

Education Demographic and Geographic Estimates (EDGE) Program

School Attendance Boundary Survey (SABS) File Documentation: 2015-2016

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School Attendance Boundary Survey (SABS) File Documentation: 2015-16

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INTRODUCTION

The School Attendance Boundaries Survey (SABS) was an experimental survey conducted by the U.S. Department of Education's (ED) National Center for Education Statistics (NCES) with assistance from the U.S. Census Bureau to collect school attendance boundaries for regular schools in the 50 states and the District of Columbia. Attendance boundaries, sometimes known as school catchment areas, define the geographic extent served by a local school for the purpose of student assignments. School district administrators create attendance areas to help organize and plan district-wide services, and districts may adjust individual school boundaries to help balance the physical capacity of local schools with changes in the local school-age population. This document summarizes the final cycle of the experimental boundary collection. The 2015-16 SABS collection was intended to update boundaries collected during the 2013-2014 cycle and to supplement boundaries from additional districts not included in the previous collection.

Background

Large-scale collection of attendance area boundaries was initiated by Dr. Salvatore Saporito and a team from The College of William & Mary in the early 2000s as part of an effort to examine school-level demographic conditions. This effort integrated population data from the 2000 decennial census with administrative data from the 1999-2000 NCES Common Core of Data (CCD) to allow for demographic and economic analysis of individual school areas for the largest 100 districts in the U.S. This effort was expanded in 2008 to create the School Attendance Boundary Information System (SABINS), a data infrastructure project supported by the National Science Foundation. SABINS included grade-specific attendance boundaries from over 500 districts for the 2009-2010 academic year. More information about the SABINS project can be found at www.sabinsdata.org. In 2011 NCES coordinated with SABINS to support a collection of the 600 largest districts in the U.S. The boundaries were assembled and associated with school-level attributes from the CCD and made available for download from the SABS website (<https://nces.ed.gov/programs/sabs/>). NCES launched the first SABS survey in 2013 to collect boundaries for the 2013-2014 academic year and initiated the follow-up 2015-2016 collection in November 2015. NCES was authorized to develop the collection under the Education Sciences Reform Act of 2002 and obtained approval for this collection in June 2013 from the Office of Management and Budget (OMB) under OMB control number 1850-0897.

Applications

The SABS collection was intended to support four primary purposes. First, unlike school district boundaries that have been regularly updated and compiled for decades to support statutory programs, large-scale multi-cycle collections of school attendance boundaries were not available. As a result, questions about potential patterns and effects of sub-district administrative geography have been difficult to analyze due to the lack of foundational data. The SABS collection provides a useful step to help understand this important educational condition, and also to understand the limitations of school-level boundaries as a means of representing and predicting the relationship of student assignments to schools. Although districts tend to use school boundaries as the primary means of organizing student assignments, many districts also use a variety of school choice and open enrollment options that transcend traditional school boundaries. The SABS collection provided an opportunity to identify these conditions as well. Second, school-level boundaries can be used to visualize the distribution of educational, demographic, and economic conditions within and between school districts using geographic information systems (GIS) and other mapping applications. They can be used to help visualize and explore how demographic, economic, and geographic conditions may align – and perhaps contribute – to educational outcomes in specific areas.

Third, the cumulative educational experience of a student occurs across multiple schools, but educational surveys tend to report information about individual schools rather than the sequence between schools. Unfortunately, data about these linkages and feeder patterns are not systematically collected and available in public data sources, so it can be difficult to understand how different schools or grade spans may or may not contribute to educational outcomes. The SABS collection does not identify definitive matriculation paths between schools, but the spatial relationships between primary, middle, and high school boundaries may provide useful clues about potential functional relationships between schools in specific areas. Fourth, as with other types of spatial data, the SABS boundaries provide a means of creating additional data based on geographic conditions that can be assessed and applied with a GIS. This allows other local-level conditions (e.g., crime locations, zoning requirements, and community amenities) to be associated with a school based on geographic proximity or other types of spatial conditions.

METHODS

Collection universe

Selection Criteria

School districts were considered for the SABS universe if they were included in the Census Bureau's 2015-16 School District Review Program (SDRP) and identified as a regular Local Education Agency (LEA) or component of a supervisory union in the 2014-15 CCD (i.e., District Type = 1 or 2) that operated at least one qualifying school.¹ Schools in the qualifying districts were included in the survey if they were identified in the 2015-2016 CCD as a currently open regular school (Type =1) that was not a charter, magnet, adult education, or virtual school, and operated at least one grade greater than prekindergarten with enrolled students. In some instances, magnet, charter, and other non-regular schools were included in the survey because the student population was drawn from a typical address-based attendance boundary.² Otherwise, magnet, charter, virtual, special education, vocational education, pre-kindergarten schools, and alternative schools were excluded by default because these schools commonly accept students based on factors other than home address. Additionally, some schools defined by CCD as a regular school did not maintain attendance boundaries and instead allowed open enrollment from throughout the district. These cases are flagged as Open Enrollment on the SABS data file.

De facto Districts

Many small districts do not require separate school-level attendance boundaries because the district can accommodate grade-level enrollment within a single school. In these cases, the school district boundary serves as a de facto boundary for the school attendance area. School districts in the SABS collection were flagged as de facto districts if each grade offered by the district was served by only one school. Boundaries for schools operated by de facto districts were set to the district boundary. Conversely, non-de facto districts contained more than one school for at least one grade between kindergarten and twelfth.

