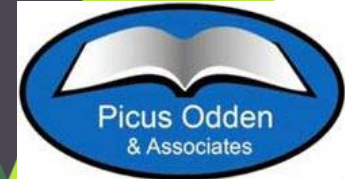




AUGENBLICK,
PALAICH AND
ASSOCIATES



Costing Out the Resources Needed to Meet Michigan's Standards and Requirements

Prepared for the
Michigan School Business Officials
Financial Strategies Workshop
January 17, 2018

Presentation

A large, stylized letter 'A' is formed by overlapping several geometric shapes. The top-right portion is a dark grey triangle. The main body of the 'A' is composed of several overlapping triangles in shades of green and yellow-green. The left side is a dark green triangle, the right side is a light green triangle, and the bottom is a medium green triangle. A dark grey triangle is also visible in the center, overlapping the green shapes.

- Introduction/Background
- Adequacy Approaches
- Other Studies
- Results and Recommendations

Study Team

- Augenblick, Palaich and Associates (APA) partnered with Picus, Odden, and Associates (POA) to lead the study for the School Finance Research Collaborative (Collaborative).
- Additional team members included Michael Griffith, Chris Stoddard, and Jennifer Imazeki.
- The study team has well over 100 years of combined experience studying school finance.

Adequacy Approaches

- Four approaches have been developed to examine the costs students, teachers, schools, and districts face to meet state standards:
 - **Evidence-Based (EB)**, uses information from research can be used to define the resource needs of a prototypical school or district to ensure that the school or district can meet state standards.

Adequacy Approaches

- **Professional Judgment (PJ)** – relies on the experience and expertise of educators in the state to identify the resources needed to meet state standards.
- **Successful Schools/School Districts (SSD)** – determines the base resources of schools or districts meeting or exceeding current state standards.
- **Cost function or statistical (CF)** – uses econometric methods to estimate the needed funding levels.

Adequacy Approaches

	Evidence-Based	Professional Judgment	Successful Schools/Districts
Benchmark of Success	Ensuring students can meet all state standards	Ensuring students can meet all state standards	Currently outperforming other Michigan schools
Data Source	Best practice research, reviewed by Michigan educators; when conflict arises in resource recommendations, the EB approach defers to the research	Expertise of Michigan educators serving on PJ panels; uses research as a starting point, but when conflict arises in resource recommendations, the PJ approach defers to educators	2013-14 expenditure data from selected successful schools, updated to 2015-16 figures
Available Data Points			
Base	Yes	Yes	Yes
Student Adjustments (Weights)	Yes	Yes	No

Michigan Study Components



- **Adequacy Approaches**
 - Professional Judgment
 - Evidence-Based
 - Successful School District
 - Utilizing the results
- **Other Studies**
 - Transportation
 - Capital
 - Geographic Cost Differences
 - Labor Market Study
- **Results and Recommendations**
- All work looked at the resources for districts and brick and mortar charter schools. The analysis did not include adult education or virtual (online) charters.



**PROFESSIONAL JUDGMENT
APPROACH**

Professional Judgment (PJ)

- The PJ approach identified resources for a number of schools and districts designed to represent MI districts, including:
 - 2 elementary schools (270 and 390 students)
 - 3 middle schools (180, 420, and 735 students)
 - 4 high schools (220, 500, 800, and 1200 students)
 - 4 districts (670, 1,700, 5,000, and 13,590 students)

Professional Judgment

- Studied various levels of student need and concentrations:
 - **ELL** – examined three WIDA levels and two concentrations (5% and 50%)
 - **Poverty** – examined three concentrations (25%, 50%, and 75%) and two levels
 - Studied regular poverty as measured by eligibility for free or reduced price lunch and high need poverty.
 - High need poverty examined resources for students with much higher levels of need.
 - **Special Education** – examined mild, moderate, and severe needs as measured by time in the classroom

