Michigan Education Finance Study

Prepared for

State of Michigan

By

Augenblick, Palaich and Associates

June 2016

Executive Summary

Augenblick, Palaich and Associates (APA) is a Denver-based education policy consulting firm with over 30 years of experience conducting school finance studies across the country. Following a competitive request for proposals (RFP) process, APA was contracted by the state of Michigan, through the Department of Treasury, to conduct a data-focused analysis of the revenues and expenditures of school districts in the state. The RFP provided specific guidance on the types of analysis required of the contractor and the specific performance standard to be used to identify districts. APA completed two main areas of study, as required under the RFP:

1. **First, APA reviewed the revenues and expenditures of districts meeting specific performance standards.** The review included an examination of base expenditures (expenditures regardless of student need) and expenditures for the students with special needs, including economically disadvantaged students, English Language Leaner (ELL) students, and special education students. This review required a number of subtasks, including an analysis of how successful districts serve special needs students; identification and analysis of the exemplary school districts (high-performing, low-spending) within various cohorts across the state; an equity study; and an analysis of how successful districts distribute funds to their schools.
2. **Second, APA examined the differences in non-instructional spending across regions of the state.** Cost areas to be included in this examination (as required by the RFP) were food service, transportation, maintenance and operations (M&O), community service, and adult education. The RFP also required an examination of the differences in revenues available to school districts by region and the differences in district expenditures by area.

Michigan Study in National Context

There are three types of education finance studies that are often conducted across the country:

1. **Structural Reviews:** A structural review of a state's finance system is focused on understanding how a state's system works and determining if the finance system is meeting the state's needs. A structural review can include examination of the types of adjustments made in the system for student and district characteristics, along with examination of the incentives built into the system. Most structural reviews are done in conjunction with an equity or costing out study.
2. **Equity Studies:** An equity study examines the horizontal, vertical, and fiscal neutrality of a finance system. It works to understand how districts, students, and taxpayers are treated under the funding formula.
3. **Costing Out Studies:** A costing out study measures the level of resources needed for districts and students to meet a specific standard. Costing out studies focus on determining a base funding level along with the adjustments needed for special needs students. There are four costing out approaches that are typically used: the Professional Judgment (PJ) approach, the Successful Schools, or Successful School Districts (SSD), approach, the Evidence-based (EB) approach, and the Statistical approach.

Many of the requirements for the Michigan Education Finance Study most closely resemble those of an SSD approach-based costing out study. Unique to the Michigan Education Finance Study is its identification of a specific standard to define "success" in districts: Successful districts have proficiency levels above the state average for all of the Michigan Merit Standards.

Additionally, the Michigan Education Finance Study required an equity study, as well as an examination of some structures of the state finance system by looking at the differences in costs across regions.

APA's Approach

APA's approach to conducting the Michigan Education Finance Study included the following:

1. Creating a performance and financial database and Identifying successful school districts;
2. Analyzing the revenues and expenditures of identified successful districts, including conducting a regression analysis to understand if there was a relationship between demographics, expenditures, and student performance;
3. Conducting a survey of successful districts regarding the supports and services provided to special needs students, the expenditures and revenues used to serve special needs students, and the methods used to distribute funding to schools, including information on the degree of autonomy school administrators have over their budgets;
4. Conducting a cohort analysis to identify and examine exemplary districts (districts that both met the SSD performance criteria and had low spending);
5. Conducting an equity study;
6. Examining regional variation in non-instructional expenditures; and
7. Examining variations in capital and debt service expenditures.

Highlights from Each Report Chapter

Chapter II. Creating a Performance and Financial Database and Identifying Successful Districts

Chapter II, which follows Chapter I (an introduction to the report), discusses how the study team created a detailed performance and financial database of district expenditure and revenue information.

Performance and Financial Database

Given that the required Michigan Education Finance Study was very data-focused, it was essential to create a detailed performance and financial database of district expenditure and revenue information. APA collected performance data for each school district in Michigan, for each state test, by grade level, for the 2009-10 and 2013-14 school years. APA worked with the state to collect unsuppressed data, meaning the study team could analyze all performance results for all districts. The data allowed APA to examine performance levels on each test and performance changes over time.

All revenue data were collected from Michigan Department of Education's Bulletin 1011 and reconciled with Michigan's Financial Information Database to make sure there were no differences in amounts

reported. The revenue data were divided into federal, state, and local sources and characterized as either operating or non-operating.

APA gathered overall expenditure data from the past five years from Bulletin 1011 and reconciled that data with Michigan's Financial Information Database (unless otherwise stated). When examining expenditures, the study team focused on identifying all expenditures, regardless of source, including all federal funding. One area of focus was base expenditures. Base expenditures represent the amount a district spends related to serving a student with no special needs (where special needs students include special education, economically disadvantaged, and ELL students).

In the case of special education, there was difficulty ensuring that the study team could account for all district expenditures for special education students. (These difficulties are discussed further in Chapter I.) Given these data challenges, the report does not include a separate examination of total special education expenditures per student.

Excluding Outliers

The study team ran analyses for all 541 districts and for a subset of 528 districts. The 13 districts excluded from the subset group were outlier districts that had total operating expenditures per student in 2013-14 that were over three standard deviations above the mean for all districts, or above $21,030 per student.

In an analysis of spending across school districts, higher-spending outlier districts can skew data significantly. However, the study team did not believe that the higher-spending districts should simply be excluded from all analysis. Instead, the study team believed it was important to have the option to look not just at all districts but also at the subset of districts that did not include the higher-spending districts. In most cases, the report will show the results for both groups (All Districts and Excluding Outliers) and report on any differences seen when looking at the results. Appendix A lists the 13 districts excluded.

Identifying Successful Districts

The first step in understanding the resources needed to meet state standards is the identification of "successful districts." A successful district is one that is meeting a specific performance standard, generally tied to performance on statewide assessments. The identification of successful districts does not mean that other districts are not performing well. Furthermore, the measures used to identify successful districts generally do not account for district performances in areas such as ability to meet student support needs or ability to provide a robust set of course offerings. When a district is identified as successful, it simply means that the district is meeting the specific performance standards set by a study. Researchers can examine a successful district's expenditure levels to understand what resources the district used to meet the set performance standards.

In the RFP for the Michigan Education Finance Study, the state identified a specific standard for selecting successful districts: Successful districts have proficiency levels above the state average for all of the

standards under the Michigan Merit Standards. In its response to the state's RFP, the study team laid out an approach that both (1) looked at the state's standard for selecting successful districts and (2) looked at four of other performance standards to understand the differences in resources between different measures of successful districts.

Standard	Criteria
Above Average	Set by state; the percentage of district students scoring proficient or above is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Above Average districts.
High Absolute Performance	The percentage of district students scoring proficient or above is at least one standard deviation above the statewide average in all tested subjects. Districts meeting this standard are referred to as High Absolute Performance districts.
Growth	The change in the percentage of district students scoring proficient or above between 2009-10 and 2013-14 was above the statewide average in all tested subjects. Districts meeting this standard are referred to as Growth districts.
Special Populations	The percentage of students in each demographic subgroup present in the district is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Special Populations districts.
Notably Successful	Districts that met the Above Average Performance standard and one additional performance standard (High Absolute Performance, Growth or Special Populations), are referred to as Notably Successful districts.

There were 186 districts that met the Above Average performance standard, while 58 districts met the Notably Successful standard. Appendix B includes a list of the districts that meet each performance standard.

Chapter III. Examining the Expenditures and Revenues of Successful Districts

The study team examined the revenues and expenditures available for the districts under each of the four performance standards (Above Average, High Absolute Performance, Growth and Special Populations) and for the combined 58 districts that met at least one of three higher performance standards (Notably Successful districts).

Revenues for school districts generally come from one of three sources: local funds raised by property taxes and other local sources; state funds from both the funding formula and other funding streams; and federal sources. Revenues can also be broken down by operating and non-operating revenues. The revenue examination focused on operating revenues available to districts and examined both the level of per student funding coming from each source and also the split between the three sources that make up the total revenues for districts.

Michigan school districts, regardless of performance level, tended to rely very heavily on state funding. Since most of the successful district groupings had low overall student need, they tended to have fewer federal dollars in their mixes of funding. There was variation in the levels of revenue when looking at districts that met the various performance standards. Districts that met the higher standards (those

districts combined into the Notably Successful performance group) had higher revenues than Above Average districts, even though both groups of districts had similar distributions of revenues by source.

The study team then focused on examining districts' base expenditures. Base expenditures are the expenditures districts spend on students with no identifiable special needs. This means expenditures for special education, economically disadvantaged, and ELL students are excluded. When looking at results for all districts, a number of the groups of districts that met performance standards had total base expenditures that were much higher than those of the districts not meeting these standards. The districts that met performance standards tended to spend more on base instruction and other costs than the districts not meeting the standard. Once the outlier districts were removed, the spending for many successful groups dropped, often dramatically, and the differences between those meeting the standard and the remaining districts changed. In fact, in a few cases, the average base expenditures per pupil for the districts that met the standard fell below those of districts that did not meet the standard.

Regression Analysis

To better understand if there was a relationship between district demographics, district spending, and overall student performance on the Michigan standardized assessments, the study team conducted a series of regression analyses. All regressions looked at spending and proficiency in the 2013-14 school year. The measure of spending was the total operating expenditures per student for the district.

A regression is a standard statistical technique for examining the relationship between a single outcome variable and one or more predictive variables. A regression produces an estimate of the relationship between each individual predictor variable and the outcome variable. For each of the predictor variables, the regression estimates a coefficient and a significance level. The significance level determines whether the observed relationship between the predictor variable and the outcome variable is meaningful or not. Predictor variables with meaningful relationships to the outcome variable are said to be statistically significant. The coefficients for predictor variables with a statistically significant relationship to the outcome variable explain the strength or magnitude of the relationship between the two variables.

The following variables had a significant relationship to math proficiency:

- Percent economically disadvantaged,
- Percent special education,
- Percent Hispanic,
- Percent African-American, and
- Operational spending per student.

The following variables had a significant relationship to reading proficiency:

- Percent economically disadvantaged,
- Percent special education,
- Percent ELL,

- Percent African-American, and
- Operational spending per student.

In both the math and reading regressions, demographic characteristics of district students had a significant impact on the proportion of students who scored proficient on the assessment. For both subjects, the percentage of students who were economically disadvantaged was related to overall proficiency, with a 10 percentage point increase in economically disadvantaged students associated with a four percent decrease in math proficiency and a three percent decrease in reading proficiency. The percentage of special education students who were in special education was also related to overall proficiency, with a 10 percentage point increase in special education students associated with a five percent decrease in math proficiency and a four percent decrease in reading proficiency. Similarly, a 10 percentage point increase in African-American students was associated with a two percent decrease in math proficiency and a three percent decrease in reading proficiency.

Some demographic variables were significantly related to changes in only one subject area proficiency. A district's percentage of ELL students was not associated with math proficiency, but a 10 percentage point increase in ELL students was associated with a one percent decrease in reading proficiency. Conversely, a district's percentage of Hispanic students was not associated with reading proficiency, but a 10 percent increase in percentage of Hispanic students was associated with a two percent decrease in math proficiency.

Operational spending per student was significantly related to both math and reading proficiency. An increase of $1,000 in spending per student was associated with a one percent increase in proficiency for both math and reading.

Chapter IV. Survey of Successful Districts

To provide greater clarity about how successful districts are employing revenues to serve special needs students, APA conducted an online survey of all districts that met the state's Above Average standard. The survey, developed by APA, was reviewed by a number of district, Intermediate Service District (ISD), and Michigan School Business Officials association representatives. The survey collected information in four key areas:

1. Compensatory education and special education expenditures;
2. Supports and services for special populations, including types of services and interventions used for at-risk and ELL students, as well as information on the cost of services and the impact services had on student success;
3. Revenue sources for special populations; and
4. Approaches used to distribute state and local funding to schools.

Note that in the survey the term at-risk is used instead of economically disadvantaged. This is because compensatory education more broadly includes both Title 1 and state-defined at-risk, of which economically disadvantaged is a component, and it is the common terminology used in costing out studies, often using economically disadvantaged or free and reduced lunch status as a proxy.

Ninety-four districts out of 186 Above Average districts participated for a participation rate of 51 percent.

Overall, the study team found that Above Average districts were implementing many research-backed supports and services for special needs students, though levels of implementation varied between districts. The following list shows the supports and services for at-risk students implemented by the majority of surveyed districts:

- Additional student support (counseling, social workers, psychologists, behavior support),
- Pullout/push-in interventionist support,
- Differentiated instruction,
- Targeted professional development for instructional staff,
- Remedial courses/credit recovery,
- Summer school,
- Tutoring,
- Before/after school program(s), and
- Purchasing specific intervention curriculum/program/software.

For ELL students, supports and services implemented by a majority of the surveyed districts included the following:

- Pullout/push-in interventionist support,
- Differentiated instruction,
- Targeted professional development for instructional staff,
- Additional student support (counseling, social workers, psychologists, behavior support), and
- Purchasing specific intervention curriculum/program/software.

Supports and services for special education students are often IEP- and disability-specific. Thus, while the survey did not ask districts to generalize the supports and services they off to all special education students, districts were given the opportunity to share promising practices. A number of districts shared these promising practices, including RTI and multi-tiered service systems, peer-to-peer supports, and community learning and work programs to support special education students.

Overall, the study team found that while there were commonalities in the types of supports and services being offered, there was no one "right" model being implemented to serve at-risk, ELL or special education students; supports and services still varied quite a bit across successful districts. There was also no one "right" way of distributing funding to schools, with successful districts employing a variety of methods.

Similarly, expenditures for ELL and economically disadvantaged students and revenue sources for all special needs students varied widely between successful districts. The study team also found that Above Average districts' expenditures for at-risk and ELL students, as represented by calculated weights, were,

on average, less than the recommended levels from costing out studies conducted nationally. This is not unexpected, as costing out studies were designed to identify resources to ensure that all students could meet state and federal performance standards, including growth towards 100 percent proficiency. This growth standard is a very different performance benchmark than the benchmark used to select Above Average districts, or even the benchmark used to select Special Populations districts.

Finally, the study team found that there was no way to fully and accurately account for all special education expenditures at the per student level using current state-collected data. This gap in information on special education expenditures is important for future consideration.

Chapter V. Cohort Analysis

The RFP specifically asked that the study team explore revenues and expenditures at a deeper level by conducting an analysis of exemplary districts. To identify exemplary districts, districts were first disaggregated to create groups of districts with similar circumstances and characteristics. For this analysis, the study team identified the three different characteristics that could be used to sort districts into cohorts:

- **Density** – a characteristic measured by dividing the number of students in the district by the square miles of the district;
- **Need** – a characteristic measured by the Need Factor (a calculation explained in the body of the report) of each district;
- **Setting** – a characteristic measured by indicators of district setting (City, Suburb, Town, and Rural) provided by the National Center of Education Statistics.

Districts were disaggregated into quartiles or quintiles to create cohorts based upon the above characteristics. For example, the density characteristic was broken into quintiles: "Lowest Density," "Second Lowest Density," "Middle Density," "Second Highest Density," and "Highest Density." Breaking the characteristic into quintiles allowed the research team to sort districts into cohorts of other like districts, based on the characteristic being measured. Within each cohort grouping, the study team identified exemplary districts. Exemplary districts are both high-performing, and low-spending. To measure performance, the study team used the Above Average standard; any district meeting this standard was assumed to be a high-performing district. To qualify as a low-spending district, a district had to be in the bottom quarter of spending within a given cohort group.

The exemplary districts in each characteristic cohort are districts that are both high-performing, and low-spending, meaning that are districts that meet the Above Average standard while spending less than districts with similar characteristics. Exemplary districts tend to have much lower need than the non-exemplary districts within each cohort when looking at density and setting. Even when looking at the need cohorts, the non-exemplary districts have slightly higher need than the exemplary districts. Additionally, no district in the Highest Need cohort met the exemplary standard. The information makes the study team question how well exemplary districts represent what is needed for all districts to meet standard, even at the base level.

Chapter VI. Equity Study

There are multiple equity concepts that are typically addressed in school finance equity analyses. The most common of these concepts are horizontal equity, vertical equity and fiscal neutrality.

Horizontal equity is concerned with how equally resources are allocated to districts or students in similar situations. It is sometimes said that horizontal equity addresses the "equal treatment of equals." That is, an equitable school finance system will provide a roughly equal amount of resources to students with similar educational needs. Under a school finance system with high horizontal equity, students with no special needs are funded roughly equally, regardless of the school district where they attend school.

Vertical equity measures how well the school finance system takes into account varying student needs. A system with high vertical equity will provide more resources for students with greater educational needs. In this way, a system with high vertical equity supports the programs and interventions that are required for students with greater educational needs to succeed in school.

Fiscal neutrality assesses the link between local wealth and the amount of revenue available to support a school district. A touchstone of school finance theory asserts that there should be little or no relationship between local wealth, such as the local property tax base, and the amount of revenues provided to a local school district. A school finance system with high fiscal neutrality minimizes the relationship between local wealth, or capacity, and district spending.

Overall, the results of the equity analyses showed Michigan's school finance system to be moderately inequitable, based on the results of commonly accepted methods and standards for measuring the equity of state school finance systems. Measures of the state's horizontal equity indicated that there was considerably more variation in per student revenues and spending than recommended for an equitable school finance system. In some cases, the coefficients of variation (CVs) were nearly twice the generally accepted standard. The findings for vertical equity were also concerning and suggested that the state may be falling short in providing additional resources for serving special needs populations. The analyses showed that much of the variation was occurring in the upper half of the district spending distribution, where a number of districts were spending considerably more per student than the median district. While some of this variation was due to higher student need, a certain amount was also attributable to a number of high-wealth, high-spending districts.

The state is closer to meeting equity benchmarks for fiscal neutrality. The correlation between local property wealth and per student current expenditures fell just within the benchmark of 0.50. Other correlations between local wealth and resources, such as per student state and local operating revenues, base expenditures per student, and teachers per 1,000 students, fell above the 0.50 benchmark, ranging up to 0.64.

The state should be concerned that many of the measures of equity and fiscal neutrality have trended up slightly in recent years, suggesting that the school finance system may get getting less equitable over time.

Chapter VII. Examination of Regional Variations in Revenues and Non-Instructional Expenditures

APA examined the differences in revenues and non-instructional expenditures for all districts, by region, as required by the RFP. Non-instructional expenditures include food service, transportation, M&O, community service, and adult education. APA assigned districts to regions using the 14 Michigan Association of Regions' State Planning & Development Regions (SPDRs); a map of these regions is provided on page 85 of this report.

The expenditure analysis for the five function areas showed large variation in per student expenditures across the five areas and within regions. As such, it was difficult to determine any patterns by region.

Looking at a national measure of the cost differences for hiring educational personnel (the Comparable Wage Index), district cost differences by region for actual expenditures were different than the differences that would be expected based on personnel costs. The CWI differences by region did not align with the differences the study team observed in actual district expenditures by region.

Chapter VIII. Capital and Debt Service

APA examined the capital and debt service expenditures for (1) all districts, (2) districts by region, and (3) for those districts that passed bonds that appear linked to specific capital expenditure categories. The study team examined nine categories of capital expenditures and three debt service categories.

To understand the relationship between successful school district bond elections and actual district spending, APA linked data from the Michigan School Bond Loan Program Election Database to the Michigan Department of Education Financial Information Database (FID). First, APA examined the School Bond Loan Program Election data to identify those bonds passed by voters. Next, APA performed a keyword search that could be used to associate each district's bond components to the categories of spending identified in the FID. Then APA calculated actual district spending from 2009-10 through 2013-14 by FID category for those districts that passed bonds.

The expenditure analysis showed large variation in expenditure levels when looking at all capital and debt service categories. This was true when looking at all districts, between regions, within regions, and when looking at only those districts with passed bonds.

Regression analyses also showed that there is little relationship between specific district demographics and a district's ability to pass a bond. Instead, the size of the bond, in per student terms, appears to be the best indicator of successful bond passage.

Chapter IX. Recommendations

In the final chapter of the report, the study team offers a number of suggestions based on the analysis conducted. Please refer to Chapter IX for more detailed support for each of the following recommendations.

The base cost expenditures for Notably Successful districts should be used as the per student base cost for Michigan once efficiency screens are applied. There are numerous possibilities for base cost figures using the average expenditure figures from districts that meet five possible performance standards (Above Average, High Absolute Performance, Growth, Special Populations, and Notably Successful) and based on the cohort exemplary district analysis described in Chapters III and V of the report. Efficiency screens are explained for fully in the final chapter of this report.

The study team believes the Notably Successful districts represent the best indicator of what it might take for ALL districts to succeed at a base level. These districts are both meeting the Above Average standard and meeting at least one higher performance standard (High Absolute Performance, Growth, or Special Populations). Because higher-spending outlier districts can skew data significantly, APA recommends only using the expenditures from the 54 districts without outliers, after applying efficiency screens, to develop per student base cost figures. Using the Notably Successful districts with additional efficiency screens provides a base cost that is reflective of what it may take to meet state standards in an efficient manner.

The final per student figures, based on average expenditures in Notably Successful districts after efficiency screens are applied, are as follows:

- Instruction – $4,983,
- Administration – $884,
- Support – $875,
- Food Service – $316,
- Transportation – 355,
- M&O – $862,
- Community Service – $206,
- Adult Education – $15, and
- Other Expenditures – $172.

The total base cost for the districts is $8,667.

The study team recommends that funding from state and local sources be available for at-risk and ELL students equivalent to weights of 0.30 for at-risk students and 0.40 for ELL students. The determination of which students qualify for at-risk would be at the states discretion and could be based upon economically disadvantaged. The results of the analyses repeatedly show that there are significant gaps between districts identified as successful and districts that are not successful in terms of district need. This was true when examining the various performance standards and the exemplary districts. The Above Average districts reporting data on the survey were only spending at levels that resulted in implied weights of 0.11 for at-risk students and 0.24 for ELL students. These weights are far below the weights recommended by costing-out research and far below the weights currently available for districts in many other states.

Ensuring that districts have an appropriate level of resources to serve at-risk and ELL students is a vital part of giving all students the opportunity for academic success. Surveyed districts seemed to be implementing the types of supports and services for at-risk and ELL students that align with best practices from the literature review. Having more robust resources for at-risk and ELL students would allow districts to more fully implement, and perhaps even expand, these research-based best practices.

Setting the weights for at-risk and ELL students at 0.30 and 0.40, respectively, would put the weights at the low end of what is recommended in national costing-out studies. This would allow districts to implement – or more fully implement – the supports and services that have been documented in research as best practices for improving student success. At this time, the study team is not making a specific recommendation on how these funds should be distributed.

The study team recommends creating a system that better tracks special education expenditures from all sources. The report did not dig deeply into current special education expenditures by district, since accounting for these expenditures is complex. As mentioned in the data collection section, APA worked with Michigan Department of Education to identify the special education expenditures for each district. APA examined multiple sources and created different iterations of figures. After receiving feedback from the survey, it was clear to the study team that not all of the expenditure categories in special education had been identified.

The study team spent time talking to district personnel about special education funding in response to the survey. Based on these discussions, APA was able to identify better special education expenditure data and code expenditures in district books. It became apparent that many districts received support from ISDs for special education. Depending on the relationship with the ISD, expenditures may or may not show up on the district's books. Additionally, some districts' financials included expenditures made to other districts. This created a situation where apples-to-apples comparisons of full special education expenditures was difficult.

The study team suggests creating a system to track actual special education expenditures for districts at the district level.

The study team does not recommend setting regional benchmarks for non-instructional expenditures at this time. The Notably Successful district figures should be used at this time as part of the base cost figures. Chapter VII contained the regional analysis for non-instructional expenditures, including food service, transportation, M&O, community service, and adult education. APA does not believe the data analyzed in the study supports setting regional benchmark costs at this time. Variation is high both across the state and within regions for all cost areas.

The study team does not recommend setting regional benchmarks for capital or debt service expenditures. Chapter VIII examines capital and debt service figures for multiple categories of expenditures. The data show large variation in both the number of districts with expenditures in each category and the amount spent per student for those districts. Without better underlying information on the types of projects, the large variation in figures leads the study team to feel that creating regional

benchmarks is not possible at this time. The study team does not recommend a baseline figure for the state since capital projects, and funding available for those projects, is district specific.

Michigan should begin to collect targeted data if it wishes to set regional cost differences in the future. The study team found that the data currently collected made it difficult to analyze differences in costs across the state. If Michigan wishes to further explore regional cost differences, then the state would need to collect targeted data. For non-instructional costs, this data could include items such as miles driven by bus, utilities costs, and building capacity utilization rates. For capital and debt service, detailed data on the types of projects being undertaken would be important. This would include items such as the square footage of building projects, cost per square foot, and level of build-out. Without such detailed data, it is very difficult to understand what is driving differences in costs.

Michigan should work to create a more equitable state funding system. The results of the equity study show that there was significantly more variation in per pupil revenues and expenditures across districts than is desirable for an equitable school finance system. The relationship between local wealth and per pupil spending (the strength of which is measured through fiscal neutrality) is more in line with generally accepted standards for equity, but the relationship appears to be gradually strengthening in recent years, contributing to a school finance system that is becoming more unequal over time. There are three areas the study team recommends state policymakers consider to improve the equity of the system.

First, the state should explore alternatives for narrowing the wide range of per pupil revenues and expenditures. Much of the disparity in spending among districts is based on differences in historical spending levels (for example hold-harmless districts) and large differences in local property tax bases. Given the difficulty of asking higher-spending districts to reduce their level of spending, the most viable option is to work toward increasing revenues for the lowest-spending districts and narrow the gap between high-spending and low-spending districts over time. Increasing the foundation allowance, as recommended above, will help make progress toward this goal. A second option is to provide state aid for equalizing supplemental operating levies in low property wealth districts so that those districts have a better opportunity to increase revenues and spending above the current, formula-driven levels. A third option is to stratify foundation and other funding increases so that lower-spending districts receive larger per pupil increases than higher-spending districts.

Ultimately, the state should work toward having a single formula allowance amount for all districts supplemented by an equalized local option operating levy that must be approved by a district's voters and that provides an avenue for local discretion on school spending levels.

Second, the equity study also found that the state fell short on vertical equity, which measures how equitably spending increased across districts based on student need. The study found that it was not uncommon for spending in districts with high student need to be lower than in districts with lower student need. This suggests that the formulas for determining special needs funding are not generating enough revenue and that districts with the means to supplement these sources locally are doing so. This

issue should be addressed by adopting the study team's recommendations for increasing the weights for at-risk and ELL funding.

Finally, the state should continue to monitor the equity of its school finding system to prevent it from becoming more inequitable in the future.

Contents

I. Introduction

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Structural Reviews

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Equity Studies

An equity study examines the horizontal equity, vertical equity, and fiscal neutrality of a finance system. It works to understand how districts, students, and taxpayers are treated under the finance system. An equity study also measures whether levels of tax effort are equitable across the state. Horizontal equity examines how funds are distributed across districts, determining if like districts are treated similarly. Vertical equity examines how a system treats differences between districts. Looking at the vertical

equity of a system allows researchers to understand how well the finance system addresses uncontrollable differences between districts. These include differences in student needs, such as differences in the numbers of special education students, economically disadvantaged students, and ELL students between districts. Finally, fiscal neutrality measures the relationship between a district's wealth and the amount of resources that district has available to serve students. In a fiscally equitable system, there would be a low relationship between resource levels and district wealth.

Costing Out Studies

A costing out study measures the level of resources needed for districts and students to meet a specific standard. Costing out studies focus on determining a base funding level for districts, as well as funding adjustments needed for special needs students. There are four main approaches to costing out studies:

1. The Professional Judgment (PJ) approach asks educators from across a state to help identify the types and levels of resources needed in representative schools and districts for students to meet state standards. PJ panels identify a base level of resources as well as the additional resources needed to serve students with special needs. Often, these additional resources are presented as adjustments, or weights, within a funding formula.
2. The Successful Schools, or Successful School Districts (SSD), approach examines the base-level expenditures of districts identified to be outperforming other districts in the state. The Successful Schools approach has generally focused more on base expenditures and less on adjustments for special needs students.
3. The Evidence-based (EB) approach relies on academic research from across the country to identify the types and levels of resources being shown to have an impact on student performance. The EB approach develops a set of model schools, designed based on the aforementioned academic research. The set of schools is then reviewed by state educators to adjust for state-specific contexts.
4. The Statistical approach uses high-level statistical modeling to examine the relationships between district spending levels and district performances. The Statistical approach requires highly detailed data, often school-level data. This approach has been used the least often across the country due to its detailed data requirements.

Many of the requirements for the Michigan Education Finance Study most closely resemble those of an SSD approach-based costing out study. Unique to the Michigan Education Finance Study is its identification of a performance standard to define "success." This performance standard, identified in the RFP, will be discussed further in Chapter II, "Identifying Successful Districts and Creating a Financial Database." Additionally, the Michigan Education Finance Study required an equity study (Chapter VI), as well as an examination of some structures of the state finance system, looking at the differences in costs across regions (Chapter VII).

APA's Approach

APA's approach to conducting the Michigan Education Finance Study included the following:

1. Creating a performance and financial database to identify successful school districts;
2. Analyzing the revenues and expenditures of identified successful districts, including conducting a regression analysis to understand if there was a relationship between demographics, expenditures, and student performances;
3. Conducting a survey of successful districts regarding supports and services provided to special needs students, expenditures and revenues used to serve special needs students, and methods used to distribute funding to schools, including information on the degree of autonomy school administrators have over their budgets;
4. Conducting a cohort analysis to identify and examine exemplary districts (districts that both met the SSD performance criteria and had low spending);
5. Conducting an equity study;
2. Examining regional variation in non-instructional expenditures; and
3. Examining variations in capital and debt service expenditures.

The remainder of this report is dedicated to detailing each of these study components, then providing a series of conclusions and recommendations based on the study team's analysis.

II. Creating a Performance and Financial Database and Identifying Successful Districts

Creating a Performance and Financial Database

Given that the required study was very data-focused, it was essential to create a detailed performance database and financial database of district expenditure and revenue information.

Performance Data

For the Michigan Education Finance Study, APA collected performance data for each school district in Michigan, for each state test, by grade level, for the 2009-10 and 2013-14 school years. APA worked with the state to collect unsuppressed data, meaning the study team could analyze all performance results for all districts. The data allowed APA to examine performance levels on each test and performance changes over time. APA's performance database included subpopulation performance information for each test, by grade level. The study team collected data for 541 school districts in the state for each school year studied.

Revenue Data

All revenue data were collected from Michigan Department of Education's Bulletin 1011 and reconciled with Michigan's Financial Information Database to make sure there were no differences in amounts reported. The revenue data were divided into federal, state, and local sources and characterized as either operating or non-operating. Operating revenue is revenue from general revenues, special revenues, and trust funds, while non-operating revenue comes from capital projects and debt service. APA gathered revenue data to examine the percentage and proportion of per student funding that comes from federal, state, and local sources for each school district, in accordance with Michigan's RFP. While overall revenue information could be gathered, revenue information is not disaggregated based on which students are served through the revenue. To gather more specific information on revenue uses, the study team surveyed districts to ask for estimates of revenues allotted to economically disadvantaged, ELL, and special education students from federal, state, local and other sources.

Expenditure Data

APA gathered overall expenditure data from the past five years from Bulletin 1011 and reconciled that data with Michigan's Financial Information Database (unless otherwise stated). When examining expenditures, the study team focused on identifying all expenditures, regardless of source, including all federal funding. In the case of special education, discussed below, there was difficulty ensuring that the study team could account for all district expenditures for special education students.

Once all expenditures were identified, the study team created different categories of expenditures to analyze. One area of focus was base expenditures. Base expenditures represent the amount a district spends related to serving a student with no special needs (where special needs students include special education, economically disadvantaged, and ELL students). Base expenditures were divided into instructional, administration (school administration, general administration, business administration),

and support services costs. Non-instructional expenditures for transportation, M&O, community service, adult education, food services, and capital were kept separate. Where needed, expenditures for special needs students were also excluded from these non-instructional areas.

After base expenditures, compensatory education expenditures were another area of focus for the study team. Compensatory education represents Title I, bilingual programming, and state funding for economically disadvantaged students. Analyzing compensatory education expenditures provided the study team an opportunity to look at how much districts spend on ELL and economically disadvantaged students (two subpopulations of special needs students). Michigan Department of Education does not separately trace expenditures for these two special needs subpopulations. To better understand how districts use compensatory education funds, surveyed districts were asked to separately estimate percentages of compensatory education expenditures used for ELL students and economically disadvantaged students.

Capturing special education expenditures through existing, state-collected financial data proved difficult. The study team first attempted to identify special education expenditures using figures from Michigan's Financial Information Database, but received feedback from district and state personnel that these figures did not capture all of the expenditures for districts' special education students. Michigan Department of Education then provided APA with Bulletin 4096, which captures all special education expenses that are reimbursable by the state and deemed allowable by the Department. In its survey to districts, APA used Bulletin 4096 as the documentation for special education expenditures. The bulletin includes costs that were originally categorized as administration, transportation, student support, and instructional support in the spending data. To avoid double counting, costs were subtracted out of each of these respective categories and re-categorized as special education costs. However, the instructional support and student support costs in Michigan's Financial Information Database and Bulletin 4096 were impossible to fully extract from the special education costs and the base expenditures, due to coding differences.

In approximately 25 percent of the districts APA surveyed, using Bulletin 4096 caused the districts to understate special education expenses by an average of 28 percent. The study team learned that Bulletin 4096 does not include Individuals with Disabilities Education Act (IDEA) expenditures or expenditures paid from one district to another for special education costs.

APA identified the additional IDEA funds from the grant codes in Michigan's Financial Information Database and once combined with data from Bulletin 4096; the study team felt it has sufficiently captured the vast majority of special education expenditures necessary for exclusion in the process of creating base cost expenditures for districts.

However, as noted there were still two remaining challenges to consider when creating per student special education expenditures for each district that accurately capture all resources expended for a district's special education students. First, special education expenditures- as currently collected by the state- do not include the costs that Michigan's Intermediate School Districts (ISDs) incur for students

with disabilities. At times, ISDs will provide resources to a district's special education students that are not specifically tracked back to that district. Second, students may be receiving services from another district or through a collaborative that are again not tracked back to their district. Therefore, while total special education expenditures could be calculated and excluded, the expenditures could not be properly assigned to the students specifically served in order to create a per student expenditure figure. This makes it difficult to achieve a perfect apples-to-apples comparison between districts. As such, the report does not examine total special education expenditures per student.

Outlier Districts

The following chapter (Chapter III) provides a full examination of district revenues and expenditures. To frame how the analyses are conducted throughout the report, this section discusses a key analysis decision that the study team made based on the expenditure levels of certain districts. The study team chose to run analyses for all 541 districts and for a subset of 528 districts. The 13 districts that are excluded from the subset group are districts that have total operating expenditures per student in 2013-14 that are over three standard deviations above the mean for all districts, or above $21,030 per student. APA did not exclude any lower-spending districts, as the data show that large variations in spending only occurred among higher-spending districts.

Table 2.1 below shows that mean, standard deviation, minimum, and maximum for the 2013-14 total operating expenditures per student.

Table 2.1

Total Operating Expenditures Per Student			
Mean	$10,384	Minimum	$7,230
Standard Deviation	$3,549	Maximum	$40,254

As shown, there was large variation in operating expenditures per student, but the majority of variation occurred above the mean. The minimum figure was just a few hundred dollars below one standard deviation below the mean. On the other end, the maximum figure was almost four times the mean and over eight standard deviations away from the mean.

In an analysis of spending across school districts, higher-spending outlier districts can skew data significantly. The study team does not believe that the higher-spending districts should be excluded from analysis completely. Instead, the study team believes it is important to have the option to look not just at all districts but also at the subset of districts that does not include the higher-spending districts. In most cases, the report will show the results for both groups (All Districts and Excluding Outliers) and discuss any differences seen when looking at the results. Appendix A lists the 13 high-spending districts excluded from the Excluding Outliers group.

Identifying Successful Districts

The first step in understanding the resources needed to meet state standards is the identification of "successful districts." A successful district is one that meets a specific performance standard, generally tied to performance on statewide assessments. The identification of successful districts does not mean that other districts are not performing well. Furthermore, the measures used to identify successful districts generally do not account for district performances in areas such as the ability to meet student support needs or the ability to provide a robust set of course offerings. When a district is identified as successful, it simply means that district is meeting the specific performance standards set by a study. Researchers can examine a successful district's expenditures to understand what resources the district used to meet the set performance standards.

In the RFP for the Michigan Education Finance Study, the state identified a specific standard for selecting successful districts: Successful districts have proficiency levels above the state average for all of the standards under the Michigan Merit Standards. In its response to the state's RFP, the study team laid out plans to both (1) look at the state's standard for selecting successful districts and (2) look at a number of other performance standards to understand the differences in resources between different measures of successful districts. APA selected three additional district performance standards for this study: performing at least one standard deviation above average on all tests (High Absolute Performance), showing above average growth over time (Growth), and showing success serving subpopulations (Special Populations). To meet any of these three additional performance measures, districts had to first meet the RFP standard of having proficiency levels above the state average.

Table 2.2 outlines the criteria for each performance standard.

Table 2.2

Standard	Criteria
Above Average	Set by state; the percentage of district students scoring proficient or above is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Above Average districts.
High Absolute Performance	The percentage of district students scoring proficient or above is at least one standard deviation above the statewide average in all tested subjects. Districts meeting this standard are referred to as High Absolute Performance districts.
Growth	The change in the percentage of district students scoring proficient or above between 2009-10 and 2013-14 was above the statewide average in all tested subjects. Districts meeting this standard are referred to as Growth districts.
Special Populations	The percentage of students in each demographic subgroup present in the district is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Special Populations districts.
Notably Successful	Districts that met the Above Average Performance standard and one additional performance standard (High Absolute Performance, Growth or Special Populations), are referred to as Notably Successful districts.

As mentioned above, a district had to first meet the Above Average Performance standard before it could be included in any subsequent performance group. Districts that met both the Above Average standard and one or more of the other performance standards were considered Notably Successful districts, the fifth performance standard group.

The following sections (1) present the districts that meet each performance standard and (2) provide information on the average size, demographics, and needs of the districts meeting each standard. The study team used a metric called a Need Factor to examine a district's relative need, based on its concentration of students with identified needs. To calculate Need Factor, APA used student weights for special education, economically disadvantaged, and ELL students. These weights were taken from work APA has done around the country examining the additional costs such students create for districts. For this study, special education students received an additional weight of 1.0, economically disadvantaged students a weight of 0.4, and ELL students a weight of 0.5. Each district's student populations were multiplied by these weights to create a Need Factor. For example, if District A has 5,000 total students, 60 special education students, 200 economically disadvantaged students, and 30 ELL students, then its Need Factor Calculation looks like this: 5,000 total students + (500 special education students x 1.0) + (1,000 economically disadvantaged students x 0.4) + (300 ELL students x 0.5))/5000 total students = 1.210 Need Factor. The Need Factor ranged from 1.00 to 1.680 across Michigan, with an average of 1.337.

The list of districts that met each performance standard is included as Appendix B.

Applying the Above Average Standard

To implement the Above Average standard set out in the RFP, APA identified those districts that were above statewide average proficiency standards for all tests and at all grade levels. This means that if a district performed below the statewide average on even one test, then that district was excluded from the Above Average group.

Table 2.3 looks at the proficiency levels that districts had to achieve in each subject area to meet the Above Average standard.

Table 2.3

Proficiency Standards for Above Average Standard by Subject Area	
	Percent Proficient or Above
Math	36%
Reading	65%
Science	20%
Social Studies	29%
Writing	47%

As Table 2.3 shows, average proficient and above levels were relatively low for most test areas, with all subjects but Reading below 50 percent.

Table 2.4 looks at districts that met this performance standard. Throughout this report, the study team will refer to these districts as Above Average districts.

Table 2.4

Districts Meeting and Not Meeting Above Average Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	186	355	180	348
Average Size	3,548	2,015	3,686	2,067
Average Percent Special Education	10.82%	13.18%	10.94%	13.20%
Average Percent Economically Disadvantaged	34.48%	58.73%	33.93%	58.84%
Average Percent ELL	1.59%	2.85%	1.63%	2.89%
Average Need Factor	1.254	1.381	1.253	1.382

Table 2.4, above, shows that there are 186 districts that met the Above Average standard. Three hundred and fifty-five districts did not meet the standard. Though it may seem logical that about half of districts should have met an Above Average standard, identifying districts with above average performance on every individual test (not just above average performance overall) sets a higher benchmark of success. About 34 percent of districts had above average performance on every individual test.

In the 2013-14 school year, the average size of the Above Average districts was 3,548, larger than the average for the remaining districts. Further, the Above Average districts had lower average percentages of special education, economically disadvantaged, and ELL students; thus, their average Need Factor was lower than the average Need Factor in districts not meeting the standard, at 1.254 versus 1.381. The Above Average districts' Need Factor was also well below the statewide average Need Factor of 1.337.

When looking at the districts after excluding outliers, 180 districts met the Above Average standard, six fewer than the number of districts that met the standard when looking at all districts. Seven district outliers were excluded from the remaining districts. The demographics of the districts stayed highly consistent across all the variables. The average size of the districts meeting and not meeting the standard increased when the outliers were excluded. When outliers were excluded, there was very little change in the Need Factor for either districts meeting the standard or districts not meeting the standard.

Applying the High Absolute Performance Standard

The second performance standard measured which districts had a percentage of students scoring proficient or above that was at least one standard deviation above the statewide average in all tested subjects. For this standard, the study team continued to examine each test for each grade individually.

APA examined each test and identified the standard deviation of student proficiency, indicating the extent to which district proficiency levels ranged above and below the state average proficiency level. The study team then identified any district performing at or above one standard deviation above the mean on all tests for which it had tested students. This High Absolute Performance standard identified districts that tested exceptionally high, in an absolute sense, for all students and in all subject areas.

Table 2.5 shows the proficient or advanced rates a district had to achieve in each subject area to meet the High Absolute Performance standard. The rates are equal to one standard deviation above the average proficient and advanced rates.

Table 2.5

Proficiency Standards for High Absolute Performance Standard by Subject Area	
	Percent Proficient or Above
Math	51%
Reading	80%
Science	31%
Social Studies	43%
Writing	63%

The High Absolute Performance standards (proficiency rates) for each subject area were well above the Above Average standards. Three of the five subject areas required proficiency rates above 50 percent before a district could meet the High Absolute Performance standard.

Table 2.6 presents the districts that met the High Absolute Performance standard, referred to as High Absolute Performance districts.

Table 2.6

Districts Meeting and Not Meeting High Absolute Performance Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	34	507	32	496
Average Size	5,919	2,316	6,344	2,379
Average Percent Special Education	9.61%	12.55%	10.21%	12.57%
Average Percent Economically Disadvantaged	19.55%	52.46%	17.90%	52.44%
Average Percent ELL	2.33%	2.42%	2.48%	2.46%
Average Need Factor	1.186	1.347	1.186	1.348

Looking at the table above, there are 34 High Absolute Performance districts. These districts are over twice as large, on average, as those that do not meet the standard. The High Absolute Performance districts also have far lower need than those that do not meet the standard, with less than 20 percent of

students considered economically disadvantaged in addition to lower percentages of special education students. The overall Need Factor for these High Absolute Performance districts is only 1.186, compared to 1.347 for the remaining districts.

Excluding outliers removed two districts that met the standard for High Absolute Performance. Removing these districts caused the average size of High Absolute Performance districts to increase by over five percent. Though overall Need Factors remained very similar among the High Absolute Performance districts, the removal of the two outlier districts caused the average percentage of special education students to increase by about one percentage point and the percentage of economically disadvantaged students to decrease by more than 1.5 percentage points. The demographics of the remaining districts stayed very consistent.

The first two standards – Above Average and High Absolute Performance – both examine district performances at an absolute level. That is, they examine the percentage of students who scored proficient or advanced in a district, regardless of that district's starting point or its student demographics. The next two standards do not focus on absolute performance, but instead identify districts that have high growth in performance and success with certain student populations.

Applying the Growth Standard

The Growth standard examines changes in district performances between the 2010-11 and 2013-14 school years. It measures each district's change in percentage of students who scored proficient or above in each tested subject, then compares each district's change to the statewide average change. To meet the Growth standard, districts must meet both the growth criteria and the Above Average Performance standard. The Growth standard identifies districts that, in an absolute sense, may not be performing as high as the High Absolute Performance districts, but that nonetheless are showing growth at a rate above that of other districts in the state.

Table 2.7 shows the growth rates, by subject area, that each district had to achieve over time to meet the Growth standard.

Table 2.7

Growth Targets by Subject Area, Proficiency Point Growth	
Math	5.0
Reading	6.7
Science	1.7
Social Studies	3.3
Writing	4.1

The amount of change needed to achieve the Growth standard seems small. However, when compared to the average proficiency rates presented in Table 2.3, the percent change is relatively large, close to 10 percent for most subject areas when compared to state average performance. For example, if the

proficiency average in math is 36 percent, a five proficiency point gain would be over 10 percent above the average.

Table 2.8 shows the districts that met the Growth standard, referred to as Growth districts.

Table 2.8

Districts Meeting and Not Meeting Growth Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	27	514	24	504
Average Size	2,097	2,566	2,386	2,630
Average Percent Special Education	9.95%	12.50%	10.74%	12.51%
Average Percent Economically Disadvantaged	41.31%	50.87%	38.93%	50.89%
Average Percent ELL	0.84%	2.50%	0.94%	2.54%
Average Need Factor	1.269	1.341	1.278	1.341

Table 2.8, above, shows that there are 27 Growth districts. The districts meeting the Growth standard were slightly smaller than those not meeting the standard and had a relatively high average percentage of economically disadvantaged students. However, the average percentage of economically disadvantaged students in Growth districts was still nearly 10 percentage points lower than in districts that did not meet the standard. Growth districts had lower overall need, as measured by the Need Factor.

Excluding three outlier districts the average size of districts meeting the Growth standard increased by almost 10 percent. Further, excluding the outlier districts slightly increased the Need Factors of Growth districts. The average size of the remaining districts increased slightly after outliers were excluded, but the demographics remained nearly identical.

Applying the (Success with) Special Populations Standard

The final performance standard focuses on district performances among special needs populations. Often, Successful School studies are focused on identifying a base cost figure for a funding system, so they do not focus on special needs student performance. However, the Michigan School Finance Study explicitly mandates the examination of base and special needs expenditures. In response, the study team computed the statewide average proficiency levels for students in demographic subgroups for all tested subjects, then identified the districts that had above average performance by each subgroup present in the district, across all tested subjects, in addition to above average proficiency levels for all students. Demographic subgroups examined included special needs populations (special education, economically disadvantaged, and ELL students) as well as racial and ethnic subgroups. To be included in the Special Populations category, districts needed to also meet the Above Average standard set by the state.

Table 2.9 shows the proficient and above rates for each subgroup by subject area.

Table 2.9

Special Populations Targets by Subject Area and Subgroup, Percent Proficient or Above					
	Economically Disadvantaged	**ELL**	**Special Education**	**Black**	**Hispanic**
Math	25.2	18.7	13.0	20.0	28.0
Reading	55.0	35.2	30.9	49.3	56.5
Science	11.7	2.7	4.6	7.8	13.1
Social Studies	18.2	6.9	6.9	14.5	21.0
Writing	36.9	24.5	12.9	33.1	39.5

The rates are lower than state averages, but the districts also had to meet the Above Average standard for all students.

Table 2.10 examines the districts meeting this performance standard, called Special Populations districts.

Table 2.10

Districts Meeting and Not Meeting Special Populations Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	9	532	8	520
Average Size	7,466	2,459	8,419	2,530
Average Percent Special Education	10.37%	12.40%	11.67%	12.44%
Average Percent Economically Disadvantaged	25.74%	50.81%	20.63%	50.80%
Average Percent ELL	3.26%	2.40%	3.66%	2.45%
Average Need Factor	1.223	1.339	1.218	1.340

Table 2.9, above, shows that there are only nine Special Populations districts that met the subgroup performance standard and that these districts were nearly three times larger, on average, than the 532 districts that did not meet the standard. The districts that met the standard had an average percentage of economically disadvantaged students that was about half that of the remaining districts. Special Populations districts had a higher average percentage of ELL students, but a lower average percentage of special education students. The overall need in the Special Populations districts is low, as shown by the 1.223 average Need Factor.

Excluding outliers removed one Special Populations district. After this outlier was removed, the average size of the districts meeting the standard increased by nearly 1,000 students. Additionally, the average percentages of special education and ELL students increased, but the percentage of economically disadvantaged students decreased by five percentage points, leading to a decrease in the average Need

Factor. Once again, after removing outliers, the general demographics of the remaining districts stayed similar.

Notably Successful Districts (Meeting at Least One Additional Performance Standard)

The last three standards discussed (High Absolute Performance, Growth, and Special Populations) provide three different lenses for identifying successful districts. Districts meeting any of these three standards can be added together to create a combined group of districts that are notably successful (referred to as Notably Successful districts). A total of 58 districts met at least one of the three standards and are described in Table 2.11, below. Forty-seven districts met only one of the standards, 10 districts met two of the standards, and one district met all three standards.

Table 2.11

Districts Meeting and Not Meeting Notably Successful Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	58	483	54	474
Average Size	4,360	2,324	4,728	2,379
Average Percent Special Education	9.89%	12.67%	10.42%	12.66%
Average Percent Economically Disadvantaged	29.12%	52.95%	27.46%	52.95%
Average Percent ELL	1.76%	2.50%	1.89%	2.53%
Average Need Factor	1.224	1.351	1.223	1.351

On average, the Notably Successful districts were larger than the remaining districts. The Notably Successful districts tended to have much lower Need Factors than districts that did not meet the standard. The average Need Factor for the 58 Notably Successful districts is far lower than the average Need Factor the remaining districts.

After outliers are excluded, there was very little change in the demographics of those districts meeting the Notably Successful standard and remaining districts. Four districts were removed from the Notably Successful group, and nine remaining districts (districts not meeting the Notably Successful standard) were removed.

In the following chapters, the study team will examine the revenue and expenditures for each of the district performance standard groups and for the combined group of 58 Notably Successful districts.

III. Examining the Expenditures and Revenues of Successful Districts

The RFP asks for an examination of the revenues and expenditures available to students in the identified successful districts. This chapter examines the revenues and expenditures available for the districts under each of the four performance standards (Above Average, High Absolute Performance, Growth and Special Populations) and for the combined 58 districts that meet at least one of three higher performance standards (Notably Successful districts).

Revenues

This section examines the overall revenues available to the successful districts. Revenues for school districts generally come from one of three sources: local funds raised by property taxes and other local sources; state funds from both the finance system and other funding streams; and federal sources. Revenues can also be broken down by operating and non-operating revenues. Operating revenues are revenues generally associated with the day-to-day business of the district. Operating revenues exclude revenues for costs such as capital. This chapter focuses on the operating revenues available to districts and examines both the level of per student funding coming from each source and the percentage of total district revenue coming from each of the three sources.

Table 3.1 shows the revenues for those districts that met the Above Average standard and those that did not meet that standard. The table first shows the number of districts, the average size of the districts, and the average Need Factor – all information that was shown previously in Chapter II. The table also gives operating revenue data in per student figures.

Table 3.1

Revenues of Districts Meeting and Not Meeting Above Average Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	186	355	180	348
Average Size of Districts	3,548	2,015	3,686	2,067
Average Need Factor	1.254	1.381	1.253	1.382
Operating Revenues Per Student				
State	$6,192	$6,155	$6,349	$6,204
Local	$3,207	$2,862	$2,452	$2,427
Federal	$587	$1,035	$528	$1,004
Other	$29	$14	$8	$14
Total	$10,015	$10,066	$9,337	$9,650
Revenue Sources (By Percentage)				
State	61.8%	61.2%	68.0%	64.3%
Local	32.0%	28.4%	26.3%	25.2%
Federal	5.9%	10.3%	5.7%	10.4%
Other	0.3%	0.1%	0.1%	0.1%

State operating revenue per student was similar for Above Average districts and the remaining districts, at $6,192 and $6,155 respectively. The Above Average districts had about $350 more in local revenue, while those districts that did not meet the standard had nearly $500 more in federal revenue. Total operating revenue was about $50 less in Above Average districts, at $10,015. The lower section of Table 3.1, above, shows that the percentage of revenue coming from state sources was very similar between districts, regardless of whether or not districts met the Above Average standard. Districts that met the standard received 32 percent of their revenue from local sources, compared to 28.4 percent in districts that did not meet the standard. Federal funding as a percentage of total operating funding was nearly twice as high for the districts that did not meet the Above Average standard. Overall, districts that did not meet the standard had a level of total revenue similar to that of the Above Average districts. Districts that did not meet the standard differed most in their reliance on local and federal funding.

