State of Arkansas

WHITE PAPER
Volume
4

Task Force to Joint Committee on Educational Facilities

Statewide Educational Facilities Adequacy Assessment

A Tutorial on Interpretation of the Final Report to the Joint Committee on Educational Facilities
November 30, 2004

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Preamble "- - - *to ensure that adequate facilities and substantially equal facilities are, and will continue to be provided for Arkansas' school children."*
Act 1181 of 2003

Background:

On November 21, 2002, the Arkansas Supreme Court affirmed in the Lake View School case (*Lake View School District No.25 of Phillips County, Arkansas et al, vs. Governor Mike Huckabee, et al.*) that educational facilities serving the public school system in Arkansas were inadequate, unequal, and in violation of the state constitutional guarantee of a free, adequate, efficient, and substantially equal public education for the children of Arkansas. The court has charged the Governor and the Arkansas General Assembly with the responsibility of correcting these defects in public policy. To meet these ends, the Arkansas General Assembly, in Regular Session of the 84th General Assembly of 2003, has established a joint legislative committee under Act 1181 of 2003, AN ACT TO CREATE THE JOINT COMMITTEE ON EDUCATUIONAL FACILITIES; AND FOR OTHER PURPOSES, to serve the General Assembly in exercising its responsibilities relative to the provision of adequate and substantially equal educational facilities for the State of Arkansas.

The 84th General Assembly determined the need to have an updated statewide educational facilities study. The General Assembly further recognized that, such a study performed an important responsibility toward satisfying the requirements imposed by the Supreme Court's decision in Lake View, as the General Assembly is ultimately responsible for making a final determination of what constitutes an adequate facility and how to provide substantially equal educational facilities throughout the state. To this end, the General Assembly established the "Joint Committee on Educational Facilities" in April, 2003.

By law, the joint committee has the responsibility to deliver eight mandates relative to state-wide educational facilities in Act 1181 of 2003. To carry this forward, the Joint Committee established the Task Force to Joint Committee on Educational Facilities to work through the eight mandates of Act 1181 and report their findings to the Joint Committee no later than November 30, 2004. Pursuant to this charge, the Task Force has assembled its final report to the Joint Committee in a document entitled Arkansas Statewide Educational Facilities Assessment -2004.

The findings and recommendations of this report can be summarized by the following outline of its contents:

Purpose:

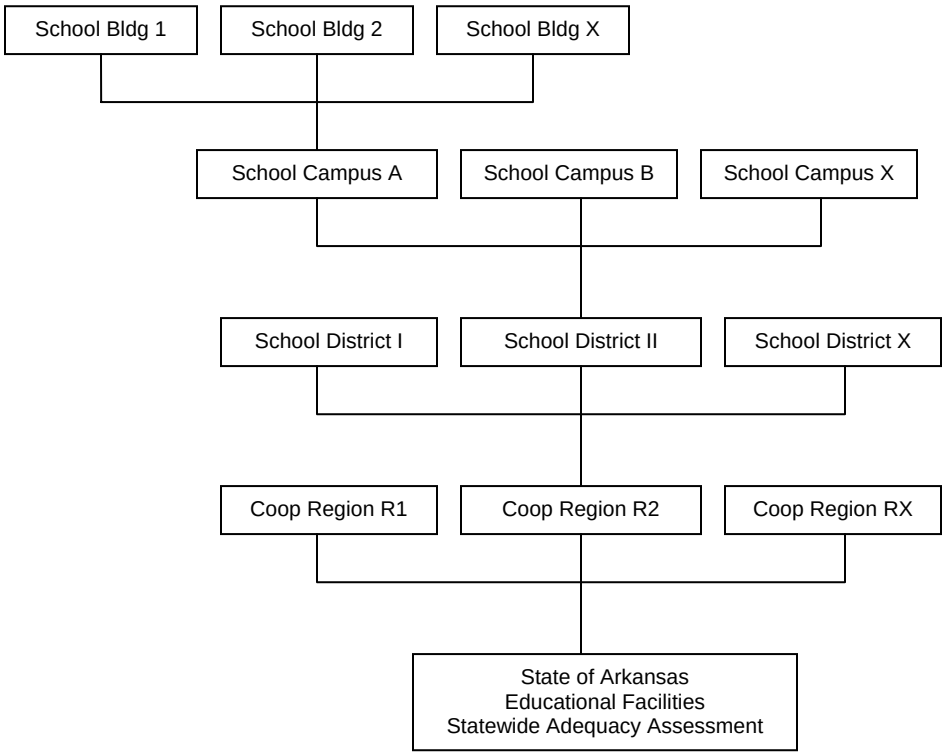
The purpose of this white paper is to provide a tutorial that will assist the reader of in understanding the statistics in the statewide report and in the school and district reports which are available at www.arkansasfacilities.com

