



AUGENBLICK,
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ASSOCIATES

Presentation to the Stakeholder Advisory Group

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Annapolis, MD
July 22, 2015



Today's Presentation

- Briefing on reports submitted in June
 - *Adequacy Cost Study: An Interim Report on Methodology and Progress*
 - *Final School Size Report: Impact of Smaller Schools*
 - *Evaluation of the Use of Free and Reduced-Price Meal Eligibility as a Proxy for Identifying Economically Disadvantaged Students*
 - *Final Report of the Study of Increasing and Declining Enrollment in Maryland Public Schools*
 - *A Review of the Literature on the Effects of Concentrations of Poverty on School Performance and School Resource Needs*



Report:

*Adequacy Cost Study: An Interim Report on
Methodology and Progress*

Overview

- This report details the progress to date on the adequacy study elements found in section 3.2.1 of the RFP. These include:
 - The three adequacy approaches – Evidence-Based, Professional Judgment, and Successful Schools
 - Case Studies of Improving Schools
 - Effects of concentrations of poverty on adequacy
 - Gaps in growth and achievement among student groups
 - Relationship between student performance and funding
 - Impact of quality prek as a factor in adequacy costs
 - Other factors impacting adequacy

Evidence-Based Approach: Work Completed To Date

- Work completed on conceptual model:
 - Update of the literature review completed
 - Initial draft of EB report (prior to input from EB panels or case studies) was completed, reviewed by MSDE, and presented to EB panel participants
- EB Excel simulation model is under development
 - Need to make decisions on prices (e.g. appropriate salaries and benefits, and nonpersonnel costs such as technology)

Evidence-Based Approach: Work Completed To Date

- EB panel work completed:
 - Worked with MSDE to identify 76 educators to serve on four panels held around the state. Each panel included:
 - District administrators (supt., director of student services, director of curriculum & instruction, technology specialist, CFO, school board member)
 - Principals (from all school levels)
 - Teachers (from all school levels, classroom & special needs)
 - Teacher team leaders/instructional coaches/tutors

Evidence-Based Approach: Work to be Completed

- Update conceptual model based on information from panels and case studies
- Complete work on Excel simulation model
 - Update with 2013-14 and 2014-15 data when available
- Estimate values for per student base cost and weights for special needs

Professional Judgment Approach: Work Completed To Date

- Work completed:
 - Initial draft of literature review provides a summary of key programs and strategies supported by education research, purpose is to orient panel members to the task at hand
 - Summary of state standards/performance expectations ensures that all panelists are acquainted with the state's performance expectations
 - PJ panels:
 - Number and types of PJ panels determined
 - Types of participants identified, preferred qualifications developed and provided to MSDE

Professional Judgment Approach: Work to be Completed

- Develop a set of representative districts and schools using data on Maryland enrollments, student demographics, and school grade configurations – used in PJ panel process
- Complete other PJ panel materials, including agendas, a description of the panel process, and resource spreadsheets for logging resource decisions made by the panels
- Work with MSDE to select panelists
- Hold PJ panels in fall
- Create an Excel model for estimating the cost of implementing the PJ adequacy model in Maryland
 - Update with 2013-14 and 2014-15 data when available
- Estimate values for per student base cost and weights for special needs

Successful Schools Approach: Work Completed To Date

- Initial list of of high performing schools identified
 - Consists of 88 schools (51 elementary/K8, 20 middle, 17 high) from 13 counties
 - Developed draft school expenditure data collection tool

Successful Schools Approach: Work to be Completed

- Finalize list of successful schools
- Convene (virtually) a small group of CFOs to review data collection tool, then finalize
- Collect school level expenditure data
- Analyze school expenditure data
 - Update when PARCC data become available in 2015 and 2016
- Estimate per student base cost

School Case Studies: Work Completed To Date

- Selected 12 high performing/ improving schools
- Training on site visit protocol was provided to MEP staff in October
- Conducted school site visits between October 2014 and March 2015
- Case study reports for each school site have been drafted, describing the school, school performance, and instructional strategies

School Case Studies: Work to be Completed

- Most of the reports are awaiting final editing and submission to MSDE
- Draft cross-case analysis of 12 cases

Adequacy Sub-Studies:

- **Effects of Concentrations of Poverty on Adequacy**
Targets: literature review completed, further analyses from adequacy approaches will be conducted
- **Identify Gaps in Growth and Achievement Among Student Group:** work to be completed during winter 2015-16
- **Correlation of Student Performance with Funding:** work to be completed fall-winter 2015-16
- **Impact of Quality PreK on School Readiness and Adequacy:** work being carried out in tandem with the prek services study required by the RFP, will be completed during winter 2015-16
- **Recommendations for Other Factors Impacting Adequacy:** none to date



Report:

Final School Size Report: Impact of Smaller Schools

Final School Size Report: Impact of Smaller Schools

- This report is the third and final school size report. The report reviews the analyses and findings from the first two school size reports and introduces new analyses, findings, and recommendations on school size.
- This new content includes the following:
 - an extension of the findings from the literature review on the impacts of smaller schools on student achievement, efficiency, and school climate;
 - an identification of models for establishing smaller schools, as taken from the literature;
 - an assessment of the impact of smaller schools on student achievement, school operating costs, and school construction funding in Maryland; and
 - a presentation of recommendations on maximum school size.

Final School Size Study: Recommendation 1

The study team has developed two recommendations for state policy makers to consider, each related to school size:

1. Create a policy establishing maximum school sizes by school level (elementary, middle, and high). These maximum school sizes would be set at the enrollment levels at which school operating costs were no longer benefiting from economies of scale and where student performance tends to decrease due to larger school size.
 - The research team has suggested enrollment limits based on the points at which schools in Maryland start becoming both less cost efficient and less productive.
 - These enrollment limits are set at 700 students for elementary schools, 900 students for middle schools, and 1,700 students for high schools.
 - The study team does not recommend that schools in Maryland should be this large, but no newly constructed schools should be allowed to exceed these limits.

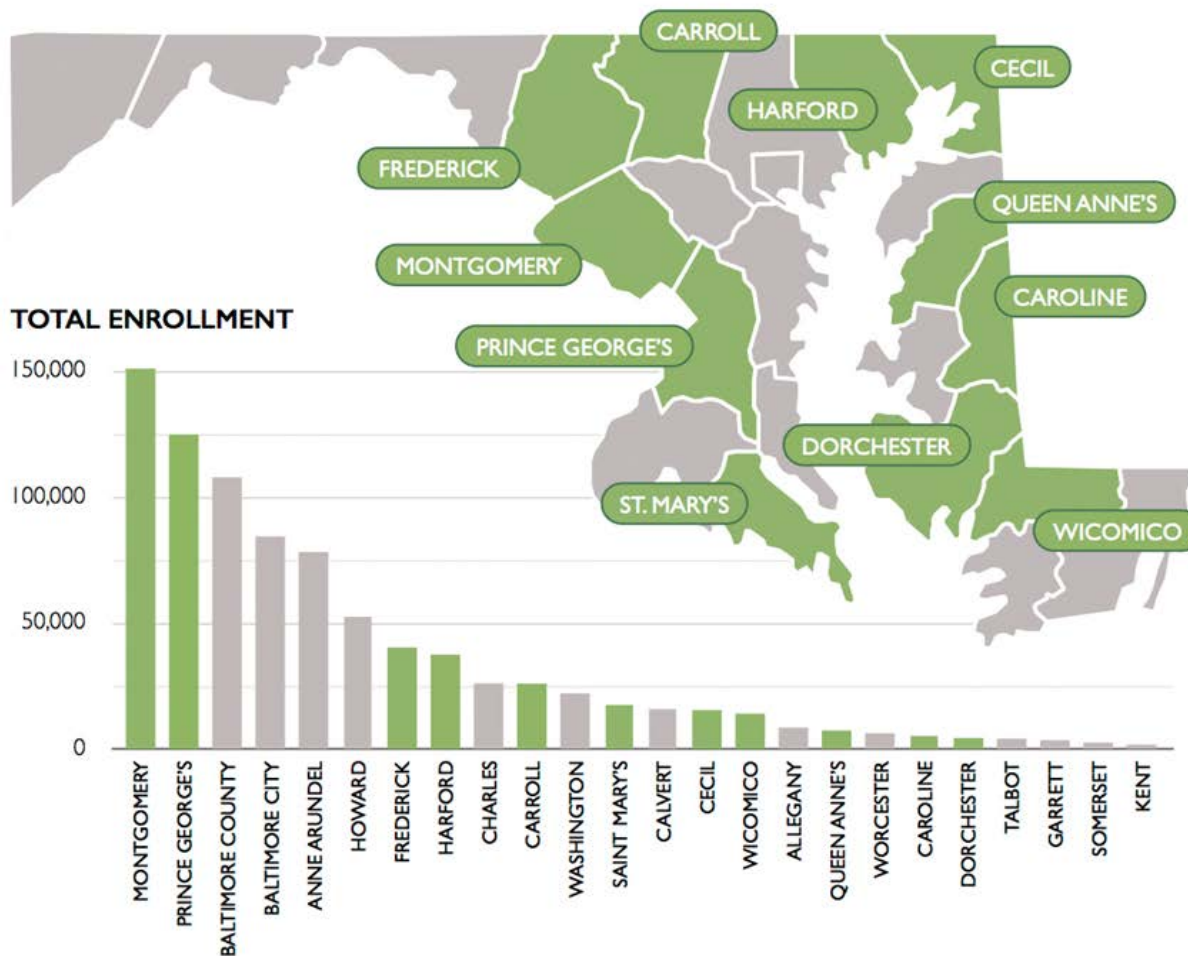
Final School Size Study: Recommendation 2

The study team has developed two recommendations for state policy makers to consider, each related to school size:

2. Institute a competitive grant program to support the construction of small schools and/or the renovation of existing large school buildings. Such a program would help accommodate school-within-school models – that is, the program would be targeted toward replacing or reconfiguring the lowest-performing large schools in the State.
 - The second recommendation suggests that the State should develop a small schools incentive grant program. Such a program would provide financial incentives and support for replacing the State’s largest, low-performing schools or for renovating existing large school buildings to house them.
 - Based on the research team’s assumptions, up to 74 schools would be eligible for this type of grant. The estimated costs vary, but will ultimately be controlled by the fiscal decisions of state policy makers.

LEAs With School Size Policies

The map below, highlights those LEAs with school size policies. The embedded chart at the bottom of the figure shows total student enrollment for each LEA.



Policies/Best Practices from the States

The Table below presents the number of states with policies or guidelines related to the facility planning components listed above.

Facility Planning Component	Number of States With a Statute, Published Guideline, or Recommendation
Classroom Size	29
Site Size	28
Square Footage/Student	22
Educational Facilities Master Plan	8
School Size	2

Policies/Best Practices from the States

- Of the best practices policies identified, the development of EFMPs is consistently recognized as a best practice, particularly for public entities that have a fiduciary responsibility to taxpayers to protect and manage capital assets.
- Organizations such as the Government Finance Officers Association promote EFMPs as a best practice tool
 - (1) for kindergarten through grade 12 school systems to connect facility needs with educational goals; and
 - (2) for direct governments, both local and state, to align capital investments with long-term needs.

School Size and Operating Efficiency

- The research on the relationship between school size and efficiency is not conclusive, but evidence suggests that school operating efficiency is U-shaped.
 - Very small schools do experience greater inefficiencies, but as schools grow larger, their efficiency advantage is diminished by the increasing costs of administration and of the need for greater coordination across a larger, more complex school organization (Stiefel et al., 2000; Walberg & Walberg, 1994).