After excluding outliers, district total operating revenues decreased for both the Above Average districts and for the remaining districts. The remaining districts had a little over $300 more in total revenue. State revenues increased for both groups and local revenues decreased, meaning the reliance on state aid as a percentage of total revenue also increased for both groups. For Above Average districts, state aid as a percentage of total revenue increased by over six percentage points.

Table 3.2 shows that the difference in revenues is more distinct between those districts that met the High Absolute Performance standard and those that did not meet it.

Table 3.2

Revenues of Districts Meeting and Not Meeting High Absolute Performance Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	34	507	32	496
Average Size of Districts	5,919	2,316	6,344	2,379
Average Need Factor	1.186	1.347	1.186	1.348
Operating Revenues Per Student				
State	$6,454	$6,149	$6,793	$6,219
Local	$4,518	$2,877	$2,818	$2,411
Federal	$621	$899	$473	$866
Other	$5	$20	$5	$12
Total	$11,599	$9,944	$10,090	$9,508
Revenue Sources (By Percentage)				
State	55.6%	61.8%	67.3%	65.4%
Local	39.0%	28.9%	27.9%	25.4%
Federal	5.4%	9.0%	4.7%	9.1%
Other	0.0%	0.2%	0.1%	0.1%

The 34 High Absolute Performance districts had total operating revenues per student that were over $1,600 higher than the revenues in districts that did not meet the High Absolute Performance standard.

Further, districts that met the standard had higher state per student and local per student revenues than districts that did not meet the standard. Local revenue was over $1,600 more per student. Overall, the High Absolute Performance districts relied less on state aid (as a percentage of total operating revenue) than remaining districts and relied more on local revenue. The High Absolute Performance districts also relied less on federal revenue (at just 5.4 percent of total revenue) than the remaining districts (at 9.0 percent of total revenue).

Removing outlier districts excluded two districts that met the standard; their removal lowered the average total operating revenues by over $1,500 per student, meaning that the difference in total revenues between High Absolute Performance districts and the remaining districts was now just under $500 dollars (instead of $1,600). State operating revenues increased by about $350 per student and local revenues decreased by $1,700 per student. For the districts meeting the standard, the changes in revenues created a large increase in the reliance on state revenue and a decrease in reliance on local revenue. For the remaining districts, total operating revenue also decreased, but by much less, a little over $400 per student. State revenues increased slightly but local revenues fell by over $400. Reliance on state revenues increased and reliance on local revenues decreased.

Table 3.3 shows the revenues for the districts that did and did not meet the growth standard.

Table 3.3

Revenues of Districts Meeting and Not Meeting Growth Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	27	514	24	504
Average Size of Districts	2,097	2,566	2,386	2,630
Average Need Factor	1.269	1.341	1.278	1.341
Operating Revenues Per Student				
State	$5,529	$6,201	$6,020	$6,264
Local	$5,755	$2,834	$2,658	$2,425
Federal	$857	$882	$577	$855
Other	$5	$20	$4	$12
Total	$12,146	$9,938	$9,260	$9,556
Revenue Sources (By Percentage)				
State	45.5%	62.4%	65.0%	65.6%
Local	47.4%	28.5%	28.7%	25.4%
Federal	7.1%	8.9%	6.2%	8.9%
Other	0.0%	0.2%	0.0%	0.1%

As was true for districts meeting the High Absolute Performance standard, those districts that met the Growth standard had over $2,200 more total operating revenue per student than districts that did not meet the Growth standard. Districts that met the standard relied more heavily on local revenue than

state revenue. Districts that did not meet the standard received over 60 percent of total operating revenue per student from the state.

Removing outliers excluded three districts that met the Growth standard and lowered average total operating revenue dramatically. (Average total operating revenue fell nearly $3,000 per student.) The change came mostly from an over $3,000 per student decrease in local funding. The districts that met the standard went from having more local revenue than state revenue (when looking at all districts) to relying on state revenue for 65 percent of total operating revenues. The remaining districts also had a decrease in total operating revenue when high-spending districts were removed, but the decrease was just under $400 per student. As a result of these changes, the remaining districts showed higher total operating revenues than the districts meeting the standard.

Table 3.4 looks at Special Populations districts.

Table 3.4

Revenues of Districts Meeting and Not Meeting Above Special Needs Population Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	9	532	8	520
Average Size of Districts	7,466	2,459	8,419	2,530
Average Need Factor	1.223	1.339	1.218	1.340
Operating Revenues Per Student				
State	$5,966	$6,171	$6,550	$6,249
Local	$7,345	$2,906	$3,535	$2,419
Federal	$735	$884	$444	$848
Other	$3	$19	$4	$12
Total	$14,050	$9,981	$10,533	$9,528
Revenue Sources (By Percentage)				
State	42.5%	61.8%	62.2%	65.6%
Local	52.3%	29.1%	33.6%	25.4%
Federal	5.2%	8.9%	4.2%	8.9%
Other	0.0%	0.2%	0.0%	0.1%

Districts that met the Special Populations standard had total operating revenues per student that were over $4,000 higher than the total operating revenues in those districts that did not meet the standard. Table 3.4 shows that the higher revenues are generated by having local revenues that are over 50 percent of total operating revenues. The districts that met the standard had a local funding percentage over 20 percentage points higher than the local funding percentage in districts that did not meet the standard. The districts that met the standard had a state funding percentage nearly 20 percentage points below the percentage in districts that did not meet the standard.

Excluding one outlier Special Populations district dropped the total operating revenue by about $3,500 per student. Local revenues per student decreased about $3,800 per student and state revenues increased by over $500 per student. The remaining districts also saw a decrease in total operating revenue per student when the high-spending districts were removed, but the decrease was just over $400 per student. The districts meeting the standard still had over $1,000 per student more than the remaining districts.

Table 3.5 looks at the Notably Successful districts.

Table 3.5

Revenues of Districts Meeting and Not Meeting Notably Successful Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	58	483	54	474
Average Size of Districts	4,360	2,324	4,728	2,379
Average Need Factor	1.224	1.351	1.223	1.351
Operating Revenues Per Student				
State	$6,076	$6,179	$6,423	$6,234
Local	$4,604	$2,785	$2,775	$2,397
Federal	$699	$903	$525	$878
Other	$5	$21	$5	$13
Total	$11,385	$9,888	$9,728	$9,522
Revenue Sources (By Percentage)				
State	53.4%	62.5%	66.0%	65.5%
Local	40.4%	28.2%	28.5%	25.2%
Federal	6.1%	9.1%	5.4%	9.2%
Other	0.0%	0.2%	0.1%	0.1%

Looking at the 58 districts that met at least one of the higher standards (High Absolute Performance, Growth, Special Populations), the districts that met the standards had total operating revenues per student that were about $1,500 higher than the total operating revenues per student in districts that did not meet the standards. Table 3.5 shows that the per student state operating revenues were similar between districts that met the standards and districts that did not meet the standards. The difference in funding comes mostly from the additional local revenues available for the districts that met the standards.

Removing the four outlier districts that met the Notably Successful standard lowered the total operating revenues per student by over $1,500. The reduction in revenue can be attributed to a lowering of local revenue, although state revenues increased slightly. Districts that did not meet the standard had a similar pattern of revenues and had, in total, about $200 less per student in total operating revenues.

The preceding tables have focused on comparing districts that met specific standards to districts that did not meet those standards. Table 3.6 compares the districts that met the four different performance standards.

Table 3.6

Comparison of Revenues for All Standards, All Districts					
	Above Average	**High Absolute Performance**	**Growth**	**Special Populations**	**Notably Successful**
All Districts					
Number of Districts	186	34	27	9	58
Average Size of Districts	3,548	5,919	2,097	7,466	4,360
Average Need Factor	1.254	1.186	1.269	1.223	1.224
Operating Revenues Per Student					
State	$6,192	$6,454	$5,529	$5,966	$6,076
Local	$3,207	$4,518	$5,755	$7,345	$4,604
Federal	$587	$621	$857	$735	$699
Other	$29	$5	$5	$3	$5
Total	$10,015	$11,599	$12,146	$14,050	$11,385
Revenue Sources (By Percentage)					
State	61.8%	55.6%	45.5%	42.5%	53.4%
Local	32.0%	39.0%	47.4%	52.3%	40.4%
Federal	5.9%	5.4%	7.1%	5.2%	6.1%
Other	0.3%	0.0%	0.0%	0.0%	0.0%
Excluding Outliers					
Number of Districts	180	32	24	8	54
Average Size of Districts	3,686	6,344	2,386	8,419	4,728
Average Need Factor	1.253	1.186	1.278	1.218	1.223
Operating Revenues Per Student					
State	$6,349	$6,793	$6,020	$6,550	$6,423
Local	$2,452	$2,818	$2,658	$3,535	$2,775
Federal	$528	$473	$577	$444	$525
Other	$8	$5	$4	$4	$5
Total	$9,337	$10,090	$9,260	$10,533	$9,728
Revenue Sources (By Percentage)					
State	63.4%	67.3%	65.0%	62.2%	66.0%
Local	24.5%	27.9%	28.7%	33.6%	28.5%
Federal	5.3%	4.7%	6.2%	4.2%	5.4%
Other	0.1%	0.1%	0.0%	0.0%	0.1%

All of the district groups had low need, with no Need Factor above 1.270. The Above Average districts had the lowest total operating revenues ($9,337). The Notably Successful districts had average total operating revenues per student of $11,385, and the Special Populations districts had the highest total

operating revenues per student at $14,050. The districts meeting the Above Average standard had the highest state share of revenue, with over 60 percent of operating revenue coming from the state. The Growth districts and the Special Populations districts had state shares below 50 percent. All the groups had relatively low federal funding as a percentage of total operating funding. Overall, the districts meeting the Above Average standard had higher Need Factors and lower revenues than the districts meeting the other four standards.

Excluding outlier districts changed the figures. All the operating revenues per student figures decreased, with figures for Growth, Special Populations, and Notably Successful districts coming down by thousands of dollars. The distribution of revenue sources also changed. For all groups, state revenue was in the 60 percent range and local revenue ranged from 24.5 percent to 33.6 percent.

The next section examines the way districts spent the operating revenues they received.

Expenditures

Base Expenditures

While district revenues were examined by source, expenditures were examined by type of expenditure. Chapter II provided detail on how the financial database for the project was created and on the level of expenditure detail used. For this section, the study team focused on examining the districts' base expenditures. Base expenditures are the expenditures districts spend on students with no identifiable special needs (where special needs students include special education, economically disadvantaged, and ELL students). For this study, APA examined base expenditures by expenditure type, including the following expenditure types:

- Instruction,
- Administration,
- Student Support Services,
- Instructional Support,
- Food Service,
- Transportation,
- Maintenance and Operations (M&O),
- Community Service,
- Adult Education, and
- Other Expenditures.

The tables below condense these categories into instruction, administration, support, and other. Support includes student support services and instructional supports. Other expenditures include food service, transportation, M&O, community service, and adult education. Later in the report, food service, transportation, M&O, community service, and adult education are analyzed more deeply when looking at cost differences by region. Two total base cost figures, one with all base expenditures and one without Food Service and Transportation, are created. Because these two categories are often funded separately from other base functions, APA wanted to highlight the differences in expenditures when

these categories are included and when they are excluded. Both expenditure categories often vary for reasons unrelated to district characteristics used in funding formulas. For example, transportation expenditures per student are often less related to the need or size of a district and more related to the geography and density of a district. Like the revenue section, this section will first compare those districts that met specific standards to those districts that did not meet the standards. This section will then provide a comparison of the districts that meet the different standards.

Table 3.7 shows base expenditures for districts that met and did not meet the Above Average standard.

Table 3.7

Expenditures of Districts Meeting and Not Meeting Above Average Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	186	355	180	348
Average Size of Districts	3,548	2,015	3,686	2,067
Average Need Factor	1.254	1.381	1.253	1.382
Base Expenditures				
Instruction	$5,249	$4,938	$4,952	$4,766
Administration	$1,050	$1,177	$960	$1,089
Support	$710	$651	$709	$649
Other	$2,150	$2,216	$1,931	$2,115
Total Base Expenditures	$9,158	$8,983	$8,552	$8,619
Total Base Expenditures Less Food Service and Transportation	$8,258	$8,033	$7,788	$7,708

Expenditures between the two sets of districts were not greatly different. Those districts that met the standard did spend more on instruction, student support services, instructional support, transportation, community service, and other expenditures. Instructional expenditures were about $300 more per student in districts that met the standard compared to in districts that did not meet the standard. Total base expenditures were higher for districts that met the standard by under $200. Overall, districts that met the standard were larger with lower need and more base level spending.

When the outlier districts were removed, the total base expenditures per student decreased for districts that met the Above Average standard and for the remaining districts. Total base expenditures for districts that met the standard went down by over $600 per student and were lower than the base expenditures per student in the remaining districts by about $75 per student.

The districts that meet the High Absolute Performance standard had much higher base expenditures than those districts that did not meet the standard. In total, the districts that met the standard spent about $1,800 more per student than districts that did not meet the standard. Again, the districts that met the standard had far lower need and were larger. In districts that met the standard, instructional

expenditures were around $1,100 higher per student and the districts spent more on student support services and instructional support services.

Table 3.8

Expenditures of Districts Meeting and Not Meeting High Absolute Performance Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	34	507	32	496
Average Size of Districts	5,919	2,316	6,344	2,379
Average Need Factor	1.186	1.347	1.186	1.348
Base Expenditures				
Instruction	$6,121	$4,973	$5,420	$4,791
Administration	$1,109	$1,135	$863	$1,056
Support	$1,018	$648	$1,076	$643
Other	$2,500	$2,173	$2,010	$2,055
Total Base Expenditures	$10,747	$8,929	$9,369	$8,546
Total Base Expenditures Less Food Service and Transportation	$9,748	$8,000	$8,711	$7,672

Excluding the two outlier districts that met the High Absolute Performance standard lowered the per student base expenditures by almost $1,400. Instructional expenditures and other expenditures both dropped. The districts meeting the standard still had base expenditures that were over $800 higher per student than in the remaining districts (excluding high-spending districts).

Table 3.9 shows the expenditures for the Growth districts.

Table 3.9

Expenditures of Districts Meeting and Not Meeting Growth Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	27	514	24	504
Average Size of Districts	2,097	2,566	2,386	2,630
Average Need Factor	1.269	1.341	1.278	1.341
Base Expenditures				
Instruction	$6,043	$4,992	$4,828	$4,830
Administration	$1,386	$1,120	$947	$1,049
Support	$599	$675	$620	$671
Other	$2,937	$2,154	$1,917	$2,059
Total Base Expenditures	$10,965	$8,942	$8,313	$8,609
Total Base Expenditures Less Food Service and Transportation	$9,559	$8,034	$7,553	$7,744

Again, total base expenditures per student were higher for districts that met the standard by about $2,000. Growth districts had much higher instructional expenditures and also spent more on administration. The districts meeting the Growth standard spent less on student and instructional support services. The successful districts spend nearly double on transportation and about spend $300 per student on maintenance and operations. The Growth districts are slightly smaller than those that do not meet the standard and also have lower student need.

When the three outlier districts that meet the Growth standard were excluded, the figures changed dramatically. Base expenditures decrease by over $2,600 per student. The largest drop was in instructional expenditures per student, but there were also drops in administration and other base expenditures. The remaining districts also had a decrease in base expenditures when high-spending districts were removed. Overall, the decrease was much smaller and the remaining districts were left with per student base expenditures higher than in the districts that met the Growth standard.

Table 3.10 looks at the expenditures of Special Populations districts.

Table 3.10

Expenditures of Districts Meeting and Not Meeting Special Needs Population Standard				
	All Districts		**Excluding Outliers**	
	Meeting Standard	**Remaining Districts**	**Meeting Standard**	**Remaining Districts**
Number of Districts	9	532	8	520
Average Size of Districts	7,466	2,459	8,419	2,530
Average Need Factor	1.223	1.339	1.218	1.340
Base Expenditures				
Instruction	$6,951	$5,013	$5,513	$4,819
Administration	$1,576	$1,126	$846	$1,048
Support	$1,062	$665	$1,173	$661
Other	$3,487	$2,172	$2,200	$2,050
Total Base Expenditures	$13,076	$8,975	$9,732	$8,578
Total Base Expenditures Less Food Service and Transportation	$11,565	$8,052	$8,985	$7,716

The nine Special Populations districts had the highest per student base expenditures. As Table 3.10 shows, those districts that met the standard had over $13,000 per student in base expenditures. The districts that met this standard spent more in every category, including about $1,300 more in other expenditures.

When the one outlier Special Populations district was excluded, the base expenditures for districts meeting the standard were reduced by more than $3,300. The Special Populations districts still had higher spending in most categories and base expenditures per student were about $1,150 more per student than for the remaining districts.

Table 3.11 looks at the combined group of Notably Successful districts.

Table 3.11

Expenditures of Districts Meeting and Not Meeting Notably Successful Standard				
	All Districts		Excluding Outliers	
	Meeting Standard	Remaining Districts	Meeting Standard	Remaining Districts
Number of Districts	58	483	54	474
Average Size of Districts	4,360	2,324	4,728	2,379
Average Need Factor	1.224	1.351	1.223	1.351
Base Expenditures				
Instruction	$5,883	$4,944	$5,143	$4,794
Administration	$1,137	$1,133	$900	$1,061
Support	$837	$652	$875	$646
Other	$2,531	$2,153	$1,975	$2,061
Total Base Expenditures	$10,388	$8,881	$8,893	$8,562
Total Base Expenditures Less Food Service and Transportation	$9,301	$7,967	$8,188	$7,683

The 58 districts that met at least one of the three higher standards spent, on average, a little over $1,300 per student more on base expenditures than districts that did not meet the standards. The districts that met the standards also spent, on average, about $900 more per student on instruction and also spent more on support and other expenditures.

Excluding four outlier Notably Successful districts reduced the base expenditures by nearly $1,500 per student. Districts that met the standard still had higher spending in instruction and support. Base expenditures for the districts that met the standard were on average still more than $300 more per student than in the remaining districts.

Table 3.12 shows the base expenditures for each of the standards district groupings.

Table 3.12

Comparison of Expenditures for All Standards, All Districts					
	Above Average	**High Absolute Performance**	**Growth**	**Special Populations**	**Notably Successful**
All Districts					
Number of Districts	186	34	27	9	58
Average Size of Districts	3,548	5,919	2,097	7,466	4,360
Average Need Factor	1.254	1.186	1.269	1.223	1.224
Base Expenditures					
Instruction	$5,249	$6,121	$6,043	$6,951	$5,883
Administration	$1,050	$1,109	$1,386	$1,576	$1,137
Support	$710	$1,018	$599	$1,062	$837
Other	$2,150	$2,500	$2,937	$3,487	$2,531
Total Base Expenditures	$9,158	$10,747	$10,965	$13,076	$10,388
Total Base Expenditures Less Food Service and Transportation	$8,258	$9,748	$9,559	$11,565	$9,301
Excluding Outliers					
Number of Districts	180	32	24	8	54
Average Size of Districts	3,686	6,344	2,386	8,419	4,728
Average Need Factor	1.253	1.186	1.278	1.218	1.223
Base Expenditures					
Instruction	$4,952	$5,420	$4,828	$5,513	$5,143
Administration	$960	$863	$947	$846	$900
Support	$709	$1,076	$620	$1,173	$875
Other	$1,931	$2,010	$1,917	$2,200	$1,975
Total Base Expenditures	$8,552	$9,369	$8,313	$9,732	$8,893
Total Base Expenditures Less Food Service and Transportation	$7,788	$8,711	$7,553	$8,985	$8,188

Looking at the three higher standards individually, each of the groups of districts had instructional expenditures over $6,000 per student. When looking at the 58 Notably Successful districts that met at least one of the higher standards, instructional expenditures were just below $6,000 per student and were over $600 more than the average of the entire pool of Above Average districts. The Above Average districts also had lower expenditures on student support services and instructional supports than all the other groups, other than the Growth group. Total base expenditures for the Above Average group were at least $1,200 less than those of any other standard group.

When outlier districts were excluded, the base expenditures decreased for all standard groups. The minimum base cost decreased to $8,313 (Growth districts). The highest base cost was $9,732 (Special Populations districts).

This section explored the base expenditures of districts by performance standard group and exemplary districts. The next section discusses the study team's regression analysis of all school districts' performances.

Regression

To better understand if there was a relationship between district demographics, district spending, and overall student performance on the Michigan standardized assessments, the study team conducted a series of regression analyses. All regressions looked at spending and proficiency in the 2013-14 school year. The measure of spending was the total operating expenditures per student for the district.

A regression is a standard statistical technique for examining the relationship between a single outcome variable and one or more predictive variables. A regression produces an estimate of the relationship between each individual predictor variable and the outcome variable. For each of the predictor variables, the regression estimates a coefficient and a significance level. The significance level determines whether the observed relationship between the predictor variable and the outcome variable is meaningful or not. Predictor variables with meaningful relationships to the outcome variable are said to be statistically significant. The coefficients for predictor variables with a statistically significant relationship to the outcome variable explain the strength or magnitude of the relationship between the two variables.

The study team's first regression analysis looked at the relationship between spending and the proportion of students in a district who scored proficient on the state math assessment. In addition to controlling for the outcome variable and the spending measure, this regression also controlled for a number of demographic characteristics of the district:

- Total enrollment of the district (transformed by a log because of the wide range of district sizes in the state),
- Percentage of students who are economically disadvantaged,
- Percentage of ELL students,
- Percentage of special education students,
- Percentage of students who are white,
- Percentage of students who are Hispanic,
- Percentage of students who are African-American, and
- Number of teachers per student in the district.

When a variable is controlled for, the coefficients that the regression analysis estimates for each predictor variable describe the relationship between that individual predictor variable and the outcome, holding all other included variables constant. For example, the coefficient for operational spending per student describes the relationship between spending and student proficiency percentages, holding all the included demographic characteristics constant.

In the study team's regressions, a number of variables had significant relationships with the proportion of students in a district who are proficient on the math standardized assessment:

- Percent economically disadvantaged,
- Percent special education,
- Percent Hispanic,
- Percent African-American, and
- Operational spending per student.

Table 3.13, below, reports only the coefficients and p-values for variables that had a significant relationship.

Table 3.13

Significant Coefficients from the Math Proficiency Regression			
Variable	Coefficient	P value	Interpretation
Percent Economically Disadvantaged	-40.19	0.000	A 10% increase in economically disadvantaged students is associated with a 4% decrease in proficient students.
Percent Special Education	-52.44	0.000	A 10% increase in special education students is associated with a 5% decrease in proficient students.
Percent Hispanic	-16.62	0.035	A 10% increase in Hispanic students is associated with a 2% decrease in proficient students.
Percent African-American	-24.27	0.000	A 10% increase in African-American students is associated with a 2% decrease in proficient students.
Operational Spending per Student	0.0011	0.000	An increase of $1000/student in operational spending is associated with an increase of 1% in proficient students.

The second regression is identical to the first, except that it looked at the proportion of students in a district who scored proficient on the state reading assessment, rather than the math assessment. Other than the outcome variable, all other variables were the same. A number of variables had significant relationships with the proportion of students in a district who are proficient on the reading standardized assessment:

- Percent economically disadvantaged,
- Percent special education,
- Percent ELL,
- Percent African-American, and
- Operational spending per student.

Table 3.14, below, again reports only the coefficients and p-values for variables that had a significant relationship with the proportion of district students who were proficient on the reading assessment.

Table 3.14

Significant Coefficients from the Reading Proficiency Regression			
Variable	Coefficient	P value	Interpretation
Percent Economically Disadvantaged	-34.21	0.000	A 10% increase in economically disadvantaged students is associated with a 3% decrease in proficient students.
Percent Special Education	-37.47	0.000	A 10% increase in special education students is associated with a 4% decrease in proficient students.
Percent ELL	-14.36	0.011	A 10% increase in Hispanic students is associated with a 1% decrease in proficient students.
Percent African-American	-29.99	0.000	A 10% increase in African-American students is associated with a 3% decrease in proficient students.
Operational Spending per Student	0.0001	0.000	An increase of $1000/student in operational spending is associated with an increase of 1% in proficient students.

In both the math and reading regressions, demographic characteristics of district students had a significant impact on the proportion of students who scored proficient on the assessment. For both subjects, a district's percentage of economically disadvantaged students was related to overall proficiency, with a 10 percentage point increase in percentage of economically disadvantaged students associated with a four percent decrease in math proficiency and a three percent decrease in reading proficiency. A district's percentage of special education students was also related to overall proficiency, with a 10 percentage point increase in special education students associated with a five percent decrease in math proficiency and a four percent decrease in reading proficiency. Similarly, a 10 percentage point increase in African-American students was associated with a two percent decrease in math proficiency and a three percent decrease in reading proficiency.

Some demographic variables were significantly related to changes in only one subject area proficiency. A district's percentage of ELL students was not associated with math proficiency, but a 10 percentage point increase in ELL students was associated with a one percent decrease in reading proficiency. Conversely, a district's percentage of Hispanic students was not associated with reading proficiency, but a 10 percent increase in percentage of Hispanic students was associated with a two percent decrease in math proficiency.

Operational spending per student was significantly related to both math and reading proficiency. An increase of $1,000 in spending per student was associated with a one percent increase in proficiency for both math and reading.

The next section examines district expenditures for students with special needs, using results from the district survey.

IV. Survey of Successful Districts

To provide greater clarity about how successful districts are employing revenues to serve special needs students, APA conducted an online survey of all districts that met the state's Above Average standard. The survey collected information in four key areas:

1. Compensatory education and special education expenditures;
2. Supports and services for special populations, including types of services and interventions used for economically disadvantaged and ELL students, as well as information on the costs of services and the impacts services have on student success;
3. Revenue sources for special populations; and
4. Approaches used to distribute state and local funding to schools.

The study team developed the survey, which was then reviewed by a number of traditional school districts, Intermediate Service Districts (ISDs) and Michigan School Business Officials association representatives.

Ninety-four of 186 Above Average districts participated in the survey, for a participation rate of 51 percent. A copy of the survey is included as Appendix C.

Please note that in the survey, and therefore this section, the term at-risk is used instead of economically disadvantaged. This is because compensatory education more broadly includes both Title 1 and state-defined at-risk, of which economically disadvantaged is a component, and it is the common terminology used in costing out studies, often using economically disadvantaged or free and reduced lunch status as a proxy.

Special Needs Populations Expenditures

Compensatory Education (At-risk and ELL)

In Michigan, expenditures identified for compensatory education include spending for at-risk students (including both Title I and state-defined at-risk) and for bilingual education (ELL) students. As part of the survey of all districts that met the Above Average standard, participants were asked to do the following:

1. Review their state-collected compensatory education figures.
2. Estimate the percentage of compensatory education figures being used to serve at-risk students, and being used to serve ELL students since expenditure data are not tracked at that level.
3. Identify any additional targeted dollars being used to serve those students.

In APA's review of state-collected compensatory education figures, nearly 90 percent of respondents indicated that their district's figures were correct. For the remaining 12 percent of respondents who indicated that their district's figures were incorrect, the average variance between state-collected figures and actual figures was just under three percent.

Districts were then asked to estimate the percentage of expenditures being used to serve at-risk and ELL students. It is important to remember that (1) current expenditure data does not disaggregate this category of expenditures between the two groups, so all figures represent districts' best estimations, and (2) there is some overlap between the categories, since ELL students may also be at-risk and vice versa. District responses to the percentage of expenditures for each category of students varied widely, in part due to differences in size of student subpopulations served in districts. In response, the study team used district responses, coupled with information about additional targeted dollars, to generate a per student amount for an at-risk student and for an ELL student in each district. These district-specific per student amounts will be presented shortly.

Finally, districts were asked to identify any additional targeted dollars, beyond compensatory education expenditures, being used to serve at-risk and ELL students. About 25 percent of the districts participating in the survey indicated that their district spent additional dollars in 2013-14, outside of compensatory education expenditures, to serve at-risk and ELL students. The additional amounts spent varied widely between districts. On average, these districts spent an additional $387 per at-risk student and an additional $969 per ELL student.

APA combined compensatory education expenditures (using district-corrected figures where applicable) and identified targeted dollars to determine separate per student amounts for at-risk and ELL students. APA then translated these figures into "weights" that represented the relationship of those expenditures compared to base education expenditures. For example, if a district spent $1,000 per at-risk student and $10,000 per student at the base level, then that district would have a weight of 0.10 to represent their at-risk expenditures compared to base expenditures.

Table 4.1

At-risk and ELL Spending in Above Average Districts					
Per Student			Weight		
Average	Standard Deviation	Coefficient of Variation	Average	Standard Deviation	Coefficient of Variation
At-risk	$754	$479	0.635	0.11	0.06	0.494
ELL	$1,561	$1,529	0.980	0.24	0.25	1.011

On average, Above Average districts spent $754 per at-risk student, for a weight of 0.11. For ELL students, Above Average districts spent an average of $1,561 per student, for a weight of 0.24. It is important to note that the standard deviation for at-risk spending was high, with a coefficient of variation of 0.635, meaning that the standard deviation was over 60 percent of the average per student amount. For ELL spending, the standard deviation was even higher, with a coefficient of variation of nearly 1.00.

There was not a high enough participation rate from the nine districts that met the Special Populations performance standard (only four of the already small group of nine Special Populations districts participated) to determine if the districts that were performing especially well with these students varied in their expenditures.

Review of Costing Out Study Weights, Nationally

Costing out studies conducted across the country over the past 15 years have attempted to identify the resources needed to ensure that all students – including special needs populations – can meet state and federal standards. During the No Child Left Behind era, this included federal standards mandating growth towards 100 percent proficiency over a set time period. Often these studies use either the Evidence-based approach, or Professional Judgment approach to determine the resources needed to serve special needs students. As noted in Chapter I, the Successful Schools (or Successful School Districts) approach is rarely used due to the limited tracking of these expenditures in typical state and district expenditure databases. The Successful Schools approach also is limited to what resources are currently being employed, which may be different that the resources that should be in place to meet proficiency standards for all special needs students.

The following tables 4.2 - 4.3 present weights that have come out of these studies to represent the relationship between expenditures for these students and base expenditures.

Table 4.2 first looks at at-risk weights.

Table 4.2

State	Year	At-Risk Weight
Colorado	2003	0.26- 0.56 (based on district size)
Colorado	2006	0.26- 0.56 (based on district size)
Colorado	2011	0.35
Colorado	2013	0.35
Connecticut	2005	0.28-0.62 (based on concentration)
D.C.	2013	0.37
Kentucky	2004	0.49-0.59
Minnesota	2006	0.75
Montana	2007	0.27-0.50 (based on district size)
Nevada	2006	0.29-0.35 (based on district size)
Pennsylvania	2007	0.43
South Dakota	2006	0.24-0.72 (based on district size)
Tennessee	2004	0.25

Source: Aportela, A., Picus, L., Odden, A. & Fermanich, M. (2014).

According to national costing out studies, the weight for at-risk students ranges from 0.25 to 0.75 and may vary based upon district size. The 0.11 at-risk weight generated for Above Average districts is well below this costing out weight range. It is worth noting that the performance standard used in these costing out studies was a different (higher) benchmark than the performance standard used to identify the Above Average districts, and even the Special Populations districts.

Table 4.3 then presents ELL weights from costing out studies across the country.

Table 4.3

State	Year	ELL Weight
Colorado	2013	0.47-0.56 (based on district size)
Connecticut	2005	0.76
D.C.	2013	0.60
Maryland	2001	1.0
Minnesota	2006	0.90
Montana	2007	0.50-0.82 (based on district size)
Nevada	2006	0.47-1.21 (based on district size)
Pennsylvania	2007	0.75
South Dakota	2006	.39-1.18 (based on district size)
Tennessee	2004	0.60-0.90 (based on district size)

Weights was ELL students have ranged from 0.39 to 1.21, often varying based upon district size. Again, the current weighted relationship in Above Average district expenditures for ELL students compared to base expenditures is 0.24, which is lower than the range coming from costing out studies nationally.

Special Education

As noted in Chapter II, the study team had difficulty identifying the appropriate special education expenditure figures. The survey further confirmed this issue, with 27 percent of districts indicating that Bulletin 4096 did not contain the appropriate figures; on average, districts reported that their actual special education expenditures were 25 percent higher than figures from Bulletin 4096. In follow-up conversations with a number of districts, it became clear that Bulletin 4096 did not include Individuals with Disabilities Education Act (IDEA) funds, expenditures to other districts, or expenditures from ISDs, and may have overestimated expenditures in districts that provide services to other districts' students. The study team worked with the state to determine if there was a better combination of sources to track all of these figures and found that it was not possible to get a fully accurate figure.

In particular, 79 percent of districts reported receiving supports and services from their ISD- such as professional development, specialized therapists, and center-based programs- that were not accounted for in their district's expenditures. Per the study team's conversations with ISD leaders, it was also clear that ISDs do not track expenditures down to the district or student level, so those expenditures could not be accounted for.

Review of Costing Out Study Weights, Nationally

While the study team was unable to determine an accurate average weight for Michigan Above Average districts, there are national weights from other states' costing studies that can be considered, as shown in Table 4.4. Weights are may be presented for separate categories of special education student need or presented a single special education weight.

Table 4.4

State	Year	Special Education Weight
Maryland	2001	1.17
Colorado	2003	1.15
Colorado	2006	1.15
Colorado	2011	0.93 for mild; 1.93 for moderate; 5.2 for severe
Colorado	2013	0.93 for mild; 1.93 for moderate; 5.2 for severe
Connecticut	2005	0.987 for mild; 1.540 for moderate; 4.182 for severe
D.C.	2013	Level 1: .88; Level 2: 1.08; Level 3: 1.77; Level 4: 3.13
Kentucky	2004	1.23
Minnesota	2006	1
Montana	2007	0.77 for mild; 1.32 for moderate; 2.93 for severe
Nevada	2006	0.88 for mild; 1.28 for moderate; 2.52 for severe
Pennsylvania	2007	1.3
South Dakota	2006	0.94 for mild, 1.86 for moderate; 4.21 for severe
Tennessee	2004	0.5 for mild; 1 for moderate; 3.45 for severe

Source: Aportela, A., Picus, L., Odden, A. & Fermanich, M. (2014).

Single special education weights range from 1.0 to 1.3, with combined weighs across three categories of need (weighted by the average proportion of students in each category) also within that range. More often than not, costing out studies nationally produce a single special education weight closer to 1.0.

Supports and Services Provided to Special Needs Populations

To better understand special needs population expenditures in Above Average districts, the state asked that the study identify the types of supports and services being purchased in those districts. The district survey asked Above Average districts to identify these services at a broad level, to provide a basic understanding of what was going on "behind the curtain" to serve special needs populations in Above Average districts. Districts were also asked to rate the impact the supports and services had on student success and to assess the fiscal (cost) impact of the supports and services.

It is important to note that survey responses, especially impact ratings, are subjective. (For example, a support might cost the same dollar amount in two separate districts A and B, but represent a much greater financial burden (and higher fiscal impact) in District B than in District A.) Furthermore, the study team was only asked to identify what resources were being *purchased* to support special needs students, so the survey design may not capture other factors that support special needs students, such as family engagement, strong school leadership, and quality teachers.

At-Risk

The following table identifies the supports and services districts reported offering to serve at-risk students in Above Average districts.

Table 4.5

Resource	# of Districts	% of Total Responding Districts
Additional student support (counseling, social workers, psychologists, behavior support)	87	89%
Pullout/push-in interventionist support	85	87%
Differentiated instruction	83	85%
Targeted professional development for instructional staff	79	81%
Remedial courses/credit recovery	78	80%
Summer school	69	70%
Tutoring	68	69%
Before/after school program(s)	66	67%
Purchasing specific intervention curriculum/program/software	65	66%
Reduced class size(s)	30	31%
Additional administration support	21	21%
Security	19	19%
Other	6	6%
Balanced calendar	4	4%

Additional student support, pullout/push-in interventionist support, and differentiated instruction were the most frequently reported supports and services. The majority of Above Average districts also indicated that they offered targeted professional development, remedial courses/credit recovery, summer school, tutoring, before/after school program(s), and had purchased specific intervention curriculum/program/software.

After noting which supports and services they offered, districts were asked to rate each support and service, in terms of both impact on student success and fiscal (cost) impact.

Chart 4.1 shows district ratings of identified supports and services in terms of impact on student success.

Chart 4.1

Average Rating, Impact on Student Success
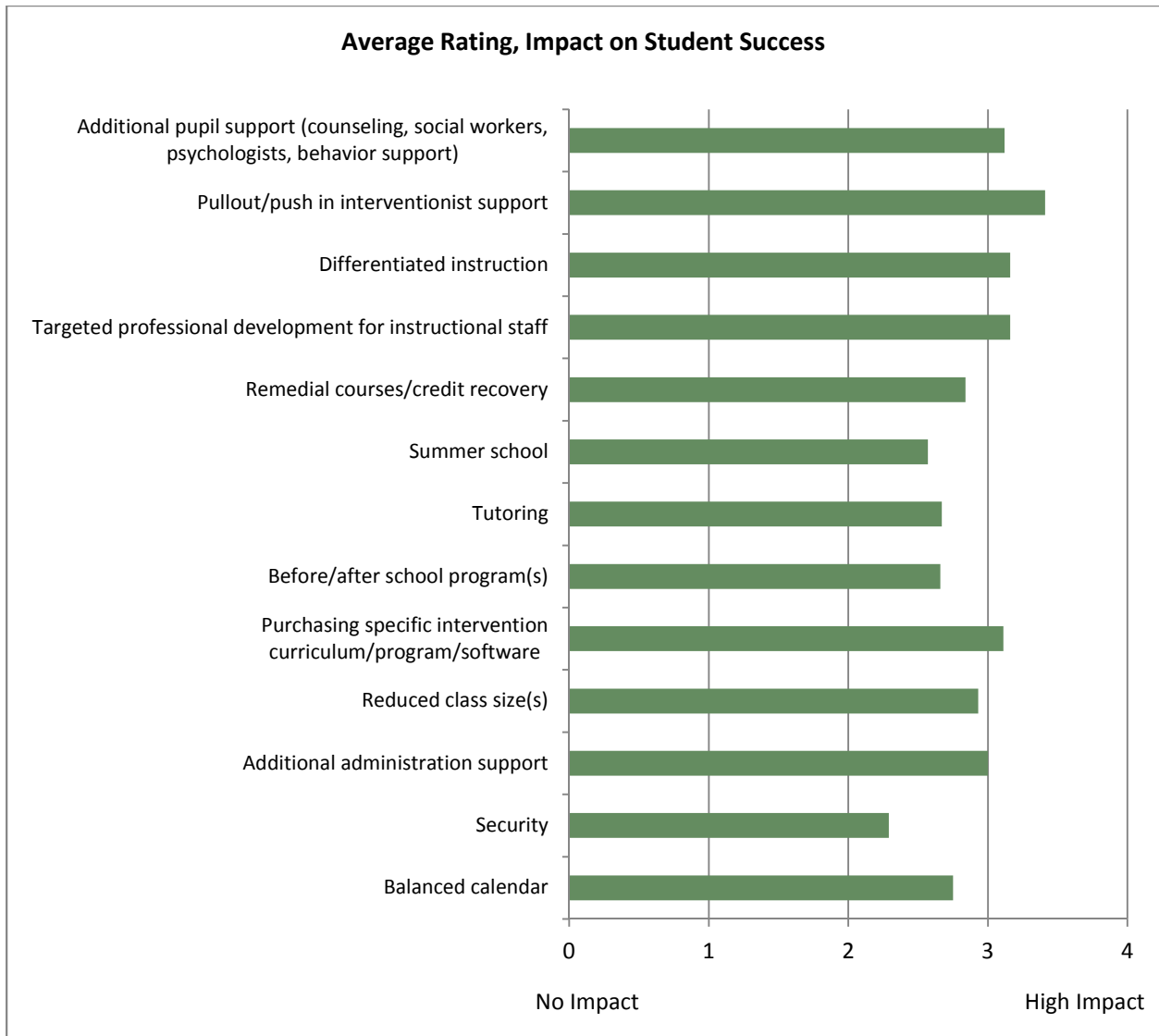
On a scale of zero (no impact) to four (high impact), a support or service with an average rating of three or higher would be considered to have a moderate to high impact on student success. Supports and services that met that benchmark included the following:

- targeted professional development for staff;
- purchased intervention-based curriculum, program, or software;
- pullout/push-in interventionist support;
- differentiated instruction;
- additional student support; and
- additional administration support.

Chart 4.2 shows district ratings of identified supports and services in terms of fiscal impact (cost).

Chart 4.2

Average Rating, Fiscal Impact
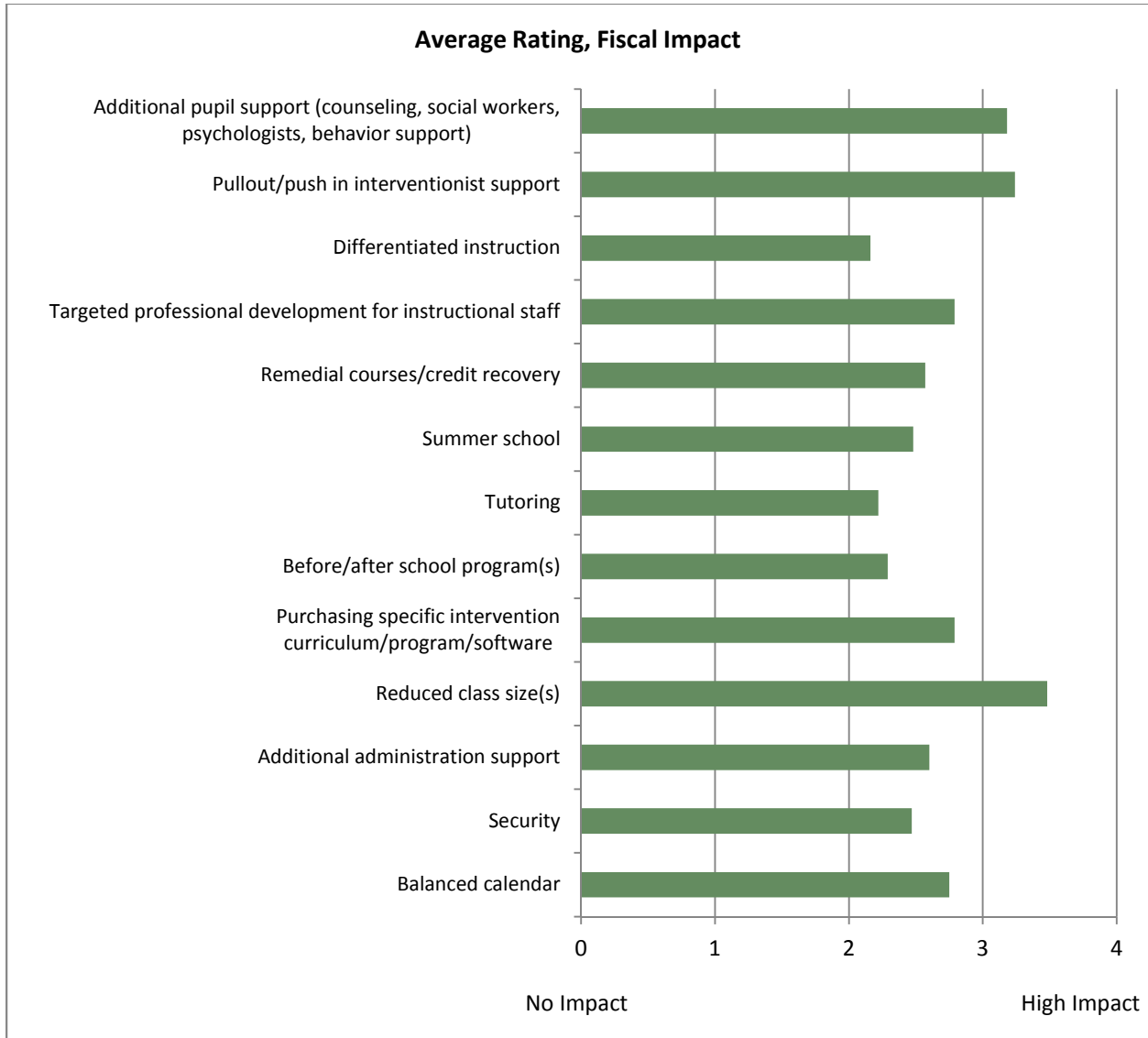
Using the same zero to four scale again, with the benchmark of three indicating moderate fiscal impact (cost), the following supports and services were rated, on average, to have a moderate to high fiscal impact (cost) in their district:

- reduced class sizes;
- pullout/push-in interventionist support; and
- additional student support.

Chart 4.3 takes supports and services and plots their average ratings of impacts on student success against their average ratings of fiscal impact.

Chart 4.3
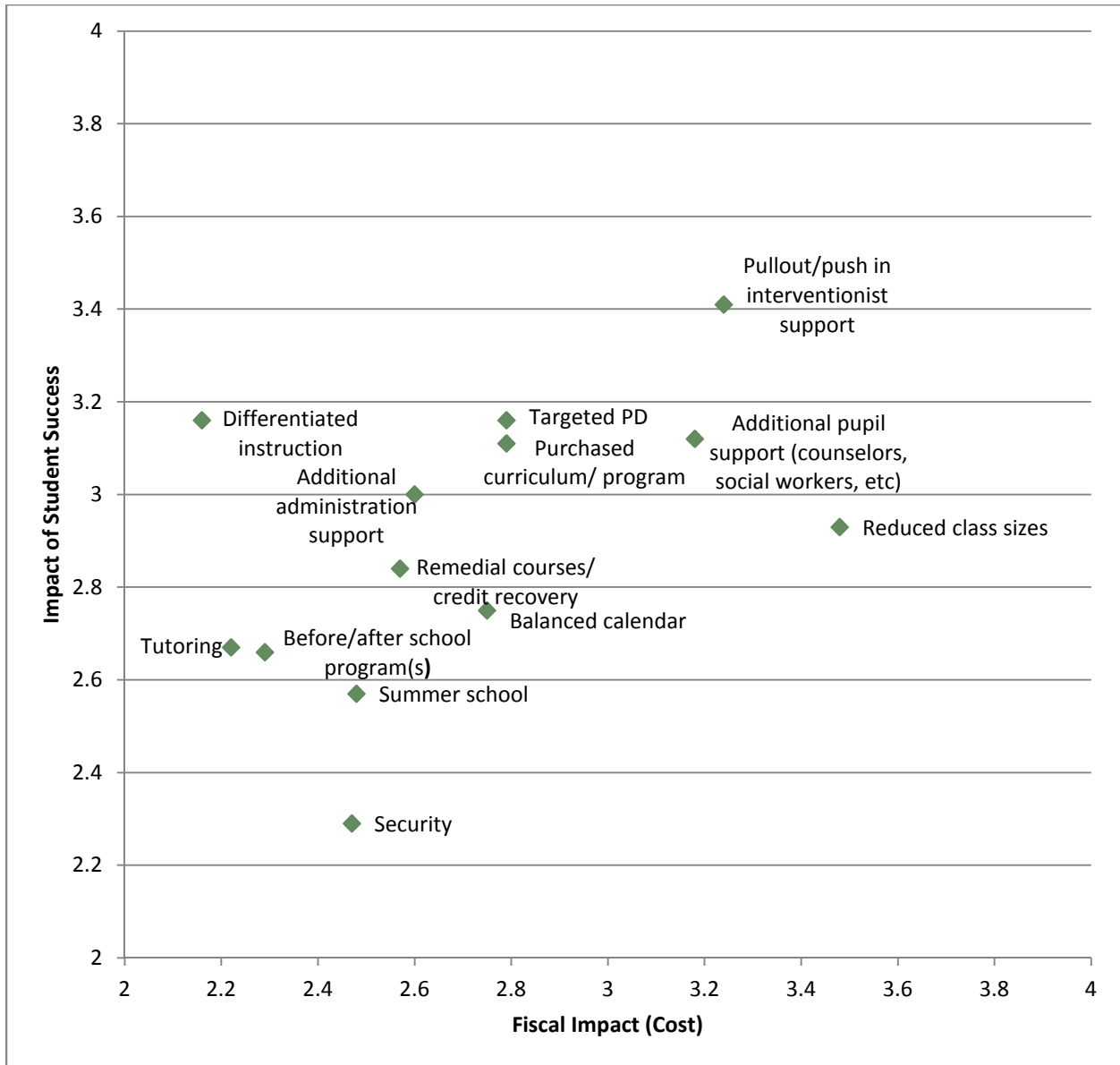
Two of the supports and services that districts rated highly in terms of impacts on student success are also higher-cost items for districts: pullout/push-in interventionist support and additional student support. Differentiated instruction had the lowest fiscal impact (cost) rating for districts, though it has a high rating for impact on student success. This makes sense, as differentiated instruction requires a shifting of resources (existing teachers doing something different) rather than an addition of resources. Reducing class sizes is the highest-cost intervention, with an average impact rating approaching the moderate level.

ELL

Supports and services were similarly explored for ELL students. Table 4.6 looks at what supports and services Above Average districts offered to ELL students.

Table 4.6

Resource	# of Districts	% of Total Responding Districts
Pullout/push-in interventionist support	68	74%
Differentiated instruction	67	73%
Targeted professional development for instructional staff	51	55%
Additional student support (counseling, social workers, psychologists, behavior support)	46	50%
Purchasing specific intervention curriculum/program/software	45	49%
Tutoring	42	46%
Specialized classes	35	38%
Summer school	31	34%
Remedial courses/credit recovery	27	29%
Before/after school program(s)	26	28%
Additional administration support	23	25%
Reduced class size(s)	12	13%
Other	10	11%
Welcome/Newcomer Center	8	9%

Of all districts surveyed, Above Average districts most often reported supporting ELL students through pullout/push-in interventions, differentiated instruction, and targeted professional development for instructional staff. Additionally, about half of Above Average districts reported supporting ELL students by providing additional student support, purchasing a specific intervention curriculum/program/software, or providing tutoring.

Chart 4.4 looks at how survey respondents rated ELL supports and services in terms of impacts on student success.

Chart 4.4

Average Rating, Impact on Student Success
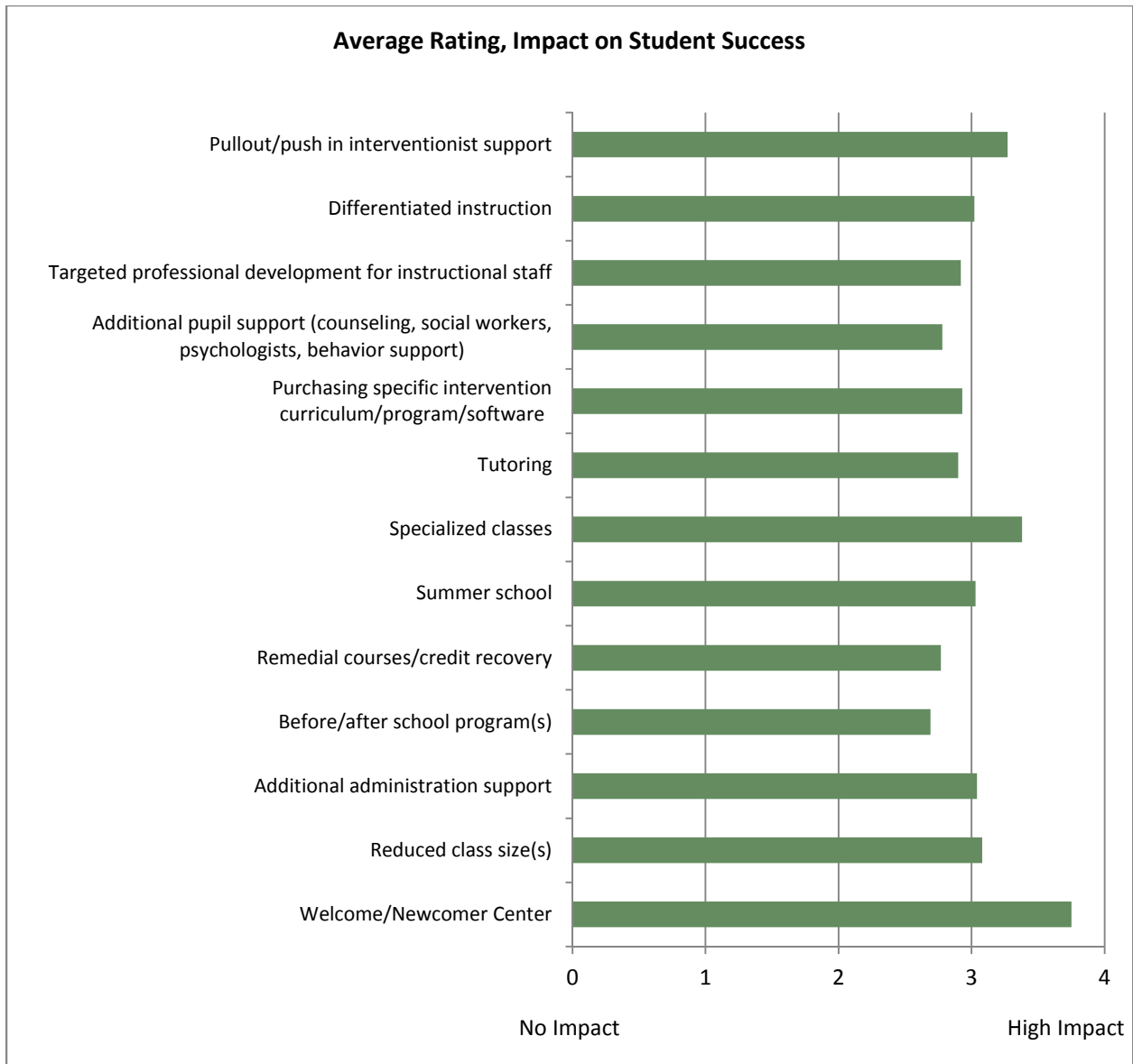
Having a welcome/newcomer center, specialized classes, and pullout/push-in interventionist support were rated as having the highest impacts on student success, followed by reduced class sizes, additional administration support, summer school, and differentiated instruction.

