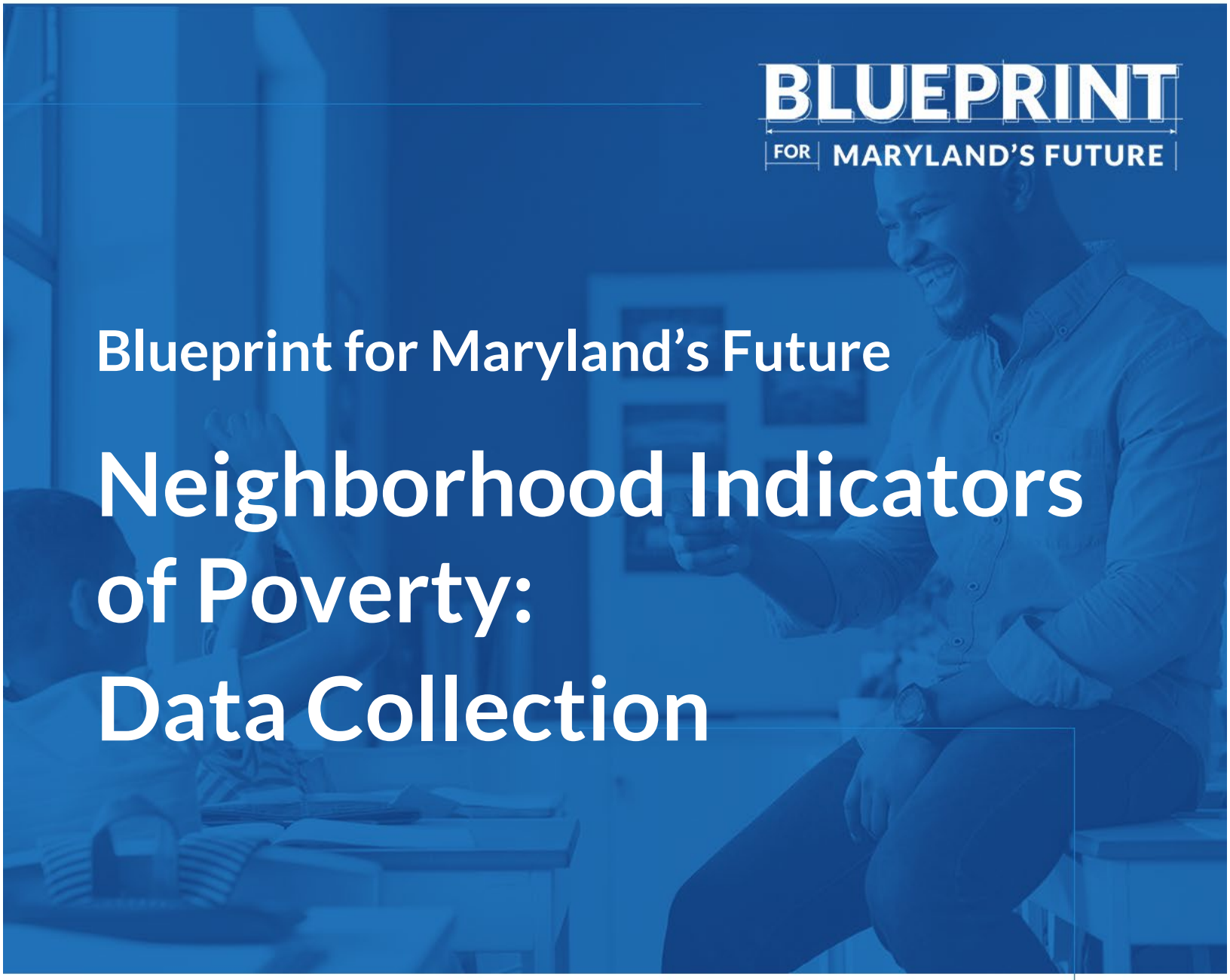

BLUEPRINT FOR MARYLAND'S FUTURE

Blueprint for Maryland's Future

Neighborhood Indicators of Poverty: Data Collection

Maryland State Department of Education

December 2022 Legislative Report

MARYLAND STATE DEPARTMENT OF EDUCATION
EQUITY AND EXCELLENCE

MARYLAND STATE DEPARTMENT OF EDUCATION

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Executive Summary

The Maryland State Department of Education (MSDE) implemented a new state-level data collection of Census tract and block data for Maryland public school students in the fall of the 2022-2023 school year. The development of the new statewide data collection was supported by numerous stakeholders. Frequent and ongoing technical assistance was provided to all Local Education Agencies (LEAs) to ensure a successful new data collection.

In the first year LEAs were able to convert 96.88% of their student's street addresses to Census block group identifiers and then provide these identifiers to MSDE as part of the statewide data collection. In this report, MSDE details the data collection implementation process resulting in new data available to support the analysis of trends and patterns in individual and neighborhood poverty at the LEA and school levels. Statewide, approximately one-fifth of students live in each of the five socioeconomic tiers, but the distribution of students in each neighborhood tier varies widely across LEAs.

This report serves as an extension of the Report on Neighborhood Indicators submitted on October 1, 2022. The analyses provided in the previous report were based on the pilot Census tract and block data collection, with the available data combined with tier data for each Census block group and student level indicators of economic disadvantage. The statewide data will support the implementation of a methodology to calculate compensatory education funding. This new statewide data is critical for Maryland to be able to calculate and incorporate neighborhood indicators of poverty into the calculation of the compensatory education formula and the Concentration of Poverty Grants.

Background

RELEVANT STATUTES

House Bill 1206: Maryland Longitudinal Data System Center - Data Matching

In July of 2019, HB1206 was passed which requires local education agencies (LEAs) to convert student home addresses into a Census tract and block number. The LEAs will provide the data to the Maryland State Department of Education (MSDE) and then MSDE will provide the data to the Maryland Longitudinal Data System Center (MLDSC). The statute also requires the MLDSC to develop a protocol for converting student home addresses. The approach of converting home addresses into Census tract and block numbers was purposeful – it was adopted to avoid the requirement that LEAs disclose student addresses.

House Bill 1300: Blueprint for Maryland's Future - Implementation & House Bill 1372: Blueprint for Maryland's Future - Revisions

HB1300 of the 2020 Regular Session and HB1372 of the 2021 Regular Session requires MSDE to submit a report by October 1, 2022 to the Accountability Implementation Board 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.

House Bill 1450: Blueprint for Maryland's Future - Implementation Plans and Funds - Alterations

One provision of HB1450, passed in the 2022 Regular Session, is for MSDE to collect the necessary data to implement the neighborhood poverty indicator methodology. MSDE is reported to submit this report to the General Assembly, Accountability and Implementation Board (AIB), and the Department of Budget and Management by December 1, 2022.

RATIONALE FOR COLLECTING CENSUS DATA

As discussed in the 2021 MSDE Interim Report on Neighborhood Indicators of Poverty report and 2022 final Report on Neighborhood Indicators of Poverty report, the current data used to identify socioeconomic status has limitations and there is a need for a more accurate measure. Historically, the education community has used Free and Reduced-Price Meals (FARMs) eligibility status under the National School Lunch Program as a proxy for socioeconomic status. Using FARMs eligibility in this manner does not correctly identify students experiencing poverty and the binary nature of the measure results in little variation in household income. Further, the introduction of the Community Eligibility Provision (CEP) enables schools to serve all enrolled students free meals, regardless of household income. An unintended consequence of this policy is it reduces the reliability and validity of the FARMs measure as an estimate of poverty.

Using the U.S. Census Bureau's American Community Survey (ACS), Census tract and block numbers can be used to investigate and develop a more accurate measure of socioeconomic status. The ACS collects data on multiple variables such as demographics, household income, education, employment, and home ownership and is administered annually by the Census to a stratified random sample of approximately 2.5% of households all over the United States. ACS data is aggregated and made available to the public for download on the Census website at several levels, including the block, block group, tract, and county levels.

CENSUS TRACT AND BLOCK DATA WORKGROUP

The MLDSC and MSDE convened the Census Tract and Block Data Workgroup in August 2020 to help implement the requirement to convert student home addresses into geolocation data and submit that information to MSDE. The Workgroup included representatives from four local education agencies (LEAs) - Anne Arundel County,

Frederick County, Caroline County, and Baltimore City. Throughout multiple meetings, workgroup members discussed their current available data and resources to comply with the legal requirements, potential barriers they and other LEAs may face, and what possible supports the State could provide to support them with the implementation.

The Census Tract and Block Data workgroup members also piloted the MLDSC protocol and utility (described in the Data Collection section) to convert student addresses into Census tract and block numbers. As part of the pilot, the four LEAs provided data converted using the MLDSC utility. Members also provided important feedback on the use of the utility and suggested changes to protocol documentation.

The workgroup met nine times from August 2020 through April 2022. At the workgroup's 10th meeting on June 6, 2022, all LEA Local Accountability Coordinators (LACs) were invited to attend an informational webinar. Although the workgroup has concluded, the MLDSC and MSDE may request feedback from workgroup participants on the implementation process and how to improve for next year.

Data Collection

BACKGROUND

Following the completion of the pilot program with the four LEAs (Anne Arundel County, Frederick County, Caroline County, and Baltimore City), the MLDSC formalized the data collection process. Revisions were made to their tool used by LEAs to convert student addresses to Census tract and block numbers based on feedback received. The full MLDSC protocol document is available in Appendix B and is referenced in the data collection manual produced by MSDE (see Appendix B). Two informational webinars on the new data collection were provided to LACs and relevant staff on the main aspects of the data collection during summer 2022.

STUDENT ADDRESS GUIDELINES AND OPTIONS FOR CONVERTING

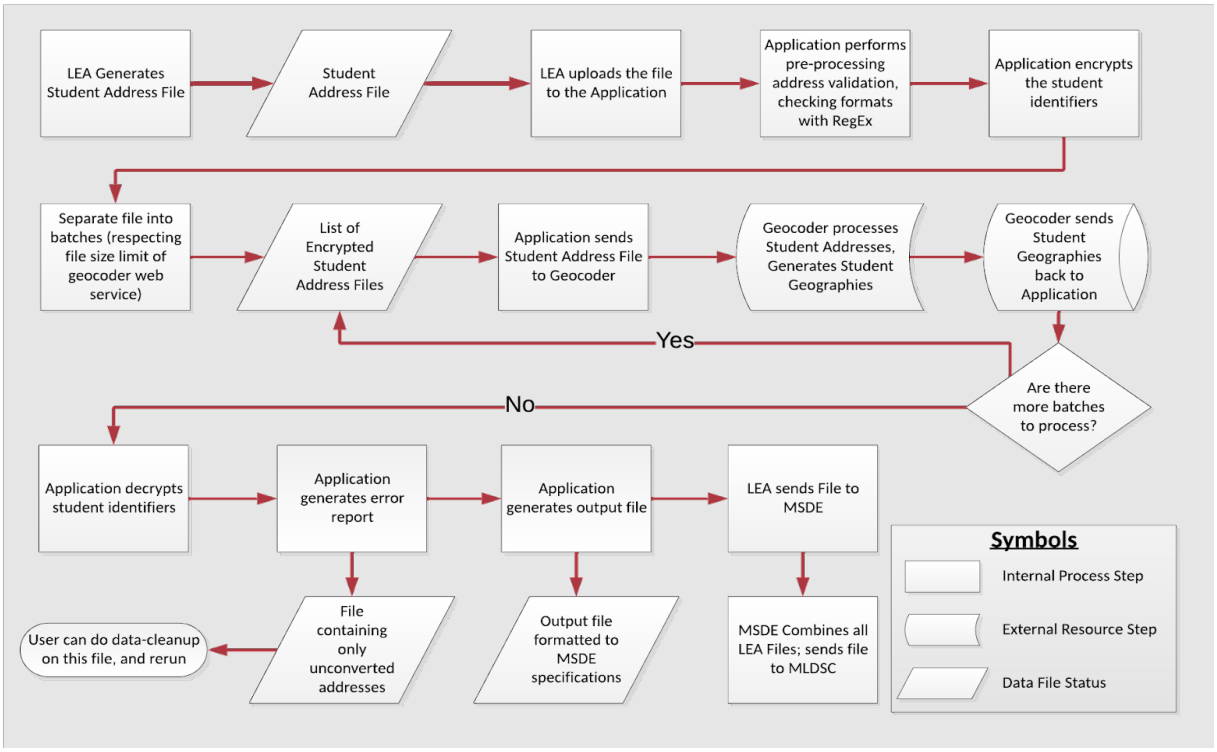
LEAs were instructed to identify a student's primary address used by the LEA to confirm residency for the address conversion. In cases where multiple addresses exist for one student, LEAs were to use the address with the latest effective date or the most recently added address on the school record listed for residency purposes. The address must be a valid residential address, meaning it contains a street number, street name, city, state abbreviation, and 5-digit Zip Code. Specific situations around students' addresses are discussed in the MSDE manual (Appendix B) provided to LEAs on September 28, 2022. The file layout for submitting to MSDE is also outlined in the manual.