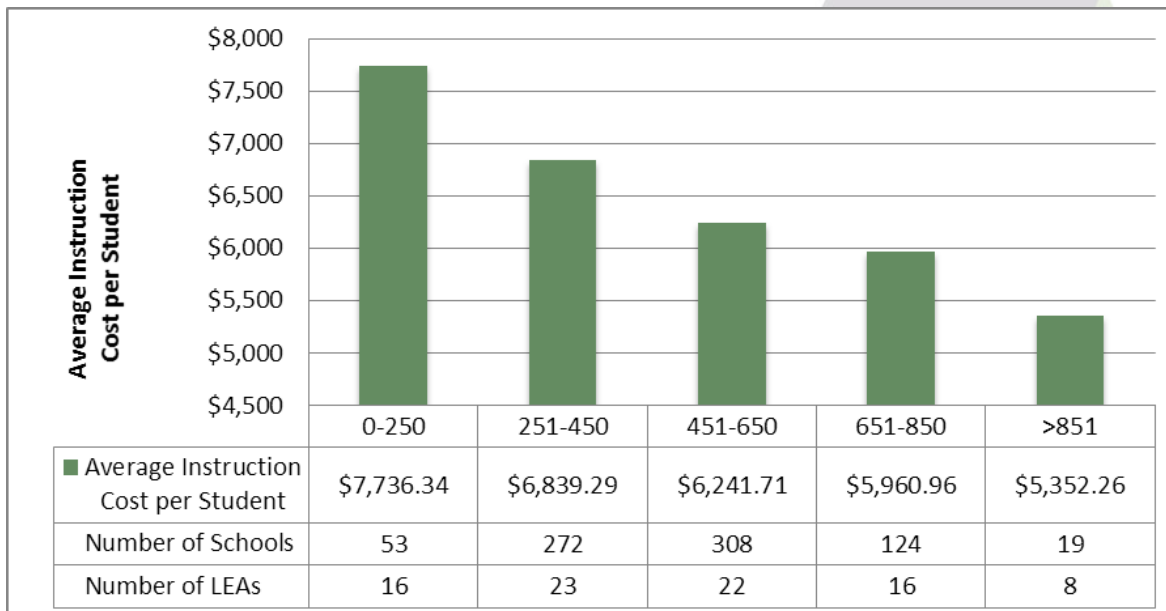
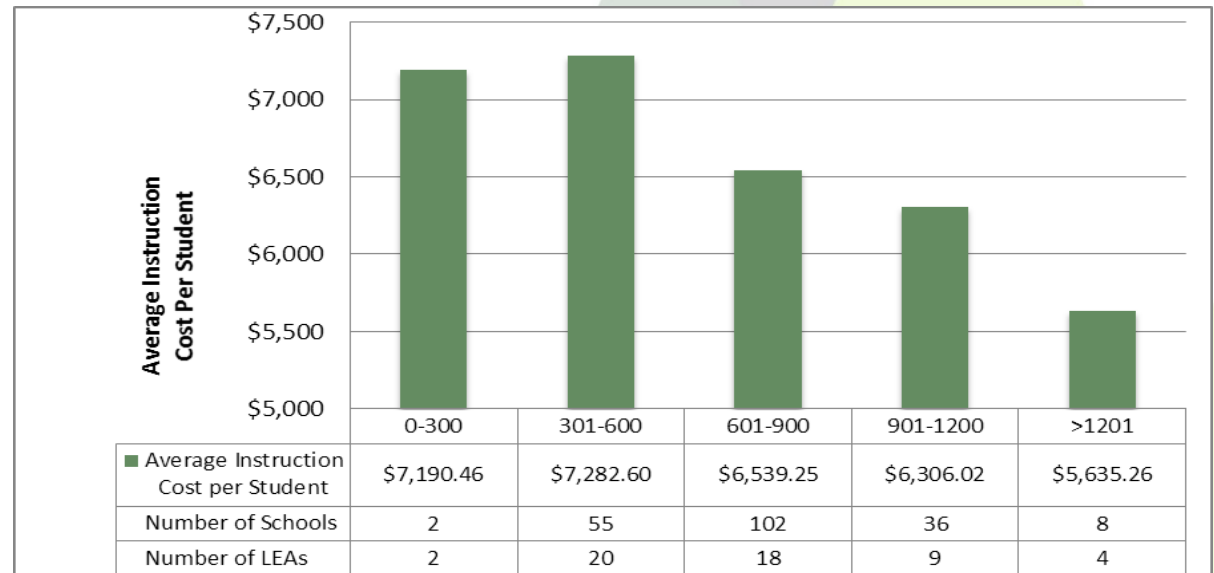
School Size and Operating Efficiency

The change in costs as school size increases appears larger in the Maryland school data than the amount of change that would be expected based on research data. The data that was collected indicates that Maryland's small schools (See high [below], middle and k-8 and elementary Charts on the next page), result in higher per student salary costs.



School Size and Operating Efficiency

Middle School



K-8 and Elementary

School Size and Student Achievement

- A meta-analysis of studies of small schools (Rochford, 2005) found that school size functions primarily as an enabler of improved student outcomes.
- The meta-analysis found that the schools that were able to improve student outcomes were also the schools that had decreased their enrollment numbers as part of a suite of related reform efforts.
- Early implementers and proponents of small schools speculated that, with fewer students, school staff would be able to form deeper and more supportive relationships.
 - Indeed, this hypothesis was proven to be true – but only in the schools that also changed their approaches to community engagement, instruction, and school structure.

School Size and Student Achievement

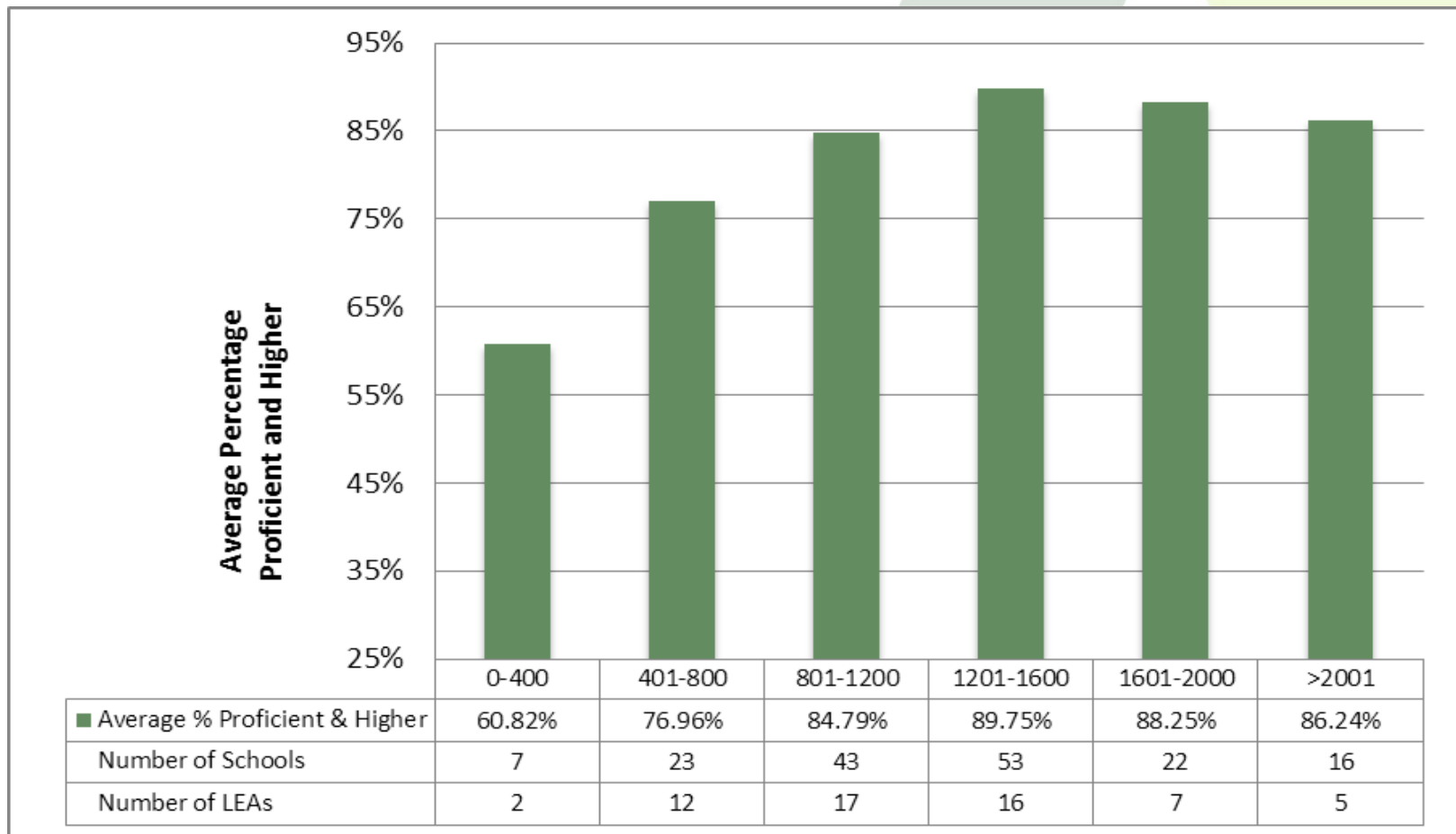
- First and foremost, these small schools benefited from leadership that both
 - (1) set a tone that encouraged personalization and
 - (2) distributed responsibility for reform efforts among multiple staff as well as the community at large.
- Successful small schools focused on improving the quality of instruction, often implementing new curricula or approaches to teaching.
- Teachers and leaders participated in professional development to learn new methods of content delivery and relationship-building skills.

School Size and Student Achievement

- It is critical to note that the literature shows smaller schools and smaller learning environments have an even more pronounced effect on children from low-income families (Friedkin & Necochea, 1988; Greenwald, Hedges, & Laine, 1996).
 - In addition to improved grades and standardized test scores,
 - low-income elementary-aged students attending small schools have better attendance and fewer behavior problems, and
 - increased participation in extracurricular programs compared to low-income students in larger schools.