Chart 4.5 considers how costly ELL supports and services are for districts.

Chart 4.5

Average Rating, Fiscal Impact
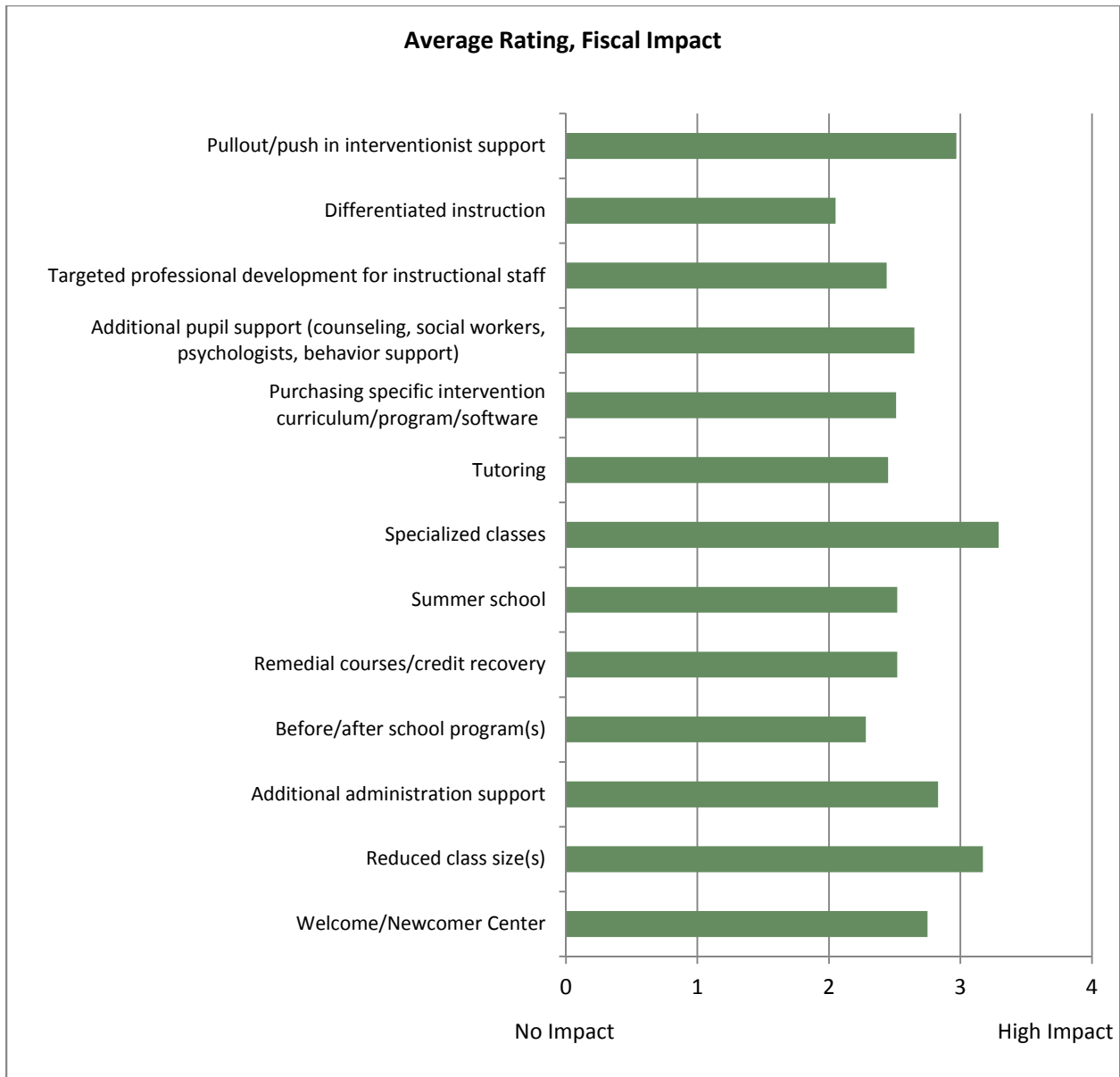
Specialized classes, reduced class sizes, and pullout/push-in interventionist support were rated as having a moderate to high fiscal impact on districts.

Chart 4.6 looks at ELL supports and services, plotting district ratings of impacts on student success against district ratings of fiscal impacts.

Chart 4.6
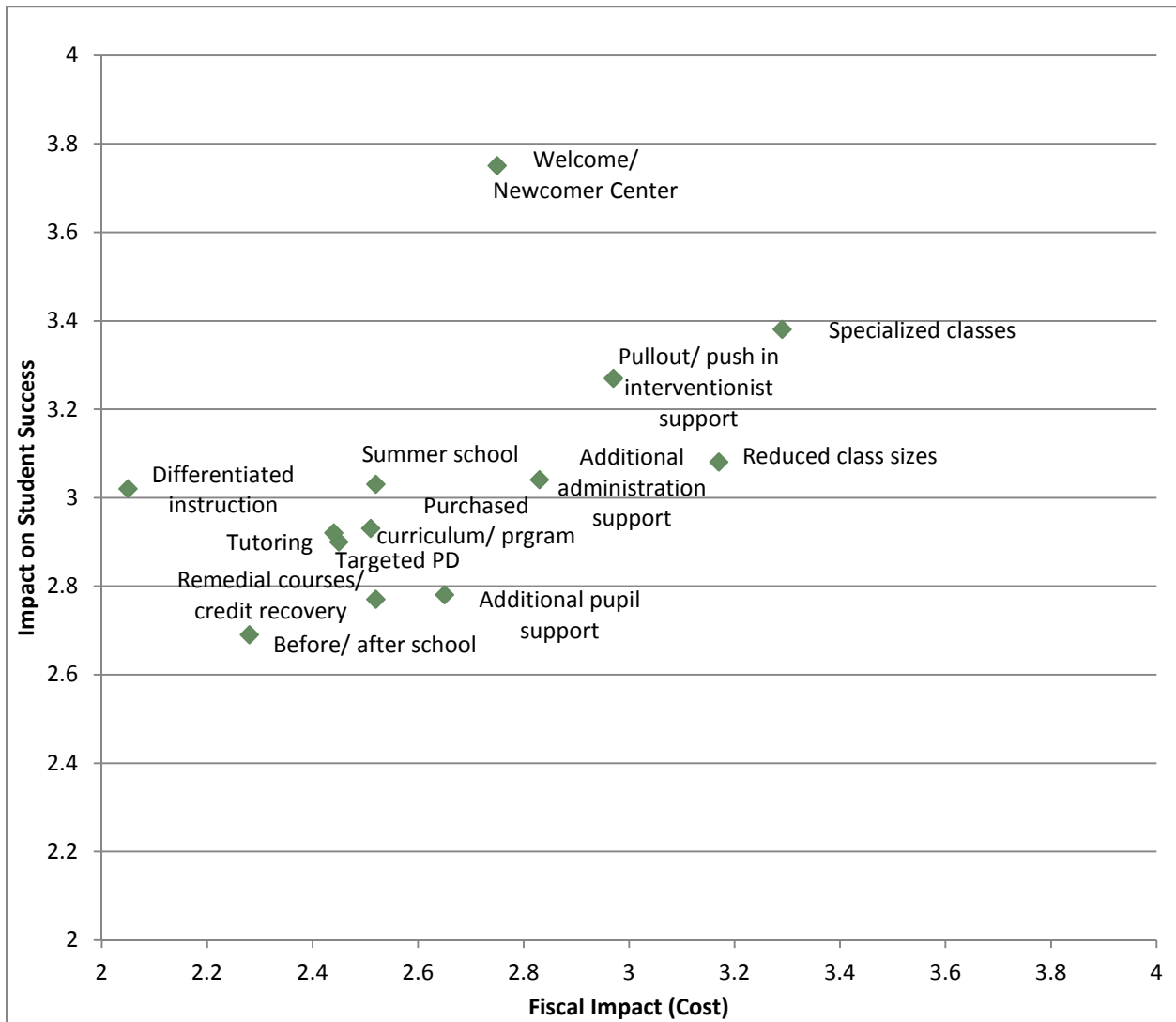
There were similarities between ratings for at-risk student supports and services and ELL student supports and services. In the ratings for ELL student supports and services, as in the ratings for at-risk supports and services, differentiated instruction was considered a relatively lower-cost intervention with a higher impact on student success, while pullout/push-in interventionist support and reduced class sizes were rated as having moderate to high impacts on student success, but also having higher fiscal impacts (costs). Specialized classes were also rated as high impact in terms of both student success and fiscal cost. Finally, having a welcome/newcomer center – an approach unique to serving ELL students – was rated as having the highest impact on student success, with a low-to-moderate cost impact.

Special Education

Supports and services for special education students are often specific to a student's IEP and disability, so instead of asking districts about supports and services being offered to all their special education

students, surveyed districts were given the opportunity to report any innovative practices that they had implemented to serve special education students.

A common theme that emerged from the responses was that districts attempted to keep special education students within general education settings as much as possible. To accomplish this goal, districts both (1) tried not to remove special education students from general education settings unless necessary and (2) tried to reintegrate students from special education settings back into general education settings as soon as the special education students were ready. This approach of integrating special education with general education was also emphasized through professional development and through the encouragement of collaboration between special education and general education teachers. The goal for many of the districts was to provide special education students with a full continuum of services while simultaneously ensuring that the students received differentiated and personalized instruction.

The districts reported using Response to Intervention (RTI), multi-tiered service systems, peer-to-peer supports, and community learning and work programs to support their special education students. Specifically, districts worked on increasing social and academic skills to manage behavioral challenges. When it came to resources for special education, several districts reported using funds for at-risk students to supplement their funding needs for special education students. One district found sharing resources with other districts within their service unit to be helpful.

Review of Best Practice Literature

The study team reviewed best practice literature to determine if there is research to support the interventions being used in successful Michigan districts to serve special needs students. The resulting literature review provides a description of the research on staffing, programs, and practices likely to have an impact on student outcomes. This review focuses exclusively on research on student outcomes and does not examine comprehensive school design studies.

There is a great deal of research on the relationships between staffing, programs, practices, and student outcomes. The study team reviewed a variety of types of research, including correlational (non-causal) studies, quasi-experimental studies, longitudinal studies, and randomized control trial (RCT) experiments. Although it is impossible to include every study on every topic in the final literature review, the study team attempted to access and examine the most relevant and rigorous studies available.

The interventions described in the following subsections stood out in the research as being particularly effective in supporting student success. The study team found that Above Average districts were implementing many of the research-recommended interventions, to varying extents.

Reduced Class Sizes

Elementary Level

In 1985, Tennessee initiated Project Student Teacher Achievement Ratio (Project STAR). Project STAR used an RCT of kindergarten through third grade students to determine the effects of smaller class sizes

on student achievement. As a methodology, RCTs are seen as the gold standard in research and continue to serve as the design for numerous studies on class size. Studies based on Project STAR report that, when compared to larger classes (22-25 students), smaller classes (13-17 students) produce higher effects on student achievement, with a statistically significant difference in effects across all tested subject areas in kindergarten through third grade (Grissmer, 1999) (Finn & Achilles, 1999) (Konstantopoulos & Chung, 2009). A number of studies report that smaller class sizes have even larger academic effects for minority students, lower-income students, and low-achieving students (Krueger, 1999) (Konstantopoulos & Chung, 2009) (Krueger & Whitmore, 2001) (Krueger & Whitmore, 2002) (Dynarski, Hyman, & Schanzenbach, 2011). Student achievement gains were largest for students who were in small classes for the longest duration (Finn, 2002) (Konstantopoulos & Chung, 2009) (Krueger, 1999).

Enrollment in small classes in kindergarten through third grade also affected student outcomes beyond the early elementary years. Some studies document that achievement gains persist through seventh or eighth grade (Krueger & Whitmore, 2001) (Krueger & Whitmore, 2002) (Finn & Achilles, 1999) (Grissmer, 1999) (Konstantopoulos & Chung, 2009). Finally, based on Project STAR, researchers report that smaller classes increase the likelihood of high school graduation, ACT/SAT participation, college attendance (by up to 11 percent), and college degree attainment. Smaller class sizes also increase the probability of students majoring in higher-earning fields, having higher average earnings at age 27, and saving more money for retirement (Dynarski, Hyman, & Schanzenbach, 2011) (Chetty, et al., 2010) (Krueger, 1999) (Finn, Gerber, & Boyd-Zaharias, 2005).

In addition to Project STAR, a number of quasi-experimental and longitudinal studies suggest that smaller class size may be beneficial to student outcomes. A Wisconsin pilot project reduced student-to-teacher ratios to a maximum of 15-to-1 in kindergarten through third grades in participating high-poverty schools. The project found that students in these smaller classes achieved higher math, reading, and language arts scores, even after controlling for pre-test scores, family income, school attendance, and race/ethnicity (Molnar, et al., 1999). In a quasi-experimental study in Israel, researchers reported that reducing class size below the maximum (class size limit) of 40 students for fourth and fifth grade students improved math and reading scores (Angrist & Lavy, 1999). Urquoila (2006) used a regression discontinuity approach to determine that a reduction in class size of about eight students improved test scores. Several other studies report similar findings.

The research literature consistently documents positive student outcomes associated with smaller class sizes. Several researchers have determined that the optimal class size should be 20 students or fewer for elementary classes, especially kindergarten through third grade classes. This literature review does not find sufficient evidence that there is an optimal class size for any grade level, but recommends reducing class sizes as much as is feasible.

Secondary Level
Compared to the research on class size in the early elementary grades, there is a smaller body of research on class size and student-to-teacher ratios in middle and high school. Nonetheless, there are

studies indicating that lower class sizes may be associated with positive outcomes for students at all grade levels. Non-causal correlational studies have identified positive relationships between smaller class sizes in middle and high school and student achievement on state assessments as well as on the National Association of Educational Progress (NAEP) assessment (Frederickson, Ockert, & Oosterbeek, 2013) (U.S. Department of Education. National Center for Education Statistics, 2000). A quasi-experimental study using nationally representative data on eighth graders found that class size reductions are related to improving student engagement and non-cognitive skills, and may be cost-effective in urban school settings (Dee & West, 2011). In fact, one large-scale study concluded that the positive relationship between small classes and student achievement was stronger for secondary schools than for elementary schools (U.S. Department of Education. National Center for Education Statistics, 2000). A multi-level regression analysis conducted in England reported that the effects of class size on student achievement extended into secondary schools, and observations indicated that lower class sizes were related to better student-teacher interactions and higher levels of student engagement in the classroom (Blatchford, Bassett, & Brown, 2011).

Overall, existing research on class sizes at the secondary level suggest that lower class sizes are likely to be beneficial for student outcomes. According to the literature, despite the use of particular class sizes in the research, it is not possible to "identify optimal class sizes in an exact way" (Blatchford, Bassett, & Brown, 2011). Similarly, this review recommends reducing class sizes as much as possible, but does not specify an optimal class size or student-to-teacher ratio for secondary schools.

Supports for ELL Students

In 2012-13, there were 4,389,325 U.S. students participating in programs for ELL students, representing 9.2 percent of all U.S. public K-12 students (U.S. Department of Education, National Center for Education Statistics, 2014). On the 2012-13 NAEP assessment, average reading scores for ELL students were 38 points lower on the fourth grade assessment and 45 points lower on the eighth grade assessment, compared to scores for non-ELL students (Kena, et al., 2014). NAEP math scores were 25 points lower for ELL fourth graders and 41 points lower for ELL eighth graders, compared to scores for non-ELL students (Kena, et al., 2014). This achievement gap suggests that there is a need to improve instruction for ELL students.

There is, however, a plethora of research that identifies a need for more instructional support and instructional time for ELL students, whether that support and time happens before or after school, during summer school, or during the school day (i.e. pullout/push-in support) (Goldenberg, 2010) (Hakuta, 2011) (Gandara & Rumberger, 2007). The What Works Clearinghouse (WWC) finds strong evidence for the effectiveness of intensive, small-group interventions for ELL students who are at risk of reading problems in elementary grades (Gersten, et al., 2007). Specifically, WWC recommends implementing interventions for at least 30 minutes per day with groups of three to six ELL students who are struggling to read (Gersten, et al., 2007).

Supports for Special Education Students

Research on the best ways to support special needs students is complex and challenging for a number of reasons. First, there is large variability within this student population, including 12 different disability categories and varying severities for each disability. The 12 mental, physical, and emotional disability categories range from learning disabilities to visual impairments to autism (Center for Public Education, 2009). The low incidence rates of some disabilities make it difficult to establish equivalent groups for those disabilities (Odom, et al., 2005). Furthermore, RCT experiments, the gold standard for research design, cannot be used to evaluate special education supports; random assignment of special education students to special education supports would violate the Individuals with Disabilities in Education Act (IDEA) guarantee of individually determined interventions (Hocutt, 1996). As a result of these challenges, there is little conclusive research on the most effective supports for special needs students.

In the literature, there is an ongoing debate about the degree to which special education students should be included in general education classes. As a point of fact, the majority of special needs students already participate in general education classes for part or all of the school day, receiving some accommodations and/or assistance during those classes (Cortiella, 2007) (Mellard, 2004). One study concluded that participation in special education classes provided greater benefits to the reading and math performance of special education students than participation in general education classes (Hanushek, Kain, & Rivkin, 1998). The best option for educating special needs students may be partly determined by student disability type. Studies that differentiate by disability type have concluded that general education may be beneficial for students with particular types of disabilities, while special education may be more beneficial for students with other types of disabilities (Carlberg & Kavale, 1980) (Marston, 1987-88) (Hocutt, 1996) (Lowenbraun & Thompson, 1989).

One promising approach to identifying and supporting both special education students and other students who may be struggling is RTI. According to the RTI Action Network, RTI provides universal screening of all children, ongoing progress monitoring, and escalating interventions (including small group tutoring and special education) for students who need them. The President's Commission on Excellence in Special Education recommended the use of RTI to identify and students who may benefit from participation in special education (2002). Students who are identified as needing intervention are likely to benefit from small group instruction three to five times a week for 20-40 minutes per intervention (Kamil, et al., 2008). This type of intervention may also reduce enrollment in special education.

The literature on special education class size and student outcomes is mixed. Using regression analysis, one study predicted a decrease in student achievement as special education caseloads increased (Algozzine, Hendrickson, Gable, & White, 1993). However, there is insufficient evidence to validate this prediction (Zarghemi & Schnellert, 2004) (Russ, Chang, Rylance, & Bongers, 2001). Several studies have concluded that learning environments, time spent on individual instruction, and academic behaviors improve in smaller special education classes (Thurlow, Ysseldyze, Wotruba, & Algozzine, 1993) (MAGI Educational Services, 1995) (Gottlieb & Alter, 1997). An additional study found that the reading

performances of sixth grade special education students decreased as class sizes increased. Studies that suggest an association between special education and both instructional practice (i.e. general education classes or special education classes) and student achievement are methodologically limited, as noted in the previously mentioned research challenges. In the literature on special education class sizes and student achievement, researchers conclude that the evidence is inconclusive (Zarghemi & Schnellert, 2004) (Russ, Chang, Rylance, & Bongers, 2001).

Professional Development and Instructional Coaching for Teachers

According to a 2015 report from the U.S. Department of Education, 17.3 percent of teachers who began teaching in 2007-08 were no longer teaching in 2011-12 and, of the remaining 82.7 percent of teachers still in the profession, 9.6 percent were no longer teaching in the same school where they started in 2007-08 (Gray, Tale, & O'Rear, 2015). High teacher turnover can be costly and may negatively affect student academic performances (Waterman & He, 2011) (Guin, 2004) (Terry & Kritsonis, 2008).

Teacher mentoring programs aim to increase the likelihood of teacher success, thereby increasing the chance that teachers will remain in the profession (Welker, 1992). Some research indicates that teacher mentors may help to reduce new teacher attrition (Gold, 1999) (National Association of State Boards of Education, 1999). Of teachers who started teaching in 2007-08, the percentage of teachers still in the profession in 2011-12 was higher among teachers who had been assigned a mentor during their first year in the classroom, compared to those who had not been assigned a first-year mentor (86 percent vs. 71 percent, respectively) (Gray, Tale, & O'Rear, 2015). However, several literature reviews on mentoring and teacher retention have produced inconclusive findings (Waterman & He, 2011) (Guarino, Santibanez, & Daley, 2006) (Wang, Odell, & Schwille, 2008).

Beyond the research on beginner teachers and retention, there is a substantial body of research on instructional coaches, teaching practices, and academic achievement. Several studies have found that coaching improves instruction at some grade levels and for teachers with different years of experience, whereas other research has been inconclusive about the effects of coaching (Lockwood, McCombs, & Marsh, 2010) (Murray, Ma, & Mazur, 2009). Other studies at both the elementary and secondary levels have found that peer coaching has a number of positive impacts on teacher instruction, including helping teachers implement new skills, improve utilization of student data, incorporate better student assessments, make curriculum more student-centered, improve classroom management, and improve interactions with students (Vanderburg & Stephens, 2010) (Joyce & Showers, 1996) (Joyce & Showers, 2002) (Kohler, Ezell, & Paluselli, 1999) (Marsh, McCombs, & Martorell, 2010) (Allen, Pianta, Gregory, Mikami, & Lun, 2011).

In addition to these teacher-level effects, research also documents the effects of instructional coaching on student reading gains at the elementary and middle school levels (Lockwood, McCombs, & Marsh, 2010)(Elish-Piper & L'Allier, 2011). An RCT at the secondary level found that a one-year teacher coaching support that occurred daily improved test scores of students of the coached teacher in the year after the intervention, compared to the test scores of students whose teachers had not received the intervention

(Allen, Pianta, Gregory, Mikami, & Lun, 2011). The quantity and frequency of coaching meetings appears in some cases to be positively related to student academic outcomes (Marsh, McCombs, & Martorell, 2010) (Elish-Piper & L'Allier, 2011).

Pupil Support for Students

Counselors

There is a copious amount of literature documenting the positive effects of school counselors on students in elementary, middle, and high schools. The positive effects range from academic improvements and reductions in disciplinary problems to increases in high school graduation and college enrollment rates. Researchers have found higher proficiency rates in English/Language Arts and math in schools with comprehensive counseling programs (Wilkerson, Perusse, & Hughes, 2013). Utah found that schools that Adequate Yearly Progress (AYP) benchmarks, as mandated through No Child Left Behind, had significantly lower student-to-counselor ratios than schools that did not attain AYP (Carey & Harrington, 2010). One study found that one additional counselor in a school increases students' academic achievement by more than one percentage point (Carrell & Hoekstra, 2014). Beyond academic achievement, studies link lower student-to-counselor ratios to fewer disciplinary incidents, less misbehavior, reduced suspension rates, higher attendance rates, and greater student-reported feelings of connection to school (Lapan, Gysbers, Bragg, & Pierce, 2012) (Dimmitt & Wilkerson, 2012) (Carrell & Hoekstra, 2014). When states adopt maximum student-to-counselor ratios, it appears to reduce the number of teachers reporting student misbehavior (Reback, 2010). Lower student-to-counselor ratios at the high school level have been linked to higher high school graduation rates, as well as higher college application and enrollment rates (Lapan, Gysbers, Bragg, & Pierce, 2012) (Bryan, Moore-Thomas, Day-Vines, & Holcomb-McCoy, 2011) (Hurwitz & Howell, 2014) (Lapan, Whitcomb, & Aleman, 2012) (Pham & Keenan, 2011).

Nurses

A number of studies document the impact school nurses may have on health indicators (Gottfried, 2013). The presence of a full-time nurse within a school appears to be associated with fewer absences, especially among students with chronic health conditions, such as asthma (Gottfried, 2013) (Telljohann, Dake, & Price, 2004). School nurses help improve student attendance rates by reducing illness rates and improving the management of chronic diseases (DeSocio, 2004). Students attending schools in districts that meet the nationally recommended student-to-nurse ratio of 750 to 1 miss fewer school days than students attending schools in districts that do not meet the ratio. This is true even with higher concentrations of poverty at the schools meeting the ratio (Smith & Sherrod, 2013). Other studies report that when a full-time school nurse is available, fewer children check out of school during the school day (Allen, 2003) (Hill & Hollis, 2012).

In addition to the benefits of greater student attendance, several studies found that the presence of a full-time nurse within every school substantially reduces the amount of time other (non-nursing) staff members spend dealing with student health issues (Baisch, Lundeen, & Murphy, 2011) (Wang, et al., 2014). Reducing the time that administrators, teachers, and clerical staff spend dealing with student

health issues ensures that non-qualified personnel are not performing health services and also increases the time that school staff have available for planning and/or instruction. Two studies found huge cost savings associated with having a full-time nurse at each school (Baisch, Lundeen, & Murphy, 2011; Wang, et al., 2014). Other likely benefits of lower student-to-nurse ratios include higher immunization rates among students, better identification of serious health conditions among students, more complete student health records, and improved management of student health conditions such as diabetes, vision problems, asthma, and depression (Baisch, Lundeen, & Murphy, 2011) (Guttu, Engelke, & Swanson, 2004) (Wang, et al., 2014).

Pullout/Push-in Interventionist Support/Tutoring for Students
One of the most effective ways to improve the performances of struggling students is through the use of intensive and regular tutoring (Wasik & Slavin, 1993) (Shanahan, 1998). There are a variety of tutoring models that have shown success, including peer tutoring, cross-age tutoring, college student tutoring, and teacher tutoring. Most of the research, however, indicates that tutoring from a highly trained adult is the most effective model for long-term learning gains (Gordan, 2009). Teacher tutors have the advantage of subject matter and pedagogical expertise and can more easily integrate current classroom subject matter into tutoring (Wasik & Slavin, 1993).

The research focuses primarily on literacy tutoring at the elementary school level, because low literacy skills can spiral to negatively affect the acquisition of many other skills in elementary school and beyond (Torgeson, 2004). At the elementary level, tutoring interventions may include a wide range hours per year, ranging from 35 to 340, and a wide range of student-to-tutor ratios, ranging from one-on-one to small- or medium-sized groups (Torgeson, 2004). In one meta-analysis, the researcher found all of these variations on literacy intervention to be effective in improving student reading performances (Torgeson, 2004). Other studies indicate that reducing instructional group size helps improve student reading performances (Elbaum, Vaughn, Hughes, & Moody, 1999). Frequent and regular (at least several times per week for 20-45 minutes) tutoring sessions are the most likely to improve reading performances among elementary school students (May, et al., 2013) (Torgeson, 2004). Still, there is little agreement on the minimum number of total hours of tutoring necessary to improve student outcomes (Lauer, et al., Out-of-School time Programs: A Meta-Analysis of Effects of At-Risk Students, 2006) (Rothman & Henderson, 2011).

There is less research at the middle and high school levels, but the research that does exist is persuasive. A study of middle school students found that struggling students who received school-based tutoring from a teacher performed higher on math and English/Language Arts assessments than similar students who did not receive tutoring (Rothman & Henderson, 2011). A meta-analysis of tutoring for adolescent students found that adult tutors produced large effect sizes, particularly on student reading and literacy skills (Seung, Ramirez, & Cumming, 2010). Effect sizes were larger when students received more hours of tutoring (Seung, Ramirez, & Cumming, 2010). Finally, an RCT at the high school level found that, for disadvantaged students, two-on-one tutoring for one hour every day increased students' math grades, math assessment scores, and expected graduation rates in comparison to those of students who did not participate in the tutoring (Cook, et al., 2014).

Based on the research, this review concludes that the interventions most likely to provide the intensive instructional support that struggling students need are (1) frequent and regular one-on-one or small group tutoring and/or (2) pullout/push-in intervention support performed by a teacher-tutor.

Extended Day Programs

Extended day interventions are separate from voluntary academic or enrichment programs that may take place outside of school hours. In this report, extended day interventions refer to a formal lengthening of the school day. Extended day programs are a relatively popular innovation in school reform. The Education Commission of the States found that 50 state-level extended day programs were piloted between 2000 and 2008 (Gewertz, 2008). It is important to note that, in many studies of extended day initiatives, extended school years may also be implemented to increase cumulative annual instructional time (Farbman & Kaplan, 2005). Both of these extended learning practices may be implemented alongside other school reform efforts which are also likely to have impacts on student performances (Patall, Cooper, & Allen, 2010) (Farbman & Kaplan, 2005). Thus, the effects of extended day interventions may be confounded.

One of the advantages of an extended day program is that it provides more time for student enrichment activities, teacher collaboration, and intensive student supports that may also have impacts on student achievement. A study of New York City schools concluded that adding 300 hours to the typical school calendar was one of the strongest predictors of high achievement, along with tutoring and consistent teacher feedback (Dobbie & Fryer Jr., 2011).

A host of other studies also indicate that extending learning time predicts gains in math and English/Language Arts achievement (Dobbie & Fryer Jr., 2011) (Hoxby & Murarka, 2009) (Massachusetts 2020, 2009) (Coates, 2003) (Vandell, Reisner, & Pierce, 2007). In one study of Boston schools that extended the school day to 7.5 hours, researchers found a 13 percentage point increase in the percentage of students passing the state basic skills test over three years (Adelman, Haslam, & Pringle, 1996). A correlational study in California found the length of school day and the total hours of school per week to be positively associated with school-level achievement scores, particularly for students at schools with high percentages of students from lower-income households (Wheeler, 1987). The research indicates that extended day may be particularly helpful for at-risk students (McDonald, Ross, Abney, & Zoblotsky, 2008) (Ross, McDonald, Alberg, & McSparrin-Gallagher, 2007) (Lauer et al., 2006). The research on extended learning and non-academic outcomes indicates that after-school programs help to increase extracurricular participation, improve students' self-confidence, and reduce both disciplinary problems and risky behaviors (Bishop, Worner, & Weber, 1988) (LeCroy, 2003) (Goldschmidt, Huang, & Chinen, 2007) (Durlak & Weissberg, 2007) (Philliber, Kaye, Herrling, & West, 2002) .

Overall, APA's meta-analysis of the extended day research concluded that extended day interventions may have a small positive relationship with academic achievement and other positive student outcomes (Patall, Cooper, & Allen, 2010). The research suggests that sustained and regular participation in extended day programming is beneficial to students (Priscella, Little, & Weiss, 2008). However, the

research does not offer a consensus on the best way to extend the school day, nor does it offer consistent policy guidance on how much extended learning time is necessary to improve student outcomes.

Revenue Sources for Special Needs Students

As noted earlier in this report, current revenue tracking does not disaggregate revenue sources for special needs students. In the absence of disaggregated revenue source data, the study team asked districts to estimate for each special needs population (economically disadvantaged, ELL, and special education) the percentage of revenues that come from different sources. The study team expected the revenue source total for each special needs population to add up to 100 percent. However, it became clear that the question was somewhat confusing for surveyed districts, and not every district response gave clear revenue source totals adding up to 100 percent. Presented here, in Table 4.7, are the responses from 67 districts (not the total number of districts surveyed) that appear to be answering the question in the intended manner (giving revenue source totals for each student subpopulation that add up to 100 percent).

Again, revenues are not currently tracked as separate source totals, so these figures represent districts' best estimates of revenue sources for special needs students.

Table 4.7

	Revenue Sources for Special Needs Students				
	Federal	**State**	**Local/ISD**	**Grants***	**Other**
At-Risk					
Average	35%	56%	9%	0%	0%
Standard Deviation	29%	33%	24%	1%	1%
Coefficient of Variation	0.82	0.59	2.65	5.08	7.47
ELL					
Average	27%	38%	33%	0%	5%
Standard Deviation	36%	44%	43%	1%	20%
Coefficient of Variation	1.32	1.18	1.57	7.14	4.09
Special Education					
Average	11%	44%	42%	0%	2%
Standard Deviation	11%	26%	28%	2%	10%
Coefficient of Variation	0.94	0.59	0.66	5.83	4.60

*Grants not captured in Federal, State and Local categories

Looking first at revenue sources for at-risk students, on average 35 percent of funding came from federal sources (like Title I), 56 percent came from the state, and the remaining nine percent came from local sources. While some districts reported getting additional grants or other sources, these additional sources, on average, less than one percent of total revenues.

For ELL students, revenue was more evenly divided between federal (27 percent), state (38 percent), and local (33 percent) sources. On average, five percent of revenue came from other sources (e.g. grants).

Eleven percent of revenues for special education came from federal sources (like IDEA), with a nearly even split between state (44 percent) and local/ISD (42 percent) funding for the remaining revenues.

It is also important to note that there is a high degree of variation in revenue sources for districts, as indicated by the high coefficients of variation (standard deviation divided by the mean) in all categories. Variation is particularly high for grants and other sources, as only a handful of districts reported having revenue from these sources.

School Funding Methods and School-level Budget Autonomy

The final question areas included on the survey of successful districts regarded how those districts distribute state and local funding to their schools, and whether they felt that school administrators had autonomy over their school budgets.

Surveyed districts were given three choices to describe how they distributed state and local funding to schools: by staffing allocation, by student weighted formula (the two most common methodologies nationally), or other (i.e. write-in explanation of another method).

Table 4.8 displays district responses to the survey question about overall method for distributing funding.

Table 4.8

Methods for Distributing State and Local Operating Funding to Schools		
Method	# of Districts	% of Total Responding Districts
By staffing allocations (e.g. allocating staff FTE based on enrollment)	46	49%
By a student-weighted formula (e.g. allocating a per student dollar amount to pay for both staff and other school expenses)	12	13%
By another method (Please describe)	35	38%

Nearly half of all districts provided the majority of their school funding through a staffing allocation method. A small percentage of districts reported using a purely student-weighted formula to distribute funding by providing schools with a per student dollar amount. The remaining 38 percent of districts reported using another method. Most commonly, this other method was a hybrid of the first two methods, and provided funding subjectively based on the needs of schools or based on historic funding and staffing information.

Districts were also given a number of factors and asked if they differentiated the funding or staffing they provided to schools based those factors, as shown in Table 4.9.

Table 4.9

Differentiation Factors		
Differentiation Factor	**# of Districts**	**% of Total Responding Districts**
School level/grade	75	84%
Student need/demographics	55	62%
School size	34	38%
Geographic location of school	1	1%
Specific program model, such as a magnet school	17	19%
Other considerations	10	11%

The majority of districts (84 percent) reported differentiating funding based on school level or grade. Sixty-two percent of districts reported differentiating funding based on student need or school demographics (62 percent). Thirty-eight percent of districts reported differentiating by school size. There was less differentiation by geographic location, program model, or other considerations, such as district priorities.

Finally, district respondents were asked to indicate whether they agreed or disagreed with the following statement: "School administrators in my district have autonomy over how funding or FTE allotment is used." Responses are shown in Table 4.10.

Table 4.10

School-level Autonomy		
Answer	**# of Districts**	**% of Total Responding Districts**
Strongly Disagree	7	8%
Disagree	29	32%
Agree	41	45%
Strongly Agree	14	15%
Total	91	100%

Sixty percent of successful districts (surveyed districts) reported that they agreed or strongly agreed that their school administrators had autonomy over their school's budget. Having autonomy over a school budget can allow school administrators the flexibility to employ resources in ways that they feel best serve their students.

Conclusions

Overall, the study team found that Above Average districts were implementing many research-backed supports and services for special needs students, though levels of implementation may vary between districts. The following list shows the supports and services for at-risk students implemented by the majority of surveyed districts:

- Additional student support (counseling, social workers, psychologists, behavior support),
- Pullout/push-in interventionist support,

- Differentiated instruction,
- Targeted professional development for instructional staff,
- Remedial courses/credit recovery,
- Summer school,
- Tutoring,
- Before/after school program(s), and
- Purchasing specific intervention curriculum/program/software.

For ELL students, supports and services implemented by a majority of the surveyed districts included the following:

- Pullout/push-in interventionist support,
- Differentiated instruction,
- Targeted professional development for instructional staff,
- Additional student support (counseling, social workers, psychologists, behavior support), and
- Purchasing specific intervention curriculum/program/software.

Supports and services for special education students are often IEP- and disability-specific. Thus, while the survey did not ask districts to generalize the supports and services they off to all special education students, districts were given the opportunity to share promising practices. A number of districts shared these promising practices, including RTI and multi-tiered service systems, peer-to-peer supports, and community learning and work programs to support special education students.

Overall, the study team found that while there were commonalities in the types of supports and services being offered, there was no one "right" model being implemented to serve at-risk, ELL or special education students; supports and services still varied quite a bit across successful districts. There was also no one "right" way of distributing funding to schools, with successful districts employing a variety of methods.

Similarly, expenditures for ELL and economically disadvantaged students and revenue sources for all special needs students varied widely between successful districts. The study team also found that Above Average districts' expenditures for economically disadvantaged and ELL students, as represented by calculated weights, were, on average, less than the recommended levels from costing out studies conducted nationally. This is not unexpected, as costing out studies were designed to identify resources to ensure that all students could meet state and federal performance standards, including growth towards 100 percent proficiency. This growth standard is a very different performance benchmark than the benchmark used to select Above Average districts, or even the benchmark used to select Special Populations districts.

Finally, the study team found that there was no way to fully and accurately account for all special education expenditures using current state-collected data. This gap in information on special education expenditures is important for future consideration.

V. Cohort Analysis

The RFP specifically asked that the study team explore revenues and expenditures at a deeper level by conducting an analysis of exemplary districts. These exemplary districts were split into different cohorts based on density, need and setting. This chapter analyzes the revenues and expenditures of districts that are performing higher and spending less than other districts in similar circumstances. For this analysis, the study team identified the three different characteristics that could be used to sort districts into cohorts:

- **Density** – a characteristic measured by dividing the number of students in the district by the square miles of the district;
- **Need** – a characteristic measured by each district's Need Factor, a figure described earlier in this report; and
- **Setting** – a characteristic measured by indicators of district setting (City, Suburb, Town, and Rural) provided by the National Center of Education Statistics.

Each characteristic was broken into quartiles or quintiles. For example, the density characteristic was broken into quintiles: "Lowest Density," "Second Lowest Density," "Middle Density," "Second Highest Density," and "Highest Density." Breaking the characteristic into quintiles allowed the research team to sort districts into groups of other like districts, based on the characteristic being measured. These groups of like districts formed the cohorts for analysis. Within each cohort grouping, the study team identified exemplary districts. Exemplary districts have both high performance and low spending. To measure performance, the study team used the Above Average standard. Any district meeting this standard was assumed to be a high-performing district. To qualify as a low-spending district, a district had to be in the bottom quarter of spending within a given cohort group. The rest of this chapter presents the results for each cohort type, starting with density.

Density

As mentioned above, density is measured by the number of students per square mile in a district. The density of a district reflects how spread out a district's student population is. The study team received data on the number of students per square mile from Michigan Department of Education. The study team created five quintiles from the density data and used these quintiles to identify five density cohort groups. District density ranged from just .05 students per square mile to over 1,700 students per square mile. The average density was 108.40 students per square mile. The five cohort groups were broken out as follows:

- **Lowest Density** – districts with fewer than about five students per square mile;
- **Second Lowest Density** – districts from about five students to under about 12 students per square mile;
- **Middle Density** – districts from about 12 students per square mile to fewer than 27.75 students per square mile;

- **Second Highest Density** – districts from 27.75 students per square mile to fewer than about 141 students per square mile; and
- **Highest Density** – Districts with above about 140 students per square mile

Table 5.1 examines the demographic differences in the five density cohort groups.

Table 5.1

Demographics for the Density Cohort Groups					
	Lowest Density	**Second Lowest Density**	**Middle Density**	**Second Highest Density**	**Highest Density**
Number of Districts	108	108	109	107	109
Average Size	480	939	1,706	3,391	6,177
Number Meeting the Above Average Standard	25	22	45	55	39
Average Percent Special Education	13.14%	12.08%	11.95%	12.07%	12.61%
Average Percent Economically Disadvantaged	58.49%	54.46%	45.35%	42.46%	51.17%
Average Percent English Language Learners	0.25%	1.87%	1.96%	1.80%	6.17%
Average Need Factor	1.367	1.348	1.311	1.300	1.362

Not surprisingly, the Lowest Density districts had the smallest student enrollments, with an average enrollment of 480 students among the 108 Lowest Density districts. The Lowest Density districts had the highest average Need Factor, at 1.367. They also had the highest average percentage of special education and economically disadvantaged students, though they had the lowest average percentage of ELL students. The Second Lowest Density districts were, on average, about twice the size of the Lowest Density districts, with just slightly lower overall need at an average Need Factor of 1.348.

The Middle Density and Second Highest Density districts each had lower Need Factors than the other three density cohort groups, with the Middle Density group at an average Need Factor of 1.311 and the Second Highest Density group at an average Need Factor of 1.300. The districts in the Second Highest Density group were, on average, nearly twice as large as the districts in the Middle Density group. The 109 districts in the Highest Density cohort group averaged 6,177 students and had the second highest average Need Factor of all the density cohort groups, at 1.362. Districts in this Highest Density cohort had high percentages of students in all the special needs categories and had much higher percentages of ELL students than all the other cohort groups. At 6.17, the average percentage of ELL students in the Highest Density cohort was over three times that of any other cohort.

Table 5.1 also shows the number of districts in each cohort group that met the Above Average standard. The Lowest Density and Second Lowest Density groups had the lowest number and lowest percentage of districts that met the standard. The Second Highest Density group had the largest number of districts that met the Above Average standard, at 55. The Middle Density and Highest Density groups had 45 and 39 districts that met the standard, respectively. Again, to be considered exemplary, districts had to not only meet the Above Average standard, but also be in the bottom quartile of spending for their cohort group when looking at total operating expenditures per student.

Table 5.2 examines the revenues available to each cohort group, broken out by exemplary and non-exemplary districts. As shown in Table 5.2, seven Lowest Density districts were identified as exemplary, nine Second Lowest Density districts, 14 Middle Density districts, 14 Second Highest Density districts, and 11 Highest Density districts. Demographically, across the cohort groups, the exemplary districts were, on average, larger than the non-exemplary districts, except for the Middle Density group. In every cohort group, the exemplary districts had far lower average Need Factors than the non-exemplary districts. The exemplary district groups ranged in average Need Factors from 1.221 to 1.295, while the non-exemplary districts ranged from 1.311 to 1.377.

The exemplary districts were identified for their low spending coupled with their lower operating revenues, relative to the non-exemplary districts. Exemplary district groups ranged in total operating revenues per student from $8,418 to $9,480. Non-exemplary district groups ranged in total operating revenues per student from $9,146 to $12,789. In every cohort group the exemplary districts received a higher percentage of total operating revenue from the state than the non-exemplary districts. The exemplary district cohort groups also received a lower percentage of funding from local and federal sources. The exemplary districts in the Second Lowest Density, Middle Density, and Second Highest Density cohorts had average per student operating revenues ranging from about $700 to a little over $1,000, less than the average per student operating revenues in non-exemplary districts in those cohorts. The Highest Density and Lowest Density exemplary districts had average operating expenditures of about $1,500, almost $2,800 less than average operating expenditures per student in non-exemplary districts in the Highest Density and Lowest Density cohorts.

When looking at the per student operating revenues without the outlier districts, the differences between exemplary and non-exemplary districts in the Lowest Density, Second Lowest Density, and Middle Density cohorts were reduced. The Lowest Density non-exemplary total revenues were reduced significantly following the removal of the outlier districts.

Table 5.2

Revenues for the Density Cohort Groups by Exemplary and Non-Exemplary										
	Lowest		Second Lowest		Middle		Second Highest		Highest	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts										
Number of Districts	7	101	9	99	14	95	14	93	11	98
Average Size of Districts	988	445	1,313	908	1,606	1,727	3,653	3,389	8,166	5,998
Average Need Factor	1.295	1.372	1.261	1.356	1.251	1.319	1.222	1.311	1.221	1.377
State Operating Revenue per Student	$4,691	$4,554	$6,531	$5,907	$6,492	$6,644	$6,800	$6,497	$6,866	$7,177
Local Operating Revenue per Student	$3,568	$6,852	$1,572	$2,688	$1,580	$1,877	$1,305	$1,942	$1,553	$2,027
Federal Operating Revenue per Student	$748	$1,370	$429	$868	$436	$629	$313	$692	$386	$1,066
Other Operating Revenue per Student	$1	$12	$2	$18	$12	$60	$0	$15	$0	$0
Total Operating Revenue per Student	$9,008	$12,789	$8,535	$9,480	$8,520	$9,210	$8,418	$9,146	$8,806	$10,270
Percent State	52.1%	35.6%	76.5%	62.3%	76.2%	72.1%	80.8%	71.0%	78.0%	69.9%
Percent Local	39.6%	53.6%	18.4%	28.4%	18.5%	20.4%	15.5%	21.2%	17.6%	19.7%
Percent Federal	8.3%	10.7%	5.0%	9.2%	5.1%	6.8%	3.7%	7.6%	4.4%	10.4%
Percent Other	0.0%	0.1%	0.0%	0.2%	0.1%	0.6%	0.0%	0.2%	0.0%	0.0%
Excluding Outliers										
Number of Districts	7	89	9	99	14	94	14	93	11	98
Average Size of Districts	988	499	1,313	908	1,606	1,739	3,653	3,389	8,166	5,998
Average Need Factor	1.295	1.380	1.261	1.356	1.251	1.320	1.222	1.311	1.221	1.377
State Operating Revenue per Student	$4,691	$4,789	$6,531	$5,907	$6,492	$6,701	$6,800	$6,497	$6,866	$7,177
Local Operating Revenue per Student	$3,568	$4,311	$1,572	$2,688	$1,580	$1,707	$1,305	$1,942	$1,553	$2,027
Federal Operating Revenue per Student	$748	$1,202	$429	$868	$436	$629	$313	$692	$386	$1,066
Other Operating Revenue per Student	$1	$13	$2	$18	$12	$17	$0	$15	$0	$0
Total Operating Revenue per Student	$9,008	$10,315	$8,535	$9,480	$8,520	$9,054	$8,418	$9,146	$8,806	$10,270
Percent State	52.1%	46.4%	76.5%	62.3%	76.2%	74.0%	80.8%	71.0%	78.0%	69.9%
Percent Local	39.6%	41.8%	18.4%	28.4%	18.5%	18.8%	15.5%	21.2%	17.6%	19.7%
Percent Federal	8.3%	11.7%	5.0%	9.2%	5.1%	6.9%	3.7%	7.6%	4.4%	10.4%
Percent Other	0.0%	0.1%	0.0%	0.2%	0.1%	0.2%	0.0%	0.2%	0.0%	0.0%

Table 5.3

Expenditures for the Density Cohort Groups by Exemplary and Non-Exemplary										
	Lowest		Second Lowest		Middle		Second Highest		Highest	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts										
Number of Districts	7	101	9	99	14	95	14	93	11	98
Average Size of Districts	988	445	1,313	908	1,606	1,727	3,653	3,389	8,166	5,998
Average Need Factor	1.295	1.372	1.261	1.356	1.251	1.319	1.222	1.311	1.221	1.377
Total Operating per Pupil	$8,764	$12,729	$8,627	$9,645	$8,370	$9,462	$8,390	$9,706	$9,017	$11,254
Base Instruction	$4,537	$6,294	$4,670	$4,829	$4,496	$4,710	$4,413	$4,647	$4,797	$4,945
Base Administration	$1,025	$1,762	$1,026	$1,097	$870	$1,016	$749	$959	$731	$956
Base Support	$294	$390	$395	$504	$407	$590	$528	$770	$779	$1,215
Base Other	$1,939	$2,925	$1,698	$2,106	$1,708	$2,005	$1,738	$1,969	$1,669	$2,181
Total Base Expenditures	$7,794	$11,372	$7,790	$8,536	$7,481	$8,320	$7,427	$8,345	$7,976	$9,296
Total Base Expend. less Food Service and Transportation	$6,912	$9,981	$6,948	$7,596	$6,747	$7,452	$6,779	$7,558	$7,393	$8,521
Excluding Outliers										
Number of Districts	7	89	9	99	14	94	14	93	11	98
Average Size of Districts	988	499	1313	908	1606	1739	3653	3389	8166	5998
Average Need Factor	1.295	1.38	1.26	1.36	1.25	1.32	1.22	1.31	1.22	1.38
Total Operating per Pupil	$8,764	$10,384	$8,627	$9,645	$8,370	$9,335	$8,390	$9,706	$9,017	$11,254
Base Instruction	$4,537	$5,239	$4,670	$4,829	$4,496	$4,655	$4,413	$4,647	$4,797	$4,945
Base Administration	$1,025	$1,336	$1,026	$1,097	$870	$1,002	$749	$959	$731	$956
Base Support	$294	$347	$395	$504	$407	$581	$528	$770	$779	$1,215
Base Other	$1,939	$2,231	$1,698	$2,106	$1,708	$1,961	$1,738	$1,969	$1,669	$2,181
Total Base Expenditures	$7,794	$9,153	$7,790	$8,536	$7,481	$8,199	$7,427	$8,345	$7,976	$9,296
Total Base Expend. less Food Service and Transportation	$6,912	$8,117	$6,948	$7,596	$6,747	$7,341	$6,779	$7,558	$7,393	$8,521

Table 5.3 on the preceding page examines the expenditures for the exemplary and non-exemplary districts, by density cohort group. Total operating expenditures per student showed a similar pattern to total operating revenues per student. The Second Lowest Density, Middle Density, and Second Highest Density cohort groups had differences in expenditures that were closer than the differences between the Highest Density and Lowest Density cohort groups. The differences in expenditures between the Second Lowest Density, Middle Density, and Second Highest Density cohort groups were slightly larger than the differences in revenues between the same cohort groups. The range of expenditures went from just over $1,000 per student for the Second Lowest Density cohort group to around $1,300 for the Second Highest Density cohort group. The exemplary districts in the Highest Density group spent at least $2,200 less in expenditures per student than the non-exemplary districts. The difference for the Lowest Density group was nearly $4,000.

Looking at base expenditures broken out by function (instructional, administration, support, and other), excluding the Lowest Density group, the difference between the exemplary and non-exemplary districts for base instruction was just under $200, on average, across groups, with the exemplary districts spending less. There were not specific patterns of difference between exemplary and non-exemplary districts for any function. That said, the non-exemplary districts did tend to spend more by virtue of being non-exemplary (higher-spending and lower-performing).

As was true for revenues, removing high-spending outlier districts reduced the differences in expenditures per student for the Lowest Density and Middle Density groups. The non-exemplary districts saw a decrease in base expenditures of over $2,000 per student.

Need

The Need Factor measures a district's overall student need by applying weights to special education, economically disadvantaged, and ELL students. The weights represent the additional resources needed to allow these special needs students to meet performance standards. The application of these weights is explained in Chapter II. The five need cohorts are broken out as follows:

- **Lowest Need** – districts with Need Factors under 1.249;
- **Second Lowest Need** – districts with Need Factors from 1.250 to 1.310;
- **Middle Need** – districts with Need Factors from 1.311 to 1.356;
- **Second Highest Need** – districts with Need Factors from 1.311 to 1.418; and
- **Highest Need** – Districts with Need Factors above 1.418.

Table 5.4 shows the demographics for the need groups.