There are two available options for converting student addresses into a Census tract and block number: Use the MLDSC utility (described in detail in the next section) or use other available methods approved by the MLDSC. All LEAs opted to use the MLDSC utility instead of requesting to use an alternative method, mostly likely because the output file created by the utility matched the required MSDE file layout and detailed error list was provided to improve the quality of their data.

MLDSC (MARYLAND LONGITUDINAL DATA SYSTEM CENTER) UTILITY

The MLDSC created a utility, piloted by the Census Tract and Block workgroup members, to assist an LEA with the student address conversion process. The utility takes the LEA provided list of student addresses, anonymizes the student identifiers, and then geocodes the student addresses using the batch processing feature of the U.S. Census Bureau's Geocoder Web Service. The utility automates the process of anonymizing the data, batching the provided student address file, and submitting it to the geocoder. The application then decrypts the student geolocation data and generates an error report containing the unconverted addresses. The application also generates an output file formatted to the file specifications listed in the MSDE manual. Both the protocol and the utility are available for download on the MLDSC website. A process flow is provided in Figure 1.

Figure 1: MLDSC Utility Process Flow



To use the MLDSC utility, LEAs used student addresses as of September 30, 2022, and were required to have one record per student. The file included a 6-digit unique record identification number to use when crosschecking files for errors. The MSDE Standard Student Demographic String, street number and name, city, state abbreviation, and zip code were included in the file.

TIMELINE AND COMMUNICATION

In fall 2022, all 24 LEAs submitted the Census tract and block numbers for all students enrolled as of September 30, 2022. Each LEA submitted final data to MSDE by November 11, 2022, and the LEA's signed verification form was due by November 15, 2022. Details on the data submission process, including data elements to be collected and the technical guidance, can be found on the MLDSC website. The full timeline is below:

Date	Event
July 18, 2022 – September 5, 2022	Alternative Method Request Window
October 3, 2022	Collection Window Opens
October 3, 2022 – November 4, 2022	LEA Clean-Up
November 4, 2022 – November 11, 2022	LEA Report Review MSDE Quality Assurance Checks
November 11, 2022	Data Final
November 15, 2022	Signed Verification Form Due

The communication to LEAs included a memo to school superintendents sent on May 6, 2022, from the State Superintendent informing them of the new required state-level data collection of Census tract and block data. An overview of the data collection process was provided to all LACs on May 17, 2022. Further, two informational webinars on the new data collection were held on June 6th and June 15th for all LACs and necessary LEA representatives.

Over the summer, MSDE and MLDSC staff provided one-on-one technical assistance meetings in preparation for the SY 2022-2023 data collection. Meetings varied in length based on the LEA's technical assistance needs. Four LEAs opted to not participate, however LEA staff attended one of the webinars or requested a webinar recording. Email communication was also conducted on a weekly basis, especially as the deadline approached.

MSDE received the first Census Tract and Block Data file submission on October 14, 2022. As the files were submitted, MSDE staff verified that each State Assigned Student Identifier (SASID) was valid in the State's system. MSDE also reviewed all Geolocation IDs to verify they were valid. In order to ensure high quality data, MSDE staff requested LEAs resubmit if the data was in the incorrect format, had spacing issues, or did not contain the correct information.

RESULTS

All 24 LEAs and the SEED School of Maryland submitted files containing converted address geolocation information for all enrolled students. In total, 872,513 of 900,625 (96.88%) of Maryland's enrolled students had an address converted into Census tract and block numbers. The address conversion rate varied among LEAs from 87% to almost 100%, as shown in Table 1. Anne Arundel, Frederick, Garrett, and Harford Counties had over 99% of student addresses converted. The LEAs with lower enrollment included Somerset and Dorchester which were around a 90% conversion rate.

Table 1: Number of Student Enrollment Records and Geolocation IDs by LEA.

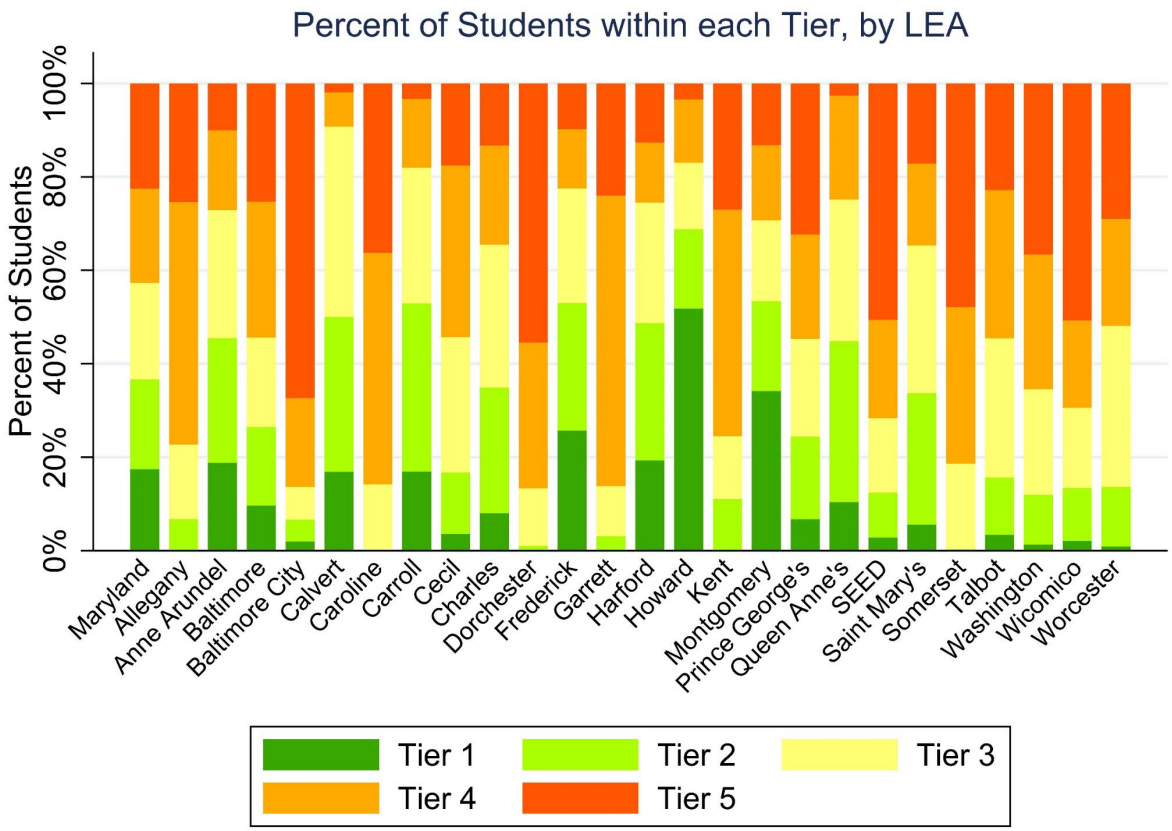
LEA	Number of Records	Number of Geolocation IDs	Percent of Geolocation IDs
Allegany	8,190	7,521	91.83%
Anne Arundel	84,910	84,866	99.95%
Baltimore County	111,043	107,680	96.97%
Calvert	15,419	14,651	95.02%
Caroline	5,669	5,294	93.39%
Carroll	25,754	24,371	94.63%
Cecil	15,029	13,835	92.06%
Charles	27,585	25,874	93.80%
Dorchester	4,527	4,115	90.90%

LEA	Number of Records	Number of Geolocation IDs	Percent of Geolocation IDs
Frederick	46,905	46,867	99.92%
Garrett	3,499	3,495	99.89%
Harford	39,691	39,424	99.33%
Howard	59,783	56,283	94.15%
Kent	1,755	1,672	95.27%
Montgomery	167,173	162,500	97.20%
Prince George's	131,117	127,613	97.33%
Queen Anne's	7,383	7,009	94.93%
St. Mary's	17,490	16,026	91.63%
Somerset	2,774	2,402	86.59%
Talbot	4,524	4,215	93.17%
Washington	22,275	21,409	96.11%
Wicomico	14,900	14,068	94.42%
Worcester	6,844	6,613	96.62%
Baltimore City	75,985	74,317	97.80%
SEED	401	393	98.00%
State of Maryland	**900,625**	**872,513**	**96.88%**

Preliminary Data Analysis

Two additional data sources were combined with the collected student geolocation data to provide an overall picture of neighborhood poverty in Maryland. As detailed in the previous two reports[1] on neighborhood indicators of poverty, MSDE used American Community Survey data to categorize each of Maryland's 4,035 Census block groups into one of five socioeconomic tiers (see Appendix A for tier methodology). The geolocation information received from LEAs for each student was matched with the socioeconomic tier information to show the distribution of students by tier across the state. Statewide, similar percentages, of between 18% and 23%, students reside in each of the five tiers.[2] As shown in Figure 2, however, the percentage of students in each tier varies greatly across LEAs. While less than 20% of students in Calvert, Carroll, and Howard Counties reside in the two highest poverty tiers (tiers 4 and 5), more than half of students in 15 LEAs reside in neighborhoods with similar levels of poverty.

Figure 2: Distribution of Students by Socioeconomic Tiers and Local Education Agency



Combined with the student geographic location data was indicators of economically disadvantaged status for each student, as identified by direct certification. Combining student level and neighborhood level indicators of poverty provides an indication of the extent that individual poverty is related to neighborhood poverty. Figure 3

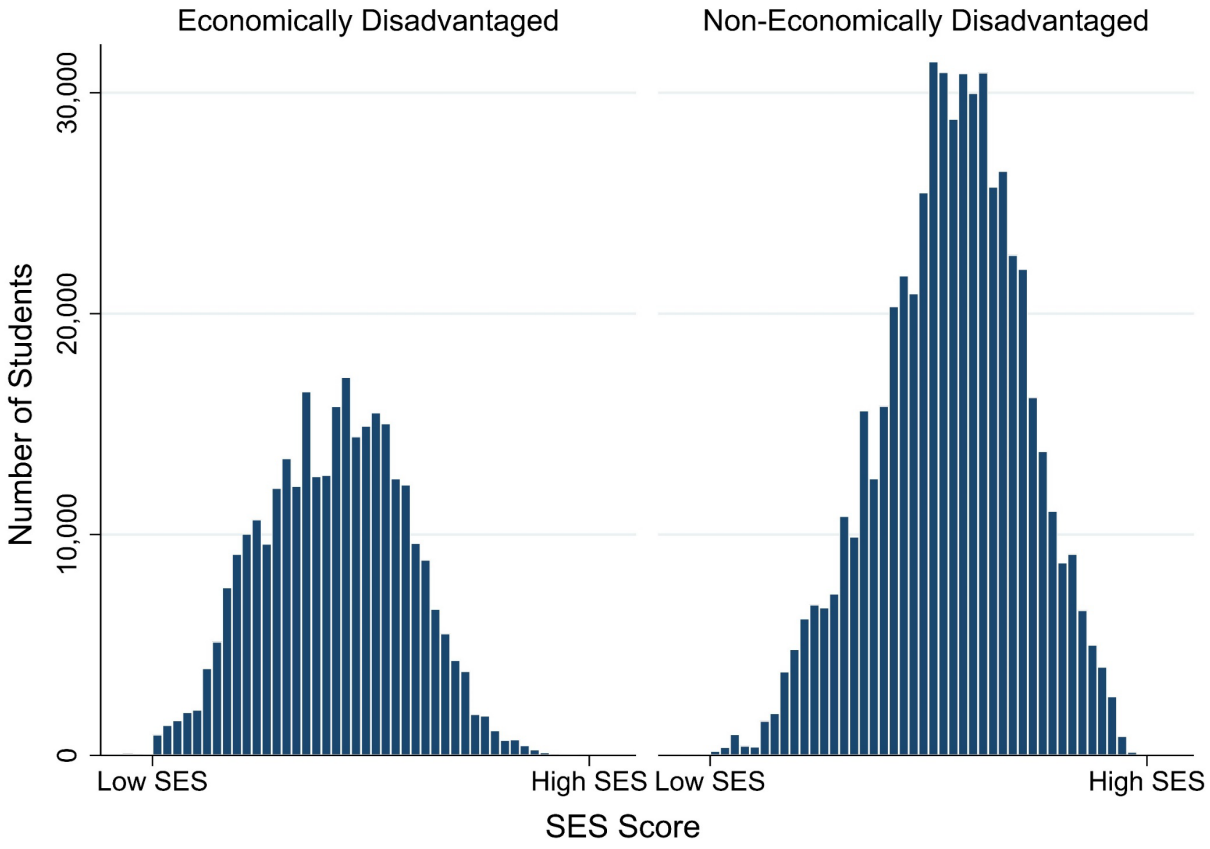
[1] https://www.marylandpublicschools.org/Blueprint/Documents/BlueprintReportNeighborhoodIndicatorsPoverty.pdf

[2] Approximately 20% of students statewide are expected to reside in each tier since tier assignment is based on about 20% of school-aged children in the state per tier.

shows that few to no economically disadvantaged students live in the lowest poverty neighborhoods and few non-economically disadvantaged students live in the highest poverty neighborhoods.

