INTERAGENCY COMMISSION ON SCHOOL CONSTRUCTION

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December 1, 2019

The Honorable Larry Hogan
Governor
State House
100 State Circle
Annapolis, Maryland 21401

The Honorable Thomas V. "Mike" Miller, Jr.
Senate of Maryland
State House, H-107
Annapolis, MD 21401

The Honorable Adrienne A. Jones
Maryland House of Delegates
State House, H-101
100 State Circle
Annapolis, MD 21401

**Re: Report Required by HB 1783/Ch. 14(3), 2018, MSAR # 11523
Recommendations of the Workgroup on the Assessment and Funding of School
Facilities and Request for Workgroup Extension**

Dear Governor Hogan, President Miller, and Speaker Jones:

On behalf of the Workgroup on the Assessment and Funding of School Facilities, I am writing to respectfully request that the Workgroup be extended for one year in order for us to respond fully to our statutory charge.

The Workgroup was established by Chapter 14 of the 2018 Laws of Maryland—the 21st Century School Facilities Act—and was charged with making recommendations for the prioritization and funding of school facilities in Maryland, based upon the results of the Statewide school facilities assessment required by §5-310 of the Education Article. It was given until December 1, 2019 to submit its findings and recommendations.

The Workgroup has been working diligently and our preliminary findings and recommendations are enclosed for your information. Due to the delay in procurement of the statewide school facilities assessment, I respectfully request a one-year extension of the Workgroup to complete our statutory charge.

Best Regards,

Karen B. Salmon, Ph.D.

Karen B. Salmon, Ph.D.
State Superintendent of Schools
Chair, Workgroup on the Assessment and Funding of School Facilities

Cc: Sarah Albert, DLS Library (5 Copies)
Rachel Hise, Department of Legislative Services
Michael Rubenstein, Department of Legislative Services
Michele Lambert, Department of Legislative Services

PRELIMINARY REPORT OF THE WORKGROUP ON THE ASSESSMENT AND FUNDING OF SCHOOL FACILITIES

The Preliminary Findings and Draft Recommendations of Maryland's Workgroup on the Assessment and Funding of School Facilities established under the 21st Century School Facilities Act (HB 1783)
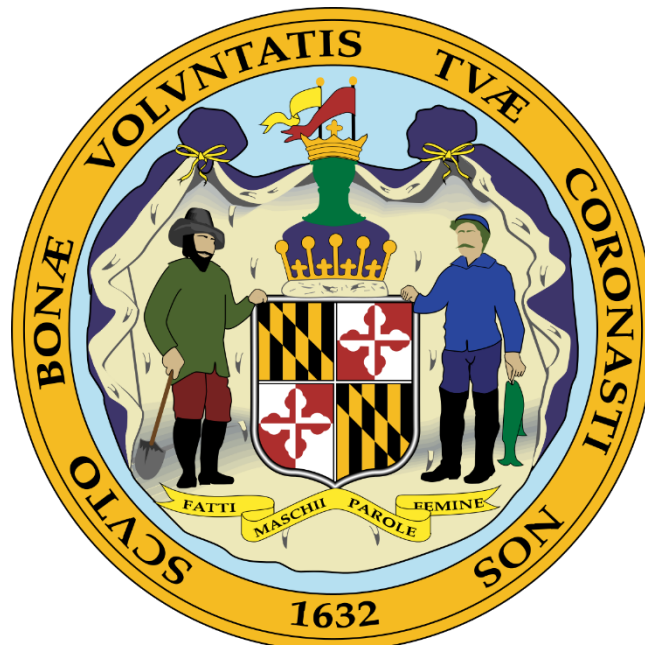
DECEMBER 1, 2019

MESSAGE FROM THE CHAIR

The establishment of this Workgroup provided an opportunity for stakeholders from all around the State to consider the substantial challenges that we face as we seek to provide educationally sufficient facilities for students in every school in Maryland. The recommendations from this group point toward the future.

We must move forward by working together to sustain our facilities in a fiscally responsible manner, with an eye on long-term outcomes by considering total cost of facility ownership. Identifying the most severe school facility needs across the State is the first step to reaching a comprehensive facilities portfolio that allows the State to maximize effectiveness in its role and to provide local school systems with the tools they need to provide educational sufficiency.

I look forward to continuing the innovative discussions and providing further comprehensive recommendations as the statewide assessment data becomes available.

Karen B. Salmon, Ph.D.

State Superintendent of Schools

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MEMBERS & AFFILIATIONS

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WORKGROUP CHAIR AND STATE SUPERINTENDENT OF SCHOOLS, MARYLAND STATE
DEPARTMENT OF EDUCATION

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APPOINTEE OF THE PRESIDENT OF THE SENATE

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REPRESENTATIVE OF THE PUBLIC SCHOOL SUPERINTENDENTS ASSOCIATION OF MARYLAND
AND EXECUTIVE DIRECTOR FOR SUPPORT SERVICES FOR CECIL COUNTY PUBLIC SCHOOLS

EXECUTIVE SUMMARY

In this report, the Workgroup on the Assessment and Funding of School Facilities ("the Workgroup") provides its recommendations to the Governor and the General Assembly of Maryland as required in 2018's House Bill 1783. Maryland has reached a critical juncture in the effort to ensure that public schools are designed and built to achieve State and local education objectives while remaining affordable to own and operate over time. The State invests hundreds of millions of dollars in school construction each year, yet conditions do not appear to be to be improving based upon the measures currently available and comparable (increasing average age and percentage of spending on capital maintenance, a.k.a. systemics). At our current average age of 30 years (see figure 1), facility renewal is often needed to ensure proper program support and reliability.
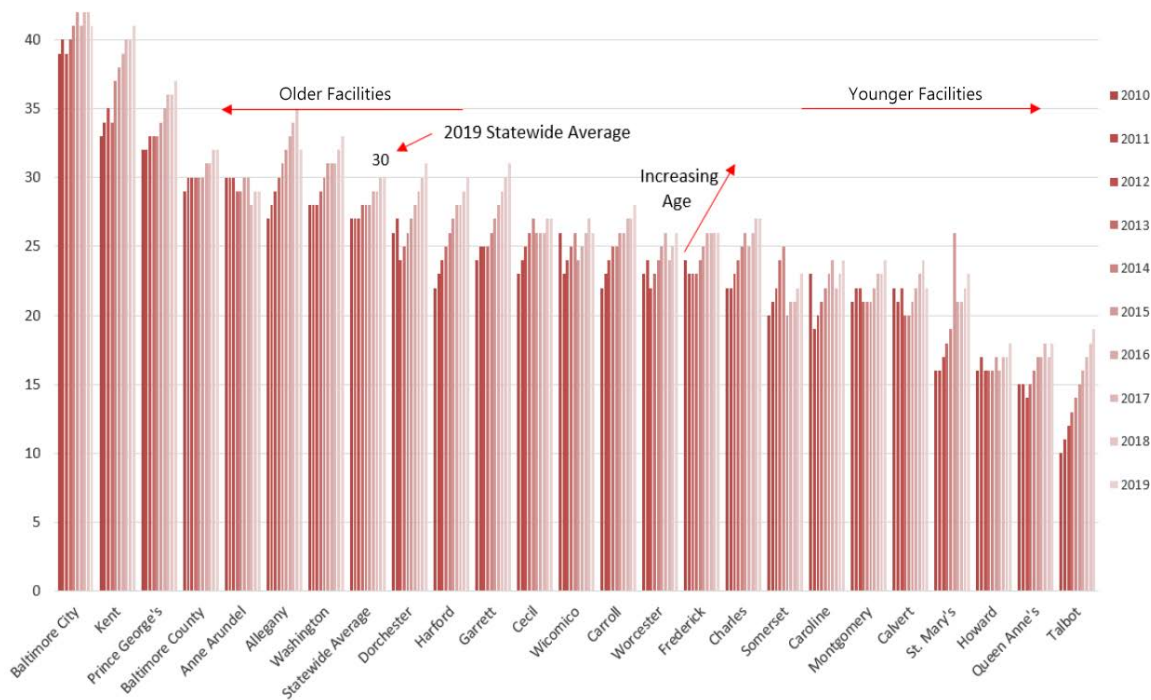
LEA: local educational agencies
The relative age difference between LEAs has remained status quo, but overall, the remaining expected life of facilities has almost uniformly declined within each LEA.

Figure 1. The IAC annually reports the average age of school facilities statewide.

In January 2016, the General Assembly established the 21st Century School Facilities Commission (Knott Commission) to review all aspects of the State's school-construction funding process. The Knott Commission held meetings and worked diligently for nearly two years to develop

recommendations, and issued its [final report] in January 2018. The recommendations of the Knott Commission provided the basis for 2018's HB 1783, the *21st Century School Facilities Act* (2018 Md. Laws, Chap. 14)*.*

The Act created the Workgroup on the Assessment and Funding of School Facilities to review the results of the statewide assessment of all school facilities. The Workgroup was tasked with using the assessment information to determine how to prioritize schools and whether or not to use assessment information in determining State funding participation.

Unfortunately, due to delays in procurement, the results of the statewide school facilities assessment were not available when the Workgroup began to meet in June 2019. In lieu of this, Interagency Commission on School Construction (IAC) staff developed a model of hypothetical schools, with 10 scenarios demonstrating different facility and educational sufficiency components, to provide a general understanding of how the decisions of the Workgroup could impact the scoring methodology proposed by IAC staff.

With this model, the Workgroup was able to begin its work without the results of the assessment. However, the Workgroup deferred making decisions on some recommendations and emphasized that their recommendations should be reconsidered once the results of the assessment are available and the implications of their decisions can be understood in the context of existing school facilities. The Workgroup adopted a recommendation to extend the Workgroup beyond the December 1, 2019 statutory report deadline so that it can finalize its recommendations after the assessment results are available and oversee any pilot program, incentives, or other efforts put in place as a result of these recommendations.

Maryland has contributed more than $8 billion to school construction projects since the inception of the Public School Construction Program in its first year of funding in 1972. Based upon information from the National Center for Education Statistics, the State has contributed on average around 25% of the total capital spending on educational facilities in Maryland. Decision makers at the local and State level continue to study and analyze school facilities needs and effective spending best practices in order to improve school facilities conditions. Since the creation of the Public School Construction program, a number of task forces, workgroups, and commissions have studied school construction funding and practices, with the Kopp Commission in the early 2000s and the Knott Commission (2016 to 2018) being the most recent. The 21st Century School Facilities Act included a goal that "as soon as practicable and within the current debt affordability guidelines, the State should provide at least $400 million each year for public school construction."

With this level of funding and attention from decision makers at all levels, Maryland is poised to become a leader in school construction practices across the nation. It will be imperative that all aspects of facility management are considered, starting with the earliest prioritization and

planning of facility projects and through the ownership and eventual renewal or disposition of a facility. This kind of cradle-to-grave analysis and planning requires that both the educational suitability of a school and the affordability of the facility to own over time are carefully considered. With the right processes and programs put in place now, that can be tweaked over time as necessary, Maryland can ensure that every child in every seat in a Maryland School has a sufficient place to learn.

MAJOR DISCUSSION AREAS

Standards-based Funding

Early on, the Workgroup made it clear that any standards-based funding based upon the results of the assessment must be with new money and that the current Capital Improvement Program (CIP) must continue in order to provide support to LEAs for their school facility projects. At the Workgroup's first meeting, staff proposed a separate funding program based upon the results of the statewide assessment. This "standards-based" funding program would use the results of the assessment, which would be weighted for prioritization, to determine a score for each school facility, known as the Maryland Condition Index (MDCI). The score would describe the condition of the bricks-and-mortar elements of a school facility as well as the ability of the school facility to serve its educational function, as measured against the Maryland Public School Facilities Educational Sufficiency Standards adopted by IAC on May 31, 2018. For additional information about how the MDCI is generated, please see Appendix 2 "DRAFT Maryland Condition Index (MDCI): How It Is Calculated".

Staff proposed that, once MDCI scores are generated for each of Maryland's nearly 1,400 school facilities, those scores could be compared against one another and that school facilities should be ranked in order beginning with those demonstrating the greatest needs. Those that ranked highest would be eligible for funding consideration for a new, renewal, or replacement project under a standards-based program. Staff proposed the application of the State and Local Cost Share for the program, but also recommended that additional project expenditures be eligible under the program, such as design fees and expenditures for furniture, fixtures, and equipment.

