

21st Century School Facilities Commission

Martin G. Knott, Jr., Chair

Agenda

July 21, 2016

10:00 a.m.

House Office Building, Room 120

Annapolis, Maryland



I. Call to Order and Chair's Opening Remarks

II. Panelist Presentations

10:10 a.m. – *Local Government*

- William R. Valentine, Board of County Commissioners, Allegany County, Vice Chair, Maryland Association of Counties Education Subcommittee
- Janice P. Spiegel, Education Liaison, Frederick County Government
- Robert F. Sandlass, Jr., Treasurer, Harford County Government
- John R. Hammond, Budget Officer, Anne Arundel County Government
- Gregg A. Todd, County Administrator, Queen Anne's County Government

10:30 a.m. – *Local Education Agencies*

- Dr. S. Dallas Dance, Superintendent of Baltimore County Public Schools
- Dr. Kevin M. Maxwell, Chief Executive Officer of Prince George's County Public Schools
- Donna Brightman, President, Washington County Board of Education
- Joy Schaefer, Board Member, Frederick County Board of Education
- Stacey Korbalek, President, Anne Arundel County Board of Education

10:50 a.m. – *Building Trades*

- Brian Cavey, Director, Apprenticeship and Training, International Association of Heat and Frost Insulators & Allied Workers, Local 24
- Norbert Klusmann, Apprentice Director, International Association of Sheet Metal, Air, Rail and Transportation Workers, Local 100
- Dr. Thomas Kriger, Director of Research and Education, North America's Building Trades Unions

11:10 a.m. – *School Facility Planners*

- Ray Barnes, Chief Operating Officer, Frederick County
- George Leah, Jr., Director of School Construction, Calvert County
- David Lever, Executive Director, Interagency Committee on School Construction

11:30 a.m. – *Teachers*

- Robert Rankin, Organizational Specialist, Maryland State Education Association (MSEA)
- Betty Weller, MSEA President and Teacher from Kent County
- Kyle De Jan, Teacher, Prince George's County
- Henoah Hailu, Teacher, Montgomery County
- Annie Cumberland, Elementary Media Specialist, Montgomery County

11:50 a.m. – *Parents and Students*

- Elizabeth Leight, President, Maryland Parent Teacher Association (PTA)
- Rick Tyler, Maryland PTA and Co-chair of Maryland Education Coalition
- Eric Guerri, Student Member, Montgomery County Board of Education
- Yara Cheikh, parent from Baltimore County
- Deeksha Walia, Former Baltimore County student board member, Current President of Kenwood High School Student Council

12:10 p.m. – *Break (15 minutes)*

12:30 p.m. – *School Design*

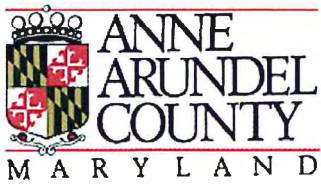
- Randy Sovich, Principal, RM Sovich Architecture
- Gary Cearfoss, Owner, SBS, Inc.
- James Determan, Hord, Principal, Coplan Macht, Inc.
- Philip Scott, Property Manager, Baltimore City Public Schools

12:50 p.m. – *Building Schools*

- Scott Saxman, Group/Regional Manager, Whiting Turner Contracting Co.
- John Diehl, Vice President, Southway Builders

III. Public Testimony

IV. Chair's Closing Remarks and Adjournment



21st Century School Facilities Commission
Hearing July 21, 2016
Presentation of John R. Hammond
Budget Officer, Anne Arundel County, Maryland

Introduction

23 Years with Anne Arundel County
Budget Officer
Chief Administrative Officer
Acting County Executive

Anne Arundel County school construction budget for FY2017 is \$233 million and the five year program for FY2018-2022 calls for \$579.2 million, and forward funds state IAC funding by nearly two years.

Commission Charges Addressed

1. Innovative Financing Mechanisms

Extend maturity of debt issuance

- Constitutional limit of 15 years for general obligation debt
- Carve-out for School Construction bonds – Dedicated funding
- Better match bond maturity to life of asset financed
- Avoid intergenerational inequity
- Take advantage of historically low interest rates and flatness of yield curve
- Build it now because construction costs are increasing at 5% annually
 - *Cost of 550 seat elementary school
 - > 1995 \$10.2 million
 - > 2015 \$29.7 million
- Greater bond capacity by extending maturity without increasing annual debt service of new debt – Approximately 60% more bond capacity by extending maturity to 30 years
- Anne Arundel recent experience – went from 20 year to 30 year bonds, increased capacity by 30%
- Bond rating not impacted – revised affordability ratios

2. Areas of cost-saving

Repeal or restructure Prevailing Wage Requirement

- State mandate increases county bid costs of construction project by as much as 12% to 14% (*IAC Report to the Board of Public Works* – October 28, 2015)
- Public policy conflict
- Return to 50% state participation threshold



MARYLAND
Association of
COUNTIES

21st Century School Facilities Commission

Comments from the Local Government Panel

Date: July 21, 2016

Contact: Robin Clark, Research Director, MACo

Location: House Office Building, Room

Year after year, school construction needs and requests outnumber allocated funding. Since 2003, school construction costs have more than doubled, only exacerbating this dynamic. While the State has increased its construction cost estimate, its overall spending goals have not shifted to reflect the new cost of construction. The State and its county partners are struggling to keep pace with school construction and renovation needs.

The State's commitment to school construction funding needs to remain strong and smart – to best serve the modern needs of our schoolchildren, educators, and communities. Maryland counties advocate that state funding recognize modern cost factors as we achieve new environmental and energy standards, satisfy heightened needs for technology, ensure student safety, fulfill community resource needs, and integrate evolving teaching methods.

County governments share responsibility for financing K-12 school construction with the State, whose funding depends on statutory formulas and regulations. Counties throughout Maryland are working with their school systems to find cost-saving solutions, and MACo supports the Commission's review of school funding formulas and guidelines to promote the smartest and most effective funding for modern schools.

MACo urges the Commission to recommend the State retain a strong commitment to this top funding priority.

Recommendations for the Commission from county governments include:

1. Maintain and strengthen the State's commitment to school construction capital funding in recognition of increases in school construction costs. Recognize the cost of recently enacted state laws and regulations of school construction in the State's funding formula.
2. Assess the cost-drivers of modern school construction, such as achieving new environmental and energy standards, satisfying heightened needs for technology,

ensuring student safety, fulfilling community resource needs, and integrating evolving teaching methods. Determine if there are more cost-effective means to achieving these aims and provide options for pursuing less costly alternatives within state law and regulation.

3. Review and revise labor laws and regulations that apply to the school construction sector, including the prevailing wage law and regulations.
4. Examine the timeline for school construction and consider ways to better coordinate the timeline with local budget processes.
5. Ensure that state alternative financing laws do not create disincentives to public-private partnership by clarifying the categorization of lease payments to private builders as temporary obligations that do not extend beyond the term of the lease.
6. Consider non-eligible expenses in the State's funding structure, including architectural & engineering fees, and the cost of moveable equipment and furniture.
7. Develop options and incentives for counties to more effectively leverage state funding.
8. Provide a predictable and accountable State-level commitment to school facility maintenance funding.

Maryland's counties welcome continued communication with the Commission for further detail on these recommendations and ideas for implementation.

For more information, please contact:

- The Honorable Mel Franklin, Council Member, Prince George's County
(301.952.3820, mfranklin1@co.pg.md.us)
- The Honorable Jan Gardner, County Executive, Frederick County
(301.600.3190, jgardner@frederickcountymd.gov)
- Robin Clark, Research Director, MACo
(410.269.0043, rclark@mdcounties.org)



FREDERICK COUNTY GOVERNMENT
OFFICE OF THE COUNTY EXECUTIVE

Jan H. Gardner
County Executive

July 21, 2016

Dear Commissioner Knott and Members of the 21st Century School Facilities Commission,

Executive Gardner sends her apologies for not being here today, she had a long standing schedule conflict. I appreciate the opportunity to address the Commission this morning.

In spring 2015, when the bids were opened for a new Frederick High School, the bids were about \$30 million dollars over budgeted estimates. This was due to a series of contributing factors which all came together, simultaneously, to produce what we called the "perfect storm".