¹ The 2014-2015 CCD included 216 Type 3 supervisory union districts out of 18,834 total LEAs. Type 3 districts were not included in the SABS collection, except for New York City. The New York City public school system was reported as a single school district in the 2015-16 SDRP collection, but the CCD disaggregates the NYC public schools into 32 geographic districts. NYC is the largest school district in the U.S. and its school attendance boundaries were available digitally.

² Charter school boundaries with LEAIDs not included in SDRP for Philadelphia were included in SABS. Philadelphia is a single school district in the 2015-16 SDRP collection, but portions of the district are served by 21 Charter Agency Districts (Type = 7).

Collection

Contact

The SABS survey collection opened at the beginning of November 2015 and closed at the end of June 2016. In early October 2015, the Census Bureau's SABS survey staff contacted school district superintendents and state officials on behalf of NCES to ask for their cooperation in a collection of school attendance boundaries. Mail-out/mail-back operations were handled through the Census Bureau's National Processing Center, part of the Census Bureau's Field Division that handles mailing and collection operations for most of the Bureau's household and establishment surveys. School attendance boundaries were not needed from de facto districts because 2015-2016 school district boundaries were already available from the Census Bureau's 2015 Topologically Integrated Geographic Encoding and Referencing System (TIGER). However, survey staff contacted superintendents in these districts (7,964) to inform them of the survey and of the de facto designation for their district. Non-de facto districts were mailed a follow-up key holder packet in late October 2015 containing instructions on how to report their boundaries using the NCES web-based reporting system. NCES used a custom online tracking application to record communications with district personnel, monitor the status of the data collection, and track the progress of the data through each of the post-processing steps. The tracking application provided a variety of regular status reports that assisted with non-response follow-up and post-processing work assignments.

Response and compilation

Districts and states used multiple modes to provide school boundaries to the Census Bureau's SABS staff including mail-back of traditional hard-copy maps, sending digital files as e-mail attachments, pointing to boundary files available online, and directly reporting through the use of the School Mapper web-based mapping system developed by NCES. The mapping application was designed to minimize response burden, improve data quality and timeliness, and reduce follow-up questions about data inconsistencies. In addition, it allowed participants to download and save their boundaries for future use in a local geographic information system (GIS). The application provided instructions and assistance to users through a user guide, a web page with frequently asked questions, and tutorial videos.

Boundaries supplied outside of the online reporting system typically fell into one of six categories: a digital geographic file, such as a shapefile or Keyhole Markup Language (KML) file; digital image files, such as JPGs and PDFs; narrative descriptions of streets and street segments that served as boundaries; an interactive web map where digital boundaries could be downloaded; address lists in Excel or PDF format; and paper maps. The cartographic quality of the responses varied considerably. Some districts provided high-quality digital boundaries developed by in-house staff or contractors using a GIS, while others provided photocopies of hardcopy maps with hand-drawn school boundaries. In most cases, the district provided the data directly to the SABS staff, but in some instances data were provided by a local county or private consulting firm. Delaware, Minnesota, and Oregon provided statewide data sets. In cases where districts responded by pointing to boundary data available online, SABS staff attempted to download the data from the recommended website. In all cases, survey staff attempted to collect the school attendance boundaries for all qualifying schools in qualifying districts.

As responses were collected and tracked, the Census Bureau's survey staff created digital scans of all hard copy maps and provided the scans as JPG files along with all other digital submissions to the SABS production team on a flow basis.

Response rate

The 2015-2016 SABS collection canvassed 12,855 qualifying school districts in the 50 states and the District of Columbia. Of those, SABS collected boundaries for 12,119 school districts, including 4,891 submissions from districts with instances of multiple schools per grade level and 7,964 de facto districts whose boundaries were already available from public sources. The canvassed collection of 12,855 qualifying school districts included a total of 79,813 schools. Of those, 72,872 were included in the final 2015-2016 SABS collection. The final unit inclusion rate was 94.27 percent for qualifying districts and 91.30 percent for qualifying schools. The final response rate for non-de facto districts was 85.0 percent.

PROCESSING

Conversion

Image files (paper scans or other digital)

The SABS production team converted PDF submissions to a JPG format and added the converted files to the collection of other scanned image JPG files created by the Census Bureau's survey staff. This collection was then georeferenced using boundaries from 2015 TIGER/Line. In other words, the production team used a GIS to match features in the digital images to the same features provided in TIGER boundaries that had known coordinates. New polygons were then digitized to follow the features in the digital image to produce new school boundaries with real-world geographic coordinates. Each school was drawn and identified as a unique feature. While most school boundaries followed boundaries available in TIGER (such as roads and block boundaries) this was not always the case. In instances where reported boundaries differed from TIGER, Esri's Imagery base map was used to identify and ensure that final SABS boundaries did not intersect housing units. Once the new boundaries were developed, they could then be integrated with other digital boundary submissions that had a defined geographic coordinate system.

Boundaries files created externally by respondents

Boundary files submitted directly by respondents were reviewed to ensure that all necessary schools were present and that the file contained adequate geographic coordinate information. This information was necessary to support subsequent productions steps that projected and harmonized the boundary collection into the same coordinate space.

Boundaries created by respondents using online tool

The School Mapper online boundary collection tool allowed district officials to manually digitize school boundaries. The application was populated with the names and locations of schools in the district, along with the reported high and low grade for the school, and the designated level (Primary, Middle, High, Other).³ The School Mapper was also pre-populated with the most recent boundaries from either the 2009-10, 2010-11, or 2013-14 boundary collections, where applicable. In these instances, users were asked to review each boundary and make necessary updates. If no changes were required, the application provided a simple process for users to save boundaries without changes. In an effort to gather high quality and reliable data, users were required to review each individual school boundary one at a time. This was done because prior experience demonstrated that respondents were likely to forget small changes when asked to provide updates for an entire district as a single submission. Instead, respondents were much more likely to remember changes when asked about each school boundary individually. Once all boundaries were digitized, the School Mapper allowed users to download their

³ The application was populated with 2014-15 CCD school data because the final 2015-16 file was not available when the survey opened. The application was later updated with the 2015-16 CCD preliminary file. The final SABS file uses data from the 2015-16 CCD v1a file.

school boundaries in a shapefile or PDF, and the boundaries were saved in a geodatabase for additional processing by SABS production staff.

