

Transportation Services Comprehensive Evaluation

***Anne Arundel County Public
Schools***



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Chapter 1 – Introduction



Chapter 1 – Introduction

In July 2019, Anne Arundel County Public Schools (AACPS) contracted with Prismatic Services to complete a review of its school transportation operations. As detailed in the district's Request for Proposals, the goals of the study were to review:

- ▶ *The effectiveness and efficient use of the current AACPS transportation program; including organizational structures, policies and procedures, contracted services, computerization automation and software levels utilization, communication systems, facilities, and equipment.*
- ▶ *Current methodologies utilized for daily school bus routing, bus size relative to expected ridership, special education routes, non-public school routes, field trips, athletic trips, and other co-curricular activities with recommendations for developing more efficient and effective routing procedures, bus routes, and compressing delivery windows/bus arrival times.*
- ▶ *Current operational and capital costs with identification of potential fiscal savings opportunities or recommended enhancements, while maintaining optimal and safe public school transportation services.*
- ▶ *A review of, and recommended enhancements for, AACPS owned or leased facilities used for transportation administration, operations, training, bus storage, fueling, and repairs.*
- ▶ *Current and recommended automation and data management tools utilized for bus routing, contractor payments, reporting requirements, data retention requirements, as well as the use of data to measure program efficacy.*
- ▶ *Staffing (professional, support, contractual), including organizational structures, resources, qualifications, utilization, compensation, and training/professional development needs.*
- ▶ *Current practices for recruiting, training, and compensating both AACPS-employed and contractor-employed school bus drivers and bus aids with recommendations for addressing the current shortage of qualified public school bus drivers and bus aids.*
- ▶ *Procedures used, and opportunities for, enhanced communications with schools, contractors, bus drivers/aids, staff, parents, students, and other stakeholders regarding transportation services.*
- ▶ *Assist the AACPS transportation department with optimizing the utilization, data population, and output generation of its computerized/automated transportation routing and accounts payable systems(s).*
- ▶ *Recommendations and costs associated with changes to school start and dismissal time scenarios; essentially to compress said times to allow for a later start for those schools with the earliest start times and an earlier completion for those elementary and middle schools with the latest dismissal times. Develop, analyze, and cost out various optimization models to assist AACPS in investigating compressing school*

start and dismissal times. Determine the impact and costs of the various scenarios on the AACPS Transportation Department and associated school operations. Also, examine opportunities to cost effectively shorten the duration of the longest bus route run times where possible and practicable.

- ▶ *Comparison of AACPS transportation program(s) and expenditure data with similar Maryland public school districts, including cost per pupil transported and per mile, as well as professional, support, and bus driver/aid (AACPS and contracted) salary schedules.*

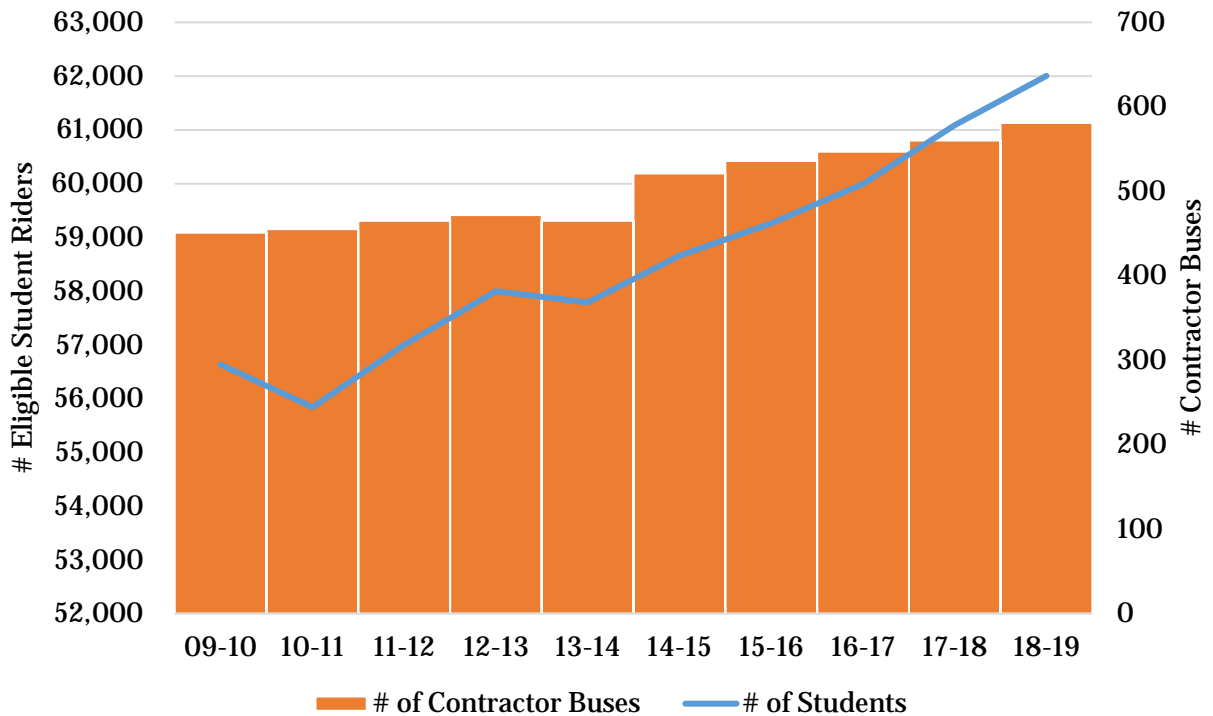
This report is provided in fulfillment of Prismatic's contract.

Located south of Baltimore, Anne Arundel County has 128 schools spread across its 418 square miles of land. The school district serves approximately 83,000 students, making it the 4th largest of Maryland's 24 school districts, behind only the Montgomery County, Prince George's County, and Baltimore County systems.

The Maryland State Department of Education (MSDE) authorizes school districts to contract or employ staff to provide student transportation services between school and home, from school to career and technology locations, and for approved extracurricular activities. The federal *Individuals with Disabilities Education Act (IDEA)* requires districts to provide transportation services to students who must travel to receive special education services, if they provide regular school transportation services.

In 2018-19, just over 62,000 AACPS students were eligible for bus transportation. To meet this need, the district has 54 of its own buses to transport special education students, then contracts with private companies to transport regular education students. In 2018-19, the private companies serviced the district with 581 buses. As shown in **Exhibit 1-1**, the number of students eligible and the number of private buses has increased over the past 10 years.

**Exhibit 1-1
Trend in Students Eligible for Transportation and Contracted Buses**



Source: Prismatic Services, November 2019

The AACPS transportation department provides transportation year-round to support a variety of programming. This includes:

- **Transportation During the School Year:**
 - Regular – student transportation to/from school
 - Special Education – student with disabilities transportation to/from AACPS schools and non-public facilities
 - Special Population – McKinney Vento (homeless) and foster care student transportation to/from assigned school
 - Hub-Based Special Programs – student transportation from dedicated hubs to/from countywide STEM, BMAH, PVA, IB-DP, and IB-MYP programs
 - Other Special Programs:
 - Newcomer Center (ELA student transportation to/from Newcomer Center at Annapolis HS)
 - AACC (student transportation to/from Anne Arundel Community College)
 - CRASC (student transportation to/from CRASC programs)

- CBI (student transportation to/from business work programs)
- Parent Infant Program (student and parent transportation to/from PIP programs)
- CAT (student transportation to/from Center of Applied Technology, 2 locations North & South)
- CAT (student transportation to/from CAT centers for 8th grade exploratory field trip)
- Activity – student transportation to/from after school programs
- Mid-day – student transportation to/from mid-day programs
- Field Trips – student transportation to/from programs outside AACPS facilities
- Athletics – student transportation to/from varsity and junior varsity athletic contests
- During the Summer:
 - Summer School – student transportation to/from ESY and SPED summer programs
 - Summer School – student transportation to/from Title I programs
 - Summer Lunch Program – AACPS employee transportation to/from designated school age children lunch stops

Methodology

Prismatic used a 10-step work plan to conduct this review:

1. Initiate project.
2. Review transportation planning, policies, and procedures.
3. Analyze department budgeting and expenditures.
4. Review department organizational structure and staffing.
5. Review management functions, including use of data tools and communications.
6. Evaluate use of technology, including routing.
7. Assess practices related to drivers.
8. Solicit stakeholder input.
9. Develop draft report.
10. Develop final report and close project.

In conjunction with district staff, Prismatic selected four peer districts for this review. They were:

- Prince George’s County;
- Baltimore County;
- Howard County; and

- ▶ Frederick County.

Exhibit 1-2 compares AACPS' district details with its peers for 2017-18.

**Exhibit 1-2
District Details of Anne Arundel and Peer Districts, 2017-18**

	# of Schools	Total Students	Total Teachers	Total ELL Students	Students with IEP's	Student/Teacher Ratio
Anne Arundel	124	82,777	5,524	5,310	8,670	1:15
Baltimore	174	113,282	7,280	6,840	14,906	1:16
Frederick	68	42,140	2,597	2,569	4,670	1:16
Howard	77	56,784	4,269	3,081	5,592	1:13
Prince George's	207	132,317	9,211	25,391	14,999	1:14

Source: IES, NCES

Prismatic provided a team of 11 consultants along with clerical and technical staff. The consultants had combined prior transportation consulting experience in 30+ states (including Maryland) and 100+ school districts. Relevant qualifications of the team members are provided in **Exhibit 1-3**.

**Exhibit 1-3
Prismatic Review Team Qualifications**

- ▶ 2 former school district transportation directors
- ▶ 2 current school district transportation directors
- ▶ 6 consultants with detailed experience in a variety of school transportation routing software packages
- ▶ 1 current GIS Analyst and Supervisor of Routing in a similarly sized district
- ▶ 1 former Deputy Project Manager for the Maryland Transit Administration
- ▶ 1 licensed architect who is also a Professor Emeritus of Architecture
- ▶ 1 former commercial routing system Lead Algorithm Manager
- ▶ 1 CPA who is also a registered School Business Administrator
- ▶ 1 consultant with a doctorate in educational leadership who also has an MBA

Source: Prismatic, November 2019



The team's project manager completed an advance visit to the district July 31 – August 1, 2019. In that visit, Prismatic completed 15 initial interviews and made logistical arrangements for the onsite visit.

The full team completed its onsite visit September 16-20, 2019. The consultants interviewed more than 30 AACPS staff and three bus contractors, as well as several school board members. The consultants also completed focus groups with bus drivers, bus aides, and district mechanics.

Team members also observed school bus morning drop-off at 29 school sites, using a standard rubric. When possible, team members spoke with school staff members and administrators regarding the quality and timeliness of transportation services at their school.

Acknowledgements

Prismatic acknowledges and appreciates the assistance of the following individuals in the preparation of this report:

- Alex L. Szachnowicz, P.E., Chief Operating Officer;
- Kelly McCrea, Executive Assistant; and
- Les Douglas, Transportation Supervisor.

Prismatic also thanks the many central office staff, school-based staff, bus contractors, contracted bus drivers, parents, and students who provided assistance, observations, and data for this review.

Report Organization

Although many areas of AACPS transportation were reviewed and documentation was collected in every conceivable area of transportation operations, this report is written in a “findings” format. In that format, only areas in need of improvement (leading to a recommendation) and areas of outstanding performance (leading to a commendation) are included. Any areas reviewed but not found in need of a recommendation nor worthy of a commendation are excluded from this report. This focuses the report and provides a smaller volume for management review.

Also, in this report, each recommendation is written in isolation from the others. The consulting team does not assume that the district will adopt all recommendations, or that it will adopt recommendations all at once. Any exceptions to this structure are clearly noted in the recommendation text.

All references to years in this report indicate school years. For example, “2019-20” refers to the school year 2019-20 which runs from July through June. All dollars presented in cost or savings projections are shown in 2019 dollars; inflation factors and cost-of-living adjustments are not included for future years.

The remaining chapters of this report are organized in this topic order:

- Chapter 2: Stakeholder Input and Observations;

- Chapter 3: Department Review; and
- Chapter 4: Conclusions and Recommendations.

The following appendices are included at the end of this report:

- Appendix A: Peer Comparison Data;
- Appendix B: Compilation of School Observations;
- Appendix C: School Administrator Survey;
- Appendix D: Parent Survey; and
- Appendix E: Facilities Master Plan Element.

Chapter 2 – Stakeholder Surveys



Chapter 2 – Stakeholder Input and Observations

Surveys were the primary method of stakeholder input on this project. The goal of the surveys was to seek input on aspects of AACPS transportation operations from various district stakeholders that included parents/guardians and school administrators. Prismatic sought to survey students as well, but AACPS administration decided against it.

Both the parent and school administrator surveys were administered online and available in October 2019. Detailed aggregate results, as well as select specific responses to each open-ended question are provided in the appendices. This chapter provides an overview of selected results.

The number of responses for each survey is shown in **Exhibit 2-1**. Both are based on the number of respondents submitting at least partially complete responses. School administrator responses were received from a majority of the schools, and at least several parent responses were received from every school. The number of parent responses were fairly high. The district has previously surveyed parents/guardians on transportation/school start issues twice before: in 2014 and in 2016. Those surveys had 1,496 and 10,857 responses, respectively.

Exhibit 2-1
Number of Responses by Stakeholder Type

Group	# of Respondents
Parents	6,268
School Administrators	95

Source: Prismatic survey results, October 2019

Survey processing included:

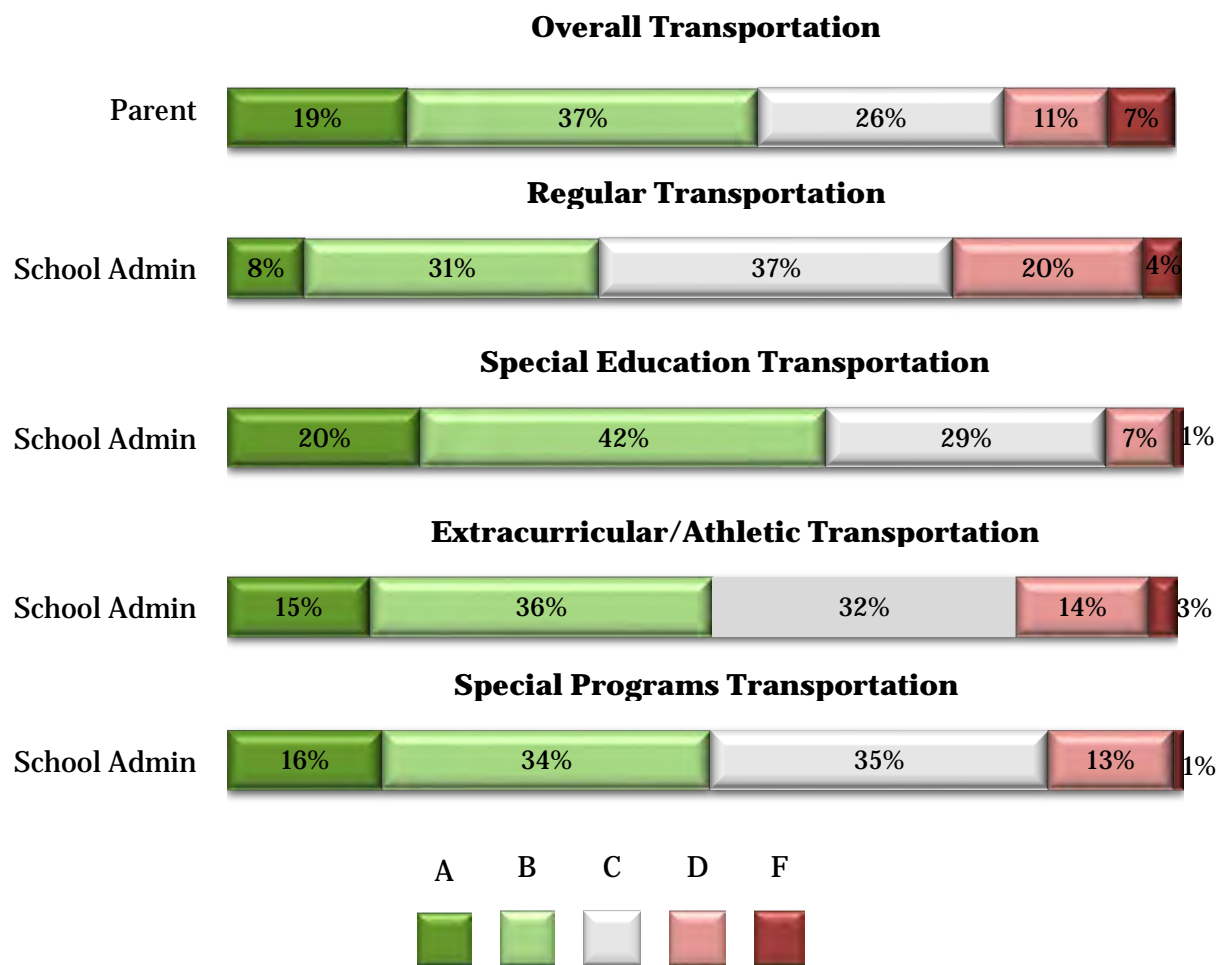
- ▶ eliminating substantially incomplete responses (those who answered only the first 1-2 questions);
- ▶ analyzing the survey response pattern for any cluster of 10+ parent surveys from the same IP address to ensure there were no attempts by interest groups to distort results;
- ▶ verifying receipt of only one response per school for the administrator survey; and
- ▶ reviewing and thematical coding responses to all open-ended questions.

Overall Transportation Grades

Stakeholders were asked to grade AACPS transportation overall (**Exhibit 2-2**). Over half of parents awarded transportations a grade of A or B. One-third of school administrators awarded regular transportation a grade of A or B. Over half of school administrators also gave special education and extracurricular/athletic transportation an A or B.

In contrast to these largely positive results, at least 15 percent graded AACPS transportation as a D or F. School administrators did so in every area except special education, where only eight percent gave it a D or F.

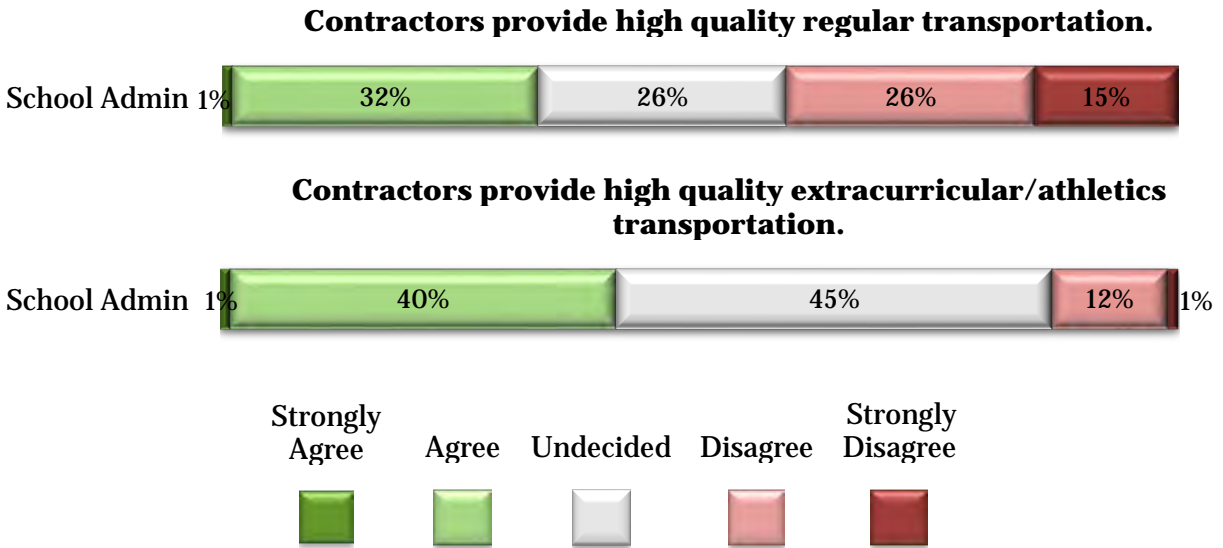
Exhibit 2-2
Overall Transportation Grades



Bus Contractor Service Quality

School administrators were asked their opinions on the quality of services provided by the AACPS bus contractors. **Exhibit 2-3** provides the results. One third of school administrators agree that bus contractors provide high quality regular transportation, while two-thirds disagree. School administrators were more complimentary of contractors' service quality in providing extracurricular/athletics transportation.

Exhibit 2-3
Bus Contractor Service Quality



Operational Readiness

Stakeholders were asked their opinions on aspects of the AACPS operational readiness. **Exhibit 2-4** provides the results. Substantial portions of school administrators were unsatisfied regarding the number of buses available to meet the transportation needs, and the high rate of absence among the contracted bus drivers. Such high levels of operational unreadiness are a concern, particularly since the provision of transportation is contracted by the district. This seems to indicate that at least some portion of the contractors are not regularly meeting their contracted service obligations.

Exhibit 2-4 Operational Readiness

There are enough working buses to meet transportation needs.



Drivers are NOT often absent, leading to transportation disruptions.¹



¹ Reverse coded.

Timeliness

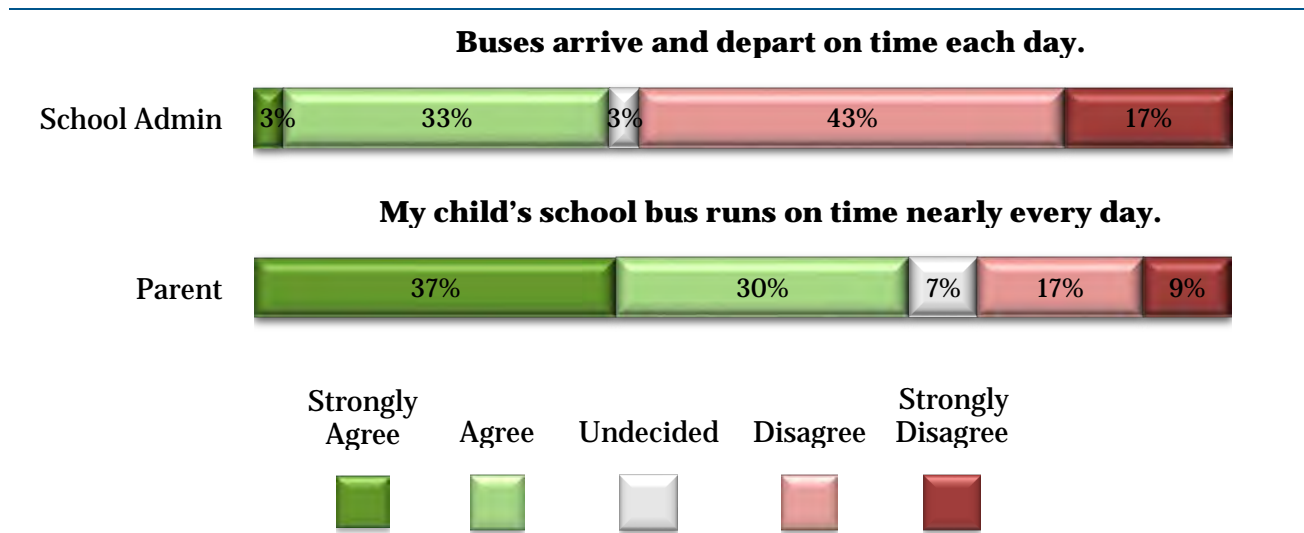
School administrators and parents were asked their opinions on the timeliness of AACPS transportation. **Exhibit 2-5** provides the results. While the first two results shown are generally positive, it is a concern that over half of school administrators stated that buses do not arrive and depart on time each day.

As of October 2019, 30 percent of school administrators stated that at least one bus arrives late in the morning 2+ times a week. Another 34 percent said late morning buses have happened at least a few times a month. This tardiness potentially infringes on students' access to school breakfast as well as instructional time.

Similarly, 59 percent of school administrators stated that at least one bus is late in arriving to school in the afternoon 2+ times a week. Another 27 percent said this happens at least a few times a month. The regular tardiness of buses places additional burdens on school staffs, which must provide supervision until all buses depart from the schools in the afternoon.

Elsewhere in the school administrator survey, respondents were asked about contacting the transportation department and bus contractors. Among school administrators the most frequent reason given for contacting the transportation department and bus contractors was the timeliness of bus service.

**Exhibit 2-5
Timeliness**

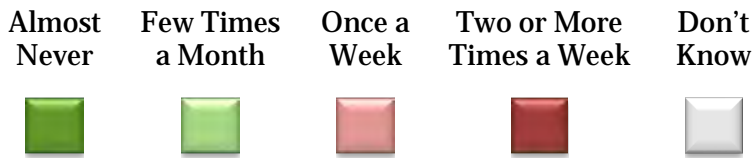
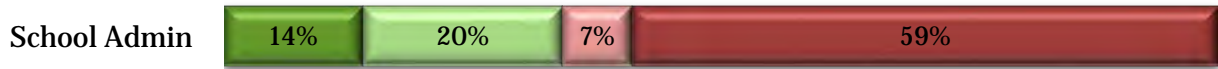


**Exhibit 2-5 (continued)
Timeliness**

This year so far at your school, how often is at least one bus late in arriving in the morning?



This year so far, how often is at least one bus late in arriving at school in the afternoon?



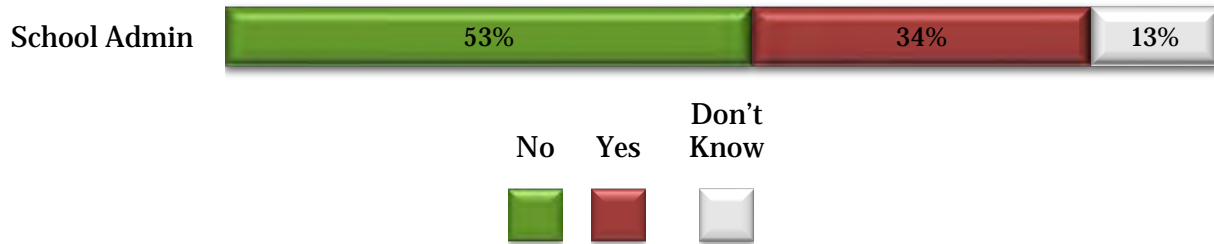
Lost Instructional Time

School administrators were asked to identify how often instructional time was lost last year due to issues with AACPS transportation. **Exhibit 2-6** provides the results. In the first question, 34 percent of administrators stated that at least one field trip in 2019-20 had a loss of instructional time in order to accommodate bus availability, such as spending less time than planned at a museum because the bus had to leave at a certain time.

On a more positive note, only five percent of school administrators stated that last year special education students were pulled early from their classes to meet their buses. This lost instructional time in particular could place the school district at risk for litigation, but it appears to be a small problem districtwide.

Exhibit 2-6
Lost Instructional Time

Last year, did any field trip have a loss of instructional time in order to accommodate bus availability?



Last year, did an administrator have to pull students from class early in order to sort out alternative busing arrangement because a bus/driver was absent?



Contractor Performance

Last year, school administrators noted how often issues related to contractor performance directly impacted students. **Exhibit 2-7** provides the results.

Combining/splitting² buses is when students from one bus are combined with another or where students from one bus are split onto multiple other buses, because the contractor is unable to provide the full number of buses for which the district contracted. This can happen when a bus has a mechanical problem or a driver is not available. School administrators reported that last year, combining/splitting was not a rare occurrence – 16 percent said it happened 2+ times a week. Another 20 percent said it happened at least a few times a month. Since 54 percent said combining/splitting almost never happened at their school, this may be a problem with only a portion of the contractors (although it would be a rather large proportion of them).

On a more positive note, only five percent of school administrators stated that last year they had to pull students from class early in order to sort out alternative busing arrangements because a bus was unavailable or a driver was absent. For the students affected by this, their instructional time was potentially impacted.

**Exhibit 2-7
Contractor Performance**

Last year, how often did bus combining/splitting happen?



Last year, how often did a bus make a double run?



² where students from one bus are combined with another or where students from one bus are split onto multiple other buses because a bus/driver is absent

Ride Times

Parents were asked their opinions on the ride times of their children. **Exhibit 2-8** provides the results. A majority agree that the length of regular route bus rides are reasonable.

Exhibit 2-8 Ride Times

The length of my child's bus ride is reasonable (regular education).



The length of my child's bus ride is reasonable (special education).



Transportation Department Responsiveness

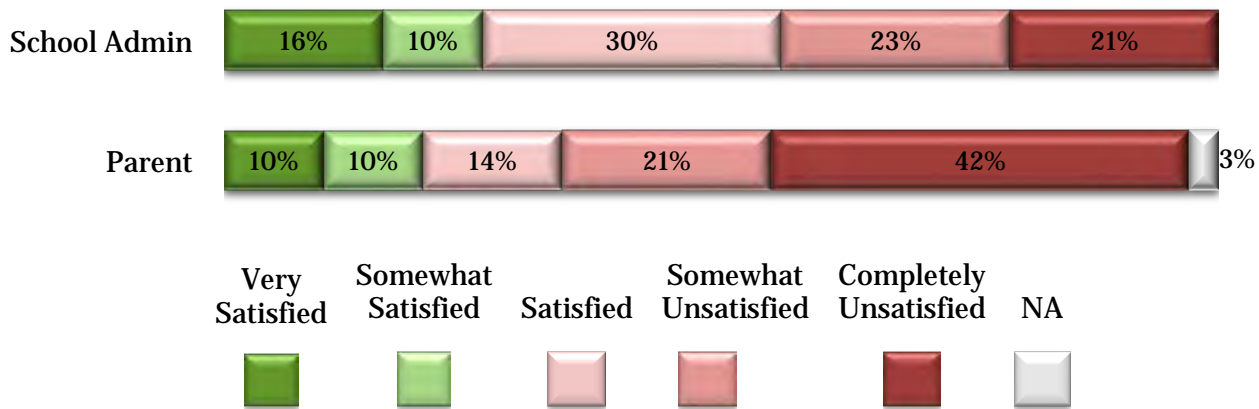
School administrators and parents were asked if they had ever contacted the AACPS transportation department with a concern. Most (95%) school administrators had contacted the transportation department at least once in the past two years with a concern; of these, 98 percent had contacted the department three or more times. The most frequent reason for school administrator contact was a concern about the timeliness of bus service (27%), followed by concerns about bus stop (15%) and bus driver attitudes (11%).

Ten percent of all parent respondents stated they had contacted the transportation department with a concern; of these, 31 percent had contacted the department three times or more. Among parents, the most frequent reason for contact was timeliness of bus service (28%), followed by concerns about a bus stop (16%) and bus driver attitudes (9%).

School administrators and parents were also asked how satisfied they were with the response of the AACPS transportation department to their concern. **Exhibit 2-9** provides the results. The majority of parents were somewhat unsatisfied or completely unsatisfied, as were 43 percent of school administrators.

**Exhibit 2-9
Transportation Department Responsiveness**

How satisfied were you with the department's handling of your concern?



Prismatic Observations

Prismatic consultants observed morning bus arrivals in 29 AACPS schools during the onsite week.

Annapolis HS	George Fox MS	North County HS
Annapolis MS	Georgetown East ES	Old Mill HS
Arundel HS	Germantown ES	Pasadena ES
Arundel MS	Glen Burnie HS	Quarterfield ES
Broadneck HS	Lindale MS	Severna Park MS
Central MS	Marley MS	Shady Side ES
Chesapeake HS	Meade HS	South River HS
Crofton ES	Meade MS	Southern HS
Crofton MS	Millersville ES	Southern MS
Freetown ES	Northeast HS	

The consulting team found that safety concerns were largely absent:

- ▶ Bus, car rider, and pedestrian traffic flows were relatively separated from each other.
- ▶ Site circulation at peak loads was generally acceptable.
- ▶ Adults were providing oversight of bus unloading and school entry.
- ▶ Bus drop off zones and parent drop-off areas were generally well designated.
- ▶ Buses were typically not parked in double rows.

The consulting team found that contractor buses were typically arriving well before school start times. The team counted that 84 percent of buses arrived 10+ minutes prior to the start of school. Team members had been instructed to arrive at school 30 minutes prior to the start of school for each observation. In nearly every case, upon arrival, the consultants found at least one bus with students already on-site. While there are no industry standards as to the correct number of minutes prior to the start of school when students should be dropped off, it is generally accepted that it should be with enough time for students to get breakfast if they wish and to get to class on time – usually around 15 minutes prior to the first bell. Arriving 30+ minutes prior to the start of school time is unusual and leaves a block of time when bus drivers are stuck supervising students by themselves and students are stuck on the bus, waiting for school-based staff to open the school doors. As noted by AACPS leaders after the onsite review, principals are given an option as to when they would like buses to arrive at their school: 15, 20, or 25 minutes prior to the opening bell.

The consulting team also found that contractors buses were typically arriving with low student loads. The team determined that 44 percent of buses looked more than half empty (precise counts by bus were not always possible, in the morning rush). In more than a few cases, consultants observed the number of students disembarking from a particular bus to be in the single digits. In only one case did a consultant report that a bus was observed to be over the rated limit for passengers – in that instance, the consultant counted 87 students disembarking from one bus at a middle school. Transporting more students than the bus rating is a strong safety concern. Habitually routing buses in a manner that results in many of them being more than half empty indicates a strong efficiency concern.

Chapter 3 – Department Review



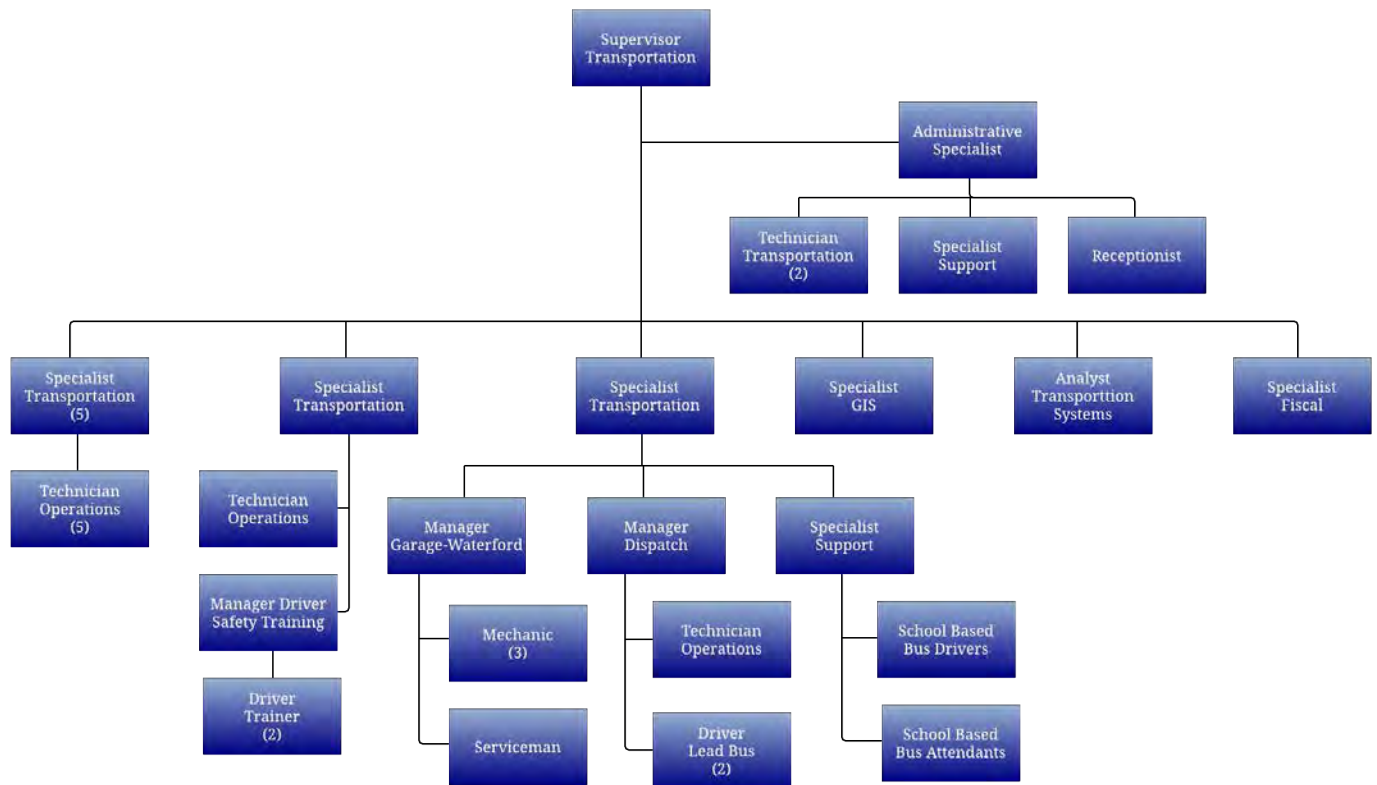
Chapter 3 – Department Review

This chapter addresses these areas of the transportation function in Anne Arundel County Public Schools (AACPS):

- State Restrictions Regarding School Vehicles
- Organization and Staffing
- Departmental Management
- Contractor Management
- Facilities
- Routing

The current organization of the AACPS transportation department is shown in **Exhibit 3-1**. The transportation supervisor reports to the chief operating officer. The transportation supervisor oversees the work of 34 staff members in the department and approximately 115 bus drivers/aides. These bus drivers/aides support the transportation needs of special education students. Regular route and other transportation are provided by 20 bus contractors and one taxi company. In 2018-19, each school day there were about 580 regular and special needs routes.

**Exhibit 3-1
AACPS Transportation Department Organization**



Source: Prismatic, October 2019

State Restrictions Regarding School Vehicles

Finding – State Restrictions

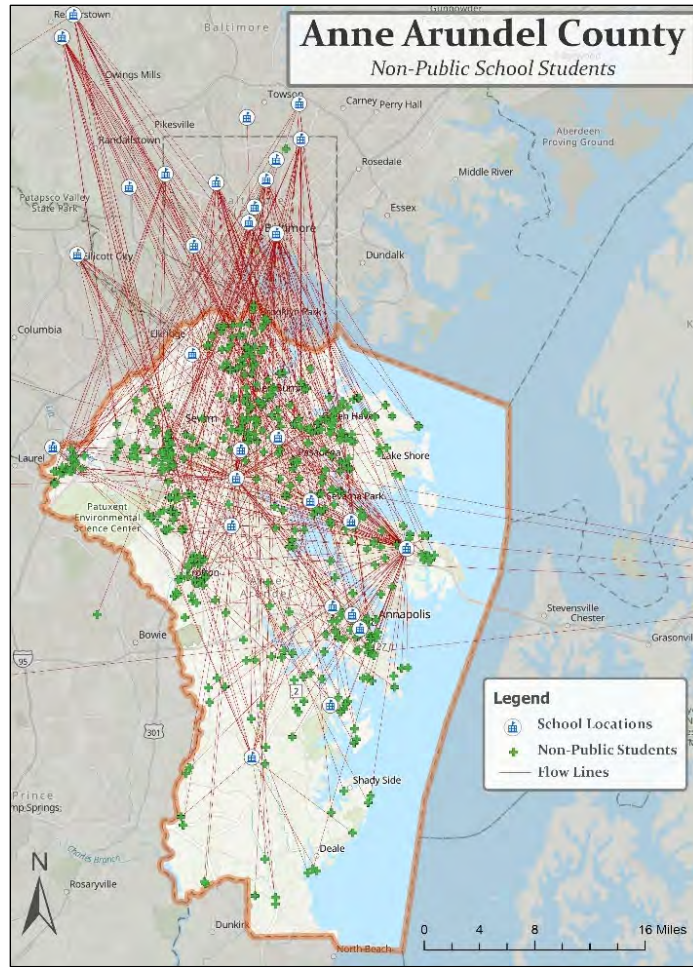
Current Maryland regulations regarding student transportation are outdated and cause districts to overspend when equally effective and lower cost alternatives exist. The anachronistic regulation of school buses in Maryland leaves school systems with the ability to select their own textbooks, playground equipment, and student computers, but not the type of vehicles it can use in transporting students. Moreover, while it can be cost-effective to transport large groups of students on a yellow school bus, school districts of today often need to transport small numbers of or even individual students in order to best meet their educational needs. In those situations, the yellow school bus is neither cost-effective nor sufficiently flexible.

The yellow school bus is designed to serve a “traditional school district” where students attend centrally located neighborhood schools. The school district of today typically contains neighborhood schools, as well as programs of choice for middle and high school students, regional career and technology centers, out-of-zone and non-public school placements for special needs students, and homeless students who must be transported to their school of origin.

Currently in AACPS:

- ▶ 517 students from Anne Arundel County receive transportation to 44 special schools and programs. This includes several schools outside of the county in Baltimore, Washington, D.C., Frederick County, and across the Chesapeake Bay. **Exhibit 3-2** provides a visual overview of the required transport of these students.