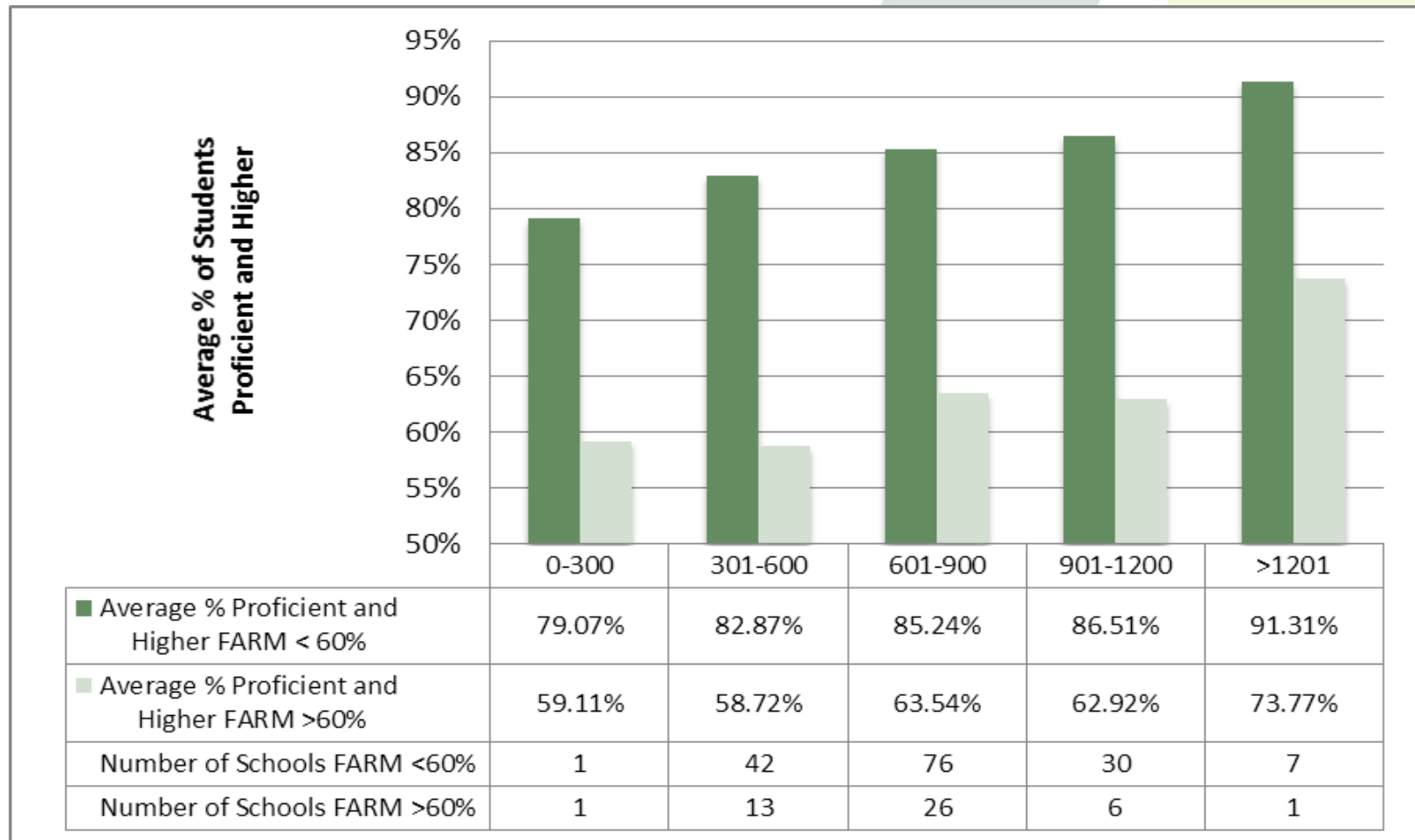
School Size and Maryland Achievement

- High Schools



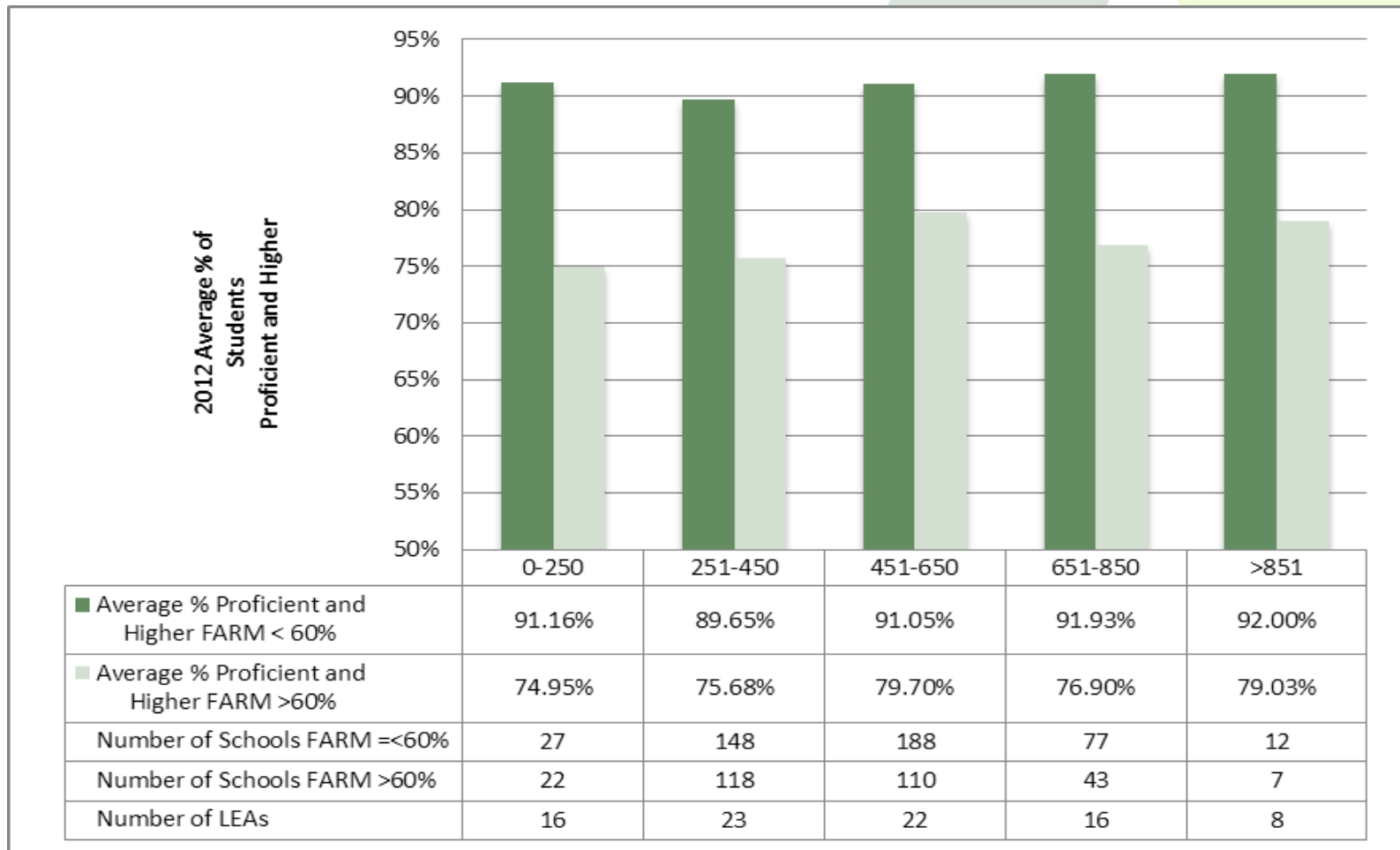
School Size and Maryland Achievement

- Middle Schools



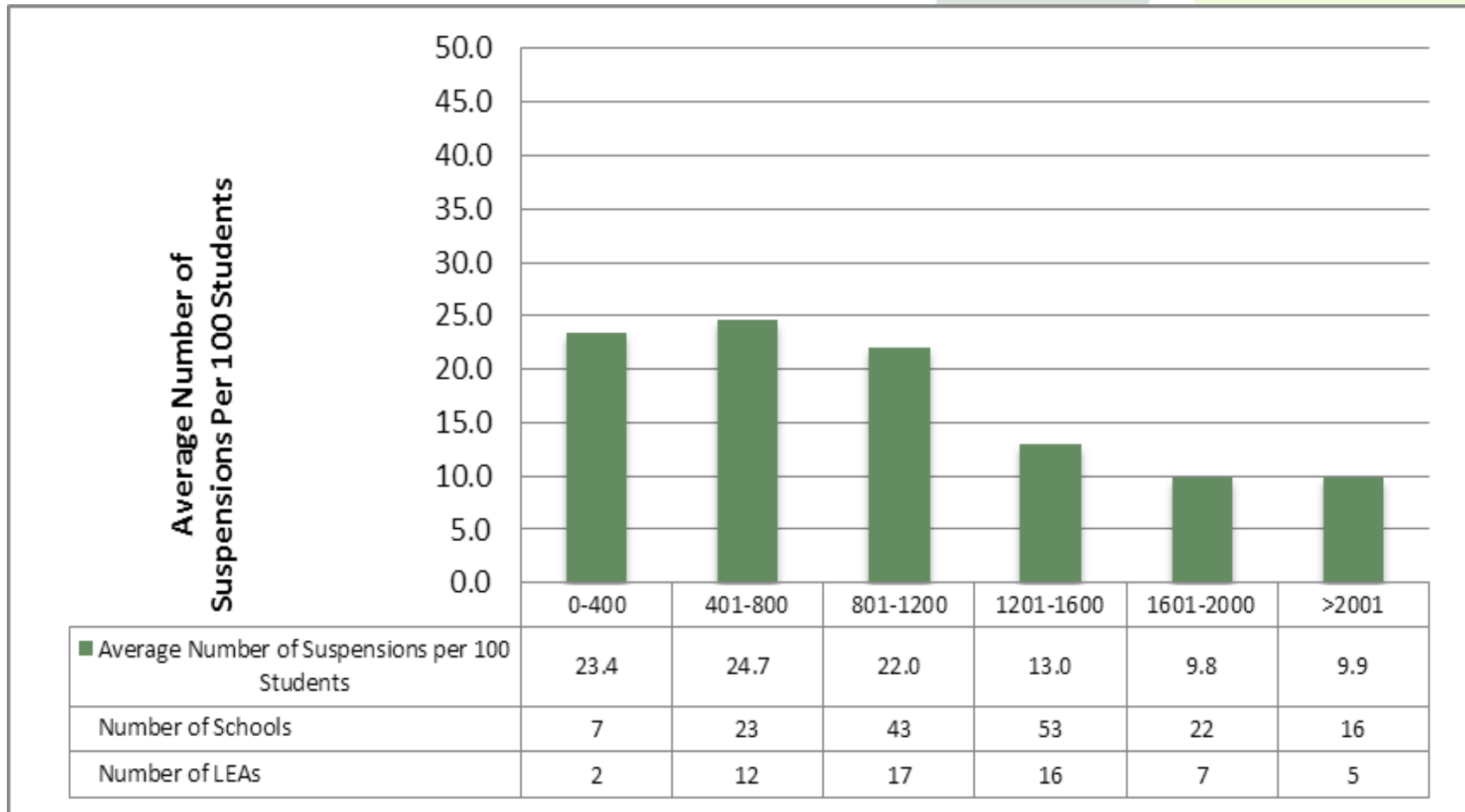
School Size and Maryland Achievement

- Elementary Schools



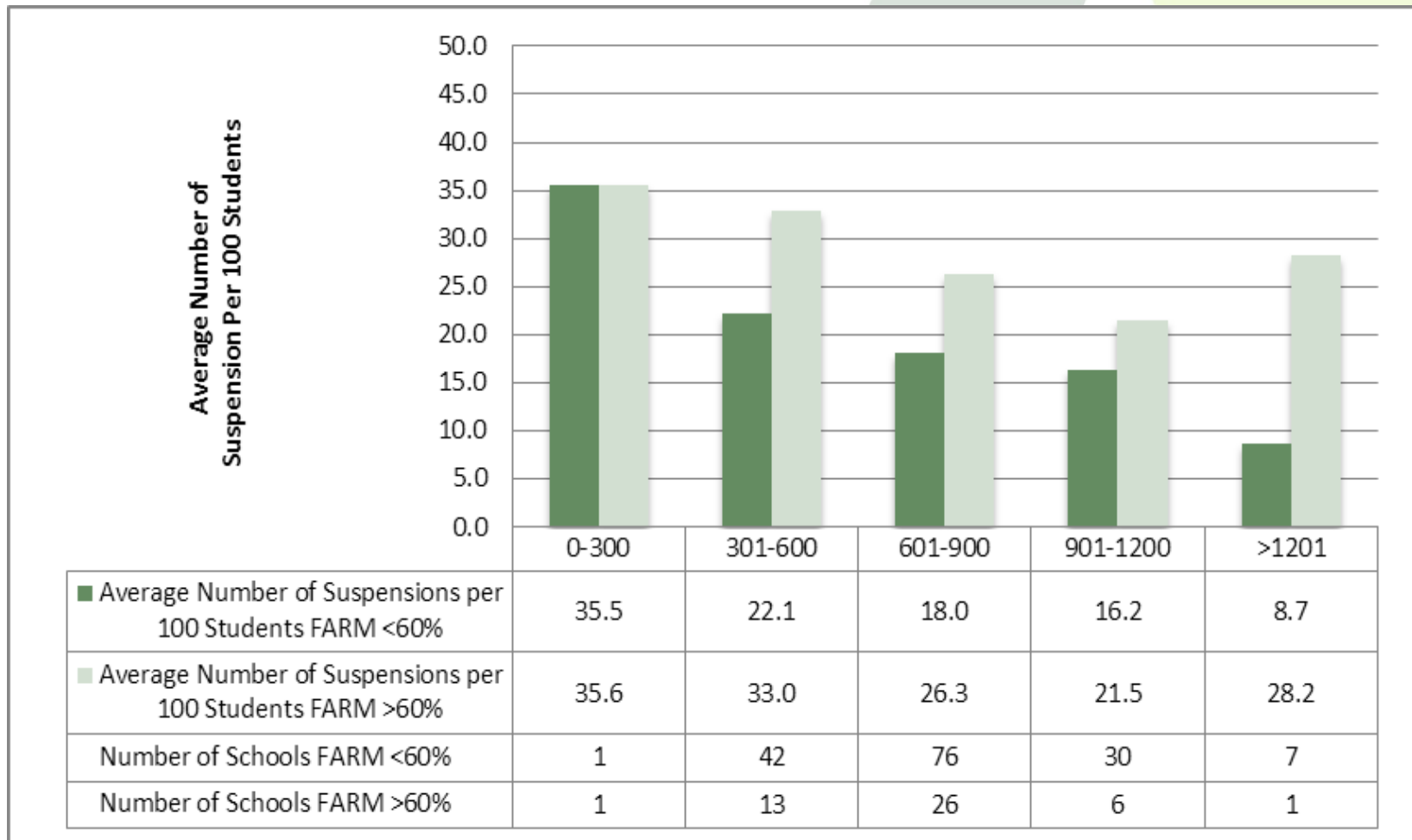
School Size and Suspensions per 100 Students

- High Schools



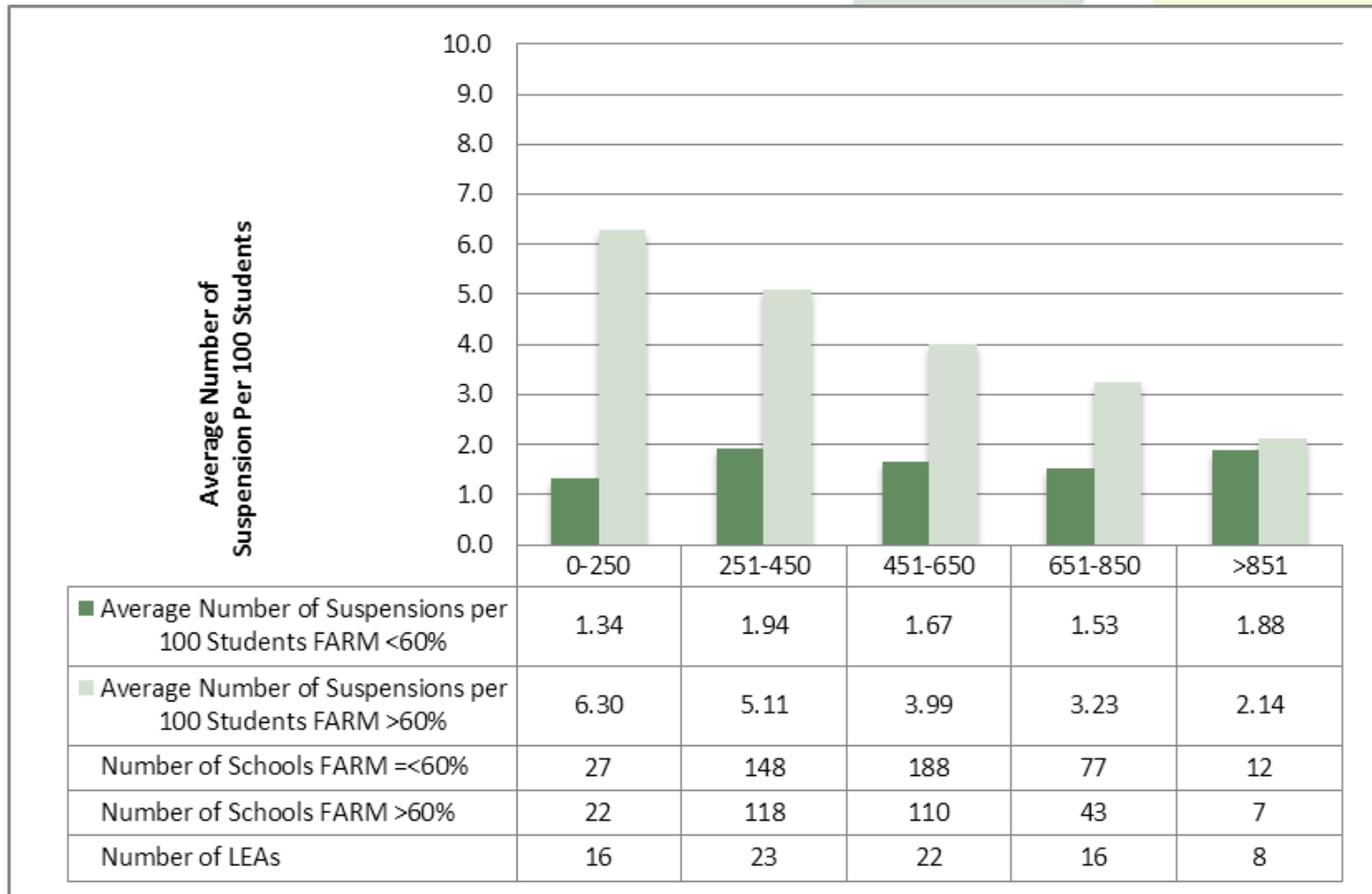
School Size and Suspensions per 100 Students