The Workgroup considered various components of the proposed standards-based program, modified some weighting factors and other program aspects, and recommended the implementation of a pilot program with at least $50 million to $60 million in addition to the IAC's current funding programs. Members of the Workgroup noted that legislation introduced but not passed in 2019, HB 727, included funding for a Public School Facilities Priority Fund and

would have required that $40 million be appropriated to the program in fiscal 2022 through 2025, subsequently increasing to $80 million beginning in fiscal 2026.

The Workgroup recognized that standard and comparable facility information provided by the statewide assessment will be valuable to the LEAs as they prioritize and plan their future projects regardless of funding source.

Total Cost of Ownership

Taken in isolation, neither the upfront cost of a construction project nor the long-term cost to own and operate a facility provides sufficient information with which to make informed portfolio- and facility-management decisions. Typically, a facility can last approximately 30 years before a major renovation project is necessary to keep the facility up-to-date and in working condition. The cost to own and operate a facility for those 30 years often exceeds the initial cost to build the facility. The IAC calculates the total cost of ownership as the cost to construct the facility initially plus the cost to own and operate the facility for thirty years. Facility-design decisions must be made both with up front and long-term costs under consideration. With this in mind, the Workgroup discussed potential incentives to encourage LEAs to reduce total cost of ownership of their school facilities. Reducing the total cost of ownership of a facility would free up both State and local dollars for other needs.

Maintenance

After a facility is built, it must then be operated and maintained properly if the total costs of ownership are to be effectively controlled. While the Workgroup primarily focused on prioritization and funding of school construction projects, it also recognized that construction projects and facility ownership cannot be separated from one another. Inadequate maintenance shortens the life of the facility, which then results in additional costs to taxpayers and facility conditions that are not suitable for the education of children. Because maintenance includes both routine maintenance and the periodic replacement of building systems that wear out (capital maintenance), the Workgroup noted that LEAs and the State would benefit from having data on the actual life spans of building systems. Such data would enable LEAs and the State to continually improve their management of their facilities and extract greater value from the dollars spent on facilities.

STATUTORY CHARGES

The General Assembly of Maryland passed the 21st Century School Facilities Act in the spring 2018 legislative session, laying the groundwork to reevaluate the State's approach to school construction funding based upon the work of the Knott Commission. Section 3 of the Act established the Workgroup and charged the Workgroup with taking the following actions:

(f) (1) After the initial school facility assessment required by §5-310(e) of the Education Article is completed, the Workgroup shall:

1) **Assessment prioritization.** *Consider how the relative condition of public school facilities within the educational facilities sufficiency standards and the facility condition index should be prioritized, taking into account local priorities and in consultation with local jurisdictions, including whether the prioritization should be by category and by local jurisdiction or statewide;*

2) **Funding based upon assessment data.** *Determine whether the results should be incorporated into school construction funding decisions;*

3) **How to fund based upon assessment data.** *If the Workgroup determines that the assessment results should be incorporated into school construction funding decisions, determine how the assessment results should be incorporated into school construction funding;*

4) **Total cost of ownership incentives.** *Consider whether the State should provide funding incentives for local jurisdictions that reduce the total cost of ownership of public school facilities.*

5) *On or before December 1, 2019, report its findings and recommendations to the Governor, and, in accordance with § 2-1246 of the State Government Article, the General Assembly.*

The Workgroup met for six half-day meetings between June 20, 2019, and November 19, 2019. Each meeting was held in the Senate Budget and Taxation Committee Room in Annapolis. Meetings were live streamed, and archived video is available on the General Assembly's website and can be linked from the Interagency Commission on School Construction (IAC) website.

After the first meeting on June 20, 2019, IAC staff conducted four webinars available to the members and the public to provide foundational information on school facilities management best practices. The webinars covered topics such as facility-portfolio management, total cost of ownership, maintenance effectiveness, and educationally sufficient facilities. The webinars and webinar slides are available to view and download on the IAC's website.

Figure 2. The Strategic Goal of the Workgroup on the Assessment and Funding of School Facilities

Throughout their meetings, the members discussed a primary objective of Maryland's school construction program—to support LEAs in providing [or maintaining] portfolios of school facilities that are educationally effective and fiscally sustainable. This was the framework initially adopted by the Workgroup on Educational Development Specifications, which began meeting in November 2018.

To facilitate their conversation, a discussion matrix was utilized and updated based upon the Workgroup's discussion at each meeting. The final discussion matrix is attached to this report as Appendix 1.

PRELIMINARY FINDINGS AND
DRAFT RECOMMENDATIONS

Statutory Charge - Prioritization

> "The Workgroup shall consider how the relative condition of public school
> facilities within the educational facilities sufficiency standards and the facility
> condition should be prioritized, taking into account local priorities and in
> consultation with local jurisdictions, including whether the prioritization should
> be by category and by local jurisdiction or statewide."

Reviewing Decisions when Assessment Data Is Available

Although the Workgroup utilized the hypothetical schools model to understand the impact of
certain weighting decisions, the members also recognized that their recommendations should
be applied to the assessment data and the resulting school facilities scores should be reviewed
and analyzed before weighting or funding decisions are finalized. The Workgroup therefore
recommended that the Workgroup on the Assessment and Funding of School Facilities be
extended to adopt the final weightings and program recommendations upon completion of the
statewide facilities assessment and to evaluate the results of a pilot standards-based funding
program.

Prioritization through Weighting

Throughout its discussions, the Workgroup focused heavily on the importance of various
educational facility components and their proportional impact on teaching and learning. Staff
provided a proposed list of nine categories into which a given facility system or attribute could
be grouped. The repair values of those systems and attributes could then be weighted by a
corresponding category weight value to ensure that the facility conditions that most affect
teaching and learning are factoring most heavily into the MDCI score of each facility. The
Workgroup revised the staff proposal, resulting in draft categories as identified in Figure 3, in
which immediate threats to life, safety, or health are weighted the most heavily (3.5 x repair
value) and space deficiencies for essentially unhoused students are also weighted very heavily
(3.0 x repair value).

The Workgroup agreed that the proposed category weights are appropriate, but also noted that
special programmed schools (such as alternative, charter, or career and technical education
schools) must be assessed differently than those that provide education via traditional methods
since traditional space requirements as defined by the Maryland Sufficiency Standards may not

be applicable to these methods of educational delivery. The Workgroup also agreed that relocatable facilities should be weighted higher than originally proposed.

Category #	Description	Weight
1	**Immediate Code/Life/Health Threat** Used only for critical issues that pose immediate threats to the life, health, or safety of persons within the facility. • Obvious friable asbestos • Unprotected exit corridors • Electrical hazards *Ex: Severe HVAC deficiencies requiring closure of a school*	3.5
2	**Sufficiency Deficiency – Space** Deficiencies that are related to sufficiency standards for inherent space-based issues in the facility. • Not enough classrooms • Lacking square-footage requirements • Missing mission-critical space	3.0
3	**Mitigate Additional Damage:** Systems or deficiencies that require repairs to mitigate additional damage. • Leaking roof • Poor ventilation causing moisture buildup *Ex: HVAC deficiencies that could result in damage to the facility, such as leaks*	2.0
4	**Degraded w/ Potential Mission Impact** Systems or deficiencies that are mission critical and beyond useful life, or most systems beyond 200% expected life. • Fire alarm system beyond 200% • Severely damaged walls • Systems past 200% life expectancy	1.5
5	**Beyond Expected Life:** Systems or deficiencies that are 100% to 200% beyond expected life and show no signs of required repairs. • Expired portable buildings • Many interior finishes without damages	.25 to 1.5

Category #	Description	Weight
6	**Grandfathered or State/District Standards:** Systems or deficiencies that are "grandfathered" code issues or specific to the local agency. • Fire Sprinklers • Flooring consistent with local architectural standards	.5
7	**Sufficiency Deficiency – Facility** Deficiencies that are related to sufficiency standards for inherent parts of the facility. • ADA Issues • Insufficient Parking • Fixed Equipment (such as serving kitchens)	1.0
8	**Sufficiency Deficiency – Equipment** Deficiencies that a related to sufficiency standards for non-fixed equipment. • Missing playgroup equipment	.5
9	**Normal/Within Life Cycle** Systems that are within the expected life cycle and do not require replacement. • Functioning, new lighting • A 20 year old system with a 25 year life cycle *Ex: HVAC within normal lifecycle and fully functioning*	.25

Figure 3. Draft Category Weights for MDCI Calculation

Statutory Charge – State Funding Using Assessment Results

"The Workgroup shall determine whether—and, if so, how—the assessment results should be incorporated into State decisions about school-construction funding."

Pilot Standards-based Funding Program

The Workgroup recommends that a standards-based funding program be created and piloted to direct new state funding to the highest new, renewal, or replacement school needs as measured by the statewide facilities assessment. The standards-based program should be one of a mix of solutions for improving school conditions, including the continuance of the current Capital Improvement Program (CIP) and the implementation of various incentives. The standards-based program should include funding for all project commitments except for land acquisition, offsite expenditures, and items with a median expected life span of less than

15 years. Final funding prioritization should only be determined after the data from the statewide facilities assessment is available.

Using Assessment Data to Fund Additional Programs

The Workgroup recognized that data from the assessment could be used to identify needs that could be funded through additional programs. For example, Facility Condition Index information could be used to compare needs and prioritize funding to address needs in specific category of building systems such as roofs. However, the Workgroup recommends postponing consideration of such programs until assessment results are available, and until specific needs can be identified based upon analysis of assessment data.

Capital and Routine Maintenance Funding

The Workgroup also recognized that data from the assessment could be used to identify where LEAs have obtained building-system life spans that are greater than the expected life spans. The data could be used as the basis for allocating additional funding that would incentivize maintenance practices that save local and State dollars by directing some of the State's savings to the LEA. However, the Workgroup recommends postponing a decision on a capital maintenance incentive program until assessment data is available.

The Workgroup also acknowledged at their October 7, 2019 meeting that the Kirwan Commission may consider a dedicated maintenance funding stream for routine operational maintenance and recommends that the Workgroup and the Kirwan Commission coordinate and appropriately fund maintenance operations.

Statutory Charge - Total Cost of Ownership (TCO) Incentive

> "The Workgroup shall consider whether the State should provide funding incentives for local jurisdictions that reduce the total cost of ownership of public school facilities."

The Workgroup on Educational Development Specifications outlined a potential incentive that would provide for additional State share percentage points that correspond to percentage reductions in the estimated facility TCO for new, replacement, and fully renovated school facilities when compared to the baseline total cost of ownership. Total cost of ownership includes the costs of building, operating, and maintaining facilities over 30 years. The Ed Specs Workgroup discussed the incentive proposal in detail at their April 10, 2019 meeting, and material was subsequently presented to the Assessment and Funding Workgroup at their meeting on October 7, 2019 (attached to this report as Appendix 3).

The Assessment and Funding Workgroup recommends implementation of the incentive as described in Scenario G of the [October 7 meeting material](#), to provide an additional 0.75

percentage points to the calculated State share incentive for each 1% reduction in the estimated TCO. LEAs with a State share of 89% or more would receive a 1% State share incentive for each 1% reduction in estimated TCO. Each reduction resulting in a State share above 100% would result in a 0.75% increase to State share (regardless of LEA State share percentage) and could be used for any LEA educational facility project purpose. The Workgroup further recommends that the incentive be evaluated after a period of time and modified as necessary.

The baseline total cost of ownership uses the same five-year enrollment projections for a facility as the statewide assessment. Use of future year enrollments assures that the needs for school facilities are properly assessed and then built with future populations in mind. The baseline calculation is based upon industry standards, and total cost of ownership estimates below the baseline may be achieved by a school facility either through reductions in square footage, selection of efficient systems or materials, or a combination of both. Even a 1% reduction in total cost of ownership can greatly benefit LEAs and the State in the long term. It is not anticipated that this incentive will result in drastic facilities solutions, but rather in thoughtful, inventive, and measured choices. The choices must be local, and achieving a sufficient learning environment for every student in Maryland must always be the goal. This incentive contributes to that goal by lowering the total cost of ownership, which frees up valuable resources to be used elsewhere.

