



BOB: Welcome, and thank you for participating in this webinar. We have endeavored to send invitations to this Webinar to all of our stakeholders – we hope we did not miss anyone.

I'm Bob Gorrell, Executive Director of the Maryland Interagency Commission on School Construction. I will be joined in presenting this webinar by IAC staff members Alex Donahue and Fred Mason. Today, it is our privilege to present foundational information to the public and to Maryland's stakeholders that we believe will strengthen the understanding of many concepts that will be discussed at length in the upcoming meetings of the Workgroup on the Assessment and Funding of K-12 School Facilities. As the graphic indicates, school facilities house the educational processes and are essential to teachers teaching and students learning.

This webinar is the first of four in preparation of the Assessment and Funding Workgroup meeting on August 28th. Today's webinar describes how and why data-driven portfolio management is essential to achieve educationally sufficient and fiscally sustainable school facilities over time, essentially in perpetuity, and as you will learn, as the scale of this task is enormous, we need good tools to build best practices and manage by exception versus reactive management de jour.

School Facility's Purpose

To support teaching and learning.



FRED: The purpose of a school facility is to support the delivery of educational programs and services. It is teaching and learning that matter and these depend on environments that are safe, healthy, and with elements that support the educational programs to be delivered. An adequate facility provides comfortable temperatures, clean air, dry rooms, and good lighting and acoustics so that the teacher can be understood, as well as elements for safety. Functional and comfortable furniture are important, as is internet connectivity, and other essential features and equipment that did not even exist 20 years ago are now critical for teaching and learning. These elements need to be maintainable over time. And, ideally, we'd like to see these elements in a welcoming and esthetically pleasing environment. Unless society decides to do away with public K–12 education—or chooses to deliver all education through distance learning—we will need public school facilities that are educationally sufficient and in good condition.