Professional Judgment

Professional Judgment Panel Meetings (Lansing)

Date	Panel
September 19-20, 2017	Elementary School Panel; Middle School Panel
September 21, 2017	Preschool Panel
September 21-22, 2017	High School Panel
October 3-4, 2017	Special Education Panel; Students in Poverty Panel
October 5, 2017	Career and Technical Education Panel
October 5-6, 2017	English Language Learners Panel
October 17-18, 2017	Very Small Sized District Panel; Small Sized District Panel
October 19-20, 2017	Moderate Sized District Panel; Large Sized District Panel
November 7, 2017	Charter Schools Panel
November 8, 2017	CFO Panel; Isolated District Panel (via webinar)
November 9, 2017	Statewide Review Panel

Professional Judgment

- Panels had between 9 and 12 participants, which included teachers, principals, special needs staff, and district administrators.
- Each panel included participants from districts, ISDs, and charter schools.
- Participants were identified through the Network of Michigan Educators, MASA, and MAISA.
- The Project Steering and Technical Committee finalized selections, ensuring they met the study team's requirements, regional representation, and demographic representation.

Professional Judgment



- Panels began with best practice research as a starting point for their work and adjusted to fit Michigan needs, based on their experience.
- Identified school and district resources including personnel, other personnel costs, non-personnel costs, non-traditional programs and services, and technology.

Professional Judgment

While panels varied in the resources they identified as necessary for an adequate education, several key recommendations were common across most panels:

- **Small class sizes**, with student-to-teacher ratios of 20:1 in kindergarten through grade three and 25:1 in grades four and five;
- **Significant time for teacher planning, collaboration, and imbedded professional development with instructional coaches.** At each level this was essentially teachers teaching about 75 percent of the day with the remaining time available for the listed activities; instructional coaches were seen as instrumental to helping teachers improve practice;
- **A high level of student support** (staffed as counselors, social workers, psychologists, and behavior interventionist), and available for all students;
- **Sufficient administrative support** in the form of assistant principals to allow for required staff evaluations to be done well;

Professional Judgment

- **Before- and after-school programs and summer level learning opportunities**, particularly for students in poverty;
- **Technology-rich learning environments**, including 1.1:1 student devices, and associated IT support;
- **Sufficient staff to serve special education and ELL students;**
- Sufficient **nursing support** to ensure students receive necessary medical care and monitoring from nurses and/or health aides to allow teachers and administrators to focus on classroom instructional needs;
- Sufficient **counselor and career exploration staff** to ensure students can achieve post-secondary goals; and
- **Preschool** for all three-year-olds and four-year-olds.

Professional Judgment

- Costed out the resources identified by the panelists.
- Used statewide average salaries where available.
- Benefits included cost of health care, social security, and retirement.
 - Only included 4.6% retirement rate in the costing out to allow for targeting of funding for actual costs faced.
 - Districts or charter schools that pay the full 25.56% for retirement would be funded to allow for that contribution level.

Professional Judgment

District Size	Very Small	Small	Moderate	Large
Base	\$11,482	\$10,307	\$9,954	\$9,590
Weights				
Poverty				
25% Concentration	0.27	0.28	0.29	0.29
50% Concentration	0.37	0.40	0.41	0.42
75% Concentration	0.39	0.42	0.43	0.44
High Need Poverty				
25% Concentration	0.45	0.50	0.51	0.51
50% Concentration	0.53	0.57	0.59	0.60
75% Concentration	0.39	0.42	0.42	0.43

Professional Judgment

District Size	Very Small	Small	Moderate	Large
ELL – 5% Concentration				
WIDA 1&2	0.62	0.52	0.51	0.46
WIDA 3&4	0.54	0.44	0.43	0.35
WIDA 5&6	0.30	0.34	0.31	0.28
ELL – 50% Concentration				
WIDA 1&2	0.56	0.48	0.43	0.40
WIDA 3&4	0.45	0.36	0.33	0.29
WIDA 5&6	0.38	0.28	0.22	0.18
Special Education				
Mild	1.03	1.08	1.09	1.06
Moderate	1.71	1.85	1.92	1.94
Severe	2.79	3.03	3.14	3.21
Average (Weighted)	1.37	1.45	1.48	1.48
CTE Weight	0.10	0.10	0.10	0.10