All non-economically disadvantaged students, however, do not live in low poverty neighborhoods and not all economically disadvantaged students live in high poverty neighborhoods. In fact, the distributions of both economically disadvantaged and non-economically disadvantaged students by neighborhood socioeconomic scores are only slightly skewed from a normal distribution, which indicates that the majority of both economically disadvantaged and non-economically disadvantaged students live in neither low nor high poverty neighborhoods but those in the middle. These data suggest that a neighborhood indicator of poverty can provide variation within a dichotomous measure of individual student economic disadvantage. Instead of solely relying on a measure of whether students are economically disadvantaged or not, the level of poverty of the neighborhood in which they reside will provide additional differentiation between levels of poverty.

Figure 3: Distribution of SES Scores by Student Economic Disadvantage Status



Note: Economically disadvantaged is defined as any student identified as directly certified. Direct certification allows local education agencies to certify students as eligible for free meal benefits using participant data from other means-tested programs.

Discussion and Policy Implications

LESSONS LEARNED

Preliminary feedback from LEAs revealed a few nuances when converting student addresses, particularly for apartment complexes and mobile home parks. LEAs indicated that most students with unconverted addresses reside in areas of high poverty. Without appropriately converting these addresses to their proper Geolocation ID, there is a missed opportunity to correctly identify these students as possibly tier 4 or tier 5 which are the tiers indicating students are in need of the highest amount of funding. MSDE and the MLDSC will work towards adding guidance in the manual and make updates to the utility to support converting addresses for apartment buildings and mobile home parks to valid Geolocation IDs. One proposed solution is to identify the coordinates (latitude and longitude) of an address and use that information to find the Geolocation ID.

The data collection also allowed for LEAs to identify students as experiencing homelessness. These students were all assigned to tier 5, which is the tier that represents the lowest socioeconomic status. MSDE will continue to analyze data anomalies including records missing the Geolocation ID and how these students should be included in the calculations.

Additionally, the MLDSC is investigating an improved methodology for identifying the highest strength match rating when more than one matched address occurs. The MLDSC plans to contact the U.S. Census Bureau to find out if any such match address strength ranking exists.

While the MLDSC utility generated detailed address conversion error reports for LEAs to review, there is an identified need to develop a report to confirm that the student roster submitted in the September Attendance file by each LEA matched with the students they sent in the Census Tract and Block file. For this first year, the students enrolled in each LEA as September 30th were included.

NEXT STEPS

As described in the 2022 final Report on Neighborhood Indicators of Poverty report, MSDE will also continue its analysis process and will submit recommendations for the complete funding formula. This analysis process includes data validation and error checks, descriptive statistics, and exploratory data analysis, applying the methods and formulas described in this report to the full statewide dataset, fiscal and programmatic impact analyses completed, individual case studies explored, additional data validation and anomalous data checks, preparation for publication and report writing, as well as further exploration of any additional methodologies that may arise before that time.

A funding formula change would have large implications for each of the local education agencies in the state, if it were to be instituted. Therefore, MSDE will engage with representatives of the LEAs to ensure that the new methodology aligns with the needs and priorities of those who will be entrusted with supporting students using these funds. By following these steps, MSDE will fulfill its duties to be responsible stewards of the data and only recommend the details of a new funding formula once able to fully assess the total cost of all methodologies statewide.

MSDE will continue to complete the following steps in the timeline outline in Table 2 below to finalize its recommendations for incorporating neighborhood indicators of poverty to determine a school's eligibility for the Compensatory Education program and the Concentration of Poverty grant.

Table 2: Timeline to Develop Neighborhood Indicators of Poverty

Date	Task
November 15, 2022	LEAs submit complete data of student enrollment and student Census block and tract locations to MSDE
November 15 - November 22, 2022	Data validation and error checks. Descriptive statistics and exploratory data analysis completed.
November 23 – November 30, 2022	Preparation of report on the data necessary to implement the neighborhood poverty indicators methodology, as required by §5-223.
December 1, 2022	Submission of report on data necessary to implement the neighborhood poverty indicators methodology, as required by §5-223.
December 1 – December 16, 2022	Possible methodologies and formulas described above are applied to full data set. Cost estimates are determined. Impact analysis at the school level is completed. Validation and error checks completed.
December 19, 2022 – January 7, 2023	Engagement with representatives from LEAs on new methodology and its implications.
January 10, 2023	MSDE completes final recommendations for incorporating neighborhood indicators of poverty to determine a school's eligibility for the Compensatory Education program and the Concentration of Poverty grant, utilizing a complete set of data.

MSDE's final recommendations for incorporating neighborhood indicators of poverty to determine a school's eligibility for the Compensatory Education program and the Concentration of Poverty grant, utilizing a complete set of data, will include:

1. The methodology for calculating Maryland Neighborhood Tiers
2. The process for completing the recommended Calculation Method
3. The Funding Formula dollar amounts and relative funding weights that will generate funding
4. Cost estimates for each school, each local education agency, and Maryland as a whole
5. Funding comparisons of the new methodology compared to current formulas

MSDE continues to keep equity and excellence as its top priorities woven into all of its actions. As the funding formulas for Compensatory Education and Concentration of Poverty are some of the most influential factors toward maintaining equity for all Maryland students, MSDE looks forward to submitting its final recommendations for incorporating neighborhood indicators of poverty to determine a school's eligibility for the Compensatory Education program and the Concentration of Poverty grant.

Appendices

APPENDIX A

SES Tier Methodology

APPENDIX B

Student Census Tract and Block Data Collection Manual, including the MLDS Protocol for Converting Student Addresses to Census Tract and Block Identifiers for 2022-2023

Appendix A: SES Tier Methodology

The socioeconomic status (SES) tier measure uses data from the Census's American Community Survey (ACS) 5-year estimates from 2020. ACS data is reported at the Block Group level, which is the smallest unit that household data beyond demographics is publicly available. The following types of data are included in the SES tier measure:

- Median household income
- Home ownership
- Household composition
- Education level
- Student age population

Each ACS data table contained 4,079 records corresponding to the 4,079 Census Block Groups in Maryland. The data files were merged in Stata using the Geo_ID variable (a unique geographic identifier for each Block Group) which links the ACS data tables.

1. *Calculation of measures*

Five measures were calculated/compiled from the ACS data for each Census Block Group:

- Median household income
- Percent owner occupied housing = number of owner-occupied housing divided by the total number of occupied housing units
- Percent single parent households = number of single parent households with children under 18 divided by the total number of households with children under 18
- Education score
    - The percentage of the population over the age of 25 was determined for each of 6 educational attainment categories: (i) no formal education, (ii) some education but less than a HS Diploma, (iii) HS Diploma or GED, (iv) some College (including Associates Degrees), (v) Bachelor's Degree, and (vi) Advanced Degree. These categories reflect the educational levels of individuals residing in the block group. Higher educational attainment was given more weight. The percentages were multiplied by the following numbers:
        - No education – 0.0
        - Some education but less than a HS Diploma – 0.2
        - HS Diploma or GED – 0.4
        - Some College – 0.6
        - Bachelor's Degree – 0.8
        - Advanced Degree – 1.0
    - Results were added to get a block group Education Score from 0.0 to 1.0.
- Student age population - the number of residents between 5 and 17 years of age

2. *Development of tiers*

SES Tiers were developed with the goal of having 20% of the school-age population in each Tier. From the 2020 ACS 5-year estimate data, there were 977,065 school-age individuals residing in Maryland as of mid-year 2020. Thus, approximately 195,413 school-age residents were placed in each Tier.

The SES score was calculated using the following metrics:

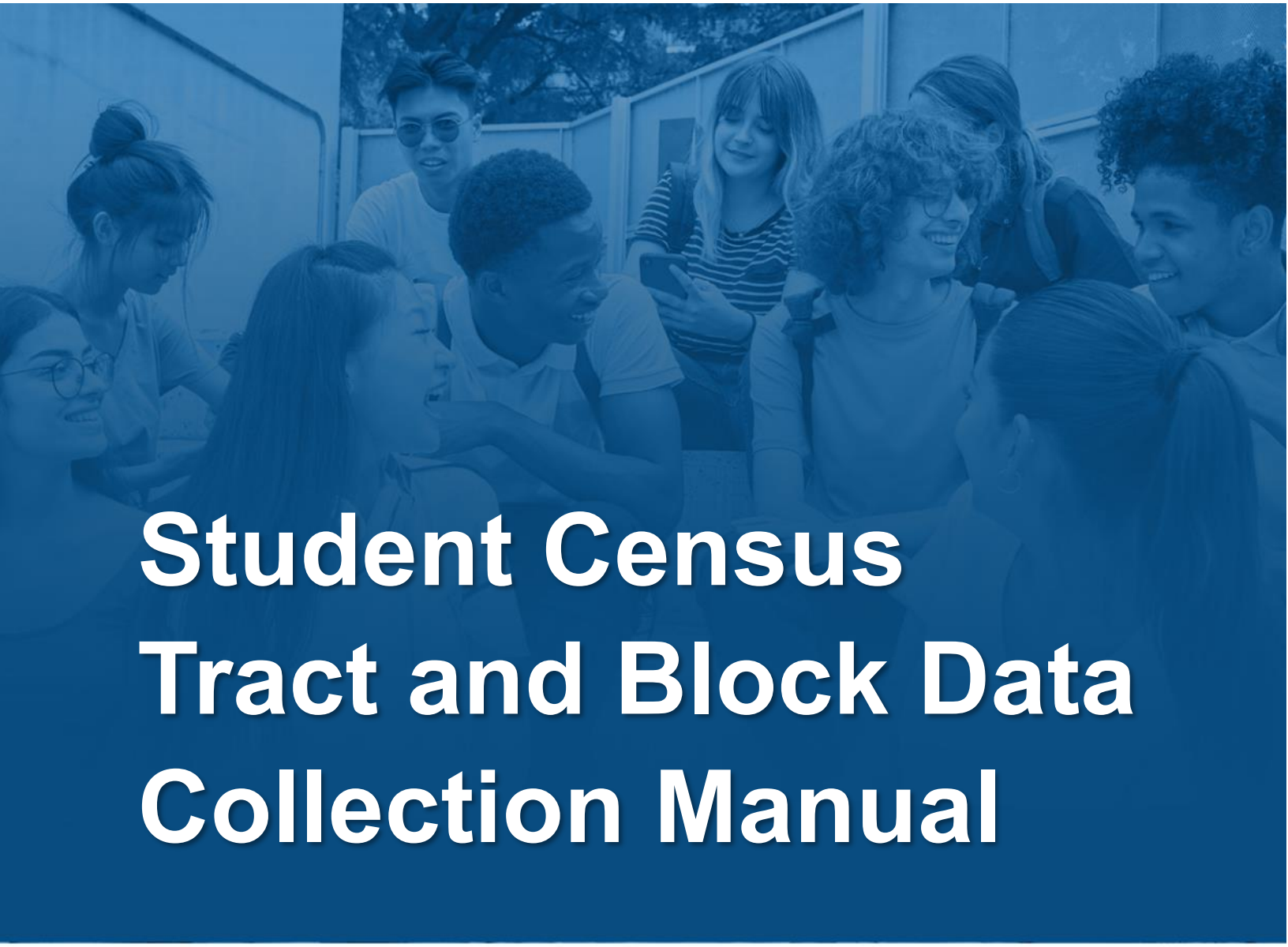
1. Median Household Income. There were 217 block groups missing Median Household Income.
2. Percent Owner Occupied Housing. There were 54 block groups missing housing ownership.
3. The percentage of Single-Parent Households, subtracted from 100%. There were 137 block groups missing household type.
4. An Education Score. There were 44 block groups missing education data.