Maryland's Portfolio of School Facilities



Facilities - Nearly 1,400 active public K-12 school facilities



Total Area - 140 million gross square feet



Enrollment - Serving more than 893,000 students

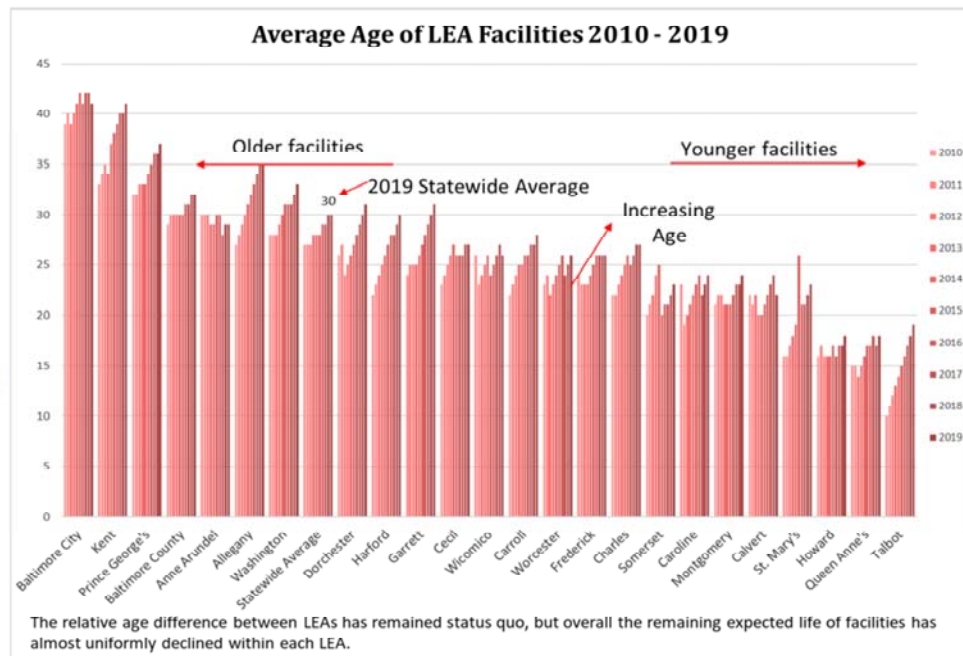


Total Asset Value - \$55.3 Billion

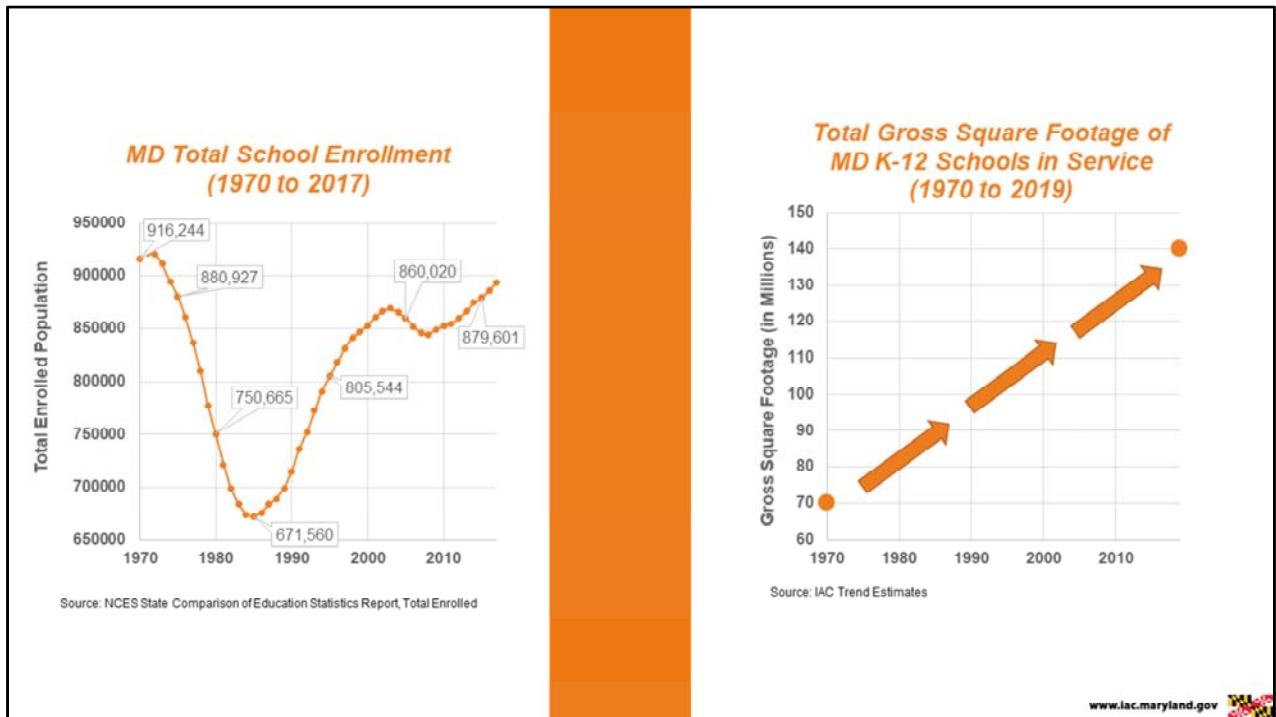
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ALEX: The scale of Maryland's portfolio of public K–12 facilities is massive and second only to highways. [Slide stats] To put this asset value into perspective, the Maryland State Highway Administration that owns about 17% of all the roads in Maryland values this asset at about \$32 Billion or less than the replacement value of our public K-12 School Facilities.