- Middle Schools



School Size and Suspensions per 100 Students

- Elementary Schools

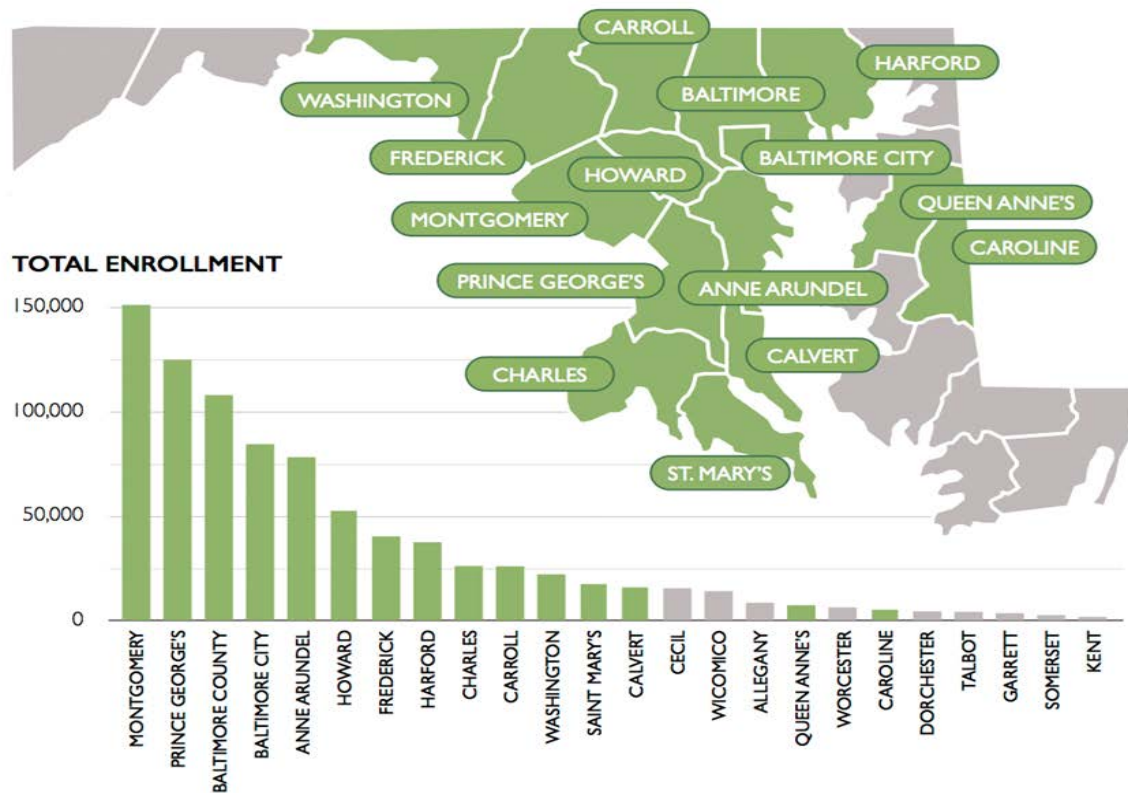


Models of Smaller Schools

- Several comprehensive reform models have emerged for creating smaller schools or smaller learning environments. A number of factors – students, facilities, operating autonomy, and instructional philosophy – guide LEAs as they select models for smaller and more personalized learning environments.
 - School within a School/School within a Building
 - Career Academies
 - Autonomous Small Schools
 - Alternative Schools
 - Magnet or Theme-based Schools

Adequate Public Facilities Policies

- An Adequate Public Facilities Ordinance (APFO) ensures that infrastructure necessary to support proposed new residential developments, including public schools, is built concurrently with, or prior to, a proposed development.



School Construction Costs

	\$/Square Foot	\$/Student	Square Footage/Student	Number of Students	Building Size
Elementary Schools					
Lowest Quartile	\$178.57	\$28,902	149.2	552	75,000
Median	\$211.55	\$43,693	188.0	624	84,700
Highest Quartile	\$267.50	\$59,789	204.5	735	103,000
Middle School					
Lowest Quartile	\$196.72	\$35,524	147.4	470	80,290
Median	\$242.96	\$43,635	173.4	612	118,500
Highest Quartile	\$270.91	\$57,395	195.4	899	150,000
High Schools					
Lowest Quartile	\$194.75	\$32,126	148.2	650	120,000
Median	\$235.29	\$49,000	180.0	1,000	173,727
Highest Quartile	\$348.92	\$66,759	222.8	1,400	267,000

School Construction Costs

- The per student cost of smaller schools
 - The initial cost per student at smaller schools is often higher per student due to the cost of land acquisition, athletic field development, and support spaces being spread over a smaller number of students.
 - As a strategy to mitigate the proportionately higher cost per student of athletic spaces (and other common spaces) for small schools, some districts have pursued joint use agreements with local parks and recreation districts.
 - In addition to the perception that larger schools are cheaper to build and operate, in urban and suburban areas, the lack of available or affordable land is often a key factor that leads to larger school size.

Final School Size Study:

Recommendation 1 Estimated Cost

- Because the suggested maximum school sizes are set at a relatively high level, the cost impact of this recommendation is estimated to be minimal.
 - Based on the national size and cost data presented in the table above, for construction projects completed in 2014, the average enrollment size of new school buildings nationally was 624 students for new elementary schools, 612 students for middle schools, and 1,000 students for high schools.
 - If these figures are representative of the new construction projects in Maryland, then the average size of new construction of schools at all three levels was smaller than the suggested new maximum school sizes. As a result, there would be no statewide cost impact.
 - However, without similar data on the size of new school construction projects in Maryland it is impossible to develop an exact estimate of what the cost of this recommendation may be.

Final School Size Study:

Recommendation 2 Estimated Cost

- To project the annual operational impact, the following differential instructional cost per student was used: \$940 per elementary school student, \$980 per middle school student, and \$1,030 per high school student. These differential costs are based on the actual costs per student in Maryland.
- At average school sizes, a total of 42 new elementary schools would need to be constructed to accommodate the students currently enrolled in the 24 large, low performing schools. At the middle school level 18 new, smaller schools would need to be constructed to replace the existing 12 larger schools. For high schools 14 new schools would be needed to replace the existing 9 larger schools.

Final School Size Study:

Recommendation 2 Estimated Cost

- If all eligible schools were to apply to grants for the new construction of smaller schools, given the assumed parameters described above a total of 74 new, smaller schools would be funded at a total construction cost of \$2.5 billion. The estimated increase in annual operating costs of the new, smaller schools compared to those of the current, larger schools is \$40.7 million.
- The research team does not believe that all eligible schools would apply for the grant, that all schools would apply to build new schools rather than renovate existing, large school buildings, or that all grant applications would be approved.
- The Maryland Legislature could use the appropriation process to control the annual and overall cost of the grant program. For example, the grant program could be implemented over a five or 10-year period to reduce the annual costs of the program.



Report:

Evaluation of the Use of Free and Reduced-Price Meal Eligibility as a Proxy for Identifying Economically Disadvantaged Students: Alternative Measures and Recommendations

Evaluate Free and Reduced-Price Meals (FRPM) eligibility as proxy for economically disadvantaged students, including consideration of alternative measures and recommendations

- Examine impact of Community Eligibility Provision (CEP) of the Healthy, Hunger-Free Kids Act (HHFKA) on school funding formulas driven by FRPM counts.
- Identify how states are responding to the CEP provisions, including alternative indicators being used by state formulas.
- Simulate use of FRPM-based and alternative indicators in Maryland and make recommendations.

Maryland's Compensatory Aid Formula

- Current primary and secondary education funding includes targeted state aid for economically disadvantaged students.
- Funding determined by providing additional weight of .97 of the per student foundation for students eligible for federal FRPM program.
- For the 2014-2015 school year, equals \$6,654 per eligible student, with on average half paid by the state (\$3,327) + foundation amount of \$6,860.

Maryland in Context

- 39 states plus District of Columbia provide compensatory aid.
- 22 states use FRPM-eligibility (Maryland included).
- 7 states restrict eligibility to free meals only.
- 9 states plus the District of Columbia use direct certification and/or categorical classifications.
- 3 states use Title I.
- 2 states use local poverty rates.

Determining FRPM Eligibility

- Direct Certification (Identified Students)
 - Homeless
 - Foster care
 - Head Start
 - Migrants
 - Supplemental Nutritional Assistance Program (SNAP)
 - Food Distribution Program on Indian Reservations (FDPIR)
 - Temporary Assistance for Needy Families (TANF)
- Federal Application Form

Challenges to FRPM as Proxy

- Validity
 - Purported under-reporting, especially upper grades and poorer neighborhoods.
 - Purported over-reporting according to some state audits (Indiana).
 - Continued increases in FRPM as percent of enrollment (> 50% nationwide).
- Healthy, Hungry-Free Kids Act, 2015
 - Community Eligibility Provision.

Community Eligibility Provision

- Under CEP, schools may qualify all students for free meals if 40% or more students are directly certified as FRPM eligible in the prior year.
- CEP eligibility is for four years, during which time all students receive free meals in the school.
- During this time school districts may *not* use a federal application to determine FRPM eligibility in a CEP school.
- A school can re-qualify for CEP at the end of the fourth year (through direct certification).

CEP Nationwide, 2014-2015

- 45% of eligible schools adopted CEP (40% directly certified or more).
- 63% of high-poverty schools adopted CEP (60% directly certified or more).
- Steady growth since piloting, 2011-2012
- But many school districts taking a “wait-and-see” approach.

CEP Maryland, 2014-2015

- 371 schools in Maryland eligible to participate in CEP.
- Representing 216,800 students (about 25% of state enrollment).
- Only 6 schools actually participated (1.6%).
- Likely increases in adoption in the future.

Possible Implications

- CEP does not provide a full count of FRPM students, only directly certified students.
- Because CEP does not permit the use of the federal application form (paperwork reduction), CEP schools do not have a full FRPM-eligible count for at least four years.
- School districts in states that use FRPM counts fear losing compensatory aid if adopt CEP, including in Maryland.

Possible Strategies

- Use of Alternative Forms
 - School district and state-sponsored alternative forms used to collect income data.
- Hybrid Models
 - Use different method estimate counts in non-CEP and CEP schools.
- Alternative Indicators
 - Use non FRPM-based indicator of economic disadvantage.

Alternative Forms

- CEP allows use of school district, state – sponsored alternative form to collect information about household income.
- Greater flexibility to develop form, need not ask for some information (e.g., social security).
- Fear households will not complete form if no immediate benefit.
- Only anecdotal data about response rates, but, generally positive.

Hybrid Models

- Use direct certification and Federal application form in non-CEP schools.
- Use direct certification and a multiplier (e.g., 1.6) to estimate number FRPM eligible in CEP schools.
- “Freeze” qualifying year FRPM percent and multiply by current enrollment.
- Concern that estimates may over or under count; identification method different in non-CEP and CEP schools.

Alternative Indicators

- Use an indicator other than FRPM, so the same indicator used in non-CEP and CEP schools.
- Most common example counts based on direct certification in non-CEP and CEP schools.
- Concern that alternative indicators based on lower income thresholds reduce the state count for low-income students, for some indicators dramatically.

Simulations

- *FRPM-based Models*
 - Hybrid All
 - Hybrid 1.8
 - Hybrid 1.6
 - Hybrid 1.4
- *Alternative Indicators*
 - Free Only
 - Direct Certification
 - Title I
 - Poverty Rate
 - Weighted Poverty Rate

Evaluative Criteria

- **Accessibility**
 - How accessible are the data? Data collection burden.
- **Predictive Validity**
 - Correlation with economic need (2013 county poverty rate for school-age children)
- **Face Validity**
 - Does it seem credible? Public, policymaker response?
- **Distributional Effects**
 - What is the school district share of state count compared to school district share of state count using FRPM.
- **Other Comments**

FRPM-Based Indicators

- Accessibility
 - Hybrid-All and Hybrid 1.6 least burdensome.
 - Hybrid 1.8 and Hybrid 1.4 require periodic use of alternative form.
 - Some school districts already use alternative forms.
- Predictive Validity
 - All strongly predict county poverty rates ($r = .91$ to $.95$).

FRPM-Based Indicators

- Face Validity
 - Concerns about under and over counts.
 - Response rate for alternative forms unknown.
 - Hybrid 1.8, 1.6 and 1.4, only estimations, not a direct count
- Distributional Effects
 - Modest effects on shares
 - Hybrid 1.4 smallest effects on shares (0.5 to -0.2 percentage points).
 - Increases state share of count for school districts with greater numbers of students in CEP schools.

FRPM-Based Indicators

- Other Comments
 - U.S.D.E. permits classification of all CEP students as low income for purpose of accountability.
 - Classified “low income” students in CEP schools likely to be different than classified “low income” students in non-CEP schools.
 - Hybrid 1.8, 1.6 and 1.4 provide no individual indicator of income for purpose of accountability or eligibility for programs.
 - Only alternative form provides an individual indicator using the same income threshold in non-CEP and CEP schools.

Alternative Indicators

- Accessibility
 - Free only requires use of alternative form.
 - Direct Certification and Title I required by Federal regulations.
 - County poverty rates accessible online, at no cost, from U.S. Census Small Area Income and Poverty Estimates (SAIPE).
- Predictive Validity
 - All strongly predict county poverty rate ($r = .85$ to $.98$).

Alternative Indicators

- Face Validity
 - More restrictive, but reduces overall state count.
 - Free Only raises same issues about self reported income.
 - Direct Certification well-established eligibility but may under count due to stigma and legal status.
 - Title I mixes income and educational risk.
 - County Poverty Rates may underestimate school district poverty rate in counties with competing private schools.

Alternative Indicators

- Distributional Effects
 - Larger than FRPM-based indicators.
 - Smallest effects for Free Only (9 school districts).
 - Other models larger effects (23 school districts).
 - Largest effects associated with Weighted Poverty Rate (range = 28.7 to -9.2 percentage points).
 - Increases state share of counts for school districts with greater numbers of students with greater economic need.

Alternative Indicators

- Other Comments
 - Free Only, Direct Certification and Title I provide individual indicators of income.
 - Advantage to using same indicator for the funding formula and identification of students within and across school districts.
 - Poverty Rate and Weighted Poverty Rate do not provide individual indicator of low income. Require alternative indicator for purpose of accountability and determining eligibility for programs.