Geographic coordinate system

All digital boundaries housed were projected into the WGS_1984_Web_Mercator_Auxiliary_Sphere coordinate system and imported into a geodatabase.

Attribute association

School boundaries submitted as shapefiles and other GIS formats were delivered with a variety of attributes and field names. A custom script was used to incorporate the attributes provided by the district into a standard SABS table schema (see Appendix A). These boundaries were then associated with attributes from the CCD using another custom script. Boundaries drawn in the School Mapper did not require these steps because school names and other attributes included in the application were provided by the CCD.

Quality assurance

Once these conversion and clean-up steps were completed, the boundary data were reviewed to ensure they satisfied conditions for final compilation.

Verify completeness of school coverage in districts

Since incomplete or duplicate coverage of school boundaries within districts could compromise the usefulness of the final collection, school boundary submissions were subjected to a series of completeness checks and comparisons with the reported CCD universe. These included:

Duplicate schools – Each school had to be represented by a single feature in the database. Duplicate features for a single school were merged into one, thus representing the largest potential physical extent of the duplicated records. In rare instances, a single school may operate different boundaries for different grades within its grade span. For example, a K-8 school may draw K-6 students from an area relatively close to the school, while also enrolling 7th and 8th grade students from a broader service area. If a duplicate record resulted from multiple boundaries served by the same school then the MultiBdy attribute was updated to a value of '1.'

Missing schools – Each school listed in the collection universe had to have a feature in the database or be identified as out-of-scope for the collection universe. The SABS collection and production teams checked district web pages and other resources to determine why missing schools may have been omitted from the geodatabase, and at times contacted district officials directly to clarify and confirm local arrangements. In many cases, districts failed to report school boundaries because the schools operated with open enrollment policies and did not rely on catchment areas. In these cases, schools were assigned catchment boundaries that were coincident with their district boundary and added to the database, and the status of each attendance boundary was recorded in the open enrollment attribute in the feature class. In instances where the missing school was an error, the correct boundary was collected from the district and incorporated into the dataset.

Extra schools – Some magnet, charter, and other non-regular schools maintain address-based attendance boundaries. If districts provided this type of boundary, the information was saved in the database even though these schools were not required to be included. In other cases, district files included boundaries for closed schools. In these types of cases, NCES confirmed the status of the extraneous school and corrected the boundaries.

Spatial check for missing grades

Grade level data from CCD were applied to a single district feature class to ensure that every geographic area was covered by every grade. Areas missing coverage for one or more grades were flagged and examined by analysts to determine how best to rectify the situation. In cases where districts included valid unassigned areas – like airports or large parks – the features were covered by a new polygons classified as ‘Unassigned’. Production staff also checked to see if districts accidentally omitted entire school levels by combining the ‘schnam’ field with the ‘Level’ field to identify the missing grade coverage. In cases where districts reported high and low grades that were differed from the data reported in CCD, the SABS shapefile assigned the grades provided by CCD.

Geometry review and editing

School attendance boundaries were clipped to conform to the boundaries in the 2015-2016 SDRP collection, and respondents were encouraged to contact their SDRP representative if they identified substantial discrepancies between their operational boundaries and those reported in the SDRP. Survey production staff then applied additional steps to clean the resulting geometry so that gaps and overlaps would not create spurious results for spatial analyses.

Union – After boundaries were clipped to the district extent, all school-level feature classes were combined into a single feature class. The new feature class consisted of a new set of polygons that were created from the geometric union of the input features. This process automatically eliminated small gaps and overlaps in the features and ensured that the lines between school level, such as primary and middle, were coterminous.

Remove slivers – The union of multiple school levels occasionally resulted in slight differences between geographic areas that were intended to be coincident across grade levels. For example, a district may report that a primary school boundary follows the edge of a river, while also reporting that an overlapping middle school boundary follows the center of the same river. Although the two boundaries were intended to be coterminous, the slight difference would create a small artifact that would otherwise function as a unique geographic entity if not corrected. SABS defined slivers as features less than 10,000 square feet. Census blocks and imagery were used to determine appropriate steps for dealing with slivers. Areas with residences were left as is, whereas slivers outside of residential areas – such as rivers and highway medians – were merged with neighboring boundaries as appropriate. In some cases, features larger than 10,000 square feet were identified as slivers and merged with nearby features.

Unassigned areas – All un-populated areas that were not covered by a school attendance area were classified as “unassigned.” These included airports, parks, water bodies, and various other unique types of land use.

FILE CONTENTS AND FORMATS

The 2015-2016 SABS boundaries were compiled into a single shapefile (a standard geographic data format that relies on a suite of files functioning together to convey spatial and attribute information to a GIS). The 2015-2016 SABS shapefile includes the following components:

- SABS_1516.shp – This file stores feature geometry that defines each school boundary.
- SABS_1516.shp.xml – This file stores metadata about the entire shapefile.
- SABS_1516.prj – This file specifies the spatial coordinate system applied to the features.
- SABS_1516.sbn – This binary spatial index file identifies links between features.
- SABS_1516.sbx – This file provides a spatial index of the features.
- SABS_1516.cpg – This file specifies information needed for character encoding.
- SABS_1516.shx – This file provides an index between features and table attributes.
- SABS_1516.dbf – This file provides a table of attributes (fields) with a unique ID for each feature. A record layout with these fields is provided in Appendix A.