I don't have time today to adequately enumerate all the details about why we experienced such a significant increase in costs. Instead, I will focus on what Frederick County has done as a result:

- We executed a creative funding solution, allowing developers to forward fund the interest expense on county bonds for the state share of new school construction projects. As the county receives the incremental payment for the state share, the county reimburses the developer.
- We formed two (2) task forces:
 - One is studying the use of a lease back option specifically for Frederick County. We expect a final report from that task force around the middle of September. We will be happy to report on their findings in the future.
 - The other task force is looking specifically at school construction. It is made up of industry & school system professionals, community members, and developers who are experts in design, mechanical systems, storm water management, site work, delivery systems, and more.
 - The school construction task force is tasked to:
 - Evaluate the cost of school construction with a goal of reducing costs by 8-10%, without sacrificing quality, performance, or the life of the projects.
 - Review and discuss mechanisms for construction savings
 - Make recommendations for potential changes in legislation, policy, or procurement for local and state education/elected officials

While our task force will not formally report our recommendations for some time, I do want to offer some suggestions we are considering, which may assist this Commission:

- We recommend a longer time frame, from planning approval through design & construction, to allow LEAs time to explore options for innovative construction techniques, design or construction efficiencies, and negotiating shared efficiencies with developers and other stakeholders for things such as road improvements, storm water management, and energy standards.

- We recommend establishing financial incentives for jurisdictions utilizing repeat prototype designs.
- We recommend the state continue to permit prototype designs be developed according to local education specifications.
- We recommend financial incentives for LEAs willing to pilot new or innovative building techniques or design strategies, which could serve as a model for future state design guidelines and assist other LEAs with design.
- We recommend financial incentives for LEAs that value engineer projects, allowing them to retain the savings and apply those savings to other school construction projects.
- We recommend the state develop its own standard for LEED Silver certification to save money. The law allows for alternatives, but does not define which alternatives are acceptable.
- We recommend the state delay implementing new legislation for at least one year so the impact can be evaluated and cumulative impacts from multiple legislative changes can be considered.
- We recommend the state evaluate staffing and supervision requirements that are a component of the prevailing wage law.
- We recommend that the state develop a standard which considers a project "vested" once planning approval is granted. Once vested, a project is exempt from legislative changes which could impact design or construction costs.

These suggestions are a sampling of the type of recommendations our local Frederick County task force is considering. In addition, we are studying our elementary school prototype design for efficiencies and are considering additional recommendations to reduce building volume and maximize site design. We look forward to finishing our work in the next few months and will be happy to share our findings with this Commission. Thank you.

Sincerely,

Janice Spiegel
Education Liaison
Office of the County Executive
Frederick County



**Queen
Anne's
County**

COUNTY ADMINISTRATOR'S OFFICE

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July 20, 2016

21st Century School Facilities Commission
House Appropriations Committee Room 120
House Office Building, 6 Bladen Street
Annapolis, Maryland

Re: Local Government Testimony

Dear Chairman Knott:

Thank you for allowing Queen Anne's County's testimony. We have two areas that we would like the Committee to consider that would be helpful to us:

1. **Timing of the local BOE's request to the State Interagency Committee on School Construction (IAC)** – This occurs in the fall of each year for the following fiscal year (i.e. FY17 requests were submitted November FY16). This falls outside of the normal budget cycle, so in theory, there could be (and usually are) NEW capital requests outside of the BOE 6-year capital plan that the County is asked to support prior to discussing other capital needs. This creates situations where a project progresses through several stages of approvals, only to be delayed in the final step. The County may provide tentative support to a project in writing to the Interagency Committee on School Construction (IAC), as required by the State. Then, the IAC may recommend funding to the Board of Public Works. The project could receive funding approval at the Board of Public Works, but, in the last stage, ultimately fail to receive final funding approval by the County, due to other competing budget needs. This creates a situation where State funding is allocated but ultimately not used.
2. **Oversight of BOE capital projects by the County** – As you know, the counties allocate a portion of capital project funding, yet we have no oversight of the project itself. This removes the management and the fiscal oversight of the project from the entity responsible for funding any cost over-runs. We would like the opportunity for professional county staff to provide construction oversight. We feel this would put the agency with the greatest vested interest in charge of ensuring the project stays on-time and on-budget.

Thank you for your time, and if there is any time for questions, now or in the future, we are happy to speak with you in more detail about any of these topics in school construction.

Respectfully,

Gregg Todd
Administrator



S. Dallas Dance
Superintendent
Baltimore County Public Schools

**21st Century School Facilities Commission Meeting
July 21, 2016**

Good morning – Chairman Knott and members of the 21st Century School Facilities Commission. Thank you for the opportunity to be with you this morning and offer a few words on the recommendations regarding the process for the administration of the Public School Construction Program (PSCP) here in Maryland.

Let me begin by saying after observing the process for four years, I am proud to live and work in a state with such a deep commitment to its public schools. As you know, Maryland is one of a handful of states in the country that provides funding for the building and for the upkeep of its schools. Since being here in Maryland, I have thoroughly enjoyed working directly and intimately with the Interagency Committee on School Construction (IAC) on all aspects of our capital program in Baltimore County. Baltimore County is in the middle of a \$1.3 billion capital campaign called *Schools for Our Future*, which is adding seats, modernizing buildings to include the installation of central air conditioning and reviewing efficiencies. As we have implemented *Schools for Our Future*, the IAC has been instrumental in assisting us with our 10-year timeline as it supports the expeditious completion of time-sensitive projects.

As a non-partisan committee, I am impressed that its composition includes members from various state departments including the Maryland State Department of Education, Department of Planning, Department of General Services, and the Public School Construction Program, who represent the perspective of each of their departments. I believe we all would agree that an objective, professional, and structured oversight and funding mechanism is needed for public school construction throughout our State.

The IAC provides a fair and objective distribution of state funds to all 24 jurisdictions based on the identified needs of each school system and the available funding. While providing much needed guidance, the IAC allows each local education agency (LEA) local control of its capital program, which is much appreciated, as all of our needs are different. Baltimore County Public Schools (BCPS) has been the beneficiary of the IAC's assistance in our capital program tremendously. For example, with the guidance and support of the IAC, four high schools, which were scheduled for systemic air conditioning projects are now

scheduled for comprehensive renovations. The comprehensive renovations will provide much needed improvements to the aging infrastructure of those four high schools in addition to the installation of central air conditioning.

Another example is the close working relationship BCPS has with the IAC liaison who has provided hands-on assistance in the development of feasibility reports, educational specifications, schematic plans, and the design development plans for BCPS' three new 700-seat elementary schools. And finally, in collaboration with BCPS and other LEAs, the IAC was able to closely align funding mechanisms with the needs of the LEAs. A good example of that is the replacement of the multi-systemic renovation program with the limited renovation program. The multi-systemic renovation program enabled LEAs to perform multiple systemic renovations in a single building at the same time. However, the school system was precluded from future consideration of state funding within that building for 15 years. The limited renovation program, allows LEAs to be eligible for state funds within the 15-year period as long as five building systems and educational enhancements are included in the limited renovation. This example demonstrates how the IAC was receptive to the needs of the LEAs and made adjustments to address those needs.

The IAC has also supported and provided a mechanism for inter-jurisdictional communication. LEAs are able to share best practices for design, construction, and maintenance of its buildings. As we all are grappling with the same issues and concerns that arise with rising enrollment, aging infrastructure, and providing 21st Century learning environments, not to mention how to save in the cost of design and construction. The IAC has been integral in fostering communication among all LEAs.

As with any program that has been in existence for some time, periodic reviews and refinements are always helpful. Therefore, if I may offer one recommendation, it would be the following: Due to my personal interaction with the IAC, I believe a sound and reasonable recommendation moving forward is to allow for all procedures to rest solely with IAC. The IAC has the biggest impact on local educational agencies and interacts with it often and frequently, and as I stated before, it offers an objective, professional, and structured oversight and funding mechanism for the entire state. It is imperative that the IAC be maintained in its current capacity. The IAC approach to equity and maintaining an effective

S. Dallas Dance, Superintendent
Baltimore County Public Schools
July 21, 2016
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balance between available state funds and meeting local priorities are to be commended.

As I close, I want to personally thank the IAC staff as they have always been available to provide assistance regarding construction and maintenance issues, not only to my hard working and dedicated staff, but also to me personally, whenever needed.

To the committee, as you continue your work, thank you for this opportunity and your commitment to our schools and students.

**Testimony of Dr. Kevin M. Maxwell, Chief Executive Officer, Prince George's County
Public Schools (PGCPS)
Wednesday, July 20, 2016
21st Century School Facilities Commission**

Good morning, Chairman Knott and members of the Commission. I appreciate the opportunity to discuss issues related to planning and implementing school construction projects. As the state's second-largest school system, Prince George's County Public Schools (PGCPS) has a vested interest in the commission's recommendations. As you may know, Prince George's County Public Schools is embarking on a major modernization program, and cost-effective and timely program delivery is essential to the success of our program.

