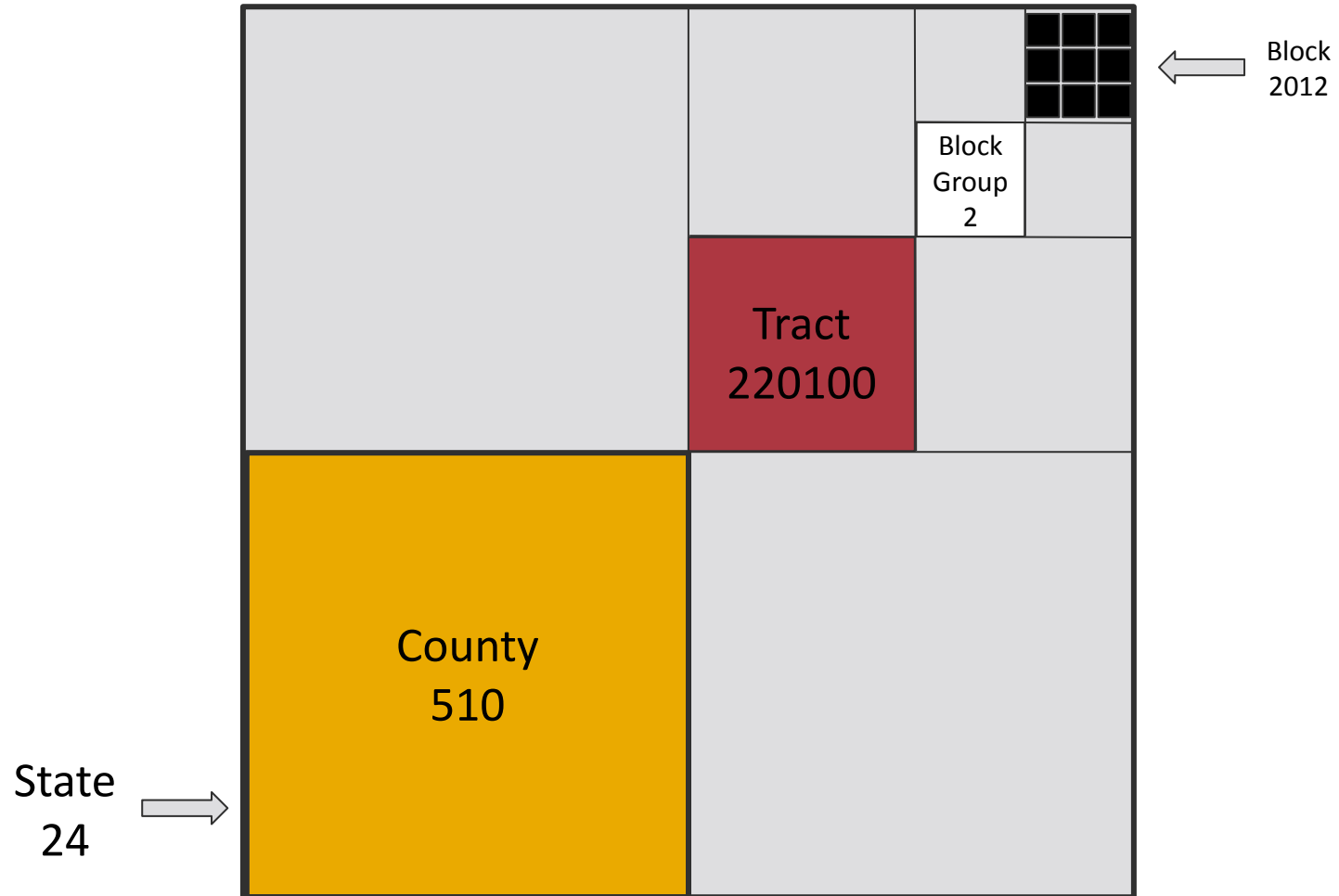
What does the MLDS Center do?

- **Independent state agency** that **develops** and **maintains** a data system containing student and workforce data from all levels of public education and the State's workforce.

- **Generate timely and accurate information** about **student performance** that can be used to **improve the State's education system and guide decision makers at all levels**.

MLDS Center Established in State Law

Data Loading Began

10 Years of Linked Data Available

2013 **2015** **2020**

2010

2014 **2018**

Operations Began

Output Development Began

35% Increase in Unique Data Collections

What data are collected in the MLDS?