In addition to the shapefile, the final compressed 2015-2016 SABS download file includes a supplemental table (District_Nonresponse.xls) that identifies the qualifying districts that did not respond to the survey.

Composite structure and effects

The 2015-2016 SABS boundaries are structured as a composite file with overlapping features for Primary, Middle, High, and Other school areas. This combined structure avoids the need for repeated joins when connecting the boundaries to external datasets that include schools from all levels, but it may pose difficulties when trying to visualize individual levels in a GIS. One option for visually isolating individual levels is to apply a definition query based on attributes provided in the shapefile, such as high and low grade. Users can also select and export features based on the Level attribute to create individual shapefiles for each school level.

In some instances, valid overlaps between school boundaries exist within the same school level⁴ (i.e., primary school level). For example, some districts allow neighborhoods to choose between two schools for the same grade. In this situation, the SABS shapefile provides overlapping boundaries for the two schools to honor the functional arrangement identified in the local data.

If a school district operates schools with inconsistent grade spans, it may create the appearance of gaps or holes in the boundary layer. For example, if a district chooses to cover 6th-8th grade with a K-8th primary school in one part of the district while using middle schools to serve 6th-8th in the remainder of the district, the resulting middle school boundary layer would appear to have a missing piece in the area served by the K-8th school. Given the variety of local boundary arrangements and the flexible grade spans used to define Primary, Middle, and High Schools, individual boundary layers will inevitably appear to have gaps in some areas for some grade levels.

Record identifier

SABS relies on standard CCD IDs to uniquely identify schools (NCESSCH) and school districts (LEAID). This allows the SABS data to be linked across a broad range of institutional data that include the CCD ID. In a few rare cases, districts provided boundaries for schools that did not contain a corresponding CCD school ID. These schools were assigned with a temporary ID by concatenating the LEAID with a fixed string of '9999' and a final single digit that was automatically incremented if more than one instance occurred.

⁴ The school levels are defined by CCD as the following: 1-Primary (low grade: PK through 3rd ; high grade: PK through 8th); 2-Middle (low grade: 4th through 7th ; high grade: 4th through 9th); 3-High (low grade: 7th through 12th ; high grade: 12th only); 4-Other (a configuration not falling within the other three categories, including ungraded); N-Not applicable.

Appendix A
Record Layout for Attribute Table

Appendix A – Record Layout of Attribute Table

Variable	Data Type	Length	Attribute Source	Description
FID	Text		SABS	Object ID.
Shape	Geometry		SABS	The geometry type for each school boundary.
SrcName	Text	100	SABS	School name as provided by the district.
ncessch	Text	12	2015-16 CCD V1a File	12 character school ID provided by the CCD.
schnam	Text	255	2015-16 CCD V1a File	School name as recorded in the CCD.
leaid	Text	7	2015-16 CCD V1a File	7 character school ID provided by the CCD.
gslo	Text	2	2015-16 CCD V1a File	Low grade as recorded in the CCD.
gshi	Text	2	2015-16 CCD V1a File	High grade as recorded in the CCD.
Defacto	Text	3	SABS	District de facto status. No/Yes.
stAbbrev	Text	2	2015-16 CCD V1a File	State abbreviation.
openEnroll	Text	1	SABS	Schools's open enrollment status: 0 = not open enroll 1 = open enrollment.
SHAPE_Length	Numeric		SABS	
SHAPE_Area	Numeric		SABS	
Level	Text	1	2015-16 CCD V1a File	School level as provided by the CCD: 1 = Primary 2 = Middle 3 = High 4 = Other N = Not applicable.
MultiBdy	Text	1	SABS	Boundary that differ by grade attributes: 1 = Yes 0 = No.

NOTE: Prior to January 8th, 2019 the openEnroll variable was described as a district-level indicator instead of a school-level indicator. The openEnroll variable describes the status of a school. When a school is designated as openEnroll, its boundaries are coterminous with school district boundaries.

Appendix B

SY 2015-16 Response Rate Tables

Appendix B – 2015-16 Response Rate Tables

Table B-1. Number and percentage of responding school districts, by type, and state/jurisdiction: 2015-16

State/jurisdiction	Total regular school districts ¹	Total regular responding school districts ¹	Percent response	De facto		Non-de facto	
				Number	Percent response	Number	Percent response
United States	12,855	12,119	94.3	7,964	100.0	4,155	85.0
Alabama	133	115	86.5	39	100.0	76	80.9
Alaska	53	47	88.7	23	100.0	24	80.0
Arizona	207	195	94.2	112	100.0	83	87.4
Arkansas	231	223	96.5	178	100.0	45	84.9
California	932	877	94.1	415	100.0	462	89.4
Colorado	178	174	97.8	121	100.0	53	93.0
Connecticut	166	145	87.3	80	100.0	65	75.6
Delaware	16	16	100.0	3	100.0	13	100.0
District of Columbia	1	1	100.0	0	0.0	1	100.0
Florida	67	57	85.1	4	100.0	53	84.1
Georgia	180	171	95.0	81	100.0	90	90.9
Hawaii	1	1	100.0	0	0.0	1	100.0
Idaho	114	109	95.6	68	100.0	41	89.1
Illinois	844	818	96.9	595	100.0	223	89.6
Indiana	289	272	94.1	124	100.0	148	89.7
Iowa	335	324	96.7	269	100.0	55	83.3
Kansas	286	284	99.3	212	100.0	72	97.3
Kentucky	173	161	93.1	70	100.0	91	88.3
Louisiana	68	53	77.9	6	100.0	47	75.8
Maine	183	171	93.4	131	100.0	40	76.9
Maryland	24	23	95.8	0	0.0	23	95.8
Massachusetts	236	195	82.6	113	100.0	82	66.7
Michigan	490	459	93.7	307	100.0	152	83.1
Minnesota	322	319	99.1	233	100.0	86	96.6
Mississippi	137	128	93.4	59	100.0	69	88.5
Missouri	516	494	95.7	418	100.0	76	77.6
Montana	406	402	99.0	370	100.0	32	88.9
Nebraska	243	233	95.9	197	100.0	36	78.3
Nevada	17	16	94.1	1	100.0	15	93.8
New Hampshire	154	139	90.3	118	100.0	21	58.3