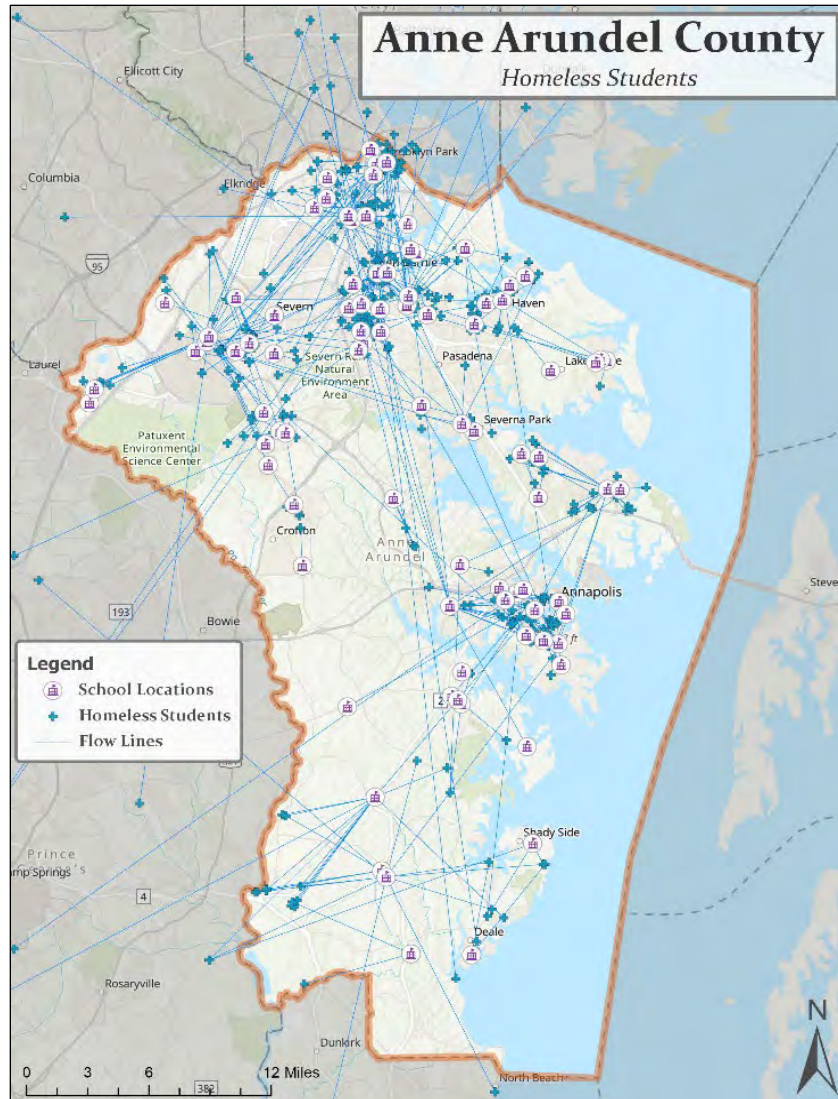
Exhibit 3-2 Required Transport of Select Students to Special Needs Schools



Source: Prismatic, September 2019

- ▶ 641 homeless students are transported in accordance with the *McKinney-Vento Act* (MVA). This includes 274 students who do not reside in their zoned school area, and 75 students who live outside of Anne Arundel County. For example, at North County High School in Glen Burnie, only 12 of its 34 homeless students live in Glen Burnie. The other 22 students are transported from Baltimore, Brooklyn, Brooklyn Park, Columbia, Elkrigde, Fort Meade, Halethorpe, and Linthicum. **Exhibit 3-3** provides a visual overview of the required transport of these students. The transportation department has four school buses as a first resource in transporting these students, if they cannot be transported on existing bus runs. If those four buses are not available, the district uses taxicabs from a private firm.

Exhibit 3-3 Required Transport of Homeless/MVA Students



Source: Prismatic, September 2019

On top of these two forms of transportation where it is possible only one student is being transported from home to school on a run, education in general and AACPS in particular have expanded programming that also expands the need for small group transportation. For example:

- Magnet programs offer students a range of academic options and transportation is provided from hub stops. While some AACPS magnets are essentially regionalized, the two performing visual arts high schools and the biomedical allied health high school are specialized by major and therefore accept students from all over the county.
- Four charter/contract schools offer transportation from all corners of the county. For instance, the Monarch Academy Annapolis campus has 13 buses, picking up students as early as 7:00 a.m. for an 8:30 a.m. bell.

Clearly, a large yellow school bus is not the most efficient way to service individual and small groups of students. Yet, this method persists because of a State of Maryland regulatory construct that is outdated, unnecessarily restrictive, and even contradictory to the transport provided to school-age children in other government contexts.

Conventional wisdom asserts that the yellow school bus is the safest form of student transportation. To be sure, the yellow school bus is designed to be safer than other vehicles. Vehicle design requirements for rollover protection, protective seating, and high crush standards, along with exterior features such as swing arms, crossview mirrors, paint scheme, and flashing red lights all contribute to the strong safety record of school buses.¹ However, what little data exist on this topic do not clearly establish the superiority of yellow school buses when it comes to safety in use. Most reference data from National Highway Transportation Safety Administration (NHTSA) when stating that the yellow school bus is the safest form of transport to and from school. Certainly, industry advocacy groups (such as the National Pupil Transportation Association) and the makers of school buses promote this idea. In reality, the NHTSA data are incomplete on the matter. From 2007 and 2016, the NHTSA recorded 1,282 deaths related to school transportation. Deaths occurred:

- while on a school transportation vehicle, which includes yellow school buses and other vehicles used in a manner similar to a school bus (118 deaths);
- while in another type of vehicle (902 deaths); and
- as a pedestrian (216 deaths).²

Industry officials tend to point to these data as evidence that the yellow school bus is the safest form of transportation. However, what is not provided by NHTSA is any form of rate of death by type. There were 118 deaths on school buses out of how many daily school bus trips? There were 902 deaths in other vehicles transporting children to to/from school (likely to mostly be parents transporting their children) out of how many daily private vehicle trips? At most schools it is typical for the number of private cars to greatly outnumber the number of buses delivering students, so one could reasonably conclude that the *rates* of death among school bus and private car transportation are not statistically different. Moreover, of the 216 pedestrian deaths, 163 resulted from being struck by a school transportation vehicle.

The NHTSA data go on further and analyze the deaths by vehicle type for all vehicles used for school transportation (**Exhibit 3-4**). As shown, the data seem to suggest that “vehicles used as school buses” are safer than school buses. However, the data lack denominational context, so it is difficult to truthfully compare.

¹ American School Bus Council Fact Sheet

² Not shown are 46 deaths recorded as “other nonoccupants.” Source: National Center for Statistics and Analysis. (2018, January). *School-transportation-related crashes: 2007-2016 data*. (Traffic Safety Facts, Report No. DOT HS 812 476). Washington, DC: National Highway Traffic Safety Administration.

Exhibit 3-4 NHTSA Data on School Vehicle Transportation Deaths

School-Transportation-Related Crashes Involving School Bus Occupant Fatalities (All Ages), by Year, Vehicle Occupied, and Crash Type, 2007–2016

Year	School Bus Body Type				Vehicle Used as School Bus				Total			
	Single-Vehicle		Multiple-Vehicle		Single-Vehicle		Multiple-Vehicle		Single-Vehicle		Multiple-Vehicle	
	Crashes	Fatalities	Crashes	Fatalities	Crashes	Fatalities	Crashes	Fatalities	Crashes	Fatalities	Crashes	Fatalities
2007	2	2	1	1	0	0	1	2	2	2	2	3
2008	3	3	6	9	1	1	3	6	4	4	9	15
2009	1	1	2	2	0	0	1	2	1	1	3	4
2010	8	8	6	6	1	1	1	1	9	9	7	7
2011	3	3	5	6	1	1	1	1	4	4	6	7
2012	3	5	5	7	1	1	1	1	4	6	6	8
2013	5	6	3	3	0	0	1	2	5	6	4	5
2014	2	2	3	8	0	0	1	1	2	2	4	9
2015	2	3	5	6	1	1	3	3	3	4	8	9
2016	2	7	2	2	0	0	4	4	2	7	6	6
Total	31	40	38	50	5	5	17	23	36	45	55	73
Average	3	4	4	5	1	1	2	2	4	5	6	7

Source: FARS 2007-2015 Final File, 2016 ARF.

Note: Does not include occupants of other vehicles in school-transportation-related crashes.

Source: National Center for Statistics and Analysis³

Each state determines what types of vehicles can be used to transport students to and from school. Some states allow passenger vans that do not meet the NHTSA definition of “school bus” to be used for student transportation. While 29 states prohibit using passenger vans to transport public school students in any way, 11 allow their use for school-related activities like field trips and sporting events only. Eight states allow the use of passenger vans for these activities in addition to daily transport to and from school.⁴ Maryland is one of the more restrictive states. In Maryland:

B. Type I or Type II school vehicles shall be used to transport students to and from school and school related activities when local school system sponsored transportation services are provided.

C. Vehicles other than Type I or Type II school vehicles may be used if:

(1) Special approval in writing has been given by the State Superintendent of Schools, consistent with the requirements of Transportation Article, §11-154(b)(2), Annotated Code of Maryland;

(2) The vehicle is a taxicab;

(3) Only one student is transported; or

³ National Center for Statistics and Analysis. (2018, January). *School-transportation-related crashes: 2007-2016 data*. (Traffic Safety Facts. Report No. DOT HS 812 476). Washington, DC: National Highway Traffic Safety Administration.

⁴ <https://www.saferidenews.com/2018/08/nhtsa-clarifies-15-passenger-van-regulations/>

(4) *The vehicle used is a commercial motor coach.*⁵

In total, Maryland regulations are inconsistent regarding the transportation of children. The State Superintendent of Schools acknowledged this inconsistency when denying a waiver requested by AACPS to allow a non-public school to transport students using 15-passenger vans, writing in part:

*The relevant sections of the Transportation Article **limit the use of non-school vehicles for transporting students between “one or more schools or licensed child care centers,”** and that “children are permitted to embark or exit the vehicle only at a school or child care center.” The Administration has not approved a **student’s home** (emphasis added) as a designated area for transporting student in non-school vehicles. See, Transportation Art. §11-154(b)(2)(ii).*

Moreover, MSDE’s long existing policy, since at least 1984, has prohibited LEAs from using non-Type I or Type II school vehicles for transporting students between home and school. MSDE has consistently applied this policy without exception. Neither my predecessors nor I have granted special approval to allow an LEA (or contractor) to use vans to transport students between home and school.

In other words, it is acceptable for students attending a before or after school licensed childcare center to travel to school in a non-school vehicle (a 15-passenger van or otherwise) but if that same student were traveling to their home, that same van would be unacceptable. This is a distinction without a difference .

A further example of inconsistency is the allowable use of taxicabs to transport students. Passenger cars that might in all other respects be exactly the same vehicle as a taxicab except the dome light are not allowed for student transport, per Code of Maryland Regulations (COMAR). The MSDE has not provided an explanation as to how the dome light substantially improves the safety of students.

The inconsistency of MSDE is only one example within state law when transporting children and vulnerable populations. At least three other agencies have regulations which are either directly contradictory to MSDE’s regulation or silent altogether on safe transportation vehicles:

- MDOT MTA Mobility – MobilityLink services are available for eligible disabled riders, including children and children riding with eligible parents. In 2017, MobilityLink provided more than 2.7 million trips.⁶ MTA has not reported a single fatality or serious injury in its MobilityLink services for more than a decade. MobilityLink transportation is provided in a variety of vehicles:
 - a fleet of 548 vehicles owned by MTA nearly all of which are operated and maintained under contract to private firms;
 - the MV-1, which was purposely built as a wheelchair-accessible vehicle and which can carry up to three wheelchair-bound passengers;
 - cut-away vehicles where the body of the vehicle is mounted on purchased chassis and is wider and taller than conversion vans. The cutaway vehicle has both a

⁵ COMAR 13A.06.07 – Transportation

⁶ National Transit Database, 2017

standard front door entry and a wheelchair lift and has a capacity of up to six passengers including restraints for up to four riders;

- ▶ Group Homes for Youth – The Maryland Departments of Human Resources (DHR), Juvenile Services (DJS) and Health (DOH) regulate at least 10 types of residential group home facilities for special populations children. Many of these facilities provide school-related transportation, transportation to outings and group events, etc. The governing regulations of these agencies make no restrictions on the type of vehicle used in the transportation of children, nor are licensing standards and training requirements provided for vehicle drivers; and
- ▶ Child Care Facilities⁷ – The MSDE is responsible for the regulation, licensing, and oversight of 8,500 child care facilities which serve ~200,000 children annually. The governing regulations for these facilities provide no restrictions on the type of vehicle used to transport children except to say that “a vehicle used to transport a child in care shall comply with all applicable State and federal safety requirements.”⁸ No recommendations or guidance is provided on the type of vehicle used to transport students at child care facilities nor are licensing standards and training requirements provided for vehicle drivers. The MDOT Motor Vehicle Administration specifically permits the transportation of children at licensed child care facilities in a Class A (passenger vehicles) or Class M vehicle (multipurpose passenger vehicle).⁹

Outside of Maryland, student transportation has more flexibility. For example:

- ▶ Dallas Independent School District (TX) has used smaller vehicles for routes that contain 10 or fewer students, typically routes that transport students to special-needs schools and magnet schools since 2013.¹⁰ These vehicles, which include vans and SUVs, are currently deployed on over 400 routes. Besides the vehicles, much about the transportation system is the same; drivers receive training specific to transporting school-aged children (including training geared towards special needs), vehicle safety is held to a high standard, and systems are put in place to ensure students and parents can clearly identify vehicles and routes. The school system contracts with existing transportation drivers, whose employees are already in the driving profession, ensuring proper licensing and professionalism. Ironically, when the alternatives to school bus transportation were rolled out, taxis were part of the alternative fleet, but were eliminated at district request.
- ▶ Halifax County Schools (VA) in 2011 maintained a fleet of 17 cars for use in special education transportation, specifically for when it was not cost-effective and/or in the best interest of the student to provide bus transportation. These cars were standard issue vehicles (**Exhibit 3-5**).

⁷ Here, “licensed child care” refers to both “family child care” and “child care centers” each of which has a unique definition and operational standards.

⁸ COMAR 13A.16.10.06 Student Transportation

⁹ 11.19.06.02 –fUse of Nonschool Vehicles by Schools or Licensed Child Care Centers

¹⁰ <https://www.schoolbusfleet.com/article/612237/gauging-the-safety-of-school-bus-alternatives>

Exhibit 3-5 Cars Used in Another District for Student Transport



Source: Prismatic, 2011

- ▶ As an alternative to vans, some school districts are beginning to adopt “school bus constructed vehicles.”¹¹ About 90 of these vehicles are currently in operation in Pennsylvania, a state that does not allow van use for school transportation. School bus constructed vehicles are nine-passenger buses that are built to the same federal motor vehicle safety standards as full-sized school buses and maintain the iconic yellow-bus look. While they do not contain flashing red lights and a stop arm, they include the same windows and mirrors, joint and rollover strength, seat padding, compartmentalization, rear emergency exit, and heavy-gauge steel side-impact barriers. A Commercial Driver’s License (CDL) is not required to operate school bus constructed vehicles, which expands the pool of eligible drivers.
- ▶ Some on-demand ride providers are tailored specifically to school-aged children. For example, HopSkipDrive is a service similar to Uber and Lyft, where drivers use their own vehicles to provide rides for children. Drivers are vetted extensively and must have at least five years of caregiving experience. Vehicles can be standard cars, but must pass a safety inspection. Rides can also be customized with specific pick-up and drop-off instructions. HopSkipDrive already partners with multiple school districts in California and Colorado. The company recently expanded operations to the East Coast, with services offered in Northern Virginia and Washington, D.C.

Currently, AACPS operates most of its special education transportation internally: its own buses, drivers, aides, and mechanics. The 2019-20 budget for transporting special education students was \$21,202,453 (\$13,122,453 for special education students and \$8,080,000 transporting nonpublic students).

¹¹ <https://www.monarktrans.com/safety/16-school-bus-constructed-vehicle>

The district currently spends more than \$0.5M a year using taxicabs to provide specialized student transport (**Exhibit 3-6**). AACPS staff indicated they believe, with only one taxicab contractor, that other on-demand hired car or small van options could be less expensive. Anecdotal data from another school district already using an on-demand hired car service indicate that costs could be reduced.

Exhibit 3-6
AACPS Expenditures on Taxicabs, 2018-19

Student Type	Taxi Expenditures
Homeless/MVA	\$349,464
Non-Public	\$60,252
Special Education	\$25,492
Regular Education	\$7,790
Foster Care	\$89,200
Total	\$532,199

Source: AACPS, September 2019

Recommendation 1:

Request changes in COMAR regarding alternative vehicles that can be used to transport students.

Each state has the authority to set its own rules on the types of vehicles that can be used to provide school transportation.¹² Maryland currently has overly restrictive rules that do not result in significantly greater student safety but do reduce service quality while likely increasing costs.

Local and state spending on traffic enforcement and safe pedestrian/bicycle infrastructure could be more effective in reducing serious injuries and fatalities than heightened local or state standards (and higher costs) for student transportation vehicles. A school district that spends its transportation dollars on an “all modes” approach to student transportation – one that includes vehicles designed to transport individual or just a few students when that is what is needed – can reduce overall transportation spending *and* improve the safety of student transportation.

The consulting team recommends that AACPS work with county government officials to request legislative changes in COMAR to allow the use of small passenger vans for student transport and to allow the use of on-demand hired private cars for student transport. Both are already being done in districts in other states.

In the near term and without any legislative remedy, AACPS leaders should advocate for:

- ▶ changing the perception of school buses as the safest form of student transportation. While buses are designed to be safe, they are not the only safe form of student transportation and the data are lacking to demonstrate that one form is safer than another;

¹² <https://www2.ed.gov/about/offices/list/oii/nonpublic/transportation.html>



- advocating a broader view of fleet flexibility . Most waivers sought from MSDE have focused on using the unmodified 15-passenger van; however, there are other vehicle solutions; and
- a coalition of state student transportation directors to jointly voice the need for greater flexibility.

Fiscal Impact:

This recommendation can be implemented with existing resources, but achieving changes in COMAR would result in substantially more flexibility in transportation options that would also lower costs.

Organization and Staffing

Finding – Driver Training Requirements

Paramount in the qualifications to become a school bus driver or bus aide is COMAR’s requirement for new drivers to complete a minimum of six hours of classroom instruction and at least nine hours of behind-the-wheel instruction. Aides must complete a minimum of four hours of classroom instruction. The hours of training provided by the training department of AACPS’s transportation department far exceeds the minimum required. New drivers for both the district and those hired by school bus contractors receive 30 hours of classroom instruction and 10 to 20 hours of behind-the-wheel instruction and observation. Bus aides receive 20 hours of classroom instruction.

COMAR is the official compilation of all administrative regulations issued by agencies of the state of Maryland. COMAR’s requirements for instructional content for new school bus drivers and school vehicle attendants or bus aides are established in Title 13A, State Board of Education, Subtitle 06 Supporting Programs, Chapter 07 Student Transportation or *Title 13A.06.07/09*.

The AACPS transportation department has charged its manager of driver safety training with ensuring that all its district bus drivers and bus aides, as well as all those working with bus contractors, meet COMAR’s minimum requirements for instruction and training, both pre-service and in-service. Currently, this manager works with a staff of two other experienced CDL driver trainers and one non-CDL temporary, alternatively-assigned office assistant. After bus contractors have provided their own newly-hired bus drivers with about nine hours of training, these new drivers are sent also to the AACPS bus driver training facility to receive five consecutive days of pre-service classroom training.

The AACPS orientation or core curricula of classroom instruction for bus drivers includes:

- driver attitude
- student management
- highway-rail grade crossing safety
- bridge crossing safety
- accident reporting and procedures
- vehicle training
- what “knowing the route” means
- loading and unloading students
- emergency evacuation
- transporting student with special needs

- appropriate duties of the bus aide or attendant
- driving under adverse weather conditions
- first aid

After the week of classroom instruction, both AACPS bus drivers and contractor drivers complete at least 10 to 20 hours of training behind-the-wheel provided by the AACPS bus training staff.

In the AACPS training module, bus aides receive the same classroom instruction at the same time as the bus drivers during the first four of the five days in the bus driver training facility. Afterwards, aides are scheduled for “on-the-bus” or on-board training to attend children while riding the bus.

As per COMAR requirements, the AACPS training staff each year provides at least six hours of in-service instruction for all drivers – four hours in the summer and one hour in each of the fall and spring semesters. Five of the hours emphasize safety procedures, strategies, and laws which often include topics on defensive driving, controlled substances and alcohol regulations, and personnel and student safety issues. The AACPS driving facility staff provides two hours of in-service training each year for bus aides. Topics include safe use of on-board equipment, student management, and first aid.

Commendation 1:

The efforts of the transportation department to provide longer amounts of training to all bus drivers and bus aides than legally required is commendable.

Finding – Cross-Training

The AACPS transportation department lacks a process to cross-train employees. This systemic challenge prevents the department from achieving service level excellence because critical functions are not carried out when the primary point of contact is out of the office for an extended period of time (e.g., funerals or vacations).

During interviews, transportation staff noted there is minimal cross-training in the department. When the primary point of contact for a particular function is out of the office, activity on requests or projects comes to a halt. When the primary point of contact is out of the office there is a knowledge gap within the department.

A lack of cross training impacts the service level delivery of the transportation department. This may impact the onboarding of new employees who may be asked by external stakeholders to assist with a concern. If transportation employees are not cross-trained, the external stakeholder must wait until the primary point of contact returns to work. This impacts the effectiveness and the efficiency of the transportation department and reflects unfavorably on the school district.

Recommendation 2:

Develop and implement a cross-training policy for the department.

Clearly defined responsibilities with backup personnel maintaining a high level of service is the norm in business practices. Desk standard operating procedures (SOPs) can assist in the cross-training of staff, ensuring someone is available who is an effective substitute when the primary

point of contact is out of the office. Cross-training can take place during slow periods within the department.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – Departmental Organization

The structure of the transportation department is not optimally organized and staffed in the areas of dispatch and routing.

Dispatch Manager and Lead Bus Driver

The functions of recruiting bus drivers and aides, accepting applications, screening applicants, conducting interviews, checking references, making hiring decision, and assigning salaries are assigned to the current dispatch manager, who is officed at the main bus parking lot and garage. Key supervisors and managers in the main office of the transportation department only participate in these functions whenever they are asked to sign off on paperwork for new hires.

The job description for the position of Manager – Transportation Dispatch contains one essential duty and responsibility related to the department’s procedures for hiring new bus drivers and bus aides. It reads: “9. Assist with interviewing prospective employees.” In reality, the position currently is responsible for all the steps in the hiring process, from encouraging individuals who walk into the dispatch office to apply, assisting them in filling out both manual and the HR online applications, interviewing them, conducting reference checks, making the decision to hire the applicants, recommending the step on the salary scale, and notifying the district’s HR department that they have been hired.

The dispatch manager notifies the transportation supervisor when a new driver or bus aide has been hired. Only after he has reviewed the driving record of each driver who is proposed for hiring does the supervisor becomes involved in the hiring process . Based on the results of that investigation, the supervisor approves the proposed driver to begin work. All hires become substitutes if no vacancy is immediately available. Generally, the hiring process begins when there are known current or upcoming vacancies.

During the time new hires are participating in required bus driver or aide training provided by the manager of driver safety training, they submit documents and fees for fingerprinting and forms for extended background checks in response to House Bill 486 – Child Sexual Abuse and Sexual Misconduct Prevention. At least 20 days pass before any clearance or approval for hire is received from the HR department and sent to the transportation department, as dictated by HB 486. Even though they can be trained, no new hire can work, even as a substitute, until HB 486 clearance is received.

Having to devote so much of the daily work time to the hiring process, which is typically an HR or personnel function, the dispatch manager’s designated roles and responsibility associated with the functions of dispatch are severely diluted and require delegating to the lead bus driver. The lead bus driver currently manages assigning substitutes, notifying everyone of route and assignment changes, and recording, calculating, and overseeing all aspects of payroll reporting. In addition, the lead bus driver begins the workday at 5:00 a.m., which is necessary to effectively record absent drivers/aides and schedule replacements.

All functions of recruiting, hiring, and assigning salary in most typical school district transportation departments are generally performed either in a school district's HR central office or at the main administrative level of the district's transportation headquarters. The same is typical practice in filling all vacancies for all positions in a school district – decisions are made at the administrative or supervisory levels.

Routing Staff

AACPS lacks sufficient staffing to fully and effectively utilize the routing software. In August 2015, the AACPS transportation department began using vMax® Compass routing software to develop regular bus routes. The transportation department currently has one full-time GIS staff member. With such limited staffing, progress in fully implementing the routing software has been slow. Other staff in the department have been tasked with some routing work as an additional duty. At the time of the onsite work, the district had only completed the translation of historical paper routes into the system.

The lack of routing software was noted in the 2014 audit completed by the Maryland Office of Legislative Audit (OLA). The 2019 OLA audit noted that the district now has routing software but that “it did not fully use this tool” and instead just computerized its historical routes largely without modification.

The routing software is currently being used as a picture display right now rather than a tool to create bus routes. Due to the lack of assistance, none of the features provided by the software are fully operational and the department continues to route using historical routes.

As currently organized, the transportation specialists are supposed to assist in routing tasks for their respective areas. However, each specialist seems overwhelmed with trying to work the vMax® Compass routing software. They each wear many hats which do not allow them to become proficient at any one task. Compounding the problem, the specialists each have their own way of deciding on stop placements, length of time for adding stops, and the amount of their immersion into the routing software. Having the routing done in multiple different ways does not promote consistency or accuracy. Some specialists do everything on paper and may add the information into vMax® Compass if they have time. The stops are updated only when there is time or not at all, if they are forgotten. No specialist could “fill in” for another specialist since everyone has their own way of handling stop requests and bus routing.

The vMax® Compass routing software is an ESRI-based GIS routing system. Geospatial computing and the associated GIS software is technical. The University of Maryland offers a GIS & Cartography concentration and numerous institutions offer certificate programs.

Based on job title comparisons, most peer districts have greater dedicated routing resources than AACPS, as shown in **Exhibit 3-7**. Only Baltimore County reported having less dedicated routing positions.

**Exhibit 3-7
AACPS and Peer Routing Staff**

	# of Positions Dedicated to Routing Tasks
Anne Arundel	1
Baltimore	1
Frederick	5
Howard	2
Prince George's	8

Source: AACPS and peer districts, October 2019

Recommendation 3:

Improve the organization the organizational structure of the department:

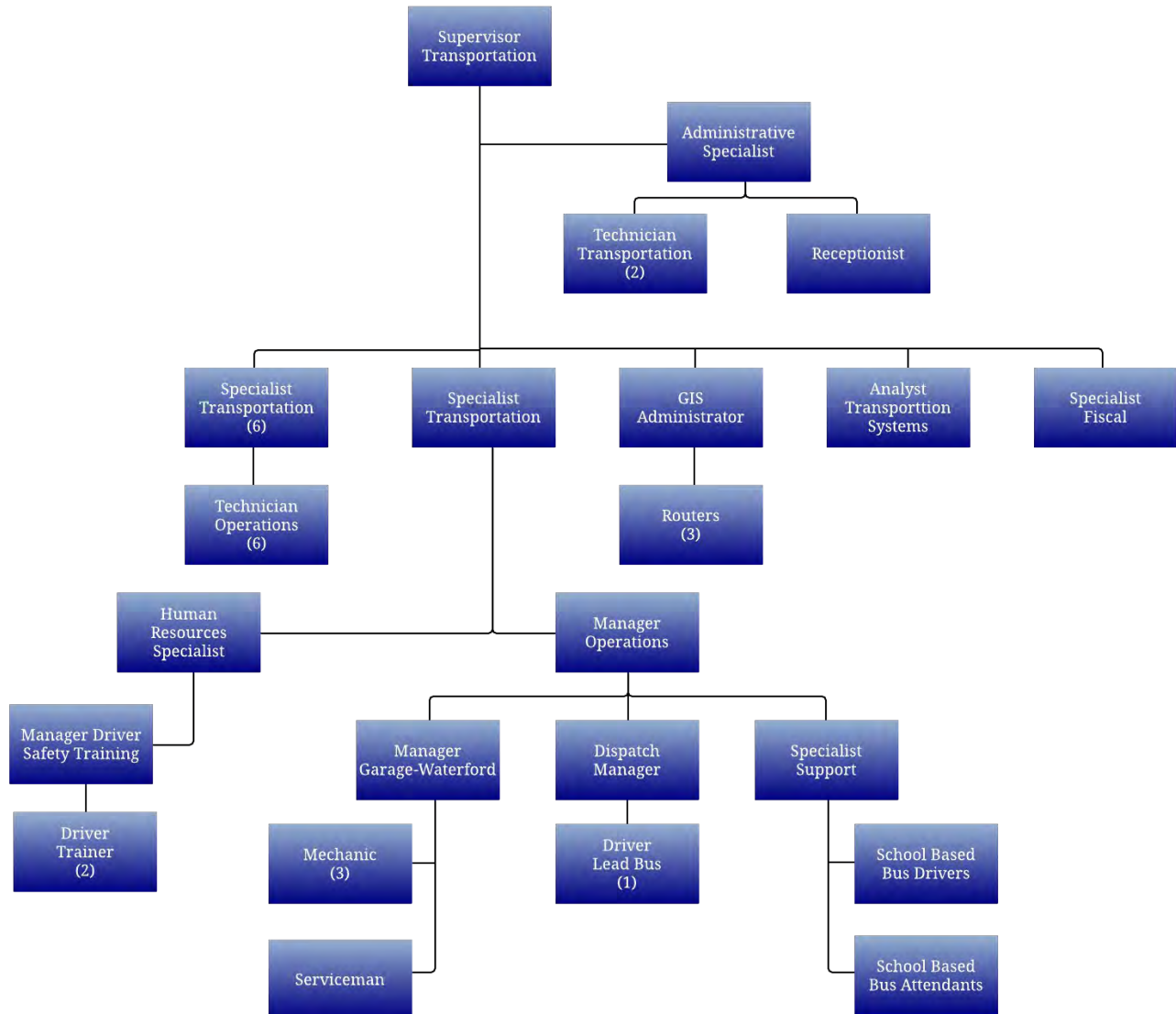
- ▶ **make hiring AACPS bus drivers/aides the responsibility of the administrative specialist in the central transportation department;**
- ▶ **upgrade the lead driver position to dispatch manager;**
- ▶ **upgrade the current dispatch manager position to operations manager;**
- ▶ **increase the number of GIS/routing/technical staff by three; and**
- ▶ **create a GIS administrator position and move the current GIS specialist to this position.**

To accomplish this, the district should:

- ▶ move the function of hiring bus drivers/aides from the dispatch office to the central office of the transportation department, assign the responsibility for departmental HR functions to the administrative specialist, and coordinate with the main district HR department to ensure that requirements of district policies and regulations pertaining to hiring, staffing, and placement are implemented;
- ▶ upgrade the leader driver and dispatch manager to dispatch manager and operations manager positions, respectively – once the moves are completed, the department will need to decide if the vacated lead bus driver position will need to be filled;
- ▶ increase the number of GIS staff by three – these positions would be expected to handle GIS, routing, and other technology-based work within the department; and
- ▶ create a GIS administrator position to manage the work of the three GIS staff members – it would be logical to move the current GIS specialist into this position.

Exhibit 3-8 provides the recommended organizational structure and staffing.

Exhibit 3-8 Recommended Organizational Structure and Staffing



Source: Prismatic, October 2019

Fiscal Impact:

Making the recommended improvements to the transportation department’s organizational structure will cost AACPS approximately \$383,100 annually:

- upgrade Lead Driver position to Dispatch Manager – \$38,000;
- upgrade Dispatch Manager position to Operations Manager – \$28,200;
- add three GIS/routing/technical staff – \$271,800; and
- move the current GIS specialist into a GIS administrator position – \$45,100.

Finding – ASE Certification

The AACPS maintenance section does not receive training. Mechanics are not ASE certified. Professional development training would enhance the productivity of the maintenance section and may incentivize the employees to remain with the school district.

The transportation maintenance staff has not received any formal professional development training during their tenure with the school district. The only training mentioned by the garage supervisor was a trip to the Thomas C2 School Bus manufacturing plant in North Carolina. This was essentially a walking tour along the assembly line while the bus was being built.

The auto mechanics II (school bus mechanics) lack profession development opportunities as well. The only recent training they received was going to the MaxAire HVAC shop. The lack of professional development for the school bus mechanics limits their ability to isolate faults and conduct repairs.

No one on the maintenance staff has taken training for the coveted National Institute for Automotive Service Excellence (ASE) certification. There are eight automotive areas in which mechanics need to pass tests to achieve ASE certification:

- Engine repair
- Automatic Transmission
- Drive Train and Axles
- Suspension and Steering
- Brakes
- Electrical Systems
- Heating and Air Conditioning
- Engine Diagnostics

Recommendation 4:

Provide training so that all interested bus mechanics have the opportunity to achieve ASE certification.

Just as the district encourages teachers and school administrators to seek continuous improvement through professional development, it should do the same with its non-certified staff, including school bus mechanics. The field of bus repair is always evolving and becoming increasingly technologically sophisticated.

The transportation department should make training and ASE certification for school bus mechanics a priority. Once mechanics earn their ASE certification, they should be compensated for their demonstrated higher level of education. The consulting team recommends that the district provide a \$150 supplement per month once mechanics achieve certification.

Fiscal Impact:

The cost to the district for ASE exams is minimal. A supplement of \$150 per month per mechanic would cost the district \$5,4000 annually. This would likely not begin until sometime in 2020-21.

Finding – Bus Driver/Aide Recruiting

Even though the number of bus driver and bus aides' vacancies for bus routes operated by AACPS is less than those bus contractors are experiencing, there is a need for a recruitment plan or prearranged strategy that focuses on recruiting and hiring bus drivers and aides. The transportation department has not yet developed a plan. As well, ongoing staff recruitment strategies, job fairs, and advertising performed by the AACPS HR department seldom target bus drivers or bus aides.

At the time of the onsite visit, all district-operated bus routes were fully staffed with requisite drivers and bus aides. All vacancies occurring prior to the beginning of the school year were immediately filled in May and June 2019. Transportation department personnel records show that AACPS filled five driver vacancies and one bus aide vacancy in 2019. These vacancies resulted from staff attrition or a need to add routes. Simultaneously, however, the collective bus contractors reported about 25 vacancies for drivers on the first day of school.

Currently, the only "advertising" or recruiting strategy that the district uses to fill driver/aide vacancies identified by the consulting team is the permanent or ongoing posting and application solicitation in the AACPS website under the tab of "Join Our Team." After clicking on another tab for Job Listings, interested applicants are shown either the job description for "Temp – Bus Driver Substitute" or "Temp – Bus Aide Substitute," along with a disclaimer which reads, "This position is posted to create a pool of candidates. Eligible Candidates will be contacted as positions become available." There currently is no way that applicants are directed to also apply with bus contractors.

Leaders in the AACPS HR department who are assigned responsibilities for recruiting, staffing, and new employee applications of both certified and support positions told interviewers that the transportation department, at least in recent years, has not depended on or requested any HR effort to help recruit or otherwise identify through job fairs applicants for bus driver or bus aide vacancies. HR has not recently held any job fairs specific to attracting candidates for bus driver or aide positions.

When discussing driver and aide vacancies for district-operation routes, transportation department leaders told interviewers that difficulties in filling vacancies for county-employed bus drivers and aides have been infrequent in recent years, so little thought, effort, or assessment of need for the development of recruiting strategies and subsequent funding have occurred. Filling a vacancy from the pool of substitute drivers and/or aides has not been difficult.

However, no considerations for the potential for high driver and/or aide turnover have been made. For example, for the 62 bus drivers employed by the district, eight years is the average length of service. Just over 73 percent of the drivers have been employed 10 years or less. The average length of service for the 55 aides is 12 years and 55 percent have served for 10 years or less.

Exhibit 3-9 shows the current number of drivers and aides by years of employment in the district. The majority of both drivers and aides have been with the district 5+ years. Only a few individuals are close to retirement.

**Exhibit 3-9
Length of Time Employed in Years
AACPS Bus Drivers and Bus Aides**

Years Employed	Bus Drivers	Bus Aides
1 - 4	20	14
5 - 9	21	12
10 - 14	10	9
15 - 19	7	6
20 - 24	3	10
25 - 29	0	2
30 - 34	1	1
35 - 40	0	1

Source: AACPS, September 2019

With a good recruitment plan, including specifics for effective recruitment of bus drivers and bus aides, school districts, whether they are “filling the pool” or filling a vacancy, are able to find qualified employees in a timely manner. This prevents lapses in employment, such as having positions that need to be filled and no one able to do the work in the meantime.

Recommendation 5:

Collaborate with the recruiting and staffing office of AACPS human resources to develop a strategic recruitment plan specifically to address needs of both the district and bus contractors to attract applicants for bus driver and aide positions.

To accomplish this, the transportation department, in collaboration with representative bus contractors, should establish ongoing meetings with the appropriate AACPS HR executive leaders involved in recruitment and staffing to mutually develop and implement a strategic recruitment plan for bus drivers and aides, to include:

- analyzing current and projected recruitment needs;
- determining the process by which applications can be channeled to bus contractors after the district’s pool is full;
- creating a hiring calendar;
- identifying the tools to be used (e.g., job fairs, advertisements, social media, etc.) to operationalize the recruiting efforts; and
- building out a budget for these specific recruitment costs that are shared between the district and the bus contractors.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – Job Descriptions

Job descriptions of the AACPS transportation department do not accurately reflect the actual work or tasks that they are performing in their daily routines. A review of 19 job descriptions found that many had not been updated in more than five years, some longer.

A job description is a plain-language tool or document that describes the tasks, duties, functions, and responsibilities of a position. It outlines the details of who performs a specific type of work, how that work is to be completed, and the frequency and the purpose of the work as it relates to the organization's mission and goals.

One of the primary responsibilities of the transportation department leaders is the maintenance of job descriptions for all positions within the department. At present, job descriptions are reviewed and updated *ad hoc* by transportation administrators and supervisors when posting positions or as part of the reclassification process of individual employees. Those revisions and updates generally resort to job functions that are written using language that is vague and generic and therefore do not reflect accurately the work performed.

The essential duties and responsibilities listed in the current job descriptions for the positions of transportation specialist, operations technician, transportation technician, dispatch manager, lead bus driver, and support specialist do not accurately represent the actual daily work tasks that the employees perform. For example:

- ▶ The job description associated with the job title of one of the transportation specialists does not reference that actually the position supervises the garage manager, the dispatch manager, or the support specialist that supervises bus drivers and aides. The same job description charges all seven employees with the title of transportation specialist with the responsibility of supervising the manager for driver safety training and the driver trainers although only one employee oversees these positions.
- ▶ Duties listed in the job description for the lead bus driver only applies directly to the assignment of one of the two lead bus drivers who actually are assigned to the dispatch manager. Contrary to the organization chart, the second lead bus driver does not work in or for the dispatch office.
- ▶ The job description for the position of transportation technician has little relationship to the actual daily work that one of the two employees with this job title is required to complete. That job description does not reference that the employee spends the majority of her work time managing and filing confidential employee records and new employee files; ensuring compliance with and filing/recording required medical and drug testing; comparing the list of transportation department employees with the list of sexual offenders and criminal activity from the AACPS office of investigations; and, preparing responses to auditing reports from MSDE and DVM.

Well-written and updated job descriptions can be a highly effective tool for managing the department's recruiting, hiring, and performance evaluation processes. Job descriptions help employees get a sense of their job responsibilities, what is expected of them, and the standards by which they will be evaluated and rewarded. They can also be useful in developing recruiting materials, orientation and training programs, and ensuring consistency and equity among positions. Job descriptions are also helpful in ensuring compliance with the *Americans with Disabilities Act* (ADA) and the *Fair Labor Standards Act* (FLSA) and can help to mitigate employee complaints related to compensation or EEOC charges, among other things.

Recommendation 6:

Review and revise job descriptions to ensure they accurately reflect the expected work and actual job tasks of each employee in the transportation department.

To accomplish this, the district should:

- ▶ analyze through observation the work of each employee and then rewrite the job description to accurately reflect the actual work, eliminating vague language at the same time;
- ▶ collaborate with the AACPS HR department to establish a plan to review and revise job descriptions every two years or more often and as needed when working conditions change or when a key position becomes vacant; and
- ▶ ensure that position descriptions are integrated with the recruiting, hiring, performance evaluation, and compensation processes.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – Salary Scale Placement

The negotiated agreement salary scale for AACPS bus drivers, found in Unit III, is set at Grade 9 which in the current contract has 20 steps. Bus aides are paid at Grade 5 on the same scale. Generally, it is assumed that a new employee with no previous bus experience would begin at Step 1. In actual practice, however, salaries assigned to newly-hired AACPS bus drivers and aides are placed on the scale anywhere between Steps 2 and 7. There are no written rules, principles, or guidelines that ensure that initial step placement, salary decisions, and assignment of salary for new bus employees are applied consistently, equitably, and non-prejudicially. As a result, a new employee could be assigned a higher salary than another employee with more experience and longevity in AACPS.