Although the TCO incentive will likely encourage consideration of facilities solutions like net-zero energy efforts and the use of energy efficient materials in schools, the 21st Century School Facilities Act of 2018 also required IAC to establish incentives for the construction of net-zero school buildings and the use of energy efficient of other preferred materials in public school construction (Education Article, §5-309(c)).

The Ed Specs Workgroup Recommendations

Throughout the course of its work earlier in 2019, the Ed Specs Workgroup made several additional recommendations for consideration by the Workgroup on the Assessment and Funding of School Facilities. After review, the Workgroup on the Assessment and Funding of School Facilities concurred with the recommendations of the Ed Specs workgroup, and in some instances refined those recommendations. The recommendations of the Workgroup on the Assessment and Funding of School Facilities are as follows:

1. IAC should create and maintain life-cycle-cost-analysis standards and measures to be used as part of a tool to estimate the total cost of ownership of potential projects.

2. IAC should implement post-occupancy evaluations (POEs) of new and renovated facilities utilizing a standard template that will facilitate collection and availability of comparable information for all LEAs. Further, the POEs should be conducted by State employees

rather than by third-party vendors. Information gleaned from the POEs shall not be used to retroactively modify funding for projects.

3. The State should adopt and implement the National Council on School Facilities' "Definitions of Key Facilities Data Elements" in the financial reporting that LEAs provide to the Maryland State Department of Education (MSDE) for activities related to the total cost of ownership of school facilities.

4. IAC should explore the practice of funding the use by LEAs of a standard web-based comprehensive maintenance management system (CMMS) to that would support LEAs' facility operations, maintenance, and capital-renewal activities and enable data analysis and reporting to State and local stakeholders. Any system selected must include preventive maintenance, work-order management, and utility management.

5. IAC should explore the implementation of real-time utilities metering for each facility. Each new, renewed, or replacement school that utilizes any State funding should be fitted with standardized measurement and verification equipment, and any associated costs should be treated as an eligible cost of the project.

Other Considerations

The Workgroup recognized that, for optimal planning, LEAs need predictable funding, but that, because the current CIP allocations are not formulaic, they are neither predictable nor easily understood by the public. After considering information provided by staff, the Workgroup agreed that a formulaic approach to allocating CIP funds merits further consideration and directed staff to provided additional information regarding potential formula-based CIP funding to the extended Workgroup when it begins meeting after the assessment data is available.

CONCLUSION AND NEXT STEPS

With an estimated asset value of $56 billion, the size of the statewide school facilities portfolio in Maryland is second only to the State's portfolio of roads. In order for LEAs to successfully deliver education programs and services to Maryland's nearly 900,000 public K-12 students, the State's 1,400 public school facilities must remain perpetually in sufficient condition. For this to take place, planning, funding, and maintenance practices must be consistently and persistently effective.

State and local funding levels and allocation practices to date have not been sufficient to avoid a substantial decline in the condition of the overall statewide school facilities portfolio. Although the average age of square footage—the only currently available comparable measure of facility condition— is insufficient to accurately convey the condition of an individual school facility, it does provide an order-of-magnitude representation of the overall condition of the portfolio of schools. The increase in the average age of Maryland's school facilities from 24 years in 2005 to 30 years in 2019 suggests that facility conditions may be worsening across the State. The completion of the statewide school facilities assessment will provide invaluable information for school construction planning and funding and will provide measures that can be reviewed longitudinally over time to provide decision makers with information needed to determine appropriate funding levels and practices.

This report contains the draft recommendations of the Workgroup on the Assessment and Funding of School Facilities, many of which should be reviewed by the Workgroup once facility assessment data becomes available. The current approach to school facility funding in Maryland may not be adequate to sustain a sufficient learning environment for every student in every seat in a Maryland school. The completion of the statewide assessment is critical, and will provide a foundation upon which good planning practices can drive decision making in order to achieve a school facilities portfolio that is both educationally sufficient and fiscally sustainable.

Requirements of Ed. Art. §5-310 and 2018 Md. Laws, Chap. 14
The Workgroup shall report its findings and recommendations to the Governor and General Assembly on or before December 1, 2019

1. **Statutory Requirement:** The Workgroup shall consider how the relative condition of public school facilities within the educational facilities sufficiency standards and the facility condition should be prioritized, taking into account local priorities and in consultation with local jurisdictions, including whether the prioritization should be by category and by local jurisdiction or statewide.
   Background Information: The statewide school facilities assessment will assess both facility condition and educational sufficiency components (including available space for projected enrollment).

Potential Solutions	Pros	Cons	Draft Workgroup Recommendations
A. Recommend extension of Assessment and Funding Workgroup to adopt final weightings and program recommendations upon completion of the Statewide facilities assessment and to guide and evaluate the pilot program(s).	• Allows continuous improvement of policies, practices, and procedures. • Increases transparency and expands stakeholder input to high-level decision makers	• Requires additional member and staff time and effort.	Workgroup recommends implementation of proposed solution so that draft recommendations proceed but that final decisions regarding assessment category weights and prioritization be postponed until assessment results become available.
B. Adopt weights for categories of deficiencies (except relocatables) to ensure that schools with the highest educational-sufficiency needs are prioritized to recognize deficiencies that have the greatest impact on teaching and learning.	• The needs-based ranking of schools based upon the assessment results provides a clear and comparable picture of facilities needs throughout the State. • Valuable data becomes available, including data on both facility condition and educational sufficiency. Even if a ranking is not generated, this information is critical to impartially support school facilities planning decisions. • Provides independent, unbiased justification of needs and priorities. • Provides more accurate estimates of future capital needs for planning purposes and as required by the Capital Debt Affordability Committee (CDAC).	• State prioritization may not take into account all local programmatic requirements or standards. • Local and State priorities may not always align perfectly.	There is agreement that the proposed category weightings are appropriate. Scoring prioritization of relative need will be a mechanical process. However, reasonable consideration of local priorities should be included in funding decisions. *Please note that special programmed schools (such as alternative, charter, or CTE schools) will be assessed differently than those that provide education via traditional methods as traditional space requirements as defined by the Maryland Sufficiency Standards may not be applicable to these methods of educational delivery.*
C. For relocatables, adjust the proposed weights. Under the original proposal, relocatables would be weighted first at .25 (Category 9) and then progress to a range between .25 and 1.5 weight (-Category 5) when they exceed twice their expected life span. Staff recommends quadrupling the initial weight to 1.0 (Category 7-Sufficiency Deficiency)) and then progressing to 3.0 (Category 2) when they exceed twice their expected life span.	• Puts a higher priority on relocatables • Applies weight that is less than the 3.0 weight for unhoused students	• Although students in relocatables are in less than ideal conditions, heavily weighting relocatables could draw funds from other educational sufficiency needs. • Will compete, in some cases, with unhoused students	The Workgroup agrees that relocatables should be weighted higher than originally proposed and that a final decision on relocatable weighting should be postponed until assessment data is available.

Items in italics are not recommendations of the Workgroup but represent directions to staff.

Requirements of Ed. Art. §5-310 and 2018 Md. Laws, Chap. 14			
The Workgroup shall report its findings and recommendations to the Governor and General Assembly on or before December 1, 2019			
Potential Solutions	**Pros**	**Cons**	**Draft Workgroup Recommendations**
C1. Relocatable Option A: Relocatables be weighted as Category 2 (weight of 3.0) regardless of age.	• Students housed in relocatables are not differentiated from students that are essentially unhoused.	• Students housed in relocatables are not differentiated from students that are essentially unhoused.	See recommendation for 1. C. above.
C2. Relocatable Option B: Relocatables begin as a Category 7 (weight of 1.0) until end of expected life and increase to category 4 (weight of 1.5) until twice expected life, at which point they are category 2 (weight of 3.0).	• Puts a higher priority on relocatables • Applies weight that is less than the 3.0 weight for unhoused students	• Although students in relocatables are in less than ideal conditions, heavily weighting relocatables could draw funds from other educational sufficiency needs. • Will compete, in some cases, with unhoused students	See recommendation for 1. C. above.
D. From the assessment, produce two reports– one with all schools in the state compared one against another and a second showing the schools in each county compared against only those within that county.	• Same pros as listed for B above.	• State prioritization may not take into account all local programmatic requirements or standards. • Local and State priorities may not always align perfectly.	The Workgroup recommends implementation of this solution.

2. Statutory Requirement: The Workgroup shall determine whether—and, if so, how—the assessment results should be incorporated into State decisions about school-construction funding **Background Information:** Current state school-construction funding more or less follows LEAs' prioritizations, with mid- to large-sized LEAs receiving roughly the same proportional allocation each year and smaller LEAs receiving funding for projects in years when they have projects. Maryland school facilities have a current asset value of $55.3 billion and more than 140 million gross square feet. Despite combined state and local funding averaging $1.9 billion per year, facility conditions have not drastically improved and the average age of our facilities has risen significantly.	

Potential Solutions	**Pros**	**Cons**	**Draft Workgroup Recommendations**
A. Do not use assessment ranking information in State or local funding decisions.	• Protects the autonomy of counties.	• Does not focus available resources on ensuring sufficiency for all students. • Does not maximize limited State and local resources.	Consider various options to utilize assessment results in State funding decisions. • Use assessment data in ways yet to be determined (potentially as described in B, C, and D below) for allocating new funding but do not take away from existing funding. •

Items in italics are not recommendations of the Workgroup but represent directions to staff.

Requirements of Ed. Art. §5-310 and 2018 Md. Laws, Chap. 14			
The Workgroup shall report its findings and recommendations to the Governor and General Assembly on or before December 1, 2019			
B. Create a pilot program using new funding to prioritize State funding to the highest new, renewal, or replacement school needs, as measured by the assessment. The prioritized program would be only one of a mix of solutions for improving school conditions and the funding to the existing CIP program must be maintained to fund LEA priorities (often system replacements). The Pilot Program should apply the State and Local Cost Share and can include funding for all project commitments except for land acquisition, offsite expenditures, and items with a median expected life span of less than 15 years. Adopted weightings can be reevaluated by the Workgroup (if extended) or by a similar advisory group after completion of the pilot program.	• Prioritized (standards-based) funding would maximize limited State and local resources to most efficiently improve the overall facility condition of the statewide portfolio, which will reduce the cost to own and operate the statewide portfolio over time. • Promotes sufficient facilities for every child in the State of Maryland. • Pilot program allows stakeholders to monitor and evaluate the effectiveness of a prioritized program while the IAC's traditional funding programs remain in place.	• Without incentives for good maintenance, could potentially "reward" poor maintenance practices since schools with highest needs are funded first. •	• Fund a standards-based pilot program with new money only for new, renewal, or replacement schools. • Funding prioritization for the pilot program should only be determined after the data from the statewide facilities assessment is available.
C. Allocate funds through additional funding programs for certain systemic needs, such as roofs, to compare and fund projects across the state in a systematic and prioritized way.	• Comparable and critical systems can be prioritized for need and addressed quickly, reducing the need for reactive maintenance on failed systems and subsequently reducing the facility's cost of ownership while improving the overall health of the facilities portfolio. • Allows targeting of specific needs. • Funding could have sunset dates.	• Issue-focused funding will not meet the overall facilities needs of the state. • Issue-focused funding programs are difficult to manage unless tied to specific needs that are mutually exclusive and objectively measurable and comparable. • Does not improve statewide portfolio health as efficiently as new, renewal, or replacement projects. • Primarily protects capital assets but does not necessarily address educational sufficiency needs.	The Workgroup recommends postponing consideration of this potential solution until assessment results are available and specific needs can be identified based upon the provided data.
D. **[Potential Incentive – Capital Maintenance (Systemics)]** Calculate, from each year's assessment information, the number of systems in a facility that are beyond their expected life and by what amount. Correspondingly provide for an increase to the LEA's State Cost Share to incentivize good maintenance practices. Each year the assessment will provide the savings/loss percentages resulting from extended/reduced life cycles for each school facility and each LEA portfolio. The Incentive could increase the LEA's State share for the following year by ¾% for each percentage point increase of extended life of the LEA portfolio.	• Encourages good maintenance practices that extend the life of systems in facilities. • Rewards counties that have consistently maintained their schools. • Counterbalances for prioritized (standards-based) funding, which when unchecked, could potentially encourage poor facilities maintenance by funding schools with the highest needs.	• Understaffed and underfunded counties are likely to benefit to a much lesser degree than highly staffed and more well funded counties	The Workgroup recommends postponing a decision on this proposal until assessment data is available.