EVIDENCE-BASED APPROACH

Evidence-Based Approach

- Identifies array of educational goods to provide each student an equal opportunity to meet the state's student performance standards.
- Estimates the costs of that basket of goods.
- Provides each school district and charter school with adequate funds to purchase and provide that basket appropriately to all students.

Evidence-Based Approach



- Relies on research on improving and high performing schools.
- Links the research to a theory of action about how successful schools operate.
- Translates the theory of action into resources at the school and district level.
- Includes review by educators.
- Alternatives can be simulated through an Excel model.

Evidence-Based Approach



- **Research Approach**

- Reviews of research on the student achievement effects of individual model elements.
 - Randomized control experiments
 - Other peer reviewed research
- Studies of schools and districts that have dramatically improved student performance on state assessments.

Evidence-Based Approach



10 Key Elements of School Improvement

1. Analyze student data.
2. Set high goals.
3. Review evidence on good instruction and effective curriculum.
4. Invest in teacher training.
5. Provide extra help for struggling students.

Evidence-Based Approach



10 Key Elements of School Improvement

6. Restructure the school day to provide more effective instruction.
7. Provide strong leadership.
8. Create professional school cultures.
9. Bring external professional knowledge into the school.
10. Recruit and retain the best talent.

Evidence-Based Approach



- Prototypical school size
 - Schools
 - 450 student elementary school
 - 450 student middle school
 - 600 student high school
 - District: 3,900 students
 - Four elementary schools
 - Two middle schools
 - Two high schools

Evidence-Based Approach



- 29 components in five areas.
- School based staff.
- Dollar per student resources.
- Resources for struggling students.
- Central office and operations & maintenance.
- Staff compensation.

Evidence-Based Approach



- Four Evidence-Based professional judgment panels:
 - October 23 – Gaylord
 - October 24 – Ann Arbor
 - October 24 – Southfield
 - October 25 – Grand Rapids
- Results led to modification of three elements of the EB Model.

Evidence Based Model

Base	\$10,136
Weights	
Preschool	0.40
Poverty	0.32
ELL	0.41
Special Education (For mild and moderate special education students; Census approach applied to all students in a district, not only the special education count)	0.07*
Alternative Schools	0.64

*Special Education is estimated through a census based approach so the weight is applied to all students, not only students in special education programs



**SUCCESSFUL SCHOOL
DISTRICT APPROACH**

Successful School District

- In 2016, APA undertook an SSD approach for the state detailed in the “Michigan Education Finance Study” report.
- APA updated the results of that report for this study.
- The 2016 report worked within a specific framework dictated by the state for identifying successful districts.

Successful School District

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.

Successful School District

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

Successful School District

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

Successful School District

- APA used the \$8,188 (total base expenditures less food service and transportation, in the Meetings Standard, Excluding Outliers column) and looked to adjust it for inflation from the 2013-14 school year to 2015-16 school year.
- Bureau of Labor and Statistics for Michigan showed no inflation between the two school years.