We would like to start by saying that the framework for school construction in Maryland, that has been built over several decades, has served Maryland citizens very well. The Public School Construction Program has institutionalized many best practices and has led innovation in many areas, including educational facility planning and sustainable design, to name just two. Notwithstanding, there is always room for improvement, and we appreciate the opportunity to share some recommendations that we believe would improve our ability to deliver projects in a more timely and effective way, while enhancing quality and value.

I would like to address three major issues today: the need to allow for more effective construction contracting methods, changes to the state Department of General Services' design review procedures, and the need for additional funding.

More effective contracting methods

State regulations for major projects currently allow for a few different contracting methods, but all require acceptance of the lowest cost bid without meaningful regard to such factors as quality, experience and financial capability. Low-bid contracting dissuades many capable construction contractors from participating in programs; low bidders may sometimes win through bid errors or intentional low bids with the goal of fighting for change orders after award. This sets up an adversarial relationship, and sometimes means that less than stellar subcontractors are selected for the construction team.

As an alternative, I propose introducing Best Value Procurement, where price is only one factor. Using that formula, price could be assigned a certain weight – for instance, 30 percent – with experience, qualifications, financial capability as the remaining factors.

The state might also consider adopting an approach used in the DC public construction program, where a competitively-selected architect is assigned to a competitively-selected contractor as a design-build team. The architect starts under contract with the local school board and then proceeds to be assigned to the general contractor contract.

Local education agency (LEA) certified reviews in lieu of DGS reviews on construction documents

The second issue relates to what have become extended and uncertain timelines for DGS-mandated reviews of project designs. As we understand it, delays have been exacerbated by severe understaffing in DGS. Delays caused by the current system substantially reduced the PGCPs summer construction program this year.

DGS lacks the staff and consultants to undertake the required reviews in a timely manner. As a result, the DGS review time has gone from the promised six weeks to 20 weeks – and in some cases, still counting. As of July 13, planned summer projects of all types with construction documents submitted to DGS in February and March have not been reviewed and thus have not received approval to proceed to construction. These projects range from HVAC piping replacements to secondary school reform renovations and major school modernizations.

Large school systems, such as PGCPs, have licensed architects and engineers on staff, and we also get full permits on our projects. All but the simplest projects are designed and stamped by outside firms with licensed professionals. At PGCPs, our internal design review process has been reorganized. In cooperation with DGS, we could train PGCPs staff and consultants to undertake the DGS review as part of our own required reviews, saving the State money and streamlining project implementation.

I recommend that you consider keeping the Maryland State Department of Education review (at the 15 percent completion mark), but allow local education agencies to undertake their own reviews at other stages, using DGS standards and guidelines. Self-certification can require a school district to certify the project meets DGS-provided standards. A courtesy copy of drawings and/or a "spot check" process could still guarantee compliance to basic standards. Alternatively, a list of approved third-party reviewers could expedite the current review process.

I strongly urge you to allow the Interagency Committee on Public School Construction (IAC) to have final approval over projects, including appeals. The IAC has the experience that Maryland school systems need in undertaking capital projects.

Additional funding needed

Lastly, I support the efforts of the Commission to identify additional funding for school construction, whether from restructuring the bond program or other means.

I appreciate the opportunity to share my thoughts on these issues on behalf of my colleagues in Prince George's County and around the state. I will now answer any questions from members of the Commission.

**Maryland Association of Boards of Education
Comments to the 21st Century School Facilities Commission
by Donna Brightman, MABE President-Elect
July 21, 2016**

Mr. Chairman and members of the Commission, I am Donna Brightman, President-elect of the Maryland Association of Boards of Education (MABE), and President of the Washington County Board of Education. I am pleased to be here today, representing all twenty-four of the State's local boards of education, to request your best efforts to develop recommendations to improve Maryland's public school construction program. Specifically, on behalf of MABE, I am requesting your pursuit of changes in law, regulations or procedures to facilitate the availability of alternative financing methods for school facilities projects.

MABE has adopted a legislative position which "supports the pursuit of innovative funding policies and strategies to maximize the capacity of state and local bonding authority in support of school facility project funding." Alternative financing refers to financing a project completely or partially using approaches other than traditional revenue bond financing or pay-as-you-go (PAYGO) financing. Alternative financing methods include sale-leaseback arrangements, lease-leaseback arrangements, public-private partnership agreements, performance-based contracting, and design-build arrangements. MABE supported the School Facilities Act of 2004, which enhanced efforts to address Maryland's public school facility needs by providing clear statutory authority for local boards and governments to utilize alternative financing methods.

There are several examples of successfully completed school projects which were financed through the sale-leaseback or other alternative financing approach. The merits of alternative financing are often very case-specific, but these methods can also generate much needed revenue when traditional financing methods are lacking.

For the last few years, many school districts have begun to think outside of the traditional classroom approach to instruction and curriculum delivery, while working to align Maryland College and Career Standards with functional facility usage. With that in mind, here are several examples that may inform this statewide discussion.

Barbara Ingram School for the Arts (BISFA): A unique downtown learning environment was the first school constructed utilizing alternative financing as set forth in the 2004 legislation. Our experience, though successful, was very technical, with many barriers, and a long two-year process. Recently, BISFA was named a gold medal school for the second year by US News and World Report and is ranked the 5th best school in Maryland.

Public Service Academy: An existing facility and maintenance building was converted to serve the Fire & Rescue, and Criminal Justice Academy Students. WCPS paid the \$500,000 renovation cost out of our general fund, since there is no process in place that allows for a rapid respond to programing needs.

Urban Improvement Project: WCPS/BOE is currently partnering with the City of Hagerstown, Washington County, University of Maryland Hagerstown System, and Maryland Theater to expand our academic footprint downtown. BOE, County, City, Community, and State are currently working to develop a non-traditional funding model. Again, there is no current process in place that addresses this type of funding partnership.

Public Private Partnerships: WCPS (safety, ADA, Title IX), BOE (restricted use of fund balance), Community (fund-raising, donations, investors) No process in place to seek state dollars to leverage a P3 project, even when the project enhances existing state and county assets.

- Williamsport High School – Athletic Facility Expansion
- Clear Spring High School – Agriculture and Environmental Science Center Expansion
- Boonsboro High School – Auditorium and Performing Arts Upgrade/Expansion

Many school systems and county governments are hard pressed to afford a new traditional high school at a cost of \$80 million to \$100 million. Yet, the existing traditional CIP process and the more recent alternative financing method do not allow the flexibility needed to tackle, case by case, district by district opportunity for a more creative approach to non-traditional CIP models. Districts that have the ability, experience and interest in developing creative projects should be given the tools needed to act.

The 2004 School Facilities Act also allowed for alternative procurement and bidding procedures, including competitive sealed proposals, solicited proposals, or unsolicited proposals. MABE continues to support expanding local school system and county government options to pursue innovative, cost-effective, public-private partnerships to facilitate improvements to existing school facilities and build new schools.

This past session legislation was introduced, but not passed, to restrict the use of the cooperative purchasing method of procurement in the area of school construction, renovation and maintenance projects. MABE opposed this legislation in support of maintaining the option for local school systems to use alternative methods of project delivery, and to procure school construction by methods other than competitive bidding, in order to optimize cost savings and efficiencies in procurement. MABE recognizes the need for further education of local government and school system facilities, budget, and procurement staff, as well as builders and investors, on the potential benefits of alternative procurement and financing methods to building and maintaining high quality public schools in Maryland.

Again, MABE appreciates this opportunity to present our perspective and positions on issues being considered by this Commission. We look forward to recommendations to improve Maryland's public school construction program in the best interests of all Marylanders, and most importantly our more than 870,000 public school students.

**Maryland Association of Boards of Education
Comments to the 21st Century School Facilities Commission
by Joy Schaefer, MABE Legislative Committee Chair
July 21, 2016**

Mr. Chairman and members of the Commission, I am Joy Schaefer, Legislative Committee Chair of the Maryland Association of Boards of Education (MABE), and a member of the Frederick County Board of Education. I am pleased to be here today, representing all twenty-four of the State's local boards of education, to request your best efforts to develop recommendations to improve Maryland's public school construction program in ways which will preserve local board governance and enhance cost containment. Specifically, on behalf of MABE, I am requesting the Commission's recognition of local discretion in the use of repeat or standardized school designs; and changes in the law to lessen or mitigate the impact of prevailing wage rates on school construction project costs.

Local boards are accountable to our local communities to design, build and maintain outstanding school facilities for student learning. Local school systems not only develop capital improvement plans (CIPs) and construct and maintain school facilities in accordance with adopted procurement and construction laws and regulations, but also strive to reflect our community preferences and priorities. Therefore, MABE believes that local school systems should remain able to prioritize project requests according to locally established criteria, and opposes any state mandated standard school designs or school sizes for elementary, middle or high schools.

