

# Updating MAEP

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**Prepared for the  
Senate Education Committee  
September, 2004**



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# APA Background

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- ❑ APA is a Denver-based consulting firm, founded in 1983, that works primarily with state-level policymakers on education finance and governance issues.
- ❑ APA works with states on the procedures used to allocate state aid to districts and schools.
- ❑ APA has worked with several states to design state school aid allocation systems (e.g. Colorado, Kansas, Kentucky, Louisiana, Maryland, and New Hampshire).
- ❑ We worked with Mississippi ten years ago to develop MAEP, one of the first systems driven by the cost of education “adequacy”



# Why Policymakers Discuss Education “Adequacy”

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- Standards-based reform (SBR)
  - State sets expectations/requirements
  - State measures student performance
  - State holds districts/schools accountable
  
- State school finance systems
  - Most states use some version of a “foundation” approach
  - State sets revenue “target”
  - State “expects” a local contribution
  - State pays difference



# Why Policymakers Discuss Education “Adequacy”

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- Basis for setting revenue “target”
  - Political (available revenue)
  - Need-based (base cost plus adjustments for student populations – special education, at-risk, and ELL – and district characteristics such as size)
  
- School finance litigation
  - Equity issues (1960’s – present)
  - Adequacy issues (1990’s – present)



# Approaches to Estimating Education Adequacy

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- Successful school district (SSD)
  - Assumes that a base cost can be calculated by examining the basic expenditures of school districts that meet state standards
- Professional judgment (PJ)
  - Assumes that groups of professional educators, presented with hypothetical schools, can specify the resources needed to meet standards, which can be costed out to yield a base cost and adjustments for students with special needs



# The Purposes of the Study

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- Replace the old accreditation indicator of quality with indicators derived from the recently adopted state accreditation and assessment systems
- Modify the adjustment for at-risk students to reflect the resources needed to help those students meet state standards
- Convert the categorical programs associated with special education, gifted and vocational students into adjustments to the base cost



# Developing a Basic Cost Figure

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- Ten years ago, we developed a procedure to examine spending of “successful” districts in four areas: (1) instruction; (2) administration; (3) facility M&O; and (4) “ancillary”
- Identified successful districts in each area based on accreditation, reputation, and some data (some overlap in districts across areas)
- Calculated average per student spending of successful districts in each area
- Combined average spending across the four areas



# Developing a Basic Cost Figure

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- New approach uses information about both overall academic performance and efficiency in each of the four areas to select successful districts
- Use of both effectiveness and efficiency criteria assures that the selection of districts is based on factors of importance to state policy makers while avoiding the selection of districts that are unusual
- Four groups of educators met to identify common academic performance criteria and efficiency criteria for each area





# Academic Performance Criteria Used in Selecting Successful Districts:

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- ❑ A district must meet the new state accreditation standards
- ❑ A district must avoid scoring less than two standard deviations below the mean on all of the 26 tests required by the state
- ❑ A district must score above one standard deviation below the mean on 24 of the 26 tests required by the state
- ❑ A district must reach an average achievement level of 3.5 across all schools (on a 1-5 scale)



# Efficiency Criteria for Instruction

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- ❑ Number of teachers per 1,000 students
- ❑ Range of reasonableness: minimum level of two standard deviations below the mean and maximum level of one half of a standard deviation above the mean
- ❑ Excluded districts with modestly high resource use or extremely low resource use; many districts with resource use above the average were excluded while many districts with resource use below the average were included
- ❑ Range of inclusion is 50.27 - 66.58 teachers per 1,000 students (average = 63.32 teachers per 1,000 students; standard deviation = 6.52 teachers per 1,000 students)



# Efficiency Criteria for Administration

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- Number of administrators per 1,000 teachers
- Range of reasonableness: minimum level of two standard deviations below the mean and maximum level of one half of a standard deviation above the mean
- Excluded districts with modestly high resource use or extremely low resource use; many districts with resource use above the average were excluded while many districts with resource use below the average were included
- Range of inclusion is 29.79 - 76.12 administrators per 1,000 teachers (average = 66.85 administrators per 1,000 teachers; standard deviation = 9.27 administrators per 1,000 teachers)