Items in italics are not recommendations of the Workgroup but represent directions to staff.

Requirements of Ed. Art. §5-310 and 2018 Md. Laws, Chap. 14			
The Workgroup shall report its findings and recommendations to the Governor and General Assembly on or before December 1, 2019			
Potential Solutions	**Pros**	**Cons**	**Draft Workgroup Recommendations**
E. Collaborate with the Kirwan Commission, who are currently considering a dedicated maintenance funding stream, to coordinate efforts to incentivize and appropriately fund maintenance operations.	• Recognizes the interlinked nature of operational funding (for routine maintenance) and capital funding (for capital maintenance [systemics]) • Works with the proposed Capital incentive (2. D.) to appropriately fund and incentivize good maintenance practices.		The Workgroup recommends collaboration with the Kirwan Commission, who are currently considering a dedicated maintenance funding stream, to coordinate efforts to incentivize and appropriately fund maintenance operations.

3. Statutory Requirement: The Workgroup shall consider whether the State should provide funding incentives for local jurisdictions that reduce the total cost of ownership of public school facilities. **Background Information:** The costs of owning and operating a facility for 30 years can exceed the initial cost to construct the facility and those operational costs compete directly with teachers and supplies for operational funding. According to Industry standards, facility owners should annually invest an average of 2% of the initial construction cost in maintenance and operations (heating, cooling, custodial, grounds, etc.) and an additional 2% of the initial construction cost in replacement of building systems (capital maintenance).	

Potential Solutions	**Pros**	**Cons**	**Draft Workgroup Recommendations**
A. The Workgroup on Educational Development Specifications outlined a potential incentive that would provide for additional State share percentage points that correspond to percentage reductions in the facility Total Cost of Ownership (TCO) when compared to the baseline.	• Immediately rewards small but powerful cost-saving decisions by LEAs in school construction. Encourages LEAs not only to look at total square footage and space use, but also to look at efficiencies that can be gained by the selection of certain efficient systems or materials. • Moves the conversation away from lower first-costs of construction that may ultimately cause higher total costs over the life of the facility. • Produces savings for the LEA both immediately and over time, but also would result in savings for the State over time as the need for systemic replacements is reduced. • Focuses local attention on total cost of ownership, laying the groundwork for greater fiscal capacity to support school construction over time. • Encourages renovations and use of existing facilities. • Incentivizes good and fiscally sustainable design.	• May require additional-up front State funding. (See Item # 5, below for information regarding Ed Spec Workgroup recommendation). • Will require additional resources to accurately analyze the estimated total cost of ownership requires additional resources. • Could reduce the emphasis on aesthetics.	The Workgroup recommends implementation of this incentive, as described in Scenario G of the Workgroup materials, to provide a ¾% State share incentive for each 1% reduction in TCO. LEAs with a State share of 89% or more shall receive a 1% State share incentive for each 1% reduction in TCO. Each reduction resulting in a State share above 100% will result in a ¾% increase to State share (regardless of LEA State share percentage) and may be used for any LEA educational facility project purpose. The incentive should be evaluated after a period of time and modified as necessary.

Items in italics are not recommendations of the Workgroup but represent directions to staff.

Recommendations of the Ed Specs Workgroup for the Workgroup on the Assessment and Funding of School Facilities			
Ed Specs Workgroup Recommendations	**Pros**	**Cons**	**Draft Workgroup Recommendations**
4. Create incentives that encourage LEAs to analyze and plan/design for total cost of ownership for new, replacement, and fully renovated school facilities based on the costs of building, operating, and maintaining facilities over the full life of a project. (Incentives as presented at the April 10 Ed Spec Workgroup Meeting to increase State participation by a percentage or a fraction of a percentage corresponding to the number of percentage points an LEA reduces the total cost of ownership under the baseline total cost of ownership (available at http://www.pscp.state.md.us/Workgroups/EDSW/EDSWindex.cfm))	This item is a statutory charge and a recommendation of the Workgroup on Educational Development Specifications. Please see item #3 for more detail.		
5. Create and maintain life-cycle-cost-analysis standards and measures to be used as part of a tool to estimate the total cost of ownership of potential projects. This recommendation is a component of the Total Cost of Ownership Incentive described in item #3. In order to estimate the cost of ownership of a designed facility to qualify for an incentive, comparable standards and measures of the life-cycle costs of various building systems must be developed.	• Supports reasonable and comparable total cost of ownership analysis, which is essential to making critical project decisions. • Could support the implementation of a TCO incentive as described in item 3.	• Creation of the LCCA standards and measures, as well as the tool to estimate TCO, will require some State resources.	The Workgroup recommends implementation of this solution.
6. Implement post-occupancy evaluations of new and renovated facilities utilizing a standard template that will facilitate collection and availability of comparable information for all LEAs.	• Post-occupancy evaluations analyze and report on best practices and lessons learned in school facility design and construction projects. Through the standard documentation and reporting of project successes and lessons learned, LEAs can learn from one another to increase the success of every project in the State.	• Post-occupancy evaluations require funding for a third-party vendor to conduct the evaluation.	The Workgroup recommends implementation of this state-provided solution. The Workgroup further recommends that Post Occupancy Evaluations be performed by State employees rather than third party vendors. Information gleaned from POEs shall not be used to retroactively modify funding for projects.
7. Implement the National Council on School Facilities' "Definitions of Key Facilities Data Elements" for activities related to facilities that make up the total cost of ownership that LEAs report to MSDE and track the cost of ownership.	• Standard definitions of activities related to facilities enable better analysis and reporting of facilities costs so that best practices can be measured and understood.	• Before the full benefits of the resulting data could be obtained, MSDE would need to replace its COBOL-based finance data system, which cannot accommodate further modifications. • Reporting requirements must be carefully considered to ensure that an additional burden is not placed on the LEAs.	The Workgroup recommends implementation of this solution.

Items in italics are not recommendations of the Workgroup but represent directions to staff.

Recommendations of the Ed Specs Workgroup for the Workgroup on the Assessment and Funding of School Facilities			
Ed Specs Workgroup Recommendations	**Pros**	**Cons**	**Draft Workgroup Recommendations**
8. Explore the implementation of a standard maintenance management system to collect data on LEAs' facility operations, maintenance, and capital-renewal activities. Analyze the data and provide reports to State and local stakeholders. Staff recommends that certain components required for effective maintenance management and comparable effective maintenance metrics be purchased by the State, which will be offered to every LEA without cost. LEAs should not be required to utilize the system, but could purchase additional components if desired.	• Almost every LEA currently uses a common computerized maintenance management system (CMMS) to track work orders, preventive maintenance logs, cost information, and other maintenance activities. Implementation of a Statewide system would have scale advantages, decreasing the cost to taxpayers to support isolated systems in each LEA, and would provide valuable information to the State for analysis and the dissemination of best practices information. • Shifts the financial burden of the maintenance management system from the LEAs to the State	• Shifts the financial burden of the maintenance management systems from the LEAs to the State • Some LEAs may want to use a different CMMS. • Some LEAs may not want the State to see their data.	The Workgroup recommends implementation of this state-funded solution to include preventive maintenance, work order management, and utility management. The Workgroup further recommends that the system and data collection reside within the purview of the IAC.
9. Explore the implementation of real-time utilities metering for each facility.	• Real-time utilities metering monitors energy consumption over time and can identify efficiency improvements, such as controls adjustments, to ensure that facilities efficiency meets design expectations. • Supports both accountability of facility systems performance and occupant behavior. • Provides basis for continuous improvement and best practices. • Provides the opportunity for information to be included in curriculum.	• Funding is required to support real-time utilities metering.	The Workgroup recommends implementation of this potential solution, initially with each new, renewed, or replacement schools that utilize any State funding be fitted with standardized M&V and that any associated costs be treated as an eligible cost of the project.

Optional Considerations			
Potential Solutions	**Pros**	**Cons**	**Draft Workgroup Recommendations**
10. Adopt a methodology for LEA CIP (Capital Improvement Program) funding allocations so that LEAs receive a formula-driven allocation (primarily based upon enrollment) each year. Revise ineligible items to more fully fund project obligations, and use existing Revolving Fund to "bank" or "advance" them as needed by each LEA, so that each LEA eventually receives their annual allocation but so that the full allocation does not have to be used by each LEA every year.	• LEAs know what funding to anticipate for local priorities and can develop better plans based upon anticipated funding levels. • State participates more fully in project costs, decreasing the burden on LEAs that struggle to fund their share of CIP projects. • Utilizes revolving fund to its maximum benefit. • LEAs without funding needs in a given year can "bank" and combine multiple annual allocations to fund complete projects.	• Will not completely eliminate the potential that in some years there will not be sufficient dollars banked for every need unless additional money is added to the Revolving Fund.	*Staff is directed to provide additional information and recommendations regarding formulaic CIP funding to the extended Workgroup following the completion of the Statewide assessment.*

Items in italics are not recommendations of the Workgroup but represent directions to staff.

DRAFT Maryland Condition Index
How It Is Calculated

Education Article, §5-310 requires the Interagency Commission on School Construction to assess and maintain a database of the physical and educational sufficiency facility conditions of each public PK-12 school facility. A fiscally sustainable school-facilities portfolio requires actionable and reliable metrics to support efficient and effective facility management. Good facilities management begins with good planning based upon empirical data and ends with effective maintenance that maximizes the investment. A school facility is made up of a long list of quantifiable physical, spatial, and environmental attributes.

The Facility Condition Index (FCI) is used to quantify physical attributes, commonly referred to as the "bricks and mortar" of a school facility. The FCI quantifies the depleted life and value of a facility's primary building systems and components such as roofs, windows, walls, and heating, ventilation, and air conditioning systems. FCI metrics are useful for estimating levels of spending necessary to achieve and maintain a specific level of physical condition. Lower scores are better, as facilities with lower FCI scores have fewer building-system deficiencies, are more reliable, and will require less maintenance spending on systems replacement and mission-critical emergencies.

The Maryland Educational Facilities Sufficiency Standards define the minimum attributes necessary to support the delivery of State-required education curricula and programs within safe and healthy environments. The attributes required by the standards are specific to the grades served and the number of students attending an existing facility and those projected to attend the facility within five years (see page 3 for additional information regarding enrollment projections).

The proposed Maryland Condition Index (MDCI) is a metric representing how far a PK-12 school is from being perfectly educationally sufficient school facility and can be used to compare each school against all others. As with the FCI, lower MDCI scores are better. The MDCI incorporates the weighted correction value of each Sufficiency Standards need with each FCI correction value. Each value is categorized into one of nine types (see page 6) and weighted to differentiate needs that significantly impede or prohibit learning from lesser needs. For example, missing or undersized facilities or space, and safety, health, and learning-climate issues such as a failing roof or HVAC system are weighted more heavily and, therefore, will yield a higher score than a building system that is old but still functioning.

Data sources include field assessments, master-plan updates, student enrollments (current and five-year projections), and frequent local education agency input. Onsite facility assessments of each school will occur every three to four years and life-cycle renewal requirements required between the assessments will be automatically adjusted annually.