Generally, steps within a pay grade of a salary scale equate to years of experience. For example, zero experience is paid at Step 0, one year at Step 1, two years at Step 2, etc. At the end of any work year, the employee is paid at the next higher step if funding is available and allocated for a “step salary increases.” This movement up the steps, however, is not standard procedure for AACPS employees paid on the negotiated agreements’ salary scale.

Currently, the dispatch manager is assigned responsibility for interviewing, hiring, and assigning salaries for all new bus drivers and bus aides. From February 2019 through June 2019, AACPS hired five new-to-district bus drivers who were assigned salaries within Grade 9 at Steps 5, 6, and 8 (one at Step 8, two at Step 6 and two at Step 5). Verification by the consulting team to determine if the disparities in the range of these initial pay grade assignments were based on awarding previous bus driving experience proved inconclusive. Salaries paid at these steps are higher than the current salaries paid to some current drivers who were hired as early as 2013 -- seven years ago.

Only one bus aide was hired in 2019. This new employee is paid at Step 2, the lowest salary of any current bus aide.

A report requested and prepared for the consulting team by the AACPS payroll division confirmed the current annual salaries and the current pay grade and steps paid all drivers and aides. Staff assigned to the human capital management directorate in the HR department affirmed that generally the recommendations of salary assignments to steps made by the transportation department are not challenged, since there are no published or written guidelines or rules used to assist in the assignment of initial step placement that would support the challenge.

The AACPS director of employee relations, the district's chief negotiator with the American Federation of State, County & Municipal Employees, Local 1693, the union representing AACPS bus drivers and bus aides, told the consulting team that the terms of the negotiated agreement only set the pay grade of drivers and aides and other employee groups within the salary scale. Placement of a newly-hired or any other employee on a specific step within the pay grade is not negotiated.

When the pay of one or more bus drivers is close to or more than the pay of more experienced drivers, salary compression and salary inversion – where newer staff makes more salary than experienced staff – occur. Sustained salary compression can be demoralizing among all employees and lead to widespread job dissatisfaction. Moreover, these pay inequities could potentially violate equal pay laws.

In most organizations, consistent and appropriate practices are instrumental to the ability to attract, motivate, and retain qualified employees, and to ensure compliance with appropriate rules, regulations, and laws. The success of their compensation program hinges on the ability to appropriately compete with external labor markets, to recognize and reward exceptional performance, and to maintain a shared sense of internal equity and fairness. Therefore, the detrimental effects of salary compression are controlled by having HR policy or “pay rules” in place that specifies initial salary assignment of new employees who are bringing comparable work experience. They also limit how high within the pay grade or range any new hire can be paid. If it is critically important for a specific individual to be hired at a higher salary than the salaries of those with more experience in the same job within the organization, a review of equity adjustments for incumbents is done.

Recommendation 7:

Write “pay rules” or “salary placement rules” setting criteria for uniformity in placement on the steps in the Grade 5 and Grade 9 salary schedule.

To accomplish this, the transportation department, in cooperation with the AACPS HR department, should write and implement rules that determine the highest step within the pay grade for bus drivers and aides that the district will pay to a new-to-district driver or aide, regardless of the number of comparable years of bus driving experience. As an example:

- zero experience could equate to Step 2;
- one to five years' comparable experience, Step 3;
- six to 10 years' experience, Step 4; and
- over 10 years' experience, Step 5.

In this scheme, if a new bus driver is bringing 15 years' verifiable bus driving experience, he can only be paid as high as Step Five. If the salary of any existing or currently employed AACPS bus driver with 15 or more years' experience is less than the Step 5 salary, it must be adjusted to at least Step 5. If the rule is written that the highest step to be paid an experienced driver, regardless of verifiable work experience credit, is Step 8, then lesser steps can be determined for appropriate work experience. The rules should state similarly that "At no time shall a new driver be assigned to a step that is higher than the step of a current AACPS driver who has equal or more comparable driving experience in the district."

Fiscal Impact:

This recommendation can be implemented with existing resources. Depending on the rules adopted by the department, there may be an increased cost associated with the new pay rules.

Departmental Management

Finding – Athletic Trips Process

The management of athletics trips is efficient and effective. Athletic trips are requested by each of the district's athletic directors. The requests are then assigned by the athletic coordinator with bus contractors pre-approved for athletic trips.

Athletic trips are garnered in a similar fashion as field trips, but the process has been streamlined to be efficient and completed in a timely manner. Bus contractors have been pre-vetted and approved before the start of the school year, and in most cases the athletic trips are scheduled months in advance. School bus contractors are paid using a combination of approved fixed rates, sports category (time component), fuel, and mileage. When needed, a larger bus is used for sports equipment, but this is not part of the contract. Once a trip has been completed, the contractor submits a detailed invoice to the participating school, whereby the invoice is processed and sent to the athletic department for payment.

Middle and high school administrators generally gave extracurricular/athletic transportation high marks, as shown in **Exhibits 3-10** and **3-11**. Middle school administrators are slightly less positive than high school administrators.

**Exhibit 3-10
Overall Grade Given to Extracurricular/Athletic Transportation**

	A	B	C	D	F
High School Administrators (n=11)	27%	55%	18%	0%	0%
Middle School Administrators (n=18)	0%	6%	50%	33%	11%

Source: Prismatic survey results, October 2019

Exhibit 3-11
Secondary Administrator Survey Responses Regarding Extracurricular/Athletic Transportation
(n=29)

Statement	Strongly Agree + Agree		Undecided		Strongly Disagree + Disagree	
	HS	MS	HS	MS	HS	MS
There are enough working buses to meet the district's athletics transportation needs.	36%	13%	36%	73%	27%	13%
Someone at my school reviews the invoice for each extracurricular/athletic trip.	64%	94%	36%	6%	0%	0%
There are often errors in the invoices submitted to my school for extracurricular/athletic trips.	0%	6%	55%	28%	45%	67%
Bus contractors provide high quality services for extracurricular/athletic trips.	64%	50%	27%	17%	9%	33%

Source: Prismatic survey results, October 2019

Commendation 2:

The process for requesting and assigning athletic trips is commendable.

Finding – Outdoor Education Center Transportation

The Arlington Echo (Outdoor Education Center) provides students across the district an opportunity to receive classes in various forms of outdoor appreciation. The co-curricular bus trips are funded via an individual fund balance at Arlington Echo.

The Outdoor Education Center is owned and operated by the district. The school provides educational opportunities and outdoor in education for AACPS students and teachers. The program offers classes in all grade levels K-12 in these areas:

- Solar Panels
- Water Bottle Filling Stations
- Native Plants
- Green Roof
- Rain Barrels
- Bio-retention Areas
- Pervious Concrete
- Living Shoreline
- Waste Watchers
- Recycling
- Composting

Funding for transportation to Arlington Echo is allocated for each school. Transportation is provided by bus contractors.

Commendation 3:

The provision of co-curricular transportation to Arlington Echo is commendable.

Finding – Walk Zones

AACPS has a policy describing the walk area for each grade level and the maximum walking distance to a bus stop.

AACPS board policy EA and EAA-RA establish procedures for eligible student transportation services. The policy states:

- Students in grades Pre-K and Kindergarten are eligible for transportation if they live one-half mile or more from school.
- Other students in elementary school are eligible if they live one mile or more from school.
- Students in all middle and high schools are eligible if they live one and one-half miles or more from school.

The policy also notes exceptions to the above rules due to safety issues while walking to their assigned school.

Commendation 4:

Policies for walk areas and maximum walking distance to a bus stop enables the public to know what AACPS expects of their students.

At the time of the onsite work, the consulting team found that department staff was in the process of defining the walk zones for each school in its routing software. This is a necessary step for ultimately using the software to determine walk eligibility and to develop bus runs/routes that adhere to walk zone policy. As this process continues, it is going to be increasingly important for the district to support the transportation department in the enforcement of walk zones, particularly since it is likely to be discovered that transportation has historically been provided in some areas where it should not have been.

Finding – Vehicle Maintenance

The AACPS bus maintenance department uses FleetVision software to manage repairs and track the parts associated with the repair.

The district uses FleetVision vehicle maintenance management software to schedule preventive maintenance, track inventory, and link work orders with repair parts and inventory. FleetVision notifies the maintenance department of buses requiring a preventive maintenance inspection (PMI), assisting with the decision-making process of scheduling and determining parts required. The FleetVision software solution includes:

- Preventive Maintenance (PM) scheduling that allows for regular PM and inspections keeping vehicles roadworthy;
- user-defined maintenance intervals, breaking down the intervals into days, hours operated, or miles driven;

- automatic PM notification for the times when a vehicle is in the shop for a repair – an alert will signal if there is an upcoming or overdue (deferred) maintenance action;
- warranty tracking to ensure repairs or replacement are made prior to a warranty expiration date; and
- fuel tracking to inform the district of the amount of fuel on-hand and the need to reorder.

Commendation 5:

The AACPS district purchased and uses Fleetvision Maintenance Management software to manage the fleet Preventive Maintenance (PM) and vehicle repair program.

Finding – Performance Reporting

The AACPS transportation department lacks performance metrics and a medium (such as a publicly available dashboard) to report on challenges and successes. This lack of a scorecard makes it difficult for district stakeholders to judge the efficiency and effectiveness of the transportation department.

The transportation department does not gather and analyze performance data to improve the service level delivery to the school district. Some staff in the transportation department have begun developing performance metrics, but the work is largely only at the initial stage. The performance metrics identified by AACPS transportation staff and the current status is provided in **Exhibit 3-12**.

**Exhibit 3-12
Transportation Performance Metrics Being Considered by Department Staff**

Metric	Frequency	Data Sources	Notes
Planned Paid Contractor Hours vs Actual	Monthly	#1 Standard hour report #2 Zonar audit report	Currently, the department is doing this quarterly
Lay-over Review to Identify Layovers > 30 Minutes	Monthly	#1 Time and Mileage Report #2 Compass routing	This would identify holes in the existing routing system
Excess Idle Time > 5 Minutes	Monthly	Zonar audit reports	
Excess Fuel Consumption – Operators Exceeding Average	Monthly	Zonar audit reports	
Excess Pre-trip & Post-trip – Operators Exceeding Average	Monthly	Zonar audit reports	This would identify contractors spending above average time doing pre-trips and post-trips
Contractor Pay Plan (Time and Miles) vs Actual	Quarterly	CPP and Compass	According to department staff, the comparison between what contractors submit and what Compass calculates is fairly close, except in instances of layovers, unplanned detours, and the various routes that nonpublic buses may take on a daily basis
Cost Per Mile – By Route and Contractor	Monthly	CPP and Master Rate Table	The department is currently doing this
Cost per Route (Bus)	Annual	CPP and Master Rate Table	The department is currently doing this
Accidents – Frequency per Miles Travelled	Unstated		
On-time performance	Daily	Zonar where available	
Breakdowns	All buses	Maintenance reports	
Excess Ride Time – Routes Outside Adopted Maximums	Unstated	Routing software	

Source: AAPCS Transportation Department, with Prismatic notes, October 2019

Key Performance Indicators are the standards by which school transportation departments can be judged. It provides an objective view into the true efficiency and effectiveness of the transportation operation. Currently, the AACPS transportation department lacks a scorecard to verify or assess its effectiveness, and also does not communicate its performance on a regular basis.

In a review of all school board meetings from January through September 2019, the consulting team found no reports to the board regarding the performance of the transportation department, either of the performance metrics currently under consideration by department staff or other metrics. Instead, the school board (and public) has been provided periodically with an overview of the department, such as how many buses are contracted and what percentage of the student body is eligible for transportation.

Exhibit 3-13 provides example transportation performance metrics, drawn from work originating from the Council of the Great City Schools (CGCS). For many of these metrics, the best value to a school district lies in analyzing them over time.

Exhibit 3-13
Example Transportation Performance Metrics
Council of the Great City Schools

Metric	Definition	CGCS Median in 2017
Average Age of Fleet	Average age of bus fleet	8.1 years
Cost per Mile Operated	Total direct cost plus total indirect cost plus total contractor cost of bus services, divided by total miles operated	\$5.07
Cost per Rider	Total direct cost plus total indirect cost plus total contractor cost of bus services, divided by number of riders	\$1,075
Cost per Bus	Total direct cost plus total indirect cost plus total contractor cost of bus services, divided by total number of buses	\$60,272
On-Time Performance	One minus the sum of bus runs that arrived late, divided by the total number of bus runs over two	99.99%
Bus Equipment – GPS Tracking	Number of buses with GPS (Global Positioning Software) tracking, divided by total number of buses	99%
Accidents – Miles Between Accidents	Total number of transportation accidents divided by total number of miles driven	39,510
Accidents – Miles Between Preventable Accidents	Total number of transportation accidents that were preventable divided by total number of miles driven	76,087
Bus Fleet – Alternately-Fueled Buses	Number of alternatively-fueled buses, divided by total number of buses	16%
Bus Fleet – Daily Buses as Percent of Total Buses	Number of daily buses, divided by total number of buses	85%
Bus Usage – Daily Runs per Bus	Total number of daily bus runs, divided by total number of buses used for daily yellow bus service	4.11
Fuel Cost as Percent of Retail – Diesel	Per gallon price paid by the district for diesel, divided by the per-gallon price of diesel at retail	79.8%
Fuel Cost as Percent of Retail – Gasoline	Per gallon price paid by the district for gasoline, divided by the per-gallon price of gasoline at retail	84.9%
Daily Ride Time – General Education	Average one-way (single trip) daily ride time, in minutes – general education students	34 minutes
Daily Ride Time – SWD Students	Average one-way (single trip) daily ride time, in minutes – students with disabilities	41 minutes

Source: CGCS, compiled by Prismatic, August 2019

In another example, the Texas Legislative Budget Board administers a robust schedule of comprehensive school district performance reviews in its state. They consider the metrics shown in **Exhibit 3-14** to be critical areas for measurement in transportation operations for school districts of all sizes.

Exhibit 3-14
Example Transportation Performance Metrics
Texas School Performance Review Program

Cost Efficiency	Cost Per Mile Cost Per Bus Cost Per Student
Cost Effectiveness	On-Time Performance Spare Bus Ratio Driver Absentee Rate Average Student Occupancy Rate
Safety	Accidents Per 100,000 Miles Student Behavior Incidents Per Month
Maintenance	Preventative Maintenance Inspections On-Time Bus Fleet Miles Per Gallon (Diesel) Miles Between Road Calls (Reactive Maintenance) Maintenance Cost Per Bus (Annual Report)

Source: Texas Legislative Budget Board School Performance Review Team, December 2016

Recommendation 8:

Develop quarterly and annual assessments of the department’s performance expenditures.

The transportation department should capture performance data from a set period to establish a baseline. The transportation supervisor should regularly analyze actual financial and operational performance against the selected benchmarks to determine where improvements are needed. Annually, the transportation supervisor should report on the department’s performance, including areas of efficiency, effectiveness, as well as areas in need of improvement. Quarterly performance should be published on the department’s webpage in a dashboard format. The consulting team recommends the metrics shown in **Exhibit 3-15** as a starting point.

**Exhibit 3-15
Recommended Transportation Department Performance Metrics**

Metric	Refinement
Cost per Mile Operated	This should be reported broken down by regular/special education and by individual contractor.
Cost per Bus	This should be reported broken down by regular/special education and by individual contractor.
On-Time Performance – Morning	This should include an analysis of the number of buses that arrive late (less than 10 minutes prior to the start of school), that arrive really late (after the start of school), and that arrive too early (more than 15 minutes prior to the start of school).
On-Time Performance – Afternoon	This should include an analysis of the number of buses that arrive for afternoon pickup late (after student dismissal) and really late (more than 20 minutes after student dismissal).
Accidents – Miles Between Preventable Accidents	Total number of transportation accidents that were preventable divided by total number of miles driven.
Daily Ride Time – General Education	Average one-way (single trip) daily ride time, in minutes – general education students.
Daily Ride Time – SWD Students	Average one-way (single trip) daily ride time, in minutes – students with disabilities.
Service Complaints	This should be reported by complaint type and bus contractor.

Source: Prismatic, November 2019

Fiscal Impact

This recommendation can be implemented with existing resources.

Finding – Standard Operating Procedures

AACPS transportation department does not have a Standard Operation Procedures (SOP) manual for internal staff and bus contractors. Without SOPs, department staff is likely completing similar duties in different ways. Without SOPs, contractors cannot definitively know the district’s expectations and variations in service quality between contractors will likely occur.

The transportation department currently distributes a Contractor’s Packet to contractors each year. While this packet has some information that the contracted bus drivers can find useful, it is not a conclusive procedure manual. The cover sheet of the May 2019 Contractor’s Packet notes that it is a compilation of “miscellaneous updated items.” The packet includes:

- Driver Physical Examinations
- Bus Aide Physical Examinations
- Bus Aide Authorization Form
- Chronological Report Due Date Listing
- Training Application
- Bus Operator Certification
- Request for Certification Date Form
- 2019-2020 Training Requirements and Schedules
- ARB and Post Accident Training
- Accident Procedures Moving Buses
- Point Assessment Rule
- Post Accident Drug and Alcohol Testing
- Positive Drug Test
- School Buses: Audio/Video Cameras
- Light Rail/Railroad Crossing
- Evacuation Drills – Athletic Trips
- School Bus Evacuation Procedures
- Idling Regulations
- MVA Records

- Student Threats – Reporting Process
- Suspicious Object
- Washington D.C. Field Trips
- Earthquake Emergency Procedures
- Tornado Warning Procedures
- Hazardous Condition Report
- Procedures for Perimeter Check of Facilities
- CBI/Work/Homeless Program Reimbursement Form
- School Bus Inspection Schedule – 2019-2020 School Year
- Internal Contractors Directory
- Activity Calendar
- 2019-2020 School Calendar
- 2019-2020 Proposed School Hours

As distributed, the document is not text-searchable. Many of the items listed are just forms, while others are memos. A few provide procedures, such as the procedure for checking the perimeter of facilities.

During interviews, it was unanimous that the department did not have a SOP manual. Department employees seemed knowledgeable regarding their operational functions, however, there is no one-source document in the department detailing the “How we do and the Why we do what we do.” The lack of a SOP manual can cause confusion and stress the department’s office staff, bus drivers, bus aides, and mechanics. Communication from top down needs to always be on the same page to eliminate unnecessary problems. Without a published procedure manual, each person does what they have always done, which may not be in the best interest of the department.

For example, in morning arrival observations the consulting team noted a large number of buses arriving to the schools well before the start of school. When this overly early habit was discussed with the transportation supervisor, he noted that he had communicated to transportation specialists that early arrivals should be discouraged. However, there is no documentation of this expectation in a manual for the specialists, nor is it detailed in the Contractor’s Packet. Yet, overly early arrival times indicate either a need to retime a bus run or the unauthorized changing of bus stop pick-up times by the contractor.

Adding to the confusion of what constitutes an acceptable morning arrival time, it has traditionally been the practice in AACPS to annually ask each principal whether they would like buses to arrive at their school 15, 20, or 25 minutes prior to the start of school. Principals are allowed to change their preferred arrival times every year, if they wish. The transportation department does not appear to maintain a list of what option was selected by each principal for 2019-20 or prior years, so analysis of the impact of this tradition is not currently possible. The transportation department has not completed any recent analyses of what the additional cost to the district is from principals selecting 25 minutes versus 20 or 15. Since a portion of bus contractor pay is based on hours of usage (bus drivers and aides are hourly employees), there could be a financial impact from principals’ choices.

In this same area of operations, the consulting team was told by some stakeholders that bus stop pickup times were being adjusted by contractors, generally in the direction of earlier pickup than published. The Contractor’s Packet does not provide any instructions on the adjustment of bus stop pickup times by the contractor, but neither does it specifically state that it is not allowed.

The Pupil Transportation Safety Institute recommends a transportation department handbook that clearly defines employee roles and responsibilities, and lists operational and safety procedures. Effective transportation departments have desk SOPs that help ensure continuity of operations when key individuals are out of the office. The desk SOPs allow opportunities for cross training and advancement within the department. Additionally, desk SOPs reduce the

amount of time required to bring new employees up to speed on office functions. Typically, department operational SOPs address high visibility, critical items such as:

- Missing Students – what to do in the event a student was not in school or didn't arrive home after dismissal in a reasonable amount of time;
- Emergency Procedures – such as what to do when an unauthorized adult attempt to board the school bus;
- Bus Stop Review Requests – what criteria and process will be followed (and documented) when an adjustment to an existing stop or additional stop is requested;
- Student Safety – actions between the driver and dispatcher in the event of a hostage situation;
- Radio Procedures – such as using the 10 codes used by law enforcement to communicate and maintain a minimum amount of traffic on the radio; and
- Medical Concern – how to respond to a student emergency such as anaphylactic shock.

Departments function cohesively when everyone knows the processes and they are followed. The SOP is the guide to enable the department to be cohesive every day. For a largely outsourced operation, a SOP manual would also have rules and procedures by which the contractors are expected to abide.

Recommendation 9:

Develop a transportation department SOP manual.

The SOPs are a source document which answers the question “How we do and the Why we do what we do” practices for department central staff, district drivers/aides, contractors, and contractor drivers/aides. They are not simply COMAR documents imbedded as internal practices.

The transportation supervisor and office staff should review and document the primary tasks associated with their individual jobs as the basis for the SOP. The documentation of the desk SOP becomes a “*living document*” which is updated on a semi-annual basis as functions change and technology is integrated. This process could begin during the summer school session and be reviewed by other members of the transportation staff for clarity.

The SOP manual should include a substantive section for district drivers and aides. The table of contents from one effective school district is provided in **Exhibit 3-16**.

Exhibit 3-16
Example Transportation Handbook Table of Contents

Welcome to Edmond Public Schools Transportation	0
Table of Contents	4
Sexual Harassment	6
Harassment/Intimidation/Bullying	6
Employee Leave	6
Criminal Record Questionnaire	7
Family Educational Rights and Privacy Act and Health Insurance Portability and Accountability Act	8
Evaluation	8
Ethical Conduct Code	8
Dress/Appearance	9
F.M. Radio	9
Inclement Weather	9
Injuries At Work	10
Omnibus Act of 1991 (Drug Testing)	10
Performance Expectations	11
Drivers' and Monitors' Section	12
Requirements	14
Responsibilities	14
Assignment of Routes and Activity Trips*	14
Clocking In and Out	14
Time Centre and Payroll	15
Care of Bus	15
Flag Out Procedure	18
Loading and Unloading Students	19
Routes	20
Accidents	20
Student Management	21
Key Procedure	22
Bus Street Use and Parking Procedure at Office	22
Information You Really Need to Know!!! A Practical Guide for the Edmond Public Schools Transportation	
Department	24
Thriving at the Transportation Department	26
Employee Lounge	28
Bus Compound	29
Pick Up/Drop Off	29
Bus Loops	32
High Schools	32
Middle Schools	33
Late Elementary Schools	37
Choice Schools	40
On the Road	41
Road Courtesy	41
Accident Processing	42
Administration	43
POLICY ON ALCOHOL AND DRUG TESTING FOR DRIVERS	45
Notes	55

Source: Edmond Public Schools, 2016

The SOP manual should also include substantial sections for the performance of contractors, such as defining when it is too early to arrive at school, what is considered the ideal arrival time, and what is considered late. The consulting team also recommends that the department explicitly detail if and under what circumstances a contractor can adjust bus stop and run/route times.

Fiscal Impact

This recommendation can be implemented with existing resources.

Finding – Process Mapping

When talking about their job responsibilities and how they perform their work, transportation department staff typically adhere to a “We’ve always done it this way” philosophy. Seldom do supervisors and managers in the department question “Is the way we are doing it the best way?” No time has been devoted recently to studying existing processes and tasks staff members complete.

Leadership at the department and central office levels told interviewers that time has not been set aside to analyze day-to-day operations to identify areas of needed improvement. In addition, multiple interviews with departmental leaders indicate a lack of knowledge of how a specific process is completed, and no written reference for how those processes should be completed. Often, an individual staff member’s response to an interviewer’s questions was “You will have to ask someone else how that is done” or “I think XYZ can answer that for you.”

How common work-day processes are performed by the five transportation specialists and their accompanying operations technicians vary with each person. Standard procedures are not followed since they have not been assessed, appraised, or established. For example, bus contractors, who generally coordinate with more than one district specialist and their assigned operations technician, receive daily reports and updates as necessary in different modes, formats, and regularity, depending on the individual specialist or technician. One bus contractor reported that the quality of data he receives depends on which department staff member sent it.

Interviewers learned that there is a perception that the actual workload of operation technicians differs – some believe they have different responsibilities while others believe they work more or less hours in a week than their colleagues. Some claim they perform work activities they believe are required, while others in the same job say these activities are not required.

Organizations with poor or non-existing workflow management can expect too-often-repeated processes, inconsistent output of work by individuals for the same common responsibilities, communication mistakes, unfinished or poor quality work output, and complaints of poor work habits resulting in late responses to the larger infrastructure. Often two or more individual employees perform the same task differently. Still worse, whenever a critical employee is away from work, no one is trained to continue the work during the absence or completes the work in a different manner from how it was previously completed.

Workflow sometimes also referred to as “BMP” (business management process) is a visual diagram or a “map” of a structured, predefined set of activities or processes from start to finish. A workflow or map is a basic, sequential advancement of steps or a series of events for a task to be done to completion and the resources needed to accomplish the steps and how these steps interact, including:

- workflows establish and designate start and end points of any activity;
- the direction(s) of movement toward completion (“After this, what happens next?”);
- the decisions that must be made as the actions and activities progress;
- who makes those decisions;
- expected results; and
- alternatives to the potential for “derailment.”

Finally, responsibility is assigned for each step. Within the realm of project management, workflows make possible predictability and the measurement of outcomes.

Recommendation 10:

Identify and map major transportation department processes, analyze the maps, and redesign workflows to make work time more efficient and effective, and to eliminate redundancy and repetition.

It is not necessary to map every single process. Transportation department leadership should:

- ▶ designate a project manager;
- ▶ identify and focus on those processes that are prone to bottlenecks, redundancy, repetition or that show signs of inefficiency or inequitable amounts of worktime devoted and subsequent work output;
- ▶ calendar, lock in, and mandate specific work times and work sessions for the overall project;
- ▶ determine which team members and current employees are involved in the development of each map for each process; and
- ▶ prioritize the order in which all the selected workflows will be mapped.

Several recommendations in this report focus on areas in which process mapping would be a logical implementation starting point.

Fiscal Impact

This recommendation can be implemented with existing resources.

Finding – Stakeholder Communications

Despite the district's large size, the transportation department lacks a way for parents to provide input to operations, report poor operational performance, or request changes other than to call on the telephone into the department. Likewise, the department has little ability to communicate effectively with parents regarding operational changes, such as new bus route timing or operational challenges, such as a bus being late due to heavy traffic on a particular day.

Currently, if a parent wants to request a change to a bus stop or make a complaint, they must initiate contact via phone call. The department has no system for accurately tracking these requests. Transportation specialists reported that they receive upwards of 50 phone requests per day at the start of the school year. There is no standardized method for completing the requests, contacting the parents, schools, or the drivers. There is no tracking for verification of the request or its completion. Each specialist handles the requests and responses in a different way with different timelines.

This lack of consistency can create confusion for parents, schools, and bus contractors. The large amount of phone requests, coupled with the time it takes to speak to each requestor, creates an atmosphere of urgency for the specialists. Each specialist wears many hats and is not able to properly address any one part of their job. The phone call system does not allow them to handle

requests in the order they are received, nor does it allow them to track the request and the response to that request. A parent could file a complaint of discrimination due to similar situations being handled differently based on the differences in how a specialist responded to different parents.

The current system does not have an accurate tracking system to protect the specialist or a standardized method of handling the requests. Phone call requests have a higher probability of falling through the cracks due to forgetfulness. Additionally, there is no way to verify that the person making the stop change request over the phone is authorized to make such a change. Many families have custody situations that do not allow contact from certain family members. A phone call does not allow the specialist to confirm the requestor has authorization to make the change. Finally, each specialist relays the stop change information to the bus contractors differently, making it difficult for these companies to track the changes.

Several systems exist for the collection and tracking of parent/stakeholder requests. All offer an online form as an initial point for receipt of parent/stakeholder requests. Some systems also offer live customer service phone answering, with the resulting conversations then input into an online system.

In the reverse direction, the department has no effective methods for communicating operational changes and challenges to the specific groups of schools, parents, and students who need to receive particular messages. When a bus is stuck in traffic in the morning, if the driver communicates the problem to the contractor and/or the transportation department, the department has no regular procedure and mechanism to communicate that problem to the school. After school, if a bus is going to be more than a few minutes late to its bus stops because of traffic, the transportation department has no way to communicate that fact to parents. The district has an automated system by which parents can be called about various items of interest (Connect-ED), but this is not deployed for transportation.

Some school districts publish information regarding late buses on their web pages (**Exhibit 3-17**). If the information is comprehensive and accurate, it can be an effective communications tools for schools and parents.

**Exhibit 3-17
Sample Webpages for Alerting Stakeholders to Late Buses**

THIS INFORMATION IS ONLY AVAILABLE FOR BUSES THAT ARE AT LEAST 10 MINUTES LATE OR FOR UNUSUAL SITUATIONS

DATE	TIME	SCHOOL	BUS	INFORMATION	UPDATE
11/14/19	6:35AM	Special needs	140	In spare bus #289	
11/18/19	6:19AM	CHS, MES, SLES	121	In spare bus #269	
11/20/19	6:15AM	CHS, CMS, MES, SLES	118	In spare bus #296	
11/25/19	6:10AM	HHS, PPMS, PPES, HES	128	In spare bus #210	
11/26/19	7:21AM	CMS	79	In spare bus 295 and running approx 25 min late to CMS.	
11/26/19	1:47PM	HHS, PPES, BES	29	In spare bus 280 this PM.	

**Exhibit 3-17 (continued)
Sample Webpages for Alerting Stakeholders to Late Buses**

Today's Bus Delays

Bus Number	Delay Date	Route	Approx. Delay	Affected Schools
Currently no buses are running late. Please click the refresh button to check again for buses running late.				
<input type="button" value="REFRESH"/>				
<small>This page will be updated on an as-needed basis to notify parents and school personnel of bus delays of more than 30 minutes. Please check back often in the morning and the afternoon for the most up-to-date information.</small>				

Source: Prismatic, 2019

Recommendation 11:

Adopt two online systems:

- ▶ **one to receive community input that allows tracking and compilation of requests, as well as tracking and reporting on department responses; and**
- ▶ **one that allows the transportation department to communicate timely about operational issues as they occur.**

The first system should allow parents to generate a customer service request that is automatically routed to the appropriate staff member in the transportation department for handling. The system should date stamp the request and track response times by department staff. The system should provide a data dashboard by which department leaders can review

parent contacts by request type, time to resolution by staff members, and other metrics. There are a number of existing online solutions, such as K12Insight and Issuetrak. **Exhibits 3-18 and 3-19** provide examples of the front and back end screens from one vendor that can be used by parents as well as contractors to report important information to be viewed by the transportation department, such as a minor bus accident. Some available online systems are offered by companies who also offer live operator phone answering solutions that can be used during peak times, such as school startup, or year-round. These systems have an associated workflow behind the front end and various dashboard metrics. Data from the dashboard should be included in transportation performance reporting to the COO, school board, and the public.

Exhibit 3-18
Example Front End for a Parent/Contractor Input System

The image displays two screenshots of a web form interface for reporting a school bus accident. The left screenshot, titled "customer web form", features a blue header with the text: "Our Healthcare Complaint Resolution Team is ready and waiting to answer your concerns or assist in any way." Below this are input fields for "name", "email", and "phone", followed by a dropdown menu for "Reason for complaint" and a large text area labeled "tell us what happened...". The right screenshot shows a more detailed form with the following fields: "Quick Pick" (set to "Accident Report"), "Submit Date" (08/06/2019), "Time" (9:56 AM), "Issue Status" (Open), "* Class" (Incident), "Organization" (Elementary School), and "Caller" (John Doe). Below these is a "* Subject" field (School Bus Accident Report MM/DD/YYYY) and a "* Full Description" section with a list of required details: "Location of accident", "Time and date of accident", "Bus identification number", and "Description of accident".

Source: Issuetrak.com, 2019

Exhibit 3-19 Example Back End used by the Transportation Department

Complaint #	Opened	Submitted By	Assigned To	Subject	Priority	Last Activity	Substatus	Requested By
37	02/09/2017	Brandon Manager	Michelle CSR	Cold Food	Medium	02/09/2017		
36	02/09/2017	Juan CSR	Juan CSR	County Clerk was rude	Medium	02/09/2017		
35	02/07/2017	Juan CSR	Juan CSR	Potholes on I-64 in Norfolk	Medium	02/07/2017		
34	02/07/2017	Jenni CSR	Jenni CSR	Wrong medication for my mother	Medium	02/07/2017	Pending Acknowledgement	
33	02/07/2017	Grant CSR	Grant CSR	Credit Limit Increase Request	Medium	02/07/2017		
32	02/07/2017	Eric Manager	Helen CSR	Bus 73 was late for child pickup	Medium	02/07/2017		
31	02/07/2017	Eric Manager	Helen CSR	Complaint that Miss Jones is ignoring Mr Smith's son, Ricky	Medium	02/07/2017		

Source: Issuetrak.com, 2019

The second system should allow the transportation department to communicate timely with groups of schools and parents, as the communication issue dictates. As a first step, the consulting team recommends that the transportation department explore automated telephonic options through the district’s existing Connect-Ed system, combined with developing a new section on the webpage that communicates late buses, based on data from the district’s existing Zonar system. Once the district has linked its student information system data to its routing system, it can explore online applications that make use of GPS and student bus assignments to provide parents with real-time bus information. Existing systems include Synovia’s Here Comes the Bus, Treker, and Zonar’s SafeStop, among others.

Fiscal Impact:

Pricing for the first system would be ~\$60 per month per user in the transportation department (end users, such as parents, use the system for free). This would translate to approximately \$10,800 per year (15 employees x \$60 per month x 12 months). The cost for the first system could be as high as \$80,000, if the district chooses an online system with live phone answering support.

Pricing for the second system would be in the range of \$5 to \$11 per month per bus in the system. At approximately 600 buses, annual costs would range from \$36,000 to \$79,200. This does not include any necessary hardware on the buses, such as GPS units.

Finding – Recordkeeping System

The transportation department is required to keep certain records on anyone involved in the transportation of students, to include contract drivers, bus aides, and cab drivers. A transportation technician receives physical copies of numerous pieces of information (i.e., physicals, licenses, etc.) which she reviews and then manually files. She pulls and refiles files daily to update the information therein.

The State of Maryland requires school districts to keep numerous pieces of information on anyone with a CDL (Commercial Driver License) or who has any other role in transporting children. One of the transportation technicians has as part of her job to manually review and file these pieces of information on all the contract and district drivers who are involved in the transportation of students. The items required to be filed include verification of required training, physicals, fingerprint cards, etc. Per the technician, this involves the use of 1,200 separate file folders each year, and takes up 10 file cabinets. If 10 file cabinets per year are filled with records and then retained, there is a considerable amount of floor space dedicated to records storage. When she first started doing this work years ago, only two file cabinets were required. Every other November, Maryland state auditors come to the district and pull the records for 50 drivers and 50 aides for the current year and the previous year to examine the records.

Ostensibly, the technician is also responsible for the processing of Accounts Payable payments concerning transportation for vendors with beginning letters of A-H. However, she related that she does not have time to do much Accounts Payable work at all, with the volume of work required for filing the driver- and other-related records. The Accounts Payable work then falls to coworkers.

Many organizations have converted their manual paper-file systems into computerized data and have done away with keeping the paper (unless actual paper files are required by state requirements).

Recommendation 12:

Research options for digitizing current paper files in the transportation department.

If Maryland law allows the use of electronic files instead of just paper files, the district should create an electronic database into which the various pieces of paper the district receives that must be maintained are scanned, thereby reducing both the time spent pulling, updating, and then refiling the files as well as the amount of storage space required to house both current and inactive files.

If undertaken, this should be done in tandem with other database needs that might exist within different departments. If only the transportation department needs to digitize, the district's implementation might be different than if multiple AACPS departments have the same problem. In that situation, the district would need to look at a more formal Document Management System districtwide. To accomplish this, the district should:

- determine if the State of Maryland allows for the storage of transportation records electronically, or if paper copies are required;
- coordinate with the technology department to define how electronic files could be set up, and if this could be done using internal resources; and
- coordinate with the Chief Operating Officer if the technology department does not believe it could meet transportation's needs for a transportation-specific database, as a system-wide Document Management System (DMS) would need to be funded through his budget.

Fiscal Impact:

The fiscal impact of this recommendation depends upon the path the district selects. It may be possible to set up a database for the transportation department with existing resources utilizing the district's technology department. If the district believes a system-wide DMS is called for, that would typically require a substantial investment.

Finding – Transportation Action Requests

When special education or homeless (MVA) students need transportation, staff in departments outside the transportation department submit the request to the transportation department using an electronic form, "Transportation Action Request" (TAR) in the district's homegrown STOPS application. However, the transportation department does not have the ability to manage those requests electronically or to communicate with the requesting department through STOPS. Moreover, there are no workflow requirements for routing special education or MVA students in order to provide timely transportation service.

When a TAR is received through STOPS, it is assigned to the transportation specialist for that school. The specialist then attempts to place the student on an existing bus route (special education or regular, as appropriate). If the request is for an MVA student and the specialist is unable to find a route for the student, the TAR is given to the transportation specialist whose primary responsibility is arranging transportation for MVA students. This typically occurs when MVA students are living out of the attendance zone for their school of origin, which was the case for approximately 600 of last year's 1,308 homeless students. The homeless transportation specialist has four buses at her disposal for MVA transportation. If one of the four buses does not work, the MVA parent may be offered reimbursement to transport their own student or the district may use a contracted cab. During the search for a solution, STOPS does not provide a way for staff members to communicate regarding the request.

Once a transportation solution is found, STOPS is used to notify the requesting department via email. The requestor must click a link in the email to access a pdf file with the information. For MVA students, the requestor must then download the pdf and attach it to another email to send it to the appropriate pupil personnel worker. The transportation department is currently faxing the solution to the school and following that with a paper copy sent via the internal mail. When necessary, the transportation department must also notify the bus contractor.

The process of providing transportation for special education and MVA students lacks consistency. There is no departmental SOP for how quickly TARs are addressed. In the case of MVA students, the first specialist may hold onto a TAR for weeks before passing it to the homeless specialist. STOPS does not have automatic date stamping or other ways by which requestors can see whether a TAR is being worked or ignored.

Recommendation 13:

Create an automated workflow for "Transportation Action Requests."

The transportation department should have the ability to answer the requests electronically, which will create a tracking and verification system for the requests. STOPS should provide all involved greater visibility into where each request is in the process. Once a transportation solution has been found, the notification process should be easier for all involved.

Fiscal Impact:

This recommendation can be accomplished with existing IT resources.

Finding – Purchasing Process

Portions of the purchasing process are labor-intensive and have numerous steps at which transportation department staff must physically touch various documents such as invoices. Staff is not able to electronically approve them.

Many of the purchases for transportation are made using blanket purchase orders, and the district uses purchasing cards (p-cards) as well for many of its smaller purchases. Once approved by the purchasing department, multi-colored copies of the purchase orders are received and held in the transportation office.

Invoices come to transportation to be physically matched up with the purchase order or other purchase documents. They are then forwarded to accounts payable for payment. Besides the time already spent in ordering merchandise and confirming its delivery as ordered, transportation copies the invoices after approving them but before sending them to accounts payable. This increases the required storage required for documents. In addition, staff spends time manually filing the copies.

In many organizations, ordering departments will send an electronic “receiver” when they have physically received the ordered merchandise. This receiver is linked to the purchase order electronically, and when the invoice comes in, the approval is already in the system and the invoice can be readily paid. This matching of purchase document to receiver to invoice is called three-way match. If all documents were retained in an electronic Enterprise Resource Planning (ERP) software solution, the amount of time manually handling, copying, and filing documents is substantially reduced.

Recommendation 14:

Amend the purchasing approval-payment cycle during the next major software upgrade.

The district does a major upgrade of its student management, human resources, and finance software on a rotating three-year basis, with maintenance releases annually for the two areas not then getting a major upgrade. At finance’s next major upgrade year, the district should amend its purchasing-approval-payment cycle to reduce the time transportation has to handle paperwork.

An electronic receiver process would allow the invoices to be sent directly to accounts payable as opposed to transportation, and the transportation department could confirm receipt of the goods or services without paper having to pass between the departments.

To accomplish this, the district should:

- ▶ meet with neighboring districts who have a more streamlined procure-to-pay process, to see what AACPS might want to incorporate into its own processes;
- ▶ discuss with its ERP vendor finance options that may already be in the software for better utilization of staff time than manually matching purchase order with invoices; and

- negotiate with the vendor for this capability to be improved, if the ERP provider does not currently have the software optimized to reduce paper handling.