**Current
Condition
of
Maryland's
Portfolio**

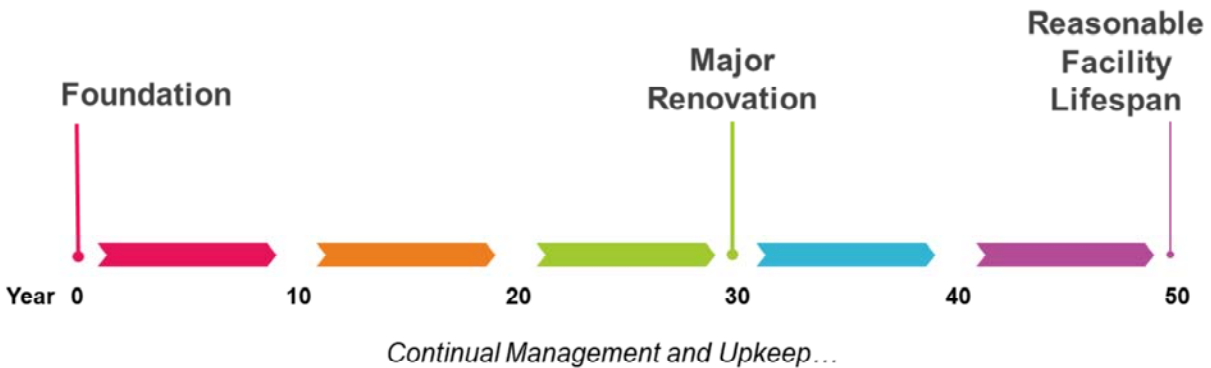


ALEX: We all agree that every child in Maryland should be able to learn in a school facility that supports teaching and learning. So, what's the condition today of Maryland's K-12 facilities? We don't yet have detailed condition data on Maryland's K-12 facilities that is comparable and current. A statewide assessment of the condition and educational sufficiency of every facility is coming soon. In the absence of such data, the average age of a facility can serve as a very rough proxy for its condition. The average Maryland K-12 facility is now 30 years old. This means that the average facility in Maryland has already been 3/5ths used up, and is entering the high-cost phase of its lifespan no different than an older vehicle which becomes more costly to own, usually due to required repairs, than a newer vehicle would be. Almost a third of Maryland's 24 LEAs have an average facility age that's even higher than 30.



ALEX: Maryland’s K-12 facilities portfolio, and accordingly its cost of ownership, is continuing to grow. In 1970, the statewide portfolio encompassed around 70 million gross square feet of space, which means that its growth to 140 million gross square feet today is a doubling in size. And, although the statewide public K-12 school enrollment has been growing for the past three decades, it still has not yet reached the peak enrollment levels in the early 1970s... this means that today’s average square footage per student is double what it was in the early 1970’s. As a result, Maryland now faces far higher long-term costs of ownership per student than it once did. The Maryland Dept. of Planning projects that Maryland’s enrollment will grow about another 3% by 2027. To the extent that we build additional space to serve those new students, our portfolio will continue to grow even more costly.