MLDS Data Delivery System

- Out-of-Home Placements

- Wages
- Industry
- GED and NEDP
- Apprenticeship
- LACES
- Business Licenses*

Maryland DEPARTMENT OF LABOR

- Health Professional and Occupational Licenses*

- Juvenile Delinquency Records

Maryland DEPARTMENT OF JUVENILE SERVICES

- Enrollment
- Degrees
- Courses
- Credits & Grades
- Financial Aid
- Workforce Training

MHEC

- National Student Clearinghouse
- College Board
- Motor Vehicle Administration
- Comptroller
- Microsoft

- Attendance
- Completion
- Assessment
- Discipline
- Early Childhood
- Staff
- Schools
- Census

EDUCATION

DHS • MDH • LABOR • DJS • MHEC • OTHER • MSDE

Data Sharing Partners

*Forthcoming

https://mldscenter.maryland.gov/DataAdministration.html
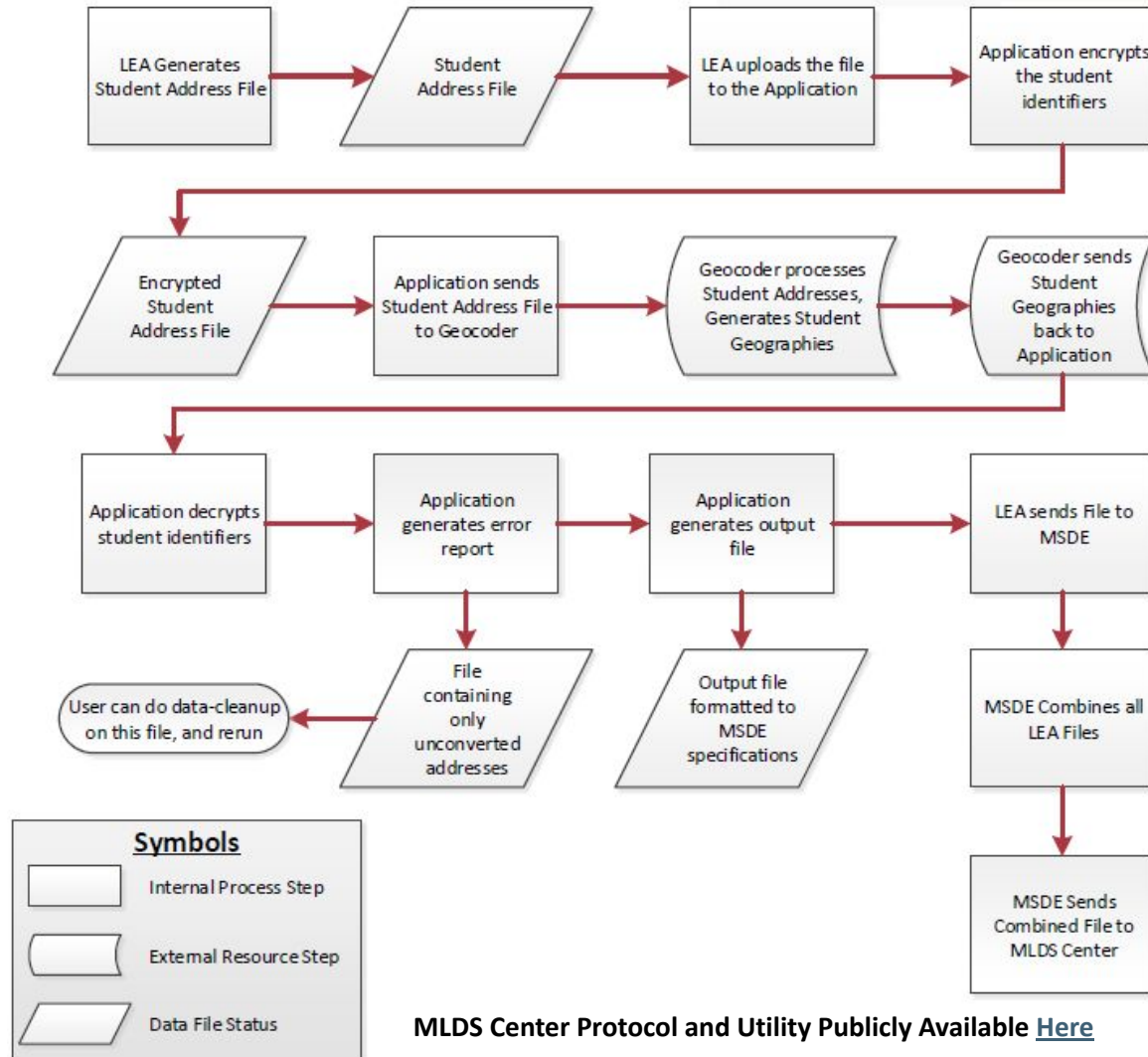
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What does MSDE do?