Table 5.4

Demographics for the Need Cohort Groups					
	Lowest Need	**Second Lowest Need**	**Middle Need**	**Second Highest Need**	**Highest Need**
# of Districts	112	104	111	106	108
Average Size	3,703	2,807	1,608	1,616	3,032
Number Meeting the Above Average Standard	96	52	21	15	2
Average % Special Education	9.63%	11.19%	12.17%	13.96%	14.99%
Average % Economically Disadvantaged	25.09%	42.97%	53.16%	59.83%	71.68%
Average % ELL	1.40%	1.07%	0.89%	1.53%	7.21%
Average Need Factor	1.204	1.289	1.339	1.387	1.473

The Lowest Need group had less than half of the need of the Highest Need group, and just above half the need of the Second Highest Need group. District size (student population) varied across the groups. The Lowest Need and Highest Need groups had the largest average district sizes. The Highest Need group had an average percentage of ELL students over seven times higher than that of the Middle Need group (which had the lowest average percentage of ELL students). The Highest Need cohort's average percentage of economically disadvantaged students was nearly triple that of the Lowest Need cohort. The attainment of Above Average status was also strongly correlated with Need Factor. Over half of the 186 total Above Average districts were in the Lowest Need group and nearly 80 percent of the Above Average districts were in the lowest two need groups.

Table 5.5 examines the revenues for the need cohorts, with each cohort split by exemplary and non-exemplary districts. There were 23 exemplary districts in the Lowest Need cohort, 12 in the Second Lowest Need cohort, five in the Middle Need cohort, five in the Second Highest Need cohort, and zero in the Highest Need cohort. Though the differences are not large, the exemplary districts in each cohort had lower Need Factors than the non-exemplary districts.

Total operating revenues for the four cohorts with exemplary districts ranged from $8,401 to $8,869. The revenues per student grew as need grew. The same pattern does not hold for the non-exemplary districts, since districts in the Lowest Need cohort had higher total operating revenues per student than all groups, other than the Highest Need cohort. The operating revenues for the non-exemplary districts ranged from $9,260 to $12,017 per student. Once again, exemplary districts relied more heavily on state aid as a percentage of total revenue than non-exemplary districts. The exemplary districts in the Lowest Need group received nearly 80 percent of their revenue from the state.

Most of the outlier districts were in the Highest Need cohort, where no districts met the exemplary standard. Removing outlier districts from the other need cohorts reduced the difference in operating revenues between exemplary and remaining districts by over $500 per student in the Lowest Need and Second Lowest Need cohorts, and by about $100 in the Middle Need cohort.

Table 5.5

Revenues for the Need Cohort Groups by Exemplary and Non-Exemplary									
	Lowest		Second Lowest		Middle		Second Highest		Highest	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts										
Number of Districts	23	89	12	92	5	106	5	101	0	108
Average Size of Districts	2,273	4,072	2,143	2,894	1,831	1,598	1,703	1,612		3,032
Average Need Factor	1.194	1.206	1.280	1.290	1.326	1.339	1.367	1.387		1.473
State Operating Revenue per Student	$6,684	$6,244	$6,550	$6,228	$5,868	$6,115	$6,151	$5,955		$6,167
Local Operating Revenue per Student	$1,395	$3,487	$1,530	$2,803	$2,189	$2,365	$1,979	$2,633		$4,224
Federal Operating Revenue per Student	$315	$497	$451	$637	$591	$753	$740	$986		$1,621
Other Operating Revenue per Student	$8	$3	$2	$63	$0	$27	$0	$7		$5
Total Operating Revenue per Student	$8,401	$10,232	$8,534	$9,731	$8,649	$9,260	$8,869	$9,581		$12,017
Percent State	79.6%	61.0%	76.8%	64.0%	67.9%	66.0%	69.3%	62.2%		51.3%
Percent Local	16.6%	34.1%	17.9%	28.8%	25.3%	25.5%	22.3%	27.5%		35.2%
Percent Federal	3.7%	4.9%	5.3%	6.5%	6.8%	8.1%	8.3%	10.3%		13.5%
Percent Other	0.1%	0.0%	0.0%	0.6%	0.0%	0.3%	0.0%	0.1%		0.0%
Excluding Outliers										
Number of Districts	23	87	12	89	5	105	5	101	0	101
Average Size of Districts	2,273	4,165	2,143	2,982	1,831	1,612	1,703	1,612		3,241
Average Need Factor	1.194	1.207	1.280	1.291	1.326	1.400	1.367	1.387		1.481
State Operating Revenue per Student	$6,684	$6,364	$6,550	$6,362	$5,868	$6,149	$6,151	$5,955		$6,360
Local Operating Revenue per Student	$1,395	$440	$1,530	$2,220	$2,189	$2,239	$1,979	$2,633		$2,666
Federal Operating Revenue per Student	$315	$2,838	$451	$610	$591	$751	$740	$986		$1,529
Other Operating Revenue per Student	$8	$3	$2	$19	$0	$27	$0	$7		$5
Total Operating Revenue per Student	$8,401	$9,645	$8,534	$9,211	$8,649	$9,164	$8,869	$9,581		$10,560
Percent State	79.6%	66.0%	76.8%	69.1%	67.9%	67.1%	69.3%	62.2%		60.2%
Percent Local	16.6%	4.6%	17.9%	24.1%	25.3%	24.4%	22.3%	27.5%		25.2%
Percent Federal	3.7%	29.4%	5.3%	6.6%	6.8%	8.2%	8.3%	10.3%		14.5%
Percent Other	0.1%	0.0%	0.0%	0.2%	0.0%	0.3%	0.0%	0.1%		0.0%

Table 5.6

Expenditures for the Need Cohort Groups by Exemplary and Non-Exemplary										
	Lowest		Second Lowest		Middle		Second Highest		Highest	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts										
Number of Districts	23	89	12	92	5	106	5	101	0	108
Average Size of Districts	2,273	4,072	2,143	2,894	1,831	1,598	1,703	1,612		3,032
Average Need Factor	1.194	1.206	1.280	1.290	1.326	1.339	1.367	1.387		1.473
Total Operating per Pupil	$8,281	$10,802	$8,499	$10,181	$8,614	$9,580	$8,779	$9,952		$12,219
Base Instruction	$4,628	$5,570	$4,501	$5,036	$4,323	$4,708	$4,356	$4,822		$5,373
Base Administration	$821	$1,054	$922	$1,141	$971	$1,085	$905	$1,087		$1,390
Base Support	$425	$805	$440	$666	$364	$532	$336	$623		$857
Base Other	$1,582	$2,152	$1,749	$2,119	$1,952	$2,070	$1,921	$2,047		$2,753
Total Base Expenditures	$7,456	$9,581	$7,611	$8,963	$7,611	$8,395	$7,517	$8,578		$10,372
Total Base Expend. less Food Service and Transportation	$6,818	$8,768	$6,831	$8,114	$6,739	$7,472	$6,606	$7,657		$9,165
Excluding Outliers										
Number of Districts	23	87	12	89	5	105	5	101	0	101
Average Size of Districts	2273	4165	2143	2982	1831	1612	1703	1612		3241
Average Need Factor	1.194261	1.21	1.28	1.29	1.33	1.40	1.37	1.39		1.48
Total Operating per Pupil	$8,281	$10,291	$8,499	$9,696	$8,614	$9,451	$8,779	$9,952		$10,888
Base Instruction	$4,628	$5,299	$4,501	$4,806	$4,323	$4,644	$4,356	$4,822		$4,780
Base Administration	$821	$963	$922	$1,051	$971	$1,058	$905	$1,087		$1,130
Base Support	$425	$821	$440	$630	$364	$534	$336	$623		$874
Base Other	$1,582	$1,964	$1,749	$2,010	$1,952	$2,037	$1,921	$2,047		$2,342
Total Base Expenditures	$7,456	$9,048	$7,611	$8,497	$7,611	$8,272	$7,517	$8,578		$9,126
Total Base Expend. less Food Service and Transportation	$6,818	$8,364	$6,831	$7,673	$6,739	$7,366	$6,606	$7,657		$8,131

The preceding table, 5.6, looks at the expenditures for the need cohort groups. The total operating expenditures per student for exemplary districts ranged from $8,281 in the Lowest Need districts to $8,779 in the Second Highest Need districts. It ranged from $9,580 in the Middle Need group to $12,219 in the Highest Need group for non-exemplary districts. In the Lowest Need cohort, the difference in operating expenditures between exemplary versus non-exemplary districts ranged from a little under $1,000 per student to about $2,700. Across cohort groups, the spending for base instruction differed by at least $380 per student and up to almost $1,000 per student. There were not clear patterns across other spending areas, which is unsurprising given that the base spending amounts did not include spending for special needs populations.

Again, removing outlier districts only affected the Lowest Need, Second Lowest Need, and Middle Need cohorts. The differences between total operating expenditures and base expenditures decreased by over $500 per student for the Lowest Need and Second Lowest Need cohorts, and by about $100 for the Middle Need cohort.

Setting

The study team used setting information from the National Center for Education Statistics (NCES).[1] NCES places every district in the country into one of 12 setting codes. The codes are broken up into four main settings: City, Suburb, Town, and Rural. In each of the four main settings, districts are then categorized according to three additional size characteristics: Large, Midsize, and Small (for City and Suburban settings), and Fringe, Distant, and Remote (for Town and Rural settings). For this study, the study team chose to use NCES' four main settings to create four setting cohorts.

Table 5.7 shows the demographics for the four setting cohorts.

Table 5.7

Demographics for the Setting Cohort Groups				
	City	**Suburb**	**Town**	**Rural**
# of Districts	34	147	94	266
Average Size	8,867	4,435	2,044	896
# Meeting the Above Average Standard	8	72	34	72
Average % Special Education	13.47%	12.20%	12.42%	12.30%
Average % Economically Disadvantaged	60.61%	43.64%	50.52%	52.78%
Average % ELL	10.19%	3.00%	1.79%	1.32%
Average Need Factor	1.428	1.312	1.335	1.341

The average size of districts was the largest in the City cohort and smallest in the Rural cohort, as would be expected. The Suburb cohort and Rural cohort had the largest number of total districts, and each had 72 districts that met the Above Average standard. The City cohort had only eight districts that met the Above Average standard. The Town group had 34. The City group had by far the highest average Need

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[1] https://nces.ed.gov/ccd/rural_locales.asp

Factor, with an average of over 60 percent economically disadvantaged students and over 10 percent ELL students. The Suburb group had the lowest average Need Factor.

Table 5.8 shows the revenues for the setting cohort groups. Two districts met the exemplary criteria in the City cohort, 24 in the Suburb cohort, 11 in the Town cohort, and 22 in the Rural cohort. The exemplary districts had far lower Need Factors in all four setting groups, with average Need Factors ranging from 1.212 to 1.270, compared to 1.331 to 1.441 for the non-exemplary districts. The two exemplary city districts had an average Need Factor just over half that of the non-exemplary districts.

Total operating revenue ranged from $8,510 to $9,200 per student in the exemplary districts, compared to $9,150 to $10,797 in the non-exemplary districts. The exemplary districts relied on the state for a higher percentage of total operating revenue than the non-exemplary districts. This was true for all four cohorts, with the lowest state revenue percentage at 69.2 percent. The exemplary districts had lower local and federal operating revenue percentages than the non-exemplary districts. All the outlier districts in the setting cohorts were in the Rural cohort and were non-exemplary districts. Removing them lowered the total operating revenues by over $1,000 per student. It also increased the non-exemplary districts' reliance on state aid from 51.9 percent to 59.5 percent.

Table 5.9, which follows Table 5.8, shows the expenditures for the setting groups. Total operating expenditures for the exemplary districts ranged from $8,484 to $9,997 per student. Total operating expenditures for the non-exemplary districts ranged from $9,387 to $11,877. Base instructional expenditures per student were higher for the exemplary districts in the City and Town groups. For non-exemplary districts, base instructional expenditures were higher in the Suburb and Rural districts, with a difference of almost $1,000 per student in the Rural districts. The City and Suburb districts appear to have spent more on student support services, while the City districts appear to have spent more on instructional support. Removing the outlier districts lowered the total operating expenditures and base expenditures by about $1,000 per student for the non-exemplary Rural districts. However, it did not appear to change the relationships in spending patterns.

Conclusions

The exemplary districts in each characteristic cohort are districts that are both high-performing, and low-spending, meaning that are districts that meet the Above Average standard while spending less than districts with similar characteristics. Exemplary districts tend to have much lower need than the non-exemplary districts within each cohort when looking at density and setting. Even when looking at the need cohorts, the non-exemplary districts have slightly higher need than the exemplary districts. Additionally, no district in the Highest Need cohort met the exemplary standard. The information makes the study team question how well exemplary districts represent what is needed for all districts to meet standard, even at the base level.

Table 5.8

Revenues for the Setting Cohort Groups by Exemplary and Non-Exemplary								
	City		Suburb		Town		Rural	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts								
Number of Districts	2	32	24	123	11	83	22	244
Average Size of Districts	8,294	8,903	4,581	4,407	1,953	2,056	1,501	842
Average Need Factor	1.228	1.441	1.212	1.331	1.270	1.344	1.254	1.349
State Operating Revenue per Student	$6,368	$6,890	$6,860	$6,950	$6,311	$6,113	$6,412	$5,599
Local Operating Revenue per Student	$2,523	$2,454	$1,306	$1,913	$1,774	$2,214	$1,676	$4,188
Federal Operating Revenue per Student	$309	$1,425	$344	$830	$410	$796	$502	$977
Other Operating Revenue per Student	$0	$0	$1	$1	$15	$26	$3	$32
Total Operating Revenue per Student	$9,200	$10,770	$8,511	$9,694	$8,510	$9,150	$8,593	$10,797
Percent State	69.2%	64.0%	80.6%	71.7%	74.2%	66.8%	74.6%	51.9%
Percent Local	27.4%	22.8%	15.3%	19.7%	20.9%	24.2%	19.5%	38.8%
Percent Federal	3.4%	13.2%	4.0%	8.6%	4.8%	8.7%	5.8%	9.1%
Percent Other	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.3%
Excluding Outliers								
Number of Districts	2	32	24	123	11	83	22	231
Average Size of Districts	8,294	8,903	4,581	4,407	1,953	2,056	1,501	884
Average Need Factor	1.228	1.441	1.212	1.331	1.270	1.344	1.254	1.351
State Operating Revenue per Student	$6,368	$6,890	$6,860	$6,950	$6,311	$6,113	$6,412	$5,763
Local Operating Revenue per Student	$2,523	$2,454	$1,306	$1,913	$1,774	$2,214	$1,676	$3,011
Federal Operating Revenue per Student	$309	$1,425	$344	$830	$410	$796	$502	$894
Other Operating Revenue per Student	$0	$0	$1	$1	$15	$26	$3	$16
Total Operating Revenue per Student	$9,200	$10,770	$8,511	$9,694	$8,510	$9,150	$8,593	$9,684
Percent State	69.2%	64.0%	80.6%	71.7%	74.2%	66.8%	74.6%	59.5%
Percent Local	27.4%	22.8%	15.3%	19.7%	20.9%	24.2%	19.5%	31.1%
Percent Federal	3.4%	13.2%	4.0%	8.6%	4.8%	8.7%	5.8%	9.2%
Percent Other	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.0%	0.2%

Table 5.9

Expenditures for the Setting Cohort Groups by Exemplary and Non-Exemplary								
	City		Suburb		Town		Rural	
	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining	Exemplary	Remaining
All Districts								
Number of Districts	2	32	24	123	11	83	22	244
Average Size of Districts	8,294	8,903	4,581	4,407	1,953	2,056	1,501	842
Average Need Factor	1.228	1.441	1.212	1.331	1.270	1.344	1.254	1.349
Total Operating per Pupil	$9,997	$11,877	$8,572	$10,474	$8,484	$9,387	$8,521	$10,917
Base Instruction	$5,088	$4,901	$4,486	$4,822	$4,613	$4,605	$4,519	$5,447
Base Administration	$741	$1,022	$778	$933	$883	$935	$940	$1,383
Base Support	$1,067	$1,353	$626	$1,010	$381	$653	$416	$455
Base Other	$1,759	$2,447	$1,730	$2,040	$1,704	$1,969	$1,764	$2,424
Total Base Expenditures	$8,655	$9,723	$7,621	$8,804	$7,581	$8,163	$7,640	$9,709
Total Base Expend. less Food Service and Transportation	$8,055	$8,795	$6,969	$8,050	$6,876	$7,324	$6,833	$8,602
Excluding Outliers								
Number of Districts	2	32	24	123	11	83	22	231
Average Size of Districts	8294	8903	4581	4407	1953	2056	1501	884
Average Need Factor	1.2275	1.44	1.21	1.33	1.27	1.34	1.25	1.35
Total Operating per Pupil	$9,997	$11,877	$8,572	$10,474	$8,484	$9,387	$8,521	$9,874
Base Instruction	$5,088	$4,901	$4,486	$4,822	$4,613	$4,605	$4,519	$4,977
Base Administration	$741	$1,022	$778	$933	$883	$935	$940	$1,195
Base Support	$1,067	$1,353	$626	$1,010	$381	$653	$416	$438
Base Other	$1,759	$2,447	$1,730	$2,040	$1,704	$1,969	$1,764	$2,115
Total Base Expenditures	$8,655	$9,723	$7,621	$8,804	$7,581	$8,163	$7,640	$8,724
Total Base Expend. less Food Service and Transportation	$8,055	$8,795	$6,969	$8,050	$6,876	$7,324	$6,833	$7,772

VI. Equity Study

With the passage of P.A. 145 in 1993 and Proposal A in 1994, the State of Michigan undertook a major restructuring of its school finance system to (1) reduce its reliance on local property tax levies (which at the time contributed 69 percent of total school funding), (2) provide relief for local property taxpayers, and (3) provide a more equitable distribution of funding for local school districts. One of the required tasks of the RFP commissioning this study was to assess whether the post-Proposal A school finance system continues to distribute resources to school districts in a fashion that ensures that all students have an equal opportunity to become proficient in those subjects listed in the Michigan Merit standard requirements."

In this chapter, APA presents the results of its equity analysis of Michigan's school finance system. As a school finance term, "equity" is concerned with how resources are allocated across school districts and, ultimately, across schools and students. The most common notion of equity assumes that a school finance system that distributes resources *equally* is equitable. However, both research and APA's experience working in other states have shown that school systems vary in their numbers of special needs students (e.g. economically disadvantaged students, ELL students, and special education students), who require higher levels of resources to achieve the same, or similar outcomes, as general population students. Thus, to achieve outcomes that are equitable, or comparable to, outcomes for general population students, special needs students require different, higher amounts of resources. Furthermore, local school districts differ in their abilities to raise revenues locally. Disparities in local property and income wealth mean that some school districts will be able to raise significantly higher local revenues than other districts. Some districts also face factors beyond their control that can lead to higher operating costs. For example, districts may have small student enrollments or low population density. A strong finance system that is truly equitable will accommodate for differences between districts in terms of (1) student resource needs, (2) district characteristics and (3) district revenue-raising abilities.

For this equity study, APA examined the fiscal equity of Michigan's school finance system for the five-year period of the 2009-10 school year through the 2013-14 school year. APA used data from Michigan Department of Education to look at education revenues, expenditures, student enrollment, local property wealth, and property tax rates over the five-year period. The equity study excluded 13 "outlier" school districts, most of which were very small districts with high property wealth and per student spending at least three standard deviations above the mean. Including these very high-spending districts in the equity study could have significantly skewed the results and led to invalid conclusions about the equitability of the funding system. More information about this is presented later in this chapter.

The remaining sections of this chapter of the report (1) provide a definition of school finance equity, (2) provide a description of key school district characteristics, (3) describe the effect the 13 high-spending outlier districts might have had on the equity analysis and provide a rationale for excluding them, (4)

present the results of the horizontal equity, vertical equity, and fiscal neutrality analyses, (5) compare key district enrollment and fiscal characteristics across district wealth quintiles, and (6) present the key findings of the equity study.

Defining Equity

School finance equity has been discussed and analyzed both in terms of (1) the focus on whom or what is being treated equitably and (2) the particular type of equity of interest. Most often, equity studies focus on the distribution of resources to school districts, since nearly every state calculates its state school finance formula at the district level. However, it is also reasonable to be concerned about how equitably resources are ultimately directed toward individual students. Are resources being allocated fairly to schools within districts? Are more resources being targeted toward students with greater educational needs? Taxpayers comprise another legitimate focus of equity. Are some taxpayers subject to much higher tax rates (or lower levels of state-provided resources) solely because they live in a school district with little wealth? Do other taxpayers enjoy the ability to raise much higher levels of revenues at lower tax efforts because they live in wealthier communities?

There are also multiple equity concepts that are typically addressed in school finance equity analyses. The most common equity concepts are horizontal equity, vertical equity and fiscal neutrality (Berne & Stiefel, 1984). These concepts are described below.

Horizontal equity is concerned with how equally resources are allocated to similar districts and/or to similar students. It is sometimes said that horizontal equity addresses the "equal treatment of equals." That is, an equitable school finance system will provide a roughly equal amount of resources to students with similar educational needs. Under a school finance system with high horizontal equity, students with no special needs are funded roughly equally, regardless of the school district where they attend school.

Vertical equity measures how well the school finance system takes into account varying student needs. A system with high vertical equity will provide more resources for students with greater educational needs. In this way, a system with high vertical equity supports the programs and interventions that are required for students with greater educational needs to succeed in school.

Fiscal neutrality assesses the link between local wealth and the amount of revenue available to support a school district. A touchstone of school finance theory asserts that there should be little or no relationship between local wealth, such as the local property tax base, and the amount of revenues provided to a local school district. A school finance system with high fiscal neutrality minimizes the relationship between local wealth, or capacity, and district spending.

These three dimensions of school finance formed the bases of APA's analysis of school finance equity in Michigan.

School District Characteristics

APA's equity analysis focused on the 528 Local Education Agencies (LEAs), called "school districts" or "districts" throughout this section, that were operating in each of the fiscal years 2010 through 2014.

The analysis did not include the state's Intermediate School Districts (ISDs) or Public School Academies (PSAs). As Table 6.1 shows, there was incredible diversity among Michigan's school districts. Student enrollment in the 528 school districts included in this analysis ranged from 10 students to nearly 50,000 students. Student need, as measured by the Need Factor – the result of dividing the number of weighted students by the number of unweighted students – ranged from 1.02 to 1.68, illustrating a wide variation in the number of students with special needs served in different districts.

The summary statistics for districts' fiscal characteristics also highlighted the range of variation across districts. Total taxable value per student, a measure of a district's total local wealth, ranged from $35,881 per student to $2,508,512 per student. This represented a difference of nearly $2.5 million per student, for a range ratio of nearly 70 to one. In other words, the local wealth per student of the highest wealth district was nearly 70 times greater than that of the lowest wealth district. Per student current expenditures also ranged widely, from $7,230 per student to $19,687 per student – a range ratio of nearly three to one. Some of this variation in per student spending is due to district size and Need Factors, but an analysis of the relationships between these factors suggested that differences in local wealth also played a large role. There was a small negative correlation between per student spending and enrollment size (-0.04), indicating that as enrollment increased, spending per student decreased slightly. The correlation between student need and spending (0.23) was modest but showed that spending increased along with student need. The strongest correlation (0.49) was between total taxable value and per student spending. This strong correlation indicated that local wealth was the largest driver of higher spending among these three factors. The implicit tax effort, the result of dividing a district's local operating revenues by its total taxable value, also varied significantly, ranging from a low of 0.096 (or 9.6 cents per $1,000 of taxable value) to 28.58 (or $28.58 per $1,000 of taxable value). Local property taxpayers experienced widely varying levels of taxation depending on the school district where they lived.

Table 6.1 presents the wide variation in other district fiscal characteristics, including operating revenues per student, expenditures per weighted student (the student count adjusted for student need), base expenditures per student (operating expenditures excluding spending for special needs), the number of teachers per 1,000 students, and the non-homestead portion of total taxable value.

Table 6.1

School District Enrollment and Fiscal Characteristics – FY 2014					
Variable	**Minimum**	**Maximum**	**Range**	**Mean**	**Median**
Enrollment	10.0	49,941.6	49,931.6	2,619.0	8.8
Weighted Enrollment	12.4	77,568.9	77,556.5	3,467.3	1,995.5
Need Factor	1.02	1.68	0.66	1.33	1.34
Local Operating Revenue Per Student	$25	$19,822	$19,796	$2,090	$1,559
State Operating Revenue Per Student	$557	$16,704	$16,147	$6,758	$6,857
Federal Operating Revenue Per Student	$0	$5,944	$5,944	$886	$686
Total State and Local Operating Revenue Per Student	$6,946	$27,314	$20,367	$8,855	$8,325
Total Operating Revenue Per Student	$7,685	$29,958	$22,273	$9,742	$9,094
Total Current Expenditures Per Student	$7,230	$19,687	$12,457	$10,471	$9,416
Total Current Expenditures Per Weighted Student	$5,393	$16,173	$10,780	$7,909	$7,122
Base Expenditures Per Student	$4,560	$14,154	$9,594	$6,687	$6,289
Teachers Per 1,000 Students	27.9	117.0	89.1	42.5	43.9
Non-Homestead Taxable Value Per Student	$10,891	$2,177,149	$2,166,258	$77,028	$60,246
Total Taxable Value Per Student	$35,881	$2,508,512	$2,472,631	$208,851	$193,594
Implicit Tax Effort	0.096	28.58	28.49	9.19	8.82

The Effect of Outlier School Districts

The 13 small, property-rich districts excluded from this analysis had spending so far above the norm for the state that their inclusion in the equity analysis would have dramatically affected key equity statistics. Table 6.2, below, summarizes several key equity statistics for fiscal year 2014 (FY 2014), the most recent year for which data were available, with and without the 13 outlier districts.

Table 6.2

Comparison of Equity Statistics Including and Excluding Outlier School Districts		
Equity Statistic	**All School Districts**	**Excluding Outlier Districts**
Correlation: Per Student TV* to Per Student State & Local Revenues	0.77	0.54
Correlation: Per Student TV* to Current Expenditures	0.75	0.49
Coefficient of Variation: Per Student State & Local Revenues	0.38	0.17
Coefficient of Variation: Per Student Current Expenditures	0.34	0.17
Range: Per Student State and Local Operating Revenues	$6,946 to $39,118	$6,946 to $27,314
Range: Per Student Local Operating Revenues	$25 to $38,131	$25 to $19,822
Range: Per Student Current Expenditures	$7,230 to $40,254	$7,230 to $19,687

 *Taxable Value

When the 13 outlier school districts were included in the equity analysis, the equity statistics revealed significant inequities in Michigan's school finance system. The correlation coefficients between local wealth and per student revenues and between local wealth and per student current expenditures both

exceeded the commonly accepted standards by a significant amount. A correlation coefficient of 0.50 or less would indicate a reasonably equitable distribution of education resources. When the 13 outlier districts were included in the analysis, the correlation coefficient between per student local wealth and per student state and local operating revenues was 0.77, well above the 0.50 standard. The correlation coefficient between per student local wealth and per student current expenditures was 0.75, also well above the standard.

When the 13 outlier districts were removed from the analysis, the correlation coefficients became more in line with the standard. The correlation coefficient between per student wealth and per student state and local operating revenues fell to 0.54, just above the standard. The correlation coefficient between per student wealth and per student current expenditures fell to 0.49, just below the standard.

The study team found similar results for the coefficient of variation. When all districts were included in the analysis, the coefficient of variation (CV) of per student state and local operating revenues was 0.38, well above the standard of 0.10 or lower. This result indicates a significant range of variation in per student revenues across districts. The CV for per student current expenditures was 0.34, also well above the standard and representative of a wide range of variation in per student spending across districts.

When the 13 outlier districts were excluded from the analysis, the CV for per student state and local operating revenues and per student current expenditures fell to 0.17 for both measures. This is still nearly double the standard, but it represented a notable improvement.

The study team believes that the influence of the 13 outlier districts on the equity analysis results paints a misleading picture of school finance equity in Michigan. For this reason, these outlier districts were not included in the following data tables and discussion.

Horizontal Equity, Vertical Equity, and Fiscal Neutrality

This section of the analysis looks at horizontal equity, vertical equity, and fiscal neutrality (concepts described earlier in this chapter). Horizontal equity is concerned with how equally similarly situated students are funded across school districts. Vertical equity assumes that a greater amount of resources is needed to effectively educate special needs students, such as special education students, ELL students, economically disadvantaged students. Fiscal neutrality examines the relationship between the wealth of a district and the amount of money that district spends on educating its students. All of the following analyses exclude the 13 outlier districts. Total taxable value is used as the measure of local wealth, although non-homestead taxable value alone is the local tax base measure used for calculating some components of the Michigan's property tax-based revenues (e.g. the state education property tax). However, the full tax base (non-homestead and homestead taxable value) is used for other property tax calculations and is more representative of the true local wealth of a district. The equity analysis examined both operating revenues and current expenditures. In both cases, any capital spending and debt service was excluded from the totals. The current expenditure amounts include federal funding. The base expenditure amounts also include federal operating revenue, but exclude spending for special needs, transportation, food service, maintenance and operations (M&O),

community service, adult education programs, and capital. This limited calculation of base expenditures differs from the calculation of total base expenditures (which does include some non-instructional costs) used in the rest of the report.

While there are a number of generally accepted statistical approaches to analyzing equity (Berne & Stiefel, 1984; Odden & Picus, 2014), the study team has found that there are several statistical measures that are most useful for policymakers trying to understand the equity of a school finance system. These statistical measures are described below:

Ñ   **Range:** Range describes the difference between the smallest and largest values of any given variable, e.g. per student spending. The greater the range within a system, the less likely it is that a system is equitable.

Ñ   **Coefficient of Variation (CV):** The CV measures how much items vary around an average. In statistical terms, CV is the standard deviation divided by the mean (average). If per-student expenditures do not very greatly across districts (low variation), then all of the expenditure figures will be tightly packed around the average. If expenditures *do* vary greatly across districts (high variation), then the expenditure figures will be widely dispersed from the average. The value of the CV ranges from zero and higher, and can be presented as a percentage (30 percent) or as a decimal (0.30). A lower number (closer to zero) indicates less variation and a higher number indicates more variation, with a number over 0.010 showing a higher amount of variation than is typically desirable in a school finance system.

The range and CV may be used for measuring both horizontal and vertical equity. However, measures of vertical equity use weighted students counts while horizontal equity uses non-weighted counts. By using weighted student counts, which provide a measure of student need, the study team is able to assess how spending varies with student need. The study team's expectation is that higher spending will be associated with higher levels of student need.

Ñ   **McLoone Index and Verstegen Index:** The McLoone and Verstegen Indices are lesser known but valuable measures of equity. Used together, they can help to pinpoint where – in terms of the per student revenue or expenditure distribution of school districts – a state is most equitable or inequitable. The McLoone Index was created to measure the bottom half of the per student distribution of school districts to indicate the degree of equity of those school districts below the median value of revenues or expenditures per student (or the 50th percentile). The McLoone Index ranges from zero to 1.0, with 1.0 representing perfect equity. An index of at least 0.95 is considered desirable. Conversely, the Verstegen Index provides the same information for the top half of the revenue or spending distribution – those districts above the median revenues or expenditures per student. The ideal value of the Verstegen Index is 1.0 and the standard is no more than 1.05.

Ñ   **Correlation Coefficient:** The correlation coefficient is the most common statistic used for measuring fiscal neutrality, or the relationship between per-student property wealth and per-student revenues or spending. A high-quality school finance system will exhibit little relationship between the two, since local property wealth should not determine how much money a school system has available to spend. The correlation coefficient ranges from -1.0 to 1.0, where -1.0 represents a perfect negative relationship and 1.0 represents a perfect positive relationship. In a perfect negative relationship, a one-unit *increase* in one item – such as a one-unit increase in per student property wealth – results in a one-unit *decrease* in another item (e.g. per student spending). In a perfect positive relationship, a one-unit *increase* in one item results in a one-unit *increase* in the other item. A correlation of zero means there is no relationship between two items.

Equity Analysis

Table 6.3 presents the key equity statistics that the study team used to assess the equity of Michigan's school finance system. The measures related to horizontal equity are discussed first, followed by the measures related to vertical equity. The fiscal neutrality measures are discussed last.

Table 6.3

Key Equity Statistics for Fiscal Years 2010-2014					
Equity Measures	**2010**	**2011**	**2012**	**2013**	**2014**
Correlation Coefficients (Standard of <=0.50)					
Total Taxable Value and State and Local Operating Revenues Per Student	0.55	0.53	0.54	0.55	0.54
Total Taxable Value and Current Expenditures Per Student	0.46	0.37	0.38	0.48	0.49
Total Taxable Value and Base Expenditures Per Student	0.61	0.51	0.54	0.64	0.64
Total Taxable Value and Teachers Per 1,000 Students	0.57	0.53	0.57	0.63	0.65
Total Property Wealth and Average Teacher Salary	-0.14	-0.16	-0.23	-0.21	-0.20
Total Taxable Value and State and Local Revenues Per Weighted Student	0.55	0.55	0.57	0.57	0.53
Total Taxable Value and Current Expenditures Per Weighted Student	0.47	0.43	0.44	0.54	0.51
Need and State and Local Revenues Per Weighted Student	-0.32	-0.40	-0.36	-0.40	-0.40
Need and Current Expenditures Per Weighted Student	-0.18	-0.17	-0.18	-0.25	-0.25
Coefficient of Variation (Standard of <=0.10)					
Total State and Local Operating Revenue Per Student	0.17	0.17	0.18	0.18	0.17
Total Current Expenditures Per Student	0.17	0.18	0.18	0.17	0.17
State and Local Operating Revenues per Weighted Student	0.18	0.17	0.18	0.19	0.18
Current Expenditures per Weighted Student	0.18	0.17	0.17	0.18	0.17
McLoone Index (Standard of 0.95 to 1.00)	.94	.93	.94	.94	.94
Verstegen Index (Standard of 1.00 to 1.05)	1.25	1.25	1.24	1.23	1.22

Horizontal Equity

Horizontal equity is a measure of how equally similarly situated students are funded across school districts. A state school finance system that is horizontally equitable should meet or exceed the standards of all of the equity statistical measures described above. The variation in revenues or spending that exists among districts should be largely explained by differences in student need.

The range of statistics presented above in Table 6.1 shows that many of the fiscal variables included in the analysis varied widely. The two measures of local wealth, total taxable value and non-homestead taxable value, both had very large distributions, ranging from $35,881 to $2,508,512 and from $10,891 to $2,177,149, respectively. Such a wide range in local wealth presents a challenge to the state for maintaining equity when districts' capacities to raise local revenues can vary by such a large amount.

The range of values found for operating revenues and current expenditures per student suggest that differences in local wealth were likely contributing to resource inequities among districts. While state operating revenues ranged from $557 to $16,704 per student for a range ratio[2] of 30 to 1, the range for local operating revenues per student ran from $25 to $19,822 for a range ratio of 783 to 1. The range ratio of 3.9 to 1 for the total of state and local operating revenues per student indicated that state aid was working to reduce a good portion of the disparity in local revenue-raising capacities. However, the range ratio still represents a wide variation, given that the range ratio for student need was 1.6 to 1.

Another indicator that the school finance system fell short on horizontal equity is the range for base expenditures per student. This measure should eliminate most of the effects of student need, since special needs weighting was excluded from the student count and special needs spending was excluded from the expenditure totals. The range for base expenditures per student was still very large, ranging from $4,560 to $14,154, for a range ratio of more than 3 to 1. The range for total current expenditures per student was $7,230 to $19,687, with a somewhat lower range ratio of 2.7 to 1.

The results of the CV analysis also indicate a level of variation that is greater than expected in an equitable school finance system. This analysis examined data over the five-year period of FY 2010 to 2014 to assess how the school finance system performed over time. The values in Table 6.2 show that across all measures and years the CV values were greater than the preferred standard of 0.10, in some cases double or nearly double the standard. This indicates that there was more variation in resources available to districts than would be found in an equitable system. All of the CV values also seem trend somewhat higher after FY 2012, suggesting that the system became somewhat more inequitable over time.

Because of the wide range of district enrollment, the CV for per student current expenditures for each district enrollment quintile[3] was calculated to determine whether the amount of spending variation was consistent across all district sizes. The results in Table 6.4 show that variation did differ by enrollment

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[2] The range ratio is the result of dividing the largest value in the range by the smallest value. This provides a measure of how many times greater the larger value is than the smaller value.
[3] A quintile is any of five equal groupings of objects, in this case districts grouped by enrollment size.

size, with the greatest variation in spending occurring among the smallest districts in the first quintile. The amount of variation was similar across the three middle quintiles. The higher level of variation found in the fifth quintile is likely due to the wide range of school district sizes rather than to variation among similar-sized districts.

Table 6.4

Coefficient of Variation for Per Student Current Expenditures by Enrollment Quintiles – FY 2014			
Enrollment Quintile	**Number of Districts**	**Enrollment Range**	**CV**
1	106	10 – 625	0.23
2	106	629 – 1,201	0.09
3	104	1,207 – 2,024	0.11
4	106	2,029 – 3,516	0.11
5	106	3,550 – 49,942	0.18

Thus far, the results of this analysis suggest that Michigan's school finance system falls short of meeting the generally accepted standards for equity. The next question to be answered is, "Where does inequality occur?" Is the system as a whole inequitable or is there greater inequality among the lowest- or highest-spending districts? The results of the McLoone Index and Verstegen Index analyses presented in Table 6.3 provides some insight. In all five years studied, the McLoone index stayed just slightly below the standard of 0.95, showing that the bottom half of the school district spending distribution stayed relatively equal. Alternatively, the Verstegen Index was significantly higher than the standard in all five years, indicating greater inequality in the top half of the spending distribution. The finding that there was more variation at the higher end of the spending spectrum was reinforced by the fact that the range between the median-spending district ($9,416 per student) and the highest-spending district ($19,687 per student) was $10,271 per student, while the range from the median-spending district to the lowest-spending district ($7,230 per student) was only $2,186.

Vertical Equity

The results for vertical equity are very similar to the horizontal equity results. Vertical equity assumes that a greater amount of resources is needed to effectively educate special needs students. This vertical equity analysis used weighted student counts in the CV calculation, thereby taking into account the variations in spending between districts with different numbers of special needs students. As Table 6.3 shows, the CVs for both state and local operating revenues and current expenditures per weighted student were similar to the CVs from the horizontal equity analysis. All of the CVs that were calculated using the weighted student count were well above the 0.10 standard and were consistently high across all five years of the study. These results indicate that the variation in per student revenues and expenditures are due to more than differences in the level of student need among districts.

Several of the correlations presented in Table 6.3 also help to provide some insight into how well the school finance system takes student need into account. The correlations between student need and per weighted student state and local operating revenues, which fall between -0.32 and -0.40, indicates a

modest negative relationship between student need and revenues. Similarly, the correlations between student need and per weighted student current expenditures, which fall between -0.17 and -0.25, indicate a negative weak relationship between student need and spending. Both results show that high-need districts have fewer relative resources than lower-need districts. One reason districts with higher levels of student need do not have the same amount of resources as lower-need districts is the slight negative relationship between total taxable value and need, that is, districts with greater student need tend to also have less local wealth. Table 6.3 shows that the correlation between need and local property wealth was -0.09 in FY 2010 and -0.07 in FY 2014.

Fiscal Neutrality

Fiscal neutrality examines the relationship between the wealth of a district and the resources it has for educating its students. The statistical measure used here for measuring fiscal neutrality is the correlation coefficient. The correlation coefficient assesses the strength and direction of two variables related to fiscal neutrality such as per student taxable value and per student revenues or expenditures. In an equitable school finance system, there should be little or no relationship between local wealth and resource levels. The results of this analysis in Michigan are mixed. As the correlation coefficients reported in Table 6.3 show, the correlation between total taxable value per student and current expenditures per student fell within the limits of the generally accepted standard of 0.50 or less. In FY 2010, the correlation coefficient was 0.46, then improved to below 0.40 in fiscal years 2011 and 2012, but increased again to near the standard at .48 and .49 in fiscal years 2013 and 2014, respectively.

The other correlations, associating total taxable value with resources, all fell above the 0.50 standard. The correlation between total taxable value per student and per student state and local operating revenues ranged from 0.53 in FY 2011 to 0.55 in FY 2010 and FY 2013. In FY 2014, it was 0.54. The correlation between total taxable value per student and per student base expenditures was further above the standard, ranging from 0.51 in FY 2011 to 0.64 in both FY 2013 and FY 2014. The correlation between local wealth and the number of teachers per 1,000 students was also high, ranging from 0.53 in FY 2011 to 0.65 in FY 2014.

Interestingly, the correlation between local wealth and average teacher salaries was negative in all five years of the study, ranging from -0.14 in FY 2010 to -0.23 in FY 2012.

Many of these correlations rose further above the standard in the most recent fiscal years studied, FY 2013 and FY 2014. This indicates that fiscal neutrality may be getting worse with time.

Local Wealth Quintiles

Another helpful approach for assessing equity is to compare fiscal variables across districts by wealth quintiles – that is, by districts grouped according to local taxable value per student from the lowest-wealth one-fifth of districts to the highest-wealth one-fifth of districts. This analysis helps to compare the fiscal condition of districts according to their fiscal capacity. Table 6.5, below, shows the key fiscal variables for the state as a whole and for the five wealth quintiles, from lowest-wealth to highest-wealth.

Table 6.5 presents some important insights into the characteristics of the state's districts and the way in which its school finance system is working. First, the districts with the highest wealth tended to also have smaller enrollments. Though the highest quintile had 20 percent of the state's school districts, it only served about 10 percent of the state's students. The table also shows that, as local wealth per student increased, student need decreased. The need ratio fell from 1.43 in the lowest quintile to 1.26 in the second highest quintile and 1.29 in the highest quintiles.

Differences in local property tax effort across the quintiles are illustrated by the implicit tax effort. The implicit tax effort declined between the lowest and the middle quintiles, but then rose again in the top two quintiles. This suggests that districts that were somewhat below the median taxable value per student felt some pressure to control property tax rates. As taxable values rose above the median amount, tax rates rose as districts were both required to raise a larger share of their total revenues from property taxes (due to the equalization built into the formula) and may have been more likely to take advantage of their higher tax capacities to raise additional local revenues above the required formula amount.

Table 6.5

Average Values of Selected School Finance Variables for School Districts in Michigan by Wealth Quintiles in FY 2014						
		Wealth Quintile				
School Finance Variables	State	Lowest	Second Lowest	Middle	Second Highest	Highest
Districts	528	106	106	104	106	106
Students	1,382,818	324,091	273,508	319,260	332,719	133,241
Weighted Students	1,830,741	462,447	361,000	416,305	419,360	171,629
Need Factor	1.33	1.43	1.32	1.30	1.26	1.29
Total Wealth per Student	$208,851	$113,307	$163,473	$194,881	$256,660	$448,488
Implicit Tax Effort (Mills)	10.0	12.2	8.4	8.5	10.2	11.2
Local Operating Revenue per Student	$2,090	$1,377	$1,369	$1,647	$2,626	$5,029
State Operating Revenue per Student	$6,758	$7,258	$7,077	$6,934	$6,632	$4,776
Federal Operating Revenue per Student	$886	$1,556	$778	$687	$585	$709
Total State and Local Operating Revenue per Student	$8,848	$8,635	$8,446	$8,581	$9,258	$9,805
Total State and Local Operating Revenue per Weighted Student	$6,683	$6,052	$6,399	$6,581	$7,345	$7,612
Current Spending per Student	$10,471	$11,115	$9,750	$10,011	$10,563	$11,260
Current Spending per Weighted Student	$7,909	$7,790	$7,387	$7,677	$8,381	$8,741
Base Spending per Student	$6,687	$6,637	$6,317	$6,514	$6,987	$7,233
Teachers per 1,000 Weighted Student	32.1	27.7	32.4	32.7	34.8	35.6
Average Teacher Salary	$62,365	$60,717	$59,965	$62,288	$65,895	$62,158

The differences in the amount of per student revenues and expenditures across the wealth quintiles

highlight the relationship described earlier between local wealth and the amount of educational resources a district has. While state operating revenues per student in the highest quintile were about 70 percent of the amount in the lowest quintile, local operating revenue per student in the highest quintile were nearly four times higher than in the lowest quintile. Total state and local operating revenues per student were about 30 percent higher in the highest quintile than in the lowest. When federal funds were included, total operating revenues per student and total current expenditures per student were almost equal between the highest and lowest quintiles. This is largely due to the significant amount of federal funding that districts in the lowest quintile received. Districts in the highest quintile spent about 15 percent more per student than districts in the second highest quintile, and about 12 percent more than districts in the middle quintile.

Table 6.5 also shows that, as wealth increased, the number of teachers per 1,000 students also increased. Districts in the lowest quintile had about 28 teachers per 1,000 students. This number grew to 33 teachers in the middle quintile and to nearly 36 teachers in the highest quintile. On the other hand, teacher average salaries were relatively similar across the quintiles, with a lower average salary in the highest quintile than in the middle and fourth quintiles. These numbers suggest that as districts enjoyed greater resources, they chose to increase their numbers of teachers to reduce class sizes and to provide additional student supports rather than invest in higher teacher salaries.

Conclusions

Overall, the results of the equity analyses show that Michigan's school finance system is moderately inequitable, using commonly accepted methods and standards for measuring the equity of state school finance systems. Measures of the state's horizontal equity indicate that there was considerably more variation in per student revenues and spending than recommended for an equitable school finance system. In some measures, the CVs were nearly twice the generally accepted standard. The findings for vertical equity are also concerning and suggest that the state may be falling short in providing additional resources for serving special needs populations. The analyses show that much of the variation occurred in the upper half of the district spending distribution, where a number of districts were spending considerably more per student than the median district. While some of this variation was due to higher student need, a certain amount can be attributed to a number of high wealth, high spending districts.

The state is closer to meeting equity benchmarks for fiscal neutrality. The correlation between local property wealth and per student current expenditures fell just within the benchmark of 0.50. Other correlations between local wealth and resources, such as per student state and local operating revenues, base expenditures per student, and teachers per 1,000 students, fell above the 0.50 benchmark, ranging up to 0.64. As a whole, it appears that the state's efforts to reduce reliance on local property taxes through the policies enacted with P.A. 145 and Proposal A had worked in most cases.

The state should be concerned that many of the measures of equity and fiscal neutrality have trended up slightly in recent years, suggesting that the school finance system may get getting less equitable over time.

Other findings from the analysis include the following:

- There was a large range in per student taxable value, ranging from $35,881 to over $2.5 million in 2014, a ratio of 70 to 1;
- Related to this, the implicit tax effort ranged from .096 to 28.58 – a very wide range, indicating large differences in the relative tax effort for taxpayers across districts;
- State and local revenues ranged from $6,946 to $27,314 per student, a 4 to 1 ratio; and
- Per student current expenditures ranged from $7,230 to $19,687, a nearly 3 to 1 ratio.

An analysis by district wealth quintiles for FY 2014 shows the following:

- The lowest-wealth districts also had the highest level of student need;
- Per student total spending in the lowest quintile was actually higher than per student total spending in all quintiles except the highest-wealth quintile (due to a large amount of per student federal funding in these low-wealth districts); and
- Surprisingly, there is a weak but negative correlation between local wealth and average teacher salaries. The analysis shows that higher wealth-higher spending districts were using their resources to increase the number of teachers rather than raise teachers' salaries.

VII. Examination of Regional Variations in Revenues and Non-Instructional Expenditures

This chapter of the report examines the differences in revenues and non-instructional expenditures for all districts, by region, as required by the RFP. Specifically, this chapter includes analysis of the following non-instructional areas: food service, transportation, maintenance and operations (M&O), adult education, community service, and capital.

This chapter is divided into the following sections:

1. Explaining how APA collected basic data and determined regions;
2. Analyzing differences in revenues between regions;
3. Analyzing differences in non-instructional expenditures between regions, with a specific examination of non-instructional expenditures in the exemplary districts; and
4. Examining other metrics for consideration.

The intent of this chapter is to determine what regional variations exist within revenues or non-instructional expenditures, and if these variations should be addressed by the state.

Data and Regions

While most of the data analysis on revenues and expenditures is based on 2013-14 school year data, the analysis of differences in regional costs includes revenue and expenditure data for five school years. This five-year range includes the 2009-10, 2010-11, 2011-12, 2012-13, and 2013-14 school years. While previous analyses focused on understanding the revenues and expenditures that individual districts used to ascertain specific levels of performance in a given year, the current analysis focuses on differences in costs across regions, where each region contains multiple school districts with varied spending patterns. The study team felt that examining these differences across regions and across years would provide the best determination of whether there were true differences in cost structures between regions.

To undertake a regional analysis, APA had to determine a region for each school district in the state. To do this, APA used the Michigan Association of Regions' State Planning & Development Regions (SPDRs). There are 14 SPDRs in the state. The following page shows a map of the SPDRs. Each district was assigned a region code based on county location. All regions are made up of contiguous counties from around the state.

MICHIGAN
STATE PLANNING & DEVELOPMENT REGIONS
(SPDRs)

Map Legend

SPDR NAME

1 Southeast Michigan Council of Governments
2 Region 2 Planning Commission
3 Southcentral Michigan Planning Council
4 Southwestern Michigan Commission
5 GLS Region V Planning Commission
6 Tri-County Regional Planning Commission
7 East Central Michigan Planning & Development Regional Commission
8 West Michigan Regional Planning Commission
9 Northeast Michigan Council of Governments
10 Northwest Michigan Council of Governments
11 Eastern Upper Peninsula Regional Planning and Development Commission
12 Central Upper Peninsula Planning and Development Commission
13 Western Upper Peninsula Planning and Development Regional Commission
14 West Michigan Shoreline Regional Development Commission

~ County

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Department of Information Technology
January 2006

MCGI

Table 7.1 shows the demographics of the 14 regions for the 2013-14 school year for both all districts and districts excluding outliers.

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Table 7.1

</div>

	Number of Districts	Average Size	Average Percent Special Education	Average Percent Economically Disadvantaged	Average Percent ELL	Average Need Factor
Demographics of Regions						
All Districts						
Region 1	111	5,741	43.2%	12.9%	4.5%	1.324
Region 2	31	1,422	12.3%	50.5%	0.3%	1.326
Region 3	36	2,203	10.9%	52.5%	3.5%	1.337
Region 4	31	1,534	10.1%	58.3%	6.4%	1.366
Region 5	34	2,572	12.5%	51.5%	0.9%	1.335
Region 6	26	2,493	10.5%	36.1%	1.4%	1.257
Region 7	74	1,402	14.4%	55.3%	0.2%	1.366
Region 8	59	3,078	12.3%	47.9%	4.6%	1.338
Region 9	16	1,017	12.0%	61.0%	0.0%	1.364
Region 10	37	1,083	11.1%	52.3%	0.6%	1.324
Region 11	13	491	11.7%	50.8%	0.0%	1.320
Region 12	27	822	13.9%	51.6%	0.0%	1.345
Region 13	21	486	10.7%	52.9%	0.0%	1.318
Region 14	25	1,724	13.2%	61.0%	3.9%	1.395
Excluding Outliers						
Region 1	111	5,741	43.2%	12.9%	4.5%	1.324
Region 2	31	1,422	12.3%	50.5%	0.3%	1.326
Region 3	36	2,203	10.9%	52.5%	3.5%	1.337
Region 4	30	1,565	10.1%	58.9%	6.5%	1.369
Region 5	34	2,572	12.5%	51.5%	0.9%	1.335
Region 6	26	2,493	10.5%	36.1%	1.4%	1.257
Region 7	74	1,402	14.4%	55.3%	0.2%	1.366
Region 8	59	3,078	12.3%	47.9%	4.6%	1.338
Region 9	16	1,017	12.0%	61.0%	0.0%	1.364
Region 10	35	1,138	11.4%	52.5%	0.5%	1.326
Region 11	10	620	12.6%	50.9%	0.0%	1.329
Region 12	23	960	13.0%	48.4%	0.0%	1.323
Region 13	18	566	12.4%	55.6%	0.0%	1.347
Region 14	25	1,724	13.2%	61.0%	3.9%	1.395

Region 1 had the largest share of the districts, with over 111 districts, and Region 11 had the smallest share, with just 13. Region 1 also had the largest average size, at 5,741 students, while Region 13 had the smallest average size, at 486. Most regions had average Need Factors over 1.310. Only Region 6 had a Need Factor below the 1.310, at 1.257. The highest average Need Factors were for Regions 4, 7, 9, and 14, with Factors of 1.366, 1.366, 1.364, and 1.395, respectively. All four regions had economically disadvantaged percentages nearing or above 60 percent.

Analyzing Differences by Region

Revenues

District revenues are a product of many factors, including the following:

- student demographics, which are a factor in federal funding;
- local wealth, the main determinant of local funds; and
- the state funding system.

This section focuses on the distribution of revenue, by revenue type, between regions. This section also looks at regional revenue levels compared to state average revenue levels. Finally, this section discusses the relationship between the distribution of revenue, by revenue type, and the level of revenue.