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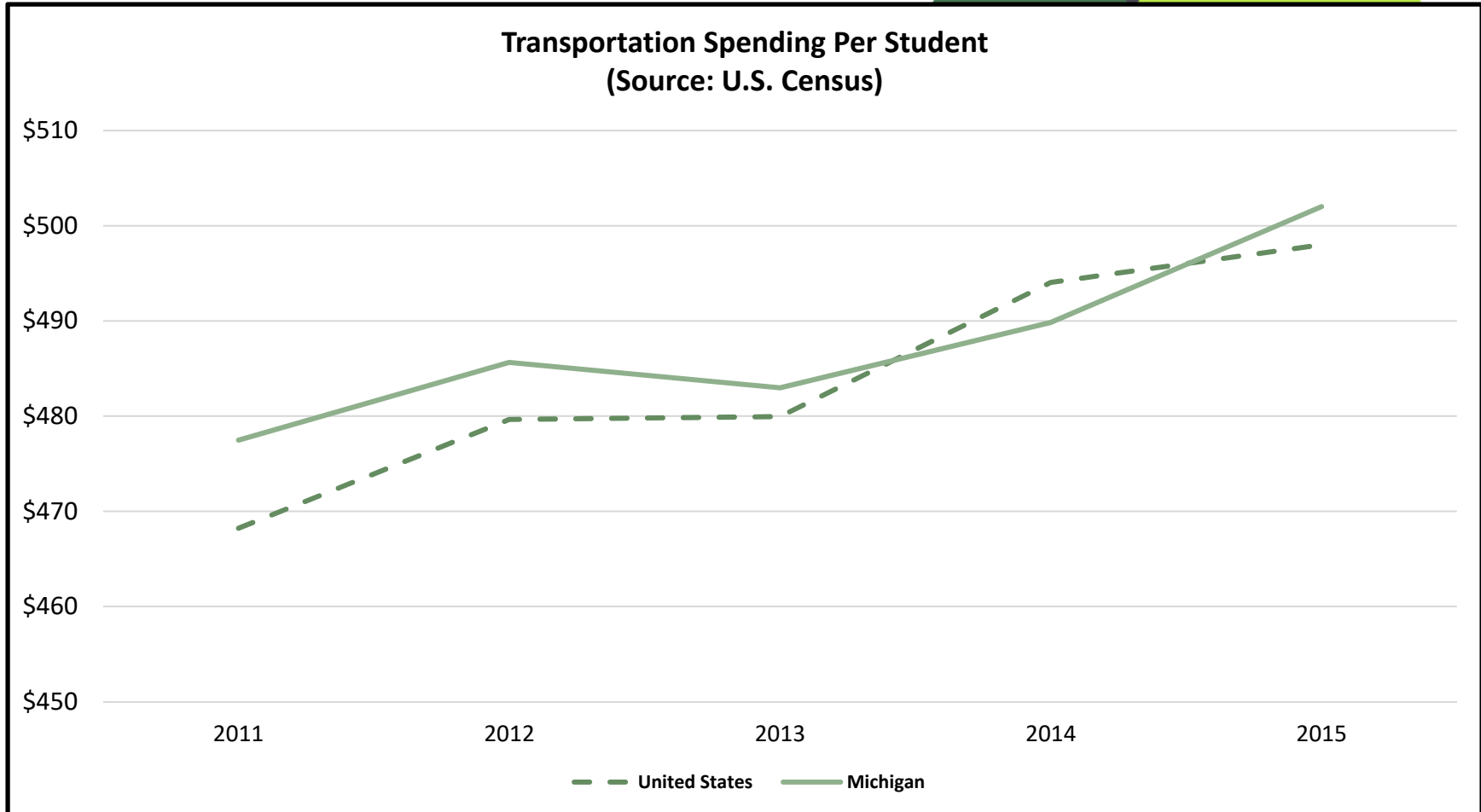
TRANSPORTATION

Transportation



- The study team looked at how other states fund transportation, current Michigan transportation expenditures, and impacts on transportation from the EB and PJ results.
- In 2014-15, Michigan spent about \$500 per student on transportation, which is very similar to the national average.