For each metric, the average and standard deviation was calculated across all block groups. To place all four metrics on a comparable scale, Z scores were calculated by subtracting the metric mean from the individual block group score and dividing by the standard deviation of the metric. (Single parent family scores were reverse coded by taking the negative of the resulting Z score.) An example of this calculation is shown below.

$$\text{Z score} = \frac{education\ score - mean\ of\ all\ education\ scores}{\text{standard deviation of all education scores}}$$

An overall SES Z score for each block group is calculated by averaging the Z score across all metrics. If a measure is missing for a block group, the average is taken of the remaining metrics. For example, if a block group is missing a single-parent family Z score, the total socioeconomic scores = (median household income Z score + owner occupied household Z score + educational Z score)/3.

After calculating a total socioeconomic score for each of the 4,035 block groups with data, they were then ranked in order from lowest to highest. Census block groups were then placed into Tier 5 (the lowest score) until approximately 20% (~195,413) of school-age residents populated that tier. The same process was followed until approximately 20% of students were in Tier 4, and so on for Tiers 3 through 1. The resulting quintile split was as even as possible given the distribution of scores and the number of school-age residents in each Census block group.



Student Census Tract and Block Data Collection Manual

2022–2023 SCHOOL YEAR

Version 2022.7 | September 2022

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Document Control

Document Information

Title:	**Student Census Tract and Block Data Collection Manual**
Security Level:	Unclassified – For Official Use Only
Filename:	Student Census Tract and Block Data Collection Manual

Document History

Version	Date	Summary of Changes
1.0	February 2022	Document creation
1.1	March 2022	File Layout added
1.2	April 2022	Content update
1.3	May 2022	Alignment to MSDE manual template
1.4	June 2022	Details on how to submit alternative method request
1.5	July 2022	Edits and link placement identified
1.6	August 2022	Final edits and live link placement

Purpose

This data collection manual was produced by the Maryland State Department of Education (MSDE), Office of Accountability and Performance Reporting. The intended audiences for the manual are local education agency administrators responsible for general supervision of data transmission to MSDE and local school system information services and data processing staff who prepare for transmission, transmit, and verify the data.

Maryland's local education agencies (LEA) are responsible for a wide range of students. The impact of poverty is well known to be associated with differences in educational opportunities and student outcomes. Further, living in a high concentration of poverty puts students at even more of a disadvantage.

Statute §24–703.3 requires LEAs to convert student home addresses into U.S. Census Bureau tract or block numbers and submit the tract or block numbers to MSDE. The legislation requires the Maryland Longitudinal Data System Center (MLDSC) to establish a protocol for LEAs to convert student addresses. This approach was adopted in order to avoid the requirement that LEAs disclose student addresses. The Census tract and block information will be used to better understand the demographic and socioeconomic conditions of Maryland public school students. MSDE will provide these data to the MLDSC. The MLDSC maintains the Maryland Longitudinal Data System (MLDS) that contains student and workforce data from all levels of education and the State's workforce as required in Education Article § 24-703, Annotated Code of Maryland.

MSDE has a vested interest in incorporating neighborhood indicators of poverty to determine a school's eligibility for the Concentration of Poverty grant and the compensatory education program. The current data used to identify socioeconomic status has limitations and there is a need for a more accurate measure.

This manual is to be used in coordination with other documentation, including:

- Maryland Longitudinal Data System Center Census Protocol
- State Board Meeting, August 24, 2021, Blueprint Deep Dive: Neighborhood Indicators of Poverty
- Interim Report on Neighborhood Indicators of Poverty

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Timeline and Due Dates

Date	Event
July 18, 2022 – September 5, 2022	Alternative Method Request Window (see Options to Create Geolocation File section)
October 3, 2022	Collection window opens
October 3, 2022 – November 4, 2022	LEA Clean-Up
November 7, 2022 – November 11, 2022	LEA Report Review MSDE Quality Assurance Checks
November 11, 2022	Data Final
November 15, 2022	Signed Verification Form due

Webinars

Two webinars were held to discuss this data collection on the following dates:

- June 6, 2022 at 1:00 p.m.
- June 15, 2022 at 1:00 p.m.

Recordings of the webinars are available upon request.

Relevant State and Federal Requirements

State Law

Annotated Code of Maryland

Maryland Code, Education Article, §4-113.1

Maryland Code, Education Article, §5-223(g)

Maryland Code, Education Article, §24-703.3

Subsequent Reporting

Blueprint for Maryland's Future

Data submitted in the Student Census Tract and Block Data Collection are used as part of a study on incorporating neighborhood indicators of poverty to determine a school's eligibility for the Concentration of Poverty grant and the compensatory education program. Under the Blueprint for Maryland's Future, MSDE is required to submit a final report to the Accountability and Implementation Board on or before October 1, 2022. Additionally, by December 1, 2022, MSDE will collect the data necessary to implement the neighborhood poverty indicator methodology and will report to the General Assembly, the AIB, and the Department of Budget and Management.

Other Reporting

In addition to meeting the requirements of both state and federal law, the information collected via the Student Census Tract and Block Data Collection also supports:

- The statewide longitudinal data system, and
- The use of data to inform education policies and practices.

Guidance for Submitting the Student Census Tract and Block File

General

What students should be included?

Every student in grades PK-12 who was enrolled in the LEA as of September 30th of the current academic year. September 30th matches the as-of-date for MSDE's September Attendance file used for enrollment purposes.

How many records per student?

The file must contain only one record per student.

Addresses

What is a student address?

Student address includes a street number, street name, city, state abbreviation, and 5-digit zip code. This is the student's primary address used by the LEA to confirm residency.

The Maryland Student Records System Manual of 2020 defines a student address as "The complete mailing address (city, state, and zip code) where the student resides." The U.S. Census Bureau is more detailed: "The address used by a living quarters, special place, business establishment, and the like for mail delivery by the U.S. Postal Service. It can be a house number and street or road name, which may be followed by an apartment, unit, or trailer lot designation; a building or apartment complex name and apartment designation; a trailer park name and lot number; a special place/GQ facility name; a post office box or drawer; a rural route or highway contract route, which may include a box number; or general delivery. A mailing address includes a post office name, state abbreviation, and ZIP code. A mailing address may serve more than one living quarters, establishment, and so on."

Does the student address have to be a residential address?

Yes, the address must be a valid residential address. This means it contains a street number, street name, city, state abbreviation, and 5-digit zip code.

Can a P.O. box be used as a valid address?

No. While P.O. boxes are a valid *mailing address*, they are not a valid residential address and should not be provided.

Can a group home or other facility be used as the student address?

Typically, the address will represent a single household. However, a group home address may be used when that address is reported as the student's primary residence. Examples of group home addresses include residential child care centers, like those that are part of the foster care system.

What student address should be used?

The student information system you are using as a source of student address data may have multiple address records for any given student. Please use the following guidance:

1. Use the student's reported "home" address, as of **September 30th**, for the current academic year.
2. If the student has two or more current home addresses on file:
    1. Use the address that has the latest effective date.
    2. If your student information system does not associate address records with their effective date range, then use the most recently added address on the school record listed for residency purposes.

What address should be used if the student is part of the Maryland Safe at Home Address Confidentiality Program (ACP)?

According to the Safe at Home website "each ACP participant is allowed to use our [Safe at Home] Post Office Box address - P.O. Box 2995, Annapolis, Maryland 21404-2995. This legal, substitute address has no relation to the participant's actual *residential* address. The participant may also use the substitute address as a return address on mail sent". Because P.O. Box numbers are not valid residential addresses, do not report an address.

What if the student is homeless?

The 2020 Maryland Student Records Manual (page 15), defines a homeless student's primary nighttime residence as:

- Shelters, transitional housing
- Doubled–up means sharing the housing of other persons due to economic hardship, loss of housing or other reasons (such as domestic violence)
- Unsheltered includes cars, parks, campgrounds, temporary trailers including FEMA trailers, or abandoned buildings
- Hotels/Motels

Use the primary nighttime residence available address as of September 30th.

What if the student is a migrant student?

Use the available address as of September 30th.

What if the student address is outside of Maryland?

Please include a student if their address is from outside of Maryland using street number, street name, city, state abbreviation, and 5-digit zip code.

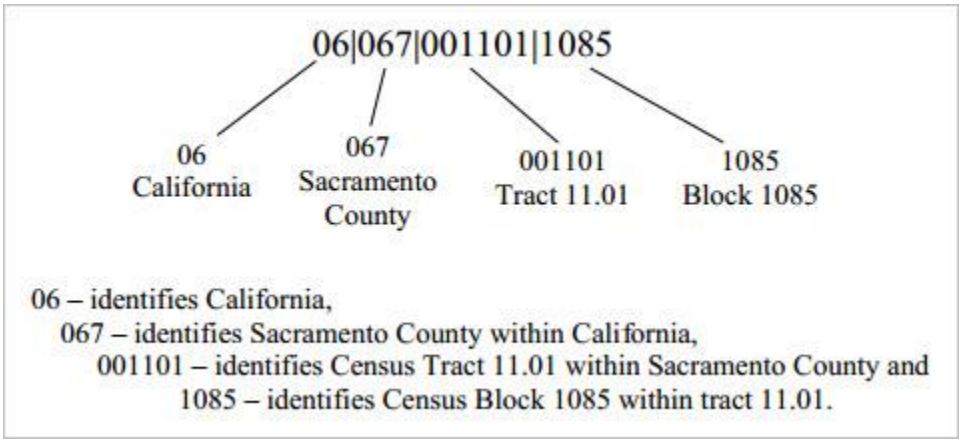
Geographic Identifiers (ID)

Census tract and blocks, like all other geographic areas that are defined by the US Census, are assigned **a unique Geographic ID**. This data collection uses geographic IDs, 15-digit integers, to identify addresses down to the census block level.

What is a valid Geographic ID?

A census block must be identified by: state/territory (2-digit code), county within a state (3-digit code), tract within a county (6-digit code), and a block within a tract (4-digit code).

Below is an example of one of these geographic IDs:



An example of a geographic ID.

What is a Census Tract Number?

A census tract number is a four-digit number, which may be followed by a two-digit decimal suffix, used to identify a census tract uniquely within a county or statistically equivalent entity.

What is a Census Block Number?

A census block number is a unique four-digit census number from 0000 to 9999 within a census tract, which nests within the state and county.

Student Census Tract and Block File Format and Layout

NOTE: If using the MLDSC created utility, the output file will already match the file format and layout below.