Fiscal Impact:

The fiscal impact of this recommendation cannot readily be determined with existing information, but the recommendation should be able to be rolled into the finance department's regular cycle of major upgrades. The cost for any specialized programming that might be required would be partially offset by the reduction in staff-hours *not* spent physically processing paper.

Contractor Management

Finding – Contractor Pay System

The contractor pay system is much improved compared to the legacy system.

The district has over 575 buses under contract to provide transportation to AACPS students. Authorizations for payments to the bus contractors are generated in the transportation department monthly.

Under its old payment system, a computer run took hours to process and, if an error was discovered, took hours to run again after the correction was made. The former software had been in use for a number of years and used a database no longer supported by Microsoft.

The new Contractor Pay Portal (CPP) was developed for and with AACPS, and not only produces its payment run much more quickly, but also has embedded within it auto-fill fields that greatly reduce the amount of data entry that has to be done by members of the transportation department when new contracts are set up, and when changes are required month-to-month.

The contractor buses operate under one of three bids, known as Big Bid, Little Bid, and One Bid. Each of these bids is structured slightly differently. The Contractor Bus Detail is an example of the information required for each of the 575+ contractor bus routes each month. While the majority of the routes have the same information pulled forward month-to-month, if changes are required (such as, number of hours for the driver or an aide), they can be input in short order.

The recent audit from the Maryland Office of Legislative Audit (OLA) noted some internal control weaknesses in the contractor payment system. However, all four of the weaknesses OLA noted were easily remedied by the district.

Commendation:

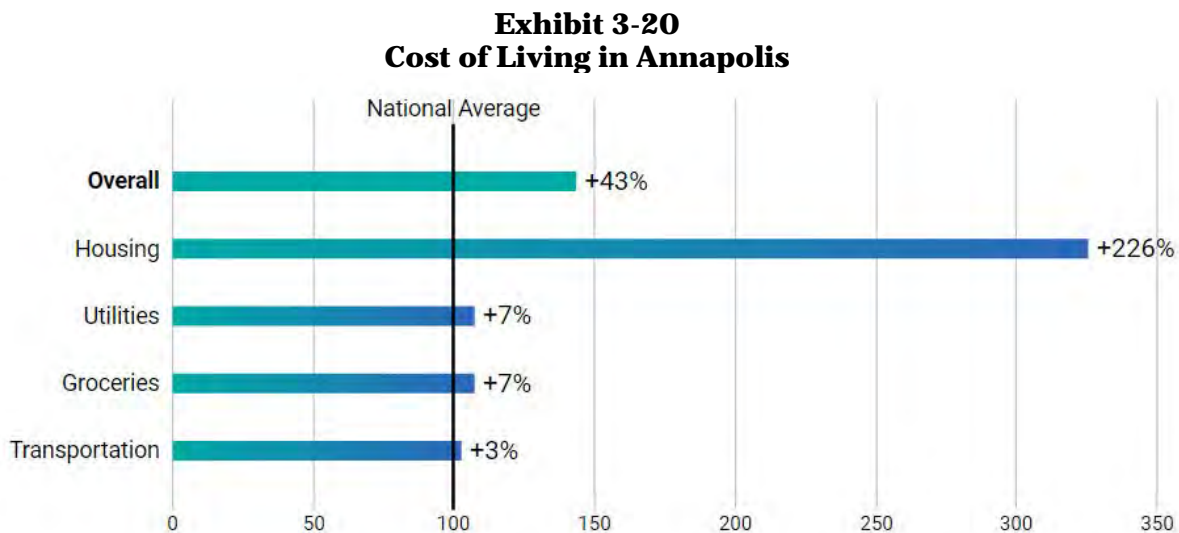
The new contractor payment system is not only much more efficient in its processing, but also allows for both new contract routes and changes to be entered with a decrease of data entry.

Finding – Contract Driver Pay

The annual hourly rate of compensation that AACPS bus contractors pay their drivers and aides generally has not increased over several years even though the annual cost of living has continued to increase. AACPS has neither encouraged or required that its bus contractors

consistently increase wages annually for their drivers and aides, a factor that would help to reduce turnover among these employee groups and attract new applicants.

Payscale.com, a nationally recognized online resource for compensation managers, also provides a cost of living calculator that helps employees to more closely determine the costs of living in a specific work location. At the time of this report, *Payscale.com* reports that the cost of living in Annapolis is 43 percent higher than the national average. **Exhibit 3-20** identifies by category the cost of living in Annapolis when compared to the national average. Using the data in this chart as an example, a \$50,000 per year worker in Pittsburg who considers moving to Anne Arundel County would need to be paid just over \$72,000 to maintain his or her standard of living.¹³



Source: <https://www.payscale.com/cost-of-living-calculator/Maryland-Annapolis>

The base rate of pay for AACPS contracted bus drivers generates an annual salary that is considerably less than \$50,000. If the rate paid to one of these drivers is \$25.00 per hour for working an average of six hours per day while driving for 180 school days, his or her annual salary is \$27,000.

Exhibit 3-21 shows the average minimum primary rates of pay reflected in the current contracts that AACPS has with each of its bus contractors. The consulting team compared the current rates with those from previous years. Generally, the rates have not changed from contract to contract.

¹³ <https://www.payscale.com/cost-of-living-calculator/Maryland-Annapolis>

Exhibit 3-21
Average Minimum Primary Rate of Pay of AACPS Bus Contractors
2019-20¹⁴

Contractor	Driver Minimum Primary Rate	Aide Minimum Primary Rate
Annapolis Bus Co., Inc.	\$20.53	\$15.96
Brook's Trans. Service, Inc.	\$26.35	\$17.20
C Muhl Bus Service, Inc.	\$24.96	\$19.07
Chesapeake Charter, Inc.	\$28.23	\$21.05
Crofton Charter, Inc.	\$15.96	\$10.84
Fay's Bus Service, Inc.	\$25.14	\$16.95
First Student, Inc.	\$33.59	\$18.06
Gary L Aisquith, Inc.	\$25.55	\$18.36
Hubers II, Inc.	\$25.27	\$16.84
Jubbs Bus Service	\$28.76	\$18.01
Lane's Bus Service, Inc.	\$22.64	\$17.74
Lonergan's Charter Service, Inc.	\$25.94	\$18.58
M.B.G. Enterprises, Inc.	\$20.51	\$14.76
North County Bus Co., Inc.	\$15.02	\$9.51
R.E. Wilson And Sons, Inc.	\$24.78	\$19.70
Smith Bus Service, Inc.	\$24.96	\$18.97
Wilson's Bus Service	\$25.33	\$17.11
Overall Average	\$24.32	\$16.98

Source: AACPS, September 2019

To be more successful in both reducing their current employee turn-over rate and attracting more applicants, generally both public and non-public businesses at least try to provide annual cost of living adjustments in their employee compensation plans. Likewise, AACPS bus contractors need to be able to show good faith effort in addressing annually the wages they pay their drivers.

Recommendation 15:

Include in the next bus contract with contractors a requirement that the minimum hourly wage they pay annually to each of their individual drivers and aides be increased based on the Baltimore/Washington average yearly inflation rate from the previous year.

In the U.S., changes of wages in employment contracts and pension benefits are generally tied to a cost-of-living index or rate of inflation calculated from the consumer price index (CPI). Using readily available statistics from the U.S. Bureau of Labor Statistics, AACPS can determine what the percentage increase will need to be.

Fiscal Impact:

Implementing this recommendation can be achieved at no direct cost to the school district. Bus contractors may attempt to pass on their increased costs through their subsequent proposal bids.

¹⁴ The averages reflected in this exhibit do not include any compensation that a bus contractor may elect to pay additionally to their drivers and aides for benefits or other perks.

Finding – Contractor Oversight

AACPS lacks consistent hands-on oversight of the bus contractors. Although transportation supervisors and other transportation staff are regularly in the field, there is little effort to assess contractor performance and ensure compliance with the terms of the bus contracts in any kind of systematic way.

Although transportation supervisors have time allotted to be in the field, they do not currently record observations in any standard format, nor are they required to provide a summary of their observations. Department work in the field is neither collected nor analyzed at the department level. Transportation staff visibility in the field in the mornings is low. Several consulting team members, during their morning arrival observations, asked bus contractors how often they see staff from the transportation department in the field. Bus drivers generally said they rarely or never see transportation staff observing routine operations. It is impossible to hold contractors accountable unless their day-to-day operations are routinely observed.

On the survey, school administrators gave numerous indications that contractors were not providing high quality services. In regard to regular education, 60 percent of school administrators did not agree that buses arrive and depart on time each day. On later questions, 30 percent said at least one bus arrives after the start of school in the morning 2+ times per week, while 59 percent said at least one bus arrived late to pick up students from school in the afternoon 2+ times per week. One-fifth of school administrators noted that bus combining/splitting¹⁵ happened at least once a week last year, an indication that contractors are not providing all the buses for which the district is contracting. Another five percent of school administrators noted that buses made double runs¹⁶ 2+ times a week last year, another indication that contractors are not providing all the buses for which the district is contracting.

With the new contractor payment system, the purchasing department has been leading an effort to hold contractors more accountable. The bus contract includes numerous items for which contractors are fined, including:

- failure to perform any or all portions of a route or trip per day as assigned – \$100 fine per incident;
- failure to have an aide on the bus when required by the district – \$100 per incident;
- failure to submit timely and proper documentation as required – \$25 per day;
- failure to identify the regular number on a spare bus – \$5 per incident;
- late arrivals (>10 minutes) at stops or schools – \$25 per incident; and
- failure to have a working camera system on an eligible school bus – \$250 per incident.

However, the purchasing department only becomes involved in contract enforcement if the staff in the transportation department requests it. It appears that the purchasing department only becomes involved in instances when the transportation staff cannot resolve the issue themselves. One example given was when a contractor was transporting on one bus two students

¹⁵ where students from one bus are combined with another or where students from one bus are split onto multiple other buses because a bus/driver is absent

¹⁶ where students are transported on a second run because a bus/driver is absent

and billing two programs for one bus each, essentially double billing for one bus. Purchasing staff indicated that they had only been involved in transportation billing adjustment due to contractors failing to perform as required a few times thus far.

In about half of the schools where the consulting team completed a morning arrival observation, school staff members were recording the arrival times of school buses. A process to systematically collect these data from all schools could form the basis for oversight of contractor timeliness and provide data for reporting on the key performance indicator of timeliness. However, it did not appear that the arrival data recorded by school staffs were reported at all to the transportation department.

The timely delivery of students is paramount to the education process. When contractors are not assessed a service level penalty there is no sense of urgency to provide corrective action. The current practice of not seeking damages for service delivery failures provides no incentive to get better or to improve the service level within the district.

Recommendation 16:

Enforce all provisions of the School Bus Transportation Contract through better contractor oversight.

The district should take a more proactive approach in monitoring the performance of contractors who collectively receive more than \$50M in payments each year. To accomplish this, the district should:

- ▶ adopt standards and rubrics for transportation specialists and technicians to monitor contractor performance in the field, including instances of non-performance like doubling-up buses and failing to run routes at all, as well as observations of a lack of bus maintenance or unsafe driver actions;
- ▶ implement a technology-based tool to track field observations of transportation staff – this will provide documentation for contractor deductions, support regular measurement of contractor performance, and document work of the transportation staff in the field;
- ▶ adopt standards for school-based staff members to report on timeliness and complete performance of contractors; and
- ▶ implement a technology-base tool for school-based staff members to report daily on bus timeliness and operations that will provide documentation for contractor deductions and support regular measurement of contractor performance.

The consulting team further recommends that the transportation and purchasing departments review language in future contracts and include stronger penalties when contractors are found to be non-performing. Deducting only \$100 from the pay of a contractor for not completing a route and then paying them the rest of the fee for that non-work is nonsensical. If a contractor does not complete a route as contracted to do so, which would include times a contractor splits, combines, or doubles up a run, a minor deduction is hardly incentive to not continue to engage in that behavior.

Fiscal Impact:

This recommendation can be implemented mostly with existing resources and should result in reduced contractor costs through the regular application of liquidated damages.

A number of tablet- and phone-based options exist for the recommended transportation standard observations that are cloud-based and have monthly subscription pricing. Once such system is \$100 per month per user. On an annual basis, that would require \$24,000 per year. The reporting system from schools to the transportation department can be developed internally.

Based on the data reported by school administrators regarding late buses and instances of doubling up, the consulting team estimates that the district should be recouping annually liquidated damages of at least \$288,980, based on these calculations:

- ▶ 60% of schools having two buses per week arriving late in the afternoon x 128 schools x 36 weeks x \$25 per instance = \$138,240;
- ▶ 50 instances of failure to have a working camera on board x \$250 per instance = \$12,500;
- ▶ 20% of schools where contractors failed to perform run/route as assigned once per week x 128 schools x 36 weeks x \$100 per instance = \$92,160; and
- ▶ 5% of schools where contractors made double runs twice per week x 128 schools x 36 weeks x \$100 per instance = \$46,080.

Liquidated damages would be higher once the district adopts more punitive assessments for contractor failure to operate a bus route as assigned.

Finding – GPS

Currently, less than one-third of the contractor fleet is equipped with GPS capability. GPS capability provides much greater management insight into day-to-day operations and the ability to accurately communicate with parents the location of specific buses.

All of the county-owned buses are equipped with GPS devices, but less than one-third of the contractor buses are. If all the buses used by AACPS were outfitted with GPS, the district would be able to more readily determine the effectiveness of its routes, to include when and where buses arrived at designated stops, incidents of unsafe driving such as speeding, where “missing” buses are located, etc. The district would also be able to communicate bus locations with parents and students.

While the 50+ county-owned buses in the district’s fleet are currently GPS-equipped, until the current Request for Bid package for 2020-21, this has not been a requirement for contractor buses. According to the new bid language, the contractor will be required to install on the school bus a Zonar GPS tracking system with the capability of allowing AACPS access to all the applicable data while in service to AACPS. However, only about 50 routes a year come up for bid, so it will take time to contractually require GPS in all buses. For bus operators currently contracting with the district, they cannot be mandated to install GPS equipment, as it is not required under the current terms of their contracts. AACPS staff believe that most contractors will have GPS installed by 2023; however, that will depend to a certain extent on the good will and internal efforts of contractors to modernize.

At present, the district is not able to quickly ascertain the location of most of the buses transporting AACPS students. It is not able to document instances where driver behavior is unsafe. It cannot readily provide information to parents who call the transportation department due to the lateness of a bus.

Conversely, the district cannot confirm that a driver was in fact where he or she should have been at any given point during the route, was not speeding if complaints were received from community members, did in fact come to a complete stop at an intersection, or any number of other complaints that may be called in by community members.

Recommendation 17:

Offer all contractors an incentive to adopt GPS prior to the end of their established contracts.

As there are benefits to be gained for parents, the contractors, and the district, AACPS should offer contractors an incentive to install GPS prior to the end of their current contract.

Fiscal Impact:

The consulting team recommends consideration of an offer of \$250 per bus if a contractor installs GPS and makes bus tracking available to the district in the next school year (2020-21), followed by a \$100 offer per bus if the contractor installs in 2021-22. With approximately 400 buses needing GPS, this could cost the district as much as \$100,000 in one-time incentives.

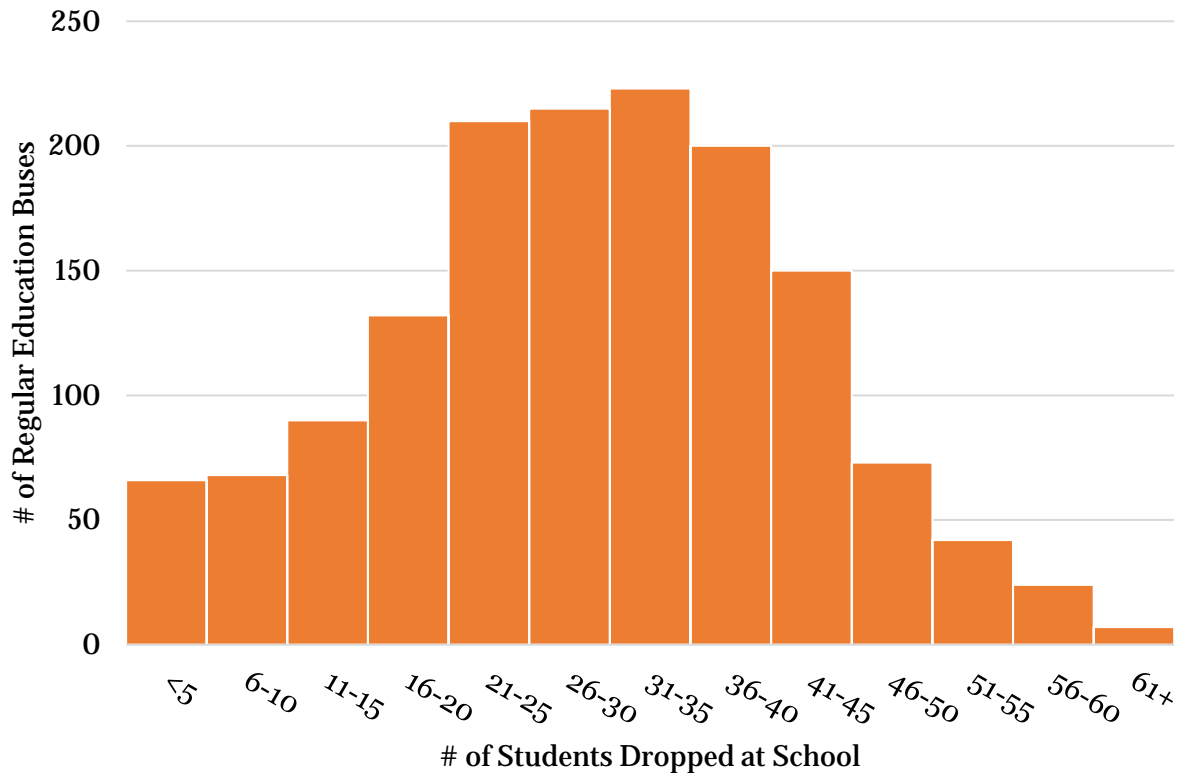
Finding – Student Loads on Contractor Buses

The transportation department does not sufficiently monitor loads on its regular bus routes. This has resulted in some instances of overcrowding, but likely far more instances of underutilization that could be remedied through bus consolidations.

In doing morning bus arrival observations, the consulting team counted how many buses they observed to be more than half empty. Overall, the team estimated that 44 percent were more than half empty upon arrival to their school. In only one instance did a consultant observe a bus to be over its rated student capacity.

The transportation department collected bus count data from contractors during one week in October. Based on what staff in the transportation department estimated as 94 percent of the data for student counts on buses, the average AACPS bus for regular education dropped off 29 students at a school each morning. If one assumes a reasonable maximum of 60 students as a “full” bus, the data indicate that 52 percent of the buses were more than half empty – dropping 30 or fewer students. **Exhibit 3-22** provides the morning distribution by student count bands.

Exhibit 3-22
Regular Education
Morning Bus Drop-offs by Number of Students on the Bus



Source: AACPS data, December 2019, and Prismatic calculations

There is little difference by school level in the morning drop-off data (**Exhibit 3-23**). There are a number of buses at each level dropping off less than 10 students each morning.

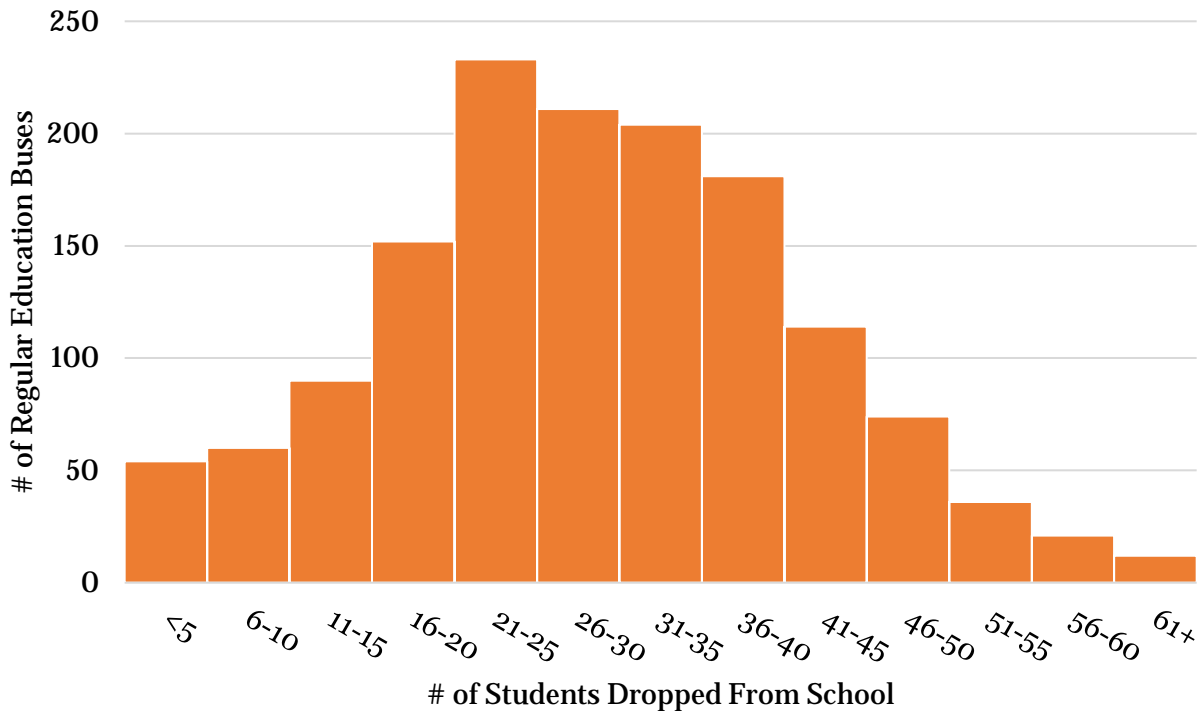
Exhibit 3-23
Regular Education
Morning Bus Drop-offs by School Level

School Level	# of Buses Dropping Off	Minimum # of Students on a Bus	Average # of Students on a Bus	Maximum # of Students on a Bus	# of Buses Dropping Off <10 Students
Elementary	612	1	30	67	75
Middle	454	1	30	68	24
High	434	2	28	60	26
Total	1,500	1	29	68	125

Source: AACPS data, December 2019, and Prismatic calculations

The picture is largely the same for afternoon bus loads (**Exhibit 3-24**). More than half (55%) of the afternoon buses are dropping off 30 students or less each afternoon.

**Exhibit 3-24
Regular Education
Afternoon Bus Loads by Number of Students on the Bus**



Source: AACPS data, December 2019, and Prismatic calculations

There is little difference by school level in the afternoon bus load data (**Exhibit 3-25**). There are more than 100 buses dropping off less than 10 students each afternoon.

**Exhibit 3-25
Regular Education
Afternoon Bus Transports From School by Level**

School Level	# of Buses Picking Up Students From School	Minimum # of Students on a Bus	Average # of Students on a Bus	Maximum # of Students on a Bus	# of Buses Dropping Off <10 Students
Elementary	582	1	31	721	57
Middle	436	1	30	66	21
High	422	2	26	63	26
Total	1,440		29	72	104

Source: AACPS data, December 2019, and Prismatic calculations

For one of its bus contracts, the district requires contractors to submit regular student counts by bus:

RECORD KEEPING REQUIREMENTS: Contractor shall maintain a log, on a form provided by the AACPS, which on a daily basis identifies time, miles and student attendance for both the morning and afternoon runs. This log will be submitted to the AACPS on a monthly basis and shall act as a confirmation of time, miles and student attendance. The log is due at the transportation department office on the fifth working day subsequent to the close of a calendar month. August and September will be combined on the September report. Time and mileage will run to and from the Contractor's regular bus storage facility.¹⁷

However, this contract applies only to the 27 “Little Bid” routes. These routes serve only the out of county special education non-public school campuses. For its remaining contracts, the district does not currently require student counts, but does receive monthly counts on a form that is provided directly to the transportation specialists. It does not appear that the specialists analyze the bus count forms received, as it required additional effort by the department to provide student count data to the consulting team – it was not readily available at the time of request. Upon discussion with department staff, leadership determined that the regular collection of student load data from contractors would be desirable and planned to make it part of the monthly required log that includes mileage and hours and from which contractors are paid.

The number of contractor buses used by the district has increased by more than 100 since 2009-10, from 451 to 581 in 2018-19. This 29 percent increase has well outpaced the increase in the number of students eligible for transportation – that has increased by only nine percent since 2009-10. Much of the increase in contractor buses occurred in 2014-15, but there have also been incremental increases in every year of the time period but one (**Exhibit 3-26**). Since 2014-15 the percentage increase in contractor buses has always exceeded the increase in the number of students eligible for transportation. Some of this growth could be attributable to the growth or expansion of programs, like Advanced Studies, that necessitate additional buses to meet students’ needs. However, the transportation department has not kept clear records as to why buses are added at the time of the addition and does not appear to routinely review existing routes for possible consolidation or cancellation.

Exhibit 3-26
Year-Over-Year Changes in Number of Students Eligible for Transportation and Contractor Buses

Year	Change in Number of Student Eligible for Transportation	Change in Number of Contractor Buses
10-11	-1.4%	0.9%
11-12	2.1%	2.2%
12-13	1.8%	1.5%
13-14	-0.4%	-1.5%
14-15	1.5%	12.0%
15-16	1.0%	2.9%
16-17	1.2%	2.1%
17-18	1.8%	2.4%
18-19	1.5%	3.8%

Source: AACPS, September 2019

¹⁷ RFP#16SC-100 (“Little Bid,” page 33)

The Maryland Office of Legislative Audit (OLA) came to a similar conclusion in its October 24, 2019 report (and in previous reports), noting:

Our analysis of the routing system data disclosed that there might be opportunities to increase ridership on certain bus routes. Our review of routing system data for 69 of the 550 regular contractor buses for the 2017-2018 school year disclosed that 139 of the 170 reviewed routes were designed to transport students at less than 75 percent of customary capacity goals, including 68 routes that transported students at less than 50 percent of bus capacity based on bus size. While we recognize that Anne Arundel county includes some rural areas (such as, south county), which can make it difficult to maximize ridership in all cases, our analysis primarily focused on highly populated areas. Similar conditions were commented upon in our two preceding audit reports.¹⁸

Recommendation 18:

Require student bus counts at least weekly from all contractors, routinely audit a 10 percent sample, and use the data to consolidate bus routes.

The district should update its contracts and require digital submission in Excel of weekly bus counts from all contractors. Transportation specialists should analyze the counts for their schools and flag any reports of overcrowding for immediate verification and rectification.

As part of their weekly school arrival/departure observations, transportation department staff should audit a 10 percent sample of the load data submitted by contractors. Any buses audited that are found to be transporting substantially fewer students than reported by a contractor should be subject to further review, as accurate counts are key to optimizing the route system.

Student load data should be used dynamically to identify opportunities for route consolidation throughout the school year.

Fiscal Impact:

This recommendation can be implemented with existing resources. Closely monitoring bus loads will provide students with greater safety (as overcrowded buses are identified and their routes modified). It will also provide the district with opportunities to identify cost savings, as routes with low ridership should be consolidated with other routes. Based on the consulting team's observations, district-reported ridership data, and bus run mileage/time plans, Prismatic conservatively estimates that at least five percent of existing runs could be consolidated into runs that still adhere to reasonable ride times but have higher student usage rates. Private contractor payments are expected to slightly exceed \$49.5M in 2019-20. A five percent savings would release \$2.48M annually for other priorities in the department.

Finding – Field Trip Requests

The transportation department has no involvement in the provision of transportation services for field trips. Field trips are requested by individual schools from bus contractors approved to do such trips. Each school may have a different tactic to request and garner transportation. Not all schools routinely review invoices from contractors for field trips provided.

¹⁸ <https://www.ola.state.md.us/>

Each school maintains a separate fund for field trips. When schools are preparing for a field trip, they are required to secure three bids from a list of pre-approved school bus contractors for the lowest possible price. Staff indicated that last year was the first year that schools were supposed to follow this process using only the vendors on the approved list. Staff also noted that some schools were selecting and using vendors who were not on the approved list.

Currently, the process of securing trip transportation may vary from school to school, as there is no exact standard procedure outlining the process. The Principal Packet includes a listing of approved field trip providers with contact information. The packet then includes a memo regarding charter transportation that includes a list of charter bus providers. That is followed by a form to be used to procure charter bus transportation. It is unclear based on the packet documents if schools are supposed to use the charter form for field trips or not. The Bus Contractor Packet contains no instructions to contractors regarding field trips, other than a requirement to conduct a bus evacuation drill prior to commencing field trips and a permitting requirement when taking a field trip to Washington D.C.

On the stakeholder survey, some school administrators did not agree that the process for requesting a field trip is efficient and effective, or that contractors provide high quality services for them (**Exhibit 3-27**). A small percentage of school administrators noted they often find invoice errors for extracurricular/athletic transportation (which would include field trips).

**Exhibit 3-27
School Administrator Survey Responses Regarding Field Trips**

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
The process for requesting field trip transportation is efficient and effective.	55%	28%	17%
Someone at my school reviews the invoice for each extracurricular/athletic trip.	73%	27%	0%
There are often errors in the invoices submitted to my school for extracurricular/athletic trips.	3%	38%	59%
Bus contractors provide high quality services for extracurricular/athletic trips.	41%	45%	14%

Source: Prismatic survey results, October 2019

Recommendation 19:

Establish a single clear, step-by-step procedure for procurement, scheduling, payment, and completion of the field trip request process.

To accomplish this, the district should:

- collaborate with each school and determine the best method for requesting trips;
- create and distribute a field trip request form for on-line use; and
- audit a sample of field trip transactions regularly to ensure pricing equity across the schools and correctness among the vendors.

Fiscal Impact:

This recommendation can be implemented with existing resources. It should provide assurances that schools have pricing equity for field trips.

Facilities

Finding – Transportation Facilities Master Planning

Major repair, maintenance, fueling, and parking facilities for AACPS-owned buses are on leased land with a likely change in ownership expected to take place soon. To date, the district has made few preparations and no plans. Preparations have included clean-up of the soil affected by the AACPS bus fueling station at the Waterford Site. This action may limit the Superfund liability to AACPS when the owners sell the site. Specific AACPS plans for this and other bus facilities are not in evidence.

Exhibit 3-28 provides data for three sites AACPS currently operates for servicing, repair, fueling, and parking of its fleet of 72 district-owned school buses, plus 10 other district vehicles. AACPS leases two of the sites from private landowners. AACPS owns the third, which was developed in September 2019 on AACPS property to replace a site AACPS had leased from contracted bus operator when the lease was not renewed by the landowner.

Exhibit 3-28
AACPS Transportation Facilities

Name	Address	# of Buses Parked	Maintenance	Fuel	Status
Waterford Bus Operations	8229 Waterford Road Pasadena, Maryland	50	Y	Y	Leased
Door's Texaco	1229 Generals Hwy Crownsville, Maryland	16	Y	Y	Leased
South River High School	South River High Edgewater, Maryland	6	N	N	Owned

Source: AACPS, October 2019

The two leased sites, Waterford Bus Operations and Door's Texaco, appear to have received minimal capital investment over the past few decades. According to AACPS officials, this is due to the land being leased; any major capital improvements would likely inure to the benefit of the landowners.

The Waterford Bus Operations site is the major bus service and operations hub of AACPS. It has enough acreage to park 50 AACPS' buses, houses three bus bays for service and repairs, a bus fueling station, ancillary storage facilities, and an office/breakroom to serve bus drivers, mechanics, and other staff. However, all facilities are minimal and noticeably primitive. While acknowledging the limits of the site's facilities, bus mechanics express thankfulness for being able to work indoors, sheltered from the elements. According to the mechanics, 95 percent of all bus repairs are performed at the site. The remaining five percent consists of warranty work and the occasional repair that can be performed at a lower cost off-site. Three full-time mechanics are currently at the site, with one additional full-time vacancy to be filled.

Observations of the Waterford site include:

- ▶ None of the three bus service bays have enough height to allow the installation and use of hydraulic lifts, nor do the bays have service pits to permit mechanics to descend below the buses to examine or work on the undercarriages, change engine oil, or perform other work underneath (**Exhibit 3-29**).

Exhibit 3-29
Waterford Site Low Ceiling Condition in Bus Bay



Source: Prismatic, September 2019

- ▶ Each of the three service bays lacks enough width to permit even an unhindered removal of wheels, or the unfettered servicing of brakes and axels as shown in **Exhibit 3-30**. Major repairs or removals of transmissions, axels, or engines require feats of carefully planned and executed contortion.

Exhibit 3-30
Waterford Site Cramped Service Bays



Source: Prismatic, September 2019

- ▶ The service bays are connected to, or flanked by, shipping containers repurposed as storage units, small equipment garages, toilets, break rooms, and “miscellaneous.” as shown in **Exhibits 3-31** and **3-32**. These units show evidence of water leaks (past and/or current), lack insulation, tidiness, and cleanliness. Some interviewees called them “deplorable.”

Exhibit 3-31
Service Bay Flanked by Storage Units



Source: Prismatic, September 2019

Exhibit 3-32
Other Storage Unit



Source: Prismatic, September 2019

- ▶ The site is largely unpaved, creating massive dust during dry times, as well as mud in wet periods.
- ▶ **Exhibit 3-33** shows AACPS' bus fueling station. The fueling station has for some time been district-managed without regard to concerns about environmental subsoil pollution. According to AACPS officials, the district has completed clean-up steps to avoid potential EPA Superfund liability and continues to monitor the subsoil for compliance. However, additional pollution by the property owner of the site's substrate appears to exist. Consequently, the site may be declared a Superfund site despite the district's efforts to remove the pollution it has caused. Much uncertainty about this matter seems to remain.

Exhibit 3-33 Bus Fueling Station



Source: Prismatic, September 2019

According to AACPS officials, the owners of the Waterford site are represented by the family's matriarch, who is of advanced age. The family has declared its intentions to potentially not renew the lease, and to instead sell the site after the matriarch's death. It may be unlikely that AACPS would seek to purchase the site, given its location removed from the geographic center of the County, and given the potential that the site might become subject to EPA Superfund protocols once it changes ownership.

According to all AACPS officials interviewed, the spartan character of the Waterford site has been functionally adequate. The buses are maintained and repaired as needed. Bus service and repair work has been acceptable. Even the mechanics on the site are grateful for a workplace that is mostly indoors, despite all other shortcomings. Looming large is the uncertainty of when the lease will end, and if the EPA will tie up the site for an extended time to clean up any remaining pollution.

The site leased from Door's Texaco is considerably less problematic than the Waterford one. The Texaco Station is a few miles away from the bus park site. The Texaco garage can perform routine maintenance as well as heavy repairs. The separate bus park site is an irregularly shaped and sloped lot with a capacity of about 20 (**Exhibit 3-34**).

Exhibit 3-34
Door's Texaco Bus Park Lot



Source: Prismatic, September 2019

A small, charmingly and lovingly decorated break room is located inside a small trailer as shown in **Exhibit 3-35**. No one was available at the site to provide any information. The site is fenced and can be locked overnight. Because the site is small and not centrally located, it is the eventual hope of AACPS officials to move out of the lease arrangement and find a site owned by the district as a replacement.

Exhibit 3-35
Break Room Trailer Exterior and Interior



Source: Prismatic, September 2019

The new parking facility on AACPS property at South River High School (**Exhibit 3-36**), near CAT South, was placed in service in September 2019 after the leased contracted bus service site in Harwood, Maryland was closed. The new site has parking for up to 15 buses, and a well-equipped office and break room constructed from a mobile classroom. The site is fenced and

lockable. Construction cost of this new facility was given as \$500,000 by AACPS. This facility is in excellent condition. The asphalt is less than a few months old, and the parking space striping is gleaming white.

Exhibit 3-36
New South River HS Bus Park Site



Source: Prismatic, September 2019

A new bus driver break room has an office, kitchen, bathroom, and large break room with a table and chairs (**Exhibit 3-37**). Furniture, though surplus, was selected carefully for its good condition. Several of the drivers who work from this facility expressed their approval of this new workplace and noted that it is a remarkable contrast to the previous bus parking site. Although acknowledged by AACPS officials as a “stopgap measure,” it is the only bus operations site on AACPS property, as well as the newest and in the best condition.

Exhibit 3-37
Kitchen in South River HS Bus Park Site



Source: Prismatic, September 2019

Overall, the district currently has bus parking and maintenance sites that are at least functional. However, the district has no control over the future of the Waterford site, where 95 percent of all bus maintenance and repair work is completed, and its location is not ideal. The Waterford lease may be terminated relatively suddenly at an as-yet undetermined time. To date, AACPS has not begun to plan for the site's replacement. If AACPS does not make and implement concrete plans with emphatic speed and determination, it may be in the undesirable and costly position of having to deploy some kind of stopgap measures if the Waterford site is lost.

Strategic planning is a universally acknowledged best practice in nearly all business cultures of the world. One good set of advice on strategic planning comes from *OnStrategy* (**Exhibit 3-38**).

Exhibit 3-38
Nine Tips for Successful Strategic Planning (Excerpt)

1. **Pull together a diverse, yet appropriate, group of people to make up your planning team.** Diversity leads to a better strategy. Bring together a small core team (six to 10 people) of leaders and managers who represent every area.
2. **Allow time for big picture, strategic thinking.** We tend to try to squeeze strategic planning discussions in between putting out fires and going on a much-needed vacation. But to create a strategic plan, your team needs time to think big. Do whatever it takes to allow that time for big-picture thinking.
3. **Get full commitment from key people in your organization.** You can't do it alone. If your team doesn't buy into the planning process and the resulting strategic plan, you're dead in the water.
4. **Allow for open and free discussion regardless of each person's position within the organization.** Encourage active participation, but don't let any one person dominate the session.
5. **Think about execution before you start.** It doesn't matter how good the plan is if it isn't executed.
6. **Make your plan actionable.** To have any chance at implementation, the plan must clearly articulate goals, action steps, responsibilities, accountability, and specific deadlines. Everyone must understand the plan and their role in it.
7. **Don't write your plan in stone.** Good strategic plans are fluid, not rigid and unbending. They allow you to adapt to changes. Don't be afraid to change your plan if needed.
8. **Clearly articulate next steps after every session.** Before closing the strategic planning session, clearly explain what comes next and who's responsible for what. When you walk out of the room, everyone must fully understand what they're responsible for and when to meet deadlines.
9. **Make strategy a habit, not just a retreat.** Review the strategic plan for performance achievement no less than quarterly and as often as monthly or weekly. Focus on accountability for results and have clear and compelling consequences for unapproved missed deadlines.

Source: <https://onstrategyhq.com/resources/the-top-10-strategic-planning-best-practices/>, 2019

Recommendation 20:

Prepare, schedule, fund, and execute an AACPS Facility Master Plan Element for Student Transportation Facilities. The plan element will include, but not be limited to:

- ▶ **identification of more centrally located bus maintenance, repair, fueling, and bus parking sites for possible purchase by AACPS; and**

- ▶ **broad programmatic delineation of key bus transportation functions for routine maintenance, all types of repairs, fueling, tool and parts storage, bus washing, bus parking, etc.**

Prismatic has provided a suggested Draft Plan Element in Appendix E. The consulting team recommends that AACPS:

- ▶ examine and refine as needed the Draft Plan Element;
- ▶ engage in a strategic planning process, building into the planning process contingency steps if a change in ownership of the Waterford Site occurs before the full strategic plan can be implemented; and
- ▶ make criteria-based land purchase optioning/acquisition in the I-97/Rt 50/Rt 100 Central County Area (97/50/100) the highest priority.

Fiscal Impact:

As contained in the Draft Plan Element, early estimates show a need for a minimum of 15 industrial use acres in the 97/50/100 quadrant at an estimated cost of \$900,000 per acre. This land may be in the form of one or two contiguous sites. Design and construction of state-of-the-art bus maintenance, repair, fueling, and paved bus parking facilities, plus storage, break rooms, toilets, secure fencing, and other ancillary installations is estimated at \$24 million over three years. Initial operating costs are estimated at 125 percent of current costs at Waterford, Door's Texaco, and South River High School. In summary:

- ▶ Land acquisition – \$ 13.5 million
- ▶ Design and Construction – \$24 million
- ▶ Operations – 125 percent of current expenses at all three sites

These figures are subject to verification and refinement during the creation and execution of the strategic plan.

Finding – Central Office Transportation Building

The AACPS Millersville Transportation Building is insufficient for the needs of the central transportation department staff and has only been minimally maintained. It is not an appropriate work environment.

The Millersville building opened as a school building in 1921. Its use as a school was discontinued when Millersville Elementary School was opened two miles away in 1965. After remaining unoccupied for more than four decades, the building was repurposed as the Transportation Building in 2012. The building has been equipped with the needed current technology for administrative functions but has been maintained only minimally otherwise. According to AACPS administrators, it is no longer cost-effective for the building to be fully renovated, restored, and made compliant with all provisions of the prevailing building codes and standards.