Recommendations

- FRPM-Based Indicators
 - Use of an alternative form will provide actual counts of FRPM eligible students in non-CEP and CEP schools.
 - Uses same method in non-CEP and CEP schools within and across school districts, enhances fairness.
 - Provides a individual indicator of income for purpose of accountability and qualification for programs.
 - Traditional indicator. Preserves status quo.

Recommendations

- Alternative Indicators
 - Direct Certification provides actual count of economically disadvantaged students.
 - Same method used in CEP and non-CEP schools within and across school districts, enhances fairness.
 - Provides indicator of individual income.
 - Established and increasingly used indicator in other states.
 - Requires adjustment to formula weight to address lower state counts and hold harmless provision during transition.
 - Shifts greater aid to school districts that serve students with greater economic need.



Report:

*Final Report of the Study of Increasing and
Declining Enrollment in Maryland Public
Schools*

Study of Increasing and Declining Enrollment

- Purpose of study is to assess the impact of enrollment changes on district finances, including transportation costs
- The study components consist of:
 - Data collection
 - Data analysis of various types of enrollment
 - Model of fixed and variable costs
 - Analysis of transportation costs and funding formula
 - Relationship of cost drivers to current funding formula
 - Relationship of district level policies and practices on operating costs
 - Recommend changes to transportation funding formula
 - Recommend funding adjustments for districts with decreasing enrollment

Data Collection

- Collected data from MSDE on enrollment, student transportation, operating expenditures, and school systems
- Reviewed available studies of impacts of changing enrollment and transportation funding systems from other states
- Reviewed Maryland Planning Department Public School Enrollment Projections report (2014), particularly impact of declining birth rates
- Interviewed four local school systems to determine impact of their practices on transportation costs

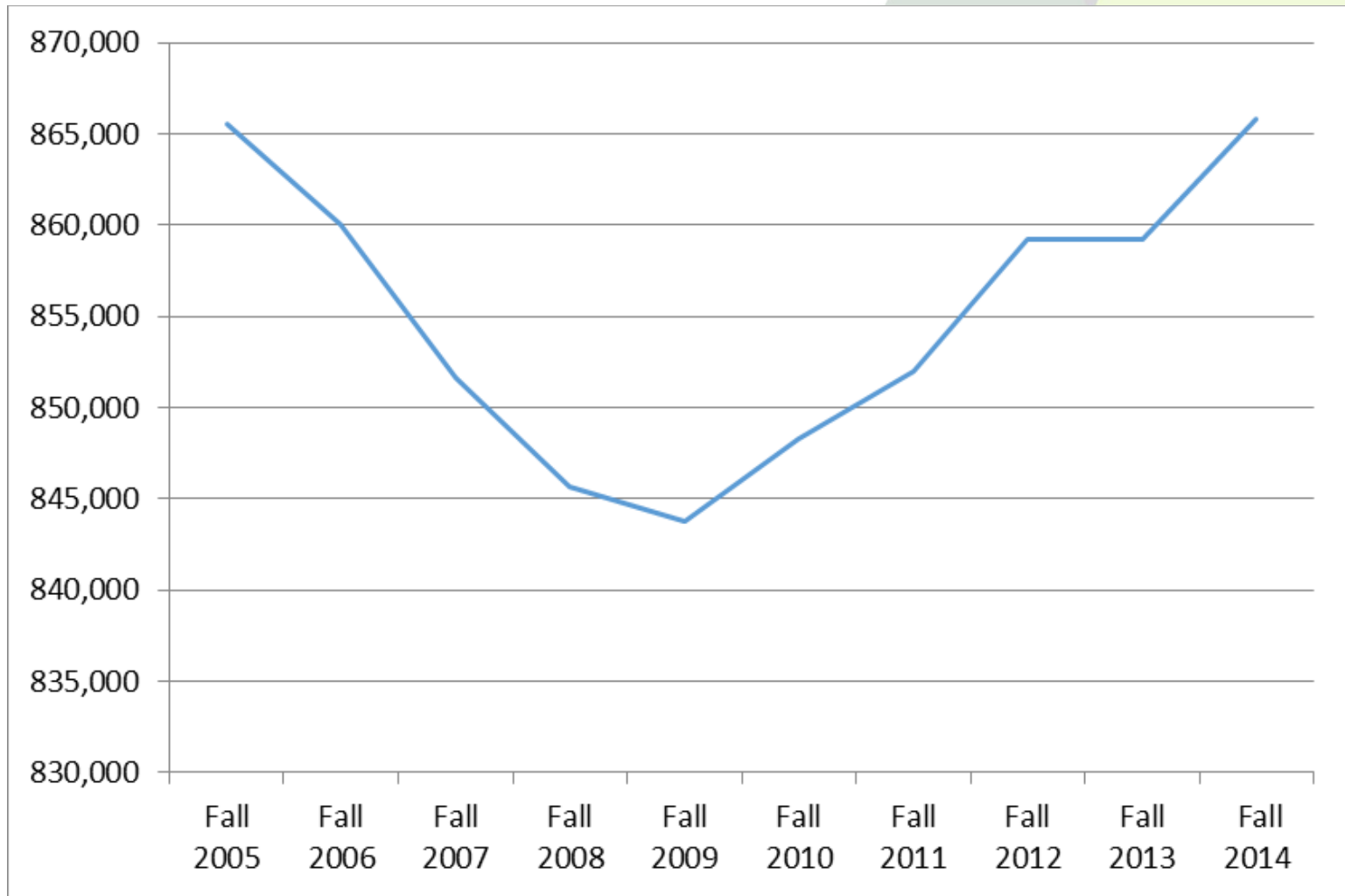
Data Analysis-Enrollment Trends

- Analyzed district level enrollment trends over 10 year period:
 - Total fall enrollment
 - Grade level enrollment
 - Prekindergarten
 - Kindergarten
 - Grades one to six
 - Grades seven to 12
 - Program enrollment
 - Special education
 - English Language Learners (ELL)
 - Title I Program

Initial Findings Guided Analysis

- Enrollment and operating factors reflected two periods
 - Before Great Recession
 - After Great Recession
- Future enrollment will be affected by birth rates that have decreased significantly in recent years in some areas
 - Research indicates that economic uncertainty impacts birth rates
 - Students from lower birth rate period are just entering school
 - Duration of lower birth rate is unclear

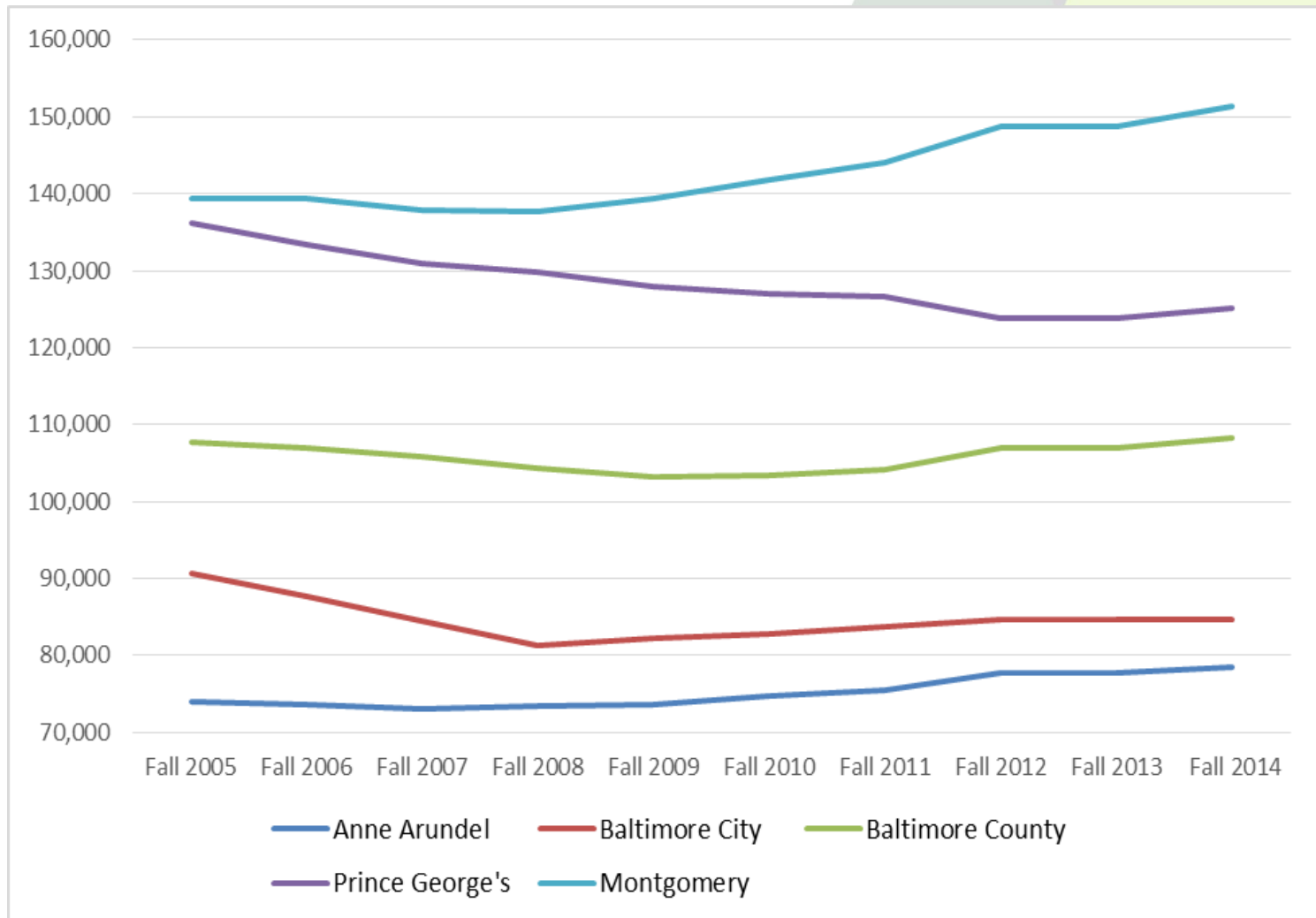
Trends in Maryland Public School Enrollment, Fall 2005 to Fall 2014



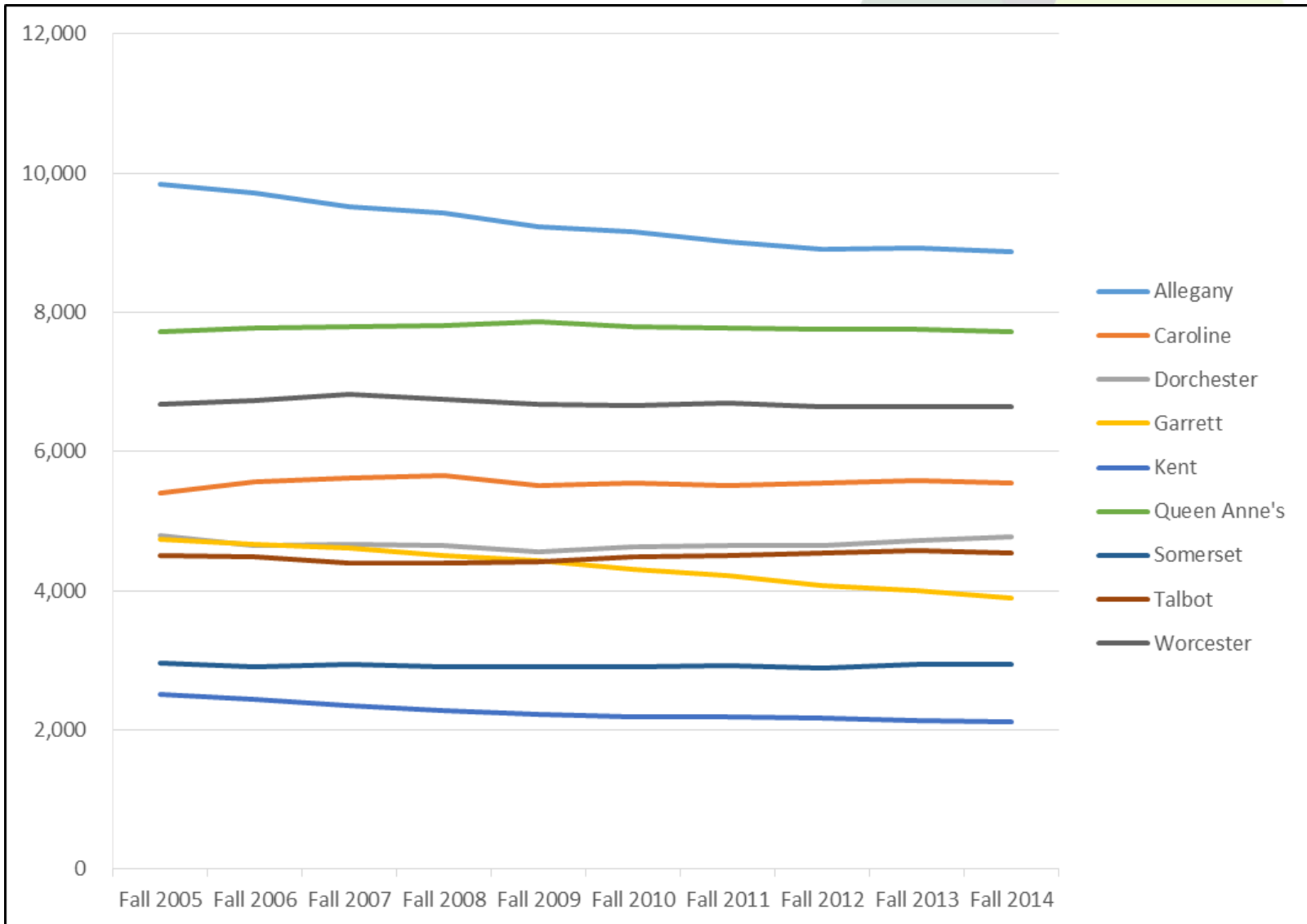
Changes in Fall Enrollment

- Statewide, enrollment declined 2.1% 2006-2010, increased 2.0% 2011-2015
- Districts with largest increases 2006-2015 were Howard Co. (9.5%), Montgomery Co. (8.5%), and Washington Co. (8.1%)
- Districts with largest decreases 2006-15 were Garrett Co. (-18%), Kent Co. (-15.8%), and Allegany Co. (-9.8%)