# Efficiency Criteria for Facilities M&O

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- ❑ Two efficiency variables used: (1) number of custodians and maintenance staff per 100,000 square feet and (2) dollars spent on M&O per square foot
- ❑ Mean number of custodians and maintenance staff per 100,000 square feet = 4.71
- ❑ Mean number of dollars spent on M&O per square foot = \$2.94
- ❑ Efficient districts had 0.93 - 6.59 custodians and maintenance staff per 100,000 square feet and spent \$.97 - \$3.93 per square foot on M&O
- ❑ These figures are between two standard deviations below the mean and one standard deviation above the mean



# Efficiency Criteria for Ancillary

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- Three efficiency variables used: (1) guidance counselors per 1,000 students; (2) librarians per 1,000 students; and (3) the percentage of classrooms with five or more high quality computers
- Mean number of guidance counselors per 1,000 students = 2.28; mean number of librarians per 1,000 students = 1.74; and mean percentage of classrooms with five or more high quality computers = 16.00%
- Efficient districts: (1) had 0.61-3.11 guidance counselors per 1,000 students; (2) had 0.92-2.16 librarians per 1,000 students; and (3) had a percentage of classrooms with five or more high quality computers smaller than 35.18
- All three high figures are one standard deviation above the mean; minimum figures are two standard deviations below the mean



# Calculation of a Base Cost Figure

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- 50 districts met the criteria in one or more area (21 districts in all 4 areas, 17 districts in 3 areas, 11 districts in 2 areas, and 1 district in just 1 area)
- Base spending per student spending (sum of four areas) was \$3,804 in 2002-03
- Need to adjust for added needs of special programs

# Making Adjustments for Special Circumstances

- Four special circumstances: (1) special education; (2) “at-risk” students, or students from low income families (eligible for free lunch); (3) career-technical programs; and (4) gifted programs
- Cannot use the successful school district approach – used the professional judgment approach
- Met with teams of people to discuss resources needed so that students could meet state performance standards
- Costed out those resources and developed student “weights” based on the base cost figure
- Student weight example: base cost = \$4,000; weight = .6 for some circumstance; and 1,000 of 5,000 students participate
  - total base cost = \$20,000,000 ( $\$4,000 \times 5,000$ )
  - added cost = \$2,400,000 ( $\$4,000 \times .6 \times 1,000$ )
  - or, total cost = \$22,400,000 ( $[\$4,000 \times 4,000] + [\$4,000 \times 1.6 \times 1,000]$ )



# Adjusting for Special Education

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- Alternative ways to proceed: (1) single weight vs. multiple weight; (2) if multiple, based on disability vs. service provision approach; and (3) how to deal with pre-school and private placement issues
- Decided to go with a single weight and assume private placement and catastrophic cost issues would be separate
- Weight calculated to be 1.88 without including pre-school and 2.07 including preschool

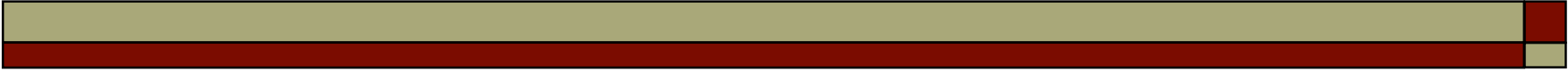




# Other Work Being Done in Regard to Special Education

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- APA is working with MDE in conducting a survey of private providers of special education services
- Gathering information on services offered to a sample of students in private placement
- Comparing to services that school districts would provide to students with same IEPs



# Adjusting for Students from Low Income Families

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- ❑ Weight for a student eligible for free lunch is 1.14
- ❑ Includes cost of early childhood services, after school services, summer programs, smaller classes, etc.
- ❑ Relatively high compared to other states but other states apply weight to “free and reduced” count
- ❑ Maryland’s new system has a weight about that high
- ❑ May be high because base cost is relatively low



# Adjusting for Career-Technical

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- Two weights: 0.13 for 7th and 8th grade students and 0.37 for 9<sup>th</sup>-12<sup>th</sup> grade students
- Weights do not include the cost of equipment at either level
- Virtually every 7th and 8th grade student rotates through a career education course while about 30 percent of 9<sup>th</sup>-12<sup>th</sup> grade students participate in career-technical education