Data Element	Valid Codes and Values	Length	Start Position	End Position
Unique Record ID Number	000000-999999	6	1	6
LEA Number	01-23, 30, 32	2	7	8
School Number	Valid MSDE school number	4	9	12
State Assigned Student ID (SASID)	State Assigned Student Identification Number	10	13	22
Local Student ID	Local Student ID Number	10	23	32
Last Name		25	33	57
First Name		15	58	72
Middle Name		15	73	87
Generation Code or Suffix	Jr, Sr, I, II, III, etc...	3	88	90
Preferred Name (OPTIONAL)		15	91	105
Date of Birth	YYYYMMDD	8	106	113
Grade	01-12, 91-96	2	114	115
Gender	1=Male; 2=Female, X=Non-Binary	1	116	116
Hispanic/Latino Ethnicity	Y=Yes; N=No	1	117	117
American Indian/Alaskan Native	0=No; 1=Yes	1	118	118
Asian	0=No; 1=Yes	1	119	119
Black or African American	0=No; 1=Yes	1	120	120
Native Hawaiian or Other Pacific Islander	0=No; 1=Yes	1	121	121
White	0=No; 1=Yes	1	122	122
Homelessness Status	Y=Yes; N=No	1	123	123
Title I Indicator	Y=Yes; N=No	1	124	124
Free/Reduced Price Meal Eligibility	F=Free; R=Reduced; N=No	1	125	125
Migrant Status	Y=Yes; N=No	1	126	126
Foreign Exchange Student Indicator	Y=Yes; N=No	1	127	127

Data Element	Valid Codes and Values	Length	Start Position	End Position
Special Education (SE) Indicator	Y=Yes; N=No; E=Exited; 2=504; 3=Exited, 504	1	128	128
Special Education End Date	YYYYMMDD	8	129	136
Special Education Certificate Status	Y=Yes; N=No	1	137	137
English Learner (EL) Status	Y=Yes; N=No; E=Exited	1	138	138
English Learner Entry into the US Date	YYYYMMDD	8	139	146
English Learner Service Begin Date	YYYYMMDD	8	147	154
English Learner Service End Date	YYYYMMDD	8	155	162
English Learner ELA Assessment Exempt Status	Y=Yes; N=No	1	163	163
Foster Care Status	Y=Yes; N=No	1	164	164
Military Connected Indicator	Y=Yes; N=No; Unknown	1	165	165
FILLER		33	166	198
Submission Date	YYYYMMDD	8	199	206
15-Digit Geographic ID		15	207	221

Data Definitions and Coding Instructions

Data Element	Definition and Instructions
Unique Record ID Number	A six-digit unique number for a record.
LEA Number	The two-digit state designation of the local education agency.
School Number	The four-digit code assigned to the school. Must be a valid school number for the reported academic year.
State Assigned Student ID (SASID)	The valid State Assigned Student ID number assigned through USIS. Cannot contain pseudo numbers and cannot be BLANK. This number must be the same on all data files submitted to MSDE.
Local Student ID	The unique number assigned by the local education agency. May be any combination of numbers, not more than ten characters, right aligned. If fewer than ten characters, zero fill remaining positions to the left. This number must be the same on all data files submitted to MSDE.
Last Name	The full legal last name borne in common by members of a family, as appears on the evidence of birth document. Up to twenty-five (25) characters long. Do not include punctuation.
First Name	The full legal first name given to a person at birth, baptism, or through legal change, as appears on the evidence of birth document. Up to fifteen (15) characters long. Do not include punctuation.
Middle Name	The student's full legal middle name given to a person at birth, baptism, or through legal change, as appears on the evidence of birth document. Up to fifteen (15) characters long. Do not include punctuation. Report as indicated as per official birth documentation.
Generation Code or Suffix	An appendage, if any, used to denote the student's generation in a family (e.g., Jr., Sr., III), as appears on the evidence of birth document. Valid values include Jr, JR, II, III, IV, V. Data reported for this element should be alpha characters right justified with null values pre-filled to the left without punctuation. Use Roman numbering for standardization – 2nd should be II (ii), 3rd should be III (iii), 4th should be IV (iv), 5th should be V. Jr and II are unique occurrences and both are valid values.
Preferred Name (OPTIONAL)	An alternative first name preferred by the student. Up to fifteen (15) characters long. Do not include punctuation.
Date of Birth	The four digit year, two digit month, and two digit day (YYYYMMDD) on which the student was born. (Example: September 7, 2002 is 20020907)
Grade	The two-digit number of the grade in which the student is placed. 96 — Prekindergarten, under age 1 95 — Prekindergarten, age 1 94 — Prekindergarten, age 2 93 — Prekindergarten, age 3 92 — Prekindergarten, age 4 (Must be used if grouping ages 0 through

Data Element	Definition and Instructions
	4) 91 — Kindergarten 01 through 12 — Grades 01 through 12
Gender	The one-digit code for gender of the student. 1 - Male 2 - Female X - Non-Binary
Hispanic/Latino Ethnicity	An indication that the student traces his or her origin or descent to Mexico, Puerto Rico, Cuba, Central and South America, and other Spanish cultures, regardless of race. Y - Yes, of Hispanic or Latino origin N - No, not of Hispanic or Latino origin
American Indian/Alaskan Native	A person having origins in any of the original peoples of North and South America (including Central America), and who maintains cultural identification through tribal affiliation or community attachment. 0 - No 1 - Yes
Asian	A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent. This area includes, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. 0 - No 2- Yes
Black or African American	A person having origins in any of the Black racial groups of Africa. 0 - No 3 - Yes
Native Hawaiian or Other Pacific Islander	A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. 0 - No 4- Yes
White	A person having origins in any of the original peoples of Europe, Middle East, or North Africa. 0 - No 5 - Yes
Homelessness Status	A “Y” or “N” indicator of whether the student lacks a fixed, regular, and adequate nighttime residence. Homeless students include:

Data Element	Definition and Instructions
	(1) students who are sharing the housing of other persons due to loss of housing, economic hardship, or a similar reason; are living in motels, hotels, trailer parks, or camping grounds due to the lack of alternative adequate accommodations; are living in emergency or transitional shelters; are abandoned in hospitals; (2) students who have a primary nighttime residence that is a public or private place not designed for or ordinarily used as a regular sleeping accommodation for human beings (within the meaning of section 103(a)(2)(C)); (3) students who are living in cars, parks, public spaces, abandoned buildings, substandard housing, bus or train stations, or similar settings; and (4) migratory students who qualify as homeless for the purposes of this subtitle because they are living in circumstances described in (1) through (3) above.
Title I Indicator	A “Y” or “N” indicator that the student is participating in and served by programs under Title I, Part A of ESEA as amended.
Free/Reduced Price Meal Eligibility	An indicator of a student's eligibility to receive Free or Reduced Price Meals under the National School Lunch Program. This includes students who are eligible through annual household applications, "identified students" in a Community Eligibility Provision (CEP) school or LEA, or students who are “directly certified”. Identified students includes students directly certified through automated data matching for: Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance to Needy Families (TANF); Foster Care Services; Medicaid; or non-applicants approved by LSS officials and from the LSS liaisons’ lists for children experiencing homelessness, Head Start children, migrant youth, and runaways. F - Free is the student's level of eligibility to participate in the National School Lunch Program for breakfast, lunch, snack, supper, and milk programs. R - Reduced price is the student's level of eligibility to participate in the National School Lunch Program for breakfast, lunch, snack, supper, and milk programs. N - No, student is not eligible to receive free or reduced price meals.
Migrant Status	A “Y” or “N” indicator for migratory child. A migrant student is defined under 34 CFR 200.40 and required by the Elementary and Secondary Education Act (ESEA).
Foreign Exchange Student Indicator	A "Y' or "N" indicator that the student is a non-US citizen enrolled in a Foreign Exchange program.

Data Element	Definition and Instructions
Special Education (SE) Indicator	A student with a disability or multiple disabilities, who, by reason thereof, receives special education and related services under the Individuals with Disabilities Education Act (IDEA) according to an Individualized Education Program (IEP), Individual Family Service Plan (IFSP), or service plan. N - No, student is not receiving Special Education services. Y - Yes, student is receiving special education services. E - Exited. Student has exited services and is no longer receiving special education services. Exited students must have Special Education End Date. 2 - Section 504 Status. A student with a disability or multiple disabilities, who is provided with related aids and services under Section 504 of the Rehabilitation Act of 1973, as amended. 3 - Exited Special Education and placed in Section 504 Status. A student who has exited from special education services, and is provided with related aids and services under Section 504 of the Rehabilitation Act of 1973, as amended. Exited students must have Special Education End Date.
Special Education End Date	The eight-digit date (YYYYMMDD) a child with disabilities (IDEA) exited special education. Required if Special Education Indicator is E-Exited or 3-Exited Special Education and placed in Section 504 Status.
Special Education Certificate Status	A "Y" or "N" indicator that the student's IEP indicates that the student is on track to receive a MD High School Certificate of Program Completion. For Students with a Special Education Indicator of "Y".
English Learner (EL) Status	A student who has a primary or home language other than English and who has been identified as qualifying for ESOL services based on the English language proficiency screener. “Yes” includes students who refused ESOL services, and English Learners who moved out of the county while still receiving ESOL services. Exited students must have an English Learner Service End Date.
English Learner Entry into the US Date	Eight-digit date (YYYYMMDD) when the student entered any U.S. school for the first time. The date cannot be in the future. Required if EL Status is Y-Yes or E-Exited.
English Learner Service Begin Date	The eight-digit date (YYYYMMDD) a student classified as an English learner began receiving ESOL services in any school in the U.S. EL Begin Date cannot be in the future. Required if English Learner Status is Y-Yes or E-Exited.
English Learner Service End Date	The eight-digit date (YYYYMMDD) a student classified as an English learner stopped receiving ESOL services in any school in the U.S. EL End Date cannot be in the future. Required if English Learner Status is E-Exited.

Data Element	Definition and Instructions
English Learner ELA Assessment Exempt Status	A “Y” or “N” indicator that the student receiving ESOL services in their first year of enrollment in a U.S. (not including Puerto Rico) school, is exempt from the PARCC English/Language Arts assessment and may substitute the required state assessment with the English Language Proficiency Assessment (ACCESS for ELs 2.0). English learners must be provided the PARCC English/Language Arts assessment beginning with their second year of enrollment in U.S. schools. ELs must be provided the PARCC Mathematics assessment regardless of how recently they entered the U.S. educational system.
Foster Care Status	A "Y" or "N" indicator that the student is in foster care. Foster care means 24-hour substitute care for children placed away from their parents or guardians and for whom the child welfare agency has placement and care responsibility. This includes, but is not limited to, placements in foster family homes, foster homes of relatives, group homes, emergency shelters, residential facilities, child care institutions, and preadoptive homes. A child is in foster care in accordance with this definition regardless of whether the foster care facility is licensed and payments are made by the State, Tribal or local agency for the care of the child, whether adoption subsidy payments are being made prior to the finalization of an adoption, or whether there is Federal matching of any payments that are made. (45 C.F.R. § 1355.20(a)).
Military Connected Indicator	An indication that the student’s parent or guardian is on Active Duty, in the National Guard, or in the Reserve components of the United States military services. N - No, student is not military connected. Y - Yes, student is military connected. Student is a dependent of a member of the Active Duty Forces (full-time) Army, Navy, Air Force, Marine Corps, or Coast Guard, National Guard or Reserve Forces (Army, Navy, Air Force, Marine Corps, or Coast Guard). U - Unknown; It is unknown whether or not the student is military-connected.
FILLER	
Submission Date	Eight-digit date (YYYYMMDD) when the file was submitted to MSDE.
15-Digit Geographic ID	A census block must be identified by: state/territory (2-digit code), county within a state (3-digit code), tract within a county (6-digit code), and a block within a tract (4-digit code).

Options to Create the Geolocation File

1. Use the utility provided by the Maryland Longitudinal Data System Center (MLDSC). The protocol can be found using this hyperlink and is also listed in the APPENDIX B. MLDSC Protocol.
    a. If using the MLDSC created utility, **your output file will match the required MSDE file layout**.
    b. You will also receive a **detailed error list** to improve the data quality of your file.
2. Use other available methods and/or tools approved by the MLDSC.
    a. Create your own utility in-house;
    b. Directly use the U.S. Census Bureau geocoder; or
    c. Another available method

    Alternative methods must be submitted to mollyb.abend@maryland.gov by September 5, 2022 for review and approval. Please provide the following information with your request:
    a. A description of your process for obtaining the 15-digit geolocation ID;
    b. If the method utilizes the U.S. Census Bureau's data and/or geocoder;
    c. The year that the source data was collected;
    d. The validation process and strategies for improving data quality; and
    e. Details about keeping address data and other personally identifiable information private and secure.
    f. Using the MLDSC created utility, LEAs must also provide the following information:
        a. The number and percentage of how many student address records convert successfully;
        b. Of the successfully converted records, the number and percentage of how many records match the 15-digit geolocation ID in the LEA's system; and
        c. The most common errors listed in the error file generated by the utility.

Each LEA must submit their data as a fixed length text file (txt). For data elements in the record layout where no data are available, use a comma without quotation marks as the delimiter.

File Naming Conventions

A file naming convention helps to identify files when technical assistance is needed. The naming convention is as follows: “CENSUS_LL_YYYYMMDD_###.TXT”. The table below describes each element.