A key to utilizing the information presented by these reports is to understand the architecture of the data infrastructure upon which the report findings are based. The final report data is derived from a very robust database developed by Magellan K-12, Inc, and licensed to the State of Arkansas, called the "*Assessment Program for Performance Learning Environments*", or A.P.P.L.E.. This software is very sophisticated in its ability to hold and analyze large quantities of diverse data inputs through a system of queries and report writers. A.P.P.L.E. currently holds in memory more than 25,000 records covering the current deficiencies and facilities needs for school buildings across the state. A.P.P.L.E. has the ability to analyze a variety of data including the inventory of buildings, the current facility needs, forecasted needs, as well as life-cycle data regarding any school building. By maintaining and continually updating the data in the database, the cost information for each of the deficiencies and the facilities' needs within a school district can be estimated, at any given time, the current cost for repairs for an individual school building, a school campus, or an entire school district.

Final Report Hierarchy:

For the purpose of the final report, the A.P.P.L.E. database has been designed with report writers that define report elements in the following layers:

Educational Facilities Adequacy Assessment
Building Data Hierarchy



The statewide adequacy assessment results will be a summary report that initiates at the level of an individual building and accumulates data through the levels of the individual campus, district, and region to the summary statewide report. This data architecture allows for further internal finite analysis at any level of the reporting hierarchy right down to an individual building.

For the purpose of the final report, educational facilities have been classified and separated into the following types of facilities:

1. Pre-K (pre-Kindergarten)
2. Elementary School
3. Middle School
4. K-8 (Kindergarten through grade 8)
5. High School
6. Middle / High School
7. K-12 (Kindergarten through grade 12)

8. Alternative School
9. Administration Building
10. Maintenance Facility
11. Athletic Facility
12. Other

Every permanent building located within a school district has been identified, classified, assessed, and reported in one of these classifications. Temporary buildings used for the purpose of education have been reported and inventoried.

The Data:

Since the final report is a summary of consistent data elements that are summarized from the individual building level to the statewide report, it is essential that we understand the basis of the first level of reporting, the individual school campus. A campus may be an individual building or a collection of buildings that compromise an individual school site with a distinct school name. For the purpose of this explanation, we will assume that our primary school campus consists of more than one building. This is a fair representation of what most school campuses look like across the state.

For each building, approximately 100 page analysis packet was developed that defines the physical parameters and the state of condition for each educational building. The teams of assessors are professional architects and engineers who are licensed and registered to practice in the State of Arkansas. Each assessment team member was formally trained at the Facilities Assessment Headquarters for a period of not less than one week in the methods of assessment, the data forms process, the data entry process, and the criteria for establishing the state of condition of the facility. This was to ensure that all assessments would be professionally competent and uniformly applied by each of the assessment teams.

All of the data collected on a room-by-room evaluation of every facility was entered into the A.P.P.L.E. data base. The automation in the database consolidated and summarized the data into a facility report for each building by its classification into the campus level report. The report elements of each campus level report are consistent with all the other campus level reports and were accumulated, to populate the data elements of the district and finally the statewide final report. Therefore, an understanding of the School Summary Report will assure the understanding of the final report.