Calculations within the Maryland Condition Index

1. Life-cycle Renewal Requirements:

A life-cycle renewal requirement exists when a building system is in use beyond the average expected life of the system. Each building system is assessed against the original-installation or last-renovation date to determine the percent depleted based on Building Owners and Managers Association International (BOMA) and similar published mean life-cycle expectancy estimates. For example, a roof that has a 20-year life expectancy, installed in 2000, would be considered 100% used in the year 2020, unless observation during an assessment indicated that the Life-cycle renewal date (end-of-life date) should be adjusted. Life-cycle renewal requirements due to degradation can be estimated and recognized incrementally over time (see figure below) to approximate actual condition between assessments. At any time, if a system is determined to not be functioning effectively, the deficiency is placed into a higher weighted category (see page 6), which will increase the MDCI score.

$$Percent\ Degraded = \frac{(Current\ age\ of\ system)^2}{(System\ Expected\ Life)^2}$$
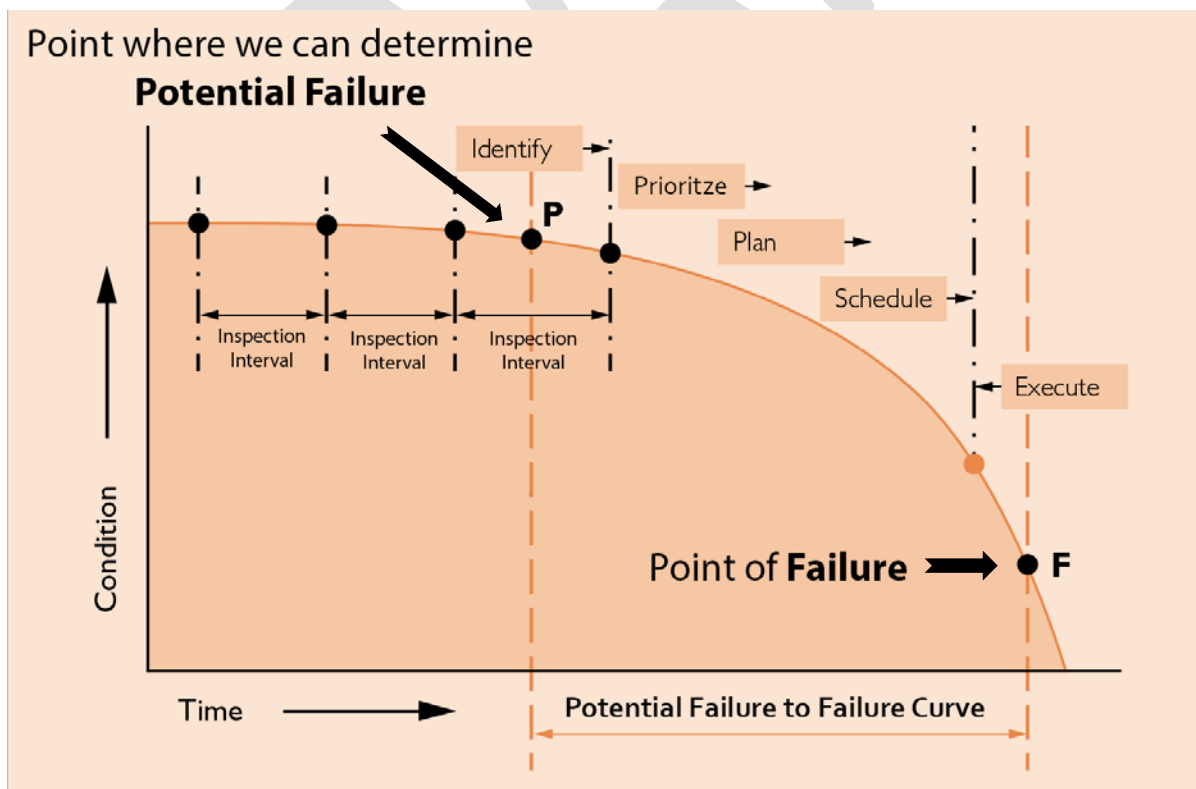
Appendix 2

2. Growth Factor:

Example: The timeline below illustrates a change in population over a 5-year period. Student population increased from 547 students in School Year (SY) 2014-15 to 736 students in SY 2018-19, with an average increase of 7.79% per year.

School Year	2014-15	2015-16	2016-17	2017-18	2018-2019
School Population	547 Students	550 Students	596 Students	665 Students	736 Students
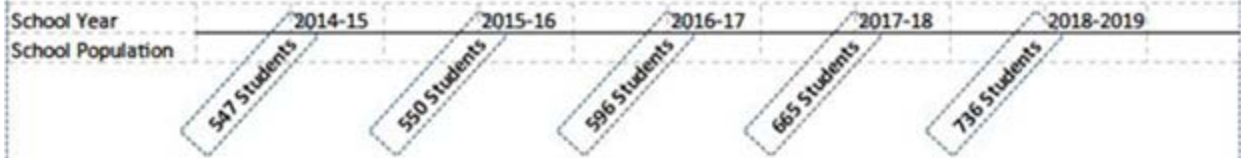
Assuming this same trend will continue for the next 5-year period, it can be predicted that this school will have a population of 1,071 students in SY 2023-24.

$$(1 + R)^5 \; Where \; R = Average \; Yearly \; Change \; of \; Growth \; Rate$$

To find the average yearly change of growth rate for the past five years:

$$R = \frac{\Delta Y_2 + \Delta Y_3 + \Delta Y_4 + \Delta Y_5}{4}$$

Note: Δ signifies differentiation in respect to the previous year

$$R = \frac{31.16\%}{4} = 7.79\%$$

$$Growth \; Factor = (1 + 0.0779)^5 = 1.455$$

An increase in population from 736 students in SY 2018-19 to 1,071 students in SY 2023-24 would result in a 5-year straight line projected percent-increase of 45.5%, which translates to a Growth Factor (GF) of 1.455

In the MDCI calculations, each school is assigned a GF*. This factor acts as a multiplier against a school's current population to determine potential space needs 5 years out. In this particular example the school will be assigned a GF of 1.455. By multiplying this GF against school's current population we are able to arrive at an Expected Population.

$$Expected \; Population = Current \; Population \; x \; Growth \; Factor$$

$$= 736 \; x \; 1.455 = 1,071 \; Students$$

When the school's current square footage fails to meet sufficiency standards for the newly calculated Expected Population, Category 7 Space Deficiencies are generated in the database, which have an additional weight factor that has been listed in the hypothetical weightings as 3.0, just below the 3.5 immediate life-health-safety weighting.

*Schools that have a declining student population or a 0% increase will be assigned a GF of 1.0, signifying no growth; thus Expected Population is equal to the current-year population. In addition, when there is a sudden percent increase or decrease in a school's population causing a large difference in the GF from year to year, the GF is validated against the Cohort Survival Projection Method and manual adjustments may be appropriate.

3. Facility Condition Index (FCI):

By assessing the remaining life of each major building system of a school facility against the average expected life-cycle of each building system and aggregating the building systems that make up the school facility, we are able to score the school facility using the industry standard methodology of the FCI. The FCI is the tool commonly used for the general condition comparative rating of buildings. Buildings with lower FCI average percentages are in better condition.

$$FCI = \frac{(\text{Value to Replace}) \times (\text{Percent Degraded})}{(\text{Value to Replace})}$$

It is important to note that this formula works for both individual building systems, as well as the entire facility. For our purposes, we need to find the FCI of each individual system in order to properly apply our weightings and calculate the MDCI.

4. Maryland Educational Facilities Sufficiency Standards:

A deviation from the Maryland Educational Facilities Sufficiency Standard exists when a facility fails to meet any Maryland Educational Facilities Sufficiency Standard. Formulas that represent each Sufficiency Standard automatically generate repair costs when the school fails to meet the standards required to serve its five-year projected student enrollment. A Growth Factor (GF) based upon the previous five-year trend is used as a multiplier against each school's current population to determine space needs (see page 5).

The following list shows a few of the many data elements that are used in formulas to calculate whether a school meets Maryland Educational Facilities Sufficiency Standards.

- Number of Students
- Growth Factor
- Grades Served
- General Classroom Net Square Footage
- Admin Net Square Footage

- Art & Music Net Square Footage
- Computer Lab Net Square Footage
- Media Center Space
- Physical Education Space
- Science Net Square Footage

5. Maryland Condition Index (MDCI):

The MDCI is calculated from the base formula for the FCI but takes into account the value to correct deviations from the Maryland Educational Facilities Sufficiency Standards (based upon the five-year projected enrollment, as described on page 6) and weighting applied to each component for direct relevancy in supporting the delivery of educational support functions. Please see the proposed categories and weights table on page 6 for category descriptions and their corresponding proposed weights. Correcting health and safety issues or the provision of sufficient space for required educational programs are weighted much higher than building systems that are old but still functioning effectively.

By combining the value of sufficiency deviations and facility condition, and weighting each component we can calculate the MDCI.

$$MDCI = \frac{\begin{array}{c}(Category\ 1\ Component \times 3.5) + (Category\ 2\ Component \times 1.5) + \\ (Category\ 3\ Component \times 2) + (Category\ 4\ Component \times .25\ to\ 1.5) + \\ (Category\ 5\ Component \times .5) + (Category\ 6\ Component \times 1) + \\ (Category\ 7\ Component \times 3.0) + (Category\ 8\ Component \times .5) + \\ (Category\ 9\ Component \times .25)\end{array}}{Value\ to\ Replace}$$

Please keep in mind that the attached category weights are only proposed weights at the time of this publication.

Appendix 2

Category #	Description	Weight
1	**Immediate Code/Life/Health Threat** Used only for critical issues that pose immediate threats to the life, health, or safety of persons within the facility. • Obvious friable asbestos • Unprotected exit corridors • Electrical hazards *Ex: Severe HVAC deficiencies requiring closure of a school*	**3.5**
2	**Sufficiency Deficiency – Space** Deficiencies that are related to sufficiency standards for inherent space-based issues in the facility. • Not enough classrooms • Lacking square-footage requirements • Missing mission-critical space	**3.0**
3	**Mitigate Additional Damage:** Systems or deficiencies that require repairs to mitigate additional damage. • Leaking roof • Poor ventilation causing moisture buildup *Ex: HVAC deficiencies that could result in damage to the facility, such as leaks*	**2.0**
4	**Degraded w/ Potential Mission Impact** Systems or deficiencies that are mission critical and beyond useful life, or most systems beyond 200% expected life. • Fire alarm system beyond 200% • Severely damaged walls • Systems past 200% life expectancy	**1.5**
5	**Beyond Expected Life:** Systems or deficiencies that are 100% to 200% beyond expected life and show no signs of required repairs. • Expired portable buildings • Many interior finishes without damages	**.25 to 1.5**
6	**Grandfathered or State/District Standards:** Systems or deficiencies that are "grandfathered" code issues or specific to the local agency. • Fire Sprinklers • Flooring consistent with local architectural standards	**.5**
7	**Sufficiency Deficiency – Facility** Deficiencies that are related to sufficiency standards for inherent parts of the facility. • ADA Issues • Insufficient Parking • Fixed Equipment (such as serving kitchens)	**1.0**
8	**Sufficiency Deficiency – Equipment** Deficiencies that a related to sufficiency standards for non-fixed equipment. • Missing playgroup equipment	**.5**
9	**Normal/Within Life Cycle** Systems that are within the expected life cycle and do not require replacement. • Functioning, new lighting • A 20 year old system with a 25 year life cycle *Ex: HVAC within normal lifecycle and fully functioning*	**.25**

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Spreadsheets of all eight scenarios have been provided to the members. Only Scenarios C, G and H will be handouts at the meeting, as they generally demonstrate total savings to the State as well as features of fair balance for State distributions. It should be noted that the total State and Local combined TCO savings are uniform for all eight scenarios.

Scenarios A – D:
State Share Percentage <u>cannot exceed 100%</u> of IAC-eligible project costs.

A. Scenario A: 1% State Share INCENTIVE for each 1% REDUCTION in TCO.

B. Scenario B: 3/4% State Share INCENTIVE for each 1% REDUCTION in TCO.

C. Scenario C: 3/4% State Share INCENTIVE for each 1% REDUCTION in TCO (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%).

D. Scenario D: 3/4% State Share INCENTIVE for each 1% REDUCTION (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%) PLUS 1/2% ADDITIONAL SAVINGS for reductions of 30% or more.

Scenarios E – H:
State Share Percentage <u>may exceed 100%</u> of IAC-eligible project costs. Under these scenarios, the LEA would receive 75 percent of any state share above 100% of project cost. This bonus above eligible project costs could be utilized for any tax-exempt bond qualified expense for the project such as design and furniture, or may be added to the LEA's Education Article 5-303 reserve account.

E. Scenario E: 1% State Share INCENTIVE for each 1% REDUCTION in TCO.

F. Scenario F: 3/4% State Share INCENTIVE for each 1% REDUCTION in TCO.

G. Scenario G: 3/4% State Share INCENTIVE for each 1% REDUCTION in TCO (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%).

H. Scenario H: 3/4% State Share INCENTIVE for each 1% REDUCTION in TCO (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%) PLUS 1/2% ADDITIONAL SAVINGS for reductions of 30% or more.

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario A: 1% SAVINGS INCENTIVE for each 1% REDUCTION.
No State Percentages above 100%.