Each local school system relies on, and greatly appreciates, the significant amount of state funding provided for school construction. At the same time, in many jurisdictions local funding exceeds the state share of funding; and in all jurisdictions, local priorities and preferences in school design must be taken into consideration. However, in light of the cost savings that can be achieved, MABE does encourage local school systems to consider the use of repeat school designs, and knows that many systems have benefitted from doing so.

The Frederick County Public School System (FCPS) has been utilizing standardized school designs, or prototypes, at every level (elementary, middle and high) for decades. Benefits include: cost savings and cost avoidance through decreased costs in architectural and engineering fees (10-20% per project), more efficient and accurate bid process, the opportunity to refine design with each iteration resulting in further cost reduction through value engineering or design improvements, and the provision of equitable facilities across the system. FCPS notes the following challenges in using standardized, prototype designs: limitations as a result of unique, unpredictable school sites, the need to update or change designs in response to changes to construction requirements or new/additional programmatic demands.

Also in the interest of cost containment, MABE supports repealing or limiting the scope of prevailing wage requirements as they apply to school construction projects. State policy regarding prevailing wage and school construction shifted in 2000 when the General Assembly enacted legislation to lower the percentage

of State funding triggering prevailing wage requirements from 75 percent to 50 percent. Following 2000, the 50 percent threshold resulted in dramatically increased project costs for many school systems and unnecessarily diluted the benefit of the State and local investment in public school construction during these years. In 2014 the General Assembly again lowered the threshold of state funding mandating prevailing wage from 50 percent to 25 percent.

For many years now, local boards of education have bid construction projects both as prevailing wage and non-prevailing wage projects. These bids provide convincing evidence of cost savings under the non-prevailing wage rates. In light of the significant potential cost savings, MABE strongly supports proposals such as creating a waiver process or additional state funding to compensate for increased project costs. FCPS's experience with side-by-side bidding bears out that construction projects bid at the prevailing wage result in added construction costs of 10 to 13 percent.

A recent report by the Maryland Public School Construction Program (PSCP) confirms the high cost of prevailing wage:

"There is incontrovertible evidence that prevailing wage rates increase construction costs. The PSCP has examined 262 trade package and small project bids that were solicited both with and without prevailing wage rates, and finds that prevailing wage rates increase bid costs by an average of 11.65%. These side-by-side bids are taken at the same time, for the same scope of work, and are submitted by the same contractors; all factors are therefore the same except for the labor rates."

Local boards greatly appreciate the fact that the General Assembly and Governor consistently strive to sustain robust funding for school facilities projects benefiting students in each of the twenty-four school systems. MABE firmly believes that providing relief from increased costs arising from prevailing wage requirements (increases of 10 percent or more) would provide an important boost to State and local efforts to address these school facility needs. Therefore, MABE has adopted a legislative position which "supports raising the threshold amount of state funding that triggers prevailing wage requirements from 25% to 50%, as it was from 2000 to 2014."

Again, MABE appreciates this opportunity to present our perspective and positions on issues being considered by this Commission. We look forward to recommendations to improve Maryland's public school construction program in the best interests of all Marylanders, and for MABE and local boards of education, most importantly, the students.

**Maryland Association of Boards of Education
Comments to the 21st Century School Facilities Commission
by Stacy Korbela, MABE Legislative Committee Vice-Chair
July 21, 2016**

Mr. Chairman and members of the Commission, I am Stacy Korbela, President of the Anne Arundel County Board of Education and Vice-Chair of the Maryland Association of Boards of Education's Legislative Committee. Thank you for allowing us to share our thoughts and concerns regarding school construction funding for all 24 LEA's. Specifically, on behalf of MABE, I am here to request a \$100 million annual increase in the minimum state investment in school construction, for a total of \$350 million.

Adequate funding for school maintenance is essential to allowing school systems to preserve aging school facilities while at the same time moving forward on major renovation and school construction projects. Although school construction costs continue to escalate and existing facilities continue to age, local boards are tasked with providing school buildings in each of our communities that are able to address the needs of ALL learners. For MABE and Maryland's 24 local school boards, the mission to provide equitable school facilities to all of Maryland's students is a top priority.

When I think of equity – I think of the old t-shirt analogy. Equal means everyone gets a t-shirt. Equitable means everyone gets a t-shirt that fits. Do all of Maryland's school children have a school they can attend? Certainly. But do all of Maryland's school children have a school to attend that fits their needs as a 21st century learner? Perhaps not. The Maryland Constitution requires that the State provide a "thorough and efficient" system of public education, and MABE believes that this includes the duty to provide safe, high quality school facilities in which ALL students can learn.

It's no secret that all 24 school districts are in urgent need of adequate capital funding to construct, renovate, and maintain school facilities. Adequately maintaining school facilities requires significant investments from both state and local governments, in part because the General Assembly has enacted significant mandates affecting school construction procedures and project costs, including strict environmental design standards and minority business enterprise contracting participation standards; and the recently expanded scope of prevailing wage rates. Under the current \$250 million approach, we're finding that project costs that dramatically exceed projected cost estimates means the anticipated state and local appropriations for pending projects just aren't enough.

Sure, we can find ways to cut costs. Using repeat designs for elementary schools is one way. Public-private partnerships is another. In Anne Arundel County, I represent the district where we partnered with a local developer and a charter school company to open a brand new contract elementary school in just under one year. The developer made the land available for purchase so the charter school company could construct a 64,000 square foot modular building on that property that will eventually house close to 800 students in grades K-8. This type of construction will certainly require more maintenance than a traditional elementary

school over the course of its lifetime, but the quick, modular construction helped us quickly address exploding population growth in that part of our county, with on-going maintenance costs to be borne by the charter school company.

Is this the way to go with all school construction? Probably not – unless annual maintenance budgets increase significantly. Could we share designs across LEA's to save design dollars? Maybe. But in a district like mine where magnet schools are prolific – a high school designed to accommodate a biomedical and allied health magnet program is not going to work at a high school designed to be a performing arts magnet. I'd hate to see design standardization take away the local board's right to design schools that fit their population.

The needs and uses of public schools are dynamic, and local boards of education must be able to adequately address and finance the range of facility needs in the future. MABE supports a state funding level of at least \$350 million for school construction and renovation projects for FY 2018 to provide the State's share of approved projects to build, renovate, and improve school facilities throughout Maryland.

**Testimony of
The Building Trades Panel
Before the General Assembly,
Maryland 21st Century Schools Facility Commission,
July 21, 2016**

**Testimony by
Brian Cavey, Director, Apprenticeship and Training
International Association of Heat and Frost Insulators and Allied Workers,
Local 24**

**Norbert Klusmann, Director, Apprenticeship and Training
International Association of Sheet Metal, Air, Rail and Transportation
Workers, Local 100**

**Thomas J. Kriger, PhD
Director of Research
North America's Building Trades Unions**

Brian Cavey

Good morning, my name is Brian Cavey and I am the Apprenticeship Director for the International Association of Heat and Frost Insulators and Allied Workers, Local 24, one of 28 local Building Trades unions in the Baltimore/Washington DC and Northern Virginia area. I work closely with the Community Hub for Opportunities in Construction Employment or CHOICE. CHOICE is an initiative of the North America's Building Trades Unions (NABTU). NABTU is composed of 14 national and international building and construction unions, whose affiliated local unions across the country represent over 3 million workers.

I want to thank Chairman Knott and fellow members of Maryland's 21st Century Schools Facility Commission for the opportunity to speak about the current system in place for Maryland school construction and the role of apprenticeship. The current system, we will argue, has failed to provide middle class employment opportunities for Maryland residents. It has also failed to create a sustainable construction workforce in the state of Maryland that can perform this work.

Between 2008 and 2011, the construction industry nationally lost 2.3 million jobs, bringing employment in the industry to the lowest level since March 1998. In February 2010, the national construction unemployment rate hit 27.1%, which made the Great Recession more like the Great Depression in our industry. Although the industry has recovered since 2011, we still face challenges in Maryland that have crippled what was once a healthy and vigorous education pipeline for new construction workers. These challenges include the dismantling of the public vocational and technical education programs, declining participation in joint labor-management apprenticeship training and an increasing focus on college preparatory programs at the high school level. These challenges are particularly relevant today because many people in our industry are retiring or are about to retire. Baby boomers (people born between 1946 and 1964),

who represent 40% of the workforce, according to the Center for Construction Research and Training (CPWR)¹, are retiring or will retire in the next few years.