See notes at end of table.

Appendix B – 2015-16 Response Rate Tables

Table B-1. Number and percentage of responding school districts, by type, and state/jurisdiction: 2015-16—Continued

State/jurisdiction	Total regular school districts ¹	Total regular responding school districts ¹	Percent response	De facto		Non-de facto	
				Number	Percent response	Number	Percent response
New Jersey	541	497	91.9	335	100.0	162	78.6
New Mexico	89	81	91.0	50	100.0	31	79.5
New York	706	631	89.4	430	100.0	201	72.8
North Carolina	115	99	86.1	14	100.0	85	84.2
North Dakota	171	169	98.8	149	100.0	20	90.9
Ohio	610	572	93.8	391	100.0	181	82.6
Oklahoma	515	512	99.4	473	100.0	39	92.9
Oregon	180	178	98.9	104	100.0	74	97.4
Pennsylvania	499	469	94.0	232	100.0	237	88.8
Rhode Island	32	25	78.1	7	100.0	18	72.0
South Carolina	81	73	90.1	19	100.0	54	87.1
South Dakota	149	142	95.3	89	100.0	53	88.3
Tennessee	134	126	94.0	33	100.0	93	92.1
Texas	1023	983	96.1	761	100.0	222	84.7
Utah	41	37	90.2	3	100.0	34	89.5
Vermont	19	15	78.9	9	100.0	6	60.0
Virginia	130	122	93.8	34	100.0	88	91.7
Washington	295	282	95.6	177	100.0	105	89.0
West Virginia	55	39	70.9	2	100.0	37	69.8
Wisconsin	421	401	95.2	288	100.0	113	85.0
Wyoming	47	44	93.6	17	100.0	27	90.0

¹District Type = 1-Regular Local School District

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Attendance Boundary Survey (SABS), 2015-16.

Appendix B – 2015-16 Response Rate Tables

Table B-2. Number and percentage of responding schools, by type, and operating state/jurisdiction: 2015-16

State/jurisdiction	Total regular public schools	Total regular responding public schools	Percent response	Type of School							
				Primary Schools		Middle Schools		High Schools		Other and Not Applicable Schools	
				Number	Percent response	Number	Percent response	Number	Percent response	Number	Percent response
United States	79,813	72,872	91.3	43,034	90.9	14,022	91.9	13,563	92.6	2,253	89.0
Alabama	1,263	1,073	85.0	562	85.8	213	86.2	222	84.4	76	77.6
Alaska	445	379	85.2	131	85.6	30	88.2	38	86.4	180	84.1
Arizona	1,355	1,253	92.5	842	92.5	182	90.5	209	95.0	20	83.3
Arkansas	960	903	94.1	460	93.7	185	93.0	234	95.5	24	96.0
California	7,717	7,235	93.8	4,973	93.7	1,165	93.9	950	93.8	147	96.1
Colorado	1,466	1,411	96.2	850	95.9	252	95.8	243	96.8	66	100.0
Connecticut	919	742	80.7	455	78.4	156	85.2	121	84.6	10	76.9
Delaware	167	167	100.0	105	100.0	37	100.0	24	100.0	1	100.0
District of Columbia	100	100	100.0	77	100.0	12	100.0	9	100.0	2	100.0
Florida	2,659	2,540	95.5	1,665	96.0	455	96.2	366	95.8	54	77.1
Georgia	2,134	2,014	94.4	1,171	93.9	444	94.9	358	95.2	41	95.3
Hawaii	259	259	100.0	174	100.0	38	100.0	38	100.0	9	100.0
Idaho	577	552	95.7	318	95.5	105	97.2	100	95.2	29	93.5
Illinois	3,698	3,542	95.8	2,138	95.4	704	95.9	645	96.8	55	96.5
Indiana	1,727	1,608	93.1	957	92.7	316	93.2	308	93.9	27	96.4
Iowa	1,298	1,243	95.8	655	95.1	262	96.3	284	96.6	42	97.7
Kansas	1,283	1,273	99.2	716	99.2	227	99.6	292	99.0	38	100.0
Kentucky	1,174	1,059	90.2	638	89.9	204	91.1	184	89.8	33	94.3
Louisiana	1,165	952	81.7	534	82.5	186	83.4	159	83.7	73	69.5
Maine	537	471	87.7	291	88.2	81	87.1	86	86.9	13	86.7
Maryland	1,264	1,256	99.4	845	99.4	217	99.5	179	98.9	15	100.0
Massachusetts	1,434	1,000	69.7	635	69.4	197	72.2	155	69.8	13	54.2
Michigan	2,334	2,059	88.2	1,097	88.7	380	91.3	414	89.8	168	76.4
Minnesota	1,395	1,381	99.0	775	99.0	234	98.7	345	99.1	27	100.0
Mississippi	848	778	91.7	387	92.1	175	92.6	171	91.0	45	88.2
Missouri	2,045	1,858	90.9	1,037	89.6	331	89.7	438	94.4	52	96.3
Montana	817	799	97.8	409	96.9	222	97.8	168	100.0	0	0.0
Nebraska	937	876	93.5	505	93.2	123	91.8	248	95.0	0	0.0
Nevada	547	530	96.9	339	97.7	101	96.2	75	94.9	15	93.8
New Hampshire	437	350	80.1	222	79.6	71	80.7	57	81.4	0	0.0

Appendix B – 2015-16 Response Rate Tables

See notes at end of table.