Transportation

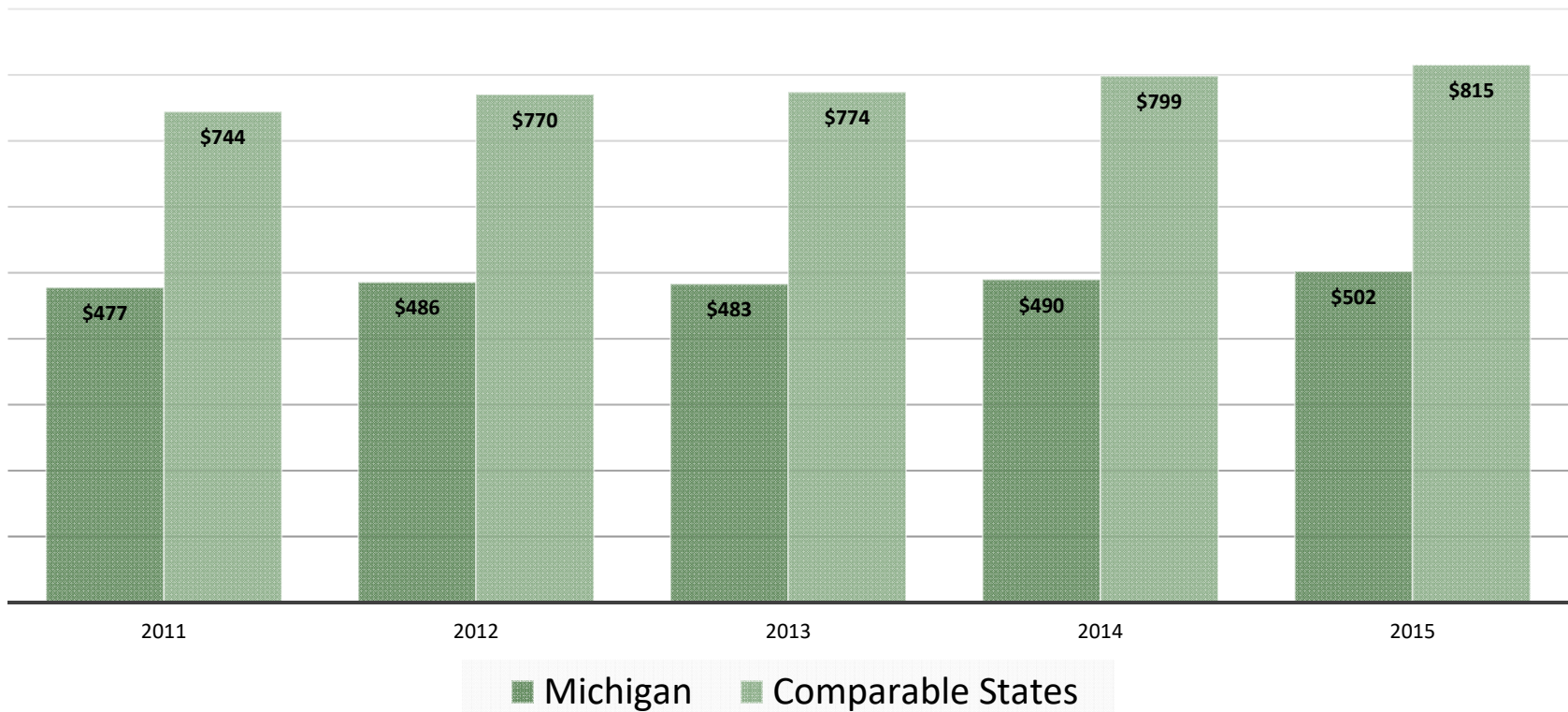


Transportation

- Five approaches to transportation funding:
 - **Reimbursement Model** (22 States): states reimburse districts for a portion of their allowable transportation costs.
 - **Included in the State's Primary Funding Formula** (11 States): transportation funding is a component of the state's primary school funding formula. In some of these states, additional funding is targeted to transportation. In other states, there is no specific amount of funding for transportation, but districts can use state funding for the cost of transporting students.
 - **Geographic Distance** (10 States): funding is based on geographic considerations such as bus route miles, total square miles or the density of students in a school district.
 - **Per student Allocation** (5 States): states provide districts with a flat per student rate regardless of their actual transportation costs.
 - **Full State Funding** (3 States): states fully fund the cost of transportation.