- **Maryland State Department of Education Mission:** To ensure a rigorous and world-class educational experience for every Maryland student, in every neighborhood, that prepares each to be college and career ready, through:

  - strategic direction and leadership;

  - policy making and resource allocation; and

  - engagement and advocacy.

- **Maryland State Department of Education Vision:** Maryland will be a system of world-class schools where students acquire the knowledge and skills necessary for success in college, career, and life.

Workgroup

- The MLDS Center and MSDE convened the **Census Tract and Block Data Workgroup** in August 2020.

- Workgroup members include data users from **four local education agencies**

- Members discussed **barriers** to fulfilling legal requirements.

- Members **provided feedback** on a draft protocol and tested the MLDS Center's utility during a **pilot** to support reporting requirements and implementation in SY 2022-2023.

Utility Process Map

LEA Generates Student Address File	→ Student Address File →	LEA uploads the file to the Application → Application encrypts the student identifiers

Encrypted Student Address File → Application sends Student Address File to Geocoder → Geocoder processes Student Addresses, Generates Student Geographies → Geocoder sends Student Geographies back to Application

Application decrypts student identifiers → Application generates error report → Application generates output file → LEA sends File to MSDE

File containing only unconverted addresses

User can do data-cleanup on this file, and rerun

Output file formatted to MSDE specifications

MSDE Combines all LEA Files

MSDE Sends Combined File to MLDS Center

Symbols

Internal Process Step

External Resource Step

Data File Status

MLDS Center Protocol and Utility Publicly Available Here

10

Takeaways

- Initiating large scale projects require **collaborative multi-agency partnership**.

- Having the **statute** in place helps define roles and responsibilities.

- **Gathering input** from LEAs and other stakeholders early in the process aided in the administration and completion of main objectives.

- Running a **pilot** with partners with a range of characteristics prior to a new collection is highly recommended, if time allows.

- Creating tools that use **common data sources** and standards support a seamless process.

- Availability for **support** before, during, and after implementation is appreciated.

- Providing guidance through **communication and documentation** is essential.

Communication Strategies

- Memos were sent to all **school superintendents** from MSDE.

- An overview of the data collection was held for all **local accountability coordinators**.

- Two **informational webinars** were held for all local accountability coordinators and necessary LEA representatives.

- MLDSC and MSDE staff provided **one-on-one technical assistance** meetings.