Compounding this problem, whole generations of younger workers are no longer even considering construction as a viable career option. Many high schools have phased out shop classes, and parents increasingly have steered graduates to four-year colleges and white-collar careers. While Maryland once had a flourishing public vocational and technical educational program (VoTech or Shop Class as they were once known) that delivered training for a host of skills, including construction trades; many of those programs have been shut down over the past few decades. Vocational and technical education presents a better understanding of applied math and science. It can arouse the imagination and motivate to the creative arts; it reinforces the English curriculum by ensuring students understand and communicate instructions, rules and regulations, specifications, etc.

Unfortunately, this is not the case today. According to a 2012 report by the Maryland Center for Construction Education and Innovation², 71 percent of construction leaders believe that neither the construction industry nor the Maryland education system is doing enough to create an adequate construction workforce. Approximately half of the respondents in the survey reported that they have observed deterioration in the quality of the construction workforce over the recent years. As a result, 70 percent of Maryland construction leaders claimed that they anticipate a labor shortage for skilled trades and craft workers through the year 2020. In addition, 70 percent of industry leaders' recruits come from out-of-state colleges such as the Pennsylvania State University and Virginia Tech.

¹ "Healthy Aging for a Sustainable Workforce." CPWR. November 2009. Web. Accessed: 7/18/16

² "The Critical Path: Positioning Maryland as an Innovation Leader in the Global Construction Industry" *Maryland Center for Construction Education & Innovation*. December 2012. Web. Accessed: 7/18/16

A related problem is that when the recession hit, many skilled workers who were unable to find jobs dropped out of the industry and have yet to return. What will bring these men and women back to the industry are good paying jobs with benefits as well as opportunities for training. In recent years, however, there have been numerous accounts of contractors misclassifying craft workers as "1099" independent contractors who receive no benefits, no retirement and do not pay taxes to the State. According to the 2015 Annual Report from the Joint Enforcement Task Force on Workplace Fraud, there was approximately \$900,000 of unreportable taxable wages in construction and landscaping in 2014-15.³

The last challenge is low bid contracts, which have a negative impact on workers, communities - and taxpayers. Due to constrained budgets, local education agencies are under considerable pressure to use a low-bid model in funding school construction projects. The problem with this model is that, over the long run, low bid contracts do not save money for taxpayers, they simply push the unfunded costs in these projects - including higher costs associated with higher injury rates and the unfunded costs for workers' health care and retirement - back on the taxpayers. According to a study of school construction costs by University of Colorado-Pueblo economist Kevin Duncan⁴, the preponderance of research on school construction in Maryland demonstrates that eliminating the payment of prevailing wages increases the costs for Maryland taxpayers. Duncan notes that when publicly funded projects are awarded to low bidders, contractors are forced to cut costs by decreasing wages, abating safety standards, reducing health and retirement benefits, and shedding training costs that are needed to

³ "2015 Annual Report: Joint Enforcement Task Force on Workplace Fraud." *Maryland Department of Labor, Licensing, and Regulation*. 2015. Web. Accessed: 7/18/16.

⁴ Duncan, Kevin. "Prevailing Wage Requirements, Contractor Bid Behavior, and School Construction Costs in Maryland: Evidence from Side-by-Side Bids." *Colorado State University-Pueblo*. 4 May 2016. Print. Accessed: 7/19/16

prepare the next generation of construction workers. In the end, the responsibilities for costs related to school construction are foisted back on the taxpayers, eliminating any gains that might have been promised through the bidding process.

As my colleague Norbert Klusmann will explain, the solution to these challenges is to reject the low road model of construction employment in Maryland - which is characterized by low wages, little or no benefits and limited options for training and advancement - and to embrace a high road model in school construction that puts a more diverse group of Maryland residents to work in the schools, who receive benefits and the best training in the construction industry. In other words, it's time for Maryland to build a higher quality construction workforce as we build higher quality Maryland schools.

Norbert Klusmann

Mr. Chairman and members of Maryland's 21st Century Schools Facility Commission, it is an honor to testify today about the joint labor-management skilled craft apprenticeship system and how it can be the solution for Maryland to develop and sustain a skilled construction workforce for school construction. I am Norbert Klusmann, Director of Apprenticeship and Training at the International Association of Sheet Metal, Air, Rail and Transportation Workers, Local 100.

The Maryland Building Trades follow a high-road model of construction employment. While few open shop contractors participate in registered apprenticeship, the Building Trades, working with our contractor partners, have established an extensive apprenticeship training system in Maryland that puts our apprentices to work on a wide range of projects. These joint

labor-management training programs also provide health and retirement benefits and life-long training opportunities that Maryland residents need to sustain a middle-class existence.

As Mr. Cavey mentioned, policy experts and law makers have been looking to other sources to help with labor challenges in construction, such as VOTEC and community colleges (which DO have an important role in the industry), rather than looking to the most appropriate, efficient and high quality craft training system in the US - the joint labor-management apprenticeship committee (JATCs) system. Nationally, the Building Trades and their signatory contractor partners invest over \$1 billion annually in apprentice and journey-level training, which makes this system one of the largest privately funded education systems in the US. This total, I should point out, does not include the tens of millions of dollars invested by the JATCs annually in plant and equipment. The Building Trades and their signatory contractors also invest \$10 billion in apprenticeship wages and benefits, so the apprentices earn a good wage while they are going through high quality training.

Apprenticeship programs have also proven to provide a greater return for employers. Economic return on investment (ROI) has shown that employers gain a return for craft training of as much as \$3 to every \$1 that is invested; accounted for by improved safety, elimination of rework, and increased productivity of the craft worker. Similarly, those completing an apprenticeship earn substantially more over a career than the average two-year college degree graduate.

Joint labor-management apprenticeship programs train the safest, most highly skilled and productive workforce through hands-on training and industry standard technical instruction. Having more than 1,600 training centers across the country, the JATC apprenticeship system is equal in scale to the third largest public university system in the United States. In addition, the

JATCs have the most extensive and institutionalized partnerships with community colleges in the United States labor movement. Hundreds of these programs have coupled craft training with academic general education courses that enable apprentices to simultaneously complete an Associate's Degree when they become journey-level workers. One example of this is right here in Maryland, where JATCs have partnering with both Baltimore County Community College and Montgomery County Community College.

In Maryland, the Building Trades invest \$20 million annually in private joint-labor management apprenticeship programs. Out of the 47 apprenticeship programs in Maryland between the years 2013-2015, 37 of them were union apprenticeship programs. Of the 2,154 apprenticeship completions in Maryland between those years, 75% graduated from joint labor-management programs. Also, studies show that joint labor-management programs in Maryland train and graduate a more diverse group of residents. According to one study of apprenticeship programs in Maryland⁵, African Americans comprised of 30.2% of joint labor-management apprentices, compared to only 16.5% in open shop programs; Latino participants represented 5.8% of joint labor-management apprentices compared to 4.6% of open shop; and women comprised 3.6% enrolled in joint programs, compared to 1.1% in open shop programs.

In sum, the JATC system provides many of the solutions for Maryland's challenges with construction workforce development. We urge policymakers to consider the joint labor-management apprenticeship system in the state of Maryland as a source of opportunity for Maryland residents, both to become highly-skilled, safe working construction workers and also members of a stable middle class that is the foundation of a prosperous Maryland economy.

⁵ Johansson, Erin and Fred Feinstein. "Apprenticeship Training Programs in Maryland: A Case Study of the Construction Industry, 1990-2003." *The Construction Policy Program at the University of Maryland School of Public Policy*. March 2005. *Print*. Accessed: 7/18/16.

Thomas J. Kriger, PhD

Thank you Chairman Knott and members of Maryland's 21st Century Schools Facility Commission for the opportunity to offer our recommendations for addressing the challenges discussed today.

As Mr. Cavey and Mr. Klusmann have pointed out, one of the main issues in Maryland has been a failure to sustain a skilled construction workforce that can build schools and perform other necessary work for the State. As a way to address these challenges, we recommend that the Commission and Maryland policymakers:

- Enact legislation that specifies that a defined percentage of Maryland residents be hired on school construction projects (even to the point that on certain projects these residents be defined based on their zip codes);
- Enact school construction legislation that specifies detailed standards for high road construction training - including both apprenticeship readiness programs and registered apprenticeship - required for school construction bid specifications; and
- Use Project Labor Agreements with community benefit provisions on school construction projects as a method of codifying the use of apprenticeship readiness programs, hiring goals for local residents and high road training standards that would facilitate the development of a locally-based, well-trained, safe working Maryland construction workforce. In this way Maryland can bring its stock of publically-funded school construction projects to the table in ways designed to build a more sustainable construction workforce.