The nearly 100-year-old wood framed former school could qualify to be a candidate for historic preservation under the Secretary of the Interior's Guidelines – if it had been consistently occupied and maintained by AACPS. Instead, the approximately 47-year hiatus of non-specific,

perhaps fallow, use has resulted in the facility's deterioration to a point that calls into question the decision to reopen it seven years ago as a transportation office. The growth of mold and mildew, as well as infestations by vermin and other pests, were all but certain during 47 cycles of no humidity control and minimal heating. If it had been the district's desire to preserve this building for eventual historic preservation action, the best practice would have been "mothballing."¹⁹ The district elected instead to let the building age in place without any protection from the elements for forty-seven years. Consequently, the building is now subject to a different type of facilities management best practice:

The 17,500 square foot building is used for its current purpose on the first floor, encompassing about 8,700 square feet. The other half of the floor area is in the basement. This area houses a jumble of surplus storage, plus new items of technology, such as smart boards, projectors, computers, and ancillary equipment.

A largely cosmetic renovation shows little effort to modernize the building's infrastructure. Life safety systems do not include a sprinkler system. The bathrooms are not modernized. The building's heating and cooling systems are kept sufficiently under repair, but are old and energy-inefficient.

AACPS' building condition assessment rates the facility as "poor." According to the district's COO, it is no longer cost-beneficial to rehabilitate, renovate, and restore the facility. The building's 5.5-acre site is likely more valuable as vacant land. AACPS could sell it or use it for another purpose.

Exhibit 3-39 shows of the current status of the building.

¹⁹<https://www.nps.gov/tps/how-to-preserve/briefs/31-mothballing.htm> provides details on mothballing in accordance with National Park Service standards listed in their Preservation Brief 31.

**Exhibit 3-39
AACPS Central Transportation Building**

Director's Office



Building Corridor



Visible Lack of Repair



Basement Jumble



Source: Prismatic, September 2019

The decision to reuse this building after 47 years of non-use by spending only minimal amounts on capital improvements has resulted in a situation where AACPS employees are working in a poor environment. Although no actual evidence appears to exist of Sick Building Syndrome,²⁰ it

²⁰ The term "sick building syndrome" (SBS) is used to describe situations in which building occupants experience acute health and comfort effects that appear to be linked to time spent in a building, but no

would be desirable to halt day-to-day operations in this structure as soon as possible. The building's location offers no operational advantage to the leaders of the district's transportation function. It is neither located in close proximity to other central office leaders nor it is located in close proximity to internal transportation operations. The building's state of disrepair makes further investment economically and fiscally indefensible.²¹ Finally, the longer it takes to find better quarters for AACPS transportation leaders, the more likely it is that a major mechanical, structural, or systems failure in the current building will force AACPS to spend funds unnecessarily on some stopgap measure.

Recommendation 21:

Include in the transportation facilities master planning effort a new transportation office for staff currently in the Millersville Building.

The transportation Master Plan Element previously recommended should also include office space for departmental leadership. The plans, construction cost estimates and schedule for construction and occupancy will be incorporated in the draft Master Plan Element.

Fiscal Impact:

The cost of implementing this recommendation was included in the overall Master Plan Element previously recommended.

Routing

Finding – Planning for the Next School Year

The transportation department does not have a set schedule for major planning activities as it prepares for each new school year. Instead, each specialist follows their own schedule and may not be completing the same tasks as the others.

Each transportation specialist starts sometime between April and June in routing tasks for the upcoming school year. They currently wait on spring ridership numbers from the contractors before starting the new routing. Some specialists contact the Planning office to find out about new communities to pre-plan stops for the new construction areas. As the department has not previously routed using the numbers of enrolled students, based on the district's student information system, specialists have not historically considered the impact of students "graduating" from one school to the next.

The department does not have an internal deadline beyond which the specialists do not address the routing of newly enrolled students. This deficiency means that parents and schools contact specialists with stop change requests specifically for individual new student both right before the start of school and in the first few days of school, when specialists should be addressing the larger challenge of launching transportation for the new year. Because parents and schools can make last minute student changes and/or additions to routes that were not planned for, bus drivers end up routing on the fly. This then causes parent/student dissatisfaction, as students get home later in the evening than they were originally told.

specific illness or cause can be identified. The complaints may be localized in a particular room or zone or may be widespread throughout the building.

²¹ <https://www.hometowndemolitioncontractors.com/blog/demolish-or-not-demolish-historic-properties>

Finally, there is no consistent department-wide process or deadline to complete run/route design, review them collectively, distribute them to drivers/contractors, and have drivers/contractors drive them to identify any problems. In some school districts where contractors provide bus service, the contract explicitly requires all run/routes to be pre-driven two weeks before the start of each school year. This helps to reduce problems during the first few days of school. As noted in the AACPS RFP 18SC-068, the district does not currently require contractors to drive runs/routes it provides to contractors. Instead, the process is backwards:

Written Route Descriptions: Contractor shall prepare and maintain a written route description for each bus in regular operation with AACPS. The route description shall identify bus number, left and right directions for both pick up and discharge sequences, bus stops, schools serviced, and relevant time of day notations. A copy of each bus route shall be submitted to AACPS by the last school day in October. (p. 51)

Recommendation 22:

Establish a consistent process for route planning for the upcoming school year.

All geographic areas of the district should receive equal attention in route planning for each upcoming school year. The major route planning tasks for which the department should enforce consistency are:

- ▶ Confirm whether any new construction or development will impact each school. If there is new construction or development, determine whether new bus stops need to be developed.
- ▶ Assess the impact of the rollover of the student database. In most districts this happens sometime in or before July. In larger districts, it can happen as early as March, so that planning can take place in various departments (including transportation). The rollover moves each student from the previous grade to their new grade and from their previous school to the new school, such as when an 8th grader is promoted to 9th grade and is reassigned from a middle school to a high school. Once rollover occurs, the resulting student database is routed to determine such things as whether an existing bus stop is not needed for the upcoming year or a particular bus is projected to be overly full.
- ▶ Review student load data from the end of the current year. Bus runs that had particularly low student counts should be reviewed for consolidation.
- ▶ Ensure the provision of bus transportation, as appropriate, for students new to the district. To facilitate effective transportation planning, the department should adopt a cutoff point, beyond which it does not explicitly plan for the transportation of new students. In some districts, this cutoff point is two weeks before the start of school. Any new student who enrolls prior to that point is accounted for in transportation planning. Any student who enrolls after that point is likely already covered in transportation planning, but is not explicitly considered, so that the department can launch operations for the school year. Once the first few weeks of school have been completed, any lingering problems with transportation for new students are then addressed.
- ▶ Require drivers/contractors to pre-drive all runs/routes before the start of the new school year and to report any problems or needed changes.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – Lack of Transportation Policies/Regulations/Guidelines

Beyond the walk zones established in AACPS policy, the district has no policies or regulations in a number of areas that would both guide route planning and establish service level expectations. This deficiency includes effective bus capacities, combining students from multiple schools on a run, use of attendance factors, and maximum ride times.

A bus capacity guideline traditionally establishes what the district considers to be a full bus. A common misconception is that the manufacturer's rated bus capacity can be considered an expectation of actual capacity. The National Association of State Directors of Pupil Transportation Services (NASDPTS) developed a position paper on the seating capacity of school buses. This paper notes that the typical school bus seat is 39 inches wide and generally considered to have a maximum seating capacity of three students. However, this maximum is derived by assuming a 12.8-inch hip breadth of a fifth percentile female adult. As specified in the Federal Motor Vehicle Safety Standard 208, a fifth percentile female adult stands approximately 4'11" and weighs 102 pounds. The NASDPTS position paper notes that many high school students exceed that height and weight.

The highway safety guidelines Pupil Transportation Safety, issued by the National Highway Traffic Safety Administration (NHTSA), recommends, "Due to variations in sizes of children of different ages, states, and school districts should exercise judgment in deciding how many students are actually transported in a school bus." The NHTSA further states:

NHTSA recommends that all passengers be seated entirely within the confines of the school bus seats while the bus is in motion. Federal motor vehicle safety standard No. 222, "School Bus Passenger Seating and Crash Protection" requires that the interior of large buses provide occupant protection so that children are protected without the need to buckle-up. Occupant crash protection is provided by a protective envelope consisting of strong, closely-spaced seats that have energy-absorbing seat backs. Persons not sitting or sitting partially outside of the school bus seats will not be afforded the occupant protection provided by the school bus seats.²²

Thus, districts are left to determine the desired bus capacity to use in their runs and routes, within some general guidelines. The AACPS transportation department informally uses these goals:

- 50 students per high school bus;
- 50-55 students per middle school bus; and
- 50-62 students per elementary bus.

These planning capacities are somewhat low in comparison to some industry guidance. For example, the compartmentalization count (Thomas C-2) can be determined by:²³

²² <https://one.nhtsa.gov/people/injury/buses/pub/numseat.hmp.html>

²³ Source: Thomas Built Buses Saf T Liner c2, 2019*

- 13 Seats (Typically) x 2 (Rows) x 3 (Elementary Students) – 1 (Short Seat Rear) = 77 Passenger Bus
- 13 Seats (Typically) x 2 (Rows) x 2 (High School Students) – 1 (Short Seat Rear) = 52 Passenger Bus

Moreover, the consulting team found many AACPS buses to be operating with far lower student loads during morning observations at 29 schools. The results for observations at Arnold Elementary School and Severn River Middle School are shown in **Exhibit 3-40**. As shown, a number of buses at those two schools dropped off low numbers of students.

Exhibit 3-40
Prismatic Morning Bus Counts at Two AACPS Schools

Arnold Elementary		Severn Middle	
Bus #	Student Count	Bus #	Student Count
260	63	117	5
235	70	473	4
286	66	260	40+
12	16	286	40+
426	59	225	40+
167	21	407	20
410	40	232	7
		410	28
		165	34
		382	40+
		303	25
		167	40+
		187	8
		387	51
		12	36
		134	23
		240	37
		274	30

Source: Prismatic, September 2019

As noted earlier in this chapter, the transportation department has only informal planning capacity goals. Moreover, these goals are so informal that they do not appear to be written in any department guidance and not all transportation specialists interviewed indicated they were aware of them. The result of such informality is shown in **Exhibit 3-41**. Overall, occupancy rates of AACPS buses hovers around just 50 percent.

Exhibit 3-41
Regular Education
Average Bus Occupancy Rates by Level

School Level	Informal Planning Capacity	Average # of Morning Students	Average Morning Occupancy	Average # of Afternoon Students	Average Afternoon Occupancy
Elementary	50-62	30	48%	31	50%
Middle	50-55	30	55%	30	55%
High	50	28	56%	26	52%
Overall		29	53%	29	52%

Source: AACPS data, December 2019, and Prismatic calculations

As with effective bus capacity guidelines, AACPS lacks guidelines on when it is acceptable to combine students from multiple schools and grade levels on one bus. Multiple district staff noted the various areas of the district where peninsulas and sparse roadways mean that there is essentially only one path for a bus to travel in picking up and dropping off students each day. These areas often have few students. In the absence of guidelines, transportation sends one bus down the road for elementary students, repeats the process for middle school students, and repeats the process a third time for high school students. While not needed in all areas of the district, in areas where the geography of where the student lives, the proximity of the schools, and the timing works, explicitly allowing students from multiple schools to be transported on the same bus would result in greater transportation efficiency.

In planning for student loads on buses, the transportation department is just at the beginning of assigning specific students to specific buses. Once that process is complete, the department would benefit from an explicit attendance factor consideration. Just as effective school meal programs consider the average daily attendance in determining how many meals to make, effective transportation departments consider average daily attendance in determining how many students to assign to each bus. This planning guideline is sometimes extended among high school buses to consider the number of student drivers at each school. **Exhibit 3-42** provides the number of student parking spaces for most of the AACPS high schools. To the extent that those spaces are used by students, it would make little sense for the transportation department to continue to hold a seat on a bus for them.

Exhibit 3-42
Number of Student Parking Spaces at AACPS High Schools

High School	# of Student Parking Spaces
Annapolis High School	130
Broadneck High School	285
Chesapeake High School	260
Glen Burnie High School	165
Meade High School	86
North County High School	120
Old Mill High School	242
Severna Park	272
South River High School	113
Arundel High School	242
Northeast High School	200
Southern High School	247

Source: AACPS, September 2019

Finally, AACPS lacks regulations or guidelines on preferred maximum student ride times. When asked about this, some district staff stated that in the past they had been advised by state officials to not state a maximum ride time, so as to avoid lawsuits if the stated time was exceeded. This argument is somewhat nonsensical. It would be a simple matter to include language stating that the district endeavors to have no ride times exceeding a certain time, but that exceptions might be needed depending on student circumstances. Such a guideline as “not to exceed 75 minutes” would greatly aid in route planning, particularly if paired with a guideline for minimum run times.

Recommendation 23:

Develop written and communicated regulations and/or guidelines for bus routing procedures that include the effective seating capacity of bus types by grade levels, permitted combinations of grades on runs, attendance factors used in planning, and maximum ride times.

Ultimately, the transportation department should establish a method by which optimized bus routes are generated in a timely and efficient manner. Bus routes should be designed for efficiency, based on:

- ▶ length;
- ▶ load; and
- ▶ destination.

Regulations and/or department guidelines should provide the parameters for length, load, and destination considerations. Once developed, the guidelines should be posted on the transportation department website so they are public and easily available to all stakeholders.

Fiscal Impact:

This recommendation can be implemented with existing resources. Having these rules in place will allow for more effective route planning and should result in reduced number of route buses.

Finding – Routing Methodology

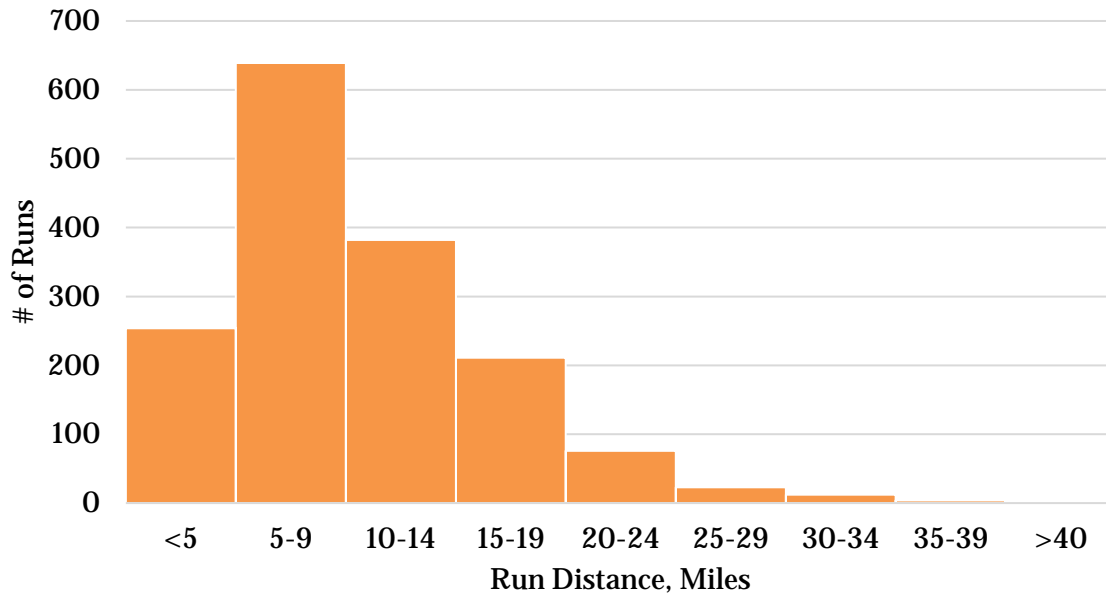
The AACPS transportation department lacks a defined routing methodology. Without it, it is not maximizing the intended capabilities of routing software.

The current routing software, “Compass” was purchased nearly four years ago under the brand name of vMax® Compass. During the implementation of this software, only minimal training was offered and no clear direction as to the exact needs of the routing software was developed. Since that time the current output is a summary list of stops with no input data to student location, passenger load, or definitive time on a contracted route. At the time of the onsite work, the consulting team found that the district had completed the recreation of historical routes in Compass, essentially digitizing what was previously only on paper. While often done in districts adopting routing software as a necessary first step, it is just a first step. At the time of the onsite work, the department’s lone GIS specialist was working with the routing software provider to work through kinks in rules regarding the auto-assignment of students to bus stops so that eventually the software can link to the student database and correctly assign each student to a bus stop.

Against this incremental progress toward routing based in technology, the department has no run/route guidelines. For example, is a run time of two miles and 10 minutes too short or acceptable? What is an acceptable planned student load? Is a run that only includes picking up six students acceptable or should runs be developed to maximize the number of students on a particular bus?

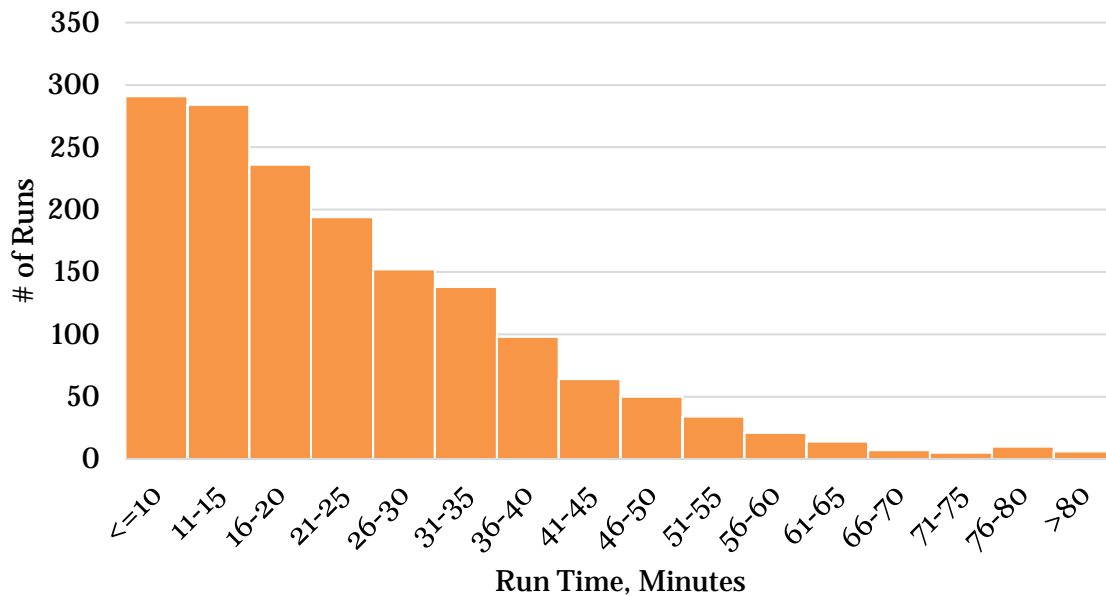
Over time, the lack of a routing methodology, compounded by the lack of incentive contractors have to offer suggestions for improving route efficiencies, has led to a large number of runs that are short, both in distance and time (**Exhibits 3-43 and 3-44**). The number of runs that are both less than five miles in length and less than 10 minutes in distance exceeds 100, out of a total of 1,604 regular education runs. There are clear opportunities for route consolidation and reworking, but the department lacks the routing methodology by which to begin those efforts.

**Exhibit 3-43
Number of Runs by Distance Traveled**



Source: AACPS data, December 2019, and Prismatic calculations

**Exhibit 3-44
Number of Runs by Time Required**



Source: AACPS data, December 2019, and Prismatic calculations

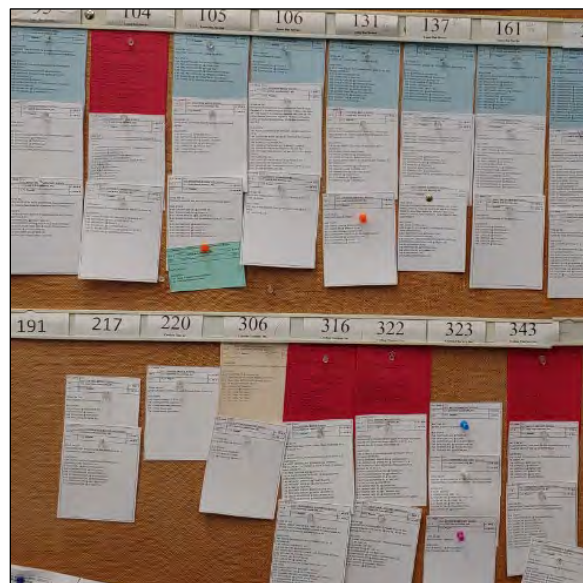
As another body of evidence supporting the need for reworking the existing route structure, the consulting team observed large numbers of buses arriving to their schools well prior to the start of school. In doing morning bus arrival observations, the consulting team was required to be

onsite 30 minutes prior to the start of school. At each of the 29 schools observed, at least a few buses were found to already be onsite when the consulting team arrived, earlier than 30 minutes prior to the start of school. In total, 84 percent of the buses that arrived at the 29 schools arrived more than 10 minutes prior to the start of school. It has traditionally been the practice in AACPS to annually ask each principal whether they would like buses to arrive at their school 15, 20, 25, or 30 minutes prior to the start of school. The memo distributed to elementary principals on May 6, 2019 for the 2019-20 school year noted that buses are scheduled for arrival at all schools 15 minutes prior to school starting time, unless the principal would prefer something else and the preference can be accommodated by the transportation department. In later emails with staff, the consulting team was told that the options were only 15, 20, or 25 minutes before school start, since the union contract does not require teachers to be present until 30 minutes prior to school opening. Principals are allowed to change their preferred arrival times every year, if they wish. How this practice impacts year-to-year routing could not be determined.

Exhibit 3-45 is an example of a vMax® Compass generated route sheet provided to contractors.

Exhibit 3-45
vMax® Compass Route Sets

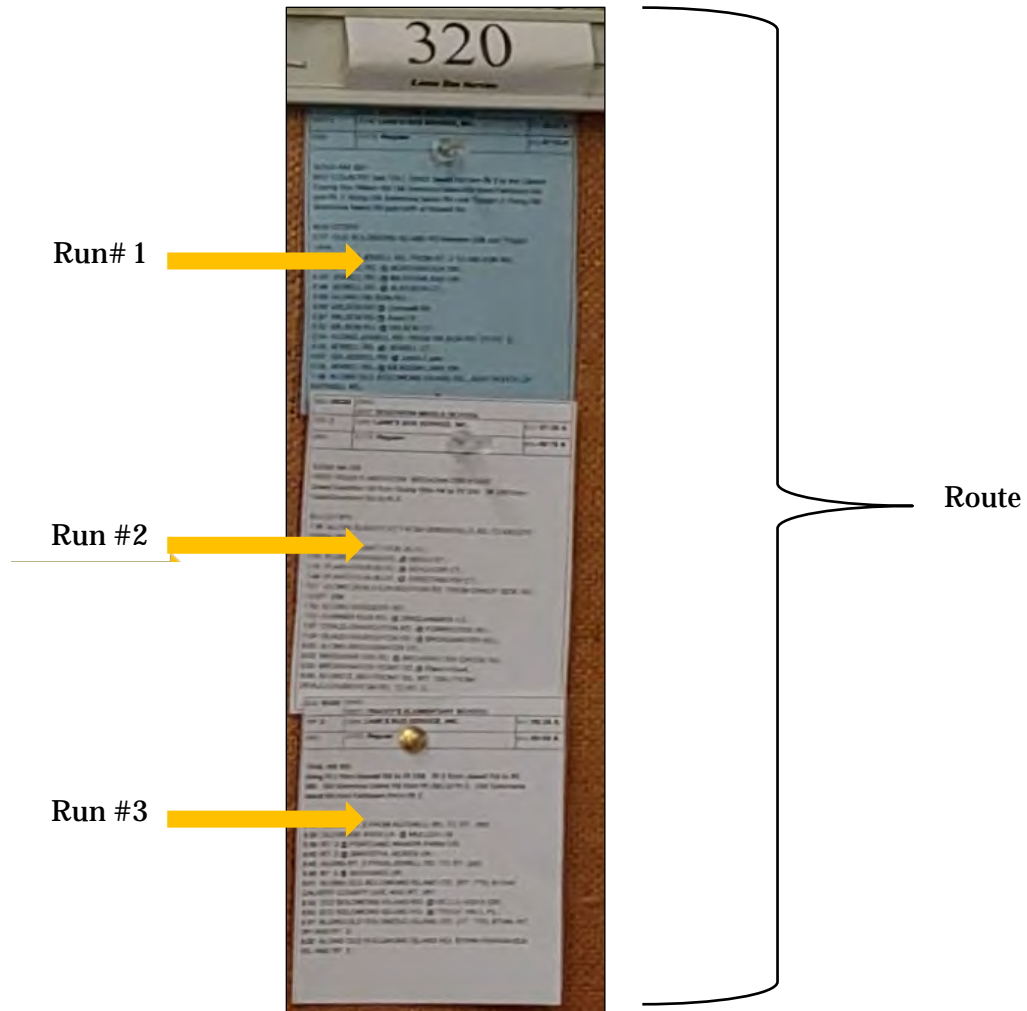
TRP: 1	CON: GARY L. AISQUITH, INC.	PUT: 06:31 A
GRD:	CATG: Regular	ETA: 07:15 A
<p>SOUH AM 433 MCKENDREE RD.; RT 778; RT 260; SANSBURY RD.; SOLOMONS ISLAND RD. (Rt. 2) FROM RT. 778 TO RT. 258 McKendree Rd. from Rt. 258 to Jewell Rd.; Old Solomons Island Rd (Rt. 778) from Rt. 2 to Rt. 260; Rt. 260 from Old Solomons Island Rd. (Rt. 778) to Sansbury Rd.; Sansbury Rd. from Rt. 260 to Rt. 2; Rt. 2 from Rt. 261 to Rt. 258.</p> <p>BUS STOPS: 6:31 ALONG MCKENDREE RD.; 6:34 MCKENDREE RD. @ W. MCKENDREE RD.; 6:36 MCKENDREE RD. @ SOUTHLAND CT.; 6:37 MCKENDREE RD. @ MCKENDREE CT.; 6:41 ALONG RT. 2 FROM JEWELL RD. TO SCRIVNER DR.; 6:43 SOLOMONS ISLAND RD @ Scrivner; 6:45 ALONG SANSBURY RD.; 6:47 SANSBURY RD @ Wilson Road; 6:50 ALONG RT. 260, FROM SANSBURY RD TO COUNTY LINE; 6:52 Rt 260 at KIDWELL LN; 6:55 ALONG OLD SOLOMONS ISLAND RD., (RT. 778); 6:58 OLD SOLOMONS ISLAND RD @ Walke; 7:00 ALONG RT 2 FROM FRIENDSHIP RD (RT 261) TO RT 258; 7:04 RT. 2 @ TRACY'S LN.;</p>		



Source: AACPS, Transportation Office, September 2019

Regular contracted bus routes are made up of several different portions of information known as “runs.” A morning run is typically a number of bus stops to pick up students that ends with the drop-off of those students at a school. As time is available, the bus then makes additional runs to pick up and drop off students for other schools. A number of runs are then combined to form a route. **Exhibit 3-46** shows a series of three runs that currently form one AACPS route.

**Exhibit 3-46
VMax® Compass Route Sets**



Source: AACPS, Transportation Office, September 2019

The current design of AACPS bus routes is not based on any set criteria such as load, length, or origin and destination. The regular bus routes are a combination of historic stops not subject to any design build criteria such as student information, addresses, walk distance to stop, or expected times of pickup and delivery. During the interviews with the transportation specialists, information was shared that the bus stops have been unchanged for many years.

Recommendation 24:

Adopt routing methodology that includes specific guidelines to support effective and efficient routing.

Once department policies, regulations, and/or guidelines have been developed in various areas, the routing team should work with transportation leaders to develop further internal guidelines that support efficiency and effectiveness. The consulting team recommends that the internal guidelines address questions such as:

- How short of a run is too short, absent any mitigating factors?
- How small of a student load is too small, absent any mitigating factors?

Fiscal Impact:

This recommendation can be implemented with existing resources. Having these guidelines in place and used for routing improvements should result in substantial bus consolidations and subsequent reduced costs.

Finding – Student Assignment to Bus Stops

The district does not currently assign students to stops in the routing system. Because of this, it does not know if bus stops are in use or not or even how many students are assigned to ride a particular bus.

The district is not currently assigning students to stops. Instead it relies on the contracted drivers to tell them the bus loads, but those are only provided twice a year for most runs and only provide bus totals, not the number of students at each bus stop along the run. This method does not allow AACPS to oversee their routes. It allows the contractors to dictate to AACPS how stops should be routed based on the student counts that they collect.

There is no verification process to determine if the contractors give accurate student counts. Additionally, there are no student lists given to drivers; each driver must determine if a student standing at a stop is going to the school that the bus is transporting to. Without the students being assigned to stops, there are no address stops for students living in rural areas, on “on and along” roads where the students stand outside and wait for a bus driver. The current student database, Power School, can have the bus and stop information uploaded for each student so that the schools are able to see where a student belongs.

On the current small squares of paper that list stops for each run, each stop has a listed time, which creates an expectation for parents that may not be able to be kept. Since the current method is to route stops rather than students, addresses are not given for students along more rural roads. These students are picked up based on an “on and along” method which means if a bus driver sees a student standing outside, they stop and pick them up. This could be difficult and distracting at the start of the school year when drivers are trying to follow the little squares with the routes as well as look for students standing out waiting for a bus. Bus drivers may have to stop suddenly and not be able activate the warning lights with enough time to prevent an accident. Not having the school opening and closing times on the routes makes it more difficult for the contracted bus drivers to know when to be at the schools.

Without student assignments, the bus routes are incomplete. Students that live along roads that would traditionally have a house stop have to wait outside for a bus driver. If they were assigned, the driver would have an address to watch out for, preventing potentially dangerous quick stops. During an accident, the only information available on which students are riding that bus comes from the contractor. The district should be able to pull a base list of who is assigned and then identify who was riding during that incident. In cases of major injuries, if the driver is not able to assist, this base list may be all that is available to contact families.

At the time of the onsite work, transportation staff was aware of the importance of assigning students to stops, buses, and runs. Staff indicated that student assignment to stops and buses would occur soon.

Recommendation 25:

Assign students to stops, buses, and runs, then create student reports by bus to be given to the drivers.

Once complete, the information can be uploaded into the student database allowing schools to know what bus and stop the students will be using. Additionally, this will also increase the accuracy of student information during accidents. With a list of students by stop, the drivers are better aware of what to expect at each stop increasing the safety of the students.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – Special Education Routing

The routing of special education students is essentially done by hand. The dispatch office creates the bus routes by hand from data provided by the “STOPS” program. This information is sent via the transportation specialist to the transportation dispatcher for the creation of bus routes.

Special needs transportation is typically ever changing, and such is the case in AACPS. When routes are generated for a special education student, the driver and bus monitor utilize a data sheet from the “STOPS” program (**Exhibit 3-47**) that includes: student name, address, pick-up time, school of choice etc. This information is compiled into a working route (**Exhibit 3-48**) with as many students as each routed special education bus can accommodate in a specific time.

Exhibit 3-47 "STOPS" Student Route Worksheet

09/17/2019 09:48 4189201584 SPED TRANS PAGE 05/06

STUDENT ROUTE WORKSHEET
ANNE ARUNDEL COUNTY PUBLIC SCHOOLS

2019-2020 Regular School Year

Parent/Designee Required at Bus Stop Drop Off	STUDENT #	BIRTHDATE	GRADE	Transfer Effective Date
	7531	07/2683	11	09/23/2019

ATTENDING SCHOOL RUTH PARKER EASON SCHOOL	PROGRAM Center	HOURS Full Day
---	--------------------------	--------------------------

HOME SCHOOL GLENN BURGIE HIGH SCHOOL	<p>THIS STUDENT HAS THE FOLLOWING NEEDS:</p> <ul style="list-style-type: none"> Bus Attendant Safety Vest (Size: Medium)
--	--

TRANSPORTATION TYPE: IEP **REQUEST TYPE:** CHANGE START DATE

COMMENTS:
09/12/2019 STUDENT WILL RIDE THE FORGIVEN BUS THAT ATTENDS PROGRAM AT RPE. ALTHOUGH THIS ISN'T A SPECIAL EDUCATION OR IEP RELATED NEED, THIS TRANSFER WAS COORDINATED WITH TRANSPORTATION AND APPROVED BY THE ASST. SUPERINTENDENT AND SPECIAL EDUCATION DEPARTMENT

ROUTE:

PICK-UP STOPS:			
BUS	BUS STOP	TIME	MAP
450	CARROLL RD @ GLEN RD	08:46 AM	

DROP-OFF STOPS:			
BUS	BUS STOP	TIME	MAP
450	CARROLL RD @ GLEN RD	04:27 PM	

PICK-UP ADDRESS: STUDENT'S HOME **DROP-OFF ADDRESS:** STUDENT'S HOME

Specialist: Wanda McIntire

Printed: 09/17/2019 10:47 AM
Created by: P2001, EMPLOYEE: WJG, 06/20/09

Source: AACPS Transportation Office, September 2019



Exhibit 3-48 Special Needs Bus Routes

Bus Route 872 AM
2019/2020

Leave Yard 6:35 AM

Right on Waterford to **right** on Mountain Rd to **left** on Mountain Estate Dr to **U turn** at end of street to return on Mt. Estate Dr. **STOP Mountain Estate Ct.**

Return to **right** on Mountain Rd to **right** on 648 N. to **right** on 270 N. (East Furnace Branch Rd) to **right** on Thomas Rd. **STOP 17 Thomas Rd.**

Continue to **left** on Country Club Dr. to **right** on 270 N. to **right** on Point Pleasant Rd. to **right** on 7th St. **STOP at 7th and Furnace Dr.**

Continue on Furnace Dr. to **left** on Annapolis Dr. to **left** on 7th St. to **right** on Point Pleasant Rd. to **right** on 270 N. follow 270 N across 10 across Ritchie Hwy to **left** on Crain Hwy S. to **left** on 2nd Ave SE **STOP 2nd Ave and M St. SE**

Turn **right** on M St. through **dog leg** to **right** on 5th Ave. SE. **STOP at 114 5th Ave.**

Continue on 5th Ave. SE across Crain Hwy to **left** on Stewart Ave. to **right** on Baltimore Ave to **left** on Newfield Rd. **STOP at 524 Newfield Rd.**

Continue straight on Newfield Rd to **left** on Meadowbrook Rd to **left** on Magnolia Rd to **left** on Stewart Ave. **STOP at Stewart Ave. and Dogwood Dr.**

Continue on Stewart Ave. to **right** on 5th Ave SE to **right** on Oakwood Rd to **left** on Oakwood Station Rd. to **right** on Jeff Mar Dr. to **left** on Michelle Ln. to **left** on Park S. Dr. follow around to **STOP at 8943 Twin Bridges Dr.**

Continue on Twin Bridges Dr. to **left** on Norfolk Rd. and follow to Ritchie Hwy. S. to **right** on Robinson Rd. to **left** on White Oak Dr. to **right** on Cedar Rd. **STOP at 47 Cedar Rd.**

Continue to **left** on Evergreen to **right** on Old County Rd. to **STOP at Old County Rd. and Water St.**

Continue on Old County Rd to **left** on Round Bay Rd to **right** on 648 S. to **left** on Jones Station Rd. to **right** on Ritchie Hwy. to **left** on College Parkway to **right** on Bale Dale Dr. to **right** on Old Mill Bottom Rd. **STOP at Elwood Ct and Old Mill Bottom Rd.**

Make **U turn** and return to **left** on Bay Dale Dr. to **right** on College Parkway to **left** on Hollywood to **right** into Harbor School.

Unload at 8:20 AM

Return to yard.

Notes:

Bus Route 872 PM
2019/2020

Leave yard 2:30 PM Enter Harbor in 2nd wave

Leave Harbor School **Left** on Hollywood, **right** on College Parkway to **left** on Bay Dale Dr to **right** on Old Mill Bottom Rd. **STOP at Elwood Ct and Old Mill Bottom Rd.**

Continue on Old Mill Bottom make **U turn** to **right** on Bay Dale Dr. to **right** on Rt. 50 west to **left** on Ritchie Hwy N. to **right** on Chautaugua Rd. to **right** on Commanche Rd to **left** on Chocataw Rd. **STOP at Chocataw and Chautauga Rd**

Turn **left** on Chautaugua Rd. to **right** on Ritchie Hwy. to **left** onto 648 after passing Safeway. Continue to **left** on Round Bay to **right** on Old County Rd. **STOP at County Rd. and Water Street**

Continue north on 648 to **left** on Evergreen to **right** on Cedar **STOP 47 Cedar**

Continue to **quick left** on White Oak to **right** on Robinson Rd to **left** on N. Ritchie Hwy. to **left** on Norfolk Rd. continue on Norfolk Rd to **right** on Twin Bridges Rd. **STOP 8943 Twin Bridges Rd.**

Continue on Twin Bridges Rd. around to **right** on Michelle Ln. to **right** on Jeff Mar Dr. turn **left** on Oakwood Station Rd. to **left** on 5th Ave to **right** on N St. continue on N St thru **dog leg** to **left** on 2nd Ave SE **STOP 2nd Ave. and M St**

Turn **left** on M St and continue back to 5th Ave. Turn **right** on 5th Ave **STOP 114 5th Ave. SE**

Continue on 5th Ave. across Crain Hwy. to **left** on Stewart Ave. turn **right** on Baltimore Ave then **left** on Newfield Rd. **STOP 524 Newfield Rd.**

Continue on Newfield to **left** on Meadowbrook Rd to **left** on Magnolia Rd to **left** on Stewart Ave **STOP Stewart Ave. and Dogwood Dr.**

Continue on Stewart Ave to 4th Ave SW to **left** on Crain Hwy to **right** on E Furnace Branch across Ritchie Hwy across Route 10 to **left** on Point Pleasant Rd to **right** on 7th St **STOP 7th St. and Furnace Dr.**

Turn **left** on Furnace Dr. to **left** on Annapolis Dr. to **left** on 7th St. to **right** on Point Pleasant Rd. to **left** on 270 S to **left** on South Meadow Dr. to **right** on Country Club Dr to **right** on Thomas Rd to **STOP 17 Thomas Rd.**

Continue to **left** on 270 S. to **left** on 648 S. to **left** on Mountain Rd. to **left** on Mountain Estate Dr to **U turn** at end of street to return on Mt. Estate Rd. **STOP Mountain Estate Ct.**

Return to Waterford bus yard. **END**

Notes:

Source: AACPS Transportation Office, September 2019

The method by which special needs routes are generated closes the flow of information. The information does not circulate to the transportation office, but is left in the dispatch office with no way of getting this information to the transportation administration. The department's routing software is not used for special education runs and routes.

Recommendation 26:

Improve special education routing by using the available routing software.

The staff in the dispatch office who are currently doing special education routing by hand should receive training on the implementation and usage of the routing software. To accomplish this, the district should:

- provide dispatch staff with training on the routing software;
- develop all special education bus routes using the routing software.
- create a standard operations manual for the design of special education routes; and
- include staff in the AACPS special needs department in reviewing new routes and route adjustments.

The communications process should also be reviewed for streamlining and improvement.

Fiscal Impact:

This recommendation can be implemented with existing resources.

Finding – School Start Time Adjustments

The district has previously explored adjusting school start times to allow high schools to start later but has thus far made only an incremental change. Past efforts stalled over the specifics of potential time changes and the transportation department's estimate of \$8 million in increased costs.

Currently, AACPS high school bell times provide the only consistent daily start and end times in the district. Elementary and middle schools are inconsistent (**Exhibit 3-49**).

Exhibit 3-49
School Start Times by Level

Level	Start – End Times
Elementary	8:10 a.m. - 2:35 p.m.
	8:15 a.m. - 2:40 p.m.
	8:20 a.m. - 2:45 p.m.
	8:25 a.m. - 2:50 p.m.
	8:30 a.m. - 2:55 p.m.
	8:35 a.m. - 3:00 p.m.
	8:45 a.m. - 3:10 p.m.
	8:50 a.m. - 3:15 p.m.
	8:55 a.m. - 3:20 p.m.
	9:00 a.m. - 3:25 p.m.
	9:05 a.m. - 3:30 p.m.
	9:10 a.m. - 3:35 p.m.
	9:15 a.m. - 3:40 p.m.
	9:20 a.m. - 3:45 p.m.
	9:25 a.m. - 3:50 p.m.
9:30 a.m. - 3:55 p.m.	
9:35 a.m. - 4:00 p.m.	
9:45 a.m. - 4:10 p.m.	
Middle	8:10 a.m. - 2:50 p.m.
	8:15 a.m. - 2:55 p.m.
	8:20 a.m. - 3:00 p.m.
	8:25 a.m. - 3:05 p.m.
	8:35 a.m. - 3:15 p.m.
	8:40 a.m. - 3:20 p.m.
	9:00 a.m. - 3:40 p.m.
9:25 a.m. - 4:05 p.m.	
High	7:30 a.m. - 2:18 p.m.