School Summary Report:

The School Summary Report is a report analyzing the condition of the facility and is based on four (4) primary areas of analysis:

1. School Data
2. Building and Cost Data
3. Life Cycle Cost
4. Priorities

School Campus Data:

School facility data describes the site and basic parameters that establish the size and scope of the campus. The school data parameters are:

a) School Type
b) Grades Served
c) Current Enrollment
d) Total Area (GSF – Gross Square Feet)
    - Permanent Area (GSF)
    - Temporary Area (GSF)
e) Permanent Area per Student (GSF)

Facility Condition Cost Data:

Facility condition cost is calculated at the building level. A facility condition cost is the cost of correcting all existing deficiencies and the replacement of all systems which have exceeded their life expectancy based on established standards. Building condition costs, depending on the system or deficiency, were calculated on the basis of unit cost estimates, area costs, and in some cases square foot costs. The costs reported were those costs required to restore the building, in its current design, to an adequate state of repair based on current building codes, life safety codes, and ADA (Americans with Disabilities Act) requirements. There was no attempt to alter or change the structure except to restore its condition to a level of safe, dry, and healthy, and to be in compliance with established building code requirements.

Building repair costs were developed based on criteria established by R.S. Means, a highly recognized national construction estimating system that is designed for this purpose. R.S. Means data has been further refined to take into consideration the variations in cost data due to regional market conditions. Means data correction factors have been established for all six (6) regions of the state.

In order to make building cost projections relevant, eleven (11) unique building systems have been identified for the purpose of reporting building repair costs in an understandable way. These building systems include:

1. Site
2. Roofing
3. Exterior
4. Structural
5. Interior
6. HVAC (heating, ventilating, & air conditioning)
7. Plumbing
8. Electrical
9. Technology
10. Fire & Safety
11. Specialties

To add further perspective and relevance to the building cost data, a Facility Condition Index (FCI) has been defined that compares the cost to repair the facility condition to the cost of replacing the same amount of square footage. The scale is on a scale of 0-100%. The higher the FCI percentage, the closer the cost to repair the building condition is to the cost of replacing the building. Therefore, a low percentage FCI indicates a building in reasonably good condition where a high percentage FCI indicates a building in relatively poor condition.

Priorities:

Building condition costs, or deficiencies, are reported in four (4) levels of priority that range from Priority 1, which are health and safety issues to Priority 4, which are more building and site related issues that do not directly impact the building operations. The A.P.P.L.E. database classifies and defines the priorities as follows:

Priority 1: Mission Critical Concerns (Current)

Priority 1 deficiencies are conditions that directly affect the school's ability to remain open, or deliver the educational curricula. These deficiencies typically include items related to building safety, severely damaged or failing building components and other items that require near term correction. These are also deficiencies that are currently contributing to further degradation of other related building components. These are primarily building systems and components that have gone to failure.

Priority 2: Concerns with an Indirect Impact to the Educational Mission (1 year)

Priority 2 concerns are items found, that if not addressed in the near term may progress to a Priority 1 deficiency. These include poor roofs that if they deteriorate further will cause deterioration of integral building systems, HVAC, and plumbing issues that may render the building unusable if not addressed. And, other items may receive water damage causing additional repair expense if not corrected. Priority 2 items are systems that are at risk of failing potentially within one year.

Priority 3: Short Term Conditions (2-3 years):

Priority 3 items are needs that are necessary to the mission of the school, but may not require immediate attention. These items should be considered as necessary improvements requiring incorporation in order to maximize efficiency and usefulness of the facility. Priority 3 items includes site enhancements , and improvements to other important systems.

Priority 4: Long Term Requirements (4-5 years):

Priority 4 concerns are items or systems which are likely to require attention within the next five (5) years, or would be considered an enhancement to the instructional environment. The enhancements may be aesthetic or may provide greater functionality. Examples include cabinets, finishes, paving, removal or abandoned equipment and educational enhancement associated with special programs.

Life Cycle Cost:

Life Cycle Cost is the estimated cost to address anticipated future building conditions based on a life cycle model. For example, a roof may have a life expectancy of twenty (20) years and is now eighteen (18) years old. The life cycle model would suggest that this roof would need to be replaced in the next two (2) years. Therefore, a future cost for replacing the roof would be projected in year two (2) of the projected life cycle costs for the building. Since these are anticipated future costs, they do not increase or confuse the costs required to correct current deficiencies. However, life cycle costs do recognize the future liability of a roof requiring substantial repair in the near term.