Element	Definition	Length
CENSUS	The file submission abbreviation for the Student Census Tract and Block File = CENSUS	6
LL	LEA Number	2
YYYYMMDD	The date when the file was generated in YYYYMMDD format	8
###	Number designated by the LEA to uniquely identify the individual submission (e.g., 001, 002)	3
.txt	Extension identifying the .txt fixed length file format	3

Below is an example using a file named CENSUS_01_20220626_001.TXT:

1. File Submission Name: CENSUS
2. LEA: 01
3. File generation date: 20220626 (June 26, 2022)
4. Submission number: 001

About the Data Collection Tool

How to Submit the Census Tract and Block File to MSDE

Data files should be uploaded to the "TO-MSDE" folder within the LAC Folder **SF-LAC-LEA##** on the MSDE Secure Server.

Please notify MSDE when your file has been uploaded to the secure server by sending an email to Molly Abend (mollyb.abend@maryland.gov).

Reports

If using the MLDSC created utility, you will receive a detailed error list to improve the data quality of your file. The description of error codes can be found in the MLDS Center's protocol (see Appendix B). Additionally, a summary report of all error and warning records, by each Error Code and Warning Code, will be generated if using the utility.

Verification of Data Quality

Validation Errors and Warnings identify inconsistencies within the Student Census Tract and Block data itself. These errors indicate that the user provided data that does not meet the criteria outlined in the Data Definitions and Coding Instructions. A detailed list of the errors reported by the MLDS Center utility (if used by the LEA) can be found in the MLDS Center's protocol.

Once data is submitted to MSDE:

1. Download sign-off sheet and send to MSDE with superintendent's signature

2. Download final error reports and data file to keep for LEA records

LEAs are responsible for downloading reports and keeping a copy for record keeping purposes.

Late File Submission Procedures

Below is the process MSDE will implement when it does not receive data files or sign-off forms within the timelines established in the MSDE Data Collection Calendar for each school year. MSDE will follow these procedures when there has been little or no contact from an LEA about a file that is due.

Definitions of Primary Roles

- **MSDE Data Collection Manager** — The MSDE staff who provides subject matter expertise, monitoring, and oversight of the data collection.
- **LEA Data Specialist** — The local education agency staff identified by the Local Accountability Coordinator as the primary contact for the submission of the data collection to MSDE.

Timeline

Day 2. Notification of the LEA Data Specialist

Two days after the established due date, the MSDE Data Collection Manager will contact the LEA Data Specialist via email or phone about the late file.

Day 4. Notification of the LEA Local Accountability Coordinator (LAC)

Four days after the established due date, the MSDE Data Collection Manager will email their Supervisor, the LEA Data Specialist, and the LEA LAC about the late file.

Day 7. Notification of the Accountability and Performance Reporting Executive Director

One week after the established due date, the MSDE Data Collection Manager will notify their supervisor and the Assistant State Superintendent of Assessment, Accountability and Performance Reporting of the late file.

Day 10. Notification of the State Superintendent.

Ten days after the established due date, MSDE will notify the State Superintendent or their designee about the late file. They or their designee will contact the LEA Superintendent about the file via email. The email will include the dates from the MSDE Data Collection Calendar, a summary of Steps 1-3 above, and the repercussions for the continued delay of the file submission.

APPENDICES

APPENDIX A. Error and Warning Codes

Error/ Warning Code	Description	Requirements
E01	Student SASID not found in USIS	Student SASID not found in USIS
E02	Invalid Geolocation ID	Geolocation ID number must be 15 digits

Address 550 West Baltimore Street
Baltimore, MD 21201
Phone 410-706-2085
Email mlds.center@maryland.gov
Website www.MLDSCenter.org

APPENDIX B. MLDSC Protocol

Protocol for Converting Student Addresses to Census Tract and Block Identifiers for 2022-2023

Document History

Version	Date	Summary of Changes
0.1	12/1/2020	Creation of Document, section headers, and introduction body.
0.2	12/8/2020	General guidance section started.
0.3	12/11/2020	Worked on the “How will data be transmitted” section, and the beginning of “How to convert and submit…” section.
0.4	12/14/2020	Restructured the document
0.5	12/21/2020	Edited Errors and Flags section
0.6	01/07/2021	Edits to all sections; prepared for Workgroup review
0.7	01/15/2021	Edits to all sections based on Workgroup meeting feedback
1.0	01/29/2021	Enhanced Purpose section
1.1	02/23/2021	Revised Background section
2.0	08/03/2021	Added draft language for utility use
2.1	08/13/2021	Added approximate length per 1,000 records (1 per 4 seconds)
2.2	10/05/2021	Updated Workgroup section
2.3	01/14/2022	Changed all references of ‘LSS’ to ‘LEA’ Added GUI mockup and replaced older screenshot images
2.4	02/25/2022	Added PowerSchool user note about report
2.5	06/15/2022	Added directions for alternative method requests
2.6	08/23/2022	Final edits; added screenshots from most recent utility build

About the MLDS Center

The Maryland Longitudinal Data System Center (MLDS Center) is an independent state agency that develops and maintains the Maryland Longitudinal Data System (MLDS) that contains student and workforce data from all levels of education and the State's workforce. The MLDS Center uses the MLDS to 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." (see Education Article, § 24-702(d)(1), Annotated Code of Maryland).

The MLDS Center's data sharing partners include the Maryland State Department of Education, Maryland Higher Education Commission, Maryland Department of Labor, Maryland Department of Juvenile Services, Maryland Department of Human Services, and the Motor Vehicle Administration. More information about the MLDS Center can be found at https://mldscenter.maryland.gov/Aboutus.html#.

The MLDS Center draws on data sources that cover the full student lifecycle: early childhood, K-12, postsecondary, and workforce with the earliest data in the system from the 2007-2008 academic year. The following are types of data collected by the MLDS Center: courses taken; grades achieved; test results; participation; completion; grade point average; transitions; degree, diploma, or credential attainment; enrollment; demographics; employment status; wage information; and type of employment. The MLDS Center uses this data to provide information about student performance that can be used to improve education policy.

Contact Information

Contact Name	Position / Title (Agency)	Contact Information
Molly Abend	Data Management Coordinator (MLDSC)	mollyb.abend@maryland.gov
Sean Duvall	Business Analyst (MLDSC)	sean.duvall@maryland.gov
Zachary Marshall	MSDE Data Collection Specialist	zachary.marshall@maryland.gov

Contents

Purpose

In 2019, the Maryland General Assembly passed House Bill 1206. This law requires each local education agency (LEA) to convert student home addresses into a U.S. Census Bureau tract or block number using a process developed by the MLDS Center.

> **Each county board shall convert a student's home address and geolocation information into census tract and block numbers in a manner and format that are consistent with the protocol developed by the Maryland Longitudinal Data System Center under § 24-703.3 of this article. - Ed. Art. § 4-113.1(a)**

This document sets forth the process to be followed by each LEA to identify census tract and block numbers for their student populations. This protocol will help guide LEAs through the process of converting student home addresses and provide the knowledge, resources, and tools necessary to complete the legislated task.

Background

Using Census Tract and Block

What is a Census Tract and Census Block?

Census Tracts[1] are small, relatively permanent statistical subdivisions of a county or equivalent entity that are updated by local participants prior to each decennial census as part of the Census Bureau's Participant Statistical Areas Program. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of statistical data.

Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. Census tract boundaries are delineated with the intention of being maintained over a long time so that statistical comparisons can be made from census to census. Census tracts occasionally are split due to population growth or merged because of substantial population decline.

Census Blocks[2] are statistical areas bounded by visible features, such as streets, roads, streams, and railroad tracks, and by nonvisible boundaries, such as selected property lines and city, township, school district, and county limits and short line-of-sight extensions of streets and roads. Generally, census blocks are small in area; for example, a block in a city bounded on all

[1] Read the entire definition of Census Tracts at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_13

[2] Read the entire definition of Census Blocks at: https://www.census.gov/programs-surveys/geography/about/glossary.html#par_textimage_5

sides by streets. Census blocks in suburban and rural areas may be large, irregular, and bounded by a variety of features, such as roads, streams, and transmission lines. In remote areas, census blocks may encompass hundreds of square miles. Census blocks cover the entire territory of the United States, Puerto Rico, and the Island Areas. Census blocks nest within all other tabulated census geographic entities and are the basis for all tabulated data.

For more information go to census.gov.

How are census tracts and blocks used by the U.S. Census Bureau?

The U.S. Census Bureau uses census tract and block to describe geographic areas. Census tracts and blocks describe geographic boundaries/areas in more detail than the general names of cities, towns, or states. The Census Bureau releases demographic, economic, housing, and social information annually on census tract and blocks such as annual incomes for households and number of students living in the tract/block.

Why is census tract and block being collected?

The U.S. Census Bureau conducts the *American Community Survey (ACS)* that provides detailed information about the nation and its people. Through the ACS, more is known about jobs and occupations, educational attainment, language other than English spoken at home, veteran status, whether people own or rent their homes, race and ethnicity, and other topics. The information is gathered and reported at the census block and tract level. By assigning Maryland students to their block and tract, the MLDS Center can use the ACS to have more in-depth information about the student backgrounds.

For many years, education research has relied on imperfect measures of socioeconomic status (SES). Historically, the education community has used free and reduced price meals (FARMs) eligibility status under the National School Lunch Program as a proxy for poverty. Using FARMs eligibility as a proxy may not correctly identify students experiencing poverty and treats all students as experiencing the same level of poverty. Using FARMs participation as a proxy for student poverty has a number of known limitations and data is only reported on student eligibility at a point in time.

How will the MLDS Center use census tract and block information and how will the information benefit LEAs?

The MLDS Center aims to use census tract and block number to investigate and develop a more accurate measure of socioeconomic status. Access to this sort of socioeconomic data is of interest to the MLDS Center, policymakers, education professionals, and the public. By having the local education agencies convert their student addresses to census tracts and blocks, and then sending that data to MSDE, the MLDS Center will be able to combine student geolocation data with the census tract and block aggregated data. This data can serve as an indicator for socioeconomic status at the individual level and provide the opportunity to perform quality academic research and draw new insights on this topic.

The MLDS Center is committed to working with LEAs to better understand the student and school population characteristics within the LEA. Previous research and policy engagement the MLDS Center has conducted on poverty can be found here: https://mldscenter.maryland.gov/ResearchReports.html. Presentations to the Commission on Innovation and Excellence in Education (Kirwan Commission) can be found here: https://mldscenter.maryland.gov/Presentations.html.

Timeline and Due Dates

Date	Event
Workgroup Established	August 2020
Pilot Administration	May 2021 - September 2021
Process Finalization	October 2021 - September 2022
Full Implementation	October 2022 - December 2022
Data Collection Window Opens	October 3, 2022
Data Collection Window Closes	November 11, 2022
Final Verification	November 15, 2022

Guidance for Submitting this File

Data Reporting Guidelines

This section contains guidance for submitting this file in the format of questions and answers.

General

What students should be included?
Every student in grades PK-12 who was enrolled in the LEA as of September 30th. September 30th matches the as-of-date for MSDE's September Attendance file used for enrollment purposes.

How many records per student?
The file must contain only one record per student.

What format must the file be in?

The file must be in fixed length format. Please see the link below for the complete file format.

Addresses

What is a Student Address?

A student address includes a street number, street name, city, state abbreviation, and 5-digit zip code. This is the student's primary address used by the LEA to confirm residency.

The Maryland Student Records System Manual of 2020 defines a student address as "The complete mailing address (city, state, and zip code) where the student resides." The U.S. Census Bureau is more detailed: "The address used by a living quarters, special place, business establishment, and the like for mail delivery by the U.S. Postal Service. It can be a house number and street or road name, which may be followed by an apartment, unit, or trailer lot designation; a building or apartment complex name and apartment designation; a trailer park name and lot number; a special place/GQ facility name; a post office box or drawer; a rural route or highway contract route, which may include a box number; or general delivery. A mailing address includes a post office name, state abbreviation, and ZIP code. A mailing address may serve more than one living quarters, establishment, and so on."

Does the student address have to be a residential address?

Yes, the address must be a valid residential address. This means it contains a street number, street name, city, state abbreviation, and 5-digit zip code.

Can a P.O. box be used as a valid address?

No. While P.O. boxes are a valid *mailing address*, they are not valid residential addresses and should not be provided.

If the address contains a directional (N, S, E, W), should the period be included?