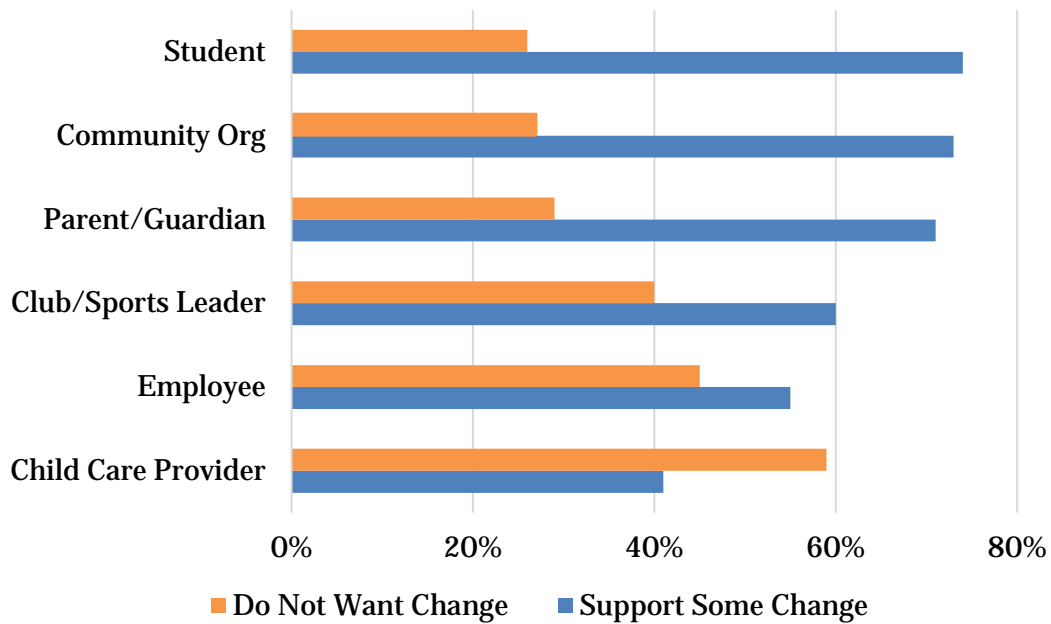
Source: AACPS, August 2019

The consistency in the high school start times was born of an effort that began in 2014 to move toward later secondary school start times. At that time, AACPS had the earliest high school start times in Maryland. Moving them to a 7:30 a.m. start made them the same as some other districts in the state.

In exploring potential changes to school start times, AACPS conducted two online stakeholder surveys, one in 2014 (October-November timeframe) and one in 2016 (February 8-14). In the 2014 survey, a majority of every stakeholder group except day care providers supported some kind of change (**Exhibit 3-50**).²⁴ In discussions with the consulting team, AACPS staff noted that the 2014 survey was more general in nature and more exploratory. It was led by the AACPS Task Force on School Start Times.

²⁴ It should be noted that the n values for most stakeholder groups were small in this survey: Parent/Guardian – 1,496; Employee – 629; Student – 191; Club/Sports Leader – 67; Community Organization Member – 59; Child Care Provider – 17.

**Exhibit 3-50
Support for Various Changes in School Start Times, 2014**



Source: 2014 AACPS Survey

Prior to the 2016 survey, the district held three community meetings in December 2015 and January 2016 to outline specific potential options for new school start times. In that process, the option that was least supported by parents in 2014 became the only option for consideration in the 2016 survey (**Exhibit 3-51**). The 2016 survey generated 14,544 responses.²⁵ A majority of each stakeholder group opposed the specific change proposed (**Exhibit 3-52**).

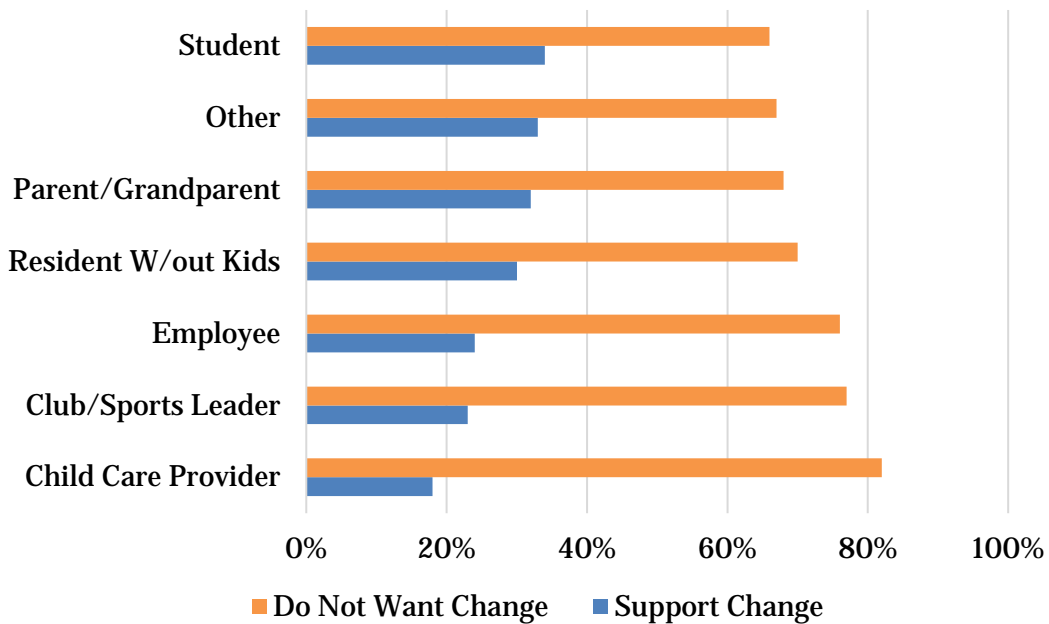
**Exhibit 3-51
Support for Change in School Start Times, 2014**

Level	Start	End
Elementary	7:50 to 9:15 a.m.	2:15 to 3:40 p.m.
Middle	9:30 a.m.	4:10 p.m.
High	8:30 a.m.	3:18 p.m.

Source: 2016 AACPS Survey

²⁵ Parent/Grandparent – 10,857; Employee – 3,314; Student – 2,209; County Resident Without Children – 630; Club/Sports Provider – 558; Child Care Provider – 309; Other – 278.

**Exhibit 3-52
Support for Specific Change in School Start Times, 2014**



Source: 2016 AACPS Survey

Part of the 2016 discussions concerned the cost associated with moving to later start times. Interviews with staff members in the transportation department found that the methodology by which the department estimated the financial impact of the proposed shift was informal. The figure of 124 additional buses needed was derived by asking each specialist to consider the impact in just their own area, without consideration of potential cross-area synergies. Transportation specialists were asked to “reshuffle their cards [the slips of paper on which individual bus runs are recorded]” and to estimate how many more buses they would need. The consulting team could find no evidence that specialists discussed or were provided with guidelines by which to develop an estimate; likewise, the consulting team could find no evidence that the figures submitted by the specialists were compared or vetted. The figures from each specialist were summed and multiplied by a per bus cost figure, which resulted in an additional \$8 million per year as the estimated fiscal impact. Staff gave the consulting team little indication that the \$8 million was rigorously derived and no documentation regarding the estimating methodology was found during this review. It is almost certain that the \$8 million figure was developed assuming that the current operations were already efficient.

The consulting team undertook a survey of parents as part of this project and a portion of the questions asked were concerned with school start times. Of the parents with students either in high school or in one of the elementary schools with changed school start times in 2019-20, 42 percent of the high school parents were somewhat or completely unsatisfied with the high school start time; 53 percent of elementary parents were likewise unsatisfied with their new start times.

Among those high school parents with either a junior or senior, 88 percent indicated that the change from a 7:17 a.m. to 7:30 a.m. start time was either “not disruptive” or they did not notice a difference. Only five percent of junior/senior parents noted the 13-minute time change was “very disruptive.” When asked to detail benefits/negatives from the 13-minute time change, the largest proportion of parents (34%) saw no changes with their high school student. Beyond that, parents’ positive observations generally outpaced negative ones (**Exhibit 3-53**).

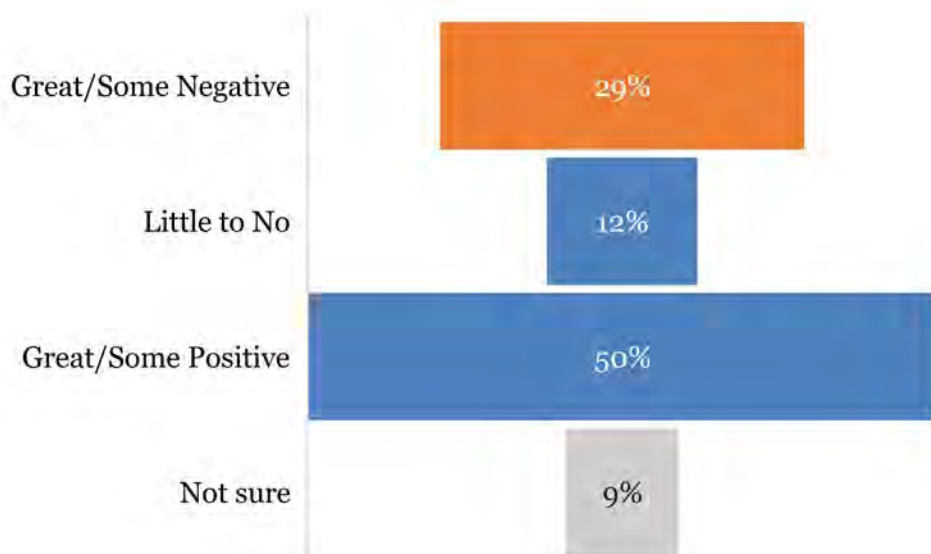
Exhibit 3-53
High School Parents' Observations of Impacts on Their Students

Statement	...increased	...decreased
Student's sleep has	16%	-
High school attendance has	4%	0%
Homework completion has	5%	2%
Student academic success has	5%	2%
Student mental and emotional health has	9%	1%

Source: Prismatic survey results, October 2019

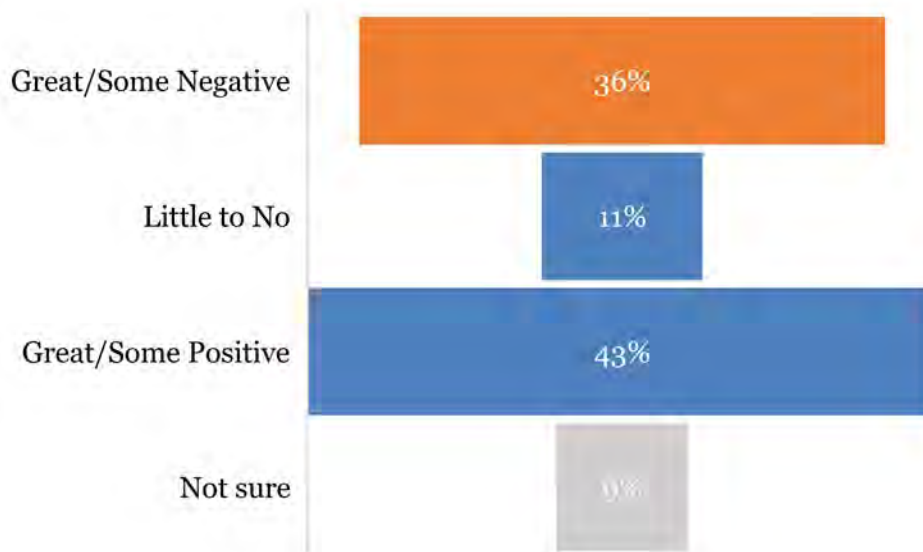
When asked to consider the impact on their family from potential later high school start times, higher proportions of high school parents saw positive impacts from either an 8:00 a.m. start or a start between 8:00 and 8:30 a.m. than saw negative impacts (**Exhibits 3-54 and 3-55**).

Exhibit 3-54
High School Parents' Estimate of Impact If AACPS Changed to 8:00 a.m. High School Start Time



Source: Prismatic survey results, October 2019

Exhibit 3-55
High School Parents' Estimate of Impact If AACPS Changed to Between 8:00 and 8:30 a.m. High School Start Time



Source: Prismatic survey results, October 2019

The AACPS School Start Time Task Force has previously reviewed the literature associated with later start times for secondary students. In what should likely be considered the final word on the subject, the American Academy of Pediatrics has recommended that middle and high schools not start before 8:30 a.m. The Academy made this recommendation 2014. As noted in their policy statement, “the evidence strongly implicates earlier school start times...as a key modifiable contributor to insufficient sleep.”²⁶

School bell times are a meaningful factor regarding transportation costs. A given bus’s ability to perform work is related to the amount of time allotted to do that work. Bell times define travel time between school tiers and acts as a constraint on bus efficiency. Adding to the complexity is how AACPS pays its bus contractors. Most bus contractors are paid:

- ▶ an annual fixed fee that is intended to be for materials, equipment, overhead, taxes, profit and any other related costs – in the newer bus contract, this is a primary and secondary bid price per day;
- ▶ hourly payments for drivers and aides, with an assumption that drivers and aides (if used) are paid for a minimum of six hours per operational day;
- ▶ maintenance payments paid per mile, with one rate for bus mileage up to 55 miles per day and another rate for more than 55 miles per day, and with increasing adjustments annually throughout the life of the contract;
- ▶ fuel payments based on the number of miles driven, with an assumption of 7.5 miles per gallon and with a minimum per bus of 55 miles per day; and

²⁶ <https://pediatrics.aappublications.org/content/pediatrics/early/2014/08/19/peds.2014-1697.full.pdf>

- ▶ hourly payments for up to two hours of layover time per day.

Thus, to the extent that AACPS is not utilizing a particular contractor bus for at least six hours and 55 miles per day, it is paying for unused capacity. These contract terms also indicate that, past six hours or 55 miles per day, the district is only paying for marginal costs: hourly driver/aide, mileage, and fuel costs.

Stakeholder concerns, stakeholder preferences, and transportation costs notwithstanding, the consulting team recognizes that the decision to alter school start times is an educational, board-level decision, not one to be driven by the transportation department. Choosing to change school start times is one of the few decisions a school board can make that can impact every stakeholder in the district. Depending on the changes made, a district may have to rewrite all its collective bargaining agreements and change the work schedules of all groups of employees.

Recommendation 27:

Evaluate two routing scenarios:

- ▶ **Scenario One: Move all elementary schools to an 8:00 a.m. start and all middle/high schools to a 9:00 a.m. start.**
- ▶ **Scenario Two: Move elementary schools to a 7:30 a.m. start, high schools to an 8:15 a.m. start, and middle schools to a 9:00 a.m. start.**

The consulting team evaluated both of these scenarios with the data currently available. Using routing optimization software, the consulting team found that either scenario could be accomplished with less or similar numbers of bus runs (**Exhibit 3-56**).

**Exhibit 3-56
Routing Scenario Analysis**

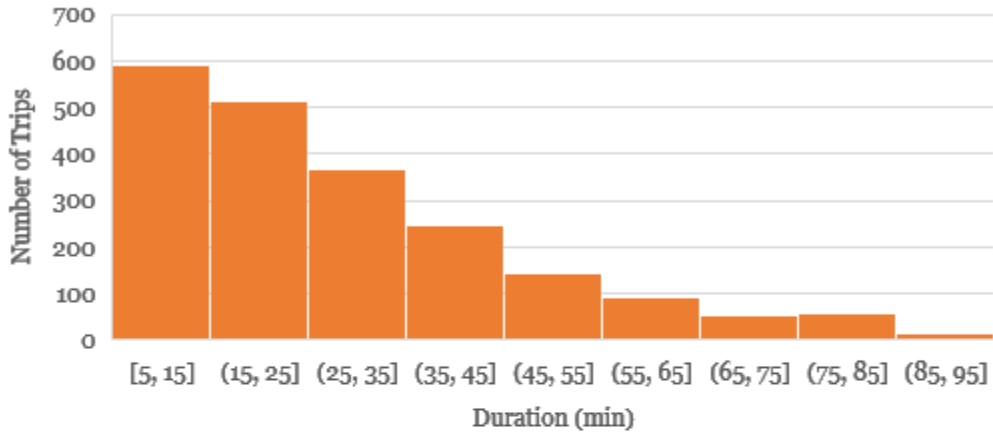
	Current	Scenario 1	Scenario 2
# of Runs	563	554	560
# of Tiers	3	2	3
Average # of Students per Bus	33	50	39
Total Morning Trip Mileage, miles	16.1k	10.4k	14.5k

Source: Prismatic, November 2019

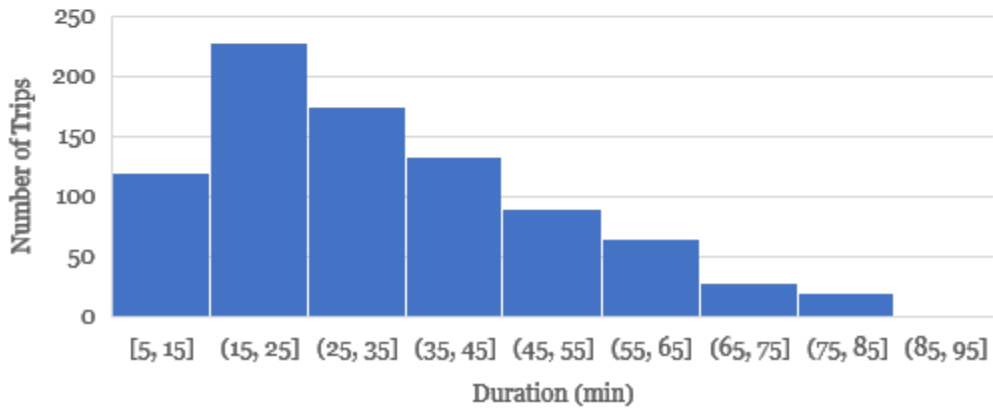
While these results may at first seem counterintuitive, they are possible because of the current routing inefficiencies in the system and the generally short ride times/mileage of many existing runs. **Exhibits 3-57** and **3-58** illustrate this by comparing the current time and mileage bands with those that would be created in Scenario One.

**Exhibit 3-57
Comparison of Trip Durations in Minutes**

Current Trips



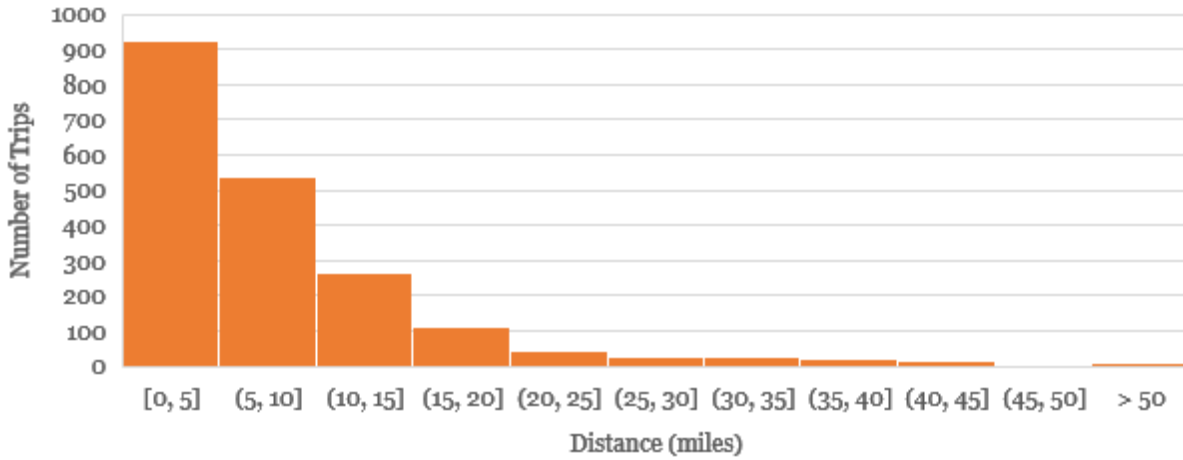
Proposed Trips



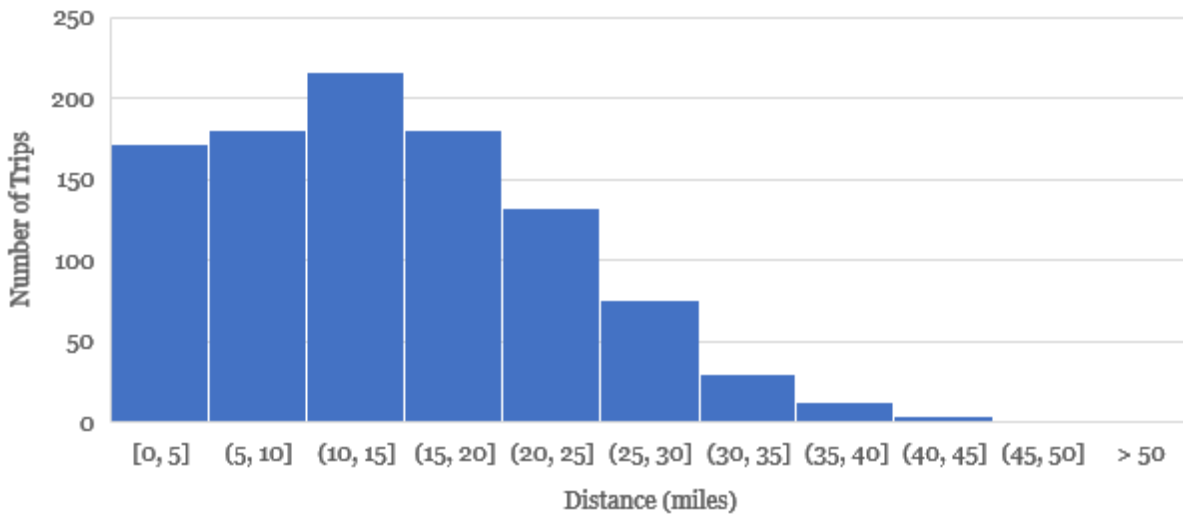
Source: Prismatic, November 2019

**Exhibit 3-58
Comparison of Trip Durations in Miles**

Current Trips



Proposed Trips



Source: Prismatic, November 2019

The assumptions made in developing these scenarios were:

- 55,000 students are included in the analysis (special education students requiring special transportation are excluded), evenly split between elementary and secondary students;
- student attending school is the school of the assigned trip;
- all students are assigned to the existing stops; no new stops are introduced;
- bus capacity is 60 for all trips; and
- students are evenly distributed on all current trip stops of the trips that go to the assigned school.

The consulting team used available data in completing the scenario evaluations but was hampered by a lack of occupancy rate data and limited bus count data. At the time of the onsite work, the transportation department was not assigning students to specific buses. Because of that, the district had no data regarding the rate at which eligible students actually occupy bus seats on a regular basis. It is typical for a district to assign more students to a bus than there are seats, because some percentage of students will not ride. Some families find it more convenient to take their student to school by car. High school students often prefer to ride with friends to school. Knowing the number of students assigned to a bus and comparing that number to the average number riding would assist in understanding the AACPS occupancy rates and would help to refine the scenario analysis. The consulting team recognizes the lack of occupancy data as a shortcoming of the analysis; however, it is likely that any knowledge gained from the occupancy data would be on the side of further efficiencies, which could then be used to reduce the cost of any new routing scheme.

The limited bus count data were a particular challenge in completing the evaluation. Although the transportation department was eventually able to provide bus count data by run, it only included totals, not by bus stop. Knowing that a bus run only picked up an average of 25 students per day indicates that the efficiency of the run could be improved, since the bus is less than half full. Not knowing where students boarded that bus (at bus stop X versus bus stop Y) leaves open the question of whether there are currently unused bus stops that could be eliminated. The consulting team recognizes this as a substantial shortcoming of the analysis but also believes that many of the discoveries possible from a full analysis that includes bus stop counts would be on the side of further efficiencies, which could then be used to reduce the cost of any new routing scheme.

Fiscal Impact

The specific fiscal impact would depend on the scenario selected. However, the consulting team believes a number of new routing scenarios could be implemented at minimal new cost to the district.

Chapter 4 – Conclusions and Recommendations



Chapter 4 – Conclusions and Recommendations

This chapter provides Prismatic’s commendations and recommendations for improvements in the transportation operation of Anne Arundel County Public Schools (AACPS). It includes these sections:

- Conclusions
- RFP Crosswalk
- Commendations
- Recommendations and Cost Summary

Conclusions

The AACPS transportation operation struggles with a lack of procedural guidelines, legacy ways of work, and limited use of technology. On top of this, the district operates under state rules that limit transportation flexibility and the traditional, home-grown system of bus contractors that is typical for Maryland school districts. All of these factors has contributed to demonstrable inefficiency and pockets of ineffectiveness in the transportation department

Of considerable importance to a number of stakeholders for this project was Prismatic’s recommendations regarding school start times and subsequent bus tiering options and costs. In short, Prismatic recognizes that the determination of school start times is an educational and leadership decision, not a transportation decision. Choosing to change school start times is one of the few decisions a school board can make that can impact every stakeholder in the district. Depending on the changes made, a district may have to rewrite all its collective bargaining agreements and change the work schedules of all groups of employees. Therefore, it is not a decision to be undertaken lightly.

While districts may feel it important to take the pulse of stakeholders on various issues, at some point a district should give the recommendations of experts the consideration they deserve. In the case of school start times, the American Academy of Pediatrics has recommended that middle and high schools not start before 8:30 a.m. The Academy made this recommendation 2014. As noted in their policy statement, “**the evidence strongly implicates earlier school start times...**as a key modifiable contributor to insufficient sleep.”¹ In this area, the word of the experts is clear.

Since this project began, California passed legislation mandating that middle schools begin no earlier than 8:00 a.m. and high schools no earlier than 8:30 a.m., with implementation required no later than the 2022-23 school year.² While perhaps the tipping point in the movement, California is not the first place where secondary schools start later. Indeed, it used to be the norm. In the 1950s and 1960s, most American schools started between 8:30 a.m. and 9:00 a.m. ³ It is not, therefore, impossible to implement later school start times. In reviewing the AACPS transportation operation, Prismatic has concluded that it would be

¹ <https://pediatrics.aappublications.org/content/pediatrics/early/2014/08/19/peds.2014-1697.full.pdf>

² <https://calmatters.org/education/k-12-education/2019/10/how-school-start-time-law-will-work-in-california/>

³ <http://www.center4research.org/early-morning-classes-sleepy-students-risky-behaviors/>

possible to move to later secondary school start times. If the department and the district work in concert to implement the efficiency recommendations contained in this report, Prismatic estimates that a move to later secondary school start times could be completed at far less than the previous district estimate of \$8 million annually.

RFP Crosswalk

As with all projects the consulting team undertakes, a number of areas within transportation were reviewed extensively but ultimately no recommendation was made. This was because either because the data were inconclusive, there were insufficient data upon which to base a recommendation, or the area was operating already at an average level. Including only the highest priorities for improvement results in a report of manageable length and helps keep district leaders and stakeholders focused on what is most important in order to realize gains in efficiency and effectiveness.

Thus, while all areas within the district’s RFP were reviewed, specific recommendations were not made for each. **Exhibit 4-1** provides a crosswalk between the RFP and Prismatic’s findings.

**Exhibit 4-1
AACPS RFP and Prismatic Findings Crosswalk**

RFP Element	Prismatic Findings Crosswalk
<i>The effectiveness and efficient use of the current AACPS transportation program; including organizational structures, policies and procedures, contracted services, computerization automation and software levels utilization, communication systems, facilities, and equipment.</i>	Commendations 3 and 5 All recommendations touched on these areas
<i>Current methodologies utilized for daily school bus routing, bus size relative to expected ridership, special education routes, non-public school routes, field trips, athletic trips, and other co-curricular activities with recommendations for developing more efficient and effective routing procedures, bus routes, and compressing delivery windows/bus arrival times.</i>	Commendations 2 and 4 Recommendations 3, 22, 23, 24, 25, 26, and 27
<i>Current operational and capital costs with identification of potential fiscal savings opportunities or recommended enhancements, while maintaining optimal and safe public school transportation services.</i>	Fiscal savings opportunities identified in Recommendations 1, 16, and 27 with likely efficiencies identified in other recommendations
<i>A review of, and recommended enhancements for, AACPS owned or leased facilities used for transportation administration, operations, training, and bus storage, fueling, and repairs.</i>	Recommendations 20 and 21
<i>Current and recommended automation and data management tools utilized for bus routing, contractor payments, reporting requirements, data retention requirements, as well as the use of data to measure program efficacy.</i>	Recommendations 8, 11, 12, 13, and 17

<i>Staffing (professional, support, contractual), including organizational structures, resources, qualifications, utilization, compensation, and training/professional development needs.</i>	Commendation 1 Recommendations 2, 3, 4, 5, and 7
<i>Current practices for recruiting, training, and compensating both AACPS-employed and contractor-employed school bus drivers and bus aids with recommendations for addressing the current shortage of qualified public school bus drivers and bus aids.</i>	Recommendations 5 and 15
<i>Procedures used, and opportunities for, enhanced communications with schools, contractors, bus drivers/aids, staff, parents, students, and other stakeholders regarding transportation services.</i>	Recommendation 11
<i>Assist the AACPS transportation department with optimizing the utilization, data population, and output generation of its computerized/automated transportation routing and accounts payable systems(s).</i>	Commendation 6 Recommendations 14, 16, 23, 24, 25, and 26
<i>Recommendations and costs associated with changes to school start and dismissal time scenarios; essentially to compress said times to allow for a later start for those schools with the earliest start times and an earlier completion for those elementary and middle schools with the latest dismissal times. Develop, analyze, and cost out various optimization models to assist AACPS in investigating compressing school start and dismissal times. Determine the impact and costs of the various scenarios on the AACPS transportation department and associated school operations. Also, examine opportunities to cost effectively shorten the duration of the longest bus route run times where possible and practicable.</i>	Recommendation 27
<i>Comparison of AACPS transportation program(s) and expenditure data with similar Maryland public school districts, including cost per pupil transported and per mile, as well as professional, support, and bus driver/aid (AACPS and contracted) salary schedules.</i>	Provided in Appendix A Used in findings and analyses, as needed

Commendations

Prismatic found six areas of commendable activity in the transportation department:

- **Driver Training** – AACPS offers more training to bus drivers and bus aides than is legally required.
- **Athletic Trips Process** – The management of athletic trips is efficient and effective.
- **Outdoor Education Center Transportation** – The provision of co-curricular transportation to Arlington Echo affords district students a valuable education opportunity.
- **Walk Zones** – Policies for walk areas and maximum walking distance to a bus stop enables the public to know what AACPS expects of their students.

- ▶ **Vehicle Maintenance** – AACPS uses Fleetvision Maintenance Management software to manage the fleet Preventive Maintenance (PM) and vehicle repair program.
- ▶ **Contractor Pay System** – The new contractor payment system is not only much more efficient in its processing, but also allows for both new contract routes and changes to be entered with a decrease of data entry.

Recommendations

Prismatic made 27 recommendations for improvements in the transportation department. In completing root cause analyses for this project, the consulting team ultimately found two primary underlying themes for these recommendations. In order for AACPS transportation services to improve, it should focus on:

- ▶ improving processes – the department should both document existing practices and break through a tendency to rely upon a “we’ve always done it this way” mentality; and
- ▶ improving technology use – the district should make processes and procedures more transparent and consistent, including by reducing the mystery around various elements in contractor pay.

Exhibit 4-2 provides a summary of Prismatic’s recommendations and associated costs or savings. Where it is expected that implementation will require a cost, costs were quantified using an aggressive method. Where savings are expected, they were quantified using a conservative method. It is likely that the actual savings could be higher for several recommendations. For recommendations noted as being “no cost”, the consulting team believes they could be implemented using existing resources, meaning a small dollar cost or some amount of work hours from existing staff.

**Exhibit 4-2
Recommendation Cost Summary**

Rec.	Recommendation	Annual Savings/ (Cost)	Other Anticipated Benefits
3-1	Request changes in COMAR regarding alternative vehicles that can be used to transport students.	No/Low Cost	<ul style="list-style-type: none"> • Reduction in overall transportation spending • Improved student transportation safety
3-2	Develop and implement a cross-training policy for the department.	No/Low Cost	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department

Rec.	Recommendation	Annual Savings/ (Cost)	Other Anticipated Benefits
3-3	<p>Improve the organization the organizational structure of the department:</p> <ul style="list-style-type: none"> ➤ make hiring AACPS bus drivers/aides the responsibility of the administrative specialist in the central transportation department; ➤ upgrade the lead driver position to dispatch manager; ➤ upgrade the current dispatch manager position to operations manager; ➤ increase the number of GIS/routing/technical staff by three; and ➤ create a GIS administrator position and move the current GIS specialist to this position. 	(\$383,100)	<ul style="list-style-type: none"> • Improved utilization of routing software • More efficient and effective routing
3-4	Provide training so that all interested bus mechanics have the opportunity to achieve ASE certification.	(\$5,400)	<ul style="list-style-type: none"> • Improved productivity of the maintenance staff
3-5	Collaborate with the recruiting and staffing office of AACPS human resources to develop a strategic recruitment plan specifically to address needs of both the district and bus contractors to attract applicants for bus driver and aide positions.	No/Low Cost	<ul style="list-style-type: none"> • Reduction in position vacancies
3-6	Review and revise job descriptions to ensure they accurately reflect the expected work and actual job tasks of each employee in the transportation department.	No/Low Cost	<ul style="list-style-type: none"> • Improved departmental functioning
3-7	Write “pay rules” or “salary placement rules” setting criteria for uniformity in placement on the steps in the Grade 5 and Grade 9 salary schedule.	No/Low Cost	<ul style="list-style-type: none"> • Improved compliance with appropriate rules, regulations, and laws • Improved employee satisfaction
3-8	Develop quarterly and annual assessments of the department’s performance measures.	No/Low Cost	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-9	Develop a transportation department SOP manual.	No/Low Cost	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department

Rec.	Recommendation	Annual Savings/ (Cost)	Other Anticipated Benefits
3-10	Identify and map major transportation department processes, analyze the maps, and redesign workflows to make work time more efficient and effective and to eliminate redundancy and repetition.	No/Low Cost	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-11	Adopt two online systems: <ul style="list-style-type: none"> ➤ one to receive community input that allows tracking and compilation of requests, as well as tracking and reporting on department responses; and ➤ one that allows the transportation department to communicate timely about operational issues as they occur. 	First system – (\$10,800 to \$80,000) Second system – (\$36,000 to \$79,200)	<ul style="list-style-type: none"> • Improved customer service • Improved communication
3-12	Research options for digitizing current paper files in the transportation department.	Depends on specifics of implementation	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-13	Create an automated workflow for “Transportation Action Requests.”	No/Low Cost	<ul style="list-style-type: none"> • Improved consistency
3-14	Amend the purchasing approval-payment cycle during the next major software upgrade.	Cannot be determined with existing information	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-15	Include in the next bus contract with contractors a requirement that the minimum hourly wage they pay annually to each of their individual drivers and aides be increased based on the Baltimore/Washington average yearly inflation rate from the previous year.	No/Low Cost	<ul style="list-style-type: none"> • Reduced employee turnover
3-16	Enforce all provisions of the School Bus Transportation Contract through better contractor oversight.	\$288,980	<ul style="list-style-type: none"> • Reduced transportation costs
3-17	Offer all contractors an incentive to adopt GPS prior to the end of their established contracts.	(\$100,000)	<ul style="list-style-type: none"> • Improved contractor performance
3-18	Require student bus counts at least weekly from all contractors, routinely audit a 10 percent sample, and use the data to consolidate bus routes.	\$2.48 million	<ul style="list-style-type: none"> • Improved transportation operations
3-19	Establish a single clear, step-by-step procedure for procurement, scheduling, payment, and completion of the field trip request process.	No/Low Cost	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department

Rec.	Recommendation	Annual Savings/ (Cost)	Other Anticipated Benefits
3-20	<p>Prepare, schedule, fund, and execute an AACPS Facility Master Plan Element for Student Transportation Facilities. The plan element will include, but not be limited to:</p> <ul style="list-style-type: none"> ➤ identification of more centrally located bus maintenance, repair, fueling, and bus parking sites for possible purchase by AACPS; and ➤ broad programmatic delineation of key bus transportation functions for routine maintenance, all types of repairs, fueling, tool and parts storage, bus washing, bus parking, etc. 	<p>(\$37.5 million) One-time cost, subject to refinement based on strategic plan</p>	<ul style="list-style-type: none"> • Improved transportation operations
3-21	<p>Include in the transportation facilities master planning effort a new transportation office for staff currently in the Millersville Building.</p>	<p>Included in 3-20 Rec.</p>	<ul style="list-style-type: none"> • Improved transportation operations
3-22	<p>Establish a consistent process for route planning for the upcoming school year.</p>	<p>No/Low Cost</p>	<ul style="list-style-type: none"> • Improved consistency
3-23	<p>Develop written and communicated regulations and/or guidelines for bus routing procedures that include the effective seating capacity of bus types by grade levels, permitted combinations of grades on runs, attendance factors used in planning, and maximum ride times.</p>	<p>No/Low Cost</p>	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-24	<p>Adopt routing methodology that includes specific guidelines to support effective and efficient routing.</p>	<p>No/Low Cost</p>	<ul style="list-style-type: none"> • Improved routing efficiencies
3-25	<p>Assign students to stops, buses, and runs, then create student reports by bus to be given to the drivers.</p>	<p>No/Low Cost</p>	<ul style="list-style-type: none"> • Improved routing efficiencies • Improve student safety
3-26	<p>Improve special education routing by using the available routing software.</p>	<p>No/Low Cost</p>	<ul style="list-style-type: none"> • Improved effectiveness and efficiency of transportation department
3-27	<p>Evaluate two routing scenarios.</p>	<p>Potentially No Cost</p>	<ul style="list-style-type: none"> • Secondary school start times in accord with best practices.