Transportation

Transportation Spending Per Student
(Source: U.S. Census)



Transportation



- The study team examined the transportation expenditures in the 409 report for districts and charter schools separately.
- Examined transportation information for 500 districts and 41 charters.
 - Entities with full data and riders reported.
- Larger variation in the miles driven per rider and the costs per rider.
- Districts averaged \$973 per rider and charters \$1,460 per rider.
 - Charter data may be skewed by the limited number of charters reporting riders and instances where data seems to be an outlier.

Transportation



- Impacts on transportation due to the programs identified in the EB and PJ approaches include:
 - Extended day/year programs
 - Preschool



IMPACTS ON CAPITAL NEEDS

Impacts on Capital Needs



- The study does not specifically look at capital needs; however, it is clear that some of the programs, interventions, and resources identified by both the PJ and EB approaches would or could lead to additional capital needs for districts and charters across Michigan.
 - Class Size Ratios
 - Support Staff
 - Extended Day/Year
 - Preschool



GEOGRAPHIC COST ADJUSTMENTS

Geographic Cost Adjustments



- Many costs of education can't be controlled by the district
 - Characteristics of the student body
 - District size
 - Location
- It makes sense to compensate districts for these differences

Geographic Cost Adjustments

- Variation in prices of education inputs.
 - Largest input is personnel and associated salaries
- Some variation is due to factors outside of district control.
 - Variation in purchasing power of a dollar
- Need to adjust for local living conditions.

Geographic Cost Adjustments



- Measuring variation in the cost of education:
 - Housing based cost of living adjustment
 - Comparable wage index
 - Hedonic wage index

Geographic Cost Adjustments

- The study team recommends using a **comparative wage index (CWI)**.
 - Compares the wages of occupations outside of education across geographic areas in the state
 - Establishes an index based on the variation in those wages
 - Applies that index to the proportion of funding associated with personnel salaries and benefits
 - Estimated by metropolitan area and by Public Use Microdata Areas (PUMA)

Geographic Cost Adjustments



- Estimated by metropolitan area and by Public Use Microdata Areas (PUMA):
 - Metropolitan CWI ranges from 91.3% (not in metro area) to 109.5% (Battle Creek)
 - PUMA CWI ranges from 77.5% (Iosco, Gladwin, Roscommon, Ogemaw & Arenac Counties) to 111.2% (Macomb County)



LABOR MARKET ANALYSIS

Labor Market Analysis



- How does salary level impact the ability to hire high quality teachers?
- Working conditions are also important.
- Study compares teaching to other occupations:
 - Other college educated workers
 - Professional and technical occupations
 - Public sector workers

Labor Market Analysis



- Adjust for characteristics of workers and occupations.
 - Demographic characteristics
 - Education
 - Usual work hours: this is controversial in terms of weeks worked for teachers
 - Insurance coverage through employers or unions

Labor Market Analysis



- **Conclusions**

- Michigan teachers make, on average less than most other comparable occupations (as much as 28% less than all professional and technical college workers).
- Gap between teacher salaries and salaries of related workers tends to be smaller in Michigan than the parallel gap in the US, but the pattern is similar in other states in the region.



**RESULTS AND
RECOMMENDATIONS**

Results and Recommendations



- Created recommendations using the results of all aspects of the study.
- Focused on a system that funds actual costs for districts and charters.
- Creates a set of parameters that can identify the needed adequacy amounts, but does not say how they should be paid for.
- Results include state, local, and federal funding.

Recommendation 1

- **Using the results of the study, create an adequacy based funding system including identifying an appropriate base cost, weights, and adjustments for district characteristics.**
- The study team provides a specific recommendation for the base cost and weights.