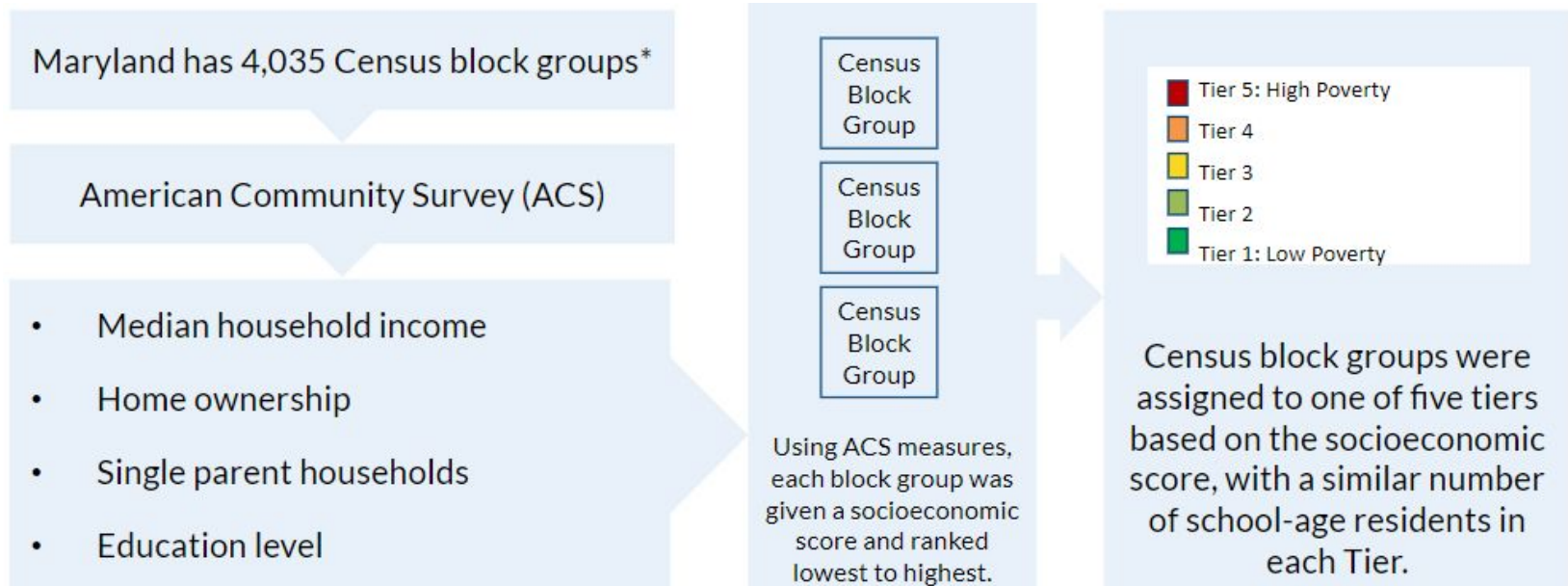- MSDE requested **resubmissions** if there were data issues.

Challenges

- Some LEAs had **firewall issues** and needed their internal information technology department to assist in downloading the utility.

- Certain addresses were **unable to be converted**, such as some students living in mobile home parks or apartment complexes.

- Some records submitted returned **multiple matched addresses**.

- MSDE's Census data collection included students enrolled in the LEA as of September 30 but was **separate** from MSDE's annual September 30 data collection

Census Tract and Block Numbers
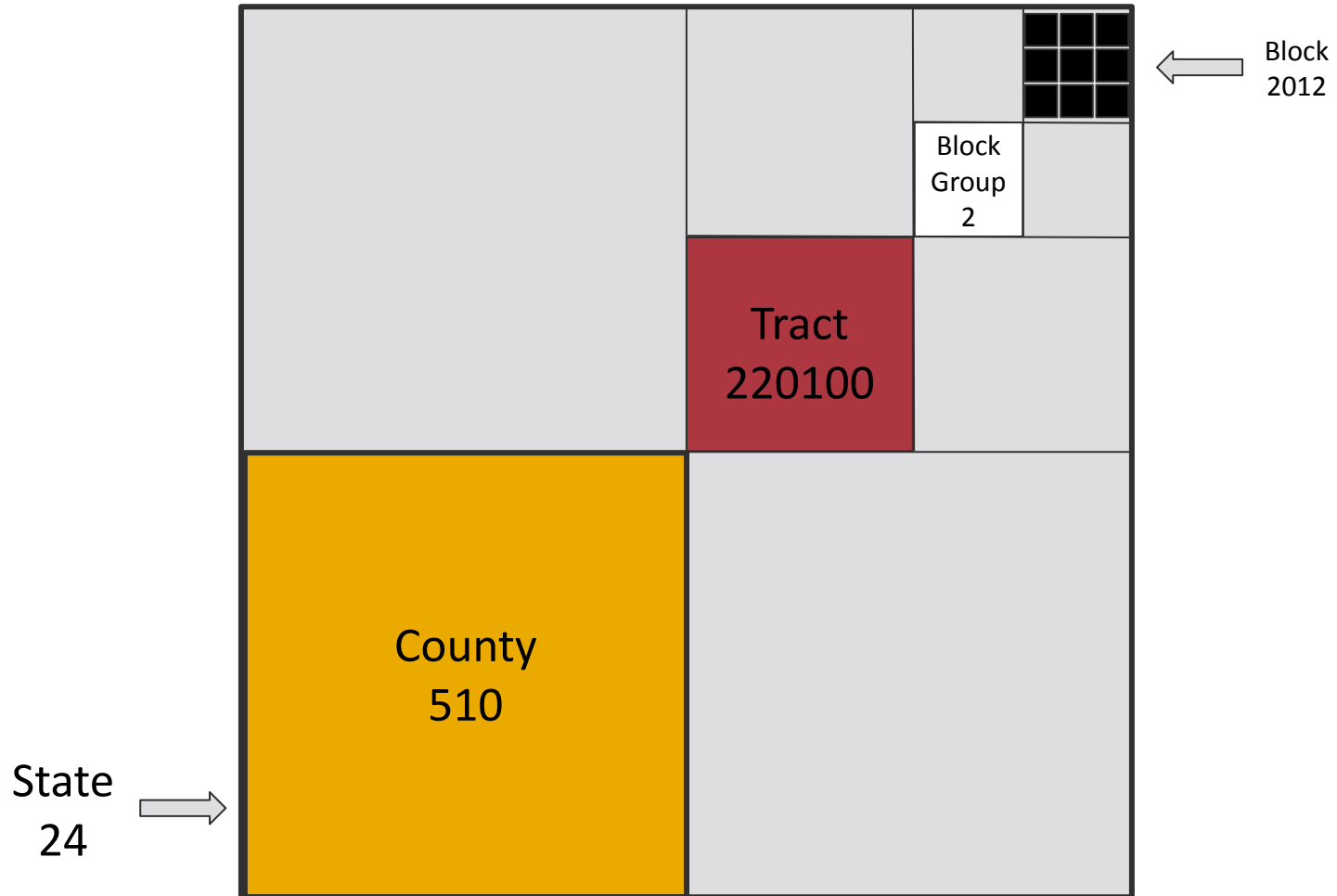
Informing Policy - MSDE