Appendices



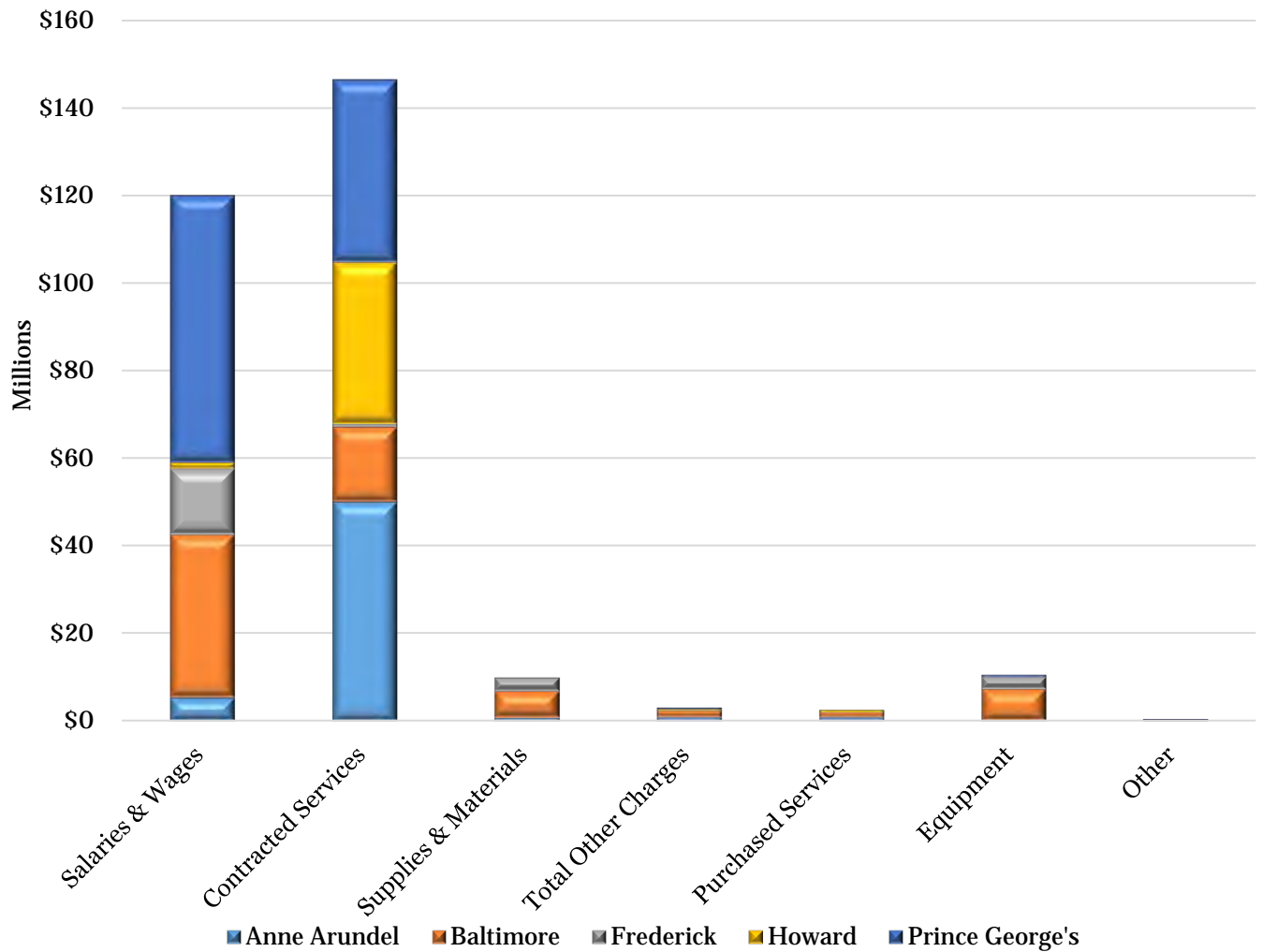
A. Peer Comparisons

Exhibit A-1
Expenditures for Student Transportation Services Table, 2017-18

Expenditure Category	Anne Arundel	Baltimore	Frederick	Howard	Prince George's	Total State
Total Transportation Services	\$56,750,072	\$69,316,982	\$21,666,212	\$39,011,564	\$103,469,529	\$637,277,781
Salaries & Wages	\$5,291,325	\$37,182,507	\$15,101,598	\$1,458,552	\$60,989,050	\$229,945,477
Contracted Services	\$49,878,418	\$17,181,129	\$700,912	\$37,001,643	\$41,583,115	\$341,083,815
Supplies & Materials	\$690,067	\$6,156,888	\$3,056,855	\$32,555	\$27,824	\$24,600,141
Total Other Charges	\$882,787	\$1,490,329	\$30,591	\$518,814	\$275,617	\$12,439,338
Purchased Services	\$881,538	\$1,215,328	\$6,143	\$518,326	\$0	\$8,160,435
Equipment	\$7,475	\$7,306,129	\$2,776,257	\$0	\$593,922	\$29,446,502
Other	\$1,249	\$275,001	\$24,447	\$488	\$275,617	\$3,645,504

Source: MD DOE, Financial Data

**Exhibit A-2
Expenditures for Student Transportation Services Graph, 2017-18**



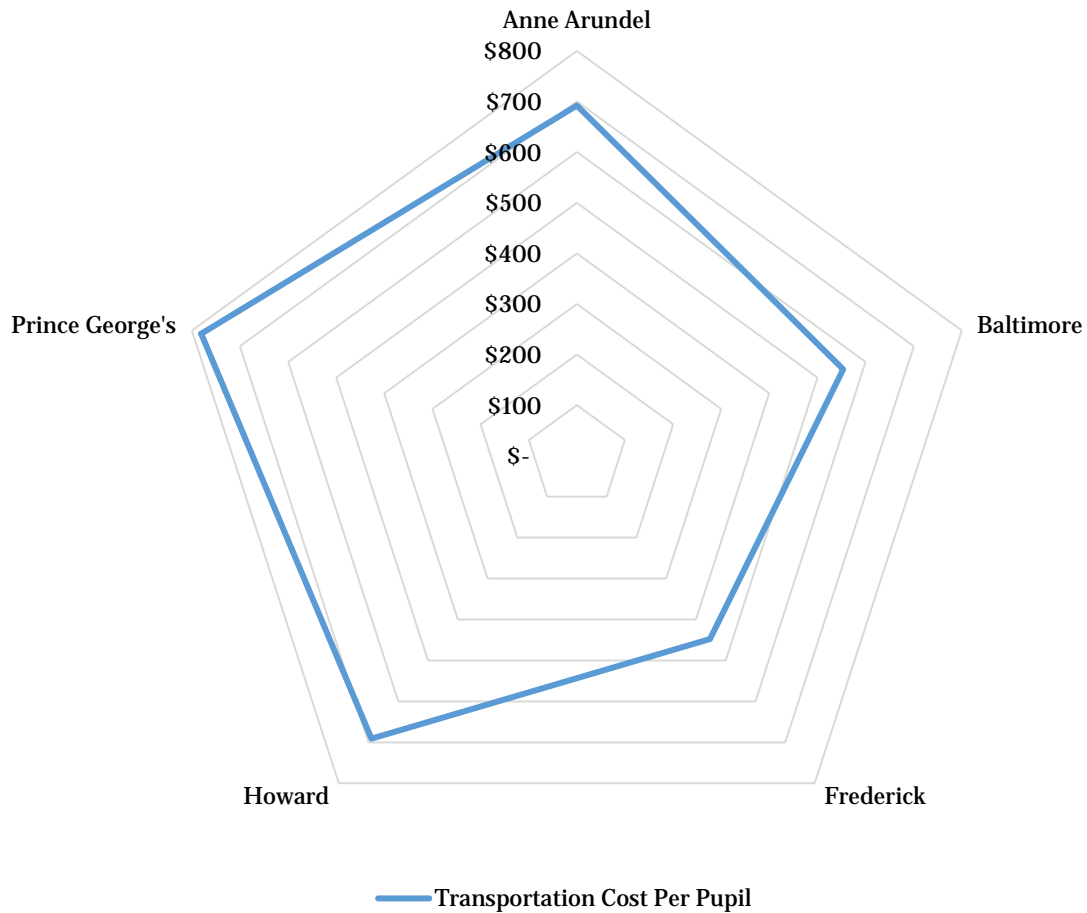
Source: MD DOE, Financial Data

**Exhibit A-3
Cost per Pupil Belonging¹
Current Expense Fund Table – 2017-18**

Entity	Grand Total	Total	Regular Programs	Transportation
Anne Arundel	\$14,651	\$13,648	\$12,200	\$692
Baltimore	\$14,388	\$13,880	\$12,562	\$553
Frederick	\$13,671	\$12,682	\$11,493	\$448
Howard	\$16,179	\$15,449	\$13,783	\$691
Prince George's	\$15,534	\$14,850	\$13,234	\$781
State Average	\$15,580	\$14,484	\$12,966	\$688

Source: MD DOE, Financial Data

**Exhibit A-4
Comparison of Transportation Cost Per Pupil – 2017-18**



Source: MD DOE, Financial Data

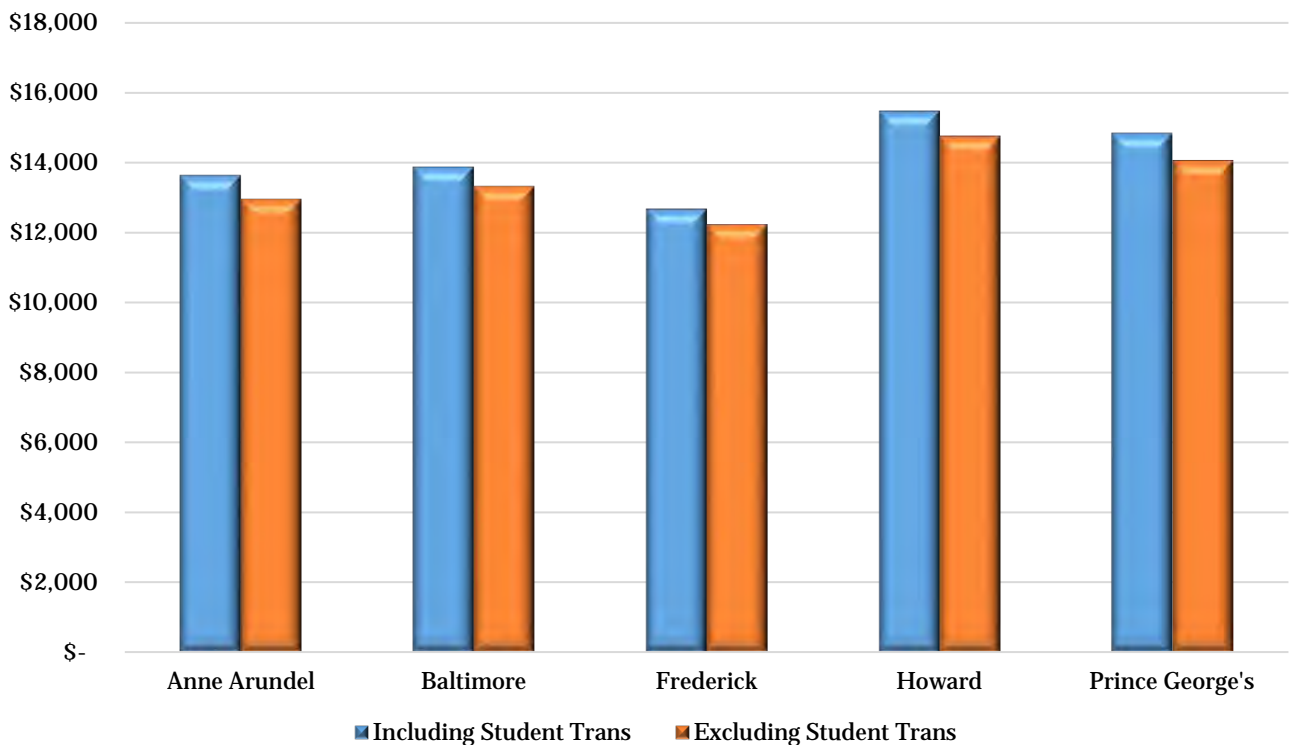
¹ Half-time prekindergarten pupils are expressed in full-time equivalents in arriving at per pupil costs.

Exhibit A-5
Cost per Pupil Belonging²
Current Expenses with Share of Teachers' Retirement Table – 2017-18

Entity	Including Student Transportation		Excluding Student Transportation	
	Including State Share of Teacher' Retirement	Excluding State Share of Teachers' Retirement	Including State Share of Teacher' Retirement	Excluding State Share of Teachers' Retirement
Anne Arundel	\$13,648	\$12,892	\$12,955	\$12,200
Baltimore	\$13,880	\$13,116	\$13,327	\$12,562
Frederick	\$12,682	\$11,941	\$12,234	\$11,493
Howard	\$15,449	\$14,474	\$14,757	\$13,783
Prince George's	\$14,850	\$14,014	\$14,070	\$13,234
State Average	\$14,484	\$13,654	\$13,797	\$12,966

Source: MD DOE, Financial Data

Exhibit A-6
Cost per Pupil Belonging³
Including and Excluding Share of Teachers' Retirement – 2017-18



Source: MD DOE, Financial Data

² Half-time prekindergarten pupils are expressed in full-time equivalents in arriving at per pupil costs.

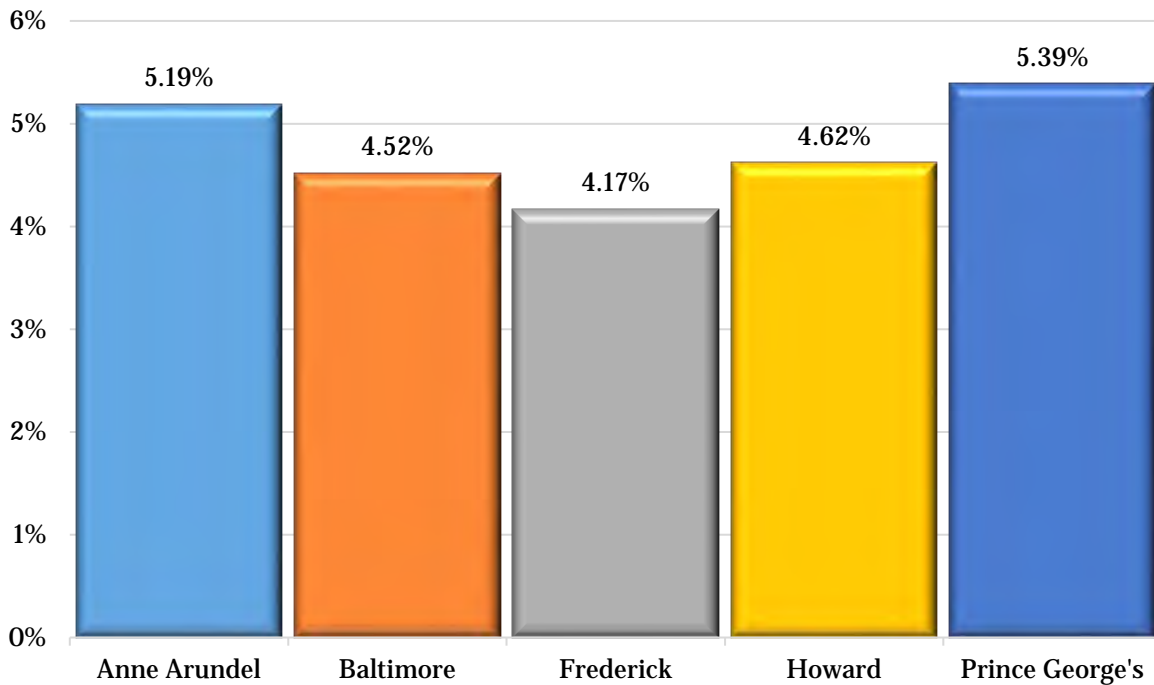
³ Half-time prekindergarten pupils are expressed in full-time equivalents in arriving at per pupil costs.

Exhibit A-7
Percent Distribution of Current Expenses by Category⁴ Table – 2017-18

Entity	Pupil Transportation	Capital Outlay
Anne Arundel	5.19%	0.39%
Baltimore	4.52%	0.26%
Frederick	4.17%	0.33%
Howard	4.62%	0.10%
Prince George's	5.39%	0.01%
State Average	5.09%	0.48%

Source: MD DOE, Financial Data

Exhibit A-8
Percent Distribution of Current Expenses by Category⁵ Chart – 2017-18

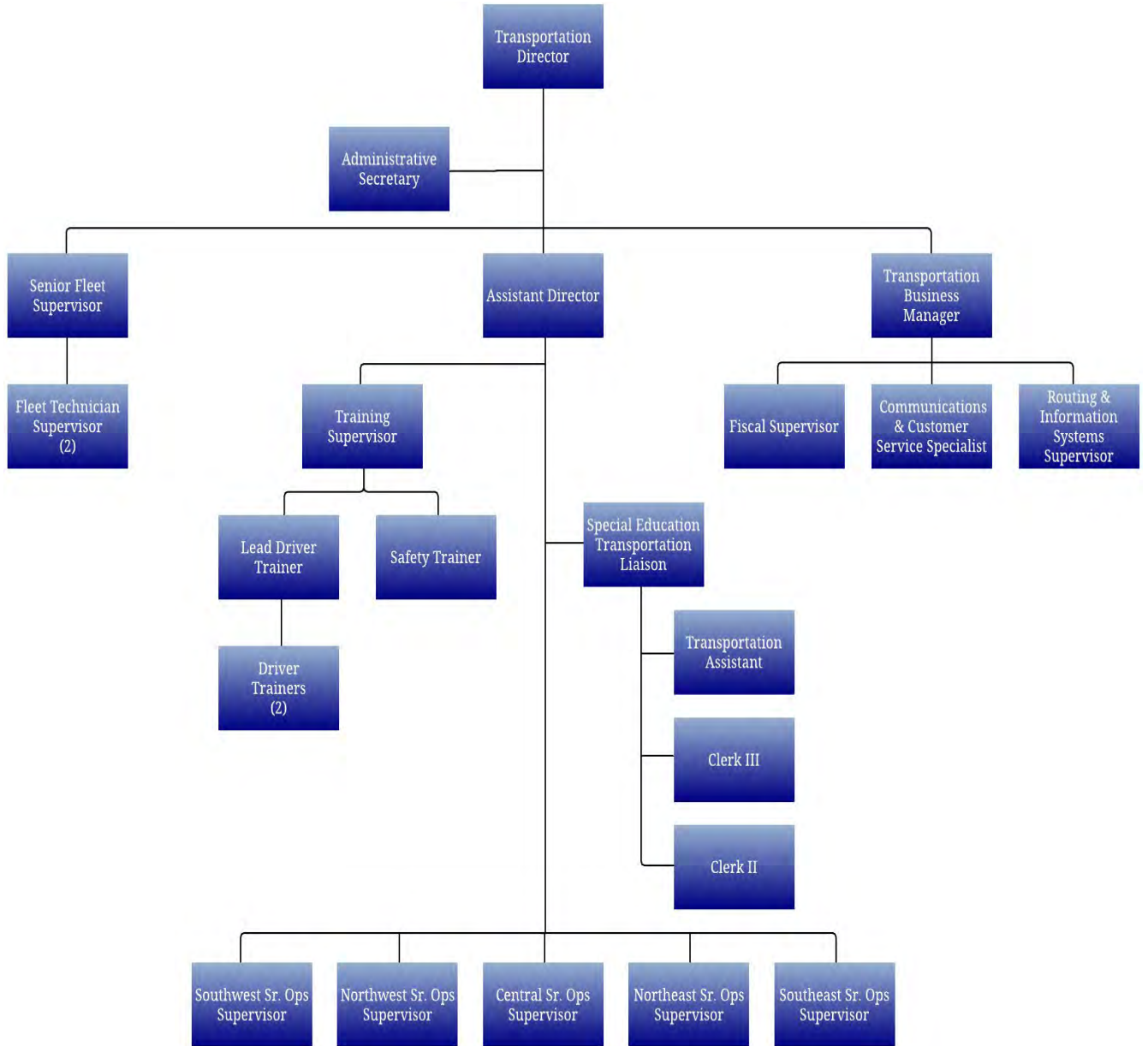


Source: MD DOE, Financial Data

⁴ Expenditures include equipment and outgoing transfers reported in each category. Percentages may not equal 100% due to rounding.

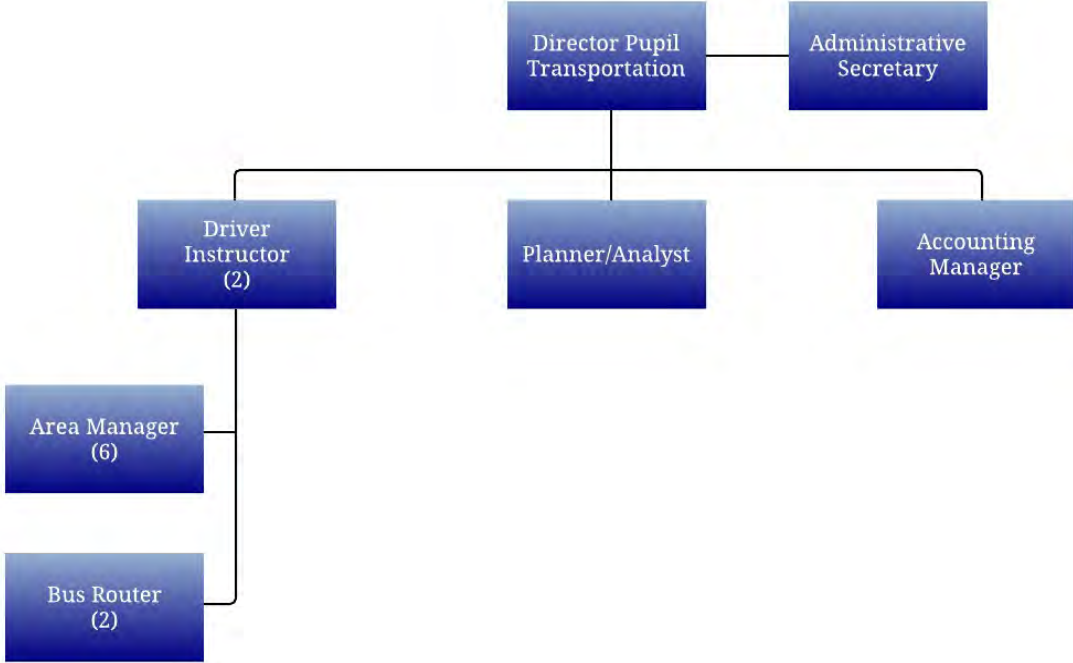
⁵ Expenditures include equipment and outgoing transfers reported in each category. Percentages may not equal 100% due to rounding.

**Exhibit A-9
Baltimore Organization Chart**



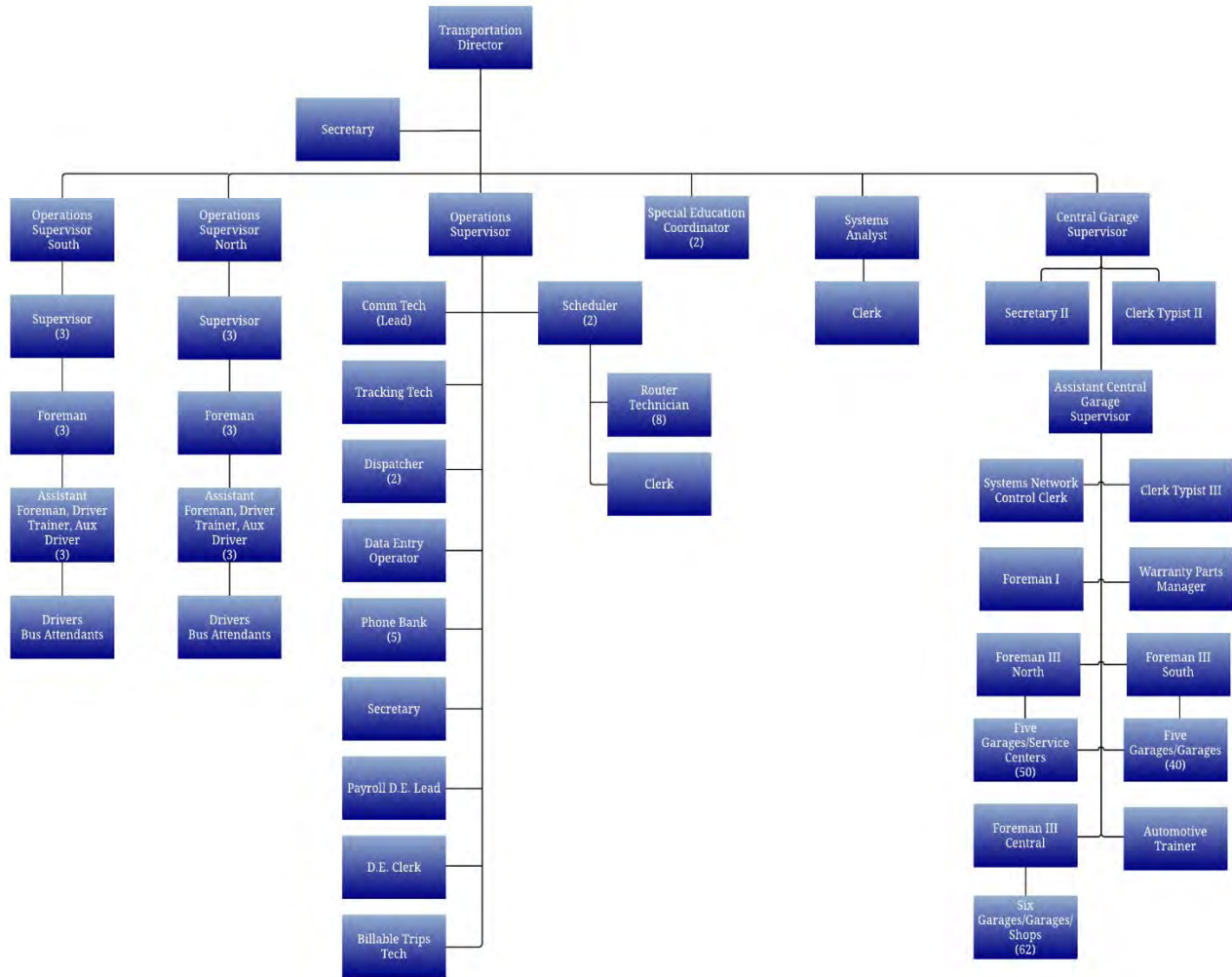
Source: Prismatic, October 2019

**Exhibit A-10
Howard Organization Chart**



Source: Prismatic, October 2019

Exhibit A-11 Prince George's Organization Chart



Source: Prismatic, October 2019

Frederick did not provide an organizational chart for their transportation department. Rather they provided us with a list of their positions (**Exhibit A-12**).

Exhibit A-12
Frederick Transportation Organization List

- 1 Director of Transportation
- 6 Transportation Managers (2 of the 6 are special Needs)
- 1 Senior Routing Specialist
- 1 Transportation Specialist
- 2 Field Trip Secretaries
- 4 Routers (2 Reg/2 Special Needs)
- 1 Payroll Specialist
- 1 Office Secretary
- 2 Dispatchers
- 1 Fleet Manager
- 1 Shop Foreman
- 1 Lead Mechanic
- 1 Parts Lead
- 2 Parts Specialists
- 12 Mechanics
- 1 Shop Support
- 2 Trainers

Appendix B – School Observations (n = 29)

1. Timing Observations

Statement	Average
How many buses arrived 10+ minutes prior to school start?	84%
How many buses arrived 0-10 minutes prior to school start?	18%
How many buses arrived after the start of school?	3%
How many buses did you observe in total?	23 (per site)
How many buses looked more than half empty?	44%
How many buses looked overly full?	0%

2. Operational Observations

Statement	1 – Yes, totally good	2 – Partly good, partly bad	3 – No, it's a problem	0 – Did not observe
Bus, car rider, and pedestrian traffic flows are relatively separated from each other.	72%	24%	3%	0%
Site circulation at peak unloading times acceptable, without vehicle or pedestrian conflicts.	62%	28%	7%	3%
Adults from the school provide visible oversight of the bus unloading and entry to school.	90%	10%	0%	0%
Bus traffic is separated from other vehicular traffic at entrance, exit, and unload points.	76%	21%	3%	0%
Buses are relatively clean on the exterior.	89%	11%	0%	0%
Buses do not have any obvious mechanical deficiencies.	79%	17%	0%	3%
Bus drop off zones are clearly designated.	76%	17%	3%	3%
Parent drop-off and pick-up areas are clearly designated.	79%	14%	7%	0%
Buses do not have to back up to turn or park.	90%	10%	0%	0%
Buses are not parked in double rows.	89%	4%	7%	0%
Procedures restrict other vehicles from access to the bus-loading zone during loading/unloading.	82%	11%	0%	7%

3. Did you observe any unsafe bus operations? If yes, describe.

- *Buses tend to want to leave even with students in the crosswalk area.*
- *One bus was pulling out as students were unloading.*
- *2 drivers were not wearing seat belts, 1 driver was not performing their emergency evacuation correctly - driver at rear door.*
- *4 drivers did not wear seatbelts. Buses were cautious in loading area but left the area faster than needed.*
- *Diagonally parked buses discharging passengers in path of buses driving by.*
- *People in bus loading zone. No designated bus loading area on sheet. Drivers were not wearing seatbelts.*
- *Bus overlap*
- *Double row parking*
- *Some buses overcrowded*

4. Did you observe any unsafe bus deficiencies? If yes, describe.

- *Nothing noted*

Questions 5-8 asked of school staff:

5. Was today's bus unloading pretty typical for this school? If no, describe.

- *24 schools said "yes, today was typical". Two schools did not respond.*
- *No - emergency evacuation drills.*
- *No, that was on accident so way later.*
- *No, 3 buses came early.*

6. Do you typically notice any differences in service quality and timeliness of the contractors serving their school? If yes, describe.

- *All but one school said they either only have one contractor or they don't notice a difference in quality/timeliness among the contractors.*
- *One singled out one contractor as better than the others.*

7. Does someone at the school record the arrival times of buses each morning?

- *Overall, about half of the schools made a note only whether buses have arrived or not. They do not typically note specific arrival times.*

8. Do you have any concerns about current morning bus operations? If yes, describe.

- *The two big concerns (which I also heard at the two other schools) is that buses are switching and do not communicate their bus number and route which causes students to miss their bus in the afternoon and delays in the afternoon generally are more of an issue, not the morning.*
- *Assistant principal reports 3 buses are regularly late up to 15 minutes after the start of school. Parents drive children to school when the bus is late.*
- *Too much going on and too many students walking into bus loop.*
- *Private vehicles sneak in on bus loop before buses.*
- *Some buses offload and create a traffic back up to the main thorough.*
- *Speed leaving the bus loop*
- *Not beyond earlier conversations*

9. Other notes from observers

- *Principal wants afternoon observations because problems are a lot more serious. Congestion is bad, does not allow buses to leave.*
- *Because of low number of bus drivers a lot of parents drive this year.*
- *Way too much foot traffic for one location.*
- *Entrance to parking lot is under construction. New road to back parking lot will further separate traffic. Curb where buses drop off needs to be separated. Some buses drop off way at the back of the line & students walk safely to right entrance. Paint curb for bus unloading even they are looking forward to bus parking lot to facilitate loading. Visitor/Staff parking lot was full at 7:45 am.*
- *Need new sign on Andover Rd. for student drop off zone, current sign is small and faded.*
- *At a middle school, 11 buses arrived before 7:55 and parked and held students on buses until 7:55 am. At 8:00 am there were hundreds of students waiting outside to go in building.*
- *No sign directing parents where to go for drop off - administrator mentioned that in the PM - shuttle buses from Bates are late and the middle school kids getting picked up start to get restless.*
- *Branches were covering do not enter sign with bus times. Need to trim trees and shrubs around sign at entrance which indicated do not enter during bus drop off times.*

- *10 cars pulled up by 8:45 about 25 kids dropped off - 2 parents apparently supervising on their own - no teachers or other staff until buses arrive two cars pulled into bus loop.*
- *Parents unload at the front of the building, this is also where all of the walkers go to get to the school. There are 2 teachers in this area with stop/go paddles that control the vehicle traffic to allow students to cross. This school is in a corner with all vehicle traffic having to circle thru.*
- *A sign is marked to direct cars away from buses, drop off area for cars is not clearly marked (sign needed) day care bus and cars are standing and waiting in drop off lane.*
- *Crosswalk has a trip hazard. Curb needs to be painted yellow where drop off is allowed as seen at other schools.*
- *By 9:15 am there were at least 75 children waiting outside. More parents need to sign up for before school care.*
- *Operations would be improved if there was a back entrance for buses. A sidewalk leading up to the school would provide safer pedestrian conditions. Additional pedestrian access points should be considered.*
- *Sidewalk marked with yellow paint to keep students away from curbs where buses unload. Was not enforced affectively but was this was first year for striping.*
- *Only have 1 late bus occasionally. PM has buses arriving late but not excessive after school start her goal is 7 minutes for dismissals and they are at 9ish.*
- *Some buses had good loads; most not so much.*
- *Bus blocked the crosswalk while unloading students. People were exiting the entrance to the bus loop in front of the school.*
- *One bus stuck in traffic and did not arrive prior to school start time – staff reported it only had 1 student on it.*
- *All high school students who want a parking spot can get one however, it doesn't look like all are used.*
- *Staff member said that all buses should have radios, but they do not.*
- *They seem to have no alternatives than double down on bus parking. School sits on Ft. Meade property and there is only one public side for buses. Ft Meade students typically walk or are dropped off.*
- *Great traffic flow design. Police Officer monitors traffic flow to ensure no cars go in bus area.*

Appendix C – School Administrator Survey Results

(n = 95 responses, representing 93 schools)¹

1. Overall, what letter grade would you give regular student transportation operations?

A	8%
B	31%
C	37%
D	20%
F	4%

2. Overall, what letter grade would you give student transportation operations for special programs, such as Magnet, Advance Studies, CAT, etc.?

A	16%
B	34%
C	35%
D	13%
F	1%

3. Overall, what letter grade would you give special education transportation operations?

A	20%
B	42%
C	29%
D	7%
F	1%

4. Overall, what letter grade would you give extracurricular/athletic transportation operations?

A	15%
B	36%
C	32%
D	14%
F	3%

5. Please provide details for any grade you gave that is lower than a C.

‣ *Inconsistent service. Difficulty communicating – sometimes will not even acknowledge that a call/email has been placed.*

¹ Two respondents did not select a school.

- *It is very hard to get bus tape footage of incidents that occur on the bus. Also the staff often escalates behaviors with poor behavior management and/or minimal de-escalation strategies.*
- *What would be helpful is if bus drivers could be trained about students with disabilities. The schools are willing but getting the drivers to attend is the challenge. Most of our drivers are fabulous but some need to understand what is their responsibility and what is the school's.*
- *We are finding it difficult to schedule Field Trips because of our school hours and the need for buses to be back in time for HS runs. Our buses are continuously late in the AM or PM. There is little communication from the bus company when they are going to be late. We have to call. My parents become furious when there is the limited communication and have called Transportation numerous times as well as I have to express such concerns. When bringing K students back to school we are not notified and students are randomly brought back. We are displeased with [contractor] as a whole. As our buses come from there. I feel terrible for our AACPS Transportation directors as I feel it is more non-communication from the bus company directly. I could get out connect-ed messages to families a lot sooner and prevent upset and other issues if the bus company would communicate with us on the school level to make us aware of lateness, buses in disrepair, etc. We all know there are things that happen, but communication and working together makes things a lot smoother.*
- *Combining buses, sending different bus number constantly, dropping off students in the middle of a field? Taking a Pk to another school without dropping them off, not contacting us to let us know of things that happen. The system is broken and we, as administrators, take the brunt of it from the parents, when in essence we have no control over it.*
- *The activity buses are frequently late and cause hardships for staff, students, and parents. The STEM bus routes are too long and some students leave the program due to long bus rides.*
- *There is not enough Activity buses for our district. They are often late as the same buses have to service other schools with varying hours.*
- *We are a site for two magnet schools to drop off. The scheduling is poor because it conflicts with our dismissal time, causing us to have cars inside of our bus loop at the wrong time. These are not families we have access to, so we have no way of communicating them regarding our procedures. We were also never asked by Transportation if this drop off time was acceptable. Both buses are inconsistent in their arrival and drop off times.*
- *We do not always get the documents, and we are told they are faxed but we haven't received the documents. A lot of miscommunication.*
- *Transportation has not been responsive to concerns. Buses are arriving up to 10 minutes before we open our doors. Parents in some cases have given up on depending on the bus because pick up times have been so erratic. There are lots of subs adding to the challenge of establishing a reliable, consistent routine.*

- *Our school has been in constant communication with transportation as one of our buses is overcrowded 3-4 to a seat. We have been assured that there will be another bus and we have not received an update or another bus.*
- *We have had Special Education students not have access to the correct seat restraint outlined in their IEP on more than 3+ occasions, students were not provided with transportation services or our staff had to leave campus to retrieve their seatbelts, etc. Also, for general education services, we've had multiple bus stops missed or substitute drivers miss stops, etc. When transportation reps for the county were contacted, little/ slow change was implemented.*
- *So far this school year, our bus has been any where from 30 minutes to an hour late dropping kids off and picking them up at dismissal. As far as extracurricular activities, we are not in need of a bus. No special programs requiring a bus.*
- *Our extra-curricular activities buses are frequently late. Twice a bus has not arrived at all, and another driver offered to take those students. Because we are a late school (activities dismissing at 4:50 pm) we can't always reach a bus company representative to determine if a bus is coming, or not. The drivers are always helpful and polite, but don't always have information about other buses.*
- *I do not believe that we have enough in place for extracurricular transportation. Students in MS or ES who do not have transportation are often unable to participate.*
- *Communications between the system, bus companies, and families are often different and unclear. This leads to a lot of confusion among the families and school, leaving the schools responsible for figuring out the answer and responding to upset parents.*
- *A. The "doubling up" of students (overcrowding) on buses to complete routes due to the lack of bus drivers was an extreme safety issue. As a parent, I would be furious that students were put in that position.
B. Communication: 1. Related to road closures and the subsequent communication to parents is not effective. Students not being picked up due to road closures is unacceptable. 2. Related to late bus arrivals, both in the morning (to drop off students), and in the afternoon (to pick them up). 3. Labeling of substitute buses also needs to improve to decrease confusion of students and adults. However, the transportation specialists and technicians are awesome in their roles.*
- *We have difficulty this year with our bus for Unified Sports not coming because it is pulled for regular runs.*
- *Buses arrive too late based on scheduled time*
- *The "D" for overall operations is based on communication between the bus company and school. Consistency of vehicles and drivers. Different drivers and the number painted on the bus does not match the route is especially concerning when dealing with 5-8 year old children. Timing of arrival at the school when delays occur are not communicated to the school by transportation or contractor.*
- *At my middle school the times that the buses drop off are a very large window, spanning about 30 minutes. Students are often dropped off in the morning when*

there are no teachers on duty to receive students. This is leaving students unsupervised.

- *Not once this year have all buses been present at the time of dismissal. Most days we are supervising students at least 20 minutes past duty hours.*
- *Many times buses come to school late to pick up students well after the dismissal time. Yes, accidents happen on the road but many times the school is not notified the bus had an issue or is going to be late.*
- *Our buses have been routinely late this year. The drivers tell me that it is due to routes being doubled up with increased enrollment and the lack of drivers.*
- *Our regular transportation has been consistently late with pick up in the morning arriving to the school at the end of the day. Several of our buses are overcrowded. Our PVA Buses arrive 10-15 mins early, dismissing students without supervision.*
- *Buses are late on an everyday basis. At least 20-30 minutes late.*
- *Transportation is very difficult to reach and communication is slow or not professional. Routes are not proactively planned for the upcoming school year.*
- *Transportation is not responsive to our needs. Every day, we have late buses, buses that don't show up, and buses that we have to end up doubling up with another bus. We have parent complaints, student complaints and the contractors/transportation is no help.*
- *Transportation to and from charter school at the local school interferes with the normal arrival and dismissal of the regular school day. It has become the burden of the school based staff to manage parents & students of charter schools.*
- *There seems to be a lot of miscommunication surrounding transportation. Schools are left to answer questions that we have no background information on.. for instance when parents ask how the routes were decided we can only defer to transportation office, but then we get several calls and email trails from parents who are unable to reach anyone in transportation or have not received a response back from transportation. Additionally, we are asked to put out statements about buses but we are not in contact with the persons making the request. It often leaves us sputtering to formulate a response, without context, and the inability to follow up. When we attempt to contact bus companies we are met with busy lines, unanswered calls, or rude exchanges as we attempt to improve customer services with our parents. It seems like there are so many moving parts and little to no guidance about where to start and how to resolve the issues.*
- *The buses provided for our extracurricular activities at both schools in which I was in charge or transportation were consistently late. Routes need to be divided more evenly because sometimes students are waiting 45 minutes to 1 hour after activities have finished for a bus to bring them home from school.*
- *Transportation has been an on-going concern. Some of our students that are special education students have not been able to stay for after-school activities as their transportation requests have not been processed. Our students stay after school longer than any other school either after meetings with our transportation specialist.*

Our students dismiss at 3:05 pm from school and 4:05 from activities yet buses still do not arrive until 4:45 pm or after. Schools that dismiss later than us get picked up first for activities. We have had buses over 1 hour late to school and times where stops were not picked up and we found out via our families. We have consistently attempted to resolve these issues and are still attempting to do so for our students.

- *Too many children are on one bus. It is challenging for the driver to control behaviors. Most, but not all, buses are consistent with arrival times for our school dismissal. Our drivers are courteous with our staff and communicate effectively. We have built a positive relationship with them.*
- *There is no extracurricular/athletic transportation for students.*
- *We consistently have different bus numbers without notification. There are often late buses.*
- *This year our regular buses are consistently late arriving to school. They are between 10 and fifteen minutes late leaving over 100 students waiting outside idly. Activity buses are worse. Once bus driver didn't want to drive out "that far" to drop off a student so she tried to put them on another bus. We have two buses that are consistently 25-30 minutes late sometimes an hour. As a result, parents aren't sending students to after school help or activities anymore.*
- *Lots of our buses are late on a regular basis both to school and to pick up our students*
- *Transportation routes need to be revisited. Buses are routinely late. Moving school start time later is not the answer.*
- *Dismissal time is 2:45 at our school. Many of our school buses do not arrive until 3:05 or later, and this is consistent. Special Education 800 buses have had great difficulty coordinating with parents and have been returning students to school. Overall lateness and inability to appropriately monitor, work in collaboration with parents, and school administration has led to a less than "C" grade in these areas.*
- *Buses are coming to schools too late in the afternoons. Finding adult coverage for these large amounts of students is challenging.*
- *Lots of issues about bus driver passing bus stops, not picking up students, buses picking up late at school, taking buses over 40 minutes to drop off students at the end of the day and bus drivers refusing to take students home on the bus. There have been numerous complaints about bus drivers passing stops, not picking up students, arriving to school late, or refusing to take students home due to transportation faxing over bus changes to the wrong bus company.*
- *Always checking for late buses*
- *Buses constantly run late, often bus 15-30 minutes. Transportation dept is not helpful and just shrugs it off.*

6. Thinking about your school, please rate your level of agreement with each of the following statements in regards to *regular* education transportation.

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
Buses arrive and depart on time each day.	37%	3%	60%
There are enough working buses to meet the needs of the district.	32%	18%	51%
Buses are often broken down, disrupting school schedules.	19%	37%	44%
Bus drivers are often absent, leading to transportation disruptions.	38%	22%	40%
Buses arrive too early in the morning.	15%	10%	75%
Buses arrive early enough for students to eat breakfast at school if they wish.	76%	9%	15%
Bus drivers treat students with courtesy and respect.	61%	25%	14%
Bus drivers treat district staff with courtesy and respect.	74%	19%	6%
Buses are clean and free of trash.	88%	10%	2%
Bus assistants effectively handle discipline on the buses.	31%	34%	34%
My school's bus loading area is well supervised in the morning and afternoon.	96%	0%	4%
My school's bus loading area is safe from other traffic.	88%	2%	10%
The transportation department effectively manages transportation operations.	51%	13%	36%
Bus contractors provide high quality services in this area.	33%	26%	41%

7. Thinking about your school, please rate your level of agreement with each of the following statements in regards to *special* education transportation.