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

Baseline				Proposed With Incentive														Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			E + B	.45F x G unless G>100% then .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100%	D-M unless G>100% then D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA) over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	51.00%	$ 22,720,500	$ (220,500)	-0.98%	$ 135,000	$ (85,500)	$ 21,829,500	$ 670,500	2.98%	$ 135,000	$ 270,000	$ 1,075,500	$ 990,000
$ 100,000,000	96%	$ 43,200,000 $ -	$ 1,800,000 $ -	1%	$ 99,000,000	97.00%	$ 43,213,500	$ (13,500)	-0.03%	$ 259,200	$ 245,700	$ 1,336,500	$ 463,500	25.75%	$ 10,800	$ 270,000	$ 744,300	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	55.45%	$ 22,458,465	$ (2,004,615)	-9.80%	$ 1,227,231	$ (777,384)	$ 18,041,535	$ 6,504,615	26.50%	$ 1,472,769	$ 2,700,000	$ 10,677,384	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	70.00%	$ 25,200,000	$ (2,700,000)	-12.00%	$ 2,700,000	$ -	$ 10,800,000	$ 11,700,000	52.00%	$ 2,700,000	$ 5,400,000	$ 19,800,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000 $ -	$ 22,500,000 $ -	30%	$ 70,000,000	80.00%	$ 25,200,000	$ (2,700,000)	-12.00%	$ 4,050,000	$ 1,350,000	$ 6,300,000	$ 16,200,000	72.00%	$ 4,050,000	$ 8,100,000	$ 28,350,000	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	106.00%	$ 40,500,000	$ 2,700,000	6.25%	$ 2,592,000	$ 5,292,000	$ -	$ 1,800,000	100.00%	$ 108,000	$ 2,700,000	$ 4,608,000	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	116.00%	$ 36,000,000	$ 7,200,000	16.67%	$ 5,184,000	$ 12,384,000	$ -	$ 1,800,000	100.00%	$ 216,000	$ 5,400,000	$ 7,416,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	126.00%	$ 31,500,000	$ 11,700,000	27.08%	$ 7,776,000	$ 19,476,000	$ -	$ 1,800,000	100.00%	$ 324,000	$ 8,100,000	$ 10,224,000	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	60.00%	$ 24,300,000	$ (1,800,000)	-8.00%	$ 1,350,000	$ (450,000)	$ 16,200,000	$ 6,300,000	28.00%	$ 1,350,000	$ 2,700,000	$ 10,350,000	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	70.00%	$ 28,350,000	$ (1,350,000)	-5.00%	$ 1,620,000	$ 270,000	$ 12,150,000	$ 5,850,000	32.50%	$ 1,080,000	$ 2,700,000	$ 9,630,000	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	80.00%	$ 32,400,000	$ (900,000)	-2.86%	$ 1,890,000	$ 990,000	$ 8,100,000	$ 5,400,000	40.00%	$ 810,000	$ 2,700,000	$ 8,910,000	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	90.00%	$ 36,450,000	$ (450,000)	-1.25%	$ 2,160,000	$ 1,710,000	$ 4,050,000	$ 4,950,000	55.00%	$ 540,000	$ 2,700,000	$ 8,190,000	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	100.00%	$ 40,500,000	$ -	0.00%	$ 2,430,000	$ 2,430,000	$ -	$ 4,500,000	100.00%	$ 270,000	$ 2,700,000	$ 7,470,000	$ 9,900,000

Scenario A - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio. Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	$ 151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	$ 1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = **$ 56,000,000,000** < --Estimated total Statewide school facilities portfolio replacement value

Scenario A - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario B:
3/4% SAVINGS INCENTIVE for each 1% REDUCTION.
No State Percentages above 100%.

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

	Baseline			Proposed With Incentive															Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			E(.75)+B	.45F x G unless G>100% then .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100%	D-M unless G>100% then D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .F5E x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA) over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	50.75%	$ 22,609,125	$ (109,125)	-0.48%	$ 135,000	$ 25,875	$ 21,940,875	$ 559,125	2.48%	$ 135,000	$ 270,000	$ 964,125	$ 990,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	1%	$ 99,000,000	96.75%	$ 43,102,125	$ 97,875	0.23%	$ 259,200	$ 357,075	$ 1,447,875	$ 352,125	19.56%	$ 10,800	$ 270,000	$ 632,925	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	52.95%	$ 21,445,965	$ (992,115)	-4.85%	$ 1,227,231	$ 235,116	$ 19,054,035	$ 5,492,115	22.37%	$ 1,472,769	$ 2,700,000	$ 9,664,884	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	65.00%	$ 23,400,000	$ (900,000)	-4.00%	$ 2,700,000	$ 1,800,000	$ 12,600,000	$ 9,900,000	44.00%	$ 2,700,000	$ 5,400,000	$ 18,000,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	30%	$ 70,000,000	72.50%	$ 22,837,500	$ (337,500)	-1.50%	$ 4,050,000	$ 3,712,500	$ 8,662,500	$ 13,837,500	61.50%	$ 4,050,000	$ 8,100,000	$ 25,987,500	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	103.50%	$ 40,500,000	$ 2,700,000	6.25%	$ 2,592,000	$ 5,292,000	$ -	$ 1,800,000	100.00%	$ 108,000	$ 2,700,000	$ 4,608,000	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	111.00%	$ 36,000,000	$ 7,200,000	16.67%	$ 5,184,000	$ 12,384,000	$ -	$ 1,800,000	100.00%	$ 216,000	$ 5,400,000	$ 7,416,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	118.50%	$ 31,500,000	$ 11,700,000	27.08%	$ 7,776,000	$ 19,476,000	$ -	$ 1,800,000	100.00%	$ 324,000	$ 8,100,000	$ 10,224,000	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	57.50%	$ 23,287,500	$ (787,500)	-3.50%	$ 1,350,000	$ 562,500	$ 17,212,500	$ 5,287,500	23.50%	$ 1,350,000	$ 2,700,000	$ 9,337,500	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	67.50%	$ 27,337,500	$ (337,500)	-1.25%	$ 1,620,000	$ 1,282,500	$ 13,162,500	$ 4,837,500	26.88%	$ 1,080,000	$ 2,700,000	$ 8,617,500	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	77.50%	$ 31,387,500	$ 112,500	0.36%	$ 1,890,000	$ 2,002,500	$ 9,112,500	$ 4,387,500	32.50%	$ 810,000	$ 2,700,000	$ 7,897,500	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	87.50%	$ 35,437,500	$ 562,500	1.56%	$ 2,160,000	$ 2,722,500	$ 5,062,500	$ 3,937,500	43.75%	$ 540,000	$ 2,700,000	$ 7,177,500	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	97.50%	$ 39,487,500	$ 1,012,500	2.50%	$ 2,430,000	$ 3,442,500	$ 1,012,500	$ 3,487,500	77.50%	$ 270,000	$ 2,700,000	$ 6,457,500	$ 9,900,000

Scenario B - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio — Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	$ 151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	$ 1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = **$ 56,000,000,000** < --Estimated total Statewide school facilities portfolio replacement value

Scenario B - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario C:	3/4% SAVINGS INCENTIVE for each 1% REDUCTION (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%). No State Percentages above 100%.

Assumptions: Baseline Project Construction Cost is $45M or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

Baseline				Proposed With Incentive														Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
\$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			E(mod)+B	.45F x G unless G>100% then .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100%	D-M unless G>100% then D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x F45 x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA) over 30 years
\$ 100,000,000	50%	\$ 22,500,000	\$ 22,500,000	1%	\$ 99,000,000	50.75%	\$ 22,609,125	\$ (109,125)	-0.48%	\$ 135,000	\$ 25,875	\$ 21,940,875	\$ 559,125	2.48%	\$ 135,000	\$ 270,000	\$ 964,125	\$ 990,000
		\$ -	\$ -															
\$ 100,000,000	96%	\$ 43,200,000	\$ 1,800,000	1%	\$ 99,000,000	97.00%	\$ 43,213,500	\$ (13,500)	-0.03%	\$ 259,200	\$ 245,700	\$ 1,336,500	\$ 463,500	25.75%	\$ 10,800	\$ 270,000	\$ 744,300	\$ 990,000
\$ 100,000,000	45%	\$ 20,453,850	\$ 24,546,150	10%	\$ 90,000,000	52.95%	\$ 21,445,965	\$ (992,115)	-4.85%	\$ 1,227,231	\$ 235,116	\$ 19,054,035	\$ 5,492,115	22.37%	\$ 1,472,769	\$ 2,700,000	\$ 9,664,884	\$ 9,900,000
\$ 100,000,000	50%	\$ 22,500,000	\$ 22,500,000	20%	\$ 80,000,000	65.00%	\$ 23,400,000	\$ (900,000)	-4.00%	\$ 2,700,000	\$ 1,800,000	\$ 12,600,000	\$ 9,900,000	44.00%	\$ 2,700,000	\$ 5,400,000	\$ 18,000,000	\$ 19,800,000
\$ 100,000,000	50%	\$ 22,500,000	\$ 22,500,000	30%	\$ 70,000,000	72.50%	\$ 22,837,500	\$ (337,500)	-1.50%	\$ 4,050,000	\$ 3,712,500	\$ 8,662,500	\$ 13,837,500	61.50%	\$ 4,050,000	\$ 8,100,000	\$ 25,987,500	\$ 29,700,000
		\$ -	\$ -															
\$ 100,000,000	96%	\$ 43,200,000	\$ 1,800,000	10%	\$ 90,000,000	106.00%	\$ 40,500,000	\$ 2,700,000	6.25%	\$ 2,592,000	\$ 5,292,000	\$ -	\$ 1,800,000	100.00%	\$ 108,000	\$ 2,700,000	\$ 4,608,000	\$ 9,900,000
\$ 100,000,000	96%	\$ 43,200,000	\$ 1,800,000	20%	\$ 80,000,000	116.00%	\$ 36,000,000	\$ 7,200,000	16.67%	\$ 5,184,000	\$ 12,384,000	\$ -	\$ 1,800,000	100.00%	\$ 216,000	\$ 5,400,000	\$ 7,416,000	\$ 19,800,000
\$ 100,000,000	96%	\$ 43,200,000	\$ 1,800,000	30%	\$ 70,000,000	126.00%	\$ 31,500,000	\$ 11,700,000	27.08%	\$ 7,776,000	\$ 19,476,000	\$ -	\$ 1,800,000	100.00%	\$ 324,000	\$ 8,100,000	\$ 10,224,000	\$ 29,700,000
\$ 100,000,000	50%	\$ 22,500,000	\$ 22,500,000	10%	\$ 90,000,000	57.50%	\$ 23,287,500	\$ (787,500)	-3.50%	\$ 1,350,000	\$ 562,500	\$ 17,212,500	\$ 5,287,500	23.50%	\$ 1,350,000	\$ 2,700,000	\$ 9,337,500	\$ 9,900,000
\$ 100,000,000	60%	\$ 27,000,000	\$ 18,000,000	10%	\$ 90,000,000	67.50%	\$ 27,337,500	\$ (337,500)	-1.25%	\$ 1,620,000	\$ 1,282,500	\$ 13,162,500	\$ 4,837,500	26.88%	\$ 1,080,000	\$ 2,700,000	\$ 8,617,500	\$ 9,900,000
\$ 100,000,000	70%	\$ 31,500,000	\$ 13,500,000	10%	\$ 90,000,000	77.50%	\$ 31,387,500	\$ 112,500	0.36%	\$ 1,890,000	\$ 2,002,500	\$ 9,112,500	\$ 4,387,500	32.50%	\$ 810,000	\$ 2,700,000	\$ 7,897,500	\$ 9,900,000
\$ 100,000,000	80%	\$ 36,000,000	\$ 9,000,000	10%	\$ 90,000,000	87.50%	\$ 35,437,500	\$ 562,500	1.56%	\$ 2,160,000	\$ 2,722,500	\$ 5,062,500	\$ 3,937,500	43.75%	\$ 540,000	\$ 2,700,000	\$ 7,177,500	\$ 9,900,000
\$ 100,000,000	90%	\$ 40,500,000	\$ 4,500,000	10%	\$ 90,000,000	100.00%	\$ 40,500,000	\$ -	0.00%	\$ 2,430,000	\$ 2,430,000	\$ -	\$ 4,500,000	100.00%	\$ 270,000	\$ 2,700,000	\$ 7,470,000	\$ 9,900,000

Scenario C - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio

Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	\$ (23,310)	-0.04%	\$ 98,280	\$ 74,970	\$ 8,544,690	\$ 275,310	3.12%	\$ 52,920	\$ 151,200	\$ 479,430	\$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	\$ (63,000)	-0.11%	\$ 982,800	\$ 919,800	\$ 6,237,000	\$ 2,583,000	29.29%	\$ 529,200	\$ 1,512,000	\$ 4,624,200	\$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	\$ 239,400	0.43%	\$ 1,164,240	\$ 1,403,640	\$ 3,515,400	\$ 2,280,600	39.35%	\$ 347,760	\$ 1,512,000	\$ 4,140,360	\$ 5,544,000

150M GSF x $379/sf = **$ 56,000,000,000** < --Estimated total Statewide school facilities portfolio replacement value

Scenario C - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	**$554,400,000**	4%	30	**$1,798,139,580**
65%	10%	**$5,544,000,000**	4%	30	**$17,981,395,796**
77%	10%	**$5,544,000,000**	4%	30	**$17,981,395,796**

Scenario D: 3/4% SAVINGS INCENTIVE for each 1% REDUCTION (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%)
PLUS 1/2% ADDITIONAL SAVINGS for reductions of 30% or more. No State Percentages above 100%.