In fact, evidence from JATCs in other states shows how labor and community leaders, contractors and policy makers have used apprenticeship readiness programs to provide a gateway

for community residents to gain access to registered apprenticeships and work on school construction. These programs use the Building Trades' nationally recognized Multi-Craft Core Curriculum, which empowers young people and returning adults for careers in construction. These programs increase the number of candidates for apprenticeships across all different building trades' crafts, increase the diversity of apprenticeship candidates by recruiting women, people of color, veterans', and out of school youth, and increase the retention rate among apprentices by providing them with a deeper understanding of the construction industry.

We are confident that these recommendations will work in Maryland for school construction because we have seen them work in other states. In Los Angeles, for example, the LA Unified School District (LAUSD) developed the "We Build Program" in conjunction with local joint labor-management training programs. "We Build" created a pool of qualified local workers, with an emphasis on hiring women, veterans, and members of underrepresented communities, to work on new school construction projects. Local residents learned the basics of general construction during a ten-week apprenticeship readiness program, and then they were offered placement in registered apprenticeship programs and sent to work for contractors who were building new schools under a project labor agreement between the LAUSD and the local Building Trades. As of 2014, more than 2,074 individuals have participated in and graduated from the pre-apprenticeship training, and 1,180 have been placed on construction jobs via district contracts and JATCs. This program saw an opportunity to both build the schools *and* to build a highly skilled, local construction workforce in the process.

Another successful program is found in Max S. Hayes High School in Cleveland. In Cleveland, this new \$48M state-of-the-art school building holds up to 800 students and sits on a 13-acre site. Max Hayes High has exposed piping, wiring, HVAC systems, and elevator shafts,

which are all used as learning tools to teach students about certain aspects of the trades. This was all due to a Community Benefit Agreement between the City of Cleveland, Cleveland Metropolitan School District (CMSD), Building Trades representatives and their private sector contractor partners. This agreement expanded career pathways for Max Hayes students, increased the diversity in Greater Cleveland construction projects and contributed to the economic benefits for local Cleveland residents.

According to the Maryland's 2009 Construction Industry Workforce Report, the average age of construction craft workers is 47 years old.⁶ With this in mind, we urge Maryland policy makers to consider a new system to train a new skilled construction workforce. Through PLAs with community benefit provisions, policy makers can use school construction to build opportunities for Maryland residents, particularly those who have been historically underserved, as they gain access to the middle class through the construction of Maryland schools.

⁶ "Maryland's Construction Industry Workforce Report." *Maryland Governor's Workforce Investment Board*. September 2009. *Web*. Accessed: 7/18/16.

***INTERAGENCY COMMITTEE ON SCHOOL
CONSTRUCTION:

MAINTENANCE INSPECTION PROGRAM
(MIP)***

The 21st Century School Facilities Commission

Interagency Committee on School Construction

July 21, 2016

David Lever, Executive Director

William Levy, Maintenance Inspection Program Manager

History of the MIP

- **1971: Public School Construction Program founded**
- **1980 – 2003: Department of General Services conducted 100 surveys per year:**
 - Initially, only inspected schools with State-funded projects, later expanded to all public schools
 - Surveys conducted by single DGS staff member
- **2003 – 2006: DGS assigned survey function to regional staff members:**
 - Still surveyed 100 schools per year
 - Between 6 and 12 different staff members involved; survey was a small part of the staff members' duties
 - Difficult to coordinate or achieve consistency of results
- **2006 – present: Public School Construction Program manages the program:**
 - Since 2006, two full-time inspectors; since 2015, one program manager
 - Initial goal of 233 new surveys per year: survey all schools on 6-year cycle
 - Number has been modified in some years due to budget constraints
 - Currently proposing a modification through FY 2019 due to vacancy
 - Extremely difficult task:
 - All physical inspections have taken place on schedule
 - Reports have been delayed: Staffing issues, complexity of work, depth and detail required for accuracy and completeness

Scope of the IAC Inspection

- **Survey addresses school *maintenance*:** How well building systems and components have been maintained to:
 - Extend their useful life
 - Protect State and local investments
 - Ensure building performance and energy efficiency
- **IAC Survey is not:**
 - ***A facility assessment:***
 - Determines all needed system upgrades and their cost
 - Determines educational adequacy of the facility
 - ***A health/safety assessment:***
 - Purview of local and State code officials and inspectors
 - Obvious health or safety problems will be noted and reported on by IAC Inspectors
- **IAC Survey distinguishes *maintenance* from building *condition*:**
 - Examples:
 - An older school or system that needs replacement may be very well maintained; or
 - A newer school or system may be poorly maintained
- **Issues related to *school administration* are distinguished from *school maintenance***
 - Example: Fire safety - clutter in the classroom that may impede egress vs. exit lights that do not work

Inspection Process

➤ Physical survey process:

- Inspectors examine 35 categories of building systems and components
- Timeline for physical inspection (excluding travel):
 - Elementary – about 2-1/2 to 3 hours
 - Middle – about 3 to 5 hours
 - High – one entire day, possibly more
- Extensive notes and photos are taken for every school
- Each category is given a rating in the field

<u>Category</u>	<u>Rating</u>	<u>Comment</u>	<u>Response</u>
ROOF CONDITIONS	Good	The 1992 PVC single-ply and built-up roof systems appear to have been well maintained with evidence of repairs. Due to age and condition, the LEA reports the replacement of these roofs is scheduled for the summer of 2018. We advise that construction and maintenance debris be removed from the roof surface to prevent possible damage to the membrane.	x
LEA Response:			

➤ Post-inspection reporting process:

- Comments are written for most categories; response may be required (“x”)
- Ratings are refined through discussion, examination of records
- By formula, category ratings combine to produce overall facility rating
- Presence of asbestos management plan and emergency preparedness plan noted
- Administrative issues are provided in separate comments
- Overall comment is provided for each school; photos are included
- More than 9,000 separate entries are made in a single fiscal year

Inspection Observations

Example: Low-Slope Roofs



Rating: Good

- Slightly worn, but no leaks reported
- No visible bubbles or alligatoring
- Flashing is intact
- Evidence of preventive maintenance (PM)

Recommended Actions

- Inspect regularly for possible deterioration
- Provide regular PM



Rating: Not Adequate

- Visible bubbles, alligatoring and seam separation
- Evidence of patching, but patches are separating from surface in some areas
- Flashing appears to be intact
- Some evidence of preventive maintenance

Recommended Actions

- Monitor interior for leaks
- Replace critical sections immediately
- Provide intensive PM
- Consider for near-future replacement

Inspection Observations

Example: Mechanical Rooms



Rating: Good (possibly Superior)

- Clean environment
- Insulation intact
- Well lit for safety, maintenance
- Equipment readily accessible
- All equipment appears to be operable

Recommended Actions

- Provide regular PM
- Replace valves, motors, etc. on schedule (prior to major replacement of equipment)



Rating: Not Adequate

- Oil and/or water on floor; dirty environment
- Rusted and dismantled equipment
- Unattached electrical switch
- Clutter blocking access
- Uneven lighting
- Insulation appears to be intact

Recommended Actions

- Clean and remove clutter
- Replace or repair disabled boiler
- Check all connections, including electrical
- Consider capital replacement of equipment

Reports

- **Letter and reports** are sent to the Superintendent and central office staff:
 - For individual comments: Responses required within 30 days
 - For schools with overall “Not Adequate” or “Poor” rating:
 - Corrections or correction plan required within 60 days
 - School will be re-inspected in a following year
 - Letter often highlights:
 - Specific schools with issues of high concern
 - Overall practices that need to be addressed
 - Overall practices that are noteworthy
 - Schools that receive “Superior” rating are noted

- **LEA Responses** are reviewed by MIP staff

- **Summary fiscal year report** submitted to IAC, Board of Public Works, the public:
 - Description of process
 - Summary of all results for the year
 - “Report Card” for each LEA, with specific comments

General Results

➤ **Inspection categories that are capital intensive:**

- Examples: HVAC, roofing, asphalt pavement, windows, lighting
- Tend to show immediate improvement after capital investment
- Tend to reduce maintenance burden, allowing resources to be used efficiently for other tasks
- However, can deteriorate rapidly if not properly scoped, constructed, and maintained (particularly HVAC)

➤ **Inspection categories that are labor intensive:**

- Examples: cleanliness of hallways, condition of storage rooms
- Appear to depend critically on the school administration; varies enormously from school to school

➤ **Inspection categories that are mixed:**

- Example: Fire safety: consists both of capital systems (fire alarm, sprinklers) and labor intensive items (inspection and certification of fire extinguishers)
- High level of capital investment must be supported by adequate staff with sufficient training