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
Buses arrive and depart on time each day.	60%	10%	30%
The ride times for students with special needs are reasonable.	51%	31%	19%
Students with special needs are sometimes pulled from classes early to meet their buses.	28%	15%	57%
Bus drivers are often absent, leading to transportation disruptions.	9%	34%	57%
Bus drivers treat students with courtesy and respect.	74%	21%	5%
Bus drivers treat district staff with courtesy and respect.	77%	20%	4%
There are enough working buses to meet the needs of the district.	37%	39%	24%
Bus aides effectively handle discipline on the buses.	48%	28%	23%
The transportation department effectively manages special education transportation operations.	65%	25%	10%

8. Thinking about your school, please rate your level of agreement with each of the following statements in regards to *extracurricular/athletics* transportation.

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
There are enough working buses to meet the district's extracurricular transportation needs.	26%	42%	32%
There are enough working buses to meet the district's athletics transportation needs.	20%	68%	12%
The process for requesting field trip transportation is efficient and effective.	55%	28%	17%
Someone at my school reviews the invoice for each extracurricular/athletic trip.	73%	27%	0%
There are often errors in the invoices submitted to my school for extracurricular/athletic trips.	3%	38%	59%
Bus contractors provide high quality services for extracurricular/athletic trips.	41%	45%	14%

9. Last year at your school, did any field trip have a loss of instructional time in order to accommodate bus availability (i.e., spent less time than planned at a museum)?

No, our school did not experience a loss of instructional time on a field trip due to bus availability.	53%
Yes, our school had at least one field trip that lost instructional time due to bus availability.	34%
Our school did not taken any field trips using bus contractors last year.	0%
Don't know	13%

10. Last year at your school, how often did bus combining/splitting happen (where students from one bus are combined with another or where students from one bus are split onto multiple other buses because a bus/driver is absent)?

Two or more times a week	16%
Once a week	4%
A few times a month	20%
Almost never	54%
Don't know	5%

11. Last year, how often did a bus make a double run (where students are transported on a second run because a bus/driver is absent)?

Two or more times a week	5%
Once a week	0%
A few times a month	17%
Almost never	70%
Don't know	8%

12. Last year, did an administrator have to pull students from class early in order to sort out alternative busing arrangement because a bus/driver was absent?

Yes, more than once last year	5%
Yes, once last year	0%
No	91%
Don't know	5%

13. This year so far at your school, how often is at least one bus late (arrives after the start of school) in arriving in the morning?

Two or more times a week	30%
Once a week	3%
A few times a month	31%
Almost never/hasn't happened yet this year	34%
Don't know	1%

- 14. This year so far at your school, how often is at least one bus late (arrives at school more than five minutes after the end of the school day) in arriving at the school for student pickup in the afternoon?**

Two or more times a week	59%
Once a week	7%
A few times a month	20%
Almost never/hasn't happened yet this year	14%
Don't know	0%

- 15. When there is a regular education transportation problem at your school, does your school contact the AACPS transportation department or the bus contractor?**

Always only the AACPS transportation department	11%
Always only the bus contractor	5%
Usually both at the same time	41%
Depends on the situation	43%
Not sure/don't know	0%

- 16. In the past two years, how many times have you or your designee contacted the transportation department with concerns about student transportation?**

None	0%
Once	0%
Twice	2%
At least three times or more	98%

- 17. What was the reason for the last time you contacted the transportation department about student transportation? Please select as many as apply.**

Timeliness of bus service	27%
Concerns about bus contractor performance	9%
Concerns about absent drivers/buses	10%
Concerns about bus driver's attitude	11%
Concerns about the bus aide's attitude	6%
Concerns about bus driver's student discipline methods/techniques	0%
Concerns about bus aide's student discipline methods/techniques	5%
Concerns about bus driver's driving practices	7%
Concerns about potentially unsafe bus driver actions	5%

Concerns about potentially unsafe bus aide actions	0%
Concerns about bus stop	15%
Concerns about student behavior on bus	6%
Commendation for observed good transportation service/good bus driver actions	0%
Other (please specify)	0%

18. How satisfied were you with the transportation department's handling of your student transportation concern the last time you contacted them?

Very Satisfied	16%
Somewhat satisfied	10%
Satisfied	30%
Somewhat unsatisfied	23%
Completely unsatisfied	21%
Not applicable	0%

19. In the past two years, how many times have you or your designee contacted the bus contractor with concerns about student transportation?

None	1%
Once	1%
Twice	13%
At least three times or more	86%

20. What was the reason for the last time you contacted the bus contractor about student transportation? Please select as many as apply.

Timeliness of bus service	42%
Concerns about bus contractor performance	3%
Concerns about absent drivers/buses	5%
Concerns about bus driver's attitude	8%
Concerns about the bus aide's attitude	2%
Concerns about bus driver's student discipline methods/techniques	0%
Concerns about bus aide's student discipline methods/techniques	1%
Concerns about bus driver's driving practices	6%
Concerns about potentially unsafe bus driver actions	1%
Concerns about potentially unsafe bus aide actions	0%
Concerns about bus stop	20%

Concerns about student behavior on bus	7%
Commendation for observed good transportation service/good bus driver actions	5%
Other (please specify)	0%

21. How satisfied were you with the bus contractor’s handling of your student transportation concern the last time you contacted them?

Very Satisfied	4%
Somewhat satisfied	20%
Satisfied	32%
Somewhat unsatisfied	38%
Completely unsatisfied	6%
Not applicable	0%

22. [Asked of schools with a school start change only] You are at a school that has changed start times in recent years. Were there any negative impacts from the change? (n = 17)

Yes	41%
No	59%

23. Please provide details on the negative impacts of the changed start time at your school.

- ▶ *Buses were late the first 2 weeks of school. [This schools starts at 9:25 am]*
- ▶ *Increased traffic actually has students at bus stops earlier. [This schools starts at 7:30 am]*
- ▶ *Community concerned that school starts too late and students aren’t in school during prime learning hours. Also concerned that school ends so late and this makes a hardship to complete homework, eat dinner as a family and make sports and other extracurricular activities. Although only 5 minutes later this school year, 2 years ago we were moved 15 minutes later. Community concern expressed over late school start and dismissal times has been even a larger issue than anticipated by a 5 minute delay. [This schools starts at 9:40 am]*
- ▶ *1)Impact on students enrolled in specialty site program - later time means reduction of therapies outside of school because therapies extend beyond dinner time 2)traffic is increased and students are dismissed closer to rush hour traffic 3)many buses have runs at other schools & are often late arriving 4)increased number of parents needing before & after care now is a financial burden that some can’t afford 5)parents sign out students early for extracurricular activities because they can’t make it on time with traffic 6)increased commute time for staff as a result of rush hour traffic 7)students lack a focus for reading, writing, & math late in the afternoon as they tend to be more awake and focused in earlier morning hours 8)staff limited on attending professional development because they can’t get to sessions in time (after dismissal & traffic!) [This schools starts at 9:35 am]*

- *Students missing the bus. Buses not showing up on time at stops. Buses making up their own stop schedule. [This schools starts at 7:30 am]*
- *Start time was moved 15 minutes earlier a couple of years ago. This year, we were reverted to the old time. Buses are arriving at the previous time repeatedly this year, making them very late. [This schools starts at 9:00 am]*

24. If you would like to provide any additional comments in regard to AACPS student transportation, please do so here. Where is the district doing well in student transportation? In what areas could student transportation be improved?

- *We need fast access to bus video footage*
- *Increase the number of bus contractors serving our school.*
- *I wrote this earlier but I feel we need to train our bus drivers how to handle special ed students, students with ADD, and have a chance to meet and get to know them. Another area is their responsibilities when we have safety drills, as the driver is primarily in charge as the administration will not be at the sight when an emergency occurs.*
- *I appreciate the customer service from AACPS Transportation office. The team that works with our school is responsive and supportive. Even when the problems have been create by a school mistake. I have also had good conversations with our Bus Contractors. We do understand that staffing, \$\$, and the sheer number of students being transported is a daunting task. Driving a bus full of students is a difficult task!! We wish there were more options for Field Trips. Thanks!*
- *I know there is a shortage, but there are very large safety issues with some of the practices that take place. It is very scary.*
- *[Contractor] seems to be our biggest concern. They double up buses, they are not communicating in a timely manner what is going on, they always have late buses*
- *Bus Driver Training Allocate funds for MORE Buses*
- *We have had inconsistency in the response from the Transportation Department. They do not reply to parent concerns, which have led to larger problems in the past. As a school principal, I have often emailed with no response from our Specialist or their supervisor. It seems they often decide on the importance of the concerns and decide whether a response is warranted. In the meantime, we are left with no reply. Thank you for asking these questions!*
- *Can we update our system? Parents have been asking for an updated system to input address and then their bus number and stops would automatically come up. Can we go to digital? Email instead of fax?*
- *Apparently there are not enough buses in the Southern area. For the past 4 years and again this year, one bus is more than 5 minutes late every day, bus [deleted]. Bus [deleted] arrives early every day and it's reported to transportation every day.*

Today it arrived at 8:03. Our doors don't open until 8:15. [Deleted] appears to be doing everything he can to impact the situation.

- *Add additional buses so that children can sit safely in their seats. Have bus assistants to support with student behaviors and safety procedures on the bus.*
- *I understand that the bus specialists have a large area to cover and that it can be a difficult position/job. I often feel, as administrators, we have to micromanage bus issues and take the 'heat' for bus issues b/c parents associate the school with the bus services or transportation problems with buses, even if / when directed to transportation. I believe this has negatively impacted our relationship with families.*
- *The bus arrives and departs late every day since the school year began. The only problem we have with our bus service is the bus is arriving late as well as picking up late in the afternoon.*
- *We are working hard to support drivers with correcting student behavior. Drivers could use more training in how to respond to students not following rules or behaving unsafely. Our drivers are usually very respectful to myself and our students, and that is greatly appreciated. The Transportation Office is very responsive when contacted about a problem, and staff frequently visit the schools to check in with staff and drivers.*
- *The timeliness of response to concerns needs to improve. I am sure that a contributing factor is of the number of incidents that happen, however, I do feel that there were occasions during which a concern wasn't given the credit due. On a positive note, [deleted] was super helpful last year during a reworking of our arrival and dismissal procedures, and I am very grateful. This year, we did receive help during the first weeks with a lot of bus issues. Many of our drivers are kind and courteous, and some of them are impatient and cranky. I wonder if the drivers are able to attend customer service training? I also wonder if we have funding or staffing for more assistants on buses as our students can present challenging and unsafe behaviors.*
- *We are happy with the bus drivers who are currently assigned to [school]. They are consistent and attentive to our students.*
- *Parent concerns and situations that involve student discipline are handled appropriately and effectively by the transportation department. Students who are not picked up from bus stops due to road closures. Is there a way to address this? Should the route be changed permanently (rt [deleted], bus [deleted])?*
- *Special Education- [deleted] and [deleted] are very receptive and responsive to address school, staff, and any issues.*
- *Great collaboration with [deleted]!*
- *I think between myself, transportation and the bus contractors, we work very well together in order to fill the needs of all students within AACPS attending an [deleted] experience. I really appreciate all of the help and wonderful customer service that all parties give!*

- *Contractors and transportation department personnel fail to communicate to schools when buses are late. Normally it is a parent calling to say a bus has not arrived in the morning or the school is calling when a bus does not show up in the afternoon. This causes a delay or lack of communication to families.*
- *I love working with [deleted]. She always answers my questions and is willing to take the time to walk me through specific cases as needed. Most of my bus drivers are very kind and are willing to work with student needs. I have encountered a driver and assistant who did not attend to the needs of one of our autistic students. Both the driver and the aid were unkind to the student, yelling and screaming at him as well as the administration in front of other students.*
- *Activity buses have been far more timely than last year. Regular dismissal runs are far worse.*
- *The timeliness of the buses is a major concern. Our buses are often late each day, causing delays in our afternoon dismissal.*
- *[deleted] and her team work closely with our staff to work proactively with bus personnel, as well as in response to problems. We continue to have conversations about bus drivers/aides demonstrating respectful attitudes towards students and appropriate ways to address behaviors. We feel supported by [deleted] and appreciate her collaborative approach to addressing our challenges.*
- *When dealing with lift buses and special ed issues, requests are handled quickly, so I would say this is something we are doing well with as a district. Improvements needed are based on experience last school year. We had a shortage of drivers and buses were often combined. Behavior issues arose and when we called transportation, they just combined different bus routes, they were not able to find additional drivers for the buses. Last year, buses were habitually late - bus 157 and 153 in particular. This year, buses are much more timely. Parents are expressing concern over late pick up time for students, although this does not impact instruction.*
- *The transportation specialists need to work on their communication skills and responsiveness to school requests for help. [Deleted] is especially unprofessional and has yet to return a single call or email to me and I am in charge of transportation at [deleted].*
- *Every other middle school has students after school for 1 hour. Our students stay after for up to two hours after school due to buses. We have been working with our specialist for 3 years to attempt to find a solution with none to date.*
- *Thank you. [Deleted] and [deleted] have always been responsive. We will always let you know if we have any issues.*
- *There is a lack of communication from the BOE Transportation department following an issue with the buses. In other words, we do not get any information as to how an incident was resolved. Also, we have had an incident where a pre-k student got off of the bus at the wrong stop. Student was wearing a bus tag with his bus stop information on it. We have also had an issue where a kindergarten student fell asleep on the bus and the bus aide and driver had no idea. We also had an incident that involved a bus driver walking to the back of the bus and cussing at one*

of our students. The buses are still consistently late, both in the morning and afternoon.

- *For the most part, our drivers are kind, willing to go the extra mile, etc. The biggest issue are sub buses. We have 5-11 year olds and they learn bus numbers quickly. We pay for expensive bus tags with the appropriate numbers per the AACPS' bus list. Sub buses show up with no indication of what "bus number" they are subbing for; and expect the school staff to handle on the spot. I have at least one bus that hasn't driven the number provided to the parents for 2 years. Transportation Specialist is always willing to support school. Bus companies do not answer their phones once school dismisses. Truly need them answering phones for at least 1 hour after school ends. We have tried as early as 3:30 and it either goes to vm or continues to ring. Trying to get buses that will work with our time for school trips is difficult. Many will not service our school unless they are able to bring students back by 1:30; there is no less funding offered and it ruins a trips' purpose. So...we end up paying more for buses that bring students back to school 10 minutes after high schools dismiss.*
- *The flexibility and friendliness of the bus drivers towards staff and students. They are not terribly warm and welcoming. The lateness of buses during regular dismissal and after school activities is problematic.*
- *I believe if contractors offered their drivers a better pay package, we would not have the issues with the drivers.*
- *1) Communication at schools with shared buses is lacking. If a bus is delayed at a school for extended period, we don't always get notified.
2) Is there a way for parents to track a bus in relation to bus stop via an app (like college kids can do)?
3) Inconsistencies between drivers regarding bus safety & expectations.
4) Students should be seated youngest to oldest, with youngest in proximity to driver. Younger should not be seated in the back of the bus!
5) Some of the Special Ed buses arrive nearly 15-20 min early.
6) Length of time some of the students for specialty site are seated on the bus can be excessive, esp for students not potty trained! Not sure if this is because of later school start time and/or increased traffic in the area.*
- *Transportation has improved from last year's service.*
- *We are very satisfied with our AACPS transportation department. For our school our biggest problems are with [Contractor]. Yesterday we were informed that their two way radios were not in service to contact a bus driver and we feel that is unsafe for our children.*
- *[Contractor] is excellent! They are wonderful to work with. [Deleted] is an excellent manager who is in constant contact with our school, as needed or requested.*
- *It has been extremely difficult to arrange field trips. In fact, two of our trips had to be cancelled because we could not find transportation.*
- *Contractors proactively communicate with schools when they know a bus is going to be late. Contractors ensure to give substitute drivers the correct A-day/B-day schedule.*

- *There are only two buses that service [Contractor]. One has 3 students on it and the other has about 35. They could be combined easily at substantial savings. I have brought this to the attention of transportation repeatedly. Also, principals should be notified about proposed changes to start times and more. Transportation department decided to unilaterally redistrict several families without following established protocols this summer.*

25. This year, at what school are you assigned?

Annapolis ES	0%	Manor View ES	1%
Annapolis HS	1%	Marley ES	0%
Annapolis MS	1%	Marley Glen Special	0%
Arnold ES	1%	Marley MS	1%
Arundel HS	1%	Mary Moss @ J. Albert Adams	1%
Arundel MS	1%	Maryland City ES	1%
Bates MS	1%	Mayo ES	0%
Belle Grove ES	0%	Meade Heights ES	1%
Belvedere ES	1%	Meade HS	1%
Benfield ES	0%	Meade MS	1%
Bodkin ES	1%	Millersville ES	1%
Broadneck ES	1%	Mills-Parole ES	0%
Broadneck HS	1%	Monarch Academy	0%
Brock Bridge ES	1%	Monarch Annapolis	0%
Brooklyn Park ES	0%	Monarch Global	0%
Brooklyn Park MS	1%	Nantucket ES	1%
Cape St. Claire ES	1%	North County HS	0%
Carrie Weedon Early Education Center	0%	North Glen ES	0%
CAT – North	0%	Northeast HS	1%
CAT – South	1%	Oak Hill ES	1%
Central ES	1%	Oakwood ES	0%
Central MS	1%	Odenton ES	1%
Central Special Center	1%	Old Mill HS	1%
Chesapeake Bay MS	1%	Old Mill MS – North	1%
Chesapeake Bay MS Regional	0%	Old Mill MS – South	1%
Chesapeake HS	1%	Overlook ES	1%
Chesapeake HS Regional	1%	Park ES	1%
Chesapeake Science Point	0%	Pasadena ES	1%
Corkran MS	1%	Pershing Hill ES	1%
Crofton ES	1%	Phoenix Academy	0%
Crofton Meadows ES	0%	Piney Orchard ES	1%
Crofton MS	1%	Pt. Pleasant ES	1%
Crofton Woods ES	0%	Quarterfield ES	1%
Davidsonville ES	1%	Richard Henry Lee ES	0%
Deale ES	1%	Ridgeway ES	1%
Eastport ES	0%	Rippling Woods ES	1%
Edgewater ES	1%	Riviera Beach ES	1%
Ferndale Early Education Center	1%	Rolling Knolls ES	0%
Folger McKinsey ES	1%	Ruth Eason Special	1%

Fort Smallwood ES	0%	Seven Oaks ES	1%
Four Seasons ES	1%	Severn ES	1%
Freetown ES	1%	Severn River MS	1%
George Fox MS	1%	Severna Park ES	1%
George T. Cromwell ES	1%	Severna Park HS	1%
Georgetown East ES	1%	Severna Park MS	1%
Germantown ES	1%	Shady Side ES	1%
Glen Burnie HS	0%	Shipley's Choice ES	1%
Glen Burnie Park ES	1%	Solley ES	0%
Glendale ES	1%	South River HS	1%
Glendale Regional	0%	South Shore ES	1%
Hebron-Harman ES	1%	Southern HS	1%
High Point ES	1%	Southern MS	1%
Hillsmere ES	1%	Southgate ES	1%
Hilltop ES	1%	Sunset ES	1%
Jacobsville ES	1%	Tracey's ES	1%
Jessup ES	1%	Tyler Heights ES	0%
Jones ES	1%	Van Bokkelen ES	0%
Lake Shore ES	1%	Waugh Chapel ES	1%
Lindale MS	0%	West Annapolis ES	0%
Linthicum ES	0%	West Meade Early Education Center	1%
Lothian ES	1%	Windsor Farm ES	1%
MacArthur MS	1%	Woodside ES	1%
Magothy River MS	1%	Other (please specify)	1%

Appendix D – Parent/Guardian Survey Results

(n = 6,268 responses, representing 126 schools)

1. Overall, what letter grade would you give the student transportation operation in Anne Arundel County Public Schools?

A	19%
B	37%
C	26%
D	11%
F	7%

2. Do any of your children enrolled in regular education currently ride the bus to school on most days?

Yes	85%
No	14%
I do not have children enrolled in AACPS regular education	1%

3. If no, what are the reasons your child(ren) do not regularly ride the bus?

We live within the walk zone of the school.	40%
We are eligible for bus transportation, but I prefer to take my child to school in my car.	16%
We are eligible for bus transportation, but the school bus pick-up/drop-of times are too early or too late.	18%
We are eligible for bus transportation, but my child rides in a carpool.	4%
We are eligible for bus transportation, but my child does not feel safe on the bus.	6%
We are eligible for bus transportation, but my child's bus is too crowded.	5%
Other (please specify)	12%

4. If yes, thinking about your youngest, regular education child who usually rides the bus to school, please rate your level of agreement with each of the following statements.

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
My child's school bus runs on time nearly every day.	67%	5%	27%
My child feels safe riding the bus.	76%	12%	12%
Bus drivers/aides effectively handle discipline issues on the bus.	46%	34%	19%

My child's bus driver treats students with courtesy and respect.	67%	21%	12%
My child has an assigned seat on the bus.	31%	26%	43%
Buses are clean and free of trash.	57%	38%	5%
My child's bus stop is too crowded.	14%	10%	77%
My child's bus stop is in a safe location.	82%	5%	13%
My child's bus is usually too crowded.	25%	21%	54%
My child's bus is usually less than half full.	11%	30%	59%
The length of my child's bus ride is reasonable.	81%	5%	13%

5. Do any of your children receive special education transportation as part of their IEP?

Yes	5%
No	75%
I do not have children enrolled in AACPS with an IEP	20%

6. If yes, thinking about the transportation provided to your student with special needs, please rate your level of agreement with these statements.

Statement	Strongly Agree + Agree	Undecided	Strongly Disagree + Disagree
My child's school bus runs on time nearly every day.	67%	7%	26%
My child feels safe riding the bus.	78%	12%	11%
Bus drivers/aides effectively manage the students on the bus.	72%	15%	13%
The length of my child's bus ride is reasonable.	64%	13%	24%

7. Do you have any concerns regarding the transportation services provided to your student with special needs? If so, please include them here.

Responses	Tallied Count
Communication Problem	11
Additional Aide Needed	2
Positive Comment	12
Bus Stop	9
Pickup Time	7
Bus Procedures	1
Ride Too Long	11
Driver/Aide Training	20
Operations	26
Other	2

8. Have you ever contacted your child's school or the AACPS transportation department with a concern about the performance of the district's student

transportation system? This could include regular school bus service, extracurricular school bus service, a school bus driver, etc.

No, I have never contacted the school or transportation department with a transportation concern.	52%
Yes, I have contacted my child's school with a transportation concern.	16%
Yes, I have contacted the transportation department with a transportation concern.	10%
Yes, I have contacted both my child's school and the transportation department with a transportation concern.	22%

9. If yes, in the past two years, how many times have you contacted your child's school with concerns about student transportation.

Once	39%
Twice	30%
At least three times or more	31%

10. What was the reason for the last time you contacted your child's school about transportation?

Timeliness of bus service.	31%
Concerns about bus driver's attitude	10%
Concerns about bus aide's attitude	2%
Concerns about bus driver's student discipline methods/techniques	6%
Concerns about bus aide's student discipline methods/techniques	1%
Concerns about bus driver's driving practices	6%
Concerns about potentially unsafe bus driver actions	7%
Concerns about potentially unsafe bus aide actions	1%
Concerns about bus stop	10%
Concerns about student behavior on bus	10%
Commendation for observed good transportation service/good bus driver actions	1%
Other (please specify)	16%

11. How satisfied were you with the school's handling of your student transportation concern the last time you contacted them?

Very satisfied	12%
Somewhat satisfied	13%
Satisfied	16%
Somewhat unsatisfied	26%
Completely unsatisfied	31%
Not applicable	3%

12. If yes, in the past two years, how many times have you contacted the transportation department with concerns about student transportation?

Once	42%
Twice	28%
At least three times or more	31%

13. What was the reason for the last time you contacted the transportation department about student transportation?

Timeliness of bus service.	28%
Concerns about bus driver's attitude	9%
Concerns about bus aide's attitude	2%
Concerns about bus driver's student discipline methods/techniques	4%
Concerns about bus aide's student discipline methods/techniques	2%
Concerns about bus driver's driving practices	6%
Concerns about potentially unsafe bus driver actions	7%
Concerns about potentially unsafe bus aide actions	1%
Concerns about bus stop	16%
Concerns about student behavior on bus	4%
Commendation for observed good transportation service/good bus driver actions	1%
Other (please specify)	20%

14. How satisfied were you with the school's handling of your student transportation concern the last time you contacted them?

Very satisfied	10%
Somewhat satisfied	10%
Satisfied	14%
Somewhat unsatisfied	21%
Completely unsatisfied	42%
Not applicable	3%

15. Are any of your children in high school this year?

Yes	38%
No	68%

16. Do you have a child in one of these schools this year:

Annapolis ES	1%
Carrie Weedon Early Education Center	0%
Crofton ES	2%

Crofton Woods ES	2%
Folger McKinsey ES	6%
Jacobsville ES	1%
Nantucket ES	1%
Pasadena ES	1%
Riviera Beach ES	0%
Shipley's Choice ES	1%
I do not have a child in one of these schools	85%

17. How satisfied are you with the current new school start/dismissal time for your student this year? [Only asked of elementary parents w/new start times this year]

Very satisfied	14%
Somewhat satisfied	10%
Satisfied	22%
Somewhat unsatisfied	20%
Completely unsatisfied	33%
Not applicable	0%

18. What have been the impacts on your family/student as a result of the changed start/dismissal time? [Only asked of elementary parents w/new start times this year]

Responses	Tallied Count
Too Late	54
Too Early	1
Time in Evenings	96
Positive Comment	3
Work and School Start Conflict	86
Now has to use After School Care/Other Arrangements	30
Other	5

19. You have indicated that at least one of your children is attending a high school this year. How satisfied are you with the current high school start/dismissal times?

Very satisfied	16%
Somewhat satisfied	27%
Satisfied	6%
Somewhat unsatisfied	27%
Completely unsatisfied	15%
Not applicable	9%

20. Is your high school student a freshman or sophomore this year?

Yes	66%
No	34%

21. If no, how disruptive was the change from a 7:17 am start time to a 7:30 am start time?

Very disruptive	5%
Somewhat disruptive	7%
Not disruptive	66%
No opinion/didn't notice a difference	22%

22. What benefits did you see with your high school student from the changed school start times:

My student is sleeping more	16%
My student is staying up later at night	6%
High school attendance has improved	4%
High school attendance has decreased	0%
High school tardiness has decreased	4%
High school tardiness has improved	2%
High school homework completion has improved	5%
High school homework completion has decreased	2%
Student academic success has improved	5%
Student academic success has decreased	1%
Student mental and emotional health has improved	9%
Student mental and emotional health has decreased	1%
Student school behavior issues has decreased	1%
Student school behavior issues has improved	2%
I have seen no benefits with my high school student	34%
Other (please specify)	9%

23. [Asked only of high school parents] How supportive would you be of a further change in the high school start time? A change to an 8:00 am start would have:

great negative impact on my family/student	17%
some negative impact on my family/student	12%
little to no impact on my family/student	12%
some positive impact on my family/student	17%
great positive impact on my family/student	33%
I'm not sure what the impact would be	9%

24. [Asked only of high school parents] How supportive would you be of a further change in the high school start time? A change to between an 8:00 am and 8:30 am start would have:

great negative impact on my family/student	23%
some negative impact on my family/student	13%
little to no impact on my family/student	11%
some positive impact on my family/student	14%

great positive impact on my family/student	29%
I'm not sure what the impact would be	9%

25. This year, in what school do you have children? [Number of responses are shown]

Annapolis ES	22	Manor View ES	16
Annapolis HS	187	Marley ES	36
Annapolis MS	96	Marley Glen Special	12
Arnold ES	102	Marley MS	42
Arundel HS	197	Mary Moss @ J. Albert Adams	1
Arundel MS	155	Maryland City ES	12
Bates MS	105	Mayo ES	30
Belle Grove ES	7	Meade Heights ES	27
Belvedere ES	42	Meade HS	118
Benfield ES	35	Meade MS	49
Bodkin ES	62	Millersville ES	45
Broadneck ES	91	Mills-Parole ES	13
Broadneck HS	279	Monarch Academy	80
Brock Bridge ES	23	Monarch Annapolis	44
Brooklyn Park ES	19	Monarch Global	50
Brooklyn Park MS	66	Nantucket ES	43
Cape St. Claire ES	67	North County HS	142
Carrie Weedon Early Education Center	7	North Glen ES	8
CAT – North	41	Northeast HS	92
CAT – South	24	Oak Hill ES	94
Central ES	80	Oakwood ES	32
Central MS	213	Odenton ES	48
Central Special Center	13	Old Mill HS	192
Chesapeake Bay MS	145	Old Mill MS – North	89
Chesapeake Bay MS Regional	6	Old Mill MS – South	132
Chesapeake HS	119	Overlook ES	22
Chesapeake HS Regional	4	Park ES	12
Chesapeake Science Point	20	Pasadena ES	36
Corkran MS	44	Pershing Hill ES	30
Crofton ES	85	Phoenix Academy	2
Crofton Meadows ES	31	Piney Orchard ES	29
Crofton MS	162	Pt. Pleasant ES	23
Crofton Woods ES	71	Quarterfield ES	26
Davidsonville ES	118	Richard Henry Lee ES	29
Deale ES	31	Ridgeway ES	65
Eastport ES	5	Rippling Woods ES	36
Edgewater ES	49	Riviera Beach ES	11
Ferndale Early Education Center	8	Rolling Knolls ES	51
Folger McKinsey ES	194	Ruth Eason Special	15
Fort Smallwood ES	54	Seven Oaks ES	17

Four Seasons ES	51	Severn ES	36
Freetown ES	7	Severn River MS	161
George Fox MS	67	Severna Park ES	60
George T. Cromwell ES	23	Severna Park HS	251
Georgetown East ES	7	Severna Park MS	209
Germantown ES	15	Shady Side ES	46
Glen Burnie HS	115	Shipley's Choice ES	24
Glen Burnie Park ES	23	Solley ES	44
Glendale ES	13	South River HS	297
Glendale Regional	2	South Shore ES	49
Hebron-Harman ES	49	Southern HS	85
High Point ES	41	Southern MS	95
Hillsmere ES	33	Southgate ES	42
Hilltop ES	23	Sunset ES	22
Jacobsville ES	43	Tracey's ES	24
Jessup ES	57	Tyler Heights ES	2
Jones ES	37	Van Bokkelen ES	11
Lake Shore ES	35	Waugh Chapel ES	50
Lindale MS	122	West Annapolis ES	29
Linthicum ES	44	West Meade Early Education Center	21
Lothian ES	42	Windsor Farm ES	75
MacArthur MS	65	Woodside ES	8
Magothy River MS	122	Other (please specify)	44

26. If you would like to provide any additional comments in regard to AACPS student transportation, please do so here. Where is the district doing well in student transportation? In what areas could student transportation be improved?

Responses	Tallied Count
Communication Problem	108
Additional Aide Needed	32
Positive Comment	215
Bus Stop	176
Pickup Time	393
Bus Procedures	14
Ride Too Long	86
Driver/Aide Training	253
Operations	282
Other	58
Location Tracking/Notifications	38
School Start Times	145
Student Behavior	44
Walking Students	139

Facilities Master Plan Element: AACPS Transportation Campus

This Draft Plan Element has the goal of establishing and putting into operation a new, comprehensive and centrally located AACPS Transportation Campus (AACPS/TC).

As a draft document, the numbers and parameters it contains are not cast in stone. Instead, the document is intended to be used as a guide to decision-making via AACPS leadership’s standard operating procedures for land acquisition, and facilities programming, design and construction.

The AACPS/TC will replace the currently leased locations of Waterford in Pasadena, and Door’s Texaco in Crownsville, as well as the recently developed bus AACPS-owned parking facility at South River High School.

The central location of the new AACPS Transportation Campus will be established on land to be acquired by AACPS in one of two possible configurations:

1. A single, contiguous site off Interstate 97 as near as possible to the half-way mark between Route 100 to the north and Route 50 to the south; or
2. As two separate sites – one located as near as possible to the intersection of Route 100 and I-97, and the other as near as possible to the intersection of Route 50 and I-97.

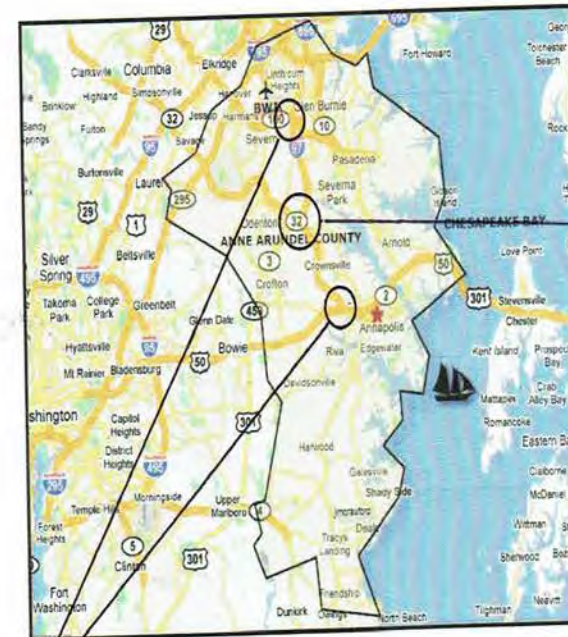
Functions to be located on the AACPS/TC

Initially, the following functions will be located on the land described as a single, contiguous site:

1. Four bus maintenance and repair service bays initially, expandable to up to sixteen if needed due to enrollment increases and/or reduction/elimination of bus service outsourcing;
2. Parts and equipment storage of sufficient size and configuration to serve the initial four repair and maintenance bays; expandable as other bays are added;
3. One bus fueling station; expandable as more buses are added;
4. Parking for 75 buses, 10 other AACPS vehicles, 85 bus driver and staff vehicles, visitors, and delivery trucks and vans; expandable as more buses are added;
5. Toilets, break rooms;
6. Office for lead mechanic/site manager; office areas (cubicles) for other mechanics, dispatchers, fueling station staff, etc.
7. Office building to replace the current Millersville Transportation Administration Building; separate parking for staff and visitors. (Office space in item (6.) may be included in the new Office Building.

If the two-site configuration (I-97 and Rt. 100; I-97 and Rt. 50) is selected, the foregoing functions may need to be logically distributed between the two sites.

In any event, the single or double site options must consist of enough acreage to permit expansion from the current AACPS bus and vehicle fleet to all buses and vehicles needed if bus service outsourcing were reduced drastically or eliminated and 10,000 students added to the current AACPS enrollment. In broad terms, such expansion would need to encompass parking for 800 buses and fleet vehicles and car parking for an equal number of drivers, if outsourcing of bus service were eliminated. Additional expansion capacity must be available for an extra 100 buses and driver car parking, if 10,000 more students are added to the current enrollment of about 80,000 students.



SINGLE SITE OPTION

DUAL SITE OPTION

Two Strategic Modes: Emergency and Master Plan

The master planning of all steps necessary to put in place and operate the AACPS/TC would suffice under ordinary circumstances. However, it is possible that changes beyond the full control of AACPS may occur before all the deliberate master planning work has been accomplished. Such changes could lead to the sudden sale of the Waterford Site and the possibility that AACPS may need to find other means to house and continue the functions currently provided for in the lease with the site owners. Although AACPS may be able to negotiate a period to transition from the Waterford site to other arrangements, it would be preferable to have contingency plans considered, prepared and ready to be implemented without undue duress and panic that could lead to ill-advised decision-making.

Emergency Contingency Plan

Immediately upon initiation of work on this Draft Plan Element, AACPS must convene a Contingency Planning Task Force, consisting of the AACPS leadership team, plus selected team staff. The goal of this Task Force is to identify and place into action plans for those options that will allow AACPS to make an orderly transition from its operations at the leased Waterford site to a district-owned Transportation Campus as outlined previously.

The model for this Contingency Planning Task Force is based on the 1982 Tylenol poisoning episode. The response of Johnson & Johnson, and its pharmaceutical subsidiary McNeill, are a textbook case of crisis management best practice. What has been discussed rarely is the claim by some persons familiar with J&J management style, that some in the J&J leadership believed in the “power of negative thinking.” This meant that the company engaged in a standard operating procedure of trying to anticipate potential threats to its business. One such perceived threat was to the quality of a J&J product or product line. According to the J&J insiders, a contingency policy was developed that stipulated

1. Crisis response would be open and honest, and free of denial, avoidance or other obfuscation.
2. All compromised product would be removed immediately from all store shelves everywhere.
3. Substitute product that could be trusted would be placed on all empty shelves asap.

In the case of AACPS, the threat is more easily anticipated: after the family matriarch’s death, the family has vowed to sell the site asap. AACPS must find a way or ways to bridge the potential gap between losing access to the Waterford site and being able to move to a completed Transportation Campus site – without making any ill-considered moves. While it is the Task Force’s job to come up with one or more specific action items, the following

ideas are suggested for consideration:

- Moving the AACPS owned buses, fleet vehicles and drivers' cars to temporary locations at some schools with extraordinarily large parking areas; use private sector maintenance garages and fueling facilities.
- Lease a site capable of parking all AACPS buses, fleet vehicles and drivers' cars. All else same as above.
- Seek a lease extension to stay on Waterford site until new Transportation Campus is ready for occupancy.

Master Planning Actions for new AACPS Transportation Campus

Action Item	Estimated Cost	Complete in Year
Land acquisition (28 acres @ \$900,000)	\$25,200,000	1-2
Planning, design and permitting of Transportation Campus on single or dual sites (detailed facilities for current use plus expansion areas)	\$1,500,000	3-4
Construction on single or dual sites	\$20,000,000	4-5

Land Acquisition

AACPS should follow its standard operating procedures for land acquisition. A total land area of approximately 28 acres should be secured on a single central site or dual sites for the following services:

- | | |
|--|--------------|
| 1. Parking for 72 AACPS owned buses and 10 fleet vehicles initially, plus 100 cars and service vehicles | 126,000 s.f. |
| 2. Four bus service bays plus ancillary storage and service facilities (toilets, break rooms, tire repair, etc.) | 10,000 |
| 3. Fueling station (single or two on dual site arrangement) | 20,000 |
| 4. Transportation administration offices and related parking | 100,000 |
| 5. Future parking expansion for 660 additional buses, plus 660 cars and service vehicles in case all bus service outsourcing is discontinued (within the next five to ten years) | 825,000 |
| 6. Additional future parking expansion for 100 buses, plus 100 cars and service vehicles (by 2030) | 125,000 |

Items 1-4: 6 acres (256,000 s.f.) – initially required acreage

Item 5: 19 acres (825,000 s.f.) – added buses after AACPS takes over ownership
Item 6: 3 acres (125,000 s.f.) – to accommodate added 10,000 students as forecast

The following site attributes are essential and should not be compromised in land acquisition:

- Ingress and egress must be unobstructed by chronic rush-hour traffic. Dedicated access and egress roads are preferable to shared roads. Dedicated access from Routes 50 and 100 can be acquired relatively easily. Dedicated I-97 access may not be as easily obtained.
- The required acreage should be free of environmentally sensitive wetlands.
- The required acreage should be generally flat and free of twisted and tortuous landscape elements.
- The acreage reserved for expansion can be viewed as a land banking resource in the unlikely event it should not be needed in the future. It could be used as a farming resource for the student nutrition program, or as a nature preserve for student field trips, if the open land is suited for such purposes.

Planning, Design and Permitting of initial Transportation Campus

Architects and engineers specializing in bus parking, maintenance, repair and fueling facilities are few and far between. But they do exist. We recommend AACPS work with a trusted local A/E firm and ask them to team with a firm specializing in bus facilities. The URLs to two resource documents are shown opposite. In addition to valuable planning and design information, they may contain names of specialist for teaming with the AACPS design firms.

Moreover, as is the case with all design projects, it is recommended that a representative group of stakeholders be included in the review of the facility programs and designs. Bus drivers, bus aides, dispatchers, mechanics, and other workers on the site should be included and their comments and recommendations considered earnestly.

Two resource documents are offered as a beginning:

1. “Guidelines for Designing a School Bus Maintenance Facility.” A short, concentrated and information-filled article.

<https://www.schoolbusfleet.com/article/610267/guidelines-for-designing-a-school-bus-maintenance-facility>

2. “School Bus Maintenance Facility Planner.” A detailed reference document from the North Carolina State Board of Education, Department of Public Instruction. 66 pages. Contains list of persons who contributed to the document, including design professionals. Excellently detailed facilities planning and programming reference.

<https://www.schoolclearinghouse.org/pubs/BUS%20GARAGEXPNew2011.pdf>