Appendix D shows the detailed revenue data, by region, for all five years and for both district groupings. The data include each region's per student revenue, by type of revenue; each region's percentages of total operating revenue by type of revenue; and the ratio to the state average for each type of revenue. Each year's data are shown on an individual page. Tables 7.2 and 7.3 show the information for 2013-14. Table 7.2 examines all districts and Table 7.3 shows districts without outliers.

Looking at the data over the years, the general patterns across regions are consistent. Federal revenues made up a slightly higher percentage of total operating revenues in the earlier years, most likely during American Recovery and Reinvestment Act of 2009 (ARRA) funding years, but have since declined. Understanding that state and local revenues make up the vast majority of funding, APA is comfortable using the 2013-14 data in Tables 7.2 and 7.3 to discuss the regional patterns for per student funding.

For all districts, total operating funding ranged from a low of $8,912 in Region 2 to a high of $16,388 in Region 11. When the outlier districts are removed, Region 2 still had the lowest total operating funding, at $8,912. Region 11 still had the highest total operating funding, but its per student figure was lower, at $11,985. State operating revenues were lowest in Region 9, at $3,701, and highest in Region 5, at $7,208. This is true when looking at all district and when looking at districts without outliers. For both district groupings (all districts, districts without outliers), local revenues were lowest in Region 5, at $1,097 per student. Region 11 had the highest local revenues for both district groupings, at $10,476 per student when all districts are included and $6,493 when outliers are removed. Federal revenues ranged from a low of $513 in Region 6 for both district groupings, they are again highest in Region 11, at $1,713 for all districts and $1,302 when outliers are excluded.

State revenues as a percentage of total revenues were lowest in Region 11, at 25 percent when all districts were included and 34 percent without outliers. Region 5 had the highest local percentage, at 79 for both district groupings. Local revenue percentage was lowest in Region 5, at 12 percent for both district groupings. Region 11 had the highest percentage of local revenue, at 64 percent for both district groupings. Federal revenues were more consistent across the regions. Region 6 had the lowest percentage, at six percent for both district groupings. Region 13 had the highest percentage for both district groupings, at 11 percent for all districts and 12 percent without outliers.

When looking at all districts, five of the 14 regions produced a majority of operating revenue through local sources. These include Regions 9, 10, 11, 12, and 13. Once outliers were removed, only Regions 9, 10, and 11 still got the majority of their operating revenue from local sources. Regions 12 and 13 saw about a 20-point drop in the percentage of operating revenue from local sources. This shows that the outlier districts were heavily locally funded. When looking at all districts, there was a general relationship between the distribution of revenue and the total operating revenues of the regions. This trend was not as apparent once outlier districts were excluded.

Table 7.2

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10	Region 11	Region 12	Region 13	Region 14	State
Revenues for All Districts by Region 2013-14															
Operating Revenues Per Student															
Federal	$830	$677	$805	$869	$855	$513	$908	$738	$962	$938	$1,713	$886	$1,486	$1,083	$881
State	$7,010	$6,785	$6,853	$5,884	$7,208	$6,963	$6,141	$6,425	$3,701	$3,814	$4,142	$5,230	$4,826	$6,518	$6,168
Local	$2,091	$1,449	$1,538	$3,156	$1,097	$1,509	$2,181	$1,975	$5,084	$6,070	$10,476	$6,252	$7,233	$2,593	$2,980
Other	$1	$0	$22	$175	$1	$0	$10	$12	$8	$29	$57	$10	$6	$8	$19
Total	$9,931	$8,912	$9,219	$10,084	$9,161	$8,985	$9,239	$9,151	$9,755	$10,850	$16,388	$12,378	$13,551	$10,202	$10,048
Percent of Total Operating Revenues															
Federal	8%	8%	9%	9%	9%	6%	10%	8%	10%	9%	10%	7%	11%	11%	9%
State	71%	76%	74%	58%	79%	77%	66%	70%	38%	35%	25%	42%	36%	64%	61%
Local	21%	16%	17%	31%	12%	17%	24%	22%	52%	56%	64%	51%	53%	25%	30%
Other	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal	0.94	0.77	0.91	0.99	0.97	0.58	1.03	0.84	1.09	1.06	1.94	1.01	1.69	1.23	-
State	1.14	1.10	1.11	0.95	1.17	1.13	1.00	1.04	0.60	0.62	0.67	0.85	0.78	1.06	-
Local	0.70	0.49	0.52	1.06	0.37	0.51	0.73	0.66	1.71	2.04	3.52	2.10	2.43	0.87	-
Other	0.03	0.00	1.17	9.18	0.05	0.02	0.52	0.64	0.40	1.50	2.96	0.52	0.33	0.44	-
Total	0.99	0.89	0.92	1.00	0.91	0.89	0.92	0.91	0.97	1.08	1.63	1.23	1.35	1.02	-

Table 7.3

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	Region 10	Region 11	Region 12	Region 13	Region 14	State
Revenues for Districts excluding Outliers by Region 2013-14															
Operating Revenues Per Student															
Federal	$830	$677	$805	$877	$855	$513	$908	$738	$962	$885	$1,302	$692	$1,153	$1,083	$842
State	$7,010	$6,785	$6,853	$6,038	$7,208	$6,963	$6,141	$6,425	$3,701	$3,875	$4,120	$5,582	$5,472	$6,518	$6,253
Local	$2,091	$1,449	$1,538	$2,666	$1,097	$1,509	$2,181	$1,975	$5,084	$5,205	$6,493	$2,877	$3,324	$2,593	$2,436
Other	$1	$0	$22	$46	$1	$0	$10	$12	$8	$30	$69	$12	$7	$8	$12
Total	$9,931	$8,912	$9,219	$9,626	$9,161	$8,985	$9,239	$9,151	$9,755	$9,996	$11,985	$9,162	$9,957	$10,202	$9,543
Percent of Total Operating Revenues															
Federal	8%	8%	9%	9%	9%	6%	10%	8%	10%	9%	11%	8%	12%	11%	9%
State	71%	76%	74%	63%	79%	77%	66%	70%	38%	39%	34%	61%	55%	64%	66%
Local	21%	16%	17%	28%	12%	17%	24%	22%	52%	52%	54%	31%	33%	25%	26%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Ratio to State Average															
Federal	0.99	0.80	0.96	1.04	1.02	0.61	1.08	0.88	1.14	1.05	1.55	0.82	1.37	1.29	-
State	1.12	1.09	1.10	0.97	1.15	1.11	0.98	1.03	0.59	0.62	0.66	0.89	0.88	1.04	-
Local	0.86	0.59	0.63	1.09	0.45	0.62	0.90	0.81	2.09	2.14	2.67	1.18	1.36	1.06	-
Other	0.05	0.00	1.90	3.88	0.08	0.03	0.84	1.03	0.65	2.57	5.87	0.99	0.63	0.72	-
Total	1.04	0.93	0.97	1.01	0.96	0.94	0.97	0.96	1.02	1.05	1.26	0.96	1.04	1.07	-

Expenditures

This section examines the expenditure data by individual non-instructional cost area, including food service, transportation, M&O, community service, and adult education. There are a number of methods of examining the differences in these expenditures by region. These methods include understanding the variation in spending for a particular cost area within a region; examining the average percentage of total operating revenues represented by each cost area, by region; and examining the ratio of spending for the cost area to the statewide average, by region.

The study team first examined regional variation in total operating expenditures to create a baseline for individual cost area analysis. Table 7.4 provides operating expenditure detail for each region, including providing the coefficient of variation (standard deviation divided by the mean) and the ratio of total operating expenditures per student to statewide average for 2013-14. A coefficient of variation, or CV, of over .100 is considered to be high variation and variations can run above 1.0.

Table 7.4

Total Operating Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$10,783	$9,275	$9,563	$9,917	$9,411
CV	0.169	0.067	0.161	0.279	0.150
Ratio	1.04	0.89	0.92	0.96	0.91
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$9,577	$9,426	$9,791	$9,847	$11,102
CV	0.132	0.130	0.128	0.094	0.376
Ratio	0.92	0.91	0.94	0.95	1.07
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$15,653	$12,569	$13,410	$9,789	$10,384
CV	0.537	0.619	0.699	0.141	0.342
Ratio	1.51	1.21	1.29	0.94	-
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$10,783	$9,275	$9,563	$9,536	$9,411
CV	0.169	0.277	0.065	0.189	0.150
Ratio	1.09	0.94	0.96	0.96	0.95
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$9,577	$9,426	$9,791	$9,847	$10,240
CV	0.132	0.130	0.128	0.094	0.187
Ratio	0.97	0.95	0.99	0.99	1.03
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$11,605	$9,598	$9,920	$9,789	$9,915
CV	0.263	0.155	0.259	0.141	0.168
Ratio	1.17	0.97	1.00	0.99	-

The table shows that, when looking at all regions, a number of regions had high variation in total operating expenditures per student. Those regions also tended to have higher per student expenditures, as shown in Chart 7.1. This is true of Regions 10, 11, 12, and 13. The 13 outlier districts are found in these four regions, along with Region 4.

As was mentioned earlier, the study team felt that it was important to look at both district groupings (all districts and districts after excluding outliers). APA believed that including the outlier districts might make differences in regional spending appear higher than actual cost differences might dictate. The lower portion of Table 7.4 shows that, when those 13 outlier districts are excluded, the CV figures and per student amounts decrease dramatically, though the CV figures still show high variation.

Chart 7.1 takes a closer look at the ratio of each region's total operating expenditures, compared to the statewide average total operating expenditures.
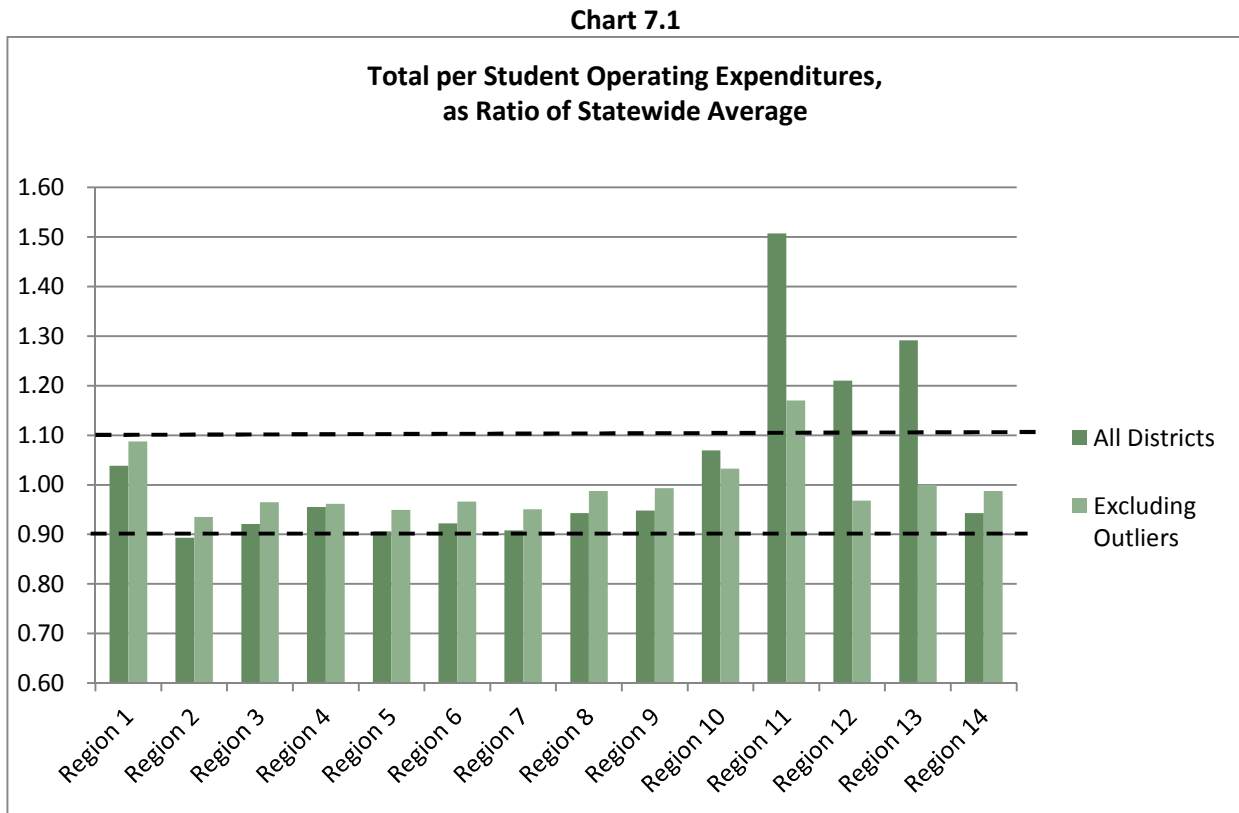
Chart 7.1

As shown in Chart 7.1, when looking at all districts, Regions 1, 10, 11, 12, and 13 had total operating expenditures per student more than 10 percent higher than the state average. Once outlier districts were excluded, the variation between regions, and between regions and the state average, was relatively minimal, though Region 11 still stood out as having higher total operating expenditures per student when expressed as a ratio (17 percent higher than the state average). This benchmark of 10 percent variation is used throughout this chapter when looking at each non-instructional cost area individually.

For each individual non-instructional cost area, the study team will present the following information in tables/charts:

- Basic statewide data for the five-year period, including the mean, standard deviation, and CV for each year;
- Data by region for 2013-14, including per student amounts, CV, ratio, and percentage of total operating expenses per student; and
- Comparison of each region's expenditures, expressed as a ratio against average expenditures in the cost area.

The 2013-14 data are generally representative of the five years of data. However, detailed information for the four other years of data is included in Appendix E.

Food Service

Table 7.5 shows the statewide average information for food service for the five years.

Table 7.5

Statewide Food Service Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	All Districts				
Average Per Student	$387	$402	$426	$433	$437
Standard Deviation	$168	$184	$248	$294	$238
CV	0.434	0.457	0.583	0.679	0.546
	Excluding Outliers				
Average Per Student	$374	$389	$407	$412	$417
Standard Deviation	$124	$131	$138	$142	$150
CV	0.330	0.337	0.340	0.344	0.358

The average amount spent per student increased across the five years for both district groupings. The variation in spending increased over time for both groupings, though the overall variation was lower when outlier districts are excluded. However, even without outliers, the CV figure shows high variation in spending per student for this cost area, across the state and regardless of year.

Table 7.6, below, shows the variables discussed earlier, including the per student amount, CV, ratio to state average, and percentage of total operating revenues for each region. Again, the top of the table shows the information for all districts and the lower portion shows the same information excluding outliers.

Table 7.6

Food Service Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$361	$453	$434	$472	$423
CV	0.390	0.174	0.287	0.391	0.196
Ratio	0.83	1.04	0.99	1.08	0.97
Percent	3.35%	4.88%	4.54%	4.76%	4.49%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$360	$427	$374	$497	$473
CV	0.285	0.407	0.410	0.329	0.394
Ratio	0.83	0.98	0.86	1.14	1.08
Percent	3.76%	4.53%	3.82%	5.05%	4.26%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$613	$598	$626	$465	$437
CV	0.699	0.802	1.073	0.377	0.546
Ratio	1.40	1.37	1.43	1.07	-
Percent	3.92%	4.76%	4.67%	4.75%	4.20%
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$361	$453	$434	$457	$423
CV	0.390	0.174	0.287	0.363	0.196
Ratio	0.87	1.08	1.04	1.09	1.01
Percent	3.35%	4.88%	4.54%	4.79%	4.49%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$360	$427	$374	$497	$462
CV	0.285	0.407	0.410	0.329	0.376
Ratio	0.86	1.02	0.90	1.19	1.11
Percent	3.76%	4.53%	3.82%	5.05%	4.52%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$503	$420	$500	$465	$417
CV	0.185	0.367	0.208	0.377	0.358
Ratio	1.20	1.01	1.20	1.12	-
Percent	4.33%	4.37%	5.04%	4.75%	4.21%

When looking at the upper portion of Table 7.6, average expenditures ranged from $360 to $628 across regions, with a statewide average of $437. Once the 13 outlier districts were excluded, the maximum average food service expenditure was reduced to $503, and the statewide average became $413. On average for the state, food service expenditures made up 4.2 percent of average total operating expenditures in either scenario. Regions 1, 6, and 8 had both the lowest food service expenditures, and food service expenditures made up the lowest percentage of their total operating expenditures. Regions

9 and 13 had the highest percentage of their operating expenditures spent on food service, after outliers are excluded. Region 11 had similar per student food service spending, though food service spending represented a lower percentage of Region 11's total operating expenditures.

Chart 7.2 looks specifically at food service expenditures as a ratio of the statewide average.

Chart 7.2
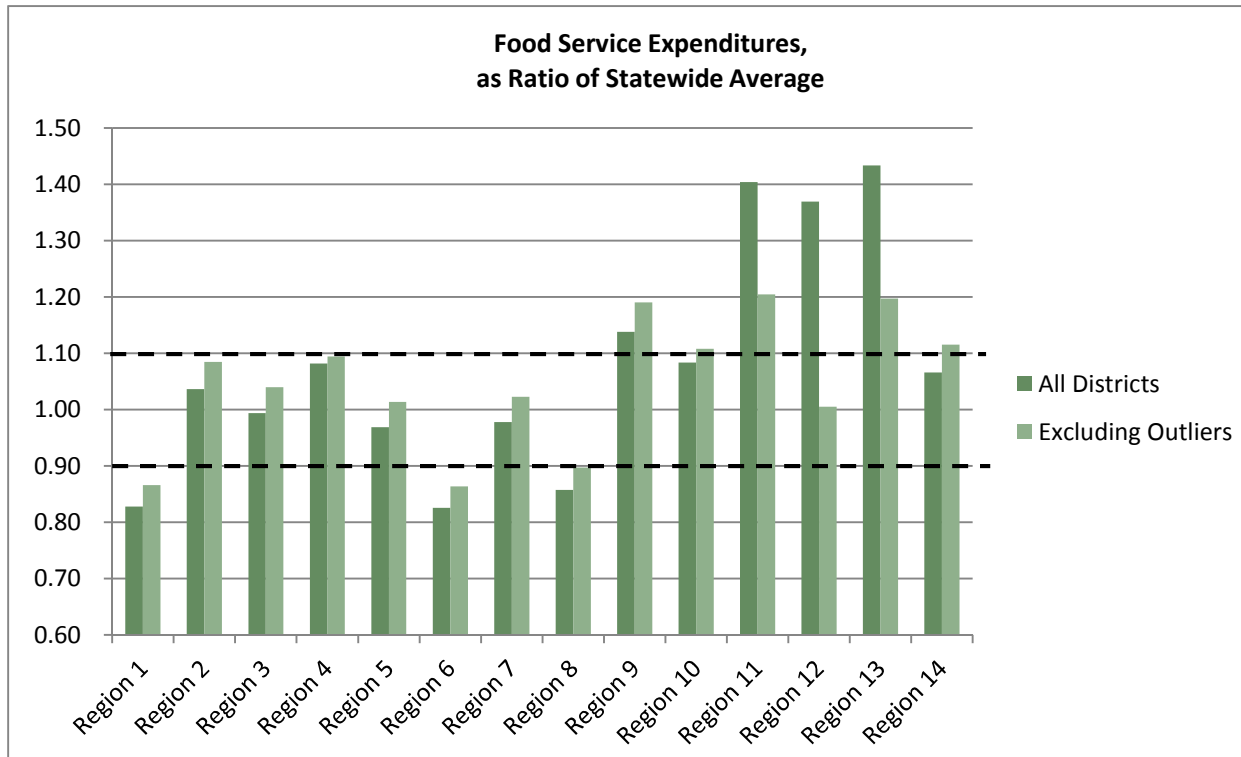
When all districts were included, four regions (9, 11, 12, and 13) had food service spending that was more than 10 percent below the state average, as shown by being above the dotted band. When the 13 outlier districts were excluded, Region 12's expenditures became aligned with statewide average spending, and food service expenditures in Region 11 and 14 crossed the 10 percent difference threshold. The food service ratios can be compared back to total operating expenditure ratios. Region 11 also had a total operating ratio of 1.17, while Region 14 had a ratio of .99. Regions 1, 6, and 8 had food service expenditures that were equal to or at least 10 percent less than the statewide average in both scenarios, while their total operating expenditure ratios were about 1.0 (once the 13 outliers were excluded).

Transportation

Table 7.7 shows the average statewide data for transportation across the five years.

Table 7.7

Statewide Transportation Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$476	$454	$475	$492	$496
Standard Deviation	$761	$647	$511	$597	$527
CV	1.598	1.425	1.076	1.213	1.063
Excluding Outliers					
Average Per Student	$417	$402	$430	$433	$443
Standard Deviation	$168	$163	$173	$181	$180
CV	0.402	0.405	0.401	0.418	0.405

The average expenditure per student statewide grew in the past few years when looking at all districts and then once the outlier districts were excluded. The CV decreased after 2009-10 for all districts, but remained extremely high. Once the outlier districts were excluded, the CV in each year was much lower than when all districts were included, though the CV still showed very high variation; it remained steady across the five years.

Table 7.8 shows the 2013-14 data for the 14 regions.

Table 7.8

Transportation Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$396	$445	$485	$441	$376
CV	0.407	0.317	0.280	0.576	0.275
Ratio	0.80	0.90	0.98	0.89	0.76
Percent	3.67%	4.80%	5.08%	4.44%	4.00%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$394	$411	$441	$543	$546
CV	0.400	0.390	0.409	0.249	0.492
Ratio	0.79	0.83	0.89	1.10	1.10
Percent	4.11%	4.36%	4.50%	5.52%	4.92%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$741	$862	$1,215	$510	$496
CV	0.428	1.226	1.715	0.463	1.063
Ratio	1.49	1.74	2.45	1.03	-
Percent	4.73%	6.86%	9.06%	5.21%	4.78%
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$396	$445	$485	$425	$376
CV	0.407	0.317	0.280	0.571	0.275
Ratio	0.89	1.00	1.09	0.96	0.85
Percent	3.67%	4.80%	5.08%	4.46%	4.00%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$394	$411	$441	$543	$532
CV	0.400	0.390	0.409	0.249	0.351
Ratio	0.89	0.93	0.99	1.23	1.20
Percent	4.11%	4.36%	4.50%	5.52%	5.19%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$613	$516	$481	$510	$443
CV	0.321	0.401	0.437	0.463	0.405
Ratio	1.38	1.16	1.08	1.15	-
Percent	5.29%	5.37%	4.85%	5.21%	4.47%

For the state, the average expenditure for transportation was $495 per student when all districts were included, and $443 when outliers were excluded, or 4.78 percent and 4.47 percent of total operating expenditures, respectively. Transportation expenditures ranged from $394 per student to $1,215 per student, with Regions 11, 12 and 13 spending much more per student than the other regions. In Regions 12 and 13, transportation expenditures also represented a higher percentage of total operating

expenditures (between seven and 10 percent). Once outlier districts were excluded, spending for those regions was greatly reduced to between $481 and $613 per student. Spending represented no more than 5.4 percent of those regions' total operating expenditures. Variation was high across all regions, for both district groupings.

Chart 7.3

**Transportation Expenditures,
as Ratio of Statewide Average**
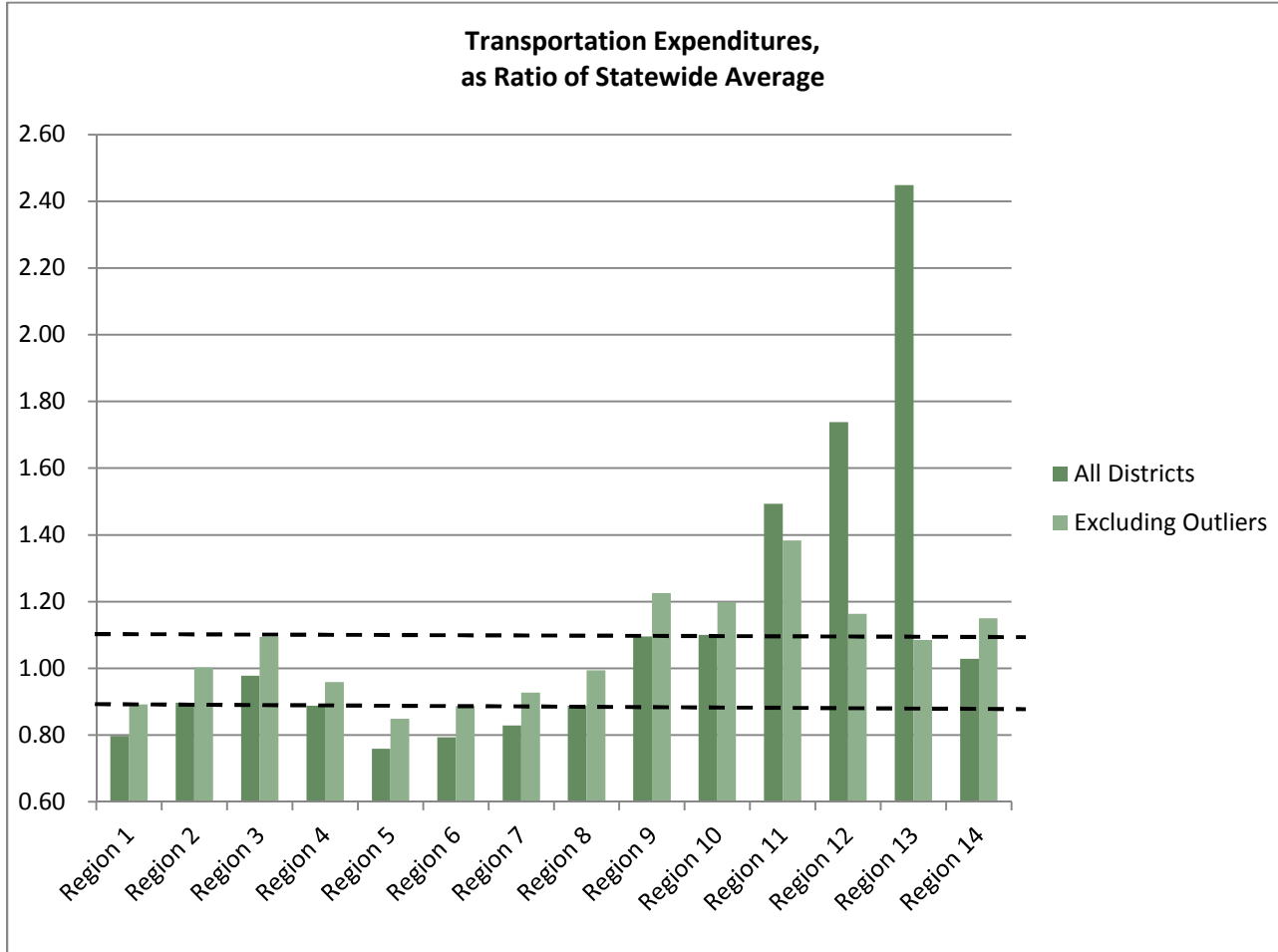
Looking at all districts, five regions had ratios at least 10 percent higher than the state average. This includes the three regions, 11, 12 and 13, that had transportation expenditures near or above 50 percent more than state average. After excluding outliers, there were still five regions 10 percent or more above state average. Region 13 was no longer 10 percent or more above state average, but Region 14 was. The degree to which the regions were above state average increased for Regions 9, 10, and 14. All five regions also spent over five percent of total operating expenditures on transportation, higher than all but one other region. All five regions also had higher ratios for transportation than they did for total operating expenditures.

Transportation costs are often thought to be higher for districts taking fewer students further distances. With this in mind, the study team examined the correlation between a district's density (measured as

number of students per square mile) and its per student spending on transportation. One might expect for districts with lower density (fewer students per square mile) to have higher costs of transporting students. If this were true, a high negative correlation would be seen between density and transportation spending per student. The correlation in 2013-14 was -0.159. This is a negative correlation, but it does not meet the benchmark for even a moderate level of correlation.

Maintenance and Operations

Table 7.9 shows statewide information on M&O expenditures from 2009-2014.

Table 7.9

Statewide Maintenance and Operations per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$937	$919	$857	$869	$959
Standard Deviation	$392	$382	$338	$360	$623
CV	0.418	0.416	0.395	0.414	0.649
Excluding Outliers					
Average Per Student	$895	$877	$850	$849	$894
Standard Deviation	$232	$226	$223	$230	$251
CV	0.259	0.258	0.262	0.271	0.281

Looking first at all districts, the expenditure per student information for M&O decreased from 2009-10 through 2011-12 and then increased in 2012-13 and 2013-14. A similar pattern was seen once outlier districts were excluded: Per students M&O spending decreased between 2009-10 and 2011-12, plateaued in 2012-13, then increased in 2013-14. The variation across the state was high when looking at either district grouping. Variation remained relatively consistent across years.

Table 7.10 takes a closer look at the 2013-14 data for the 14 regions.

Table 7.10

Maintenance and Operations Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$947	$846	$879	$924	$860
CV	0.236	0.175	0.222	0.366	0.330
Ratio	0.99	0.88	0.92	0.96	0.90
Percent	8.78%	9.12%	9.20%	9.32%	9.13%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$891	$863	$832	$863	$1,062
CV	0.207	0.326	0.219	0.208	0.493
Ratio	0.93	0.90	0.87	0.90	1.11
Percent	9.30%	9.16%	8.50%	8.76%	9.57%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$1,298	$1,361	$1,679	$795	$959
CV	0.496	0.913	1.399	0.223	0.649
Ratio	1.35	1.42	1.75	0.83	-
Percent	8.29%	10.83%	12.52%	8.12%	9.24%
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$947	$846	$879	$891	$860
CV	0.236	0.175	0.222	0.323	0.330
Ratio	1.06	0.95	0.98	1.00	0.96
Percent	8.78%	9.12%	9.20%	9.34%	9.13%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$891	$863	$832	$863	$957
CV	0.207	0.326	0.219	0.208	0.261
Ratio	1.00	0.97	0.93	0.96	1.07
Percent	9.30%	9.16%	8.50%	8.76%	9.35%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$1,051	$935	$996	$795	$894
CV	0.449	0.372	0.381	0.223	0.281
Ratio	1.18	1.05	1.11	0.89	-
Percent	9.06%	9.74%	10.04%	8.12%	9.02%

Looking at the upper portion of the table with all districts, the state average expenditure for M&O was $953 per student, or 9.24 percent of total operating expenditures. Regional expenditures ranged from $795 per student (Region 14) to over double that, at $1,679 (Region 13). These two districts had the highest (Region 13) and lowest (Region 14) percentages of their total operating expenditures dedicated to M&O. Once outlier districts are removed, M&O expenditures decreased significantly in Region 13, so

expenditures in all regions were now around $800- $1,000 per student (roughly eight to 10 percent of total operating expenditures), with a statewide average of $894 (9.02 percent of total operating expenditures). Also shown in Table 7.10, variation within regions was high for M&O spending. When looking at all districts, only one region had variation below .200 and a number of regions were approaching, or above, 1.000. When the outlier districts were removed, variation within regions was still very high. Again, only one region was below .200 and only one district was well above .400.

Chart 7.4 looks at each region's M&O expenditures as a ratio of statewide average M&O expenditures.

Chart 7.4
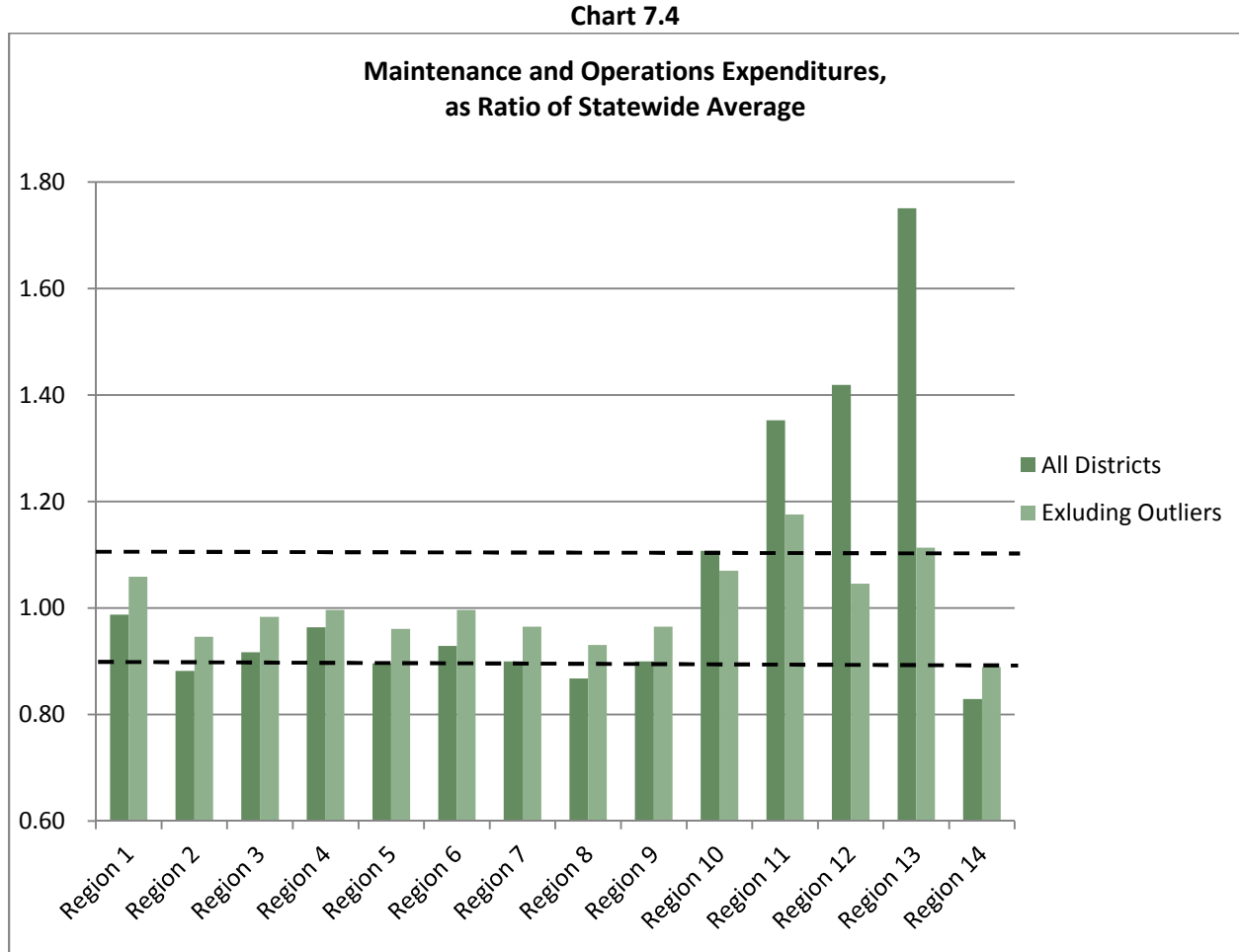
Three districts had ratios below 10 percent of state average when looking at all districts. This shifted to just one district when high-spending districts were removed. The one district, Region 14, also spent the lowest percentage of total operating expenditures on M&O. Region 14's M&O ratio was much lower than its total operations ratio (Chart 7.1).

When looking at all districts, four regions had M&O per student spending at or above 10 percent of state average. Three of the regions were well above state average. When outlier districts were excluded, only two districts remained 10 percent or more above state average and the levels were much closer to state

average. When referring back to the total operating expenditure ratios for these two regions, 11 and 13, Regions 11's ratio was similar to that of its M&O ratio, while Region 11's was much lower than its M&O ratio.

It is interesting that overall M&O expenditures had high variation, as well as high variation within region, but that few regions were outside the 10 percent above or below state average range.

Community Service

Table 7.11 shows the statewide information for community service expenditures from 2009-2014.

Table 7.11

Statewide Community Service Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$107	$104	$106	$104	$101
Standard Deviation	$249	$214	$198	$195	$170
CV	2.320	2.048	1.867	1.875	1.682
Excluding Outliers					
Average Per Student	$108	$106	$107	$105	$102
Standard Deviation	$251	$216	$200	$196	$170
CV	2.322	2.044	1.858	1.867	1.672

The average per student expenditure for community service stayed fairly constant over time, at just above $100 per student over the five years looking at either all districts or after excluding outlier districts. The CV decreased over time but stayed extremely high, showing that the variation in per student spending for community service is significant. Unlike the previous non-instructional expenditure areas, the variation did not decrease significantly after removing the outlier districts.

Table 7.12 examines community service expenditures for 2013-14, by region.

Table 7.12

Community Service Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$160	$39	$71	$83	$82
CV	0.871	1.428	1.194	1.914	0.891
Ratio	1.58	0.38	0.70	0.82	0.81
Percent	1.48%	0.42%	0.74%	0.83%	0.87%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$140	$53	$107	$23	$86
CV	1.090	1.693	1.078	1.599	1.373
Ratio	1.39	0.52	1.06	0.23	0.85
Percent	1.46%	0.56%	1.10%	0.24%	0.78%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$240	$105	$18	$163	$101
CV	2.826	2.159	1.693	1.523	1.682
Ratio	2.38	1.04	0.17	1.61	-
Percent	1.54%	0.84%	0.13%	1.67%	0.97%
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$160	$39	$71	$65	$82
CV	0.871	1.428	1.194	1.920	0.891
Ratio	1.57	0.38	0.69	0.63	0.80
Percent	1.48%	0.42%	0.74%	0.68%	0.87%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$140	$53	$107	$23	$90
CV	1.090	1.693	1.078	1.599	1.333
Ratio	1.38	0.52	1.06	0.23	0.89
Percent	1.46%	0.56%	1.10%	0.24%	0.88%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$286	$121	$17	$163	$102
CV	2.705	1.997	1.747	1.523	1.672
Ratio	2.82	1.19	0.17	1.61	-
Percent	2.47%	1.27%	0.17%	1.67%	1.03%

As shown in Table 7.12, the variation within regions was extremely high and not significantly different between the two district groupings. The study team believes the variation in per student spending on community service makes it inappropriate to try to determine regional or statewide benchmarks.

Adult Education

Table 7.13 shows the statewide adult education expenditures from 2009-2014.

Table 7.13

Statewide Adult Education Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$2	$29	$25	$26	$22
Standard Deviation	$17	$109	$101	$110	$94
Maximum	$323	$1,158	$1,065	$1,482	$1,594
Minimum	$0	$0	$0	$0	$0
CV	7.362	3.699	4.014	4.304	4.352
Excluding Outliers					
Average Per Student	$2	$30	$26	$26	$22
Standard Deviation	$17	$110	$102	$111	$96
CV	7.271	3.651	3.963	4.249	4.296

Adult education expenditures were the most varied and lowest cost area examined in this section. Expenditures per student since 2010-11 stayed relatively consistent and very low, at just $22 in 2013-14. The variation in expenditures between districts (as shown by the CVs) across time was extremely high for both district groupings.

Table 7.14 shows the 2013-14 adult education information by region.

Table 7.14

Adult Education Expenditures by Region 2013-14				
All Districts				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$28	$6	$15	$24	$21
CV	3.431	3.592	1.882	2.121	3.085
Ratio	1.27	0.25	0.67	1.12	0.96
Percent	0.26%	0.06%	0.15%	0.25%	0.22%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$10	$34	$11	$4	$6
CV	2.169	5.504	2.314	3.166	6.083
Ratio	0.44	1.59	0.51	0.18	0.30
Percent	0.10%	0.37%	0.11%	0.04%	0.06%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$29	$25	$16	$55	$22
CV	3.606	4.216	4.249	1.830	4.352
Ratio	1.33	1.17	0.73	2.53	-
Percent	0.18%	0.20%	0.12%	0.56%	0.21%
Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$28	$6	$15	$25	$21
CV	3.431	3.592	1.882	2.080	3.085
Ratio	1.24	0.25	0.66	1.13	0.93
Percent	0.26%	0.06%	0.15%	0.26%	0.22%
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$10	$34	$11	$4	$7
CV	2.169	5.504	2.314	3.166	5.916
Ratio	0.43	1.55	0.50	0.18	0.31
Percent	0.10%	0.37%	0.11%	0.04%	0.07%
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$38	$30	$19	$55	$22
CV	3.162	3.884	3.931	1.830	4.296
Ratio	1.69	1.34	0.83	2.47	-
Percent	0.32%	0.31%	0.19%	0.56%	0.22%

The data by region reaffirmed the statewide data, showing a large amount of variation in adult education expenditures between districts. As was true for community service expenditures, both the all district and excluding outliers groups showed very high variation within regions and across regions. Adult education also made up a very small percentage of total operating expenditures in all regions, never going above one percent for any region. As with community service expenditures, the study team

did not believe it would be appropriate to consider regional or a statewide benchmark for adult education.

Exemplary Districts

To examine the non-instructional expenditures of the exemplary districts, APA chose to look at all exemplary districts by cohort type. That is, any districts that were exemplary within a density, need, or setting cohort are grouped together for this analysis. APA chose to do this because of the low number of exemplary districts overall, which would result in a very limited number of districts per region. Additionally, the study team examined the 2013-14 data for only food service, transportation, and M&O. With the consistent information across years, APA did not feel that multiple years of comparison were needed. Additionally, the variation in community services and adult education were so high that the study team felt it was not appropriate to further analyze them here.

Table 7.18 shows the food service expenditures per student for the three cohort groups and the statewide average.

Table 7.18

Food Service Expenditures for Exemplary Districts				
	Density Cohort	Need Cohort	Setting Cohort	State	State, Excluding Outliers
Average	$333	$345	$330	$437	$417
CV	0.303	0.310	0.301	0.546	0.358

The food service expenditures per pupil for the need cohorts were very similar and were all lower than either state figure. Once outliers were removed, the state figure was about $80 more per student, or about 25 percent higher. The variation was similar. Compared to the figures in Table 7.6 earlier in this chapter, the exemplary districts had lower average per student expenditures for food service than any region in the state. The lowest expenditure by region was $360 in Region 6.

Table 7.19 shows the same information for transportation.

Table 7.19

Transportation Expenditures for Exemplary Districts				
	Density Cohort	Need Cohort	Setting Cohort	State	State, Excluding Outliers
Average	$385	$386	$388	$496	$443
CV	0.437	0.413	0.378	1.063	0.405

Again, the cohort averages were very similar and were lower than either state average. In this case, the state without outliers was about 14 percent higher than the cohort districts. Comparing to Table 7.8 earlier in the chapter, Region 5 had lower average transportation expenditures per student than any of the exemplary cohort groups. Regions 1 and 6 had slightly higher average transportation expenditures than the exemplary groups.

Finally, Table 7.20 looks at M&O expenditures for the exemplary districts in the three cohorts.

Table 7.20

	Density Cohort	Need Cohort	Setting Cohort	State	State, Excluding Outliers
Maintenance and Operations Expenditures for Exemplary Districts					
Average	$773	$753	$769	$959	$894
CV	0.170	0.159	0.159	0.649	0.281

As shown in Table 7.20, M&O for the state without outliers was about 16 percent higher than the cohort groups, similar to transportation and less than food service. Looking at the prior Table 7.10, no region had M&O expenditures per student lower than any of the three cohort groupings. Region 14 was the closest, at $795 per student.

The exemplary districts were well below state average expenditure in all three cost areas and below almost all regions.

Other Metrics

This section explores alternate ways to measure the differences in costs faced by districts, beyond the above comparison of actual expenditure differences between districts. The actual expenditures for districts across the cost areas include underlying factors. For example, a district's density affects its transportation expenditures, and the age of its buildings affects its M&O expenditures. Just examining the expenditures does not necessarily indicate the true cost differentials between regions. Two approaches to measuring differences focus on different types of costs. The first approach examines the cost of attracting education personnel to a location and is called the Comparable Wage Index (CWI). The second approach is commonly referred to as regional cost difference and is often expressed through cost of living (COL) differences. Consumer price indices, used across the country, can be a useful tool to compare costs between regions.

Comparable Wage Index (CWI)

The CWI was developed by Lori Taylor for the National Center on Education Statistics, and is continuously updated.[4] The CWI is *not* a COL index to measure differences in prices of goods between locales. It is, instead, a measure of the level of wages given to similar professions in each district across a state. "The basic premise of a CWI is that all types of workers demand higher wages in areas with a higher cost of living (e.g. San Diego) or a lack of amenities …." (Federal Bureau of Investigation 2003).[5]

The study team identified the CWI for each district in the state and then calculated an average for each region. Table 7.21 shows the results by region, compared to the ratios for total operating expenditures to state average without outliers from earlier in the report.

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[4] http://bush.tamu.edu/research/faculty/Taylor_CWI/
[5] Taylor, Lori and Fowler Jr., William "A Comparable Wage Approach to Geographic Cost Adjustment," for the U.S. Department of Education. May 2006

Table 7.21

Comparable Wage Index and Total Operating Expenditure Ratio by Region		
Region	CWI	Total Operating Expenditure Ratio
1	1.12	1.09
2	0.97	0.94
3	1.00	0.96
4	1.05	0.96
5	1.05	0.95
6	1.09	0.97
7	0.95	0.95
8	0.98	0.99
9	0.87	0.99
10	0.91	1.03
11	0.89	1.17
12	0.88	0.97
13	0.89	1.00
14	0.96	0.99

Interestingly, the CWI figures are consistent with total operating expenditure ratios for some regions but not for others. For example, Region 1 has the highest CWI figure and also the second highest total operating expenditure ratio, while Region 11 has one of the lowest CWI figures but the highest total operating revenue ratio. Regions 4, 5, and 6 have much higher costs of attracting personnel than they do total operating ratios. Regions 9, 10, 12, and 13 have much lower CWI figures than total operating ratios.

Overall, the relationship between actual expenditures per student do not seem to align well with the CWI figures for regions. Again, the CWI is attempting measure the cost of educational personnel for a region compared to the costs across the state. The earlier sections focused on the differences in costs of non-instructional items, which can include personnel but are some of the lowest personnel-centric costs that districts face. The CWI is showing that there are large projected differences in the costs districts might need to pay to attract personnel.

Cost of Living (COL)

Another approach would be to examine the differences in COL between the regions. COL figures generally are focused on the costs of attaining the same basket of goods in different locales. This could be done if a metric existed for either every district or each region. Currently, APA is not aware of a source for such information. The Bureau of Labor and Statistics does provide information for a number of locales in Michigan, but it does not include comparable data for each district or region of the state.

Conclusions

The expenditure analysis for the five function areas shows that there is large variation in per student expenditures across the five areas and then within regions. The study team believes that examining the differences in expenditures for food service, transportation, and M&O is appropriate based on the data. No district was 10 percent or more below state average in all the three cost areas, though Regions 1 and 6 were below in both food service and transportation. Additionally, both regions' ratios for the two cost areas were noticeably different than the ratios for operating expenditures as a whole.

Four districts were 10 percent or higher than the state average on two of the three cost areas. They include Regions 9, 10, 13, and 14. Again, all four regions had ratios for the function areas that were different than the ratios for operating expenditures as a whole. Region 13 was above state average by at least 10 percent for all three function areas. The region has a high ratio compared to state average for total operating expenditures, 1.17, once high spending districts are excluded. The ratios for food service and M&O were similar to the 1.17 ratio. The ratio for transportation was much higher than the 1.17, at 1.38.

The study team then examined the correlation between a district's density (number of students per square mile) and its per student spending on transportation. One might expect for districts with low density (fewer students per square mile) to have higher costs of transporting students. If this were true, a high negative correlation would be seen between density and transportation spending per student. The correlation in 2013-14 was -0.159. There is a negative correlation, but the correlation is not high, not even meeting a moderate level of correlation.

Unsurprisingly, the exemplary districts spend less in the non-instructional areas than the non-exemplary districts. This is true across the three cohort types.

Examining alternative approaches to measuring differences in costs by regions, the study team analyzed the CWI information for the 14 regions. CWI figures measure the differences in securing personnel across the regions. The CWI figures for the regions do not align well with the ratios seen by region when examining cost differences by region. This leads the study team to think that applying adjustments just for non-instructional costs by region might not fully account for differences in costs by region.

VIII. Capital and Debt Service

APA proposed to examine capital and debt service expenditures in a different manner than the other non-instructional categories presented in Chapter VII. Given that capital needs and available funding differ across districts at different points in time it would be expected that capital expenditures would be expected to be more varied across districts than most other expenditures. For example, a growing district may have an immediate need for a new school building while a district with more stable enrollment and sound infrastructure may have more limited building needs. If the capital expenditures for the two districts were compared, one district might look like a high-cost district and the other a low-cost district, when in reality the two districts are simply facing different capital expenditure needs. Another reason for differences in expenditures is variation between districts in terms of ability to raise local funding for capital projects. In this case, two districts might have very similar capital needs, but expenditures are reflective of the communities' ability or willingness to *fund* these needs. Again, actual expenditures would not reflect differences in district costs but simply differences in available funds.

Ideally, the study team would possess detailed information on the types of projects, costs of projects, and timing of projects for every district in the state over at least the five-year time span of the study. However, as APA evaluated the data available from state sources, it became clear this information is not readily available at this time. The information that *is* available about projects includes the data from the School Bond Loan Program Election Results, which provides information on bonds that districts propose through the School Bond Qualification and Loan Program. The available information does not include the detailed type of data described above but it generally does identify the types of projects for which bond funding will be used.

The first section of this chapter examines each of the capital and debt service expenditure categories individually. The analysis includes the basic regional analysis shown for the other non-instructional areas in the previous chapter, analysis of the expenditures for districts with expenditures in the spending category, and an analysis of the expenditures for those districts that appear to have passed a bond related to the expenditure category. The study team looked at the capital expenditure information for each district, with the expenditures broken down into multiple categories including the following:

- Building and Additions,
- Educational Media and Textbooks,
- Equipment and Furniture,
- Facilities Acquisition, Construction, and Improvements,
- Improvements Other than Building,
- Land,
- School Bus Purchases,
- Vehicles Other than Buses, and
- Other Capital Outlay.

To understand the relationship between successful school district bond elections and actual district spending, APA linked data from the Michigan School Bond Loan Program Election Database to the Michigan Department of Education Financial Information Database (FID). First, APA examined the School Bond Loan Program Election data to identify those bonds passed by voters. Next, APA performed a keyword search that could be used to associate each district's bond components to the categories of spending identified in the FID. APA then calculated actual district spending from 2009-10 through 2013-14, by FID category, for those districts that passed bonds. For each spending year, APA included three years of successful bond elections. For example, for the 2009-10 spending year, APA included all districts that passed bonds in calendar years 2007, 2008, and 2009. Including three years of bonds increased the likelihood that spending related to those bonds would appear in the FID, as many bond expenditures occur over a period of several years.

Table 8.1 shows the years of bonds that were linked to district spending per year.

Table 8.1

Passed Bonds Linked to District Spending 2009-10 to 2013-14					
	Spending Year				
	2009-10	2010-11	2011-12	2012-13	2013-14
Bonds Passed, Calendar Year	2007	2008	2009	2010	2011
	2008	2009	2010	2011	2012
	2009	2010	2011	2012	2013

It is important to note that many bonds are comprehensive in nature, with anticipated spending in multiple categories of FID data. The same bonds are also associated with multiple spending years, due to the three-year range of bonds for each spending year.

Along with the capital expenditure data, APA collected debt service expenditure information for each district. Debt service expenditures provide information on how districts are paying off their capital expenditures. District debt service expenditures tend to be more consistent over time than capital expenditures, though they the two types of expenditures are still related. APA examined the following types of debt service expenditures:

- Interest on Debt;
- Other Financing and Debt; and
- Redemption of Long-term Bonds, Loans, and Capital Leases.

The second section of this chapter examines the availability of bond dollars in relationship to district wealth, size, and density. APA completed this analysis using various types of regression analyses to understand which variables best predict whether a bond will pass.

Capital Expenditures

Building and Additions

Building and Additions (Building) represents Michigan district expenditures associated with acquiring buildings and non-property expenditures for buildings built or for additions projects.

Table 8.2 provides information for all districts, all districts excluding outliers, districts with Building expenditures, and districts with Building expenditures excluding outliers.

Table 8.2

Building and Additions per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$505	$391	$408	$393	$332
Standard Deviation	$1,520	$997	$1,276	$1,301	$1,158
CV	3.010	2.552	3.125	3.312	3.485
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$513	$393	$407	$391	$330
Standard Deviation	$1,537	$1,004	$1,269	$1,303	$1,166
CV	2.993	2.555	3.116	3.336	3.533
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$838	$653	$710	$688	$586
Standard Deviation	$1,887	$1,221	$1,619	$1,663	$1,489
CV	2.251	1.871	2.279	2.418	2.543
Number of Districts	326	324	311	309	307
Districts with Expenditures Excluding Outliers					
Average Per Student	$839	$648	$698	$681	$575
Standard Deviation	$1,895	$1,224	$1,601	$1,662	$1,494
CV	2.258	1.889	2.292	2.443	2.597
Number of Districts	323	320	308	303	303

The table shows that the state average per pupil Building expenditures for all districts decreased from 2009-10 to 2013-14. Further, there was large variation between districts when looking both at all districts and after excluding outliers. The average in 2013-14 for all districts was $332 per student with a standard deviation of $1,158, leading to a coefficient of variation (CV) of 3.485. The figures changed minimally when outliers were excluded, with the mean going down only $2 per student and variation between districts actually increasing.