Overall Facilities Costs (Total Cost):

Once the facility condition costs have been established, two other strategic variables are added that determine the total facilities costs in accordance with the following formula:

While facility condition costs are primary to estimate the cost to bring the current facilities back to good repair, there are two other strategic criteria that must be added to the facilities condition costs to establish the total cost of educational adequacy within the State of Arkansas. These additional costs include Educational Suitability and Enrollment Growth costs.

Educational Suitability Costs:

Along with the costs associated with the provision of buildings that are safe, dry, and healthy (facility condition costs), a second major component of educational adequacy is the ability of the facilities to deliver the educational program. Preliminary space guidelines have been developed for elementary, middle, and high schools as per the Arkansas Facilities Manual, Section 2: Standards & Guidelines. These guidelines include classroom spaces for core academic courses as well as areas for art, music, special education, and building services.

Educational suitability is measured as a comparison of proposed academic space requirements in comparison with the existing square footage (excluding temporary buildings)on the school campus. The Joint Committee has approved the application of the Standards & Guidelines as proposed by the Task Force for the purpose of calculating educational suitability costs. Ultimately, this cost will be driven by program standards that will be adopted by the State Board of Education and ratified by the General Assembly. However, for the current purpose of estimating educational suitability costs, space dimensions have been put forward that are based on the current pedagogy for lecture, group work, hands-on learning, tutoring, and individual course work that have been developed by the Educational Standards Committee..

Enrollment Growth Costs:

A third critical variable in the cost of educational facilities is the provision of sufficient facilities required to meet the needs of increasing student populations in high enrollment growth areas. For facility planning purposes in the State of Arkansas, there is a need for comprehensive enrollment projections that have long-term accuracy. As part of the statewide facilities adequacy assessment, a ten (10) year set of enrollment projections for every school district in the state has been developed. New methodologies and forecasting tools were utilized to develop the growth projections. Additional data such as building permits issued by statistical area and births by county were analyzed and incorporated into the system of student population projections.

Producing statewide enrollment projections was a five (5) step process that took place over the summer of 2004:

1. **Gather Data:**
    - Live Births
    - Historic Enrollment
    - Housing Developments

2. **Projection Assumptions:**
    - Most Likely Case
    - Low Growth Assumption
    - High Growth Assumption

3. **Initial Review Process:**
    - Data Analysis

4. **Select Revisions:**
    - District-by-District Considerations

5. **Final Review**

At the statewide level, it appears that total enrollment will continue to increase, but at a slightly faster rate that that of the past five (5) years. However, there is a wide variation in enrollment by grade level, as well as by region in the state. Some regions of the state are growing while others are static and yet others are declining due to aging populations and/or other demographic variables.

To meet the needs of high growth areas, school districts will need to consider adding space to existing schools as well as building new schools. At the same time, other school districts may need fewer school facilities as their populations are declining. As with any projection, the State must pay close attention to the variables associated with determining enrollment projections as presented in the final report. Any one or more of these factors can increase or decrease enrollment within the State of Arkansas. More importantly, as projections are updated annually they provide the State with a dynamic planning tool to assist them in determining the future direction of Arkansas Public Schools.

Educational Facilities Adequacy Cost Summary:

The final report summarizes the cost of educational adequacy in the State of Arkansas at the district level. The summary report will itemize for each school district within the state the following variables:

1. School District Number
2. School District Name
3. Total Number of Students
4. Total Number of Schools
5. Facility Condition Assessment
6. Educational Suitability Cost
7. Cost in $ per Student
8. Cost in $ per (GSF)
9. Enrollment Growth in Number of Students
10. Cost to Cover Enrollment Growth Projections
11. School District Total Cost

Naturally, all interested parties may want to probe beneath the top level data to evaluate the information at the district, campus, or individual building levels. Since there are so many pages of detail supporting the lower levels of analysis, the Task Force has posted this information and detail on the Facilities Assessment website and is available for public inspection at < www.arkansasfacilities.com >.

Additional facilities planning support will be available from the State Board of Education Facilities Division.

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