General Conclusions

- **Maintenance resources** are stretched thin in every jurisdiction in the state
 - Changes in enrollment and other factors:
 - LEAs with growing enrollments: Building area grows, resources may remain flat
 - LEAs with declining enrollment: Declining State revenue, facility costs remain fixed
 - Baltimore City: A unique set of circumstances
 - Fixed costs increase continually (materials, equipment, pensions)
 - Buildings are aging continually; greater maintenance effort is needed
 - Academic needs take precedence

- **Results may vary significantly from year to year:**
 - Sample selected for inspection is largely random
 - Particular impact on small LEAs with only a few inspections each year
 - Need to look at longer term window: minimum three years

- **Maintenance and capital investment are intertwined:**
 - Good maintenance sustains capital investment and defers need for additional investment
 - Timely, appropriate capital investment reduces the maintenance burden

LEA Results

- **Basis of measurement:** percentages of total overall ratings that are Superior + Good; Adequate; and Not Adequate + Poor
- **Small Jurisdictions:**
 - Favored by “friends and neighbors” character of schools:
 - Facility personnel are members of the community
 - Community may provide valuable volunteer assistance
 - When local wealth is reasonable and is directed to schools, show consistently high results: *Calvert, Caroline, Cecil, Garrett, Kent, Talbot, Wicomico*
 - When local wealth is constrained, results are more mixed: *Allegany, Dorchester, Queen Anne’s, St. Mary’s, Somerset, Worcester*
- **Large Jurisdictions:** *Anne Arundel, Baltimore County, Montgomery*
 - Able to hire very capable experts and specialists
 - Disadvantaged by:
 - Large number of facilities, remote from central office
 - Multiple levels of accountability and communication
- **Mid-size Jurisdictions:**
 - If reasonably funded, show high level of results: *Carroll, Frederick, Howard, Washington*
 - Number of facilities allows for direct central office knowledge and accountability
 - Sufficiently large that expert personnel and good resources can be budgeted
 - If funding is uncertain, results are more mixed: *Charles, Harford*

LEA Results

➤ **Prince George's County:**

- Among oldest schools in state
- Extensive improvements in last three years due to leadership from the top:
 - Increased staffing in capital planning, design and construction
 - Improved project methodologies
 - Comprehensive, countywide facility assessment to prioritize projects
- Should lead over time to improved maintenance results

➤ **Baltimore City:**

- Lack of resources: staff, equipment, materials
- Vast excess facility capacity relative to student population
- Oldest facilities in state
- History of underinvestment in facility improvements and maintenance
- Poor past record of facility management:
 - Buildings not operated efficiently
 - Reactive rather than preventive maintenance
 - Poor inventory control
 - Capital projects not well scoped
- 21st Century Building Program:
 - MOU requires improvements to maintenance
 - Commitments made September 2014 to increased budget, staff, resources

Value of the MIP

*Maryland is one of few states in country that has a
maintenance inspection program*

Need to learn from other states: New Mexico, West Virginia, others

MIP Benefits:

- **Has raised attention** to school maintenance throughout the State
- **Has given support to:**
 - Local requests for more staff and other maintenance resources
 - Local requests for funding to correct specific deficiencies identified in the reports
- **Consistent methodology, FY 2006 – FY 2016:**
 - Allows identification of persistent deficiencies
 - Allows trends to be identified – statewide and LEA
- **Supports increasing correlation of capital funding and maintenance:**
 - Maintenance results are reviewed for all project requests in existing schools
 - Increases scrutiny of request and promotes full discussion of causes
- **Best Practices:** Continuous interaction between Inspectors and 24 LEAs allows best practices to be identified and promulgated
- **Educates Public** about the complexity of facility management issues and the need to sustain investment

Testimony - The 21st Century School Facilities Commission

July 21, 2016

Betty Weller
MSEA President

The Maryland State Education Association represents 72,000 educators and school employees who work in Maryland's public schools, teaching and preparing our 845,861 students for the careers and jobs of the future. MSEA also represents 39 local affiliates in every county across the state of Maryland, and our parent affiliate is the 3 million-member National Education Association (NEA).

The Maryland State Education Association believes that each child must be guaranteed the opportunity for a free public school education in a modern, safe, and healthy environment. MSEA supports funding for school construction and renovation necessary to ensure a high-quality and safe teaching and learning environment, including construction to reduce class size, appropriate heating, ventilation, and air conditioning systems. The existing capital improvement plans submitted by each local school system indicate a need of state funding for school construction of over \$4.5 billion for the next five years. Parents are asking our schools to do more and more, we need to avoid the temptation to cut corners and slide by with less. Below are the major concerns MSEA has with ensuring our schools are fully prepared for the 21st century.

School Safety – Tragic events can occur anywhere and anytime. However, school-based criminal activity or violence targeting children and educators is both extremely difficult to comprehend and extremely important to prevent. Many of Maryland's schools have added extra security equipment and procedures in an attempt to make our schools more secure. Installation of modern security structures and systems is most cost-efficient when included during construction and/or renovations. Compounding the safety problem is the continued use of over 2,800 portable classrooms statewide, exposing students and educators to unnecessary danger.

Community Schools – While Maryland consistently ranks as a top state for public education, socioeconomically disadvantaged students often need support beyond the classroom in order to succeed within it. Poverty dramatically and negatively affects the wellbeing of children, particularly in the areas of physical health, mental health, safe housing, access to technology, parental support, family planning services and education, youth employment, and nutrition. Each of these factors play a large role in whether students are able to learn and do well in school— making it imperative that these opportunity gaps be closed through proven methods like community schools so we can provide equitable education in our communities. Schools need additional capacity to work with community partners to bring those needed services into the school building to make them accessible to students, parents, and community members.

School Discipline / In-School Suspensions – In January 2014 the Maryland State Board of Education adopted regulations instituting new disciplinary directives to every school system requiring their school discipline philosophy to be focused on keeping students in school. If suspension or expulsion is necessary, as a last resort, the schools must keep suspended or expelled students connected to the school by providing education services that will allow the student to return

to school with an opportunity to be college and career ready. Every school system was required to alter its disciplinary procedures for students, and principals and administrators now avoid disciplinary decisions that would cause a student to be away from school. This new approach, and the in-school suspension programs that are associated with it, require extra staff, extra programs, and extra building capacity.

College and Career Readiness/ CTE – Maryland has established a goal of improving the post-secondary degree completion rate from the current level of 44% of the population ages 26 to 64 to a level of 55% by the year 2025. Employers seek an educated workforce and Maryland's economy is based on recruiting and retaining businesses to keep Maryland families working. Many employers seek employees ready-to-work when they graduate from high school. Research indicates that 38% of new jobs in Maryland won't require a bachelor's degree. National statistics show that, on average, high school students engaged in CTE programs graduate at a rate of over 90%, compared to the national overall average of 75%. Students are eight to ten times less likely to drop out at 11th and 12th grade, when enrolled in a CTE program. More high schools need to have the capacity to offer career and technology programs and more Career and Technology Centers are needed.

Early Childhood Education/ Prekindergarten expansion – Studies reveal dramatic gains in children who receive early childhood education. The short- and long-term benefits of pre-K are rapidly gaining recognition and garnering social, economic, and political support. Pre-K has been proven to have positive impacts that can reverberate throughout a child's school years, and even into his or her adult life and career. Pre-K creates a wide range of benefits, from gains in individual levels of academic achievement (and decreases in special education service needs) to widespread societal improvements. Currently Maryland provides pre-K for less than half of four-year olds. Expansion of pre-K is long overdue and school facilities must be adequate to handle additional enrollments.

Technology – Rapid advances in technology have stressed the financial, training, and physical capacity of Maryland schools. Federal and state mandates continue to demand more online accountability reports and online assessments. In 2014, the Maryland State Department of Education (MSDE) conducted a survey of local school systems to determine the technology infrastructure funding gap that existed. Results were obtained from 16 of the 24 jurisdictions and estimates totaled a shortfall of \$467 million. As computer labs, media centers, classrooms, and common areas all serve multiple purposes related to technology and need to be continually updated to keep up with technological demands, schools must have the capacity to handle and adapt to these increasing technology needs.

At-Risk Students – Maryland families today are more diverse than ever in the history of our state. The racial composition of our 845,861 students attending public schools in Maryland is 39.1% White, 34.4% Black, 15.5% Hispanic/Latino, 6.3% Asian, and 4.7% others. Nearly 64% of all students are identified as an At-Risk category student including 372,187 eligible for Free and Reduced-price Meals, 104,618 receiving Special Education Services, and 63,404 identified as Limited English Proficient. Schools face many challenges toward providing every child with an opportunity to learn and sufficient support for success. Tomorrow's school buildings need to have the extra capacity to provide more individual instructional time for teachers to teach and for students to learn.