When looking only at districts that have expenditures in the Building category, about 60 percent or less had expenditures. The trend of decreasing per student expenditures continued with a 2013-14 average

per student expenditure of $586, over $250 more per pupil than when looking at all districts. The CV decreased when looking at districts with expenditures, but overall variation was still very high; excluding outliers changed the figures only minimally.

Table 8.3 shows per student expenditures by region for districts with Building expenditures for 2013-14.

Table 8.3

Building and Additions Expenditures by Region 2013-14 for Districts With Spending in Area					
	Districts with Expenditures				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$432	$530	$540	$947	$179
CV	1.602	2.758	1.361	2.153	1.373
Ratio	0.74	0.91	0.92	1.62	0.31
Districts	79	22	19	13	25
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,034	$928	$891	$279	$266
CV	1.757	3.571	1.637	0.881	1.073
Ratio	1.77	1.59	1.52	0.48	0.45
Districts	15	34	34	6	18
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$978	$876	$62	$160	$586
CV	1.393	1.283	0.485	1.275	2.543
Ratio	1.67	1.50	0.11	0.27	
Districts	3	20	4	15	
	Districts with Expenditures Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$432	$530	$540	$947	$179
CV	1.602	2.758	1.361	2.153	1.373
Ratio	0.75	0.92	0.94	1.65	0.31
Districts	79	22	19	13	25
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,034	$928	$891	$279	$266
CV	1.757	3.571	1.637	0.881	1.073
Ratio	1.80	1.61	1.55	0.49	0.46
Districts	15	34	34	6	18
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$199	$856	$62	$160	$575
CV	1.344	1.414	0.485	1.275	2.597
Ratio	0.35	1.49	0.11	0.28	
Districts	2	17	4	15	

Per student expenditures for Buildings ranged from $62 (Region 13) to $1,034 (Region 6). The ratio of per student expenditures to the state average ranged from 0.11 (Region 13) to 1.77 (Region 6).. Variation was high within all regions. The lowest CV was 0.485 in Region 13, which had the lowest per student expenditures for the Building category. The highest CV was 3.571 in Region 7. The figures stayed similar when outliers were excluded.

To get a better understanding of differences in spending between districts, the study team used the language in passed bonds to allocate spending into specific expenditure categories. Bonds with key terms, such as "erect," "new building," and "additions to building" were used to connect bonds to the Building expenditure category.

Table 8.4 below shows the average per pupil Building expenditures from bonds passed and in effect from 2009-10 to 2013-14. This information is shown both for all districts with expenditures and for districts with expenditures excluding outliers.

Table 8.4

Building and Additions per Student Spending for Districts with Passed Bonds from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	Districts with Expenditures and Passed Bonds				
Average Per Student	$2,588	$1,941	$3,497	$2,818	$2,456
Standard Deviation	$3,347	$2,033	$4,978	$2,934	$4,038
CV	1.293	1.048	1.073	1.041	1.645
Number of Bonds Passed	53	52	47	48	47
Number of Districts	53	51	41	43	41
	Districts with Expenditures Excluding Outliers				
Average Per Student	$2,116	$2,012	$2,667	$2,885	$1,842
Standard Deviation	$2,318	$2,042	$2,943	$3,210	$3,020
CV	1.116	1.015	1.103	1.113	1.164
Number of Bonds Passed	51	52	43	48	46
Number of Districts	51	49	39	42	40

The table shows that there was large variation between districts when looking at districts excluding outliers. The average in 2013-14 was $2,456 per student, but the standard deviation was $4,038, leading to a CV of 1.645. The figures changed when outliers were excluded: The mean went down by $614 per student and the variation decreased. In 2013-14, there were 41 districts that had Building expenditures associated with passed bonds – 12 fewer districts than in 2009-10.

Educational Media and Textbooks

Table 8.5 considers capital expenditures for Education Media and Textbooks (Media), including expenditures for the initial purchase of books for a newly constructed building.

Table 8.5

Educational Media and Textbooks per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$1	$2	$2	$0	$0
Standard Deviation	$6	$39	$34	$6	$3
CV	10.519	16.480	13.818	13.631	17.818
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$1	$1	$1	$1	$1
Standard Deviation	$6	$39	$35	$6	$3
CV	10.391	63.272	55.872	9.644	4.554
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$27	$160	$192	$47	$17
Standard Deviation	$35	$296	$252	$45	$26
CV	1.267	1.859	1.314	0.951	1.556
Number of Districts	12	8	7	5	5
Districts with Expenditures Excluding Outliers					
Average Per Student	$27	$160	$192	$47	$17
Standard Deviation	$35	$296	$252	$45	$26
CV	1.267	1.859	1.314	0.951	1.556
Number of Districts	12	8	7	5	5

As Table 8.5 shows, the average expenditure per student when looking at all districts or districts excluding outliers was very small, ranging from $0 to $2 per student. The variation was high in all years, though level of variation changes across years. When looking at only those districts with Media expenditures each year, the average amount per student increased. It should be noted, however, that this trend is based on the spending patterns of very few districts. The study team did not undertake further analysis of Media expenditures for several reasons, including variation between districts, small dollar spending amounts, and limited numbers of districts with Media expenditures.

Equipment and Furniture

Equipment and Furniture (Equipment) expenditures include the money districts spend on equipment, furniture, and/or machinery. Equipment purchases can include initial purchases for new buildings, additions to buildings, or replacements to existing building property.

Table 8.6 presents Equipment expenditures.

Table 8.6

Equipment and Furniture per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$171	$176	$149	$188	$180
Standard Deviation	$336	$437	$226	$362	$303
CV	1.963	2.491	1.515	1.921	1.682
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$158	$149	$146	$172	$172
Standard Deviation	$267	$205	$225	$255	$270
CV	1.694	1.376	1.535	1.483	1.570
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$179	$182	$155	$196	$189
Standard Deviation	$342	$444	$228	$368	$308
CV	1.906	2.440	1.471	1.871	1.627
Number of Districts	516	522	519	519	515
Districts with Expenditures Excluding Outliers					
Average Per Student	$165	$154	$153	$179	$180
Standard Deviation	$271	$207	$227	$258	$274
CV	1.644	1.338	1.489	1.437	1.521
Number of Districts	505	509	506	506	505

The average Equipment expenditure per student was similar across the years, between all districts, and between districts excluding outliers. Variation was high across the years and when looking at either district group; in 2013-14, the CV was 1.682 for all districts and 1.570 for district without outliers.

Most districts in the state had Equipment expenditures in all five years. Fewer than 30 districts did *not* have Equipment expenditures. The statewide average expenditures increased slightly each year, but the variation remained similarly high.

Table 8.7 shows Equipment expenditures by region looking at only districts with expenditures in the category.

Table 8.7

Equipment and Furniture Expenditures by Region 2013-14 for Districts with Expenditures					
Districts with Expenditures					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$148	$109	$153	$244	$102
CV	1.034	1.033	0.936	2.050	0.986
Ratio	0.78	0.57	0.81	1.29	0.54
Districts	109	30	34	28	34
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$199	$243	$190	$140	$204
CV	0.886	1.974	1.145	0.951	1.080
Ratio	1.05	1.29	1.01	0.74	1.08
Districts	23	70	57	16	34
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$250	$210	$457	$175	$189
CV	1.444	1.472	1.678	1.017	1.627
Ratio	1.32	1.11	2.42	0.92	
Districts	11	26	18	25	
Districts with Expenditures Excluding Outliers					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$148	$109	$153	$224	$102
CV	1.034	1.033	0.936	2.224	0.986
Ratio	0.82	0.60	0.85	1.25	0.57
Districts	109	30	34	27	34
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$199	$243	$190	$140	$205
CV	0.886	1.974	1.145	0.951	1.106
Ratio	1.10	1.35	1.06	0.78	1.14
Districts	23	70	57	16	32
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$156	$219	$306	$175	$180
CV	1.237	1.478	1.163	1.017	1.521
Ratio	0.87	1.22	1.70	0.97	
Districts	10	23	15	25	

When looking at all districts, per student Equipment expenditures ranged from $102 (Region 5) to $457 (Region 13). The ratios to state average ranged from 0.54 to 2.42. When outliers were removed, the minimum expenditure stayed the same (Region 5) but the maximum went down to $306 per student (Region 13).

APA looked for bonds with key terms such as "refurnishing," "re-equipping," and "equipment" to connect those bonds to the Equipment expenditure category.

Table 8.8 shows that the average spending is consistent across years.

Table 8.8

Equipment and Furniture per Student Spending for Districts with Passed Bonds from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	Districts with Expenditures and Passed Bonds				
Average Per Student	$321	$371	$317	$409	$390
Standard Deviation	$441	$345	$370	$411	$508
CV	1.373	0.929	1.167	1.004	1.303
Number of Bonds Passed	71	74	73	70	68
Number of Districts	68	69	67	66	64
	Districts with Expenditures Excluding Outliers				
Average Per Student	$321	$371	$317	$409	$390
Standard Deviation	$441	$345	$370	$411	$508
CV	1.373	0.929	1.167	1.004	1.303
Number of Bonds Passed	71	74	73	70	68
Number of Districts	68	69	67	66	64

The average spending in 2013-14 was $390 per student, but the standard deviation was $508, resulting in a CV of 1.303. There were no outliers in this expenditure category for approved bonds. In 2013-14, there were 64 districts that had Equipment expenditures associated with approved bonds.

Facilities Acquisition, Construction, and Improvements

Table 8.9 includes facilities acquisition, construction, and improvements (Facilities) expenditures. These expenditures include the costs of site acquisition, site improvements, architecture and engineering services, and activities associated with buying or constructing buildings.

Table 8.9 shows that the per student expenditures declined considerably in all districts between 2009-10 and 2013-14. Average per student expenditures across all districts decreased from $142 in 2009-10 to $43 per student in 2013. A similar decrease occurred when outliers were excluded. Variation was extremely high across all years and for both district groups, with no CV under 3.5.

Table 8.9

Facilities Acquisitions, Construction, and Improvements per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	All Districts				
Average Per Student	$142	$57	$69	$73	$43
Standard Deviation	$1,025	$206	$400	$530	$222
CV	7.195	3.638	5.781	7.297	5.147
Number of Districts	541	541	541	541	541
	Excluding Outliers				
Average Per Student	$146	$58	$70	$74	$43
Standard Deviation	$1,037	$208	$404	$537	$224
CV	7.108	3.591	5.785	7.210	5.155
Number of Districts	528	528	528	528	528
	Districts with Expenditures				
Average Per Student	$325	$141	$161	$176	$108
Standard Deviation	$1,531	$306	$598	$816	$342
CV	4.708	2.173	3.723	4.628	3.155
Number of Districts	237	217	233	223	215
	Districts with Expenditures Excluding Outliers				
Average Per Student	$329	$141	$160	$178	$107
Standard Deviation	$1,541	$306	$601	$819	$342
CV	4.678	2.173	3.748	4.608	3.194
Number of Districts	234	217	230	221	214

Only about 40 percent of districts had any spending for Facilities in any of the years. Looking only at districts with Facilities expenditures increases the average per student spending in all years, but by varying amounts and percentages. The variation between districts in terms of per student spending for Facilities was still extremely high across all five years. Excluding outliers changed the figures only minimally.

Looking at the 2013-14 districts with spending by region, Table 8.10 that follows shows there was wide variation in average per student spending on Facilities across the regions. Nine regions had average spending per student below $100 while three regions (Regions 4, 6, and 9) had average spending above $200 per student. Ratios of average regional per student spending to the statewide average ranged from a low of 0.16 to a high over 5.01. Variation within regions was also high, with CVs ranging from 1.021 (Region 12) to 2.679 (Region 6). The results were similar when outliers were excluded as only one district was removed.

Table 8.10

Facilities Acquisition, Construction, and Improvements by Region 2013-14					
Districts with Expenditures					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$47	$67	$95	$543	$45
CV	2.078	2.100	2.301	1.986	1.330
Ratio	0.43	0.62	0.88	5.01	0.41
Districts	55	11	16	10	10
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$217	$91	$131	$391	$50
CV	2.678	1.626	1.444	2.482	1.622
Ratio	2.00	0.84	1.21	3.61	0.46
Districts	9	22	27	7	15
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$131	$73	$34	$17	$108
CV	1.619	1.021	1.742	1.315	3.155
Ratio	1.21	0.67	0.31	0.16	
Districts	3	10	7	13	
Districts with Expenditures Excluding Outliers					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$47	$67	$95	$543	$45
CV	2.078	2.100	2.301	1.986	1.330
Ratio	0.44	0.62	0.89	5.07	0.42
Districts	55	11	16	10	10
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$217	$91	$131	$391	$50
CV	2.678	1.626	1.444	2.482	1.622
Ratio	2.03	0.85	1.22	3.65	0.47
Districts	9	22	27	7	15
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$9	$73	$34	$17	$107
CV	1.279	1.021	1.742	1.315	3.194
Ratio	0.08	0.68	0.32	0.16	
Districts	2	10	7	13	

APA looked for bonds with key terms such as "remodel" and "construction" to connect those bonds to the Facilities expenditure category. Table 8.11 shows that the average spending varied across years.

Table 8.11

Facilities Acquisition, Construction, and Improvements per Student Spending for Districts with Passed Bonds from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	Districts with Expenditures and Passed Bonds				
Average Per Student	$730	$432	$505	$593	$325
Standard Deviation	$1,884	$1,038	$1,169	$1,616	$622
CV	1.580	2.404	2.315	2.726	1.912
Number of Bonds Passed	66	68	61	58	54
Number of Districts	63	63	58	53	50
	Districts with Expenditures Excluding Outliers				
Average Per Student	$730	$435	$514	$378	$325
Standard Deviation	$1,884	$1,046	$1,177	$564	$622
CV	1.580	2.404	2.291	1.491	1.912
Number of Bonds Passed	65	68	60	57	54
Number of Districts	63	62	57	53	50

The average spending in 2013-14 was $325 per student, which was a decrease from $730 in 2009-10. The CV increased to 1.912 from 1.580 in 2009-10, meaning that there was more variation in 2013-14. The figures changed minimally when outliers were included. Over the years, the number of districts with expenses associated with approved bonds decreased from 63 in 2009-10 to 50 in 2013-14.

Improvements Other Than Buildings

Expenditures for Improvements other than Buildings (Improvements) include capital outlay expenditures that aren't necessarily for new or improved buildings, equipment, or other capital assets[6] and are shown in Table 8.12.

Table 8.12 on the following page shows the average Improvements expenditures amount per student to be relatively stable over the five years, especially once outliers are excluded, with average per student expenditures for Improvements between $41 and $56. Variation was high across the years, especially in 2010-11. This is true when looking at either district group.

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[6] Definition provided by MDE.

Table 8.12

Improvements Other than Building per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	All Districts				
Average Per Student	$49	$113	$55	$43	$41
Standard Deviation	$161	$1,676	$262	$211	$160
CV	3.305	14.801	4.788	4.891	3.869
Number of Districts	541	541	541	541	541
	Excluding Outliers				
Average Per Student	$47	$43	$56	$43	$41
Standard Deviation	$150	$326	$265	$213	$159
CV	3.196	7.485	4.738	4.910	3.877
Number of Districts	528	528	528	528	528
	Districts with Expenditures				
Average Per Student	$124	$613	$156	$126	$122
Standard Deviation	$238	$3,875	$425	$347	$257
CV	1.919	6.325	2.725	2.748	2.102
Number of Districts	212	100	190	185	183
	Districts with Expenditures Excluding Outliers				
Average Per Student	$118	$232	$156	$125	$119
Standard Deviation	$220	$725	$426	$348	$253
CV	1.868	3.126	2.724	2.780	2.131
Number of Districts	211	99	189	183	182

In four of the five years examined, there were around 200 districts with Improvement expenditures. In 2010-11, only about 100 districts had expenditures in the category. The average per student expenditure increased in all years when looking at only those districts with Improvement expenditures. The largest increase occurred for both district groupings (all districts and districts excluding outliers) in 2010-11. The per student average for 2010-11 decreased considerably once the outlier districts were excluded. The other years show average per student expenditures between $118 and $156 per student. Variation decreased but was still very high in all years.

Table 8.13 looks at the expenditures by region for districts with Improvement expenditures.

Table 8.13

Improvements Other than Building by Region 2013-14					
Districts with Expenditures					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$72	$240	$120	$346	$274
CV	1.328	1.886	0.913	1.324	2.125
Ratio	0.59	1.96	0.98	2.83	2.24
Districts	57	12	16	5	17
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$81	$129	$48	$8	$98
CV	1.145	1.768	1.337	1.388	1.327
Ratio	0.66	1.06	0.39	0.07	0.80
Districts	10	14	20	3	8
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$183	$154	$247	$23	$122
CV	1.091	1.427	1.281	0.987	2.102
Ratio	1.50	1.26	2.02	0.19	
Districts	3	8	3	7	
Districts with Expenditures Excluding Outliers					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$72	$240	$120	$230	$274
CV	1.328	1.886	0.913	1.896	2.125
Ratio	0.61	2.02	1.02	1.94	2.31
Districts	57	12	16	4	17
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$81	$129	$48	$8	$98
CV	1.145	1.768	1.337	1.388	1.327
Ratio	0.68	1.09	0.41	0.07	0.82
Districts	10	14	20	3	8
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$183	$154	$247	$23	$119
CV	1.091	1.427	1.281	0.987	2.131
Ratio	1.55	1.30	2.08	0.20	
Districts	3	8	3	7	

The variation in per student spending across regions with outliers was extremely high in 2013-14, ranging from just $8 (Region 9) to $346 (Region 4). When the outliers were excluded, the minimum remained the same ($8 in Region 9) but the maximum changed to $274 per student (Region 5). Ratios ranged from 0.07 to 2.83 with outliers and from 0.07 to 2.31 without outliers. The lowest CV for all districts was 0.913 (Region 3) and the highest was 1.886 (Region 2).

The study team did not connect bonds with Improvements expenditures due to the minimal use of this the Improvement expenditure category among districts.

Land

Land expenditures (Land) include the purchase of land by a district. Table 8.14 presents these expenditures.

Table 8.14

Land per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$3	$1	$2	$2	$1
Standard Deviation	$38	$10	$19	$21	$15
CV	12.156	7.859	10.752	10.584	15.919
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$3	$1	$2	$2	$1
Standard Deviation	$38	$10	$19	$21	$15
CV	12.008	7.763	10.621	10.455	15.726
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$76	$31	$48	$54	$40
Standard Deviation	$175	$39	$90	$99	$94
CV	2.297	1.273	1.865	1.827	2.351
Number of Districts	22	22	20	20	13
Districts with Expenditures Excluding Outliers					
Average Per Student	$76	$31	$48	$54	$40
Standard Deviation	$175	$39	$90	$99	$94
CV	2.297	1.273	1.865	1.827	2.351
Number of Districts	22	22	20	20	13

Table 8.14 shows that when all districts are examined, districts spent, on average, very little per student on land acquisitions and that the variation between districts was extremely high. Very few districts had actual expenditures in the land category, with only around 20 districts having such expenditures in the first four years and just 13 districts having Land expenditures in 2013-14. Considering the low number of districts with actual expenditures the study team did no further regional analysis for Land expenditures.

School Buses

School Buses (School Bus) expenditures account for the full cost of the purchase of a new or remanufactured school bus.

Table 8.15

School Bus Purchase per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$38	$34	$36	$41	$40
Standard Deviation	$146	$97	$214	$121	$97
CV	3.796	2.837	5.997	2.965	2.400
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$33	$32	$27	$37	$41
Standard Deviation	$90	$68	$63	$91	$98
CV	2.735	2.149	2.307	2.459	2.375
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$113	$94	$102	$103	$102
Standard Deviation	$233	$142	$353	$175	$132
CV	2.056	1.506	3.447	1.702	1.295
Number of Districts	183	195	188	215	214
Districts with Expenditures Excluding Outliers					
Average Per Student	$97	$86	$77	$92	$102
Standard Deviation	$134	$89	$86	$125	$133
CV	1.377	1.033	1.109	1.354	1.297
Number of Districts	180	194	186	212	213

Table 8.15 shows that the average expenditures per student were consistent across years when looking at all districts, ranging from $34 to $41. The CV ranged from 2.400 to 5.997, all CV figures that show very high variation. Excluding outliers, the average per student expenditures decreased in all years except 2013-14. The variations became more consistent across years and were lower without outliers. Less than 40 percent of districts had School Bus expenditures in each of the five years. The average per student expenditure of the districts with School Bus spending was over twice as much as the average when including all districts. The CVs in each year were much lower but still considered high.

Table 8.16 shows the expenditures by region for those districts with School Bus expenditures.

Table 8.16

School Bus Purchase by Region 2013-14				
Districts with Expenditures				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$67	$100	$77	$73	$55
CV	1.274	0.854	1.011	0.807	0.855
Ratio	0.65	0.98	0.75	0.71	0.54
Districts	44	13	17	13	12
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$64	$135	$56	$152	$145
CV	1.223	1.125	0.742	1.220	0.563
Ratio	0.63	1.32	0.55	1.49	1.42
Districts	12	26	28	9	10
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$124	$192	$57	$266	$102
CV	0.781	0.888	0.000	1.306	1.295
Ratio	1.21	1.89	0.56	2.61	
Districts	5	14	1	10	
Districts with Expenditures Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$67	$100	$77	$73	$55
CV	1.274	0.854	1.011	0.807	0.855
Ratio	0.65	0.98	0.75	0.71	0.54
Districts	44	13	17	13	12
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$64	$135	$56	$152	$145
CV	1.223	1.125	0.742	1.220	0.563
Ratio	0.63	1.32	0.55	1.49	1.42
Districts	12	26	28	9	10
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$124	$201	$57	$266	$102
CV	0.781	0.868	-	1.306	1.297
Ratio	1.21	1.97	0.56	2.60	
Districts	5	13	1	10	

The average per student expenditure ranged from a low of $56 per student (Region 8) to a high of $266 per student (Region 14). The ratios to state average ranged from a low of 0.55 to a high of 2.61. Though the CV figures were lower than for many other expenditure categories, they still show very high variation within regions. Region 13 showed no variation as only one of its districts had School Bus expenditures. The figures remained similar when outliers were excluded, as only one outlier district had School Bus expenditures in 2013-14.

APA looked for key terms such as "purchase of bus" to connect bonds to the School Bus expenditure category. Table 8.17 shows that the average per pupil spending varied across years.

Table 8.17

School Buses per Student Spending for Districts with Passed Bonds from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	Districts with Expenditures and Passed Bonds				
Average Per Student	$196	$146	$112	$155	$253
Standard Deviation	$162	$159	$85	$144	$177
CV	0.824	1.506	0.775	0.931	0.699
Number of Bonds Passed	12	19	16	20	15
Number of Districts	12	19	16	20	15
	Districts with Expenditures Excluding Outliers				
Average Per Student	$196	$146	$112	$155	$253
Standard Deviation	$162	$159	$85	$144	$177
CV	0.824	1.506	0.775	0.931	0.699
Number of Bonds Passed	12	19	16	20	15
Number of Districts	12	19	16	20	15

The average spending in 2013-14 was $253 per student and the standard deviation was $177. The variation was the lowest in 2013-14, with a CV of 0.699. There were no outliers in this expenditure category for passed bonds. The number of districts with bus expenditures associated with passed bonds was similar across years.

Vehicles Other than Buses

Table 8.18 that follows shows expenditures for Vehicles Other than Buses (Vehicles) expenditures. For all districts, the expenditures per student were very low, just around $2 per student. This was true in all years and when looking at both all districts and districts without outliers. The variation across districts was also very high. Less than one-fifth of the districts with Vehicle expenditures had expenditures in any year. Average expenditures per student ranged from just $11 to $17 each year. The variation was still high across each year. Based on the low number of districts with Vehicle expenditures and the low Vehicle expenditures per student, the study team did not explore regional differences in costs.

Table 8.18

Vehicles Other than Buses per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$2	$2	$2	$2	$3
Standard Deviation	$8	$12	$7	$8	$27
CV	4.557	5.122	3.968	3.849	9.256
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$2	$2	$2	$2	$2
Standard Deviation	$8	$9	$7	$9	$6
CV	4.585	4.349	3.917	3.799	3.458
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$11	$14	$12	$12	$17
Standard Deviation	$17	$27	$14	$17	$65
CV	1.537	1.847	1.208	1.381	3.723
Number of Districts	83	87	79	99	92
Districts with Expenditures Excluding Outliers					
Average Per Student	$11	$12	$12	$12	$11
Standard Deviation	$17	$19	$14	$17	$12
CV	1.563	1.505	1.208	1.371	1.115
Number of Districts	82	86	79	98	91

Other Capital Outlay

Other Capital Outlay (Other) expenditures include capital expenditures not included in any other category. Table 8.19 on the following page shows information for this Other expenditure category. The statewide average per student amount for the category was very low across the five years with extremely high variation. This trend holds when looking at all districts or all districts excluding outliers. Fewer than 80 of the 541 districts had expenditures for Other in any year and the per student amounts are, on average, below $100. Due to the low overall expenditures and low number of districts with expenditures, the study team did no further analysis for Other expenditures.

Table 8.19

Other Capital Outlay per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$11	$8	$11	$5	$7
Standard Deviation	$118	$91	$132	$31	$60
CV	11.076	11.135	12.427	6.655	8.803
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$11	$8	$11	$5	$7
Standard Deviation	$120	$92	$134	$32	$61
CV	10.942	11.387	12.276	6.573	8.695
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$85	$57	$87	$43	$57
Standard Deviation	$327	$236	$372	$87	$166
CV	3.839	4.120	4.266	2.000	2.923
Number of Districts	68	77	66	59	65
Districts with Expenditures Excluding Outliers					
Average Per Student	$85	$56	$87	$43	$57
Standard Deviation	$327	$237	$372	$87	$166
CV	3.839	4.244	4.266	2.000	2.923
Number of Districts	68	76	66	59	65

Debt Service

Debt service expenditures represent the costs associated with money raised, generally through bonds, to pay for many of the capital expenditures examined above. Districts use financing to spread the cost of large-scale capital projects across time. This means that the expenditures for debt service tend to occur in the majority of districts and that they tend to be more consistent over time. Much of the spending seen for debt service is likely for projects that were undertaken before the time period of expenditures being analyzed in this study. As such, the study team did not attempt to link debt service expenditures to bond information.

Interest on Debt

Interest on Debt (Interest) includes expenditures for interest on serial bonds, leases with options to buy, and loans.

Table 8.20 shows expenditure data for the Interest category.

Table 8.20

Interest on Debt per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
	All Districts				
Average Per Student	$483	$493	$488	$499	$488
Standard Deviation	$420	$429	$439	$520	$571
CV	0.869	0.872	0.899	1.042	1.171
Number of Districts	541	541	541	541	541
	Excluding Outliers				
Average Per Student	$487	$496	$491	$502	$491
Standard Deviation	$413	$422	$432	$514	$571
CV	0.848	0.850	0.880	1.025	1.163
Number of Districts	528	528	528	528	528
	Districts with Expenditures				
Average Per Student	$512	$522	$516	$526	$519
Standard Deviation	$414	$424	$435	$520	$575
CV	0.809	0.814	0.843	0.989	1.108
Number of Districts	510	511	512	513	508
	Districts with Expenditures Excluding Outliers				
Average Per Student	$509	$518	$513	$523	$516
Standard Deviation	$408	$418	$429	$514	$574
CV	0.803	0.806	0.837	0.984	1.112
Number of Districts	505	506	506	507	502

Table 8.20 shows the expenditures per student for all districts were just below $500 per student in all five years and close to $500 per student when outliers were excluded. Variation was high, below 1.000 from 2009-10 through 2011-12 and above 1.000 in the two most recent years. The vast majority of districts had expenditures in the category across the five years, with average expenditures just above $500 per student in all years, for both all districts and districts excluding outliers. The CV figures were below 1.000 for the first four years and just above 1.000 in 2013-14.

Table 8.21 that follows shows the Interest expenditures by region for districts that have expenditures in this area. Expenditures ranged from a low of $271 per student (Region 12) to a high of $743 per student (Region 1). The ratios ranged from a low of 0.52 to a high of 1.43. The range in expenditures was still very high, with the lowest CV at 0.659 (Region 6) and the highest CV at 1.739 (Region 13). The figures are similar when looking at the districts without outliers.

Table 8.21

Interest on Debt by Region 2013-14				
Districts with Expenditures				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$743	$332	$478	$485	$399
CV	1.112	0.892	0.718	1.223	0.729
Ratio	1.43	0.64	0.92	0.93	0.77
Districts	109	30	36	28	33
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$668	$333	$614	$236	$535
CV	0.659	0.762	0.662	0.755	1.151
Ratio	1.29	0.64	1.18	0.45	1.03
Districts	25	68	55	16	32
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$338	$271	$720	$521	$519
CV	0.837	1.066	1.739	0.703	1.108
Ratio	0.65	0.52	1.39	1.00	
Districts	11	24	17	24	
Districts with Expenditures Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$743	$332	$478	$483	$399
CV	1.112	0.892	0.718	1.251	0.729
Ratio	1.44	0.64	0.93	0.94	0.77
Districts	109	30	36	27	33
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$668	$333	$614	$236	$494
CV	0.659	0.762	0.662	0.755	1.144
Ratio	1.29	0.64	1.19	0.46	0.96
Districts	25	68	55	16	30
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$236	$271	$720	$521	$516
CV	0.635	1.093	1.739	0.703	1.112
Ratio	0.46	0.52	1.39	1.01	
Districts	9	23	17	24	

Redemption of Long-term Bonds, Loans, and Capital Leases

Expenditures for Redemption of Long-term Bonds, Loans, and Capital Leases (Redemption) included district expenditures to retire serial bonds and loans. Table 8.22 shows the average expenditures per student for all districts, all districts excluding outliers, districts with expenditures, and districts with expenditures excluding outliers.

Table 8.22

Redemption of Long-term Bond, Loans, and Capital Leases per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$688	$684	$804	$862	$894
Standard Deviation	$1,128	$692	$1,175	$1,003	$1,014
CV	1.639	1.011	1.462	1.163	1.134
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$692	$686	$804	$861	$890
Standard Deviation	$1,133	$684	$1,173	$1,000	$1,004
CV	1.637	0.996	1.459	1.161	1.128
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$742	$741	$866	$923	$981
Standard Deviation	$1,154	$690	$1,198	$1,010	$1,021
CV	1.556	0.932	1.383	1.094	1.040
Number of Districts	502	500	502	505	493
Districts with Expenditures Excluding Outliers					
Average Per Student	$734	$730	$853	$911	$965
Standard Deviation	$1,154	$682	$1,191	$1,006	$1,010
CV	1.572	0.934	1.397	1.104	1.047
Number of Districts	498	496	498	499	487

The table shows that looking at all districts, Redemption expenditures increased over the five years, staring around $690 per student and increasing to nearly $900 per student. Variation was high across all four years, generally above 1.000. The figures were similar looking at all districts and when excluding outliers.

A significant majority of districts had spending in the Redemption category; close to 500 districts had Redemption expenditures in each year. Looking at just those districts with Redemption expenditures increased the spending per student by about $60 to $80 per student in each year. Variation continued to be high across the years, with CVs above 1.000. Excluding the outlier districts – between four and six districts per year – decreased the per student amounts slightly but resulted in little change to variation.

Table 8.23 shows Redemption expenditures for 2013-14, by region, for districts with expenditures in this category.

Table 8.23

Redemption of Long-term Bond, Loans, and Capital Leases by Region 2013-14					
Districts with Expenditures					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$1,035	$682	$766	$789	$769
CV	0.852	1.271	0.405	0.987	1.437
Ratio	1.05	0.69	0.78	0.80	0.78
Districts	105	29	33	28	29
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,057	$1,130	$914	$862	$1,310
CV	0.606	1.658	0.471	0.598	0.668
Ratio	1.08	1.15	0.93	0.88	1.33
Districts	25	68	55	16	32
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$1,168	$1,013	$1,430	$771	$981
CV	0.622	0.952	1.014	0.315	1.040
Ratio	1.19	1.03	1.46	0.79	
Districts	11	22	16	24	
Districts with Expenditures Excluding Outliers					
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$1,035	$682	$766	$673	$769
CV	0.852	1.271	0.405	0.730	1.437
Ratio	1.07	0.71	0.79	0.70	0.80
Districts	105	29	33	27	29
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,057	$1,130	$914	$862	$1,237
CV	0.606	1.658	0.471	0.598	0.674
Ratio	1.10	1.17	0.95	0.89	1.28
Districts	25	68	55	16	30
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$939	$1,024	$1,430	$771	$965
CV	0.580	0.964	1.014	0.315	1.047
Ratio	0.97	1.06	1.48	0.80	
Districts	9	21	16	24	

Expenditures ranged from a low of $682 per student (Region 2) to a high of $1,430 (Region 13). This created a range of ratios to statewide average of 0.69 to 1.46. CVs range from a low of 0.315 (Region 14) to a high of 1.68 (Region 7). Once outliers were excluded, Region 4 had the lowest expenditures per student for Redemption at $673 per student. Region 13 still had the highest expenditures. Ratios ranged from 0.70 to 1.48.

Other Financing and Debt

Other Financing and Debt (Financing) expenditures represent expenditures for the retirement of debt, the payment of interest on debt, payments to the housing authority and the payment of dues and fees. Table 8.24 shows the expenditures for the spending category.

Table 8.24

Other Financing and Debt per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
All Districts					
Average Per Student	$171	$155	$448	$581	$269
Standard Deviation	$940	$951	$1,580	$1,996	$1,465
CV	5.508	6.150	3.525	3.437	5.453
Number of Districts	541	541	541	541	541
Excluding Outliers					
Average Per Student	$175	$158	$459	$595	$244
Standard Deviation	$951	$962	$1,597	$2,018	$1,309
CV	5.439	6.074	3.479	3.395	5.355
Number of Districts	528	528	528	528	528
Districts with Expenditures					
Average Per Student	$499	$440	$1,112	$1,304	$702
Standard Deviation	$1,558	$1,567	$2,338	$2,832	$2,307
CV	3.122	3.560	2.102	2.172	3.285
Number of Districts	185	190	218	241	207
Districts with Expenditures Excluding Outliers					
Average Per Student	$499	$442	$1,117	$1,308	$629
Standard Deviation	$1,558	$1,571	$2,343	$2,837	$2,045
CV	3.122	3.550	2.096	2.169	3.249
Number of Districts	185	189	217	240	205

When looking at all districts, average expenditures per student were quite varied, ranging from a low of $155 per student in 2010-11 to a high of $581 per student in 2012-13. The variation was extremely high, especially in 2009-10, 2010-11, and 2013-14. The figures did not change dramatically when outliers were excluded.

Less than 40 percent of districts had Financing expenditures in most years. In 2012-13, compared to other years in this study, the highest number of districts had financing expenditures. The per student figures more than doubled in each year when looking at only those districts with expenditures. The variation remained similar across years and, though the CVs went down, variation remained high. The figures were similar for districts with expenditures excluding outliers.

Table 8.25 looks at Financing expenditures in 2013-14 by region for districts with expenditures in this area.

Table 8.25

Other Financing and Debt by Region 2013-14				
Districts with Expenditures				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$650	$338	$147	$779	$20
CV	2.835	2.022	3.625	2.606	0.865
Ratio	0.93	0.48	0.21	1.11	0.03
Districts	52	13	14	12	5
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,862	$1,279	$696	$279	$664
CV	2.492	2.023	3.964	2.345	1.914
Ratio	2.65	1.82	0.99	0.40	0.95
Districts	10	22	31	6	13
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$5,432	$32	$44	$7	$702
CV	1.724	1.480	1.646	1.260	3.285
Ratio	7.74	0.05	0.06	0.01	
Districts	3	14	6	6	
Districts with Expenditures Excluding Outliers				
	Region 1	**Region 2**	**Region 3**	**Region 4**	**Region 5**
Average	$650	$338	$147	$845	$20
CV	2.835	2.022	3.625	2.505	0.865
Ratio	1.03	0.54	0.23	1.34	0.03
Districts	52	13	14	11	5
	Region 6	**Region 7**	**Region 8**	**Region 9**	**Region 10**
Average	$1,862	$1,279	$696	$279	$664
CV	2.492	2.023	3.964	2.345	1.914
Ratio	2.96	2.03	1.10	0.44	1.06
Districts	10	22	31	6	13
	Region 11	**Region 12**	**Region 13**	**Region 14**	**State**
Average	$25	$32	$44	$7	$629
CV	1.251	1.480	1.646	1.260	3.249
Ratio	0.04	0.05	0.07	0.01	
Districts	2	14	6	6	

The table shows that the variation in average expenditure per student was extreme. When looking at all districts with expenditures, Region 5 had an average of just $20 per student while Region 11 had an

average of $5,432 per student. This resulted in a ratio to statewide average variation of 0.03 to 1.724. CVs were high across the board, ranging from 0.865 (Region 5) to 7.74 (Region 11).

Once outliers were excluded, Region 11 dropped from being by far the highest region to one of the lowest with just $25 per student. Region 5 remained the lowest spender at $20 per pupil and Region 6 became the highest spender at $1,862 per student. Variation remained very high.

Regression Analyses

This section of the chapter examines the relationship between a district's ability to pass a bond and various district characteristics. The study team felt it was important to understand if certain demographic characteristics were a good predictor of a district's ability to raise capital dollars through elections. The analysis examined district characteristics including wealth, student demographics, size, region, density, and setting.

To examine the relationships, APA looked at every election in the database provided by the state for the Michigan School Bond Loan Program Election Database. There were a total of 599 individual elections in the database, with the first elections in the fall of 2005 and the last in the fall of 2016. A number of statistical analyses were undertaken on the data including a logistic regression and a linear regression. Prior to running the statistical analyses the study team combined the data for districts that had multiple bond issues in the same election that had the same outcome. This reduced the number of elections in the database to 532 elections.

The variables used in the various regression analysis included the size of district (logged for use in the regressions because of the extremely skewed distribution[7]), economically disadvantaged percentage, English Language Learner (ELL) percentage, special education percentage, wealth per pupil, density, setting, region, and the amount per pupil asked for in the election. For the demographic data, such as the size of the ELL student population, APA used the data for the school year closest to the date of each election.

Table 8.26 shows the mean, minimum, and maximum of the variables, excluding setting and region.

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[7] The statistical analysis model used requires that input variables have a roughly normal distribution with most cases clustered in the middle of the distribution and fewer cases at the high and low end. District size does not follow this pattern with most districts having relatively small sizes and fewer districts with larger sizes. It is standard in statistical analysis to take the logarithmic of variables that are skewed in this way to transform them to a normal distribution that will function properly in the statistical model.

Table 8.26

	Size	Economically Disadvantaged	ELL	Special Education	Wealth	Density	Amount per Student for Bond
Variable Information for Regressions							
Mean	2,767	45.1%	3.6%	12.3%	$225,152	107.1	$9,992
Minimum	71	5.1%	0.0%	0.2%	$49,473	0.3	$138
Maximum	84742	94.5%	25.8%	25.8%	$936,545	1233.5	$55,634

There is a large range across the districts with elections. This is true for all variables. The amount asked per pupil for a bond ranges from a low of just $138 per pupil to a high of $55,634. The average is slightly below $10,000.

Logistic Regression

The study team first ran two logistic regressions to examine the relationship between district characteristics and passing a bond. A logistic regression uses the independent variables to predict the likelihood of a binary outcome. In this analysis, the independent variables are the district characteristics, which are used to predict the likelihood of a bond or set of bonds passing or failing. The study team used the variables mentioned in Table 8.26 in each regression. The first regression also used setting, using Urban as the baseline setting, while the second regression included region, using Region 1 (Detroit) as the baseline region. Choosing what setting or region to omit does not change the estimate the relationship of the other variables and the likely hood of passing the bond.

The results of both regressions indicate that the only statistically significant factor in predicting the result of a bond election is the amount per student for bond. This was true for both the setting and region regression. This means that the other district characteristics do not seem to have a significant relationship with likelihood of passing a bond. The results show that at the average amount per student for bond, a district has about a 60 percent chance of passing the bond. Increasing the bond amount by $10,000 per student, to $20,000, decreases the odds by nearly 20 percentage points to about 42 percent. Increasing an additional $10,000 per student decreases the odds about 15 more percentage points.

Overall, as shown in Figure 8.1, the regression shows a steep decline in the ability to pass a bond as the amount per student for bond increases.

Figure 8.1
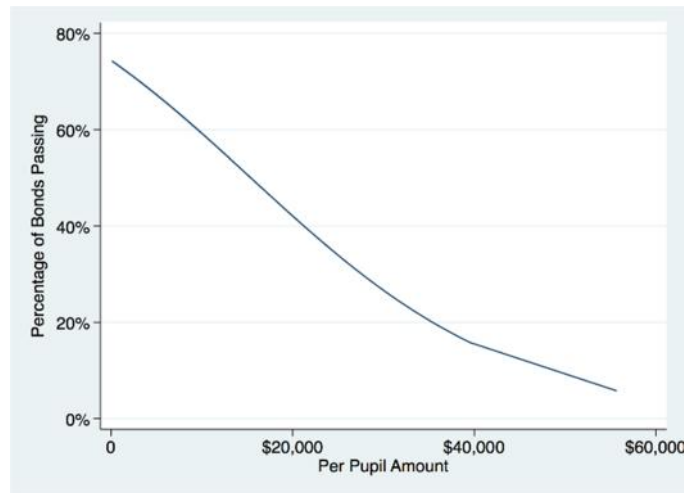
Linear Regression

The logistic regression made it clear that the amount per student for bond held the most powerful influence on the success of the bond. To better understand this variable, the study team ran a linear regression to see if different district characteristics were related to the amount per student for a bond. For this regression, APA included the following variables:

- Size (logged for this analysis)
- Economically Disadvantaged Percentage
- ELL Percentage
- Special Education Percentage
- Density
- Wealth

Again, the study team ran the regression using both setting and region separately. The results show that the size and wealth of the districts are the best indicators of the amount per student for bond that is asked for, with smaller and wealthier districts requesting higher per pupil amounts in their bonds. To be clear, wealth is not a significant factor in predicting success or failure of an election, but it is a predictor of the amount per student for bond.

Conclusions

The data in the section shows that there is large variation in the capital expenditures for all districts, for districts within a region, and across regions. Districts have made different decisions on the implementation of capital projects across time. These decisions might be made for varying reasons, some districts may be growing and need to build new facilities, while others are shrinking and face the need to maintain older facilities. Along with the differing needs of districts, the ability of each district to pass local bonds is a factor in the spending for capital expenditures.

A number of the capital expenditures areas have very few districts with expenditure in the area or the level of expenditures are very low. These spending areas include Media, Land, and Vehicles. The other capital expenditure categories show high variation in spending when looking at all districts, between regions, and within regions. CVs tend to be well above the .300 threshold and are frequently above the 1.000 level regardless of the level of analysis. The variations do not necessarily lessen when looking at those districts that seem to have passed bonds in the area.

The debt service expenditures capture the costs of financing capital projects over time. Each districts costs are based on the long-term costs associated with capital projects for the district. Though the expenditures tend to be more stable across time for debt service categories, the level of variation is still extremely high across all districts, across regions, and within regions.

The regressions show that the best indicator for success or failure of a bond is the amount per student being asked for in the bond. The per student bond amount is related to the wealth and size of districts but is most likely also related to the type of project the district wishes to fund. The regressions show that it could be difficult for districts to undertake large scale building or renovation projects. This concern is especially true for smaller districts where costs per student for these projects would be very high.

IX. Recommendations

This report has analyzed and shared large amounts of data across its various chapters. This chapter provides the study team's recommendations based on the analysis completed. The initial section of this chapter offers a review and summary of the data analyzed earlier in the report.

Review of Key Findings

Identifying Successful Districts

The study team employed five different performance standards throughout the study. These standards included the following:

Table 9.1

Standard	Criteria
Above Average	Set by state; the percentage of district students scoring proficient or above is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Above Average districts.
High Absolute Performance	The percentage of district students scoring proficient or above is at least one standard deviation above the statewide average in all tested subjects. Districts meeting this standard are referred to as High Absolute Performance districts.
Growth	The change in the percentage of district students scoring proficient or above between 2009-10 and 2013-14 was above the statewide average in all tested subjects. Districts meeting this standard are referred to as Growth districts.
Special Populations	The percentage of students in each demographic subgroup present in the district is above the statewide average in all tested subjects. Districts meeting this standard are referred to as Special Populations districts.
Notably Successful	Districts that met the Above Average Performance standard and one additional performance standard (High Absolute Performance, Growth or Special Populations), are referred to as Notably Successful districts.

Districts that met both the Above Average standard and one of the other performance standards were considered Notably Successful districts, the fifth performance standard group. Based on the study team's analysis, there are 186 Above Average districts, 34 High Absolute Performance districts, 27 Growth districts, nine Special Populations districts, and 58 Notably Successful districts.

Excluding Outliers

When the study team examined the expenditure data for districts, it became clear that there were a number of outlier districts spending a comparatively unusual amount (greater than three standard deviations above the mean for all districts) and that the inclusion of these 13 districts would skew results significantly. As a result, the study team presented most results in two iterations: one including the 13 outlier districts and one excluding those districts.

Revenues

When examining revenues, looking at districts that met the Above Average standard and those that did not within the cohort analysis, a few key highlights were apparent. When all districts were included in the analysis, there were groups of districts with much higher total revenues per student and much higher reliance on local taxes to fund their additional revenues per student. The removal of the 13 outlier districts tended to shift the averages – both among districts that met the various standards and districts that did not meet standards – to a more consistent pattern of revenue sources. Districts at all performance levels tended to rely very heavily on state funding. Since most of the successful district groupings had low overall student need, they also tended to have fewer federal dollars in their mixes of funding.

There was variation in the levels of revenue when looking at districts that met the various performance standards. Districts that met the higher standards, those combined into the Notably Successful performance group, had higher revenues than the Above Average districts, even though both groups of districts had similar distributions of revenues by source. Those districts that met the exemplary standards within cohort groups did have lower total operating revenues per student than the revenues for all districts meeting any of the performance standards. This is to be expected, as the exemplary districts were selected for their low spending. The study team feels it is important to keep in mind that the number of exemplary districts is small. Though the study team is interested in analyzing those low-spending, high-performing districts, it cannot always be assumed that the most efficient district programs can be replicated, either in other districts or statewide.

Expenditures

The expenditure analysis first focused on the base expenditures for districts. Again, base expenditure per student is the amount a district spends on a student with no special needs (i.e. a general population student). The relationships between groups for expenditures was very similar to what was seen for revenues. When looking at results for all districts, a number of the groups of districts that met performance standards had total base expenditures much higher than the total base expenditures in districts that did not meet performance standards. Districts that met the standards tended to spend more on base instruction and other costs than districts that did not meet the standard. Once the outlier districts were removed, the spending for many successful groups dropped, often dramatically, and the differences between those districts that met the standard and the remaining districts changed. In fact, in a few cases, the average base expenditures per pupil for the districts that met the standard fell below the average base expenditures per pupil for the districts that did not meet the standard.

Regardless of the cohort grouping, a limited number of districts met the exemplary standard of being high-performing (as defined by meeting the Above Average performance standard) and low-spending (as defined by spending in the lowest quarter of districts in a given cohort). These districts tended to be very low need and tended to have low base spending amounts.

Student Need

The analysis of performance groups and exemplary districts made it clear that the successful districts tended to have very low overall student need, based on their demographics and measured by their Need Factors. When looking at performance groups, the districts that met a standard often had Need Factors that were two-thirds or even just half of the Need Factors seen in districts not meeting the standard. When looking at the exemplary districts by cohort, this pattern tended to hold true, even when examining districts from like settings. From the cohort analysis, the only cohorts (based on the characteristics of Density, Need, or Setting) where there were not large differences were the Need cohorts, created based on the Need Factor of each district. Still, even among the Need cohorts, the exemplary districts had lower student need than the non-exemplary districts.

This focus on district student need was brought out again in the regression analysis. The analysis worked to understand which variables had the greatest statistically significant effects on districts' overall performances. For each district, the regression analysis examined total operating expenditures against performance and demographics. Though the level of total operating expenditures was a predictor of performance, the study team's key takeaway was that the demographics of a district were highly predictive of a districts performance. The percentage of economically disadvantaged students was a predictor of performance for both math and reading and ELL percentage was a predictor for reading. Again, this highlights just how large an impact district need appears to have on student success. It makes it clear that, while it is important for the state to identify a strong base cost per student, adjustments for special needs students are vital to the overall success of districts, schools, and students.

The analysis of performance groups and exemplary districts showed that districts with higher special needs populations struggled to meet the performance standards. This makes it very important to understand the level of additional resources needed to address the needs of special needs students. The study focused on the resources needed for economically disadvantaged and ELL students. The survey provided information on the types of supports and services needed beyond what the average district used to serve a typical student; the survey highlighted that districts used many research-backed supports, services, and interventions for special needs students.

However, it is also notable that only nine districts met the Special Populations standard, so even the successful districts were not particularly effective at working with special needs students. Furthermore, as previously noted, demographics are a deciding factor in student performance. The level of resources being expended for at-risk and ELL students in relationship to base expenditures (presented as weights) was low in relationship to the levels recommended in national costing out studies. The surveyed districts averaged a weight of just 0.11 for at-risk students and 0.24 for ELL students. National research would suggest weights for at-risk students between 0.25 and 0.75 and weights for ELL students between 0.39 and 1.21.

While not specifically targeted for at-risk or ELL students, the study team did find that the limited number of districts that met the Special Populations standard, had higher spending in most categories

and base expenditures per student were about $1,150 more per student than for the remaining districts (after excluding outliers).

Equity

The equity section looks at how equitable the state is, using the metrics of horizontal equity, vertical equity, and fiscal neutrality. Overall, Michigan's school finance system is moderately inequitable, based on the results of commonly accepted methods and standards for measuring the equity of state school finance systems. When examining both horizontal and vertical equity, the correlation between wealth and operating revenues and expenditures was above the generally accepted standard of a 0.500 correlation. Additionally, the relationship between resources and need showed a negative relationship, meaning that districts with higher need tended to have fewer resources available to serve students.

There was large variation across years for all operating revenues and for per student expenditures. Per pupil taxable value had a large range, from $35,881 to over $2.5 million in 2014, a ratio of 70 to 1. The lowest-wealth districts also had the highest levels of student need. Implicit tax effort decreased from the lowest through the middle quintiles, then increased again for the two highest quintiles, suggesting that the higher taxable values facilitated raising larger amounts of local revenues. Overall, the various metrics create concerns about the equity of the state's system.

Regional Analysis

Part of the study team's work included further analysis of (1) regional revenues and (2) regional non-instructional expenditures. APA assigned districts to regions based on the 14 Michigan Association of Regions State Planning & Development Regions (SPDRs). Non-instructional cost areas included food service, transportation, M&O, community service, and adult education.

Revenues

When considering all districts, the revenues by region showed regional differences in reliance on state, local, and federal funds for total operating revenue. Most regions relied on state revenue for the majority of their funding. This was true even when outlier districts were excluded. When looking at all districts (including outliers), five regions (Regions 9, 10, 11, 12 and 13) relied most heavily on local revenue. When outliers were excluded, this number was reduced to three (Regions 9, 10, and 11). The changes in reliance on local revenue show that the outlier districts relied heavily on local funding.

Expenditures

Expenditures by region varied both across regions and within regions when looking at total operating expenditures per student and non-instructional expenditures per student. Due to the high variation in spending for community service and adult education, no patterns were clearly discernable across regions. Two regions (Regions 2 and 6) showed expenditures at least 10 percent below the state average in food service, transportation, and/or M&O. No district had lower spending than the state average across all three non-instructional categories. The variation within the regions with lower spending was high, above the 0.100 coefficient of variation (CV) standard.

Similarly, four regions (Regions 9, 10, 13, and 14) showed much higher than state average expenditures for food service, transportation, and M&O. This was especially true when looking at all districts. When outliers were excluded, the differences lessened, though one region, Region 13, was still more than 10 percent above state average in all three spending categories. Overall, it was difficult to determine any patterns by region, since the level of variation within all categories was very high.

Looking at a national measure of the cost differences for hiring educational personnel, district cost differences by region for actual expenditures were different than the differences that would be expected based on personnel costs. The CWI differences by region did not align with the differences the study team observed in actual district expenditures by region.