A Multigenerational Task



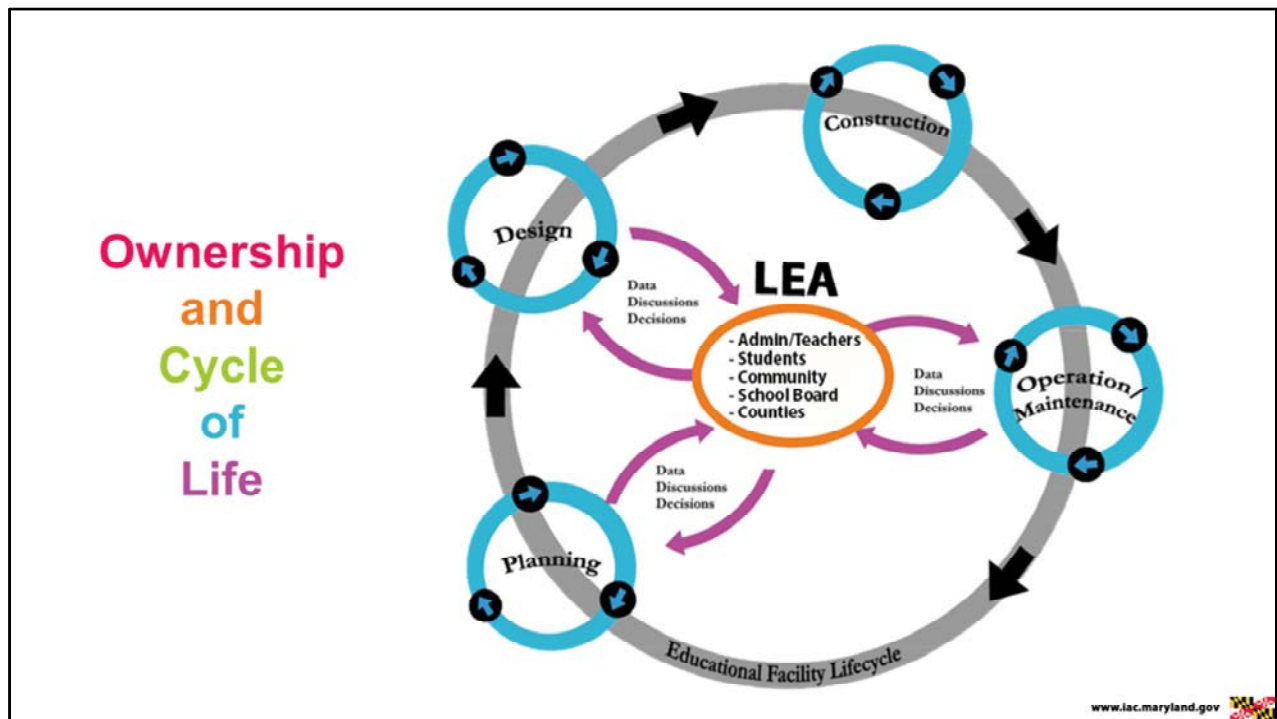
Objectives: Educational Sufficiency + Fiscal Sustainability

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BOB: Facilities are not set-and-forget assets. Like almost anything built by people, they require continual management and upkeep. School facilities have an added management burden in that they are constantly changing due variations in populations or revisions required to support programmatic changes. Variations in population, either growth or decline, have to be managed and an unused facility costs just about the same to maintain and operate as a fully utilized facility in constant use. Even a mothballed facility has a cost.

The functional lifespan of a facility can be 50 years or greater with proper care. Facility ownership is therefore multigenerational—not only because each facility will serve multiple generations, but also because facility ownership is never-ending. The champions involved in the acquisition of a school facility are usually long gone and unaware of the struggles to sustain that facility decades later.