- Tiers indicate the relative level of poverty in a neighborhood.

Maryland has 4,035 Census block groups*

American Community Survey (ACS)

- Median household income
- Home ownership
- Single parent households
- Education level

Census Block Group

Census Block Group

Census Block Group

Using ACS measures, each block group was given a socioeconomic score and ranked lowest to highest.

- Tier 5: High Poverty
- Tier 4
- Tier 3
- Tier 2
- Tier 1: Low Poverty

Census block groups were assigned to one of five tiers based on the socioeconomic score, with a similar number of school-age residents in each Tier.

* Block groups are the smallest geographical units for which the Census reports data publicly. Maryland has an additional 44 block groups that do not have data on the four measures, primarily because they are not residential areas.

Informing Policy - MSDE

- Each tier contains a similar number of school-age residents (approximately 195,000).

Tier	Median household income	Home ownership (%)	Single Parent Households (%)	Educational Level 0.0 = No education 1.00 = Advanced degree
Tier 5	$48,048	34.9%	70.7%	0.50
Tier 4	$70,339	60.9%	38.9%	0.58
Tier 3	$90,277	76.1%	24.3%	0.62
Tier 2	$115,395	85.2%	15.1%	0.68
Tier 1	$173,503	92.8%	8.3%	0.78

- Tier 5 represents households with high poverty/low socioeconomic score. Tier 1 represents households with low poverty/high socioeconomic score.

Research Applications - MLDSC

- The MLDS Center's previous research has examined the **long-term outcomes** associated with student disadvantage and school-level concentrated disadvantage:
  - Student and School Concentrated Poverty in Maryland: What are the Long-term High School, College, and Career Outcomes
  - Presentations, workshops, lectures, and other sessions

- This research was used to inform **state law providing increased resources** for students attending schools with high levels of concentrated disadvantage.

- Prior research measured disadvantage using student eligibility for free/reduced price meals – a measure with known limitations (see Henneberger et al., 2023).

Henneberger, A. K., Rose, B. A., Mushonga, D. R., Nam, B., & Preston, A. M. (2023). Expanding the understanding of school concentrated disadvantage using free and reduced-price meals data: Links to college and labor market outcomes in Maryland. *Journal of Education for Students Placed at Risk (JESPAR)*, *28*(2), 150-178.

Application and Use Cases - MLDSC

- The MLDS Center will be able to combine student geolocation data **with the Census** tract and block aggregated data.

- Merged with publicly available ACS data, this provides opportunity for a **richer understanding of disadvantage**.

  - Ability to compare school-level disadvantage to neighborhood-level disadvantage

  - Ability to use multiple Census indicators to measure disadvantage (e.g., household income; education level)

  - Ability to disentangle effects of neighborhood disadvantage from individual and school disadvantage

- Provides more **nuanced targets** for policies supporting student success.

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