Capital and Debt Service

The study team examined seven capital and three debt service spending categories. The analysis included looking at the spending for all districts, only districts with expenditures in the categories, expenditures by region, and, for capital expenditures, expenditures for districts with bonds linked to the expenditure category.

As was true for non-instructional expenditures, variation across districts in terms of capital and debt service spending was very high across the years and regardless of the lens used to examine the expenditures. It is clear that districts have various capital needs and also have different levels of ability to raise dollars locally for capital projects. The analysis also shows that there is little relationship between a district's specific demographics and that district's ability to pass a bond. Instead, the size of the bond, in per student terms, appears to be the best indicator of success.

Recommendations

Below are the recommendations the study team suggests based on the analysis described throughout the report.

The base cost expenditures for Notably Successful districts should be used as the per student base cost for Michigan once efficiency screens are applied. There are numerous possibilities for base cost figures using the average expenditure figures from districts that meet five possible performance standards (Above Average, High Absolute Performance, Growth, Special Populations, and Notably Successful) and based on the cohort exemplary district analysis described in Chapters III and V of the report. Efficiency screens are explained more fully in the final chapter of this report.

The study team believes the Notably Successful districts represent the best indicator of what it might take for ALL districts to succeed at a base level. These districts are both meeting the Above Average standard and meeting at least one higher performance standard (High Absolute Performance, Growth, or Special Populations). Because higher-spending outlier districts can skew data significantly, APA recommends only using the expenditures from the 54 districts without outliers, after applying efficiency screens, to develop per student base cost figures. Using the Notably Successful districts with additional

efficiency screens provides a base cost that is reflective of what it may take to meet state standards in an efficient manner.

The study team believes that additional efficiency screens should be applied to ensure that certain costs for districts with uniquely high or low spending in specific cost areas are not included in the final base cost figure calculations. For example, a district might be successful in part because it has high base instructional costs, much higher than the base instructional costs in other successful districts. The efficiency screens allow the instructional expenditures for that district to be excluded from the analysis.

Efficiency is measured not against all districts in the state, but only against the other Notably Successful districts. For each cost area (instruction, administration, and non-instructional cost areas), the districts were compared and any district 1.5 standard deviations above the mean for Notably Successful districts was eliminated as inefficient for that category of spending. Additionally, any district at or below 2.0 standard deviations of the mean was also eliminated. It is important to include a measure that will exclude potentially extreme low spenders (using a more lenient standard of 2.0 standard deviations, instead of 1.5, for the upper end). This helps eliminate any data outliers whose resources and spending may be extremely low for reasons about which APA is unaware, but which are unrelated to efficiency.

Efficiency for each spending area is judged using the following measures:

- Base instruction – the number of teachers per 1,000 weighted students[8],
- Base Administration – the number of administrators per 1,000 weighted students,
- Food service – actual food service per student expenditures,
- Transportation – actual transportation per student expenditures, and
- M&O – actual M&O per student expenditures.

The application of the base instruction efficiency screen eliminated five districts that had more teachers per 1,000 weighted students than the 1.5 standard deviation cutoff. Four districts were removed for not meeting the administration efficiency screen. Five districts were excluded for being more than 1.5 standard deviations above the mean and two districts were excluded for being 2.0 standard deviations below the mean in food service. The transportation screen saw four districts that were inefficiently high spenders and one that was below 2.0 standard deviations from the mean. Only one district was excluded for being inefficient in M&O. That district was above the 1.5 standard deviation metric.

The final per student figures, based on expenditures in Notably Successful districts after efficiency screens are applied, are as follows:

- Instruction – $4,983,

---

[8] APA measures district resource efficiency using a weighted student enrollment count (enrollment multiplied by a district's Need Factor). This means that a district's enrollment numbers were adjusted to reflect its number of special needs students. Such students can require significant extra resources, and APA did not wish to identify any of the successful districts as being less efficient simply because they had higher numbers of teachers or administrators to serve the higher needs of their students.

- Administration – $884,
- Support – $875,
- Food Service – $316,
- Transportation – 355,
- M&O – $862,
- Community Service – $206,
- Adult Education – $15, and
- Other Expenditures – $172.

The total base cost for the districts was $8,667.

The study team recognized the exemplary district analyses as a key component of the study and recognized that it is fair to ask why the exemplary districts are not being used to define the base cost figure for the study. The study team felt that using a relatively low standard, the Above Average standard, and then only considering the expenditures of the districts spending in the lowest 25 percent of any given cohort, would not accurately reflect what it might take for all districts to be able to meet standards. As has been noted earlier in the study, the performance levels needed to meet the Above Average standard are relatively low, with only Reading requiring over 50 percent of students to be at or above proficiency.

Still, the study team felt that if exemplary districts were to be used as the benchmark for establishing a base cost, then a higher performance metric (other than the Above Average standard) should be used. The study team would suggest starting with the Notably Successful standard. Using the Notably Successful standard as the starting point, districts can be identified that meet the criteria and are in the bottom quartile of spending in their cohorts for the three characteristic groups. Running these figures, a total of 19 districts would be Notably Successful and in the bottom quartile of spending in at least one of the cohort groupings.

Table 9.2 compares the base expenditures of the 54 Notably Successful districts (excluding outliers), with efficiency screen applied, to the results for the 19 Exemplary districts that also met the Notably Successful performance standard (i.e. "Exemplary Notably Successful districts").

Between Notably Successful districts and Exemplary Notably Successful districts, the total difference in average spending per student was nearly $900. The largest differences are seen in instruction (about $200), administration (about $120), support (over $300), and community service ($120). The 54 Notably Successful districts represented about 10 percent of all districts, while the subset of 19 Exemplary Notably Successful districts represented under four percent of all districts. The Exemplary Notably Successful districts clearly had lower base cost expenditures. However, the limited number of districts meeting this standard, just 3.5 percent of all districts, led the study team to question if the number should be used to create a base for all districts. It is recommended that the Notably Successful district standard representative of 54 districts be used.

Table 9.2

Comparison of 54 Notably Successful Districts with Efficiency Screens and the Subset of 19 Exemplary Notably Successful Districts		
	Notably Successful Districts (Excluding Outliers)	**Subset of <u>Exemplary</u> Notably Successful Districts (Excluding Outliers)**
Number of Districts	54	19
Per Student Expenditures by Area		
Instruction	$4,983	$4,794
Administration	$884	$766
Support	$875	$561
Food Service	$316	$339
Transportation	$355	$326
M&O	$862	$804
Community Service	$206	$86
Adult Education	$15	$20
Other	$172	$147
Total Base Expenditure per Student	$8,667	$7,781

Appendix F identifies the 54 Notably Successful districts, and the 19 Exemplary Notably Successful districts.

The study team recommends that funding from state and local sources be available for at-risk and ELL students equivalent to weights of 0.30 for at-risk students and 0.40 for ELL students. The determination of which students qualify for at-risk would be at the states discretion and could be based upon economically disadvantaged. The results of the analyses repeatedly show that there are significant gaps between districts identified as successful and districts that are not successful in terms of district need. This was true when examining the various performance standards and the exemplary districts. The Above Average districts reporting data on the survey were only spending at levels that resulted in implied weights of 0.11 for at-risk students and 0.24 for ELL students. These weights are far below the weights recommended by costing-out research and far below the weights currently available for districts in many other states.

Table 9.3 shows the percentages of economically disadvantaged students in districts that met the five performance standards and in districts that did not meet the performance standards. The table only includes information for districts without outliers. Districts that met the standards consistently had far lower percentages of economically disadvantaged students than districts that did not meet the standard. Those districts that met the High Absolute Performance standard had over a third fewer economically disadvantaged students as those that did not meet the standard. The Notably Successful districts had about half as many economically disadvantaged students as districts that did not meet the standard.

Table 9.3

Economically Disadvantaged Percentages for Districts Meeting Performance Standards, Excluding Outlier Districts		
	Meeting Standard	**Remaining Districts**
Above Average	33.93%	58.84%
High Absolute Performance	17.90%	52.44%
Growth	38.93%	50.89%
Special Populations	20.63%	50.80%
Notably Successful	27.46%	52.95%

Tables 9.4 shows the percentages of economically disadvantaged students by cohort, looking at the exemplary and non-exemplary districts.

Table 9.4

Economically Disadvantaged Percentages by Cohorts		
Density		
	Exemplary	**Non-Exemplary**
Lowest Density	48.09%	60.02%
Second Lowest Density	40.78%	55.71%
Middle Density	36.16%	46.77%
Second Highest Density	27.18%	44.76%
Highest Density	28.72%	53.69%
Need		
	Exemplary	**Non-Exemplary**
Lowest Need	25.39%	24.53%
Second Lowest Need	43.19%	42.83%
Middle Need	49.49%	53.34%
Second Highest Need	55.43%	60.04%
Highest Need	-	-
Setting		
	Exemplary	**Non-Exemplary**
City	26.06%	62.77%
Suburban	26.13%	47.05%
Town	40.44%	51.85%
Rural	38.18%	54.20%

When looking at density cohorts, the exemplary districts were always well below the non-exemplary districts in terms of percentages of economically disadvantaged students. The largest difference was seen in the highest density districts, where there was a nearly two-to-one difference. The pattern was not as prevalent when looking at need cohorts. The lowest need cohorts had similar percentages of economically disadvantaged students between exemplary and non-exemplary groups, with the

exemplary groups having slightly higher percentages. This changed as the cohort needs increased, and non-exemplary groups had slightly higher percentages. Notably, no districts in the highest need category met the exemplary standard. The setting cohorts showed the largest disparities in economically disadvantaged percentages in the City and Suburban groups. The exemplary City districts' average percentages were well below half those of the non-exemplary City districts. Suburban districts had lower percentages than other cohorts, but they still had a nearly 21 percentage point difference between exemplary and non-exemplary groups.

Table 9.5 shows the ELL information by performance standard.

Table 9.5

ELL Percentages for Districts Meeting Performance Standards without Outlier Districts		
	Meeting Standard	**Remaining Districts**
Above Average	1.63%	2.89%
High Absolute Performance	2.48%	2.46%
Growth	0.94%	2.54%
Special Populations	3.66%	2.45%
Notably Successful	1.89%	2.53%

Though the districts not meeting standard were not consistently higher than those that did meet the standard, three of the five standards showed that those districts that met standards had lower ELL percentages. Overall, the percentages were low across the districts, but the differences could be large, such as in the Growth group.

Tables 9.6 look at the ELL percentage information for the cohorts. When looking at density, all of the exemplary district averages were below the non-exemplary district averages. For the second highest and highest density groups, the non-exemplary districts had percentages around three times higher than those of the exemplary districts. Three of the four need cohorts with exemplary districts had higher percentages of ELL students in the non-exemplary districts. The differences were large, as seen in the density cohort table, above. The second highest need group exemplary districts actually had ELL percentages over twice as high as in the non-exemplary districts. The setting cohorts showed differences in the ELL percentages between exemplary and non-exemplary. The exemplary districts are lower for every setting group. There are large differences for the Suburban and Town settings, but the largest percentage point difference is in the City group. The exemplary districts are over nine percentage points below the non-exemplary.

Table 9.6

ELL Percentages by Cohorts		
Density		
	Exemplary	**Non-Exemplary**
Lowest Density	0.00%	0.26%
Second Lowest Density	0.78%	1.97%
Middle Density	1.02%	2.09%
Second Highest Density	0.65%	1.97%
Highest Density	2.50%	6.58%
Need		
	Exemplary	**Non-Exemplary**
Lowest Need	0.35%	1.71%
Second Lowest Need	0.48%	1.11%
Middle Need	0.70%	0.91%
Second Highest Need	3.68%	1.42%
Highest Need	-	-
Setting		
	Exemplary	**Non-Exemplary**
City	1.69%	10.72%
Suburban	1.01%	3.39%
Town	0.12%	2.01%
Rural	1.21%	1.38%

Additionally, the regression analysis shows that lower concentrations of economically disadvantaged and ELL students are a leading predictor of district success.

Ensuring that districts have appropriate level of resources to serve at-risk (or economically disadvantaged) and ELL students is a vital part of giving all students the opportunity for academic success. The survey indicates that districts are implementing the types of supports and services for at-risk and ELL students that align with best practices from the literature review. Having more robust resources for at-risk and ELL students will allow districts to more fully implement, and perhaps even expand, these research-based practices.

Setting the weights for at-risk (or economically disadvantaged) and ELL students at .30 and .40, respectively, would put the weights at the low end of what is recommended in national costing-out studies. This would allow districts to implement – or more fully implement – the supports and services that have been documented in research as best practices for improving student success. At this time, the study team is not making a specific recommendation on how these funds should be distributed.

The study team recommends creating a system that better tracks special education expenditures from all sources. The report did not dig deeply into current special education expenditures by district, since

accounting for these expenditures is complex. As mentioned in the data collection section, APA worked with Michigan Department of Education to identify the special education expenditures for each district. APA examined multiple sources and created different iterations of figures. After receiving feedback from the survey, it was clear to the study team that not all of the expenditure categories in special education had been identified.

The study team spent time talking to district personnel about special education funding in response to the survey. Based on these discussions, APA was able to identify better special education expenditure data and code expenditures in district books. It became apparent that many districts received support from ISDs for special education. Depending on the relationship with the ISD, expenditures may or may not show up on the district's books. Additionally, some districts' financials included expenditures made to other districts. This created a situation where apples-to-apples comparisons of full special education expenditures was difficult.

The study team suggests creating a system to track actual special education expenditures for districts at the district level.

The study team does not recommend setting regional benchmarks for non-instructional expenditures at this time. The Notably Successful district figures should be used at this time as part of the base cost figures. Chapter VII contained the regional analysis for non-instructional expenditures, including food service, transportation, M&O, community service, and adult education. APA does not believe the data analyzed in the study supports setting regional benchmark costs at this time. Variation is high both across the state and within regions for all cost areas.

Table 9.11

Community Service Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Average Per Student	$108	$106	$107	$105	$102
Standard Deviation (SD)	$251	$216	$200	$196	$170
Coefficient of Variation (CV)	2.322	2.044	1.858	1.867	1.672

Though the variation in community service expenditures per student has decreased over the five-year study period, the coefficient of variation (CV) was still extremely high for the 2013-14 school year. Similar variation was seen within regions, with CVs ranging from .230 to 2.705. Even the lowest regional CV was twice as high as the .100 metric for variation in school finance. Additionally, the average community service expenditure per student was just above one percent of total operating expenditures.

Table 9.12

Adult Education Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Average Per Student	$2	$30	$26	$26	$22
Standard Deviation (SD)	$17	$110	$102	$111	$96
Coefficient of Variation (CV)	7.271	3.651	3.963	4.249	4.296

Adult education expenditures per student showed even more variation across the state. Though the variation has decreased since 2009-10, it was still over 4.000. This is extremely high variation for an expenditure category. When looking at districts without outliers, regional CVs ranged from 1.830 to 5.916, all extremely high CVs. Like community service, adult education expenditures per student were a very small percentage of total operating expenditures, well under one percent.

The study team believes that, until community service and adult education account for a higher percentage of total operating expenditures and become far less varied (at least within regions), they should not be considered for regional benchmarking.

Unlike community service and adult education, three non-instructional categories – food service, transportation, and M&O – represented a much larger share of total operating costs. APA does not believe the data analyzed in the study supports setting regional benchmark costs at this time. Variation is high both across the state and within regions for all three spending types.

Table 8.13 shows food service expenditures per student without outlier districts.

Table 9.13

Food Service Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Average Per Student	$374	$389	$407	$412	$417
Standard Deviation (SD)	$124	$131	$138	$142	$150
Coefficient of Variation (CV)	0.330	0.337	0.340	0.344	0.358

The variation was much lower than the variation for community service and adult education, though it was still high at .358 in 2013-14. Variation got slightly higher over the five years as costs grew. Variation across regions ranged from .185 to .410 in the five years studied.

Table 9.14

Transportation Expenditures per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Average Per Student	$417	$402	$430	$433	$443
Standard Deviation (SD)	$168	$163	$173	$181	$180
Coefficient of Variation (CV)	0.402	0.405	0.401	0.418	0.405

Transportation expenditures had higher variation across the state than food service expenditures. The range of regional CVs were also greater with a minimum of 0.249 and a maximum of 0.571. The study team also examined the correlation between density and transportation costs to see if that was a better measure of differences in cost. Though the correlation was positive, as expected, the level of correlation was still low.

Table 9.15

M&O per Student from 2009-10 to 2013-14					
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Average Per Student	$895	$877	$850	$849	$894
Standard Deviation (SD)	$232	$226	$223	$230	$251
Coefficient of Variation (CV)	0.259	0.258	0.262	0.271	0.281

M&O expenditures per student are the largest non-instructional category and had the lowest variation, at 0.281 for 2012-14. This is still high variation, and regional variations ranged from .175 to .449. Again, all regions had variation above the standard .100.

Region 11 did show high spending ratios across the years and across all three of the non-instructional categories that the study team believed could be analyzed. Nonetheless, the variation in spending for the region was still high, ranging from 0.185 for food service to 0.449 for M&O. Additionally, the cost differentials seen in the regional analysis differed from those found in the CWI information mentioned in Chapter VII. The CWI measures the cost of employing educational personnel by region and often runs contrary to the non-instructional cost findings, as shown in Table 7.21 in Chapter VII.

The study team feels that it is not sound practice to set benchmarks for just a few regions, for a few non-instructional costs, when data show high variation. The differences in the CWI figures also bring up a question of whether adjusting only for non-instructional costs might provide a benefit for some regions without recognizing the overall cost differentials in the system.

The study team does not recommend setting regional benchmarks for capital or debt service expenditures. Chapter VIII examines capital and debt service figures for multiple categories of expenditures. The data show large variation in both the number of districts with expenditures in each category and the amount spent per student for those districts. Table 9.16 shows the number of districts with expenditures, the average expenditure per student, and the CV for each of the seven capital expenditure categories in 2013-14.

Table 9.16

Capital Expenditures for Districts with Expenditures 2013-14				
	Building and Additions	**Educational Media and Textbooks**	**Equipment and Furniture**	**Facilities Acquisitions, Construction, and Improvements**	**Improvements other than Buildings**
Average Per Student	$586	$17	$189	$108	$122
Standard Deviation	$1,489	$26	$308	$342	$257
CV	2.543	1.556	1.627	3.155	2.102
Number of Districts	307	5	515	215	183
	Land	**School Bus Purchase**	**Vehicles other than Buses**	**Other Capital**	
Average Per Student	$40	$102	$17	$57	
Standard Deviation	$94	$132	$65	$166	
CV	2.351	1.295	3.723	2.923	
Number of Districts	13	214	92	65	

The table shows that variation across all districts with expenditures ranges from a low CV of 1.295 for School Bus Purchase to a high of 3.155 for Facilities Acquisition, Construction, and Improvements. Just five districts had expenditures in 2013-14 for Educational Media and Textbooks while 515 districts had Equipment and Furniture expenditures.

Table 9.17 shows similar information for debt service.

Table 9.17

Debt Service Expenditures for Districts with Expenditures 2013-14			
	Interest on Debt	**Other Financing and Debt**	**Redemption of Long-term Bond, Loans, and Capital Leases**
Average Per Student	$519	$702	$189
Standard Deviation	$575	$2,307	$308
CV	1.108	3.285	1.627
Number of Districts	508	207	515

Again, variation is high in the number of districts and the amount spent per student. Other Financing and debt has the lowest number of districts with spending in 2013-14 but the highest amount per student. Conversely, Redemption of Long-term Bond, Loans, and Capital Leases has the highest number of districts but the lowest per student amount. Variation ranges from a low CV of 1.108 to a high of 3.285.

Without better underlying information on the types of projects the large variation in figures leads the study team to feel that creating regional benchmarks is not possible at this time. The study team does

not recommend a baseline figure for the state since capital projects are district specific as well as the funding available for those projects.

Michigan should begin to collect targeted data if it wishes to set regional cost differences in the future. The study team found that the data currently collected made it difficult to analyze differences in costs across the state. If Michigan wishes to further explore regional cost differences targeted data would need to be collected. For non-instructional costs this data could include items such as the miles driven by bus, utilities costs, and capacity utilization rates for buildings. For capital and debt service, detailed data on the types of projects being undertaken would be important. This would include items such as the square footage of projects, cost per square foot, and level of build out. Without the detailed data, it is very difficult to understand what is driving differences in costs that may not be related to specific cost differences

Michigan should work to create a more equitable state funding system. The results of the equity study show that there was significantly more variation in per pupil revenues and expenditures across districts than is desirable for an equitable school finance system. The relationship between local wealth and per pupil spending (the strength of which is measured through fiscal neutrality) is more in line with generally accepted standards for equity, but the relationship appears to be gradually strengthening in recent years, contributing to a school finance system that is becoming more unequal over time. There are three areas the study team recommends state policymakers consider to improve the equity of the system.

First, the state should explore alternatives for narrowing the wide range of per pupil revenues and expenditures. Much of the disparity in spending among districts is based on differences in historical spending levels (for example hold-harmless districts) and large differences in local property tax bases. Given the difficulty of asking higher-spending districts to reduce their level of spending, the most viable option is to work toward increasing revenues for the lowest-spending districts and narrow the gap between high-spending and low-spending districts over time. Increasing the foundation allowance, as recommended above, will help make progress toward this goal. A second option is to provide state aid for equalizing supplemental operating levies in low property wealth districts so that those districts have a better opportunity to increase revenues and spending above the current, formula-driven levels. A third option is to stratify foundation and other funding increases so that lower-spending districts receive larger per pupil increases than higher-spending districts.

Ultimately, the state should work toward having a single formula allowance amount for all districts, supplemented by an equalized local option operating levy that must be approved by a district's voters and provides an avenue for local discretion on school spending levels.

Second, the equity study also found that the state fell short on vertical equity, which measures how equitably spending increased based on student need across districts. The study found that it was not uncommon for spending in districts with high student need to be lower than in districts with lower student need. This suggests that the formulas for determining special needs funding are not generating enough revenue and that districts with the means to supplement these sources locally are doing so. This

issue should be addressed by adopting the study team's recommendations for increasing the weights for at-risk and ELL funding.

Finally, the state should continue to monitor the equity of its school finding system to prevent it from becoming more inequitable in the future.

Appendix A:

Excluded Outlier Districts

District Code	District Name
2010	AuTrain-Onota Public Schools
2020	Burt Township School District
7010	Arvon Township School District
11200	New Buffalo Area Schools
15010	Beaver Island Community School
17050	DeTour Area Schools
17160	Whitefish Township Schools
31070	Elm River Township School District
42030	Grant Township S/D #2
45040	Northport Public School District
49020	Bois Blanc Pines School District
52100	Powell Township Schools
52160	Wells Township School District

Appendix B:

List of Districts by Performance Standards

District ID	District Name	Above Average Standard	High Absolute Performance Standard	Growth	Special Populations	Notably Successful
2080	Superior Central School District	1	0	0	0	0
3010	Plainwell Community Schools	1	0	0	0	0
3020	Otsego Public Schools	1	0	1	0	1
3040	Wayland Union Schools	1	0	0	0	0
3070	Hopkins Public Schools	1	0	0	0	0
3080	Saugatuck Public Schools	1	0	0	0	0
3100	Hamilton Community Schools	1	0	0	0	0
5060	Elk Rapids Schools	1	0	0	0	0
7010	Arvon Township School District	1	0	1	0	1
7040	L'Anse Area Schools	1	0	0	0	0
8030	Hastings Area School District	1	0	0	0	0
8050	Thornapple Kellogg School District	1	0	0	0	0
9090	Pinconning Area Schools	1	0	1	0	1
10015	Benzie County Central Schools	1	0	0	0	0
10025	Frankfort-Elberta Area Schools	1	0	0	0	0
11020	St. Joseph Public Schools	1	1	0	0	1
11030	Lakeshore School District (Berrien)	1	0	0	0	0
11200	New Buffalo Area Schools	1	0	0	0	0
11340	Bridgman Public Schools	1	0	1	0	1
13110	Marshall Public Schools	1	0	0	0	0
14030	Edwardsburg Public Schools	1	0	0	0	0
15020	Boyne City Public Schools	1	0	0	0	0
16015	Cheboygan Area Schools	1	0	1	0	1
16070	Mackinaw City Public Schools	1	0	0	0	0
17010	Sault Ste. Marie Area Schools	1	0	0	0	0
17050	DeTour Area Schools	1	0	1	0	1
17140	Brimley Area Schools	1	0	0	0	0
18010	Clare Public Schools	1	0	1	0	1
19010	DeWitt Public Schools	1	0	0	0	0
19070	Fowler Public Schools	1	1	0	0	1
19100	Bath Community Schools	1	0	0	0	0
19120	Ovid-Elsie Area Schools	1	0	1	0	1
19125	Pewamo-Westphalia Community Schools	1	0	0	0	0
19140	St. Johns Public Schools	1	0	0	0	0
20015	Crawford AuSable Schools	1	0	0	0	0
22030	Breitung Township School District	1	0	0	0	0
23060	Grand Ledge Public Schools	1	0	0	0	0
23080	Olivet Community Schools	1	0	0	0	0
23490	Oneida Township S/D #3	1	0	1	0	1
24020	Harbor Springs School District	1	0	0	0	0
24070	Public Schools of Petoskey	1	0	0	0	0
25030	Grand Blanc Community Schools	1	0	0	1	1
25050	Goodrich Area Schools	1	0	0	0	0
25100	Fenton Area Public Schools	1	0	0	0	0
25120	Flushing Community Schools	1	0	0	0	0
25140	Davison Community Schools	1	0	0	0	0
25150	Clio Area School District	1	0	0	0	0
25200	Lake Fenton Community Schools	1	0	0	0	0
25250	Linden Community Schools	1	0	0	0	0
26040	Gladwin Community Schools	1	0	0	0	0
27010	Bessemer Area School District	1	0	0	0	0
28010	Traverse City Area Public Schools	1	0	0	0	0
28090	Kingsley Area Schools	1	0	0	0	0
31010	Hancock Public Schools	1	0	0	0	0
31030	Public Schools of Calumet, Laurium & Keweenaw	1	0	0	0	0
31050	Chassell Township School District	1	0	0	0	0
31100	Dollar Bay-Tamarack City Area Schools	1	0	0	0	0

District ID	District Name	Above Average Standard	High Absolute Performance Standard	Growth	Special Populations	Notably Successful
31110	Houghton-Portage Township School District	1	0	0	0	0
32060	Harbor Beach Community Schools	1	0	1	0	1
32170	Ubly Community Schools	1	0	0	0	0
33010	East Lansing School District	1	0	0	0	0
33060	Haslett Public Schools	1	1	0	0	1
33070	Holt Public Schools	1	0	0	0	0
33130	Mason Public Schools (Ingham)	1	0	0	0	0
33170	Okemos Public Schools	1	1	0	0	1
33200	Stockbridge Community Schools	1	0	0	0	0
33230	Williamston Community Schools	1	1	0	1	1
34090	Lakewood Public Schools	1	0	0	0	0
34110	Portland Public Schools	1	0	0	0	0
35030	Tawas Area Schools	1	0	1	0	1
36015	Forest Park School District	1	0	1	1	1
37040	Beal City Public Schools	1	0	0	0	0
38010	Western School District	1	0	0	0	0
38040	Columbia School District	1	0	0	0	0
38100	Hanover-Horton School District	1	0	0	0	0
39065	Gull Lake Community Schools	1	0	0	0	0
39140	Portage Public Schools	1	0	0	0	0
39160	Schoolcraft Community Schools	1	0	0	0	0
39170	Vicksburg Community Schools	1	0	0	0	0
41025	Northview Public Schools	1	0	0	0	0
41040	Byron Center Public Schools	1	1	0	0	1
41050	Caledonia Community Schools	1	1	0	0	1
41070	Cedar Springs Public Schools	1	0	0	0	0
41090	East Grand Rapids Public Schools	1	1	0	0	1
41110	Forest Hills Public Schools	1	1	0	0	1
41130	Grandville Public Schools	1	0	0	0	0
41170	Lowell Area Schools	1	0	0	0	0
41210	Rockford Public Schools	1	0	0	0	0
41240	Sparta Area Schools	1	0	0	0	0
42030	Grant Township S/D #2	1	1	0	0	1
44020	Almont Community Schools	1	0	0	0	0
44090	North Branch Area Schools	1	0	0	0	0
45010	Glen Lake Community Schools	1	1	0	0	1
45020	Leland Public School District	1	0	0	0	0
46040	Blissfield Community Schools	1	0	1	0	1
46060	Clinton Community Schools	1	0	0	0	0
46140	Tecumseh Public Schools	1	0	0	0	0
47010	Brighton Area Schools	1	1	0	0	1
47060	Hartland Consolidated Schools	1	0	0	0	0
47070	Howell Public Schools	1	0	0	0	0
47080	Pinckney Community Schools	1	0	0	0	0
49040	Les Cheneaux Community Schools	1	0	0	0	0
49110	Mackinac Island Public Schools	1	0	0	0	0
50040	Anchor Bay School District	1	0	0	0	0
50050	Armada Area Schools	1	0	0	0	0
50080	Chippewa Valley Schools	1	0	0	0	0
50130	Lakeview Public Schools (Macomb)	1	0	1	0	1
50140	L'Anse Creuse Public Schools	1	0	0	0	0
50190	Romeo Community Schools	1	0	0	0	0
50210	Utica Community Schools	1	0	0	0	0
52015	NICE Community School District	1	0	0	0	0
52090	Negaunee Public Schools	1	0	0	0	0
52100	Powell Township Schools	1	0	0	0	0
52160	Wells Township School District	1	1	1	1	1

District ID	District Name	Above Average Standard	High Absolute Performance Standard	Growth	Special Populations	Notably Successful
52170	Marquette Area Public Schools	1	0	0	0	0
55120	Stephenson Area Public Schools	1	0	0	0	0
56010	Midland Public Schools	1	1	0	0	1
56020	Bullock Creek School District	1	0	0	0	0
57030	McBain Rural Agricultural Schools	1	0	0	0	0
58030	Bedford Public Schools	1	0	0	0	0
58070	Ida Public School District	1	0	0	0	0
61060	Mona Shores Public School District	1	0	0	0	0
61180	Montague Area Public Schools	1	0	0	0	0
61230	North Muskegon Public Schools	1	1	0	0	1
61240	Whitehall District Schools	1	0	0	0	0
62040	Fremont Public School District	1	0	1	0	1
62050	Grant Public School District	1	0	0	0	0
63010	Birmingham Public Schools	1	1	0	0	1
63040	Royal Oak Schools	1	0	1	0	1
63050	Berkley School District	1	0	1	0	1
63070	Avondale School District	1	0	0	0	0
63080	Bloomfield Hills Schools	1	1	0	1	1
63100	Novi Community School District	1	1	0	0	1
63110	Oxford Community Schools	1	0	0	0	0
63150	Troy School District	1	1	0	1	1
63160	West Bloomfield School District	1	0	0	0	0
63190	Clarkston Community School District	1	1	0	0	1
63200	Farmington Public School District	1	0	0	0	0
63210	Holly Area School District	1	0	0	0	0
63220	Huron Valley Schools	1	0	0	0	0
63230	Lake Orion Community Schools	1	1	0	0	1
63240	South Lyon Community Schools	1	1	0	0	1
63260	Rochester Community School District	1	1	0	1	1
63270	Clawson Public Schools	1	0	1	0	1
63290	Walled Lake Consolidated Schools	1	0	0	0	0
65045	West Branch-Rose City Area Schools	1	0	1	0	1
69020	Gaylord Community Schools	1	0	0	0	0
69030	Johannesburg-Lewiston Area Schools	1	0	0	0	0
70010	Grand Haven Area Public Schools	1	1	0	0	1
70040	Allendale Public Schools	1	0	0	0	0
70070	West Ottawa Public School District	1	0	0	0	0
70120	Coopersville Area Public School District	1	0	0	0	0
70175	Jenison Public Schools	1	1	1	0	1
70190	Hudsonville Public School District	1	1	1	0	1
70300	Spring Lake Public Schools	1	1	0	0	1
70350	Zeeland Public Schools	1	0	1	0	1
72010	Roscommon Area Public Schools	1	0	1	0	1
73110	Chesaning Union Schools	1	0	0	0	0
73190	Frankenmuth School District	1	0	0	0	0
73200	Freeland Community School District	1	0	0	0	0
73255	Swan Valley School District	1	0	0	0	0
74050	East China School District	1	0	0	0	0
74100	Marysville Public Schools	1	0	0	0	0
74120	Memphis Community Schools	1	0	0	0	0
74130	Yale Public Schools	1	0	0	0	0
76060	Brown City Community Schools	1	0	0	0	0
76080	Croswell-Lexington Community Schools	1	0	0	0	0
76090	Deckerville Community School District	1	0	0	0	0
78070	New Lothrop Area Public Schools	1	0	1	0	1
80110	Gobles Public School District	1	0	0	0	0
80140	Lawton Community School District	1	0	0	0	0

District ID	District Name	Above Average Standard	High Absolute Performance Standard	Growth	Special Populations	Notably Successful
80150	Mattawan Consolidated School	1	0	0	0	0
80160	Paw Paw Public School District	1	0	1	0	1
81010	Ann Arbor Public Schools	1	1	0	0	1
81040	Chelsea School District	1	1	1	0	1
81050	Dexter Community School District	1	1	0	0	1
81080	Manchester Community Schools	1	0	0	0	0
81120	Saline Area Schools	1	1	0	1	1
81140	Whitmore Lake Public School District	1	0	0	0	0
82055	Grosse Pointe Public Schools	1	1	0	0	1
82095	Livonia Public Schools School District	1	0	0	0	0
82100	Plymouth-Canton Community Schools	1	1	0	1	1
82155	Trenton Public Schools	1	0	0	0	0
82300	Grosse Ile Township Schools	1	0	0	0	0
82390	Northville Public Schools	1	1	0	0	1
83010	Cadillac Area Public Schools	1	0	0	0	0

Appendix C:

District Survey

Michigan Education Finance Study: District Survey

Introduction

The survey is structured as follows:

1. Programmatic Questions
    a. At-Risk Supports and Services
    b. ELL Supports and Services
    c. Special Education Supports and Services

2. Financial Data Review Questions
    a. Compensatory Education Expenditures
    b. Special Education Expenditures
    c. Revenue Sources for Serving At-Risk, ELL and Special Education

3. School Funding Approach Questions

_____

1. Please confirm that you are responding on behalf of [prepopulated field with your district's name].

○ Yes
○ No

_____

Programmatic Questions: At-Risk Supports and Services

2. What support and services are provided throughout your district to serve at-risk students? (select all that apply)

❑ Differentiated instruction
❑ Targeted professional development for instructional staff
❑ Reduced class size(s)
❑ Additional pupil support (counseling, social workers, psychologists, behavior support)
❑ Tutoring
❑ Pullout/push in interventionist support
❑ Before/after school program(s)
❑ Summer school
❑ Balanced calendar
❑ Purchasing specific intervention curriculum/program/software _____
❑ Additional administration support
❑ Remedial courses/credit recovery
❑ Security
❑ Other _____

_____

3. Please rate the supports and services that you reported being offered in your district to serve at -risk students, in terms of positive impact on student success. *Note: Only supports and services selected in Question #2 will appear here.*

	No Impact 0	1	2	3	High Impact 4
» Differentiated instruction	○	○	○	○	○
» Targeted professional development for instructional staff	○	○	○	○	○
» Reduced class size(s)	○	○	○	○	○
» Additional pupil support (counseling, social workers, psychologists, behavior support)	○	○	○	○	○
» Tutoring	○	○	○	○	○
» Pullout/push in interventionist support	○	○	○	○	○
» Before/after school program(s)	○	○	○	○	○
» Summer school	○	○	○	○	○
» Balanced calendar	○	○	○	○	○
» Purchasing specific intervention curriculum/program/software	○	○	○	○	○
» Additional administration support	○	○	○	○	○
» Remedial courses/credit recovery	○	○	○	○	○
» Security	○	○	○	○	○
» Other	○	○	○	○	○

4. Please rate the supports and services that you reported being offered in your district to serve students who are struggling academically (at-risk) students, in terms of their fiscal impact. *Note: Only supports and services selected in Question #2 will appear here.*

	No Impact 0	1	2	3	High Impact 4
» Differentiated instruction	○	○	○	○	○
» Targeted professional development for instructional staff	○	○	○	○	○
» Reduced class size(s)	○	○	○	○	○
» Additional pupil support (counseling, social workers, psychologists, behavior support)	○	○	○	○	○
» Tutoring	○	○	○	○	○
» Pullout/push in interventionist support	○	○	○	○	○
» Before/after school program(s)	○	○	○	○	○
» Summer school	○	○	○	○	○
» Balanced calendar	○	○	○	○	○
» Purchasing specific intervention curriculum/program/software	○	○	○	○	○
» Additional administration support	○	○	○	○	○
» Remedial courses/credit recovery	○	○	○	○	○
» Security	○	○	○	○	○
» Other	○	○	○	○	○

_____

Programmatic Questions: ELL Supports and Services

5. What support and services are provided throughout your district to serve English Language Learner (ELL) students? (select all that apply)

- ❑ Specialized classes
- ❑ Differentiated instruction
- ❑ Targeted professional development for instructional staff
- ❑ Reduced class size(s)
- ❑ Additional pupil support (counseling, social workers, psychologists, behavior support)
- ❑ Tutoring
- ❑ Pullout/push in interventionist support
- ❑ Before/after school program(s)
- ❑ Summer school
- ❑ Purchasing specific intervention curriculum/program/software
- ❑ Additional administration support
- ❑ Remedial courses/credit recovery
- ❑ Welcome/Newcomer Center
- ❑ Other _____

_____

6. Please rate the supports and services that you reported being offered in your district to serve ELL students, in terms of their positive impact on student success. *Note: Only supports and services selected in Question #5 will appear here.*

	No Impact				High Impact
	0	1	2	3	4
» Specialized classes	○	○	○	○	○
» Differentiated instruction	○	○	○	○	○
» Targeted professional development for instructional staff	○	○	○	○	○
» Reduced class size(s)	○	○	○	○	○
» Additional pupil support (counseling, social workers, psychologists, behavior support)	○	○	○	○	○
» Tutoring	○	○	○	○	○
» Pullout/push in interventionist support	○	○	○	○	○
» Before/after school program(s)	○	○	○	○	○
» Summer school	○	○	○	○	○
» Purchasing specific intervention curriculum/program/software	○	○	○	○	○
» Additional administration support	○	○	○	○	○
» Remedial courses/credit recovery	○	○	○	○	○
» Welcome/Newcomer Center	○	○	○	○	○
» Other	○	○	○	○	○

7. Of the supports and services that you reported being offered in your district to serve ELL students, which have the highest fiscal impact? *Note: Only supports and services selected in Question #5 will appear here.*

	No Impact 0	1	2	3	High Impact 4
» Specialized classes	○	○	○	○	○
» Differentiated instruction	○	○	○	○	○
» Targeted professional development for instructional staff	○	○	○	○	○
» Reduced class size(s)	○	○	○	○	○
» Additional pupil support (counseling, social workers, psychologists, behavior support)	○	○	○	○	○
» Tutoring	○	○	○	○	○
» Pullout/push in interventionist support	○	○	○	○	○
» Before/after school program(s)	○	○	○	○	○
» Summer school	○	○	○	○	○
» Purchasing specific intervention curriculum/program/software	○	○	○	○	○
» Additional administration support	○	○	○	○	○
» Remedial courses/credit recovery	○	○	○	○	○
» Welcome/Newcomer Center	○	○	○	○	○
» Other	○	○	○	○	○

_____

Programmatic Questions: Special Education Supports and Services

8. As supports and services provided to special education students are student disability/need and IEP dependent, this survey will not be asking specific programmatic questions. The survey will ask about expenditures and revenues for special education students in the next section.

However, if there is anything you would like to tell us about how your district approaches serving special education students in a unique or innovative way, please tell us below:

_____
_____
_____
_____

_____

Financial Data Review Questions: Compensatory Education Expenditures

9. According to data collected by the state, your district's total expenditures for compensatory education in 2014 were [prepopulated figure for your district]. Is that figure correct? ***Note: for a reminder of how a figure was calculated, for this question and subsequent questions, please mouse over the word in*** ***red*** ***when in the online survey.***

❍ Yes
❍ No, the correct figure is: _____

10. In your estimation, what percentage of your district's total expenditures for compensatory education in 2014 was to serve:

      ELL students   _____
      At-Risk students   _____

11. In 2014, did your district spend additional targeted dollars outside of identified compensatory education dollars on at-risk or ELL students? If so, please report the amount of the additional targeted dollars.

❑ Yes, my district spends additional targeted dollars for at-risk students in the amount of: _____
❑ Yes, my district spends additional targeted dollars for ELL students in the amount of: _____
❑ No, my district does not spend additional targeted dollars for at-risk or ELL students outside of identified compensatory education expenditures.

_____

Financial Data Review Questions: Special Education Expenditures

12. According to data collected by the state, your district's total expenditures for special education in 2014 were [prepopulated figure for your district]. Is that the correct total?

❍ Yes
❍ No, the correct total is: _____

13. Does your ISD provide additional resources for your special education students that are not included in the above expenditure figure?

❍ Yes
❍ No

14. If applicable, please describe the additional support and services provided by your ISD for your district's special education students that are paid for outside of your special education expenditures.

_____
_____
_____

15. In your estimation, what percentage of the total revenues to serve each group of students came from the following sources in 2014?

	Federal	State	Local/ISD	Grants not included in previous categories	Other
At-Risk					
ELL					
Special Education					

_____

16. In your district, how is funding distributed to schools? *Excluding items that may be addressed separately such as grants, transportation, capital, food service, or maintenance and operation.* (Select only one)

○ By staffing allocations (e.g. allocating staff FTE based on enrollment)
○ By a student-weighted formula (e.g. allocating a per student dollar amount to pay for both staff and other school expenses)
○ By another method (Please describe) _____

_____

17. Does your district allocate funding for other school cost areas, such as supplies and materials or school-based professional development, using per student dollar allocations? *Excluding items that may be addressed separately such as grants, transportation, capital, food service, or maintenance and operation.*

Note: This question is only asked if the "Staffing Allocation" option is selected in Question #16.

○ Yes
○ No, our district uses another method. (Please describe) _____

_____

18. Is school funding/ FTE allotment differentiated by the following factors? *Excluding items that may be addressed separately such as grants, transportation, capital, food service, or maintenance and operation.* (select all that apply)

❑ School level/grade
❑ Student need/demographics
❑ School size
❑ Geographic location of school
❑ Specific program model, like a magnet school
❑ Other considerations _____

19. Please indicate whether you agree with the following statement: School administrators have autonomy over how funding or FTE allotment is used.

○ Strongly Disagree
○ Disagree
○ Agree
○ Strongly Agree

20. Any additional comments that you would like to share about how your district funds its schools?

_____ __
_____
_____
_____

_____

You have reached the end of the survey. If you have any questions you would like to revisit, please use the back button. You may also come back to the survey at any time before **February 19th.** If you are satisfied with your responses, please use the forward button to submit your survey. You will NOT be able to re-enter the survey after doing so.

_____

Thank you for completing this survey!

Appendix D:

Revenues by Region 2009-14

Revenues by Region 2009-10

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
All Districts															
Federal Operating	$1,178	$1,042	$1,033	$1,147	$1,312	$799	$1,234	$1,120	$1,451	$1,171	$2,246	$1,251	$2,335	$1,538	$1,249
State Operating	$6,321	$6,289	$6,253	$5,427	$6,527	$6,286	$5,839	$5,806	$3,658	$3,419	$3,170	$4,839	$4,498	$6,050	$5,642
Local Operating	$2,208	$1,327	$1,418	$2,685	$1,237	$1,509	$1,834	$2,025	$4,413	$5,773	$9,286	$4,983	$8,370	$2,615	$2,842
Other Operating	$1	$0	$0	$6	$1	$0	$11	$3	$2	$29	$38	$11	$7	$8	$7
Total Operating	$9,708	$8,658	$8,703	$9,265	$9,077	$8,594	$8,918	$8,954	$9,524	$10,391	$14,740	$11,084	$15,210	$10,211	$9,740
Percent of Total Operating Revenues															
Federal Operating	12%	12%	12%	12%	14%	9%	14%	13%	15%	11%	15%	11%	15%	15%	13%
State Operating	65%	73%	72%	59%	72%	73%	65%	65%	38%	33%	22%	44%	30%	59%	58%
Local Operating	23%	15%	16%	29%	14%	18%	21%	23%	46%	56%	63%	45%	55%	26%	29%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.94	0.83	0.83	0.92	1.05	0.64	0.99	0.90	1.16	0.94	1.80	1.00	1.87	1.23	1.00
State Operating	1.12	1.11	1.11	0.96	1.16	1.11	1.03	1.03	0.65	0.61	0.56	0.86	0.80	1.07	1.00
Local Operating	0.78	0.47	0.50	0.94	0.44	0.53	0.65	0.71	1.55	2.03	3.27	1.75	2.94	0.92	1.00
Other Operating	0.12	0.01	0.07	0.92	0.16	0.05	1.66	0.45	0.30	4.37	5.73	1.72	1.06	1.18	1.00
Total Operating	1.00	0.89	0.89	0.95	0.93	0.88	0.92	0.92	0.98	1.07	1.51	1.14	1.56	1.05	1.00
Without Outliers															
Federal Operating	$1,178	$1,042	$1,033	$1,158	$1,312	$799	$1,234	$1,120	$1,451	$1,121	$1,942	$1,161	$1,582	$1,538	$1,199
State Operating	$6,321	$6,289	$6,253	$5,594	$6,527	$6,286	$5,839	$5,806	$3,658	$3,519	$3,615	$5,415	$5,205	$6,050	$5,752
Local Operating	$2,208	$1,327	$1,418	$2,103	$1,237	$1,509	$1,834	$2,025	$4,413	$4,854	$5,894	$2,440	$3,025	$2,615	$2,296
Other Operating	$1	$0	$0	$0	$1	$0	$11	$3	$2	$28	$44	$13	$8	$8	$6
Total Operating	$9,708	$8,658	$8,703	$8,854	$9,077	$8,594	$8,918	$8,954	$9,524	$9,521	$11,494	$9,029	$9,819	$10,211	$9,253
Percent of Total Operating Revenues															
Federal Operating	12%	12%	12%	13%	14%	9%	14%	13%	15%	12%	17%	13%	16%	15%	13%
State Operating	65%	73%	72%	63%	72%	73%	65%	65%	38%	37%	31%	60%	53%	59%	62%
Local Operating	23%	15%	16%	24%	14%	18%	21%	23%	46%	51%	51%	27%	31%	26%	25%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.98	0.87	0.86	0.97	1.09	0.67	1.03	0.93	1.21	0.93	1.62	0.97	1.32	1.28	1.00
State Operating	1.10	1.09	1.09	0.97	1.13	1.09	1.02	1.01	0.64	0.61	0.63	0.94	0.90	1.05	1.00
Local Operating	0.96	0.58	0.62	0.92	0.54	0.66	0.80	0.88	1.92	2.11	2.57	1.06	1.32	1.14	1.00
Other Operating	0.13	0.01	0.08	-	0.17	0.06	1.78	0.48	0.32	4.60	7.14	2.17	1.33	1.27	1.00
Total Operating	1.05	0.94	0.94	0.96	0.98	0.93	0.96	0.97	1.03	1.03	1.24	0.98	1.06	1.10	1.00

Revenues for All Districts by Region 2010-11

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
All Districts															
Federal Operating	$926	$957	$926	$1,142	$1,112	$723	$1,094	$895	$1,254	$1,082	$2,013	$1,141	$2,035	$1,321	$1,080
State Operating	$6,622	$6,457	$6,412	$5,699	$6,746	$6,687	$6,014	$5,974	$3,777	$3,526	$3,338	$4,862	$4,625	$6,119	$5,839
Local Operating	$2,135	$1,361	$1,431	$2,885	$1,208	$1,557	$1,855	$1,949	$4,397	$5,629	$10,823	$4,850	$7,139	$2,528	$2,805
Other Operating	$1	$0	$22	$12	$2	$0	$11	$4	$2	$33	$43	$13	$6	$8	$9
Total Operating	$9,683	$8,775	$8,790	$9,739	$9,068	$8,968	$8,975	$8,822	$9,430	$10,270	$16,217	$10,866	$13,806	$9,976	$9,733
Percent of Total Operating Revenues															
Federal Operating	10%	11%	11%	12%	12%	8%	12%	10%	13%	11%	12%	10%	15%	13%	11%
State Operating	68%	74%	73%	59%	74%	75%	67%	68%	40%	34%	21%	45%	34%	61%	60%
Local Operating	22%	16%	16%	30%	13%	17%	21%	22%	47%	55%	67%	45%	52%	25%	29%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.86	0.89	0.86	1.06	1.03	0.67	1.01	0.83	1.16	1.00	1.86	1.06	1.88	1.22	1.00
State Operating	1.13	1.11	1.10	0.98	1.16	1.15	1.03	1.02	0.65	0.60	0.57	0.83	0.79	1.05	1.00
Local Operating	0.76	0.49	0.51	1.03	0.43	0.56	0.66	0.69	1.57	2.01	3.86	1.73	2.55	0.90	1.00
Other Operating	0.10	0.01	2.35	1.35	0.22	0.04	1.25	0.48	0.18	3.67	4.75	1.42	0.69	0.84	1.00
Total Operating	0.99	0.90	0.90	1.00	0.93	0.92	0.92	0.91	0.97	1.06	1.67	1.12	1.42	1.02	1.00
Without Outliers															
Federal Operating	$926	$957	$926	$1,151	$1,112	$723	$1,094	$895	$1,254	$1,073	$1,734	$1,078	$1,571	$1,321	$1,045
State Operating	$6,622	$6,457	$6,412	$5,864	$6,746	$6,687	$6,014	$5,974	$3,777	$3,653	$3,744	$5,453	$5,328	$6,119	$5,952
Local Operating	$2,135	$1,361	$1,431	$2,305	$1,208	$1,557	$1,855	$1,949	$4,397	$4,752	$5,807	$2,523	$3,134	$2,528	$2,284
Other Operating	$1	$0	$22	$8	$2	$0	$11	$4	$2	$29	$50	$15	$7	$8	$9
Total Operating	$9,683	$8,775	$8,790	$9,327	$9,068	$8,968	$8,975	$8,822	$9,430	$9,507	$11,336	$9,069	$10,040	$9,976	$9,290
Percent of Total Operating Revenues															
Federal Operating	10%	11%	11%	12%	12%	8%	12%	10%	13%	11%	15%	12%	16%	13%	11%
State Operating	68%	74%	73%	63%	74%	75%	67%	68%	40%	38%	33%	60%	53%	61%	64%
Local Operating	22%	16%	16%	25%	13%	17%	21%	22%	47%	50%	51%	28%	31%	25%	25%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.89	0.92	0.89	1.10	1.06	0.69	1.05	0.86	1.20	1.03	1.66	1.03	1.50	1.26	1.00
State Operating	1.11	1.08	1.08	0.99	1.13	1.12	1.01	1.00	0.63	0.61	0.63	0.92	0.90	1.03	1.00
Local Operating	0.93	0.60	0.63	1.01	0.53	0.68	0.81	0.85	1.92	2.08	2.54	1.10	1.37	1.11	1.00
Other Operating	0.11	0.02	2.53	0.89	0.23	0.04	1.34	0.51	0.19	3.40	5.87	1.79	0.87	0.90	1.00
Total Operating	1.04	0.94	0.95	1.00	0.98	0.97	0.97	0.95	1.02	1.02	1.22	0.98	1.08	1.07	1.00