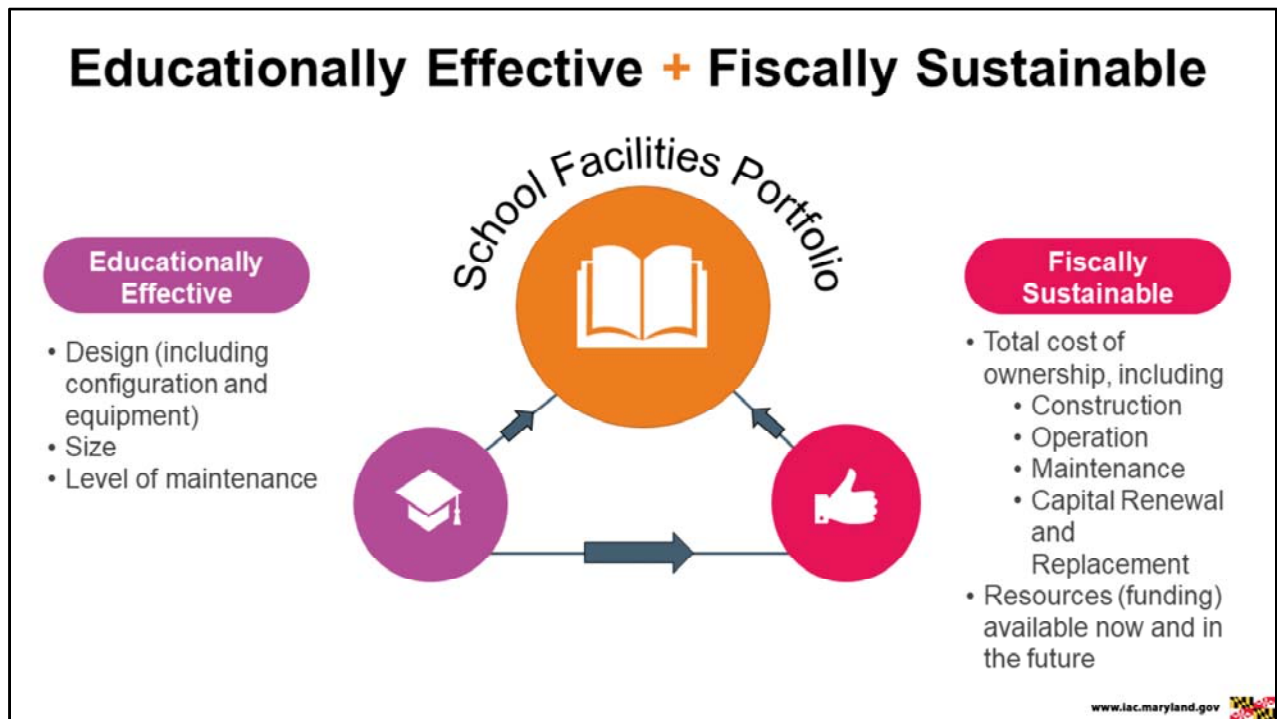
So long as there are new generations of children and an expectation that they be educated, there will be a need for school facilities. We must properly first plan and then care for these complex and expensive capital assets. The two guiding principles for facility stewardship are **educational sufficiency and fiscal sustainability**. The first is necessary in serving the facilities' purpose, and the second is necessary in making the first possible on a continuing basis.



BOB: There are four major phases in the never-ending life cycle of a school facility: Planning, Design, Construction, and Operation and Maintenance. Planning and Maintenance are the two bookends of good facility stewardship and they are ongoing over the life of the facility. Some of the activities are periodic like design and construction, yet as we are all aware they are what the public see and construction steals the show. If we have not incorporated good decisions into the design, then to get what we need during construction, we will have change orders and likely project delays, and even more expensive, a facility that is costly to operate and maintain.

Doing each of the phases well is essential to achieving and maintaining educational sufficiency and fiscal sustainability. Most importantly, to operate efficiently and cost effectively, we must have good data that is the result of comparable performance measures. We must collect good data, compare and discuss what we measure, and make informed decisions over the entire life of a facility, but also for continuous improvement incorporated into the next new or replacement facility.

Educationally Effective + Fiscally Sustainable



ALEX: A portfolio owner reaches educational sufficiency and fiscal sustainability by applying best practices throughout many different processes and multiple stages in the long process of facility management.

Two concepts are central to this work: first, a portfolio-management approach, and, second, a focus on total cost of ownership over time. In Webinar #2, we'll look in detail at total cost of ownership. In this webinar, we have focused on portfolio management.

Portfolio-Management Approach



FRED: As the image in this slide shows, no facility is an island. To deliver education services and programs and support its students, each Maryland school district must maintain a set of school facilities matched to its local needs. Those needs are ever changing as the populations in the district's neighborhoods change. And while facilities within a portfolio may be similar, they are never identical, and over time, they will also change uniquely over time. Having a portfolio of schools gives each school district the opportunity for some economies of scale to manage the ebbs and flows of not only enrollments, but also changes in educational programs. Managing school facilities as a portfolio instead of reacting to each facility in isolation provides opportunities to maximize efficiencies.