No. We recommend excluding the period after a directional as the Census Geocoder does not appear to process addresses with them included.

Can a group home or other facility be used as the student address?

Typically, the address will represent a single household. However, a group home address may be used when that address is reported as the student's primary residence. Examples of group home addresses include residential child care centers, like those that are part of the foster care system.

Which student address should be used?

The student information system you are using as a source of student address data may have multiple address records for any given student. Please use the following guidance:

1. Use the student's reported "home" address, as of **September 30th**, for the current academic year.
2. If the student has two or more current home addresses on file:
    a. Use the address that has the latest effective date.
    b. If your student information system does not associate address records with their effective date range, then use the most recently added address on the school record listed for residency purposes.

What address should be used if the student is part of the Maryland Safe at Home Address Confidentiality Program (ACP)?

According to the Safe at Home website "each ACP participant is allowed to use our [Safe at Home] Post Office Box address - P.O. Box 2995, Annapolis, Maryland 21404-2995. This legal, substitute address has no relation to the participant's actual *residential* address. The participant may also use the substitute address as a return address on mail sent". Because P.O. Box numbers are not valid residential addresses, do not report an address.

What if the student is homeless?

The 2020 Maryland Student Records System Manual (page 15) defines a student's primary nighttime residence as:

- Shelters, transitional housing
- Doubled–up means sharing the housing of other persons due to economic hardship, loss of housing or other reasons (such as domestic violence)
- Unsheltered includes cars, parks, campgrounds, temporary trailers including FEMA trailers, or abandoned buildings
- Hotels/Motels

Use the available address as of September 30th.

What if the student is a migrant student?

Use the available address as of September 30th.

What if the student address is outside of Maryland?

Please include a student if their address is from outside of Maryland using street number, street name, city, state abbreviation, and 5-digit zip code.

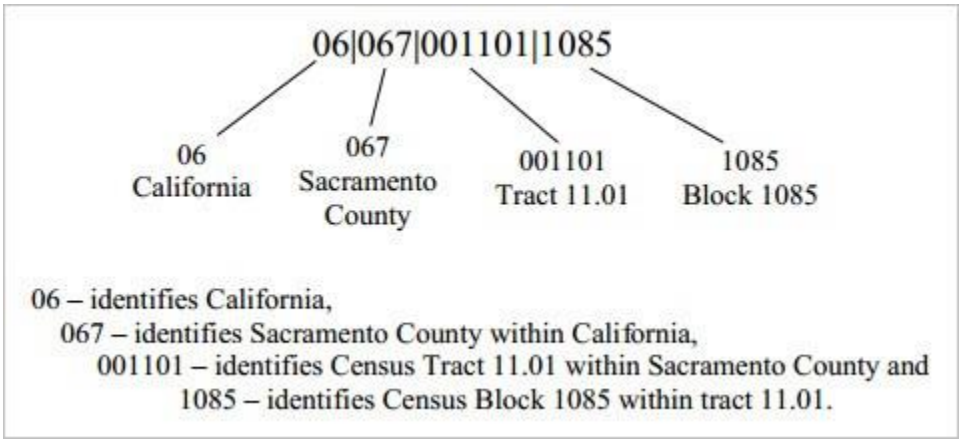
Geographic Identifiers: How census tract and blocks are identified

Census tract and blocks, like all other geographic areas that are defined by the US Census, are assigned a unique **Geographic ID**. This data collection uses geographic IDs, 15-digit integers, to identify addresses down to the census block level[2].

What is a valid Geographic ID?

A census block must be identified by: state/territory (2-digit code), county within a state (3-digit code), tract within a county (6-digit code), and a block within a tract (4-digit code).

Below is an example of one of these geographic IDs:



An example of a geographic ID.

What is a Census Tract Number?

A census tract number is a four-digit number, which may be followed by a two-digit decimal suffix, used to identify a census tract uniquely within a county or statistically equivalent entity.

What is a Census Block Number?

A census block number is a unique four-digit census number from 0000 to 9999 within a census tract, which nests within state and county.

How to Convert Student Addresses

The LEAs have two options for converting student addresses into a census tract and block number:

1. Use the utility (described in detail below) provided by the MLDS Center

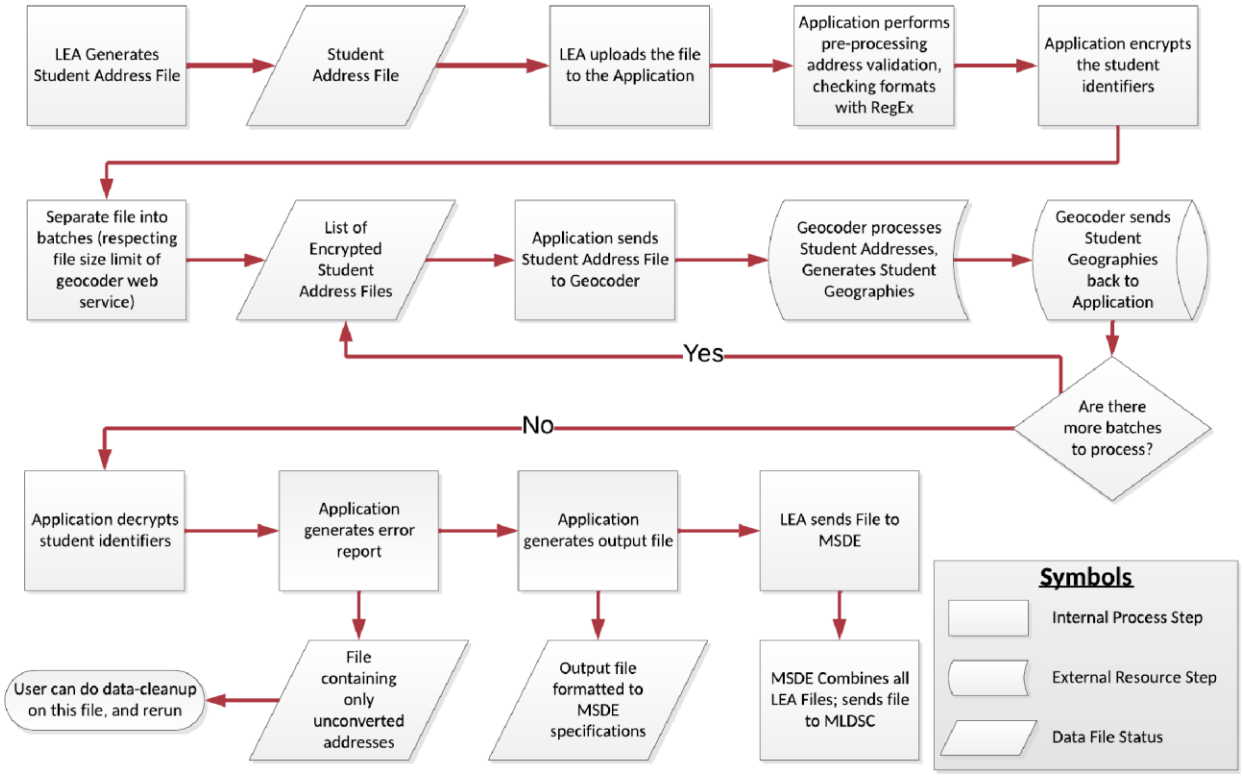
[2] For more information, read the Census Bureau's documentation titled "Understanding Geographic Identifiers (GEOIDs)". The section "GEOID Structure for Geographic Areas" explains the structure of geographic IDs down to the Census Block level: https://www.census.gov/programs-surveys/geography/guidance/geo-identifiers.html

2. Use other available methods/tools approved by the MLDS Center

Using the Utility Provided by the MLDS Center

The MLDS Center has created a utility that will assist an LEA with the student address conversion process. The utility takes the LEA provided list of student addresses, anonymizes the student identifiers, and then geocodes the student addresses using the batch processing feature of the U.S. Census Bureau's Geocoder Web Service.

The utility will automate the process of anonymizing the data, batching the provided student address file, and then feeding it to the geocoder. The process flowchart is below.



Student Address File Layout and Utility Instructions

The LEA must prepare and provide a file of student addresses for batch geocoding to the MLDS Center utility.

1. Use the specifications below to create the student address input file. Refer to the General Guidance section for details on what students and addresses to include.

Data Element	Start Position (inclusive)	Length	End Position (inclusive)	Type	Permitted Values / Comment
Unique Record ID Number	1	6	6	Integer	000000-999999
MSDE Standard Demographic String[3]	7	200	206	See comment	See footnote 4, at the bottom of this page.
Street Number and Name	207	48	254	Character	The number and name portion of the street address. Ex: 100 Main Street
City	255	40	294	Character	The name of the city / town.
State Abbreviation	295	2	296	Character	The two digit abbreviation of the state.
Zip Code	297	5	301	Character	A five digit zip code.

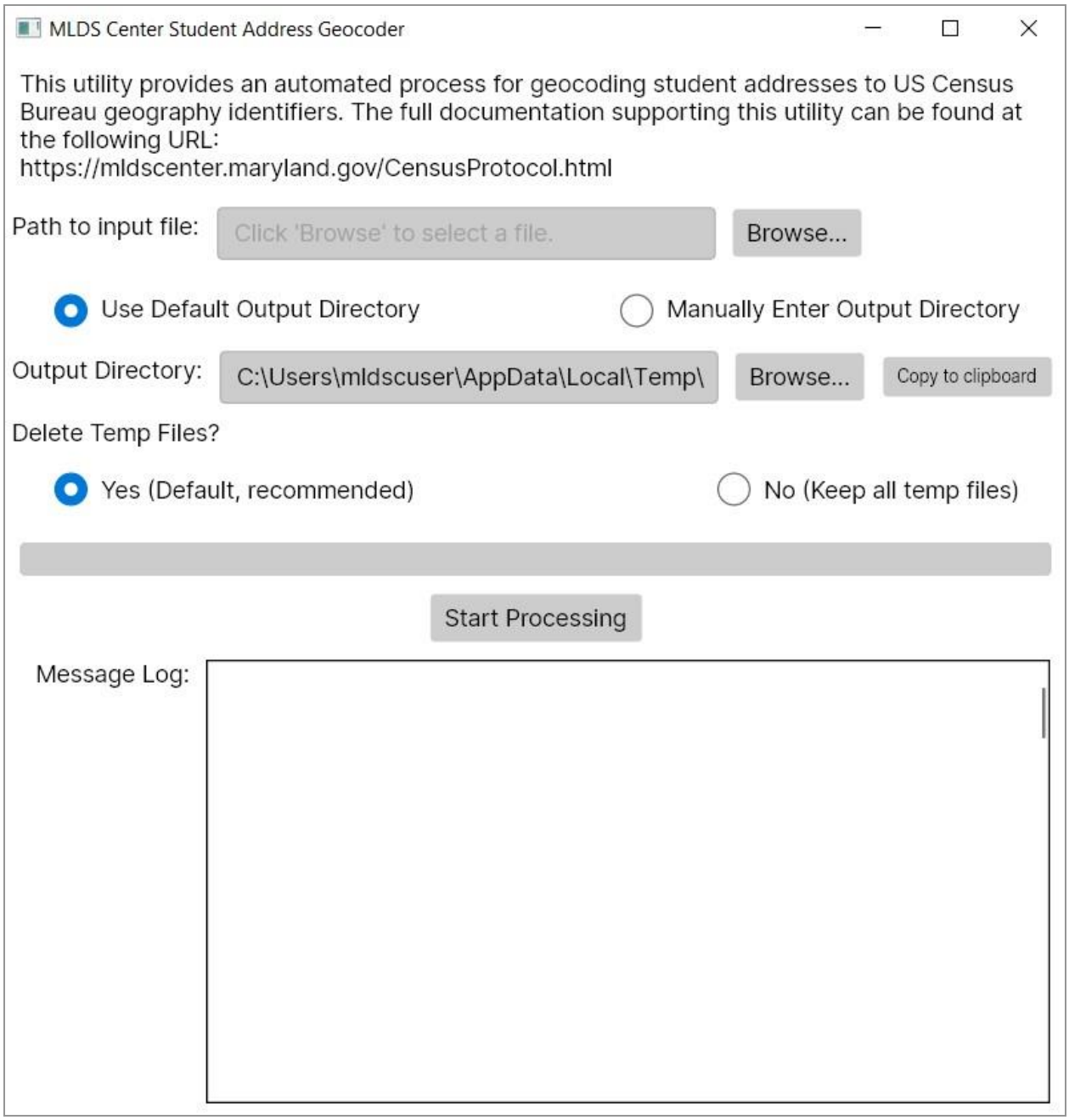
2. Use the following link to access the utility: https://mldscenter.maryland.gov/CensusProtocol.html. On that page, you can download **"MLDSC Census Utility.zip"**.
    a. If using MacOSX, go to Finder, view in the upper bar, right click “Show Path Bar”, and then right click and copy the last segment.