Revenues for All Districts by Region 2011-12

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
All Districts															
Federal Operating	$899	$771	$810	$937	$946	$549	$979	$839	$1,134	$1,045	$1,776	$895	$1,768	$1,210	$964
State Operating	$6,742	$6,423	$6,421	$5,932	$6,819	$6,525	$5,995	$6,046	$3,517	$3,612	$3,553	$4,866	$4,735	$6,114	$5,886
Local Operating	$2,072	$1,327	$1,490	$2,807	$1,214	$1,582	$1,931	$1,965	$4,660	$5,736	$9,360	$5,072	$7,980	$2,515	$2,826
Other Operating	$0	$0	$21	$154	$1	$0	$12	$12	$5	$42	$54	$12	$6	$9	$19
Total Operating	$9,713	$8,520	$8,742	$9,830	$8,979	$8,657	$8,916	$8,861	$9,316	$10,436	$14,742	$10,845	$14,489	$9,848	$9,695
Percent of Total Operating Revenues															
Federal Operating	9%	9%	9%	10%	11%	6%	11%	9%	12%	10%	12%	8%	12%	12%	10%
State Operating	69%	75%	73%	60%	76%	75%	67%	68%	38%	35%	24%	45%	33%	62%	61%
Local Operating	21%	16%	17%	29%	14%	18%	22%	22%	50%	55%	63%	47%	55%	26%	29%
Other Operating	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.93	0.80	0.84	0.97	0.98	0.57	1.01	0.87	1.18	1.08	1.84	0.93	1.83	1.26	1.00
State Operating	1.15	1.09	1.09	1.01	1.16	1.11	1.02	1.03	0.60	0.61	0.60	0.83	0.80	1.04	1.00
Local Operating	0.73	0.47	0.53	0.99	0.43	0.56	0.68	0.70	1.65	2.03	3.31	1.79	2.82	0.89	1.00
Other Operating	0.02	0.01	1.09	8.15	0.03	0.02	0.64	0.62	0.29	2.25	2.89	0.65	0.31	0.45	1.00
Total Operating	1.00	0.88	0.90	1.01	0.93	0.89	0.92	0.91	0.96	1.08	1.52	1.12	1.49	1.02	1.00
Without Outliers															
Federal Operating	$899	$771	$810	$943	$946	$549	$979	$839	$1,134	$978	$1,413	$790	$1,288	$1,210	$923
State Operating	$6,742	$6,423	$6,421	$6,096	$6,819	$6,525	$5,995	$6,046	$3,517	$3,699	$3,844	$5,428	$5,264	$6,114	$5,985
Local Operating	$2,072	$1,327	$1,490	$2,314	$1,214	$1,582	$1,931	$1,965	$4,660	$4,816	$5,916	$2,609	$3,188	$2,515	$2,307
Other Operating	$0	$0	$21	$27	$1	$0	$12	$12	$5	$45	$65	$14	$7	$9	$12
Total Operating	$9,713	$8,520	$8,742	$9,380	$8,979	$8,657	$8,916	$8,861	$9,316	$9,538	$11,238	$8,842	$9,746	$9,848	$9,226
Percent of Total Operating Revenues															
Federal Operating	9%	9%	9%	10%	11%	6%	11%	9%	12%	10%	13%	9%	13%	12%	10%
State Operating	69%	75%	73%	65%	76%	75%	67%	68%	38%	39%	34%	61%	54%	62%	65%
Local Operating	21%	16%	17%	25%	14%	18%	22%	22%	50%	50%	53%	30%	33%	26%	25%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.97	0.83	0.88	1.02	1.02	0.59	1.06	0.91	1.23	1.06	1.53	0.86	1.39	1.31	1.00
State Operating	1.13	1.07	1.07	1.02	1.14	1.09	1.00	1.01	0.59	0.62	0.64	0.91	0.88	1.02	1.00
Local Operating	0.90	0.58	0.65	1.00	0.53	0.69	0.84	0.85	2.02	2.09	2.56	1.13	1.38	1.09	1.00
Other Operating	0.04	0.01	1.76	2.29	0.05	0.03	1.03	0.99	0.46	3.83	5.57	1.22	0.58	0.73	1.00
Total Operating	1.05	0.92	0.95	1.02	0.97	0.94	0.97	0.96	1.01	1.03	1.22	0.96	1.06	1.07	1.00

Revenues for All Districts by Region 2012-13

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
All Districts															
Federal Operating	$812	$703	$734	$843	$894	$578	$938	$714	$983	$1,371	$1,839	$843	$1,886	$1,204	$932
State Operating	$6,915	$6,577	$6,616	$5,710	$7,025	$6,705	$6,086	$6,265	$3,592	$3,750	$3,602	$5,017	$4,743	$6,364	$6,020
Local Operating	$2,075	$1,394	$1,473	$2,952	$1,175	$1,528	$2,082	$1,968	$4,810	$5,773	$9,961	$5,911	$9,061	$2,610	$2,963
Other Operating	$1	$0	$21	$131	$1	$0	$10	$12	$4	$31	$46	$10	$6	$6	$16
Total Operating	$9,803	$8,674	$8,844	$9,635	$9,095	$8,811	$9,116	$8,959	$9,389	$10,925	$15,448	$11,782	$15,696	$10,184	$9,932
Percent of Total Operating Revenues															
Federal Operating	8%	8%	8%	9%	10%	7%	10%	8%	10%	13%	12%	7%	12%	12%	9%
State Operating	71%	76%	75%	59%	77%	76%	67%	70%	38%	34%	23%	43%	30%	62%	61%
Local Operating	21%	16%	17%	31%	13%	17%	23%	22%	51%	53%	64%	50%	58%	26%	30%
Other Operating	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.87	0.75	0.79	0.90	0.96	0.62	1.01	0.77	1.05	1.47	1.97	0.90	2.02	1.29	1.00
State Operating	1.15	1.09	1.10	0.95	1.17	1.11	1.01	1.04	0.60	0.62	0.60	0.83	0.79	1.06	1.00
Local Operating	0.70	0.47	0.50	1.00	0.40	0.52	0.70	0.66	1.62	1.95	3.36	1.99	3.06	0.88	1.00
Other Operating	0.03	0.01	1.27	8.11	0.09	0.02	0.63	0.73	0.26	1.94	2.84	0.64	0.37	0.36	1.00
Total Operating	0.99	0.87	0.89	0.97	0.92	0.89	0.92	0.90	0.95	1.10	1.56	1.19	1.58	1.03	1.00
Without Outliers															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
Federal Operating	$812	$703	$734	$850	$894	$578	$938	$714	$983	$1,333	$1,429	$707	$1,264	$1,204	$884
State Operating	$6,915	$6,577	$6,616	$5,871	$7,025	$6,705	$6,086	$6,265	$3,592	$3,824	$3,805	$5,498	$5,388	$6,364	$6,119
Local Operating	$2,075	$1,394	$1,473	$2,509	$1,175	$1,528	$2,082	$1,968	$4,810	$4,802	$5,891	$3,294	$3,125	$2,610	$2,373
Other Operating	$1	$0	$21	$17	$1	$0	$10	$12	$4	$33	$54	$12	$7	$6	$10
Total Operating	$9,803	$8,674	$8,844	$9,246	$9,095	$8,811	$9,116	$8,959	$9,389	$9,992	$11,179	$9,511	$9,784	$10,184	$9,385
Percent of Total Operating Revenues															
Federal Operating	8%	8%	8%	9%	10%	7%	10%	8%	10%	13%	13%	7%	13%	12%	9%
State Operating	71%	76%	75%	63%	77%	76%	67%	70%	38%	38%	34%	58%	55%	62%	65%
Local Operating	21%	16%	17%	27%	13%	17%	23%	22%	51%	48%	53%	35%	32%	26%	25%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.92	0.80	0.83	0.96	1.01	0.65	1.06	0.81	1.11	1.51	1.62	0.80	1.43	1.36	1.00
State Operating	1.13	1.07	1.08	0.96	1.15	1.10	0.99	1.02	0.59	0.62	0.62	0.90	0.88	1.04	1.00
Local Operating	0.87	0.59	0.62	1.06	0.50	0.64	0.88	0.83	2.03	2.02	2.48	1.39	1.32	1.10	1.00
Other Operating	0.05	0.01	2.11	1.75	0.15	0.04	1.04	1.21	0.43	3.41	5.57	1.24	0.71	0.61	1.00
Total Operating	1.04	0.92	0.94	0.99	0.97	0.94	0.97	0.95	1.00	1.06	1.19	1.01	1.04	1.09	1.00

Revenues for All Districts by Region 2013-14

Region	1	2	3	4	5	6	7	8	9	10	11	12	13	14	State
All Districts															
Federal Operating	$830	$677	$805	$869	$855	$513	$908	$738	$962	$938	$1,713	$886	$1,486	$1,083	$881
State Operating	$7,010	$6,785	$6,853	$5,884	$7,208	$6,963	$6,141	$6,425	$3,701	$3,814	$4,142	$5,230	$4,826	$6,518	$6,168
Local Operating	$2,091	$1,449	$1,538	$3,156	$1,097	$1,509	$2,181	$1,975	$5,084	$6,070	$10,476	$6,252	$7,233	$2,593	$2,980
Other Operating	$1	$0	$22	$175	$1	$0	$10	$12	$8	$29	$57	$10	$6	$8	$19
Total Operating	$9,931	$8,912	$9,219	$10,084	$9,161	$8,985	$9,239	$9,151	$9,755	$10,850	$16,388	$12,378	$13,551	$10,202	$10,048
Percent of Total Operating Revenues															
Federal Operating	8%	8%	9%	9%	9%	6%	10%	8%	10%	9%	10%	7%	11%	11%	9%
State Operating	71%	76%	74%	58%	79%	77%	66%	70%	38%	35%	25%	42%	36%	64%	61%
Local Operating	21%	16%	17%	31%	12%	17%	24%	22%	52%	56%	64%	51%	53%	25%	30%
Other Operating	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.94	0.77	0.91	0.99	0.97	0.58	1.03	0.84	1.09	1.06	1.94	1.01	1.69	1.23	1.00
State Operating	1.14	1.10	1.11	0.95	1.17	1.13	1.00	1.04	0.60	0.62	0.67	0.85	0.78	1.06	1.00
Local Operating	0.70	0.49	0.52	1.06	0.37	0.51	0.73	0.66	1.71	2.04	3.52	2.10	2.43	0.87	1.00
Other Operating	0.03	0.00	1.17	9.18	0.05	0.02	0.52	0.64	0.40	1.50	2.96	0.52	0.33	0.44	1.00
Total Operating	0.99	0.89	0.92	1.00	0.91	0.89	0.92	0.91	0.97	1.08	1.63	1.23	1.35	1.02	1.00
Without Outliers															
Federal Operating	$830	$677	$805	$877	$855	$513	$908	$738	$962	$885	$1,302	$692	$1,153	$1,083	$842
State Operating	$7,010	$6,785	$6,853	$6,038	$7,208	$6,963	$6,141	$6,425	$3,701	$3,875	$4,120	$5,582	$5,472	$6,518	$6,253
Local Operating	$2,091	$1,449	$1,538	$2,666	$1,097	$1,509	$2,181	$1,975	$5,084	$5,205	$6,493	$2,877	$3,324	$2,593	$2,436
Other Operating	$1	$0	$22	$46	$1	$0	$10	$12	$8	$30	$69	$12	$7	$8	$12
Total Operating	$9,931	$8,912	$9,219	$9,626	$9,161	$8,985	$9,239	$9,151	$9,755	$9,996	$11,985	$9,162	$9,957	$10,202	$9,543
Percent of Total Operating Revenues															
Federal Operating	8%	8%	9%	9%	9%	6%	10%	8%	10%	9%	11%	8%	12%	11%	9%
State Operating	71%	76%	74%	63%	79%	77%	66%	70%	38%	39%	34%	61%	55%	64%	66%
Local Operating	21%	16%	17%	28%	12%	17%	24%	22%	52%	52%	54%	31%	33%	25%	26%
Other Operating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Ratio to State Average															
Federal Operating	0.99	0.80	0.96	1.04	1.02	0.61	1.08	0.88	1.14	1.05	1.55	0.82	1.37	1.29	1.00
State Operating	1.12	1.09	1.10	0.97	1.15	1.11	0.98	1.03	0.59	0.62	0.66	0.89	0.88	1.04	1.00
Local Operating	0.86	0.59	0.63	1.09	0.45	0.62	0.90	0.81	2.09	2.14	2.67	1.18	1.36	1.06	1.00
Other Operating	0.05	0.00	1.90	3.88	0.08	0.03	0.84	1.03	0.65	2.57	5.87	0.99	0.63	0.72	1.00
Total Operating	1.04	0.93	0.97	1.01	0.96	0.94	0.97	0.96	1.02	1.05	1.26	0.96	1.04	1.07	1.00

Appendix E:

Non-instructional Expenditures by Region 2009-14

Total Operating by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$10,587	$10,698	$10,819	$10,743	$10,783
	CV	0.180	0.197	0.187	0.170	0.169
	Ratio	1.07	1.08	1.07	1.05	1.04
2	Average	$8,791	$8,961	$8,829	$8,819	$9,275
	CV	0.079	0.085	0.081	0.064	0.067
	Ratio	0.89	0.90	0.88	0.86	0.89
3	Average	$8,971	$9,002	$9,257	$9,315	$9,563
	CV	0.122	0.118	0.117	0.123	0.161
	Ratio	0.91	0.91	0.92	0.91	0.92
4	Average	$9,169	$9,415	$9,670	$9,645	$9,917
	CV	0.223	0.246	0.334	0.250	0.279
	Ratio	0.93	0.95	0.96	0.94	0.96
5	Average	$9,023	$9,271	$9,363	$9,410	$9,411
	CV	0.151	0.179	0.177	0.181	0.150
	Ratio	0.91	0.93	0.93	0.92	0.91
6	Average	$9,239	$9,364	$9,326	$9,470	$9,577
	CV	0.129	0.137	0.129	0.120	0.132
	Ratio	0.93	0.94	0.92	0.92	0.92
7	Average	$8,826	$8,930	$9,027	$9,321	$9,426
	CV	0.119	0.118	0.128	0.206	0.130
	Ratio	0.89	0.90	0.90	0.91	0.91
8	Average	$9,345	$9,159	$9,387	$9,646	$9,791
	CV	0.098	0.115	0.114	0.144	0.128
	Ratio	0.95	0.92	0.93	0.94	0.94
9	Average	$9,587	$9,389	$9,684	$9,510	$9,847
	CV	0.105	0.093	0.127	0.080	0.094
	Ratio	0.97	0.94	0.96	0.93	0.95
10	Average	$10,487	$10,550	$10,684	$10,768	$11,102
	CV	0.371	0.376	0.392	0.401	0.376
	Ratio	1.06	1.06	1.06	1.05	1.07
11	Average	$13,766	$15,123	$14,186	$15,117	$15,653
	CV	0.482	0.676	0.444	0.575	0.537
	Ratio	1.39	1.52	1.41	1.47	1.51
12	Average	$10,982	$10,834	$11,224	$11,392	$12,569
	CV	0.433	0.419	0.456	0.489	0.619
	Ratio	1.11	1.09	1.11	1.11	1.21
13	Average	$13,521	$12,668	$13,592	$15,214	$13,410
	CV	0.881	0.750	0.751	0.968	0.699
	Ratio	1.37	1.27	1.35	1.48	1.29
14	Average	$9,645	$9,737	$9,666	$9,860	$9,789
	CV	0.158	0.153	0.130	0.141	0.141
	Ratio	0.98	0.98	0.96	0.96	0.94

Total Operating by Region without Outliers

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$10,587	$10,698	$10,819	$10,743	$10,783
	CV	0.180	0.197	0.187	0.170	0.169
	Ratio	1.11	1.12	1.12	1.10	1.09
2	Average	$8,791	$8,961	$8,829	$8,819	$9,275
	CV	0.079	0.085	0.081	0.064	0.067
	Ratio	0.92	0.94	0.91	0.90	0.94
3	Average	$8,971	$9,002	$9,257	$9,315	$9,563
	CV	0.122	0.118	0.117	0.123	0.161
	Ratio	0.94	0.94	0.96	0.96	0.96
4	Average	$8,914	$9,105	$9,322	$9,314	$9,536
	CV	0.167	0.173	0.282	0.170	0.189
	Ratio	0.94	0.95	0.96	0.96	0.96
5	Average	$9,023	$9,271	$9,363	$9,410	$9,411
	CV	0.151	0.179	0.177	0.181	0.150
	Ratio	0.95	0.97	0.97	0.97	0.95
6	Average	$9,239	$9,364	$9,326	$9,470	$9,577
	CV	0.129	0.137	0.129	0.120	0.132
	Ratio	0.97	0.98	0.96	0.97	0.97
7	Average	$8,826	$8,930	$9,027	$9,321	$9,426
	CV	0.119	0.118	0.128	0.206	0.130
	Ratio	0.93	0.93	0.93	0.96	0.95
8	Average	$9,345	$9,159	$9,387	$9,646	$9,791
	CV	0.098	0.115	0.114	0.144	0.128
	Ratio	0.98	0.96	0.97	0.99	0.99
9	Average	$9,587	$9,389	$9,684	$9,510	$9,847
	CV	0.105	0.093	0.127	0.080	0.094
	Ratio	1.01	0.98	1.00	0.98	0.99
10	Average	$9,621	$9,692	$9,758	$9,830	$10,240
	CV	0.129	0.143	0.153	0.143	0.187
	Ratio	1.01	1.01	1.01	1.01	1.03
11	Average	$11,396	$10,991	$11,246	$11,218	$11,605
	CV	0.314	0.268	0.232	0.216	0.263
	Ratio	1.20	1.15	1.16	1.15	1.17
12	Average	$9,178	$9,068	$9,195	$9,222	$9,598
	CV	0.093	0.085	0.095	0.133	0.155
	Ratio	0.97	0.95	0.95	0.95	0.97
13	Average	$9,748	$9,813	$9,759	$9,591	$9,920
	CV	0.259	0.285	0.286	0.242	0.259
	Ratio	1.02	1.03	1.01	0.98	1.00
14	Average	$9,645	$9,737	$9,666	$9,860	$9,789
	CV	0.158	0.153	0.130	0.141	0.141
	Ratio	1.01	1.02	1.00	1.01	0.99

Food Service by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$327	$334	$356	$357	$361
	CV	0.301	0.320	0.331	0.341	0.390
	Ratio	0.84	0.83	0.84	0.82	0.83
	Percent	3.09%	3.12%	3.29%	3.32%	3.35%
2	Average	$400	$424	$438	$448	$453
	CV	0.141	0.157	0.165	0.170	0.174
	Ratio	1.03	1.05	1.03	1.03	1.04
		4.55%	4.73%	4.96%	5.07%	4.88%
3	Average	$374	$391	$419	$427	$434
	CV	0.243	0.268	0.272	0.278	0.287
	Ratio	0.97	0.97	0.98	0.99	0.99
		4.17%	4.34%	4.53%	4.58%	4.54%
4	Average	$395	$423	$451	$457	$472
	CV	0.385	0.377	0.376	0.340	0.391
	Ratio	1.02	1.05	1.06	1.05	1.08
		4.31%	4.49%	4.67%	4.74%	4.76%
5	Average	$379	$384	$416	$425	$423
	CV	0.251	0.244	0.268	0.263	0.196
	Ratio	0.98	0.96	0.98	0.98	0.97
		4.20%	4.15%	4.45%	4.52%	4.49%
6	Average	$336	$346	$354	$362	$360
	CV	0.258	0.273	0.268	0.273	0.285
	Ratio	0.87	0.86	0.83	0.83	0.83
		3.63%	3.69%	3.79%	3.82%	3.76%
7	Average	$379	$393	$411	$416	$427
	CV	0.394	0.396	0.393	0.405	0.407
	Ratio	0.98	0.98	0.97	0.96	0.98
		4.29%	4.40%	4.56%	4.47%	4.53%
8	Average	$347	$360	$372	$378	$374
	CV	0.370	0.397	0.401	0.413	0.410
	Ratio	0.90	0.90	0.87	0.87	0.86
		3.71%	3.94%	3.96%	3.92%	3.82%
9	Average	$474	$495	$502	$487	$497
	CV	0.108	0.125	0.140	0.299	0.329
	Ratio	1.22	1.23	1.18	1.12	1.14
		4.94%	5.27%	5.18%	5.12%	5.05%
10	Average	$417	$444	$467	$471	$473
	CV	0.404	0.414	0.412	0.387	0.394
	Ratio	1.08	1.10	1.10	1.09	1.08
		3.97%	4.21%	4.38%	4.38%	4.26%
11	Average	$558	$542	$596	$562	$613
	CV	0.635	0.611	0.721	0.568	0.699
	Ratio	1.44	1.35	1.40	1.30	1.40
		4.06%	3.58%	4.20%	3.72%	3.92%
12	Average	$507	$525	$545	$572	$598
	CV	0.695	0.667	0.720	0.794	0.802
	Ratio	1.31	1.30	1.28	1.32	1.37
		4.62%	4.84%	4.85%	5.02%	4.76%
13	Average	$518	$566	$666	$722	$626
	CV	0.597	0.769	1.313	1.618	1.073
	Ratio	1.34	1.41	1.56	1.67	1.43
		3.83%	4.47%	4.90%	4.75%	4.67%
14	Average	$405	$413	$427	$449	$465
	CV	0.346	0.360	0.341	0.347	0.377
	Ratio	1.05	1.03	1.00	1.04	1.07
		4.20%	4.24%	4.41%	4.55%	4.75%

Food Service by Region without Outliers

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$327	$334	$356	$357	$361
	CV	0.301	0.320	0.331	0.341	0.390
	Ratio	0.87	0.86	0.88	0.87	0.87
	Percent	3.09%	3.12%	3.29%	3.32%	3.35%
2	Average	$400	$424	$438	$448	$453
	CV	0.141	0.157	0.165	0.170	0.174
	Ratio	1.07	1.09	1.08	1.09	1.08
		4.55%	4.73%	4.96%	5.07%	4.88%
3	Average	$374	$391	$419	$427	$434
	CV	0.243	0.268	0.272	0.278	0.287
	Ratio	1.00	1.01	1.03	1.04	1.04
		4.17%	4.34%	4.53%	4.58%	4.54%
4	Average	$387	$412	$439	$444	$457
	CV	0.381	0.367	0.359	0.318	0.363
	Ratio	1.03	1.06	1.08	1.08	1.09
		4.34%	4.53%	4.71%	4.77%	4.79%
5	Average	$379	$384	$416	$425	$423
	CV	0.251	0.244	0.268	0.263	0.196
	Ratio	1.01	0.99	1.02	1.03	1.01
		4.20%	4.15%	4.45%	4.52%	4.49%
6	Average	$336	$346	$354	$362	$360
	CV	0.258	0.273	0.268	0.273	0.285
	Ratio	0.90	0.89	0.87	0.88	0.86
		3.63%	3.69%	3.79%	3.82%	3.76%
7	Average	$379	$393	$411	$416	$427
	CV	0.394	0.396	0.393	0.405	0.407
	Ratio	1.01	1.01	1.01	1.01	1.02
		4.29%	4.40%	4.56%	4.47%	4.53%
8	Average	$347	$360	$372	$378	$374
	CV	0.370	0.397	0.401	0.413	0.410
	Ratio	0.93	0.93	0.91	0.92	0.90
		3.71%	3.94%	3.96%	3.92%	3.82%
9	Average	$474	$495	$502	$487	$497
	CV	0.108	0.125	0.140	0.299	0.329
	Ratio	1.26	1.27	1.23	1.18	1.19
		4.94%	5.27%	5.18%	5.12%	5.05%
10	Average	$403	$436	$457	$461	$462
	CV	0.377	0.397	0.395	0.371	0.376
	Ratio	1.08	1.12	1.12	1.12	1.11
		4.19%	4.50%	4.68%	4.69%	4.52%
11	Average	$502	$472	$499	$497	$503
	CV	0.356	0.137	0.199	0.184	0.185
	Ratio	1.34	1.22	1.22	1.21	1.20
		4.41%	4.30%	4.44%	4.43%	4.33%
12	Average	$376	$396	$400	$412	$420
	CV	0.295	0.265	0.362	0.367	0.367
	Ratio	1.00	1.02	0.98	1.00	1.01
		4.10%	4.37%	4.36%	4.47%	4.37%
13	Average	$467	$488	$500	$479	$500
	CV	0.208	0.235	0.213	0.200	0.208
	Ratio	1.25	1.25	1.23	1.16	1.20
		4.79%	4.97%	5.12%	5.00%	5.04%
14	Average	$405	$413	$427	$449	$465
	CV	0.346	0.360	0.341	0.347	0.377
	Ratio	1.08	1.06	1.05	1.09	1.12
		4.20%	4.24%	4.41%	4.55%	4.75%

Transporation by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$395	$371	$396	$387	$396
	CV	0.382	0.443	0.399	0.408	0.407
	Ratio	0.83	0.82	0.83	0.79	0.80
	Percent	3.73%	3.47%	3.66%	3.60%	3.67%
2	Average	$384	$386	$405	$420	$445
	CV	0.281	0.275	0.287	0.299	0.317
	Ratio	0.81	0.85	0.85	0.85	0.90
		4.37%	4.31%	4.58%	4.77%	4.80%
3	Average	$441	$460	$473	$474	$485
	CV	0.257	0.258	0.252	0.287	0.280
	Ratio	0.93	1.01	1.00	0.96	0.98
		4.91%	5.11%	5.11%	5.09%	5.08%
4	Average	$358	$381	$402	$410	$441
	CV	0.478	0.481	0.519	0.531	0.576
	Ratio	0.75	0.84	0.85	0.83	0.89
		3.91%	4.04%	4.15%	4.25%	4.44%
5	Average	$365	$362	$370	$376	$376
	CV	0.295	0.300	0.267	0.302	0.275
	Ratio	0.77	0.80	0.78	0.76	0.76
		4.05%	3.90%	3.96%	3.99%	4.00%
6	Average	$362	$341	$383	$385	$394
	CV	0.404	0.390	0.405	0.414	0.400
	Ratio	0.76	0.75	0.81	0.78	0.79
		3.92%	3.64%	4.11%	4.07%	4.11%
7	Average	$382	$382	$402	$407	$411
	CV	0.345	0.392	0.383	0.392	0.390
	Ratio	0.80	0.84	0.85	0.83	0.83
		4.33%	4.28%	4.46%	4.37%	4.36%
8	Average	$435	$371	$430	$438	$441
	CV	0.356	0.449	0.401	0.383	0.409
	Ratio	0.91	0.82	0.91	0.89	0.89
		4.65%	4.05%	4.58%	4.55%	4.50%
9	Average	$523	$519	$546	$526	$543
	CV	0.254	0.269	0.273	0.250	0.249
	Ratio	1.10	1.14	1.15	1.07	1.10
		5.46%	5.52%	5.64%	5.53%	5.52%
10	Average	$484	$490	$520	$520	$546
	CV	0.457	0.425	0.467	0.462	0.492
	Ratio	1.02	1.08	1.09	1.06	1.10
		4.62%	4.65%	4.86%	4.83%	4.92%
11	Average	$649	$550	$693	$764	$741
	CV	0.399	0.617	0.506	0.414	0.428
	Ratio	1.36	1.21	1.46	1.55	1.49
		4.71%	3.64%	4.89%	5.05%	4.73%
12	Average	$723	$736	$776	$764	$862
	CV	1.208	1.241	1.145	1.019	1.226
	Ratio	1.52	1.62	1.64	1.55	1.74
		6.58%	6.79%	6.92%	6.70%	6.86%
13	Average	$1,543	$1,303	$1,091	$1,443	$1,215
	CV	2.292	2.241	1.965	1.801	1.715
	Ratio	3.24	2.87	2.30	2.93	2.45
		11.41%	10.29%	8.03%	9.49%	9.06%
14	Average	$506	$472	$494	$521	$510
	CV	0.710	0.516	0.550	0.673	0.463
	Ratio	1.06	1.04	1.04	1.06	1.03
		5.24%	4.84%	5.11%	5.29%	5.21%

Transporation by Region without Outliers

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$395	$371	$396	$387	$396
	CV	0.382	0.443	0.399	0.408	0.407
	Ratio	0.95	0.92	0.92	0.89	0.89
	Percent	3.73%	3.47%	3.66%	3.60%	3.67%
2	Average	$384	$386	$405	$420	$445
	CV	0.281	0.275	0.287	0.299	0.317
	Ratio	0.92	0.96	0.94	0.97	1.00
		4.37%	4.31%	4.58%	4.77%	4.80%
3	Average	$441	$460	$473	$474	$485
	CV	0.257	0.258	0.252	0.287	0.280
	Ratio	1.06	1.14	1.10	1.09	1.09
		4.91%	5.11%	5.11%	5.09%	5.08%
4	Average	$351	$370	$389	$396	$425
	CV	0.483	0.476	0.511	0.522	0.571
	Ratio	0.84	0.92	0.90	0.91	0.96
		3.94%	4.06%	4.17%	4.25%	4.46%
5	Average	$365	$362	$370	$376	$376
	CV	0.295	0.300	0.267	0.302	0.275
	Ratio	0.88	0.90	0.86	0.87	0.85
		4.05%	3.90%	3.96%	3.99%	4.00%
6	Average	$362	$341	$383	$385	$394
	CV	0.404	0.390	0.405	0.414	0.400
	Ratio	0.87	0.85	0.89	0.89	0.89
		3.92%	3.64%	4.11%	4.07%	4.11%
7	Average	$382	$382	$402	$407	$411
	CV	0.345	0.392	0.383	0.392	0.390
	Ratio	0.92	0.95	0.94	0.94	0.93
		4.33%	4.28%	4.46%	4.37%	4.36%
8	Average	$435	$371	$430	$438	$441
	CV	0.356	0.449	0.401	0.383	0.409
	Ratio	1.04	0.92	1.00	1.01	0.99
		4.65%	4.05%	4.58%	4.55%	4.50%
9	Average	$523	$519	$546	$526	$543
	CV	0.254	0.269	0.273	0.250	0.249
	Ratio	1.25	1.29	1.27	1.21	1.23
		5.46%	5.52%	5.64%	5.53%	5.52%
10	Average	$468	$474	$496	$507	$532
	CV	0.325	0.298	0.336	0.340	0.351
	Ratio	1.12	1.18	1.15	1.17	1.20
		4.86%	4.89%	5.09%	5.16%	5.19%
11	Average	$603	$426	$625	$626	$613
	CV	0.300	0.421	0.363	0.323	0.321
	Ratio	1.45	1.06	1.45	1.44	1.38
		5.29%	3.88%	5.56%	5.58%	5.29%
12	Average	$458	$469	$489	$497	$516
	CV	0.377	0.400	0.410	0.403	0.401
	Ratio	1.10	1.17	1.14	1.15	1.16
		4.99%	5.17%	5.32%	5.39%	5.37%
13	Average	$457	$458	$455	$452	$481
	CV	0.408	0.377	0.438	0.414	0.437
	Ratio	1.10	1.14	1.06	1.04	1.08
		4.69%	4.67%	4.66%	4.71%	4.85%
14	Average	$506	$472	$494	$521	$510
	CV	0.710	0.516	0.550	0.673	0.463
	Ratio	1.21	1.17	1.15	1.20	1.15
		5.24%	4.84%	5.11%	5.29%	5.21%

Maintenance and Operations by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$1,035	$975	$925	$919	$947
	CV	0.251	0.252	0.236	0.248	0.236
	Ratio	1.10	1.06	1.03	1.00	0.99
	Percent	9.78%	9.11%	8.55%	8.55%	8.78%
2	Average	$784	$785	$756	$770	$846
	CV	0.165	0.162	0.179	0.169	0.175
	Ratio	0.84	0.85	0.84	0.84	0.88
		8.92%	8.76%	8.57%	8.74%	9.12%
3	Average	$889	$853	$830	$825	$879
	CV	0.249	0.217	0.214	0.221	0.222
	Ratio	0.95	0.93	0.92	0.90	0.92
		9.91%	9.48%	8.97%	8.85%	9.20%
4	Average	$834	$852	$837	$873	$924
	CV	0.257	0.314	0.356	0.349	0.366
	Ratio	0.89	0.93	0.93	0.95	0.96
		9.10%	9.05%	8.66%	9.05%	9.32%
5	Average	$865	$861	$827	$809	$860
	CV	0.287	0.317	0.373	0.398	0.330
	Ratio	0.92	0.94	0.92	0.88	0.90
		9.58%	9.29%	8.83%	8.60%	9.13%
6	Average	$896	$901	$862	$848	$891
	CV	0.206	0.202	0.207	0.193	0.207
	Ratio	0.96	0.98	0.96	0.93	0.93
		9.70%	9.62%	9.24%	8.95%	9.30%
7	Average	$826	$817	$806	$808	$863
	CV	0.227	0.249	0.270	0.258	0.326
	Ratio	0.88	0.89	0.90	0.88	0.90
		9.36%	9.15%	8.93%	8.66%	9.16%
8	Average	$840	$817	$797	$804	$832
	CV	0.186	0.200	0.213	0.246	0.219
	Ratio	0.90	0.89	0.89	0.88	0.87
		8.99%	8.93%	8.49%	8.33%	8.50%
9	Average	$890	$892	$879	$854	$863
	CV	0.213	0.270	0.206	0.226	0.208
	Ratio	0.95	0.97	0.98	0.93	0.90
		9.28%	9.50%	9.08%	8.98%	8.76%
10	Average	$979	$1,007	$997	$1,014	$1,062
	CV	0.505	0.537	0.478	0.540	0.493
	Ratio	1.05	1.10	1.11	1.11	1.11
		9.33%	9.55%	9.33%	9.41%	9.57%
11	Average	$1,218	$1,346	$1,231	$1,326	$1,298
	CV	0.480	0.504	0.504	0.581	0.496
	Ratio	1.30	1.46	1.37	1.45	1.35
		8.85%	8.90%	8.68%	8.77%	8.29%
12	Average	$1,147	$1,139	$1,128	$1,158	$1,361
	CV	0.635	0.621	0.595	0.743	0.913
	Ratio	1.22	1.24	1.26	1.26	1.42
		10.44%	10.51%	10.05%	10.16%	10.83%
13	Average	$1,344	$1,245	$1,437	$1,775	$1,679
	CV	0.864	0.818	0.979	1.497	1.399
	Ratio	1.44	1.35	1.60	1.94	1.75
		9.94%	9.83%	10.57%	11.67%	12.52%
14	Average	$831	$814	$770	$785	$795
	CV	0.217	0.200	0.202	0.239	0.223
	Ratio	0.89	0.88	0.86	0.86	0.83
		8.62%	8.35%	7.96%	7.96%	8.12%

Maintenance and Operations by Region without Outliers

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$1,035	$975	$925	$919	$947
	CV	0.251	0.252	0.236	0.248	0.236
	Ratio	1.16	1.11	1.09	1.08	1.06
	Percent	9.78%	9.11%	8.55%	8.55%	8.78%
2	Average	$784	$785	$756	$770	$846
	CV	0.165	0.162	0.179	0.169	0.175
	Ratio	0.88	0.90	0.89	0.91	0.95
		8.92%	8.76%	8.57%	8.74%	9.12%
3	Average	$889	$853	$830	$825	$879
	CV	0.249	0.217	0.214	0.221	0.222
	Ratio	0.99	0.97	0.98	0.97	0.98
		9.91%	9.48%	8.97%	8.85%	9.20%
4	Average	$810	$820	$800	$841	$891
	CV	0.206	0.247	0.274	0.298	0.323
	Ratio	0.90	0.94	0.94	0.99	1.00
		9.08%	9.01%	8.58%	9.03%	9.34%
5	Average	$865	$861	$827	$809	$860
	CV	0.287	0.317	0.373	0.398	0.330
	Ratio	0.97	0.98	0.97	0.95	0.96
		9.58%	9.29%	8.83%	8.60%	9.13%
6	Average	$896	$901	$862	$848	$891
	CV	0.206	0.202	0.207	0.193	0.207
	Ratio	1.00	1.03	1.01	1.00	1.00
		9.70%	9.62%	9.24%	8.95%	9.30%
7	Average	$826	$817	$806	$808	$863
	CV	0.227	0.249	0.270	0.258	0.326
	Ratio	0.92	0.93	0.95	0.95	0.97
		9.36%	9.15%	8.93%	8.66%	9.16%
8	Average	$840	$817	$797	$804	$832
	CV	0.186	0.200	0.213	0.246	0.219
	Ratio	0.94	0.93	0.94	0.95	0.93
		8.99%	8.93%	8.49%	8.33%	8.50%
9	Average	$890	$892	$879	$854	$863
	CV	0.213	0.270	0.206	0.226	0.208
	Ratio	0.99	1.02	1.03	1.01	0.96
		9.28%	9.50%	9.08%	8.98%	8.76%
10	Average	$868	$890	$895	$899	$957
	CV	0.167	0.208	0.231	0.242	0.261
	Ratio	0.97	1.02	1.05	1.06	1.07
		9.02%	9.19%	9.17%	9.15%	9.35%
11	Average	$1,066	$1,042	$971	$962	$1,051
	CV	0.476	0.349	0.297	0.376	0.449
	Ratio	1.19	1.19	1.14	1.13	1.18
		9.35%	9.48%	8.63%	8.58%	9.06%
12	Average	$892	$891	$880	$859	$935
	CV	0.272	0.294	0.319	0.318	0.372
	Ratio	1.00	1.02	1.04	1.01	1.05
		9.72%	9.82%	9.57%	9.32%	9.74%
13	Average	$946	$943	$943	$916	$996
	CV	0.310	0.341	0.360	0.353	0.381
	Ratio	1.06	1.08	1.11	1.08	1.11
		9.71%	9.61%	9.66%	9.56%	10.04%
14	Average	$831	$814	$770	$785	$795
	CV	0.217	0.200	0.202	0.239	0.223
	Ratio	0.93	0.93	0.91	0.93	0.89
		8.62%	8.35%	7.96%	7.96%	8.12%

Community Service by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$160	$156	$164	$157	$160
	CV	0.923	0.912	0.890	0.867	0.871
	Ratio	1.49	1.50	1.54	1.51	1.58
	Percent	1.51%	1.46%	1.51%	1.46%	1.48%
2	Average	$44	$39	$38	$37	$39
	CV	1.200	1.374	1.461	1.527	1.428
	Ratio	0.41	0.37	0.36	0.36	0.38
		0.50%	0.43%	0.44%	0.43%	0.42%
3	Average	$55	$53	$66	$67	$71
	CV	1.216	1.215	1.291	1.262	1.194
	Ratio	0.51	0.51	0.62	0.64	0.70
		0.61%	0.59%	0.71%	0.71%	0.74%
4	Average	$57	$58	$65	$84	$83
	CV	1.978	1.924	1.892	1.909	1.914
	Ratio	0.53	0.56	0.61	0.80	0.82
		0.62%	0.62%	0.67%	0.87%	0.83%
5	Average	$91	$94	$95	$87	$82
	CV	0.891	0.918	0.917	0.946	0.891
	Ratio	0.84	0.90	0.90	0.84	0.81
		1.00%	1.02%	1.02%	0.93%	0.87%
6	Average	$166	$177	$161	$142	$140
	CV	1.064	1.106	0.930	0.996	1.090
	Ratio	1.55	1.70	1.52	1.36	1.39
		1.79%	1.89%	1.73%	1.50%	1.46%
7	Average	$52	$53	$55	$54	$53
	CV	1.381	1.423	1.509	1.606	1.693
	Ratio	0.49	0.50	0.52	0.52	0.52
		0.59%	0.59%	0.61%	0.58%	0.56%
8	Average	$101	$104	$111	$111	$107
	CV	1.106	1.092	1.089	1.040	1.078
	Ratio	0.94	1.00	1.04	1.06	1.06
		1.08%	1.14%	1.18%	1.15%	1.10%
9	Average	$23	$20	$11	$24	$23
	CV	1.775	1.830	2.412	1.745	1.599
	Ratio	0.22	0.19	0.11	0.23	0.23
		0.24%	0.21%	0.12%	0.25%	0.24%
10	Average	$79	$73	$79	$77	$86
	CV	1.349	1.363	1.423	1.422	1.373
	Ratio	0.73	0.70	0.74	0.74	0.85
		0.75%	0.70%	0.74%	0.72%	0.78%
11	Average	$356	$258	$195	$238	$240
	CV	3.257	3.116	2.904	2.860	2.826
	Ratio	3.32	2.47	1.84	2.28	2.38
		2.59%	1.70%	1.38%	1.57%	1.54%
12	Average	$153	$142	$123	$105	$105
	CV	3.195	3.038	2.935	2.528	2.159
	Ratio	1.42	1.36	1.16	1.01	1.04
		1.39%	1.31%	1.10%	0.92%	0.84%
13	Average	$37	$22	$18	$20	$18
	CV	1.680	1.928	1.840	1.951	1.693
	Ratio	0.35	0.22	0.17	0.19	0.17
		0.28%	0.18%	0.13%	0.13%	0.13%
14	Average	$206	$227	$252	$239	$163
	CV	1.764	1.921	2.034	2.063	1.523
	Ratio	1.92	2.17	2.37	2.29	1.61
		2.14%	2.33%	2.60%	2.42%	1.67%

Community Service by Region without Outliers

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$160	$156	$164	$157	$160
	CV	0.923	0.912	0.890	0.867	0.871
	Ratio	1.48	1.48	1.52	1.50	1.57
	Percent	1.51%	1.46%	1.51%	1.46%	1.48%
2	Average	$44	$39	$38	$37	$39
	CV	1.200	1.374	1.461	1.527	1.428
	Ratio	0.40	0.37	0.36	0.36	0.38
		0.50%	0.43%	0.44%	0.43%	0.42%
3	Average	$55	$53	$66	$67	$71
	CV	1.216	1.215	1.291	1.262	1.194
	Ratio	0.50	0.50	0.61	0.63	0.69
		0.61%	0.59%	0.71%	0.71%	0.74%
4	Average	$50	$49	$53	$66	$65
	CV	2.152	2.063	1.957	1.943	1.920
	Ratio	0.46	0.46	0.49	0.63	0.63
		0.56%	0.53%	0.56%	0.71%	0.68%
5	Average	$91	$94	$95	$87	$82
	CV	0.891	0.918	0.917	0.946	0.891
	Ratio	0.84	0.89	0.89	0.83	0.80
		1.00%	1.02%	1.02%	0.93%	0.87%
6	Average	$166	$177	$161	$142	$140
	CV	1.064	1.106	0.930	0.996	1.090
	Ratio	1.53	1.68	1.50	1.35	1.38
		1.79%	1.89%	1.73%	1.50%	1.46%
7	Average	$52	$53	$55	$54	$53
	CV	1.381	1.423	1.509	1.606	1.693
	Ratio	0.48	0.50	0.52	0.52	0.52
		0.59%	0.59%	0.61%	0.58%	0.56%
8	Average	$101	$104	$111	$111	$107
	CV	1.106	1.092	1.089	1.040	1.078
	Ratio	0.93	0.99	1.03	1.06	1.06
		1.08%	1.14%	1.18%	1.15%	1.10%
9	Average	$23	$20	$11	$24	$23
	CV	1.775	1.830	2.412	1.745	1.599
	Ratio	0.21	0.19	0.11	0.23	0.23
		0.24%	0.21%	0.12%	0.25%	0.24%
10	Average	$80	$76	$82	$80	$90
	CV	1.364	1.348	1.403	1.402	1.333
	Ratio	0.74	0.72	0.76	0.76	0.89
		0.83%	0.78%	0.84%	0.81%	0.88%
11	Average	$444	$314	$237	$288	$286
	CV	2.987	2.920	2.728	2.687	2.705
	Ratio	4.10	2.97	2.21	2.75	2.82
		3.89%	2.86%	2.11%	2.57%	2.47%
12	Average	$176	$165	$143	$122	$121
	CV	2.991	2.812	2.723	2.342	1.997
	Ratio	1.63	1.57	1.33	1.16	1.19
		1.92%	1.82%	1.55%	1.32%	1.27%
13	Average	$32	$20	$19	$21	$17
	CV	1.619	2.039	1.831	1.978	1.747
	Ratio	0.29	0.19	0.18	0.20	0.17
		0.33%	0.20%	0.20%	0.21%	0.17%
14	Average	$206	$227	$252	$239	$163
	CV	1.764	1.921	2.034	2.063	1.523
	Ratio	1.90	2.15	2.34	2.27	1.61
		2.14%	2.33%	2.60%	2.42%	1.67%

Adult Education by Region All Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$4	$50	$38	$36	$28
	CV	7.159	3.007	3.447	3.463	3.431
	Ratio	1.90	1.69	1.50	1.40	1.27
	Percent	0.04%	0.47%	0.35%	0.33%	0.26%
2	Average	$1	$7	$6	$5	$6
	CV	4.778	3.201	3.709	3.960	3.592
	Ratio	0.28	0.23	0.24	0.20	0.25
		0.01%	0.07%	0.07%	0.06%	0.06%
3	Average	$2	$19	$19	$19	$15
	CV	2.444	2.060	2.082	1.952	1.882
	Ratio	1.00	0.65	0.78	0.76	0.67
		0.03%	0.21%	0.21%	0.21%	0.15%
4	Average	$3	$24	$24	$25	$24
	CV	3.571	2.084	2.215	2.113	2.121
	Ratio	1.50	0.82	0.94	1.00	1.12
		0.04%	0.26%	0.24%	0.26%	0.25%
5	Average	$1	$46	$46	$59	$21
	CV	4.852	4.082	3.873	3.557	3.085
	Ratio	0.29	1.55	1.82	2.30	0.96
		0.01%	0.49%	0.49%	0.62%	0.22%
6	Average	$1	$13	$9	$10	$10
	CV	3.285	1.964	2.455	2.265	2.169
	Ratio	0.45	0.45	0.35	0.40	0.44
		0.01%	0.14%	0.09%	0.11%	0.10%
7	Average	$3	$34	$27	$34	$34
	CV	7.601	4.335	4.897	5.227	5.504
	Ratio	1.15	1.16	1.07	1.34	1.59
		0.03%	0.38%	0.30%	0.37%	0.37%
8	Average	$1	$17	$12	$9	$11
	CV	3.522	2.512	2.543	2.233	2.314
	Ratio	0.47	0.59	0.47	0.33	0.51
		0.01%	0.19%	0.12%	0.09%	0.11%
9	Average	$0	$5	$4	$1	$4
	CV	#DIV/0!	2.127	2.422	4.000	3.166
	Ratio	0.00	0.18	0.14	0.03	0.18
		0.00%	0.06%	0.04%	0.01%	0.04%
10	Average	$1	$6	$6	$6	$6
	CV	4.307	5.445	6.083	6.083	6.083
	Ratio	0.34	0.22	0.24	0.24	0.30
		0.01%	0.06%	0.06%	0.06%	0.06%
11	Average	$0	$28	$22	$25	$29
	CV	#DIV/0!	2.860	3.606	3.606	3.606
	Ratio	0.00	0.94	0.88	0.99	1.33
		0.00%	0.18%	0.16%	0.17%	0.18%
12	Average	$1	$35	$43	$25	$25
	CV	5.196	3.450	3.603	4.374	4.216
	Ratio	0.31	1.18	1.73	0.97	1.17
		0.01%	0.32%	0.39%	0.22%	0.20%
13	Average	$2	$14	$14	$14	$16
	CV	4.583	3.986	4.190	4.184	4.249
	Ratio	0.74	0.48	0.56	0.54	0.73
		0.01%	0.11%	0.10%	0.09%	0.12%
14	Average	$6	$56	$52	$56	$55
	CV	2.624	1.734	1.709	1.778	1.830
	Ratio	2.69	1.90	2.07	2.18	2.53
		0.06%	0.57%	0.54%	0.56%	0.56%

Adult Education by Region for Non-High Spending Districts

Region		2009-10	2010-11	2011-12	2012-13	2013-14
1	Average	$4	$50	$38	$36	$28
	CV	7.159	3.007	3.447	3.463	3.431
	Ratio	1.86	1.65	1.46	1.36	1.24
	Percent	0.04%	0.47%	0.35%	0.33%	0.26%
2	Average	$1	$7	$6	$5	$6
	CV	4.778	3.201	3.709	3.960	3.592
	Ratio	0.27	0.22	0.24	0.19	0.25
		0.01%	0.07%	0.07%	0.06%	0.06%
3	Average	$2	$19	$19	$19	$15
	CV	2.444	2.060	2.082	1.952	1.882
	Ratio	0.98	0.64	0.76	0.74	0.66
		0.03%	0.21%	0.21%	0.21%	0.15%
4	Average	$4	$25	$24	$26	$25
	CV	3.510	2.043	2.172	2.072	2.080
	Ratio	1.51	0.83	0.95	1.01	1.13
		0.04%	0.27%	0.26%	0.28%	0.26%
5	Average	$1	$46	$46	$59	$21
	CV	4.852	4.082	3.873	3.557	3.085
	Ratio	0.29	1.51	1.77	2.24	0.93
		0.01%	0.49%	0.49%	0.62%	0.22%
6	Average	$1	$13	$9	$10	$10
	CV	3.285	1.964	2.455	2.265	2.169
	Ratio	0.44	0.44	0.34	0.39	0.43
		0.01%	0.14%	0.09%	0.11%	0.10%
7	Average	$3	$34	$27	$34	$34
	CV	7.601	4.335	4.897	5.227	5.504
	Ratio	1.12	1.13	1.04	1.31	1.55
		0.03%	0.38%	0.30%	0.37%	0.37%
8	Average	$1	$17	$12	$9	$11
	CV	3.522	2.512	2.543	2.233	2.314
	Ratio	0.46	0.57	0.45	0.33	0.50
		0.01%	0.19%	0.12%	0.09%	0.11%
9	Average	$0	$5	$4	$1	$4
	CV	#DIV/0!	2.127	2.422	4.000	3.166
	Ratio	0.00	0.17	0.14	0.03	0.18
		0.00%	0.06%	0.04%	0.01%	0.04%
10	Average	$1	$7	$6	$7	$7
	CV	4.186	5.295	5.916	5.916	5.916
	Ratio	0.35	0.23	0.25	0.25	0.31
		0.01%	0.07%	0.07%	0.07%	0.07%
11	Average	$0	$36	$29	$33	$38
	CV	#DIV/0!	2.489	3.162	3.162	3.162
	Ratio	0.00	1.19	1.11	1.26	1.69
		0.00%	0.33%	0.25%	0.29%	0.32%
12	Average	$1	$41	$51	$29	$30
	CV	4.796	3.171	3.313	4.031	3.884
	Ratio	0.35	1.35	1.98	1.11	1.34
		0.01%	0.45%	0.55%	0.32%	0.31%
13	Average	$2	$17	$16	$16	$19
	CV	4.243	3.685	3.876	3.870	3.931
	Ratio	0.85	0.55	0.63	0.61	0.83
		0.02%	0.17%	0.17%	0.17%	0.19%
14	Average	$6	$56	$52	$56	$55
	CV	2.624	1.734	1.709	1.778	1.830
	Ratio	2.63	1.85	2.02	2.13	2.47
		0.06%	0.57%	0.54%	0.56%	0.56%

Appendix F:

List of Districts for Base Cost Recommendation

Notably Successful Districts without Outliers

District Code	District Name
3020	Otsego Public Schools
9090	Pinconning Area Schools
11020	St. Joseph Public Schools
11340	Bridgman Public Schools
16015	Cheboygan Area Schools
18010	Clare Public Schools
19070	Fowler Public Schools
19120	Ovid-Elsie Area Schools
23490	Oneida Township S/D #3
25030	Grand Blanc Community Schools
32060	Harbor Beach Community Schools
33060	Haslett Public Schools
33170	Okemos Public Schools
33230	Williamston Community Schools
35030	Tawas Area Schools
36015	Forest Park School District
41040	Byron Center Public Schools
41050	Caledonia Community Schools
41090	East Grand Rapids Public Schools
41110	Forest Hills Public Schools
45010	Glen Lake Community Schools
46040	Blissfield Community Schools
47010	Brighton Area Schools
50130	Lakeview Public Schools (Macomb)
56010	Midland Public Schools
61230	North Muskegon Public Schools
62040	Fremont Public School District
63010	Birmingham Public Schools
63040	Royal Oak Schools
63050	Berkley School District
63080	Bloomfield Hills Schools
63100	Novi Community School District
63150	Troy School District
63190	Clarkston Community School District
63230	Lake Orion Community Schools
63240	South Lyon Community Schools
63260	Rochester Community School District
63270	Clawson Public Schools
65045	West Branch-Rose City Area Schools
70010	Grand Haven Area Public Schools
70175	Jenison Public Schools
70190	Hudsonville Public School District
70300	Spring Lake Public Schools
70350	Zeeland Public Schools

District

District Code	**District Name**
72010	Roscommon Area Public Schools
78070	New Lothrop Area Public Schools
80160	Paw Paw Public School District
81010	Ann Arbor Public Schools
81040	Chelsea School District
81050	Dexter Community School District
81120	Saline Area Schools
82055	Grosse Pointe Public Schools
82100	Plymouth-Canton Community Schools
82390	Northville Public Schools

Exemplary Districts using the Notably Successful

District Code	District Name
3020	Otsego Public Schools
11020	St. Joseph Public Schools
18010	Clare Public Schools
19070	Fowler Public Schools
19120	Ovid-Elsie Area Schools
23490	Oneida Township S/D #3
25030	Grand Blanc Community Schools
32060	Harbor Beach Community Schools
35030	Tawas Area Schools
46040	Blissfield Community Schools
47010	Brighton Area Schools
50130	Lakeview Public Schools (Macomb)
56010	Midland Public Schools
61230	North Muskegon Public Schools
62040	Fremont Public School District
63240	South Lyon Community Schools
65045	West Branch-Rose City Area Schools
78070	New Lothrop Area Public Schools
80160	Paw Paw Public School District

Appendix G:

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Works Cited

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