The Power of Early Decisions

30-Year Cost



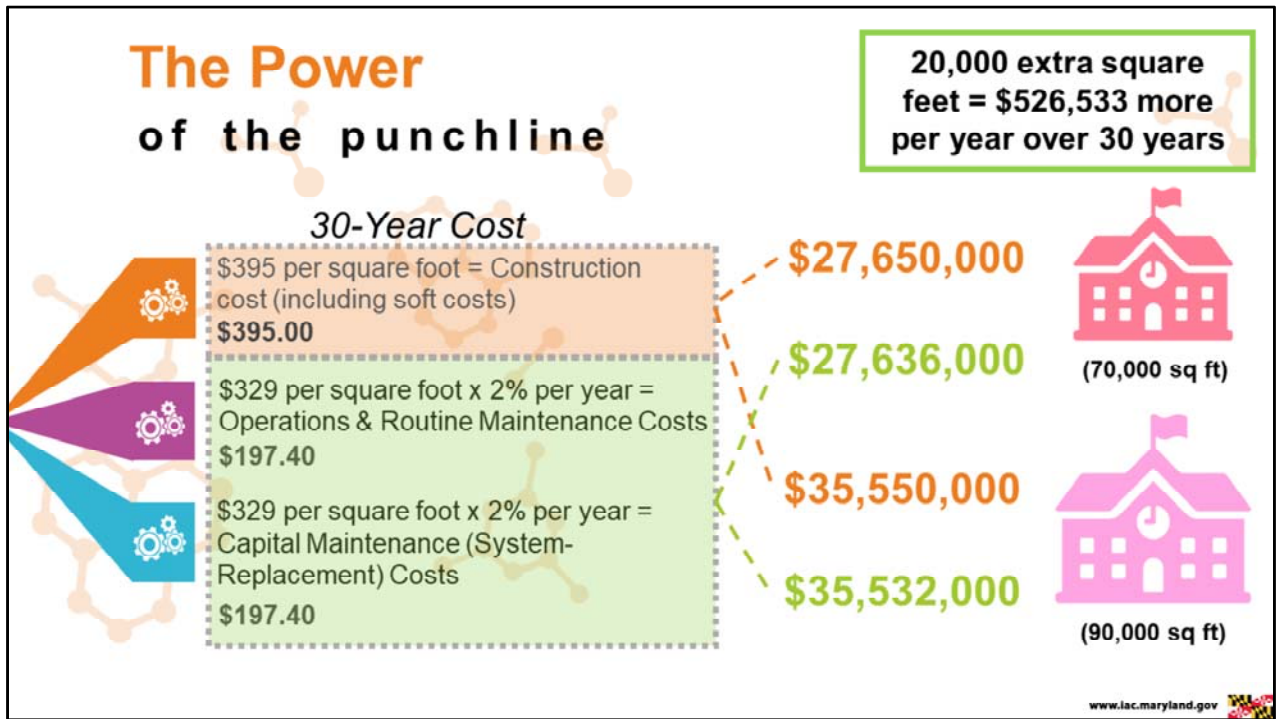
$$\begin{aligned}
 &(70,000 \times \$395) \\
 &+ (70,000 \times \$329 \times .02 \times 30) \\
 &+ (70,000 \times \$329 \times .02 \times 30) \\
 &= \mathbf{\$55,286,000 \text{ Total Cost}} \\
 &\quad \$27,650,000 \text{ up front} \\
 &\quad + \$921,200 \text{ per year}
 \end{aligned}$$



$$\begin{aligned}
 &(90,000 \times \$395) \\
 &+ (90,000 \times \$329 \times .02 \times 30) \\
 &+ (90,000 \times \$329 \times .02 \times 30) \\
 &= \mathbf{\$71,082,000 \text{ Total Cost}} \\
 &\quad \$35,550,000 \text{ up front} \\
 &\quad + \$1,184,400 \text{ per year}
 \end{aligned}$$

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FRED: Many decisions made during the Planning and Design phases at the beginning of a facility's life cycle—such as its location, shape, size, and functional relationships—can have significant consequences and constrain future generations. When considering a facility's educational specifications, perhaps the most consequential decision is the total square footage of the facility. At current average construction costs, each gross square foot of additional space above baseline requirements translates into nearly \$400 of **additional cost of ownership after the first cost of construction**, over 30 years because the LEA must spend money to operate and maintain that space.