Table B-2. Number and percentage of responding schools, by type, and operating state/jurisdiction: 2015-16—Continued

State/jurisdiction	Total regular public schools	Total regular responding public schools	Percent response	Type of School							
				Primary Schools		Middle Schools		High Schools		Other and Not Applicable Schools	
				Number	Percent response	Number	Percent response	Number	Percent response	Number	Percent response
New Jersey	2,240	1,883	84.1	1,217	84.0	372	85.1	279	82.5	15	93.8
New Mexico	730	638	87.4	368	84.8	144	91.1	119	90.8	7	100.0
New York	4,275	3,781	88.4	2,001	86.5	695	88.2	827	91.3	258	96.6
North Carolina	2,297	2,068	90.0	1,194	90.4	434	90.0	412	88.8	28	93.3
North Dakota	468	454	97.0	258	97.4	35	92.1	159	97.5	2	100.0
Ohio	3,100	2,758	89.0	1,452	87.2	620	93.2	615	89.8	71	84.5
Oklahoma	1,732	1,699	98.1	905	97.4	338	98.5	446	99.1	10	100.0
Oregon	1,068	1,059	99.2	643	99.2	193	98.5	205	99.5	18	100.0
Pennsylvania	2,739	2,518	91.9	1,484	91.6	481	90.9	508	93.6	45	95.7
Rhode Island	248	190	76.6	122	76.3	36	76.6	29	76.3	3	100.0
South Carolina	1,082	932	86.1	550	85.5	211	87.2	155	87.6	16	80.0
South Dakota	641	599	93.4	293	91.3	154	96.3	152	95.0	0	0.0
Tennessee	1,557	1,364	87.6	790	86.6	254	88.8	266	89.3	54	88.5
Texas	7,209	6,472	89.8	3,682	88.6	1,464	90.2	1,036	92.4	290	94.2
Utah	803	771	96.0	514	96.6	131	96.3	108	93.1	18	94.7
Vermont	65	53	81.5	29	74.4	13	92.9	10	90.9	1	100.0
Virginia	1,777	1,702	95.8	1,085	96.0	318	95.5	283	95.0	16	100.0
Washington	1,926	1,832	95.1	1,085	95.2	338	94.9	336	95.7	73	92.4
West Virginia	671	472	70.3	309	70.5	83	71.6	74	71.8	6	42.9
Wisconsin	1,868	1,628	87.2	903	84.2	339	91.6	348	91.1	38	86.4
Wyoming	356	336	94.4	187	94.4	64	94.1	76	93.8	9	100.0

NOTES: The Common Core of Data (CCD) defines schools as Primary, Middle, High, Other, and Not Applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Attendance Boundary Survey (SABS), 2015-16.

Appendix B – 2015-16 Response Rate Tables

Table B-3. Number and percent of school districts, by open enrollment, mode of collection, type of collection and state/jurisdiction: 2015-16

State/jurisdiction	Total regular non-de facto school districts ¹	Open enrollment for regular school district ¹		Mode of collection						Type of Collection					
		Number	Percent response	Web		E-mailed		Mailed		Geospatial file		Image file		Web-Drawn	
				Number	Percent response	Number	Percent response	Number	Percent response	Number	Percent response	Number	Percent response	Number	Percent response
United States	4,891	440	9.0	3,369	68.9	339	6.9	7	0.1	954	19.5	334	6.8	2,427	49.6
Alabama	94	7	7.4	61	64.9	8	8.5	0	0.0	15	16.0	4	4.3	50	53.2
Alaska	30	7	23.3	15	50.0	2	6.7	0	0.0	2	6.7	1	3.3	14	46.7
Arizona	95	8	8.4	67	70.5	8	8.4	0	0.0	14	14.7	6	6.3	55	57.9
Arkansas	53	12	22.6	28	52.8	5	9.4	0	0.0	8	15.1	2	3.8	23	43.4
California	517	40	7.7	378	73.1	43	8.3	1	0.2	125	24.2	48	9.3	249	48.2
Colorado	57	15	26.3	32	56.1	6	10.5	0	0.0	15	26.3	4	7.0	19	33.3
Connecticut	86	3	3.5	58	67.4	4	4.7	0	0.0	13	15.1	3	3.5	46	53.5
Delaware	13	0	0.0	0	0.0	13	100.0	0	0.0	13	100.0	0	0.0	0	0.0
District of Columbia	1	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0
Florida	63	6	9.5	46	73.0	1	1.6	0	0.0	24	38.1	3	4.8	20	31.7
Georgia	99	9	9.1	71	71.7	9	9.1	1	1.0	30	30.3	6	6.1	45	45.5
Hawaii	1	0	0.0	1	100.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0
Idaho	46	3	6.5	37	80.4	1	2.2	0	0.0	7	15.2	3	6.5	28	60.9
Illinois	249	11	4.4	196	78.7	16	6.4	0	0.0	38	15.3	16	6.4	158	63.5
Indiana	165	17	10.3	122	73.9	9	5.5	0	0.0	16	9.7	10	6.1	105	63.6
Iowa	66	12	18.2	37	56.1	6	9.1	0	0.0	16	24.2	7	10.6	20	30.3
Kansas	74	13	17.6	53	71.6	5	6.8	1	1.4	9	12.2	9	12.2	41	55.4
Kentucky	103	6	5.8	77	74.8	8	7.8	0	0.0	16	15.5	7	6.8	62	60.2
Louisiana	62	5	8.1	36	58.1	5	8.1	1	1.6	11	17.7	4	6.5	27	43.5
Maine	52	7	13.5	32	61.5	1	1.9	0	0.0	1	1.9	2	3.8	30	57.7
Maryland	24	0	0.0	21	87.5	2	8.3	0	0.0	12	50.0	2	8.3	9	37.5
Massachusetts	123	11	8.9	63	51.2	8	6.5	0	0.0	16	13.0	7	5.7	48	39.0
Michigan	183	30	16.4	112	61.2	9	4.9	1	0.5	15	8.2	10	5.5	97	53.0
Minnesota	89	6	6.7	79	88.8	1	1.1	0	0.0	79	88.8	1	1.1	0	0.0
Mississippi	78	7	9.0	57	73.1	5	6.4	0	0.0	7	9.0	4	5.1	51	65.4
Missouri	98	2	2.0	65	66.3	9	9.2	0	0.0	15	15.3	5	5.1	54	55.1
Montana	36	9	25.0	18	50.0	5	13.9	0	0.0	1	2.8	9	25.0	13	36.1
Nebraska	46	9	19.6	24	52.2	3	6.5	0	0.0	8	17.4	2	4.3	17	37.0
Nevada	16	2	12.5	12	75.0	1	6.3	0	0.0	3	18.8	0	0.0	10	62.5
New Hampshire	36	1	2.8	19	52.8	1	2.8	0	0.0	2	5.6	2	5.6	16	44.4