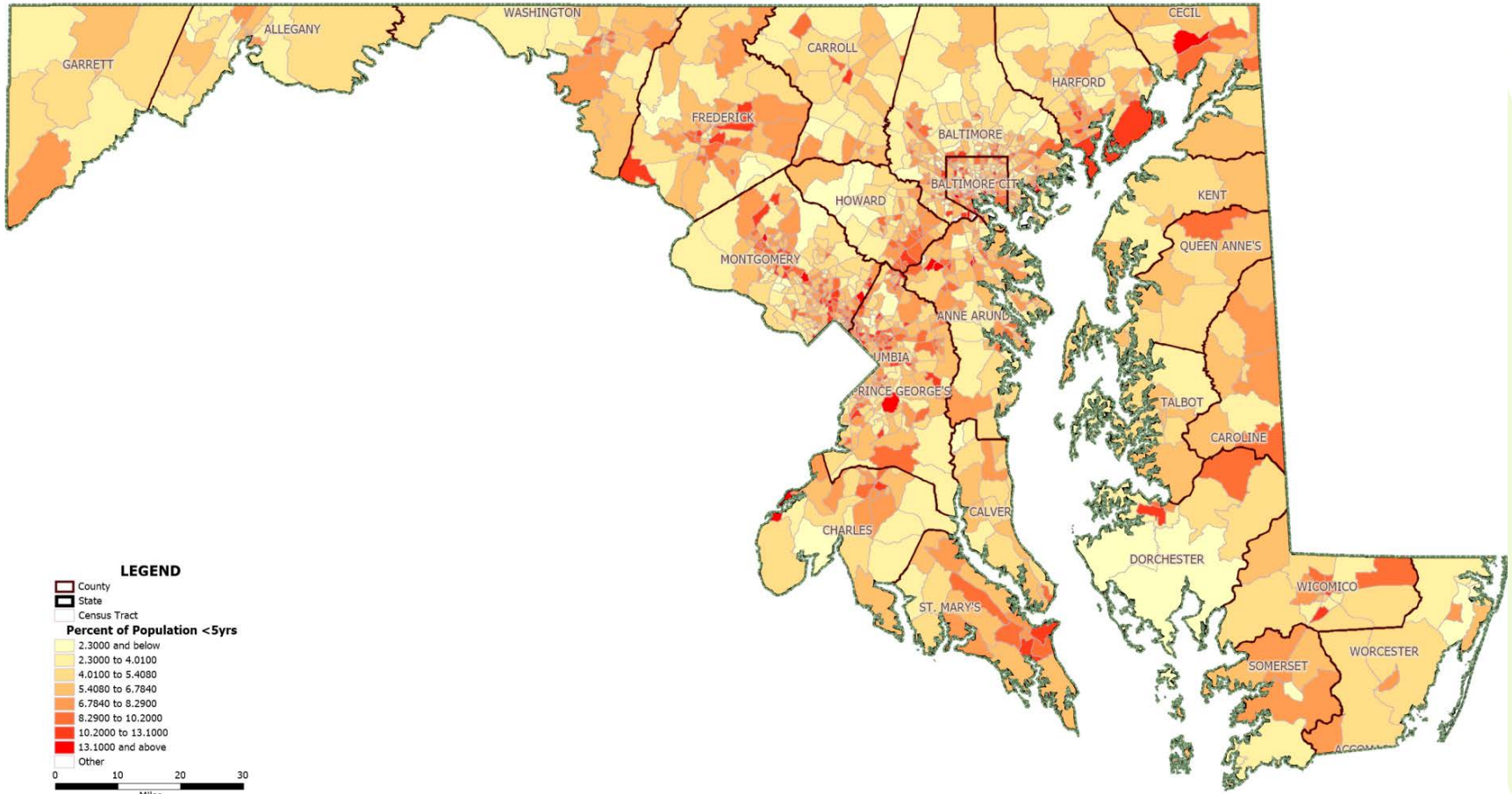
Change in Enrollment for Districts Greater Than 60,000 Students



Change in Enrollment for Districts Under 10,000 Students



Future Students not in School System Yet



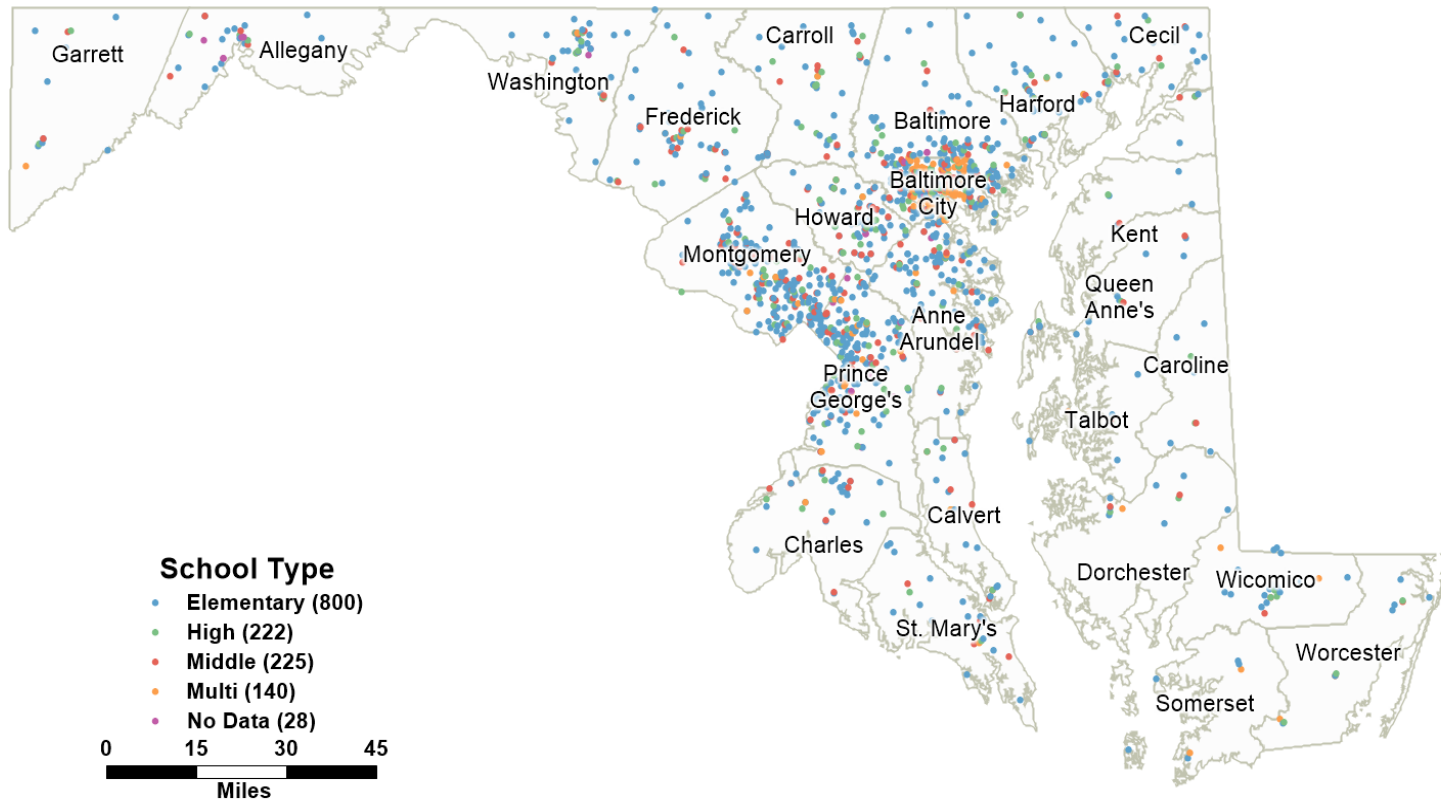
Changes in Special Education Enrollment

- Statewide decreased -6.2% 2006-15
 - -4.6% decrease 2005-10, -1.7% 2011-15
 - Somerset Co. largest increase (34.3%), Garrett Co. largest decrease (-37.7%)
- Only 6 counties experience increases, ranging from 0.5% (Prince George's County) to 34.3%

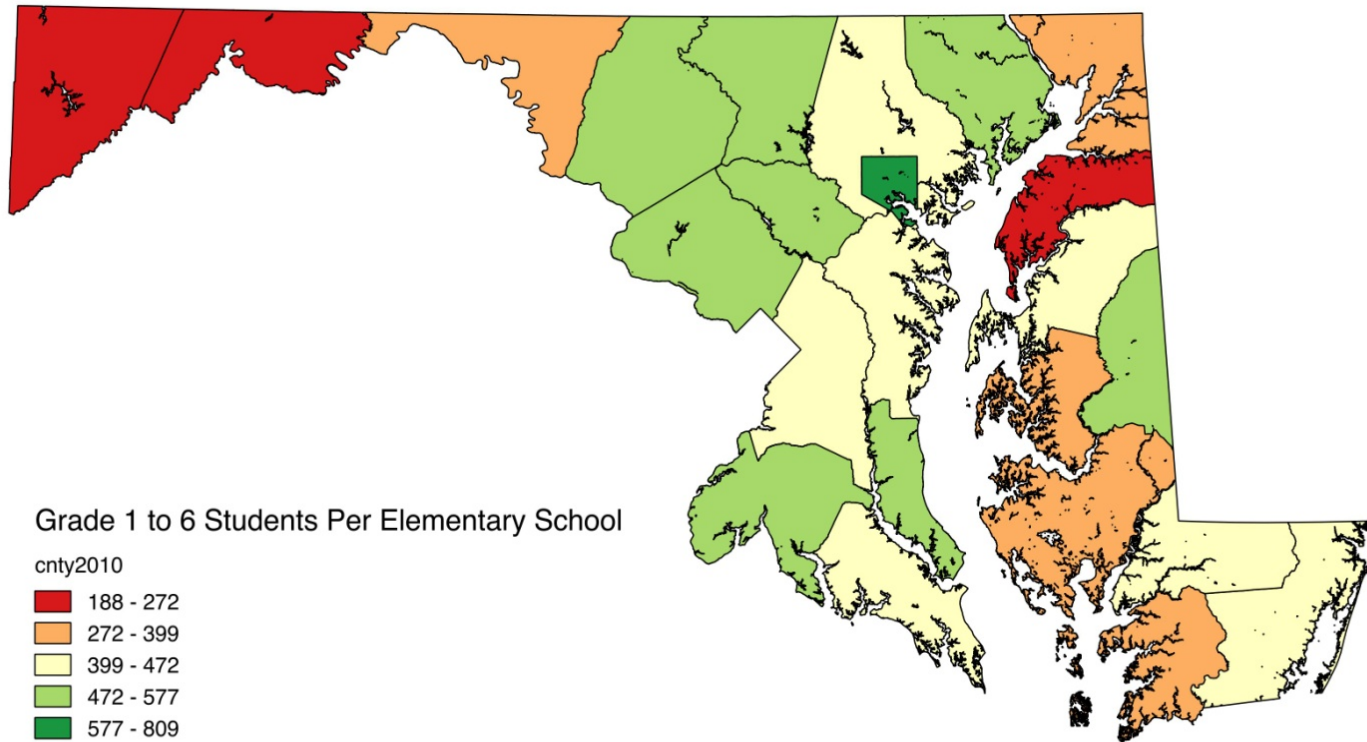
Enrollment Change and Operating Costs

- Analysis
 - Number of schools
 - Staffing
 - Instructional
 - Non-instructional
 - Transportation
 - Other Fixed and Variable Costs
- Findings
 - Variation in response to enrollment change in number of schools
 - Most school districts adjusted staffing-instructional costs more than non-instructional
 - Variation in eligibility, transportation cost per pupil, and services provided particularly for disabled students