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

Baseline				Proposed With Incentive														Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			E(mod)+B	.45F x G unless G>100% then .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100%	D-M unless G>100% then D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Syst emics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA)over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	50.7500%	$ 22,609,125	$ (109,125)	-0.48%	$ 135,000	$ 25,875	$ 21,940,875	$ 559,125	2.48%	$ 135,000	$ 270,000	$ 964,125	$ 990,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	1%	$ 99,000,000	97.00%	$ 43,213,500	$ (13,500)	-0.03%	$ 259,200	$ 245,700	$ 1,336,500	$ 463,500	25.75%	$ 10,800	$ 270,000	$ 744,300	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	52.95%	$ 21,445,965	$ (992,115)	-4.85%	$ 1,227,231	$ 235,116	$ 19,054,035	$ 5,492,115	22.37%	$ 1,472,769	$ 2,700,000	$ 9,664,884	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	65.00%	$ 23,400,000	$ (900,000)	-4.00%	$ 2,700,000	$ 1,800,000	$ 12,600,000	$ 9,900,000	44.00%	$ 2,700,000	$ 5,400,000	$ 18,000,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	30%	$ 70,000,000	87.50%	$ 27,562,500	$ (5,062,500)	-22.50%	$ 4,050,000	$ (1,012,500)	$ 3,937,500	$ 18,562,500	82.50%	$ 4,050,000	$ 8,100,000	$ 30,712,500	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	106.00%	$ 40,500,000	$ 2,700,000	6.25%	$ 2,592,000	$ 5,292,000	$ -	$ 1,800,000	100.00%	$ 108,000	$ 2,700,000	$ 4,608,000	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	116.00%	$ 36,000,000	$ 7,200,000	16.67%	$ 5,184,000	$ 12,384,000	$ -	$ 1,800,000	100.00%	$ 216,000	$ 5,400,000	$ 7,416,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	141.00%	$ 31,500,000	$ 11,700,000	27.08%	$ 7,776,000	$ 19,476,000	$ -	$ 1,800,000	100.00%	$ 324,000	$ 8,100,000	$ 10,224,000	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	57.50%	$ 23,287,500	$ (787,500)	-3.50%	$ 1,350,000	$ 562,500	$ 17,212,500	$ 5,287,500	23.50%	$ 1,350,000	$ 2,700,000	$ 9,337,500	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	67.50%	$ 27,337,500	$ (337,500)	-1.25%	$ 1,620,000	$ 1,282,500	$ 13,162,500	$ 4,837,500	26.88%	$ 1,080,000	$ 2,700,000	$ 8,617,500	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	77.50%	$ 31,387,500	$ 112,500	0.36%	$ 1,890,000	$ 2,002,500	$ 9,112,500	$ 4,387,500	32.50%	$ 810,000	$ 2,700,000	$ 7,897,500	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	87.50%	$ 35,437,500	$ 562,500	1.56%	$ 2,160,000	$ 2,722,500	$ 5,062,500	$ 3,937,500	43.75%	$ 540,000	$ 2,700,000	$ 7,177,500	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	100.00%	$ 40,500,000	$ -	0.00%	$ 2,430,000	$ 2,430,000	$ -	$ 4,500,000	100.00%	$ 270,000	$ 2,700,000	$ 7,470,000	$ 9,900,000

Scenario D - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio   Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	$ 151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	$ 1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = $ 56,000,000,000   < --Estimated total Statewide school facilities portfolio replacement value

Scenario D - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario E: 1% SAVINGS INCENTIVE for each 1% REDUCTION and LEA receives 3/4 of the Adjusted State Share Percentage above 100%.
~~No State Percentages above 100%.~~

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

	Baseline			Proposed With Incentive															Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			E + B	.45F x G unless G>100% then ((G-1)*.75)+1	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100% then (G-1)*75% x .45F	D-M unless G>100% then (M x-1) + D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA) over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	51.00%	$ 22,720,500	$ (220,500)	-0.98%	$ 135,000	$ (85,500)	$ 21,829,500	$ 670,500	2.98%	$ 135,000	$ 270,000	$ 1,075,500	$ 990,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	1%	$ 99,000,000	97.00%	$ 43,213,500	$ (13,500)	-0.03%	$ 259,200	$ 245,700	$ 1,336,500	$ 463,500	25.75%	$ 10,800	$ 270,000	$ 744,300	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	55.45%	$ 22,458,465	$ (2,004,615)	-9.80%	$ 1,227,231	$ (777,384)	$ 18,041,535	$ 6,504,615	26.50%	$ 1,472,769	$ 2,700,000	$ 10,677,384	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	70.00%	$ 25,200,000	$ (2,700,000)	-12.00%	$ 2,700,000	$ -	$ 10,800,000	$ 11,700,000	52.00%	$ 2,700,000	$ 5,400,000	$ 19,800,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	30%	$ 70,000,000	80.00%	$ 25,200,000	$ (2,700,000)	-12.00%	$ 4,050,000	$ 1,350,000	$ 6,300,000	$ 16,200,000	72.00%	$ 4,050,000	$ 8,100,000	$ 28,350,000	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	106.00%	$ 42,322,500	$ 877,500	2.03%	$ 2,592,000	$ 3,469,500	$ (1,822,500)	$ 3,622,500	201.25%	$ 108,000	$ 2,700,000	$ 6,430,500	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	116.00%	$ 40,320,000	$ 2,880,000	6.67%	$ 5,184,000	$ 8,064,000	$ (4,320,000)	$ 6,120,000	340.00%	$ 216,000	$ 5,400,000	$ 11,736,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	126.00%	$ 37,642,500	$ 5,557,500	12.86%	$ 7,776,000	$ 13,333,500	$ (6,142,500)	$ 7,942,500	441.25%	$ 324,000	$ 8,100,000	$ 16,366,500	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	60.00%	$ 24,300,000	$ (1,800,000)	-8.00%	$ 1,350,000	$ (450,000)	$ 16,200,000	$ 6,300,000	28.00%	$ 1,350,000	$ 2,700,000	$ 10,350,000	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	70.00%	$ 28,350,000	$ (1,350,000)	-5.00%	$ 1,620,000	$ 270,000	$ 12,150,000	$ 5,850,000	32.50%	$ 1,080,000	$ 2,700,000	$ 9,630,000	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	80.00%	$ 32,400,000	$ (900,000)	-2.86%	$ 1,890,000	$ 990,000	$ 8,100,000	$ 5,400,000	40.00%	$ 810,000	$ 2,700,000	$ 8,910,000	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	90.00%	$ 36,450,000	$ (450,000)	-1.25%	$ 2,160,000	$ 1,710,000	$ 4,050,000	$ 4,950,000	55.00%	$ 540,000	$ 2,700,000	$ 8,190,000	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	100.00%	$ 40,500,000	$ -	0.00%	$ 2,430,000	$ 2,430,000	$ -	$ 4,500,000	100.00%	$ 270,000	$ 2,700,000	$ 7,470,000	$ 9,900,000

Scenario E - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio — Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	$ 16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	$ 151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	$ 16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	$ 19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	$ 1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = $ 56,000,000,000 <--Estimated total Statewide school facilities portfolio replacement value

Scenario E - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario F: 3/4% SAVINGS INCENTIVE for each 1% REDUCTION and LEA receives 3/4 of the Adjusted State Share Percentage above 100%. ~~No State Percentages above 100%.~~

Assumptions: Baseline Project Construction Cost is $45M or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

Baseline				Proposed With Incentive														Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost						For State						For LEA						Combined
		A x .45 x B	A x .45 x (1-B)			.75E + B	.45F x G unless G>100% then ((G-1)*.75)+1	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100% then (G-1)*75% x .45F	D-M unless G>100% then (M x-1) + D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA)over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	50.75%	$ 22,609,125	$ (109,125)	-0.48%	$ 135,000	$ 25,875	$ 21,940,875	$ 559,125	2.48%	$ 135,000	$ 270,000	$ 964,125	$ 990,000
		$ -	$ -															
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	1%	$ 99,000,000	96.75%	$ 43,102,125	$ 97,875	0.23%	$ 259,200	$ 357,075	$ 1,447,875	$ 352,125	19.56%	$ 10,800	$ 270,000	$ 632,925	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	52.95%	$ 21,445,965	$ (992,115)	-4.85%	$ 1,227,231	$ 235,116	$ 19,054,035	$ 5,492,115	22.37%	$ 1,472,769	$ 2,700,000	$ 9,664,884	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	65.00%	$ 23,400,000	$ (900,000)	-4.00%	$ 2,700,000	$ 1,800,000	$ 12,600,000	$ 9,900,000	44.00%	$ 2,700,000	$ 5,400,000	$ 18,000,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	30%	$ 70,000,000	72.50%	$ 22,837,500	$ (337,500)	-1.50%	$ 4,050,000	$ 3,712,500	$ 8,662,500	$ 13,837,500	61.50%	$ 4,050,000	$ 8,100,000	$ 25,987,500	$ 29,700,000
		$ -	$ -															
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	103.50%	$ 41,563,125	$ 1,636,875	3.79%	$ 2,592,000	$ 4,228,875	$ (1,063,125)	$ 2,863,125	159.06%	$ 108,000	$ 2,700,000	$ 5,671,125	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	111.00%	$ 38,970,000	$ 4,230,000	9.79%	$ 5,184,000	$ 9,414,000	$ (2,970,000)	$ 4,770,000	265.00%	$ 216,000	$ 5,400,000	$ 10,386,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	118.50%	$ 35,870,625	$ 7,329,375	16.97%	$ 7,776,000	$ 15,105,375	$ (4,370,625)	$ 6,170,625	342.81%	$ 324,000	$ 8,100,000	$ 14,594,625	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	57.50%	$ 23,287,500	$ (787,500)	-3.50%	$ 1,350,000	$ 562,500	$ 17,212,500	$ 5,287,500	23.50%	$ 1,350,000	$ 2,700,000	$ 9,337,500	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	67.50%	$ 27,337,500	$ (337,500)	-1.25%	$ 1,620,000	$ 1,282,500	$ 13,162,500	$ 4,837,500	26.88%	$ 1,080,000	$ 2,700,000	$ 8,617,500	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	77.50%	$ 31,387,500	$ 112,500	0.36%	$ 1,890,000	$ 2,002,500	$ 9,112,500	$ 4,387,500	32.50%	$ 810,000	$ 2,700,000	$ 7,897,500	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	87.50%	$ 35,437,500	$ 562,500	1.56%	$ 2,160,000	$ 2,722,500	$ 5,062,500	$ 3,937,500	43.75%	$ 540,000	$ 2,700,000	$ 7,177,500	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	97.50%	$ 39,487,500	$ 1,012,500	2.50%	$ 2,430,000	$ 3,442,500	$ 1,012,500	$ 3,487,500	77.50%	$ 270,000	$ 2,700,000	$ 6,457,500	$ 9,900,000

Scenario F - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio

Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	$ 151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	$ 1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = $ 56,000,000,000 <--Estimated total Statewide school facilities portfolio replacement value

Scenario F - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario G: 3/4% SAVINGS INCENTIVE for each 1% REDUCTION (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%) and LEA receives 3/4 of the Adjusted State Percentage above 100% . ~~No State Percentages above 100%.~~

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint, etc.)