FRED: The 20,000 extra square feet is not limited to the \$7.9 million more we will see for the construction contract. The cost of maintenance and operations over 30 years is just about the same again. With the cost to construct amortized over 30 years, we see the extra square footage school equates to a cost of about \$526,533 more per year over the smaller footprint school.

Operations and Maintenance

Industry Standards For Investment



Capital Maintenance

2% of Construction Cost (with soft costs) per year

$$.02 \times \$395/\text{GSF} \times 140\text{M GSF} = \$1.106 \text{ Billion per year}$$

$$\$1.106 \text{ Billion} + \$1.106 \text{ Billion} = \$2.212 \text{ Billion per year}$$

Operations and Routine Maintenance

2% of Construction Cost (with soft costs) per year

$$.02 \times \$395/\text{GSF} \times 140\text{M GSF} = \$1.106 \text{ Billion per year}$$

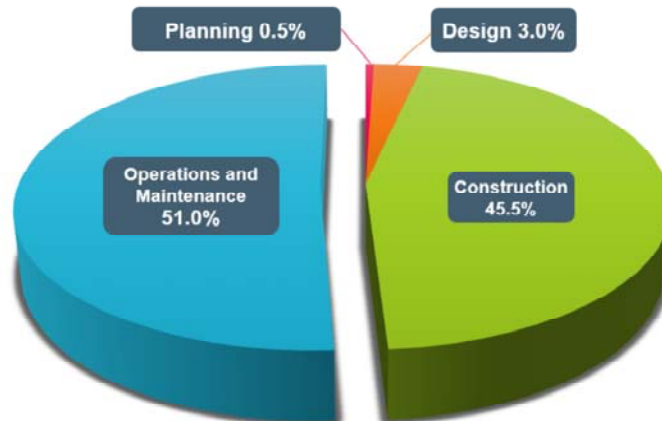
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FRED: The cost to operate and maintain a facility is just as significant as the cost to construct it. Industry standards suggest that, over 30 years, the **annual** average cost of replacing building systems when they've been exhausted can average about 2% of the initial cost of the facility. To meet this standard, Maryland's LEAs should spend just over \$1 billion per year at current cost levels.

In addition, **annual** operations and routine maintenance costs average another 2% of the initial cost of the facility. While a given facility may require more or less maintenance and operations spending based upon conditions and the effectiveness of its owner's maintenance practices, the 2% standard is a good rule of thumb at the portfolio level.

Total Cost of Facility

Average Percentage Over 30 Years



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FRED: This graphic is a visual representation of total cost to own and operate a facility. Added together, capital maintenance and routine maintenance and operations costs over 30 years can be more than the original, or first cost, of building the facility. Or said another way, operations and maintenance can be MORE THAN HALF of the total cost owning a facility. Building a facility the right size and with the right materials can lower the total cost of ownership.

Data Required for Portfolio Management



Facility Outcomes and Results

- Educational Sufficiency
- Condition



Return on Investments

- Operating (M&O)
- Capital



Facility Inputs

- Expenditures of Resources



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ALEX: To maximize the educational sufficiency and fiscal sustainability of their portfolios, Maryland and its LEAs together need to obtain the greatest possible return on our collective capital investments and operations spending. This means that we need to measure both the inputs (the resources spent on facilities) and the outcomes (the results in terms of facility condition and sufficiency), and identify which actions and practices are unsuccessful, which are successful, and which are more effective or efficient than others. We need comparable data on both inputs and outcomes that is as objective as possible. Comparable data better informs decisions from birth to renewal to replacement to disposal. Combining data on spending with data on conditions and results is essential to continuous improvement of the management of the portfolio.