# Adjusting for Gifted

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- Weight for gifted students is 0.48
- The count of these students in high school should be limited to those students involved in gifted programming and not include those otherwise identified as gifted
- To use a gifted student weight in a funding formula, the state would need to enforce an agreement as to the definition of gifted students (or set a limit)



# Using the Base Cost Figure and Weights in MAEP

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- ❑ Base cost and weights can be combined to estimate a target revenue level for every district
- ❑ State could back-off federal funds by reducing some or all weights
- ❑ State would need to have good information about counts of students
- ❑ State might want to avoid double-counting some students (such as special education and at-risk)
- ❑ State would need to determine state/local share (based on relative wealth or common tax effort)



# Funding Transportation

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- Current state aid = minimum (67%), operating (27%), and property (6%)
  - Minimum component reflects a rate table, based on student density and number transported
  - Operating component reflects ADA
  - Property component reflects spending for new buses
  
- State aid decline: 79% of total transportation costs in 1983-84 to 35% most recently
  - Transportation spending between 4.5% and 4.9% of current spending in recent years.
  - Significant variation among districts in the amount they spend on transportation: Oxford spent \$911 per pupil while Greenwood spent only \$91
  - State aid was \$112 per pupil transported (\$102 per ADA) in 2002-03
  - State aid varied from \$37 to \$220 per student attending and from 16.9% to 85.8% of current transportation expenditures.

# Funding Transportation

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- Actual costs are more closely related to pupils bussed and miles per student transported than to density alone
- APA suggests that the state include transportation funding in MAEP and replace the rate table with a formula
- Projected transportation spending =  
$$(\$211) \times (\text{students bussed}) + (\$.923) \times (\text{student miles transported})$$
- If district had an enrollment of 1,000 students, bussed 850 of them, and the total miles bussed was 40,000, then projected transportation spending would be \$216,270, or \$254 per student transported
- Set state aid:  
$$\text{State Aid} = (\text{Proj. Trans. Spnd.}) \times (1 - [\text{Relative Wealth} \times \{1 - \text{State Share \%}\}])$$



# Funding Facilities

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- Capital needs:
  - (1) repairs of existing facilities that are too costly to be paid for in a single year (such as roof replacement)
  - (2) additions to existing facilities to meet enrollment growth or to increase the usefulness of a building
  - (3) new construction to replace old facilities or to meet new demands
  
- Funding of school construction tends to be separate from current operating expenses
  
- State aid for capital purposes provided to: (1) promote the appropriate repair and construction of buildings and (2) mitigate the impact of wealth variation across districts





# Funding Facilities

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- ❑ Districts primarily issue debt and repay over 20-30 years
- ❑ States restrict construction: voter approval of debt (60% in MS) and/or limit debt in relation to property value (15% in MS)
- ❑ More than 90% of capital revenue comes from local sources
- ❑ State has two programs: (1) Public School Building Fund (a “bank” that accumulates funds based on \$24/student over 20 years) and (2) the Education Enhancement Fund (EEF) that provides an amount (\$16 million) for capital and bus purchase
- ❑ State authorizes school boards to issue negotiable notes to make repairs, additions, and improvements up to the amount that could be repaid with a three mill levy over 10 years



# Funding Facilities

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- Capital spending varies significantly across districts, reflecting: (1) low state support; (2) variation in the wealth of districts; and (3) variation in district needs
  
- While expenditures for O&M increased 24% between 1998-1999 to 2002-2003, spending on facilities and construction declined by 24%
  
- State undertook a review of the capital needs of districts:
  - 9 need new facilities, 68 need renovations or additions and almost all need some kind of repair
  - Estimated cost is \$325/student/year



# Funding Facilities

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- Combining survey results and data on actual construction, about \$200 million is needed for repairs, \$125 million is needed for additions, and \$80 million is needed for new facilities each year
- What might the state do?
  - Pay 30% for repairs (\$60 million)
  - Pay 50% for additions (\$63 million)
  - Pay 40% for new construction (\$32 million)
- Equalize payments based on wealth
- Use existing PSBF for repairs



# Questions and Comments

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