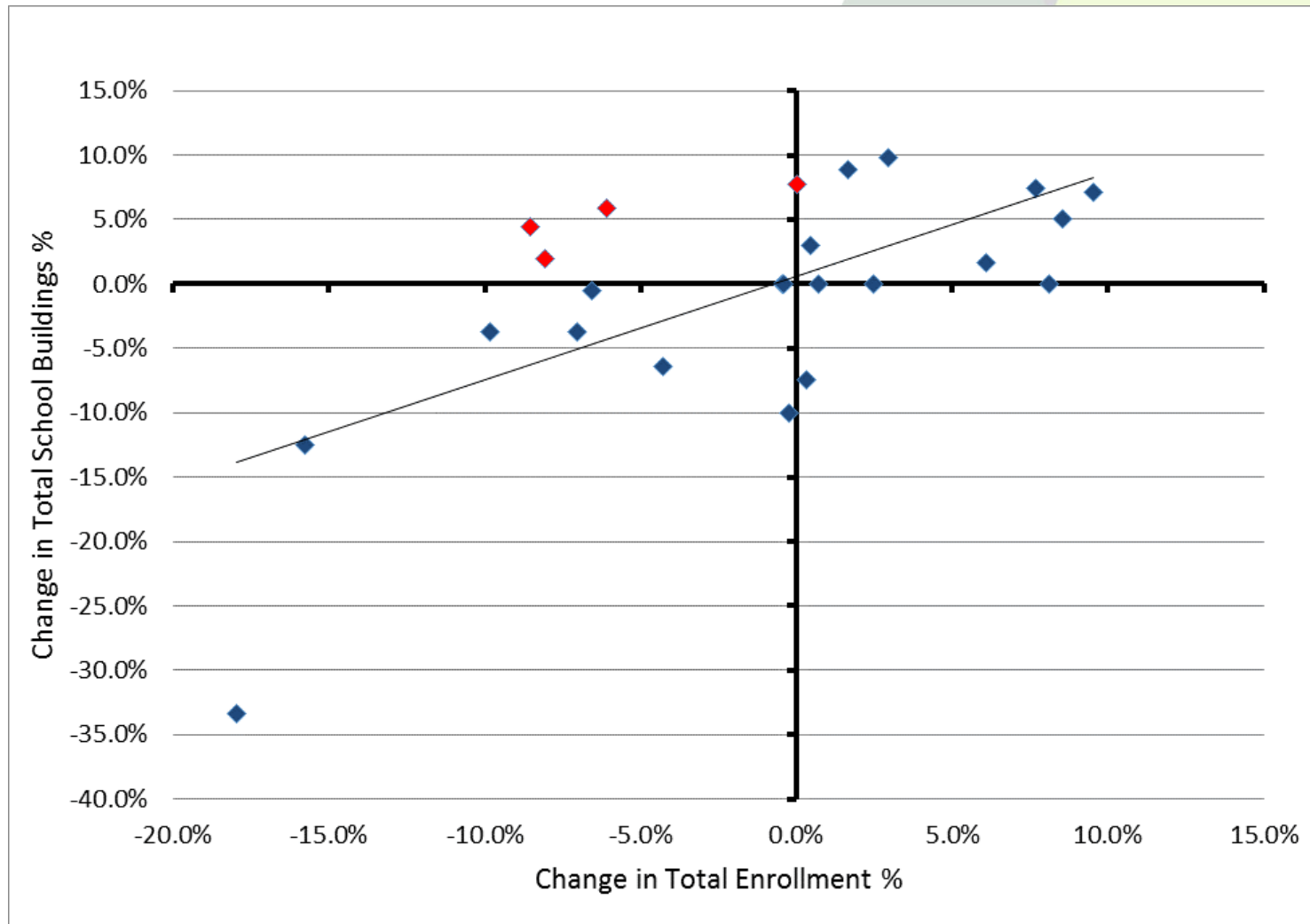
School Locations-Ability to Adjust to Decreasing Enrollment



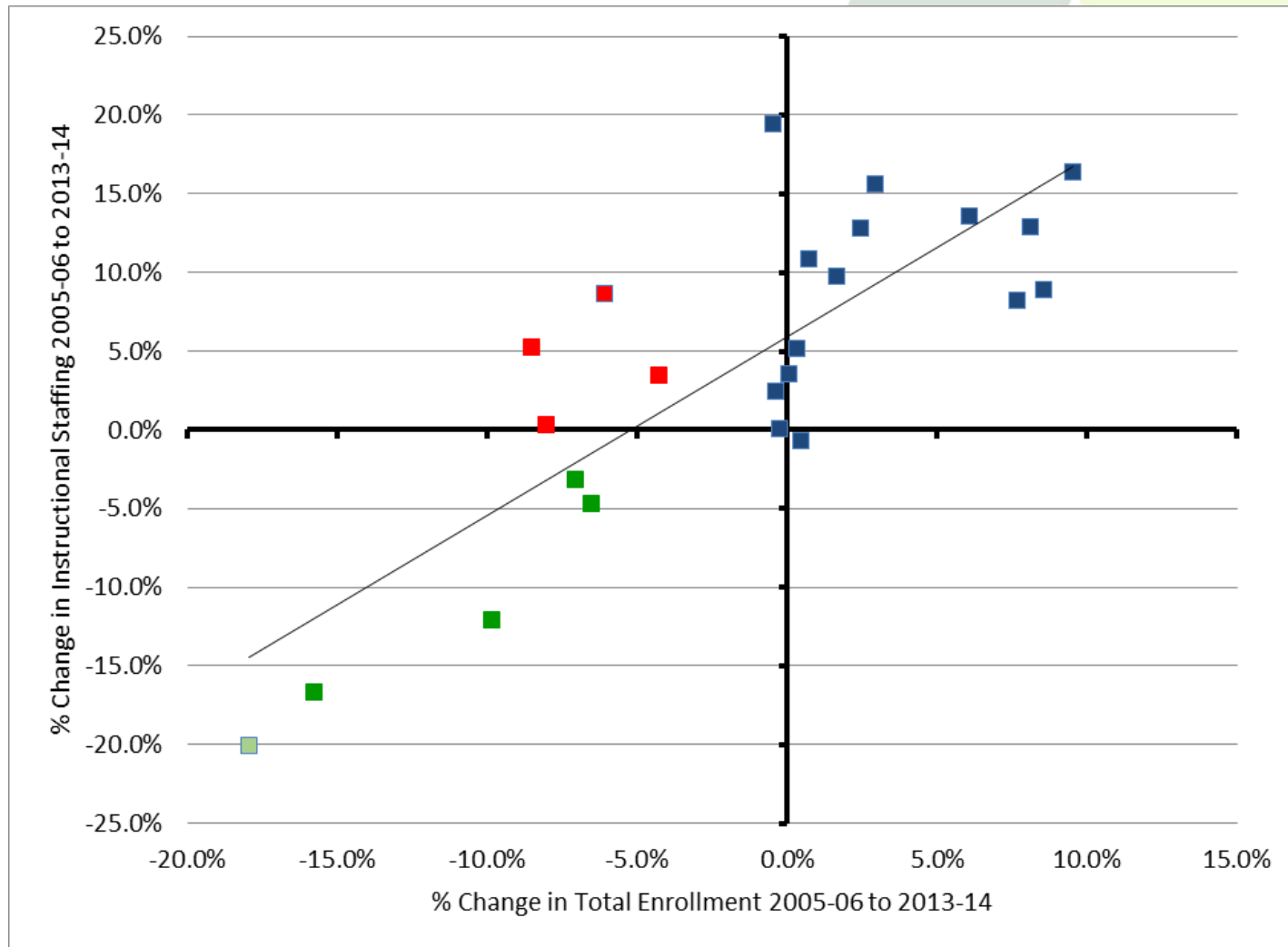
Elementary Students per School



Relationship Between Change in Total Enrollment and Change in the Number of School Buildings



Relationship Between Change in Enrollment and Change in Instructional Staffing



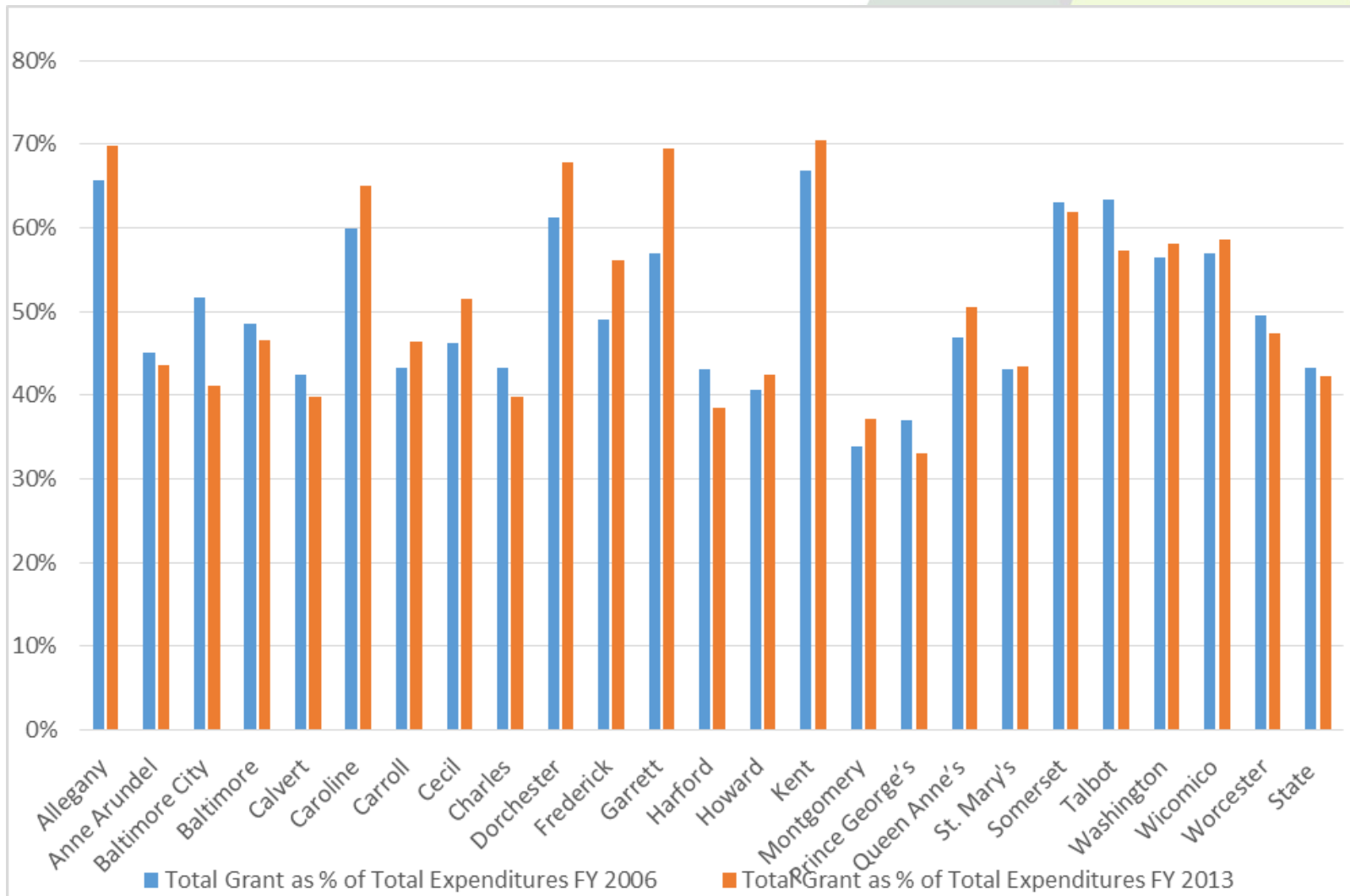
Transportation Costs and Funding

- Analyzed transportation operating data and enrollment change
 - Miles traveled
 - Vehicles used
 - Pupils transported-regular and disabled
 - Transportation cost per pupil trends

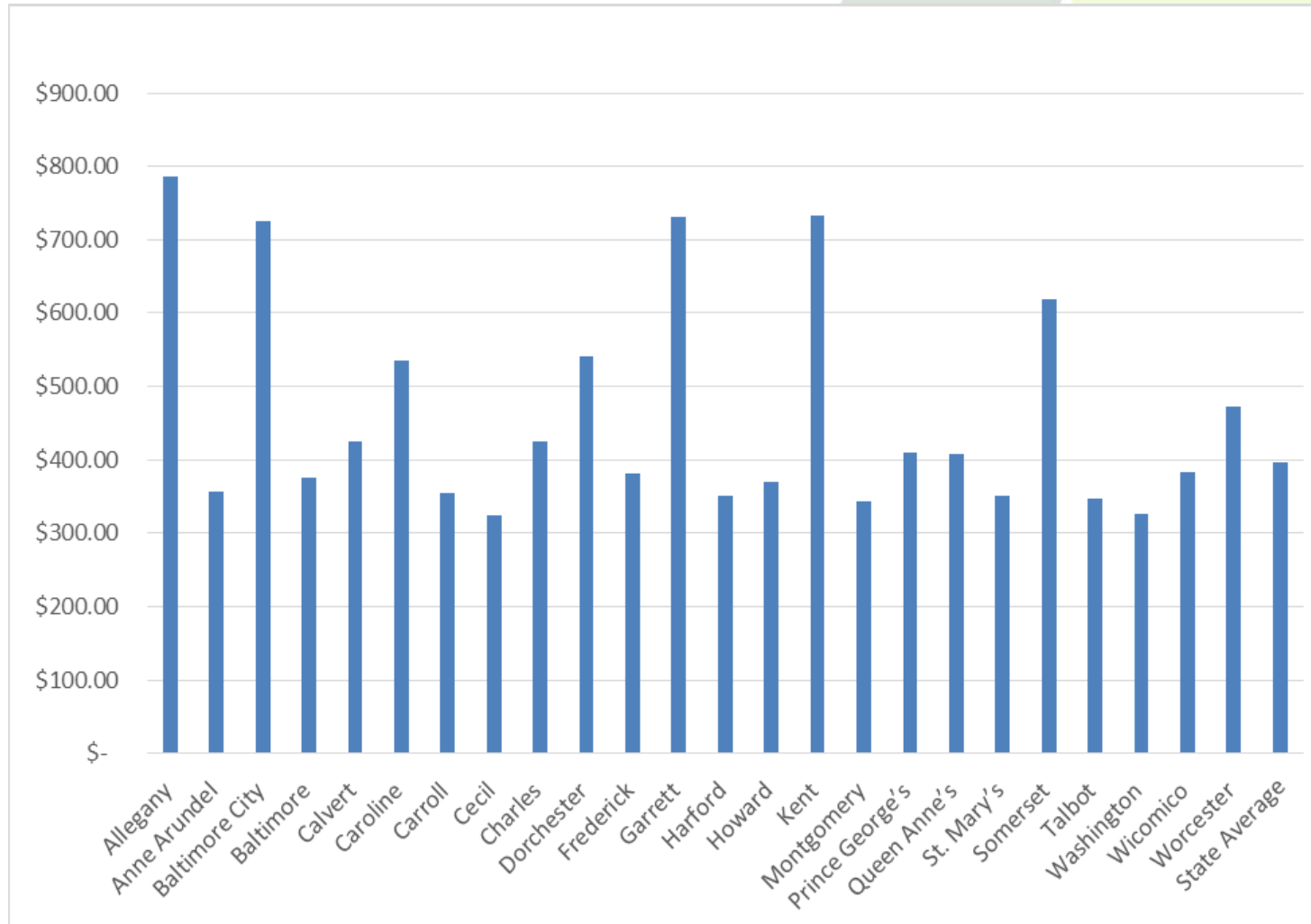
Transportation Costs and Funding

- Many other factors affect transportation cost
 - District policies and practices affecting eligibility and service levels
 - Enough time to utilize seating capacity
 - Long distances in rural areas
 - Congestion in suburban and urban areas
 - Labor costs
 - Varying length of school day (elementary vs. secondary)
 - School locations-dispersed or consolidated in locations
 - Vehicle capacity
 - Loaded and unloaded miles-routing efficiency
 - Schools served by each bus daily (number of tiers)