Recommendation 1

	Professional Judgment	Evidence-based	Successful Schools
Base Cost	\$9,590	\$10,136	\$8,188

- The EB and PJ base cost figures set retirement at 4.6%, while SSD base has full retirement costs.
- The difference between EB and PJ results is almost fully explained by difference in K-3 class size ratios.
- **The study team recommends using \$9,590 as a base cost figure. Performance in K-3 should be monitored and if results are not seen, a 15:1 class size should be considered.**

Recommendation 1

- The study team looked at poverty and high need poverty weights for three concentrations.
- Result of the EB study identified a .32 weight for poverty, while the PJ study had a range of weights from .27-.44.
- High need poverty showed a weight of about .15 above poverty.
- **Study team recommends a weight of .35 for all poverty students with further study on the needs and identification of high need poverty students.**

Recommendation 1

- The study team looked at multiple WIDA levels and two concentrations.
- EB results were a .41 weight, with PJ results ranging from .18 (WIDA 5-6 & FELS) to .62 (WIDA 1-2).
- **The study team recommends using three weights to represent WIDA levels. Students eligible for both ELL and poverty weight would only receive the ELL weight.**
 - **WIDA 1-2: .70**
 - **WIDA 3-4: .50**
 - **WIDA 5-6/FELS: .35**

Recommendation 1

- Both the EB and PJ looked at special education in three categories: mild, moderate, and severe.
- The weights from the two approaches differed, with the EB weights lower and the PJ weights higher.
- **The study team recommends a .70 weight for mild special education, a 1.15 weight for moderate special education, and full state funding for severe special education students.**

Recommendation 1

- The PJ approach examined the costs faced at four district sizes. Smaller districts face higher per pupil costs to meet the state's standards.
 - **The study team recommends adjusting for district size costs.**
- Both approaches examined the costs of preschool.
 - **The study team recommends funding of \$14,155 for preschool for three or four year-olds.**

Recommendation 1

- The PJ approach examined the additional costs faced by isolated school districts.
- These costs include the additional cost of wrap around services for students.
- **The study team recommends keeping the current isolated district definition, but not restricting it to the UP. Districts would receive an additional weight of .04 for each student.**

Recommendation 2

- **The base cost and special needs adjustments should be funded at the same levels for districts and brick and mortar charter schools.**
- Some key areas of difference include:
 - Retirement costs for districts, and some charters, who participate in the state's pension system.
 - Facilities costs for charter schools who do not have resources beyond operating funding for facilities.
 - These differences need to be addressed.

Recommendation 3

- **Retirement costs above the costs used in the costing out need to be funded for all entities facing the expense**
- The study team costed out the adequacy recommendations using a 4.6 percent retirement figure.
- The 25.56 percent retirement rate base should be used for districts and some charter schools who face the higher retirement costs
 - Weights should be applied to this higher figure when determining the needed adequacy amount

Recommendation 4

- **Transportation funding should be funded outside of the base per student amount and funding should be tied to actual transportation costs.**
- In the near term, riders should be funded at \$973 per student until a more detailed transportation funding system can be designed.
- The costs for isolated districts should be a specific focus of any transportation study.

Recommendation 5

- **The state should undertake a full capital study that examines the costs faced by districts and charter schools.**
- Districts currently have highly varied capacity to build new buildings or provide upkeep for current buildings.
- Charters face utilizing operating expenditures to secure facilities. An understanding of the costs charters face for facilities is very important.

Recommendation 6

- **The study team suggests utilizing a Comparable Wage Index (CWI) to adjust for cost differences due to geographic location.**
- Data is easy to collect and publicly available and can be easily be updated annually.
- The method is well established, with a well defined model.
- Data is outside the control of school districts.

Recommendation 7

- **The study team suggests a .10 weight for every student that is enrolled in CTE.**
- Both approaches identified additional costs for CTE programming.