See notes at end of table.

Appendix B – 2015-16 Response Rate Tables

Table B-3. Number and percent of school districts, by type, mode of collection, type of collection and state/jurisdiction: 2015-16—Continued

State/jurisdiction	Total regular non-de facto school districts ¹	Open enrollment for local school district ¹		Mode of collection						Type of Collection					
		Percent		Web		E-mailed		Mailed		Geospatial file		Image file		Web-Drawn	
		Number	response	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
New Jersey	206	11	5.3	139	67.5	12	5.8	0	0.0	20	9.7	4	1.9	127	61.7
New Mexico	39	4	10.3	25	64.1	2	5.1	0	0.0	4	10.3	3	7.7	20	51.3
New York	276	14	5.1	159	57.6	26	9.4	2	0.7	62	22.5	16	5.8	109	39.5
North Carolina	101	3	3.0	72	71.3	10	9.9	0	0.0	40	39.6	3	3.0	39	38.6
North Dakota	22	6	27.3	11	50.0	3	13.6	0	0.0	2	9.1	4	18.2	8	36.4
Ohio	219	21	9.6	151	68.9	9	4.1	0	0.0	14	6.4	13	5.9	133	60.7
Oklahoma	42	5	11.9	31	73.8	3	7.1	0	0.0	8	19.0	3	7.1	23	54.8
Oregon	76	1	1.3	72	94.7	1	1.3	0	0.0	73	96.1	0	0.0	0	0.0
Pennsylvania	267	16	6.0	201	75.3	20	7.5	0	0.0	27	10.1	13	4.9	181	67.8
Rhode Island	25	2	8.0	15	60.0	1	4.0	0	0.0	2	8.0	1	4.0	13	52.0
South Carolina	62	4	6.5	44	71.0	6	9.7	0	0.0	12	19.4	7	11.3	31	50.0
South Dakota	60	16	26.7	22	36.7	15	25.0	0	0.0	6	10.0	17	28.3	14	23.3
Tennessee	101	19	18.8	68	67.3	6	5.9	0	0.0	11	10.9	3	3.0	60	59.4
Texas	262	17	6.5	191	72.9	14	5.3	0	0.0	54	20.6	36	13.7	115	43.9
Utah	38	2	5.3	32	84.2	0	0.0	0	0.0	9	23.7	1	2.6	22	57.9
Vermont	10	1	10.0	5	50.0	0	0.0	0	0.0	0	0.0	0	0.0	5	50.0
Virginia	96	3	3.1	77	80.2	8	8.3	0	0.0	34	35.4	4	4.2	47	49.0
Washington	118	12	10.2	90	76.3	3	2.5	0	0.0	22	18.6	14	11.9	57	48.3
West Virginia	53	0	0.0	37	69.8	0	0.0	0	0.0	1	1.9	1	1.9	35	66.0
Wisconsin	133	13	9.8	96	72.2	4	3.0	0	0.0	15	11.3	13	9.8	72	54.1
Wyoming	30	12	40.0	13	43.3	2	6.7	0	0.0	5	16.7	1	3.3	9	30.0