[3] The Maryland Student Records System Manual states that all data collections passing through MSDE’s Division of Assessment, Accountability, and Information Technology (DAAIT) must contain the Standard Demographic String. The manual for 2020 defines the specifications of this string, here (page 35): http://marylandpublicschools.org/about/Documents/OCP/Publications/StudentRecordsSystemManual2020.pdf

3. Open the folder where the .zip folder was downloaded and extracted.
4. Open the MLDSC_Census_Utility_Aug2022 v3 file folder.
5. Double-click the MLDSC_Census_Geocoder application.
6. Select “Extract All”
7. Select a destination for the extracted files
8. Select “Extract”
9. Open the MLDSC_Census_Utility_Aug2022 v3 file folder again
10. Double-click the MLDSC_Census_Geocoder application.

NOTE: The MLDS Center procured an extended validation code signing certificate to enhance the security of the utility. When opening the utility, *a windows security prompt will likely appear, informing you that the publisher of the utility **is** the MLDS Center*. You should **NOT** run unsigned software, where the publisher is unknown or unspecified, unless you are absolutely certain the file is authentic.

11. The application, when opened, should look something like the following:



12. Once open, select “Browse” to provide the full path to your input file.
13. After you provide the path of the input file, you will be provided with the option to select the default output directory or manually enter the output directory. This is the path to which files will be written and the location to retrieve your output. Copy the path to your clipboard with the “Copy to Clipboard” button.
14. Next, you have the option to delete the temporary files (recommended) or keep the temporary files.
15. Select the “Start Processing” button to start to process the file, handling 1,000 records at a time. As the utility processes each 1,000 record subset, a message will appear

indicating the processing progress. ***It takes approximately 4 minutes per 1,000 records. For every 15,000 records the estimated processing time is 1 hour.***

16. While the file is processing, a progress bar will indicate the percentage complete.
17. A message indicating the processing has finished will appear. The total processing time, number of records processed, records successfully completed, and records that failed conversion are provided.
18. Go to the aforementioned output directory. (Use the "Copy to Clipboard" button if needed)
19. In this directory, you will see the output of the batch processed. These files contain the processed data (with the Errors and ErrorsSummary files helping LEAs identify and clean up data issues.)
20. All output files, folders, and crash logs (when created) are written to the MLDSC_Census_Geocoder folder.
21. If you run into an issue, please send details of your error to sean.duvall@maryland.gov, along with the relevant crash log file.

Output File for Submission to MSDE

The output file provided will match the input specifications of the MSDE data collection. Please refer to MSDE's Student Census Tract and Block File Submission Guide.

Data Element	Start Position (inclusive)	Length	End Position (inclusive)	Type	Permitted Values / Comment
Unique Record ID Number	1	6	6	Integer	000000-999999
MSDE Standard Demographic String[4]	7	200	206	See comment	See footnote 4, at the bottom of this page.
15-digit Geographic ID	207	15	221	Integer	See description of geographic IDs.

[4] The Maryland Student Records System Manual states that all data collections passing through MSDE's Division of Assessment, Accountability, and Information Technology (DAAIT) must contain the Standard Demographic String. The manual for 2020 defines the specifications of this string, here (page 35): http://marylandpublicschools.org/about/Documents/OCP/Publications/StudentRecordsSystemManual2020.pdf

Using an Alternative Process

Although it is recommended to use the MLDS Center utility, there are numerous tools and means that can be used to meet the requirements of this process. Some alternatives to the utility are listed below.

- The U.S. Census Bureau's Geocoder: https://geocoding.geo.census.gov/. An overview brochure is available.
- The Texas Education Agency has several tools available on their public website: https://tea.texas.gov/texas-schools/general-information/census-block-group-tools ● LEAs may utilize available resources within their system.

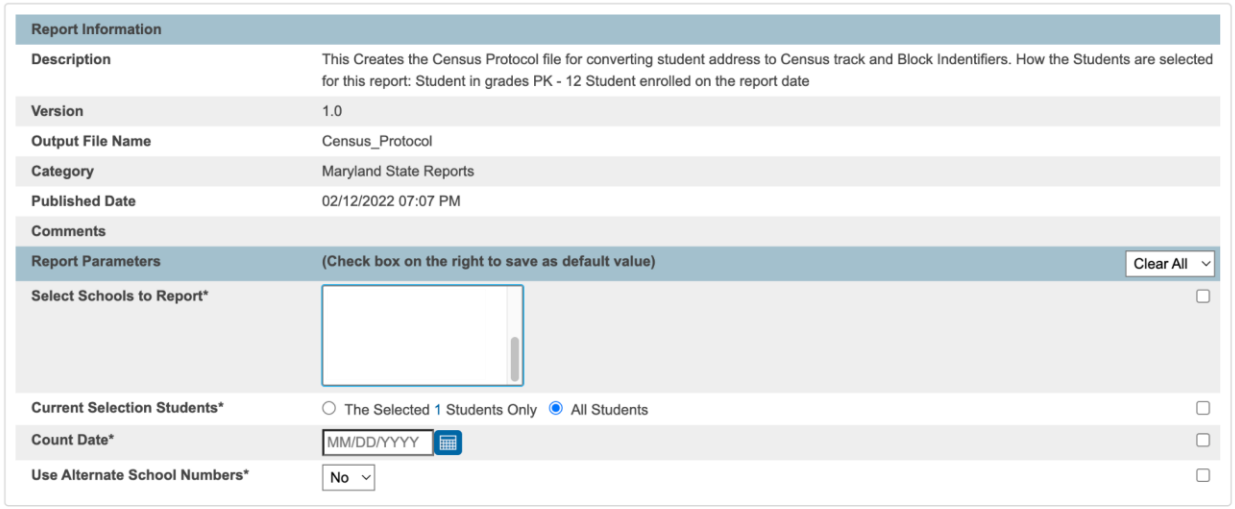
Alternative methods must be submitted to mollyb.abend@maryland.gov by September 5, 2022 for review and approval. The following information should be included with your request:

- A description of your process for obtaining the 15-digit geolocation ID;
- If the method utilizes the U.S. Census Bureau's data and/or geocoder;
- The year the source data was collected;
- The validation process and strategies for improving data quality; and
- Details about keeping address data and other personally identifiable information private and secure.
- Using the MLDS Center created utility, LEAs must provide the following information:
    - The number and percentage of how many student address records convert successfully.
    - Of the successfully converted records, the number and percentage of how many records match the 15-digit geolocation id in the LEA's system.
    - The most common errors listed in the error file generated by the utility.

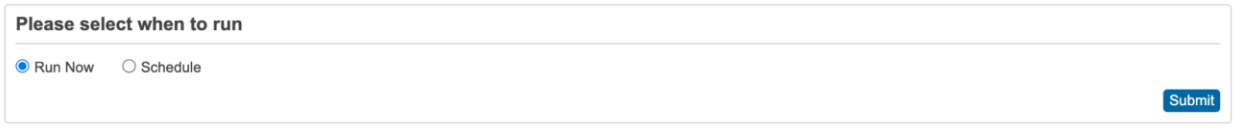
PowerSchool Users Note

PowerSchool SIS users have an advantage because within the LEA's school information system there is a state report called "Census Tract and Block File" that pulls the necessary data using the correct file layout. After selecting the "Census Tract and Block File" report, select all schools and the September 30th date. On the next page is a screenshot of the report:

Census Tract and Block File



Scheduling



Guidance for Submitting the Census Tract and Block File to MSDE

The output file from the MLDS Center utility should match the file format needed to submit to MSDE. See MSDE's Student Census Tract and Block File Submission Guide for file requirements.

How will the data be transmitted in accordance with the law?
Education Article, § 4-113.1, Annotated Code of Maryland, requires MSDE to collect the census tract and block number data from each LEA as stated below:

> **(b) The Department [MSDE] shall collect from each county board census tract and block number information for each student in the county.**

MSDE will in turn provide the data to the MLDS Center, using Managed File Transfer (MFT). MFT allows secure access and ensures all data submitted remains protected via encryption. To read more about the MLDS Center's privacy and security policies.

> **(c) The Department [MSDE] shall provide the Maryland Longitudinal Data System Center with the census tract and block number information collected under this section to aid the Maryland Longitudinal Data System Center's goal under § 24-702 of this article of linking student data and workforce data.**

How does an LEA access the Census Tract and Block output file?
After the utility runs, the file will be saved and written directly to a file directory located on the computer of the user's choosing. Please reference the Using the Utility Provided by the MLDS Center section for more information.

Errors and Flags to be Checked by MLDS Center Utility

The MLDS Center Errors File (created by the utility) will be located in the output directory for each batch. As part of a pilot conducted in Fall 2021, the average success rate address conversion was 92%. Using the Errors File, LEAs can identify which areas need cleaning and could help to raise the success rate.

A summary report of all error and warning records, by each Error Code and Warning Code, will be generated as well.

Error Codes and Descriptions

Code	Name	Description
1	Invalid Unique Record ID	Improperly formatted unique record ID; must be an integer with one to six digits.
2	Invalid Street Address Provided	Improperly formatted street address provided (incomplete, non-existent)
3	Invalid City Provided	Improperly formatted city provided (incomplete, non-existent)
4	Invalid State Abbreviation Provided	Improperly formatted state abbreviation provided (incomplete, non-existent)
5	Invalid Zip Code Provided	Improperly formatted zip code provided (incomplete, non-existent)
6	Valid address does not resolve to census tract and/or block.	Non-residential addresses may not resolve census tract and/or block, and thus are invalid.

7	Multiple Record ID Numbers	More than one record ID number is listed; all records must be unique

Warning Codes and Descriptions

Code	Name	Description
8	State Outside Maryland	The address state is outside of Maryland.

Census Tract and Block Data Workgroup

The MLDS Center and MSDE created a Census Tract and Block Data Workgroup made up of local education agency level users of address data. Workgroup members were to assist in establishing protocols and developing technical assistance for local education agencies.

- Andrew Raith, Reporting Specialist, Frederick County Public Schools
- Cheryl Lawrence, Instructional Technology Coordinator, Caroline County Public Schools
- Chris Wohn, Director of Research, Baltimore City Public Schools
- Jason Dykstra, Executive Director, Anne Arundel County Public Schools
- Katherine Tartaglia, GIS Analyst, Baltimore City Public Schools
- Nichole Stewart, Director of Facility Planning, Baltimore City Public Schools

Staff of both the MLDS Center and MSDE also attended:

- Laia Tiderman, formerly a Program Manager, MSDE
- Matthew Duque, Senior Research and Data Specialist, MSDE
- Molly Abend, Data Management Coordinator, MLDS Center
- Ross Goldstein, Executive Director, MLDS Center
- Sean Duvall, Business Analyst, MLDS Center

Workgroup Timeline

As shown on the next page, in 2020 the Workgroup met twice, drafted and reviewed a draft protocol outline, and created a draft protocol. In subsequent years, meetings occurred about every 2 months, a pilot administration was conducted, and protocols were revised for full implementation to begin in fall 2022.

References

US Census Bureau. “Glossary.” *United States Census Bureau*, 16 September 2019, https://www.census.gov/programs-surveys/geography/about/glossary.html. Accessed 3 December 2020.

Annotated Code of Maryland, Education Article § 24-702

Annotated Code of Maryland, Education Article § 24-703.3

Annotated Code of Maryland, Education Article § 4-113.1

Texas Education Agency. *Census Block Group Tools*. Texas Education Agency. Retrieved January 15, 2021, from https://tea.texas.gov/texas-schools/general-information/census-block-group-tools

APPENDIX C. Recommendations

1. Choose to use the utility provided by the Maryland Longitudinal Data System Center.
2. Review the error report created by the utility to identify areas to clean.
3. Clean current address data prior to the new school year.
4. Contact your Operations department for any tools or information available on geolocation data.