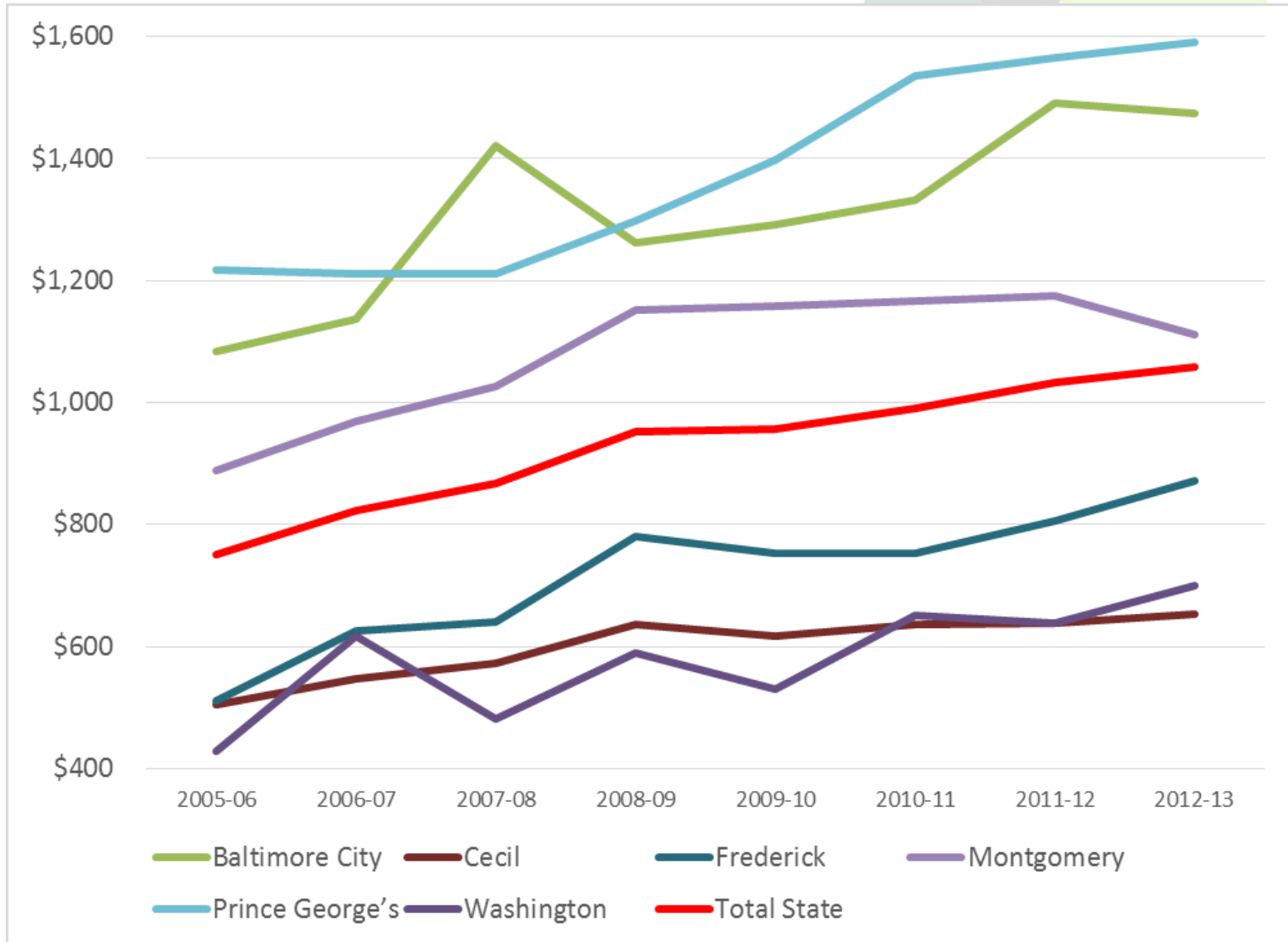
Transportation Revenue as a Percentage of Transportation Expenditures



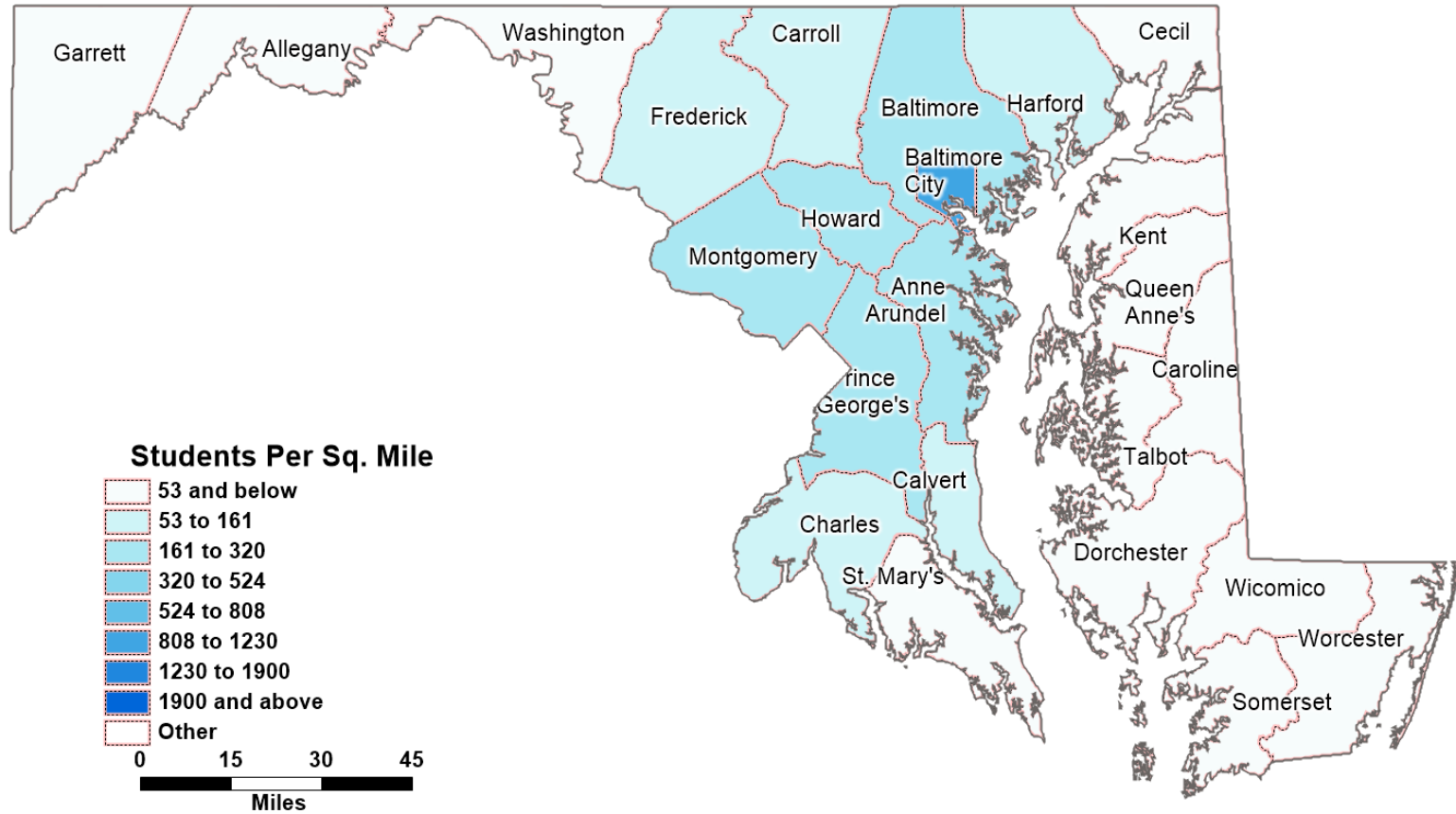
Transportation Base Grant Amount per Regular Pupils Transported 2013-14



Per Pupil Transportation Costs



Student Population Density



Transportation Practice Findings and Conclusions

- Transportation practices-from interviews and review of policies/practices posted on district websites
 - Vary significantly-eligibility standards, walking distance, use of time and seating capacity
 - Many best practice examples could be shared widely
 - Seat design-
 - Normal practice-2 same size seats/row (rated by manufacturers at 3 passengers/seat but allowing only 2/seat)
 - Best practice- buy different seats allowing 2 large students in 30” seat and 3 large students in 45” seat, increases secondary capacity by 25% at very minimal cost
 - Utilize public transit

Transportation Practice Findings and Conclusions

- Many best practice examples (continued)
 - Door side only stops only when necessary (road conditions, morning but not afternoon)
 - Use of national information and programs-location of bus stops, Safe Routes to Schools, Walking School Bus
 - Transportation routing software-use latest navigation and routing optimization features
 - Number of vehicles by historic ridership rather than eligibility to ride
 - Bell time adjustments to provide enough time to utilize seating capacity

Transportation Funding Conclusions

- Current funding formula conclusions
 - Varies widely in amount of expenditures funded
 - No single operating cost factor is closely correlated to funding provided
 - Current formula increases as total district enrollment increase (not riders or eligible riders), but is not reduced if enrollment decreases (hold harmless). This does not promote cost effectiveness.
 - Was originally based on transportation concepts and practices from the 1980's
 - Adjusts using transportation cost index for regular students but not disabled students (usually much more expensive per student)

Transportation Funding Recommendations

- Recommendation
 - Replace current formula with multivariate statistical model that establishes realistic cost and funding levels based on multiple factors that affect transportation cost
 - Several states use this approach
 - Fund pilot projects in regional shared services and other innovations
- Implementation
 - More detailed transportation data are required from districts
 - State policy decisions are required on state/district share and wealth adjustment
 - Design formula to promote efficiency based on best practices from school systems and other transportation sectors

Other Recommendations

- Develop better information for district level planning
 - Birth rates
 - Transportation cost detail
 - Geographic information systems-planning, proximity to school for school closing or transportation decisions
 - Technology inventory-last update was 2010, many technology opportunities to improve instruction and operational effectiveness
- Technical assistance on difficult decisions
 - School closings
 - Transportation efficiency balanced with safety and service levels
 - Shared staffing, consultants or expertise

Decreasing Enrollment in Small, Sparsely Populated School Systems

- Maryland's approach in the past
 - Hold harmless in transportation funding
 - Very limited use of supplemental funding based on qualifiers
 - Possible to add qualifiers to past approach
 - Evidence of maximum adjustment based on performance measures and benchmarks (e.g. staffing adjustment, school capacity utilization, transportation efficiency)
 - Fund specific challenge-school consolidation, transportation efficiency, staffing
- Add combination of small district size and sparsity factor
 - For small districts due to diseconomies of scale
 - For sparsity due to travel distance/time to school causing inability to close schools
 - Many examples from other states



Report:

A Review of the Literature on the Effects of Concentrations of Poverty on School Performance and School Resource Needs

Concentrations of Poverty Literature Review

- Question to be answered by study is whether compensatory funding should increase for districts or schools with higher concentrations of poverty (linear vs nonlinear)
- Five main sections:
 - Measuring poverty in schools
 - Effects on learning at the student level
 - Effects on learning at the school level
 - Why concentrations of poverty in schools occurs
 - Poverty and school funding

Measuring Poverty in Schools

- Poverty may be measured in variety of ways – as made clear in proxy report
- Counts of students eligible for free or reduced-price meals (FARMS) is most common, but criticized by some
- May not account for all factors placing students at-risk of failing

Effects on Learning at the Student Level

- Effects of poverty on student learning are varied:
 - Early language gaps caused by lower levels of child-directed speech among low income parents
 - Higher summer learning loss due to fewer enrichment opportunities during the summer
 - Lower attendance rates due to greater incidence of illness and other interruptions
 - Lower engagement and motivation due to sense of alienation and lower perception of link between education and success in life

Effects on Learning at the School Level

- Academic performance correlates negatively with concentrations of poverty in schools
- Higher concentrations of poverty seem to impact all students in a school, not only poor students
- Factors influencing school performance include lack of positive peer influences, low teacher motivation/morale, less effective teaching, diluted curriculum, less parental involvement
- Some research suggests school effects could start at concentrations as low as 25%, others at 50%

What Causes Schools to Become High Poverty

- High poverty schools tend to serve high poverty communities, perpetuated by attendance boundaries
- Research shows poverty tends to concentrate itself – often driven by housing costs
- Poverty can be self perpetuating – social influences of poor neighborhood affect individuals
- Low income families face financial and social challenges to leaving poor neighborhoods and/or schools

Poverty and School Funding

- Literature is quite clear that additional resources are needed to serve low income students and mitigate the effects of poverty
- Less clear on whether nonlinear funding mechanisms are warranted
- Many of the interventions suggested by the literature are currently found in higher poverty schools and districts – incentives for highly effective teachers, extended day programs, attendance strategies, etc.

Next Steps

- The research team will:
 - Assess compensatory components of EB and PJ adequacy models using information from literature review
 - Seek input from PJ panels
 - Look for evidence from case study cross case analysis
 - Make final recommendations on compensatory weight in final adequacy report due in fall 2016