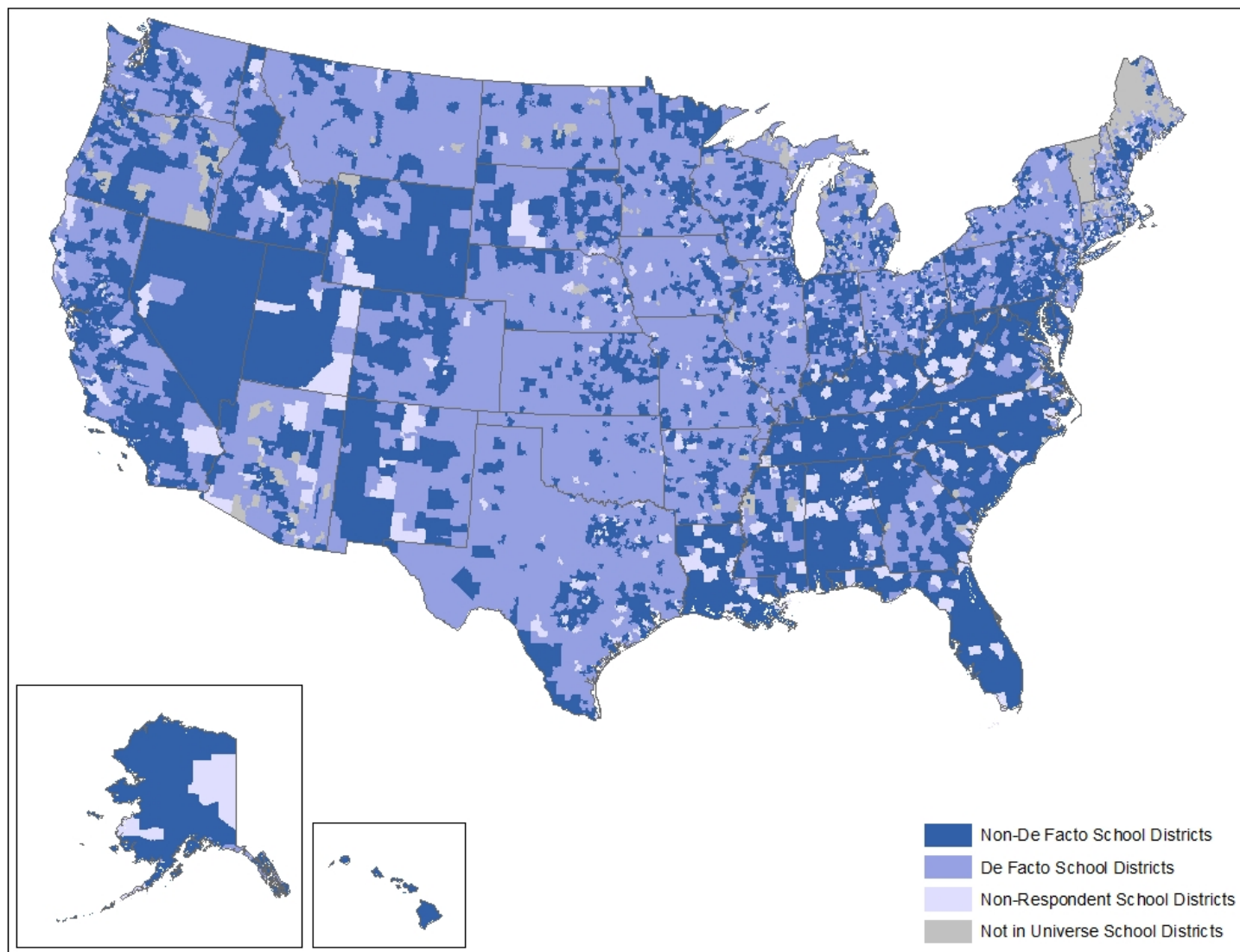
¹District Type = 1-Regular Local School District or 2-Local School district that is a component of a supervisory union.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Attendance Boundary Survey (SABS), 2015-16.

Appendix C
2015-16 Coverage Map

Appendix C– 2015-2016 Coverage Map

Figure 1: Coverage map for the 2015-16 SABs collection



SOURCE: U.S. Department of Education, National Center for Education Statistics, School Attendance Boundary Survey (SABS), 2015-16.

Appendix D

Glossary

Appendix D– Glossary

De facto district: A district where each grade is served by only one school, and therefore school attendance areas reflect the extent of the district boundary.

Charter School: A school providing free public elementary and/or secondary education to eligible students under a specific charter granted by the state legislature or other appropriate authority, and designated by such authority to be a charter school. SABS relies on the CCD definition for this concept.

Feature Class: A feature class is a collection of spatial records with the same geometry type, attribute information, and spatial reference.

Geodatabase: A geodatabase is a native data structure used for editing and data management in the ArcGIS platform that can contain feature classes and other files that include spatial information.

GIS: A GIS is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographic data.

Magnet School or Program: A special school or program designed to attract students of different racial/ethnic backgrounds for the purpose of reducing, preventing, or eliminating racial isolation (50 percent or more minority enrollment); and/or to provide an academic or social focus on a particular theme (e.g., science/math, performing arts, gifted/talented, or foreign language). SABS relies on the CCD definition for this concept.

Shapefile: A shapefile is a common geographic data format that stores both spatial and associated tabular attribute information used by GIS and mapping applications.

School District: An education agency or administrative unit that operates under a public board of education

School: An institution that provides educational services and: (a) has one or more grade groups (prekindergarten through 12) or is ungraded; (b) has one or more teachers; (c) is located in one or more buildings; (d) has assigned administrator(s); (e) receives public funds as its primary support, and (d) is operated by an education agency. SABS relies on the CCD definition for this concept.

School Attendance Boundary: A geographic area from which the students are eligible to attend a local school. These administrative areas are also commonly referred to as catchment zones.

Vocational School: A public elementary/secondary school that focuses primarily on providing formal preparation for semiskilled, skilled, technical, or professional occupations for high school-age students who have opted to develop or expand their employment opportunities, often in lieu of preparing for college entry. SABS relies on the CCD definition for this concept.