Data Required for Each Facility

Age, size/area, and capacity

Educational Sufficiency of the spaces within the facility

Condition of the facility and its major systems

What repair and maintenance work has been done

The *effectiveness* of that repair and maintenance work

Money spent on acquisition, operation, and maintenance

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ALEX: To effectively manage each individual facility—and to understand and effectively manage its portfolio of facilities—districts and the state must collect, maintain, and analyze comparable data about each facility. For each facility, we need to know.....

Comparable Data by Activity Category

Why is comparable data important?



Permits the evaluation of portfolio-management activities over time by accounting for spending in alignment with the activities



Allows for comparative analysis across facilities and across years



Supports continuous improvement of processes



Supports transparency and accountability





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ALEX: Comparable data by activity category is key to being able to properly allocate our limited state and local resources to the facilities issues that need most to be addressed, and to spend them in the ways that have been shown to work best. All LEAs need this information in order to manage their portfolios efficiently and effectively. The data needs to be transparent and easily understood to inform the public how billions of public dollars are being spent annually and the results they're achieving so that the public can see why resources are needed AND that their tax dollars are being spent well.

The Six Defined Categories Of Facilities-Related Spending

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1. **Planning:** Determining What is Needed
 2. **Acquisition:** Obtaining the School Facility
 3. **Alteration:** Permanent Facility Modification
 4. **Non-permanent Addition:** Adding Temporary Capacity
 5. **Maintenance:** Tending the School Facility
 6. **Operations:** Supporting Occupancy Needs

Source: National Council on School Facilities

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BOB: For the purposes of school-portfolio management, the National Council on School Facilities, which represents the states nationally on issues relating to public K-12 school facilities, groups the activities involved in facility ownership into six categories. Each category is carefully defined such that every dollar spent is counted in one (but not more than one) category. Longitudinally, knowing the ratio of expenditures in these categories compared to the total cost of ownership will reveal over time what ownership strategies are working best and which can be improved. For instance, if a facility over 30 years has a lower total cost of ownership than its peers, but had higher planning and acquisition ratios than its peers, we need to understand why and how to repeat the outcome to lower each new project and the total cost of ownership of our entire portfolio.

So...

Why Right-Size Each Facility And Every Portfolio?



1

Educational Sufficiency

2

Fiscal Sustainability

3

Taxpayers Demand It

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ALEX: And why Right-Size each facility and every portfolio? Because right-sizing is critical to achieving both educational sufficiency AND fiscal sustainability. Ownership of underutilized facilities is expensive and dilutes available resources. Therefore, right sizing and disciplined, if not shrewd, administration are essential to making facilities portfolios affordable. Every square foot of space must be built, heated, cooled, cleaned, maintained, and parts replaced—whether it is serving a direct educational purpose 100% of the time or only 10% of the time.

Essential Tools

for sustainable school facilities



A Portfolio-Management Approach



Regular assessment of facilities and of M&O activities



Analysis of the right data



A focus on Total Cost of Ownership

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ALEX: Experience has shown that the most powerful tools in a school district's state's toolboxes are.....

Maryland's local educational authorities--and we collectively as a state—must achieve and then maintain a level of facility condition and educational sufficiency that properly supports the teaching and learning of our required educational programs. To do this, we must adopt an approach that yields best practices and promotes continuous improvement. These tools, when utilized in a well coordinated manner, will either yield the results we want or the reasons why we are not achieving our expectations.



... A healthy, safe, and educationally sufficient learning environment for every child in every seat in Maryland.



Questions?

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BOB: Ultimately, we all agree that we need a healthy, safe, and educationally sufficient learning environment for every child in every seat in Maryland. Together, the State and the local jurisdictions are building the capacity to better provide this learning environment.

If you have questions about the topics discussed in this webinar, please send them to the address on screen.



Up next...

Total Cost of Ownership



**In preparation for the
Workgroup on
Assessment & Funding
of School Facilities**

**Webinar 2 of 4
August 7, 2019**

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