	Baseline						Proposed With Incentive												
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
								For State						For LEA				Combined
		$45,000,000 Project Construction Cost																
		A x .45 x B	A x .45 x (1-B)				.45F x G unless G>100% then ((G-1)*.75) +1 x .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45F x 30 x B)	I+K	(1-G) x .45F unless G>100% then (1-G)*75% x .45F	D-M unless G>100% then (M x-1) + D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
				E(mod)+B														
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA) over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	50.75%	$ 22,609,125	$ (109,125)	-0.48%	$ 135,000	$ 25,875	$ 21,940,875	$ 559,125	2.49%	$ 135,000	$ 270,000	$ 964,125	$ 990,000
$ 100,000,000	96%	$ -	$ -	1%	$ 99,000,000	97.00%	$ 43,213,500	$ (13,500)	-0.03%	$ 259,200	$ 245,700	$ 1,336,500	$ 463,500	25.75%	$ 10,800	$ 270,000	$ 744,300	$ 990,000
		$ 43,200,000	$ 1,800,000															
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	52.95%	$ 21,445,965	$ (992,115)	-4.85%	$ 1,227,231	$ 235,116	$ 19,054,035	$ 5,492,115	22.37%	$ 1,472,769	$ 2,700,000	$ 9,664,884	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	65.00%	$ 23,400,000	$ (900,000)	-4.00%	$ 2,700,000	$ 1,800,000	$ 12,600,000	$ 9,900,000	44.00%	$ 2,700,000	$ 5,400,000	$ 18,000,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	30%	$ 70,000,000	72.50%	$ 22,837,500	$ (337,500)	-1.50%	$ 4,050,000	$ 3,712,500	$ 8,662,500	$ 13,837,500	61.50%	$ 4,050,000	$ 8,100,000	$ 25,987,500	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	106.00%	$ 42,322,500	$ 877,500	2.03%	$ 2,592,000	$ 3,469,500	$ (1,822,500)	$ 3,622,500	201.25%	$ 108,000	$ 2,700,000	$ 6,430,500	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	116.00%	$ 40,320,000	$ 2,880,000	6.67%	$ 5,184,000	$ 8,064,000	$ (4,320,000)	$ 6,120,000	340.00%	$ 216,000	$ 5,400,000	$ 11,736,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	126.00%	$ 37,642,500	$ 5,557,500	12.86%	$ 7,776,000	$ 13,333,500	$ (6,142,500)	$ 7,942,500	441.25%	$ 324,000	$ 8,100,000	$ 16,366,500	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	57.50%	$ 23,287,500	$ (787,500)	-3.50%	$ 1,350,000	$ 562,500	$ 17,212,500	$ 5,287,500	23.50%	$ 1,350,000	$ 2,700,000	$ 9,337,500	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	67.50%	$ 27,337,500	$ (337,500)	-1.25%	$ 1,620,000	$ 1,282,500	$ 13,162,500	$ 4,837,500	26.88%	$ 1,080,000	$ 2,700,000	$ 8,617,500	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	77.50%	$ 31,387,500	$ 112,500	0.36%	$ 1,890,000	$ 2,002,500	$ 9,112,500	$ 4,387,500	32.50%	$ 810,000	$ 2,700,000	$ 7,897,500	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	87.50%	$ 35,437,500	$ 562,500	1.56%	$ 2,160,000	$ 2,722,500	$ 5,062,500	$ 3,937,500	43.75%	$ 540,000	$ 2,700,000	$ 7,177,500	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	100.00%	$ 40,500,000	$ -	0.00%	$ 2,430,000	$ 2,430,000	$ -	$ 4,500,000	100.00%	$ 270,000	$ 2,700,000	$ 7,470,000	$ 9,900,000

Scenario G - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio

Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

56,000,000	65%	16,380,000	8,820,000	1%	55,440,000	65.75%	16,403,310	$ (23,310)	-0.04%	$ 98,280	$ 74,970	$ 8,544,690	$ 275,310	3.12%	$ 52,920	151,200	$ 479,430	$ 554,400
56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	1,512,000	$ 4,624,200	$ 5,544,000
56,000,000	77%	19,404,000	5,796,000	10%	50,400,000	84.50%	19,164,600	$ 239,400	0.43%	$ 1,164,240	$ 1,403,640	$ 3,515,400	$ 2,280,600	39.35%	$ 347,760	1,512,000	$ 4,140,360	$ 5,544,000

150M GSF x $379/sf = $ 56,000,000,000 < --Estimated total Statewide school facilities portfolio replacement value

Scenario G - State and Counties estimated 30-year future value of savings (cost avoidance) at 4% per year construction cost escalation and with .

State Share %	TCO Reduction	Present Value of TCO Savings	Const Cost Escalation %	Years	Future Value w/Const Escalation
65%	1%	$554,400,000	4%	30	$1,798,139,580
65%	10%	$5,544,000,000	4%	30	$17,981,395,796
77%	10%	$5,544,000,000	4%	30	$17,981,395,796

Appendix 3: Total Cost of Ownership (TCO) Incentive Program Scenarios

Scenario H:

3/4% SAVINGS INCENTIVE for each 1% REDUCTION (except, for LEAs with state share of 89% or more, a 1% savings incentive up to 100%) and 3/4 of the Adjusted State Percentage above 100% PLUS 1/2% ADDITIONAL SAVINGS for reductions of 30% or more. ~~No State Percentages above 100%.~~

Assumptions: **Baseline Project Construction Cost is $45M** or 45% of TCO Baseline [Middle School, w/915 students, $49,195/student (IAC Cost w/site is $379/SF)]. TCO is project cost plus 30 years of M&O including systemics.
M&O baseline is project cost times 2% per year for systemics (capital maintenance) plus 2% per year for routine M&O (heat, cool, custodial, routine-emergent-preventive maintenance, grounds maint., etc.)

	Baseline					Proposed With Incentive														Combined
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
$45,000,000 Project Construction Cost									For State						For LEA			Combined
		A x .45 x B	A x .45 x (1-B)			E(mod)+B	G>100% then ((G-1)*.75) +1 x .45F	C - H	I/A	(.02 x .45A x 30 x B) - (.02 x .45E x 30 x B)	I+K	(1-G) x .45F unless G>100% then (G-1)*75% x .45F	D-M unless G>100% then (M x-1) + D	N/D	(.02 x .45A x 30 x (1-B)) - (.02 x .45F x 30 x (1-B))	(.02 x .45A x 30) - (.02 x .45F x 30)	N+P+Q	L+R
Total Cost of Ownership (TCO) for the Facility	State Share % of Constr/Systemics for the County	State Share of Baseline Construction Cost w/ Site	LEA Share of Baseline Construction Cost w/Site	TCO Cost Reduction Percentage	Proposed TCO for the Facility	Adjusted State Share Percentage	Adjusted State Share of Construction	State Savings On Construction	% State Savings On Construction	Est. Reduced State Cost of Systemics over 30 years	Est. Net State TCO Savings over 30 years	Adjusted LEA Share	LEA Savings on Construction	% LEA Savings On Construction	Est. Reduced LEA Cost of Systemics over 30 years	Est. Reduced LEA Cost of Maint & Ops. over 30 years	Est. LEA TCO Savings over 30 years	Est. Net TCO Savings (State+LEA)over 30 years
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	1%	$ 99,000,000	50.75%	$ 22,609,125	$ (109,125)	-0.48%	$ 135,000	$ 25,875	$ 21,940,875	$ 559,125	2.48%	$ 135,000	$ 270,000	$ 964,125	$ 990,000
$ 100,000,000	96%	$ 43,200,000 $ -	$ 1,800,000 $ -	1%	$ 99,000,000	97.00%	$ 43,213,500	$ (13,500)	-0.03%	$ 259,200	$ 245,700	$ 1,336,500	$ 463,500	25.75%	$ 10,800	$ 270,000	$ 744,300	$ 990,000
$ 100,000,000	45%	$ 20,453,850	$ 24,546,150	10%	$ 90,000,000	52.95%	$ 21,445,965	$ (992,115)	-4.85%	$ 1,227,231	$ 235,116	$ 19,054,035	$ 5,492,115	22.37%	$ 1,472,769	$ 2,700,000	$ 9,664,884	$ 9,900,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	20%	$ 80,000,000	65.00%	$ 23,400,000	$ (900,000)	-4.00%	$ 2,700,000	$ 1,800,000	$ 12,600,000	$ 9,900,000	44.00%	$ 2,700,000	$ 5,400,000	$ 18,000,000	$ 19,800,000
$ 100,000,000	50%	$ 22,500,000 $ -	$ 22,500,000 $ -	30%	$ 70,000,000	87.50%	$ 27,562,500	$ (5,062,500)	-22.50%	$ 4,050,000	$ (1,012,500)	$ 3,937,500	$ 18,562,500	82.50%	$ 4,050,000	$ 8,100,000	$ 30,712,500	$ 29,700,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	10%	$ 90,000,000	106.00%	$ 42,322,500	$ 877,500	2.03%	$ 2,592,000	$ 3,469,500	$ (1,822,500)	$ 3,622,500	201.25%	$ 108,000	$ 2,700,000	$ 6,430,500	$ 9,900,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	20%	$ 80,000,000	116.00%	$ 40,320,000	$ 2,880,000	6.67%	$ 5,184,000	$ 8,064,000	$ (4,320,000)	$ 6,120,000	340.00%	$ 216,000	$ 5,400,000	$ 11,736,000	$ 19,800,000
$ 100,000,000	96%	$ 43,200,000	$ 1,800,000	30%	$ 70,000,000	141.00%	$ 41,186,250	$ 2,013,750	4.66%	$ 7,776,000	$ 9,789,750	$ (9,686,250)	$ 11,486,250	638.12%	$ 324,000	$ 8,100,000	$ 19,910,250	$ 29,700,000
$ 100,000,000	50%	$ 22,500,000	$ 22,500,000	10%	$ 90,000,000	57.50%	$ 23,287,500	$ (787,500)	-3.50%	$ 1,350,000	$ 562,500	$ 17,212,500	$ 5,287,500	23.50%	$ 1,350,000	$ 2,700,000	$ 9,337,500	$ 9,900,000
$ 100,000,000	60%	$ 27,000,000	$ 18,000,000	10%	$ 90,000,000	67.50%	$ 27,337,500	$ (337,500)	-1.25%	$ 1,620,000	$ 1,282,500	$ 13,162,500	$ 4,837,500	26.88%	$ 1,080,000	$ 2,700,000	$ 8,617,500	$ 9,900,000
$ 100,000,000	70%	$ 31,500,000	$ 13,500,000	10%	$ 90,000,000	77.50%	$ 31,387,500	$ 112,500	0.36%	$ 1,890,000	$ 2,002,500	$ 9,112,500	$ 4,387,500	32.50%	$ 810,000	$ 2,700,000	$ 7,897,500	$ 9,900,000
$ 100,000,000	80%	$ 36,000,000	$ 9,000,000	10%	$ 90,000,000	87.50%	$ 35,437,500	$ 562,500	1.56%	$ 2,160,000	$ 2,722,500	$ 5,062,500	$ 3,937,500	43.75%	$ 540,000	$ 2,700,000	$ 7,177,500	$ 9,900,000
$ 100,000,000	90%	$ 40,500,000	$ 4,500,000	10%	$ 90,000,000	100.00%	$ 40,500,000	$ -	0.00%	$ 2,430,000	$ 2,430,000	$ -	$ 4,500,000	100.00%	$ 270,000	$ 2,700,000	$ 7,470,000	$ 9,900,000

Scenario H - Estimated 30-year State and Counties savings (cost avoidance) what-if for entire Statewide School Facilities Portfolio — Notes: 1) Baseline construction is 45% of TCO; 2) State share average is an assumption; 3) All numbers x 1,000;

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56,000,000	65%	16,380,000	8,820,000	10%	50,400,000	72.50%	16,443,000	$ (63,000)	-0.11%	$ 982,800	$ 919,800	$ 6,237,000	$ 2,583,000	29.29%	$ 529,200	$ 1,512,000	$ 4,624,200	$ 5,544,000
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77%	10%	$5,544,000,000	4%	30	$17,981,395,796