The Maryland Education Coalition (MEC) is dedicated to raising the academic achievement of students in Maryland public schools by promoting adequate funding and systemic accountability for improving results.
www.marylandeducationcoalition.org

Testimony for the 21st Century School Facilities Commission

July 21, 2016

The Maryland Education Coalition (MEC) has worked with state and local leaders and stakeholders for about three (3) decades to address the dire school construction needs in Maryland. We are excited about the opportunities presented by the 21st Century Schools Commission and look forward to working with each of you and the staff collaboratively.

MEC's Position on School Construction - A safe and supportive learning environment is critical to ensure an equal educational opportunity for all Maryland students. The state should allocate funds for school construction, renovation, and system improvements in a way that treats children from every jurisdiction fairly and equitably and that ensures adequate, attractive, physically accessible, environmentally comfortable, technologically appropriate, and well-maintained space for instruction and school-based family and community services. MEC also supports the use of community schools and smaller learning communities within larger school facilities with appropriate program offerings, facility modifications, staffing and instructional resources.

Given the significant school construction needs and the disparity in building conditions statewide, MEC strongly urges the commission to:

1. Urge the state to update the Kopp survey to comprehensively assess the school construction needs in each district and urge the state to increase funding so that districts can mitigate health and safety issues and other high priority school construction needs within a reasonable timeframe;
2. Assess local capacity to provide adequate funding and make proposals to ensure equity in school building quality for all school districts, particularly for low-wealth and significantly diverse districts; and
3. Ensure high quality and properly designed school buildings that support a 21st century academic curriculum, and the safety, health and community needs of school communities.

Update the Kopp Survey to Determine the Need and Ensure Adequate Funding. In 2003, the Kopp Task Force required local school districts to assess their building conditions to meet "minimal adequacy" standards, using a common assessment tool. Since then, the state and local counties have made significant investments in school construction but it is unclear how much progress has been made toward meeting that relatively low standard. School building conditions and challenges vary in districts across the state. Some districts are burdened with renovating and maintaining old school buildings that have mechanical systems and structures that are far beyond their useful lives. Many of these schools pose health and safety threats to the state's most vulnerable children – with faulty heating systems and plumbing, leaking roofs, outdated fire alarms and inadequate or non-existent air conditioning systems. These schools are often more expensive to maintain. Other districts need to build more schools or additions due to significant annual growth in student enrollment or the growing diversity of the school systems student population.

MEC recommends that the commission call for an update of the Kopp survey (or develop an appropriate survey) to comprehensively assess the school construction needs in each district.

Addressing the gap in funding is also critical. The **Analysis of the FY 2016 Maryland Executive Budget, 2015, page 16,** states:

"The need for public school construction funding in Maryland is very largely and widely known. In 2003, the Task Force to Study Public School Facilities, known as the Kopp Commission, found that \$3.85 billion in State and local funds would be needed to bring all of Maryland's public school buildings to minimum levels of adequacy in 31 areas. According to IAC, if the same needs were identified today, the total cost as a result of construction cost escalation would be over \$6.0 billion. The result of the Kopp Commission was the establishment of a State goal to provide annual funding of \$250.0 million for public school construction."

It is significant that the state has contributed approximately \$300 million towards school construction annually, exceeding the \$250 million goal. However, even if the state continued its average contribution of approximately \$300 million for school construction annually, it would take 20 years to eliminate the \$6 billion backlog. Further the \$6 billion estimate is based on bringing school buildings to minimum adequacy. **The Kopp report** stated that its assessment “clearly did not encompass many of the elements that most school systems – as well as most parents, teachers, and students – believe are necessary for a good education. These additional elements include gyms in elementary schools, health facilities in all schools, smaller classrooms for primary grades, separate lunch and assembly rooms, etc.”

The Office of Public School Construction has stated that school districts needs are between \$13-15 billion to bring all Maryland public school facilities up to 21st Century standards. While the State contribution to school construction has been relatively stable over the past decade, it has not kept pace with inflation.

Given the dire need statewide, MEC and partners have been advocating for the state to significantly increase State Aid for Public School Construction over recent years. And MEC understands that there are many pieces to the public school construction program in Maryland. These includes:

- New facilities or additions to support significant enrollment increases (*attached*) in many of our school systems and communities.
- Modernization, major renovations or systematic replacements of existing facilities usually at significant cost savings vs building a new facility
- Robust maintenance programs to maintain facility quality, safety & health

MEC recommends that the Commission urge the state to increase the base funding for school construction to a minimum of \$400 million annually. MEC also recommends that the commission identify revenue sources and develop a long-term funding plan that ensures school facility needs - both construction and maintenance - in all Maryland districts can be addressed within a reasonable time frame.

Assess Local Capacity and Ensure Funding Equity. The disparity in school facility conditions between low-wealth and high-wealth districts can largely be attributed to local wealth. Over the past decade, the State has given roughly equal amounts of school construction funding to large Maryland school districts annually. However, the local contribution to school districts for construction and renovations differ greatly. High wealth counties have the capacity to contribute significantly larger amounts to school construction than low wealth districts. For example, Baltimore City’s contribution to school construction in FY2017 – not including its contribution to the 21st Century Schools Program– is \$17 million^{1,2}

By contrast, Anne Arundel County, which is roughly equal in size, contributed approximately \$90 million to local school construction³. This disparity is due to the differences in each district’s ability to incur debt, not because school facilities are given higher funding priority in one jurisdiction than another. Given the disparity in local capacity – which is reflected in the disparate conditions in school buildings statewide- it is essential that the State distribute capital funding in an equitable way, taking into account local wealth.

Counties with growing enrollments and large numbers of relocatable classrooms also have needs and have sought and won additional state dollars for school construction to address problems with overcrowded schools. While the need to address overcrowding is significant, differences in wealth and capacity of each of these districts should be considered.

¹ **Baltimore City Budget Summary, page 2**

² The City Schools' 21st Century Schools Program was adopted by the state legislature in 2013 to address Baltimore's rapidly deteriorating school building and its limited capacity to address its own need. While the state is contributing to this effort, 2/3 of the funding that will leverage up to \$1 billion in bonds is being paid for by the City and city school system. Although this program will help Baltimore City rebuild up to 28 school buildings, it is a one-time investment and over 100 city school buildings will not receive funding through this program.

³ **Anne Arundel County Public Schools Board of Education Requested/County Council Approved, page 4**

To develop an equitable way to distribute state funding for school construction, it is critical that the commission study the capacity of each local district to address its own need. Based on the trend in state allocations for school construction, the cost-share formula does not achieve the IAC goal to *"equalize educational facilities and opportunities throughout the State"*.

The Commission should recommend that the State study and develop an improved, equitable method to distribute state school construction funding to ensure that children in low-wealth districts have the same access to adequate buildings as those in higher-wealth counties.

Ensure High Quality Construction and 21st Century Standards. The commission will be comparing various school construction models, including private sector projects, with current state practices to make recommendations as to how costs can be reduced. A lot has been learned over the past year after the State reported on the construction of Monarch Academy, a charter school in Anne Arundel County. The report showed that Monarch's construction cost approximately \$9.7 million less than Rolling Knolls Elementary, in Anne Arundel County Public Schools at the same time.

The major factor in the cost difference is attributed to the variation in each school's education specifications, which are determined by each school district (*i.e. size and types of classrooms, hallways, technology and equipment, outdoor areas, etc.*). Rolling Knolls benefits from various spaces that Monarch Academy decided to omit or reduce due to budget constraints - for example, the library, computer/media center, teacher planning areas, additional classrooms to ensure flexibility with scheduling, collaborative learning areas, resource rooms for small groups and specialized instruction/interventions, larger classrooms (for integrated technology, special education needs, small group learning).

The report noted Monarch's inadequate acoustics, which is caused by structural design flaws and lack of sound absorption materials that could cause noise disruption between classrooms. Monarch's HVAC system and materials used for the roofing, plumbing, and walls throughout the school are of lesser quality than Rolling Knolls, which reduces overall durability and increases maintenance costs of the school. Further, Anne Arundel County Public Schools includes community use space since the county does not have separate recreation centers to offer youth extra opportunities.

Lastly, Monarch was not subject to State procurement, prevailing wage, and Minority Business Enterprise requirements, which likely contributed to the difference in cost between the two schools. The commission will continue studying these factors for its report in December.

MEC supports finding ways to reduce costs. However, the State's academic standards demand that school facilities support a rigorous 21st century curriculum. Further, in areas of high poverty and low resources, allotting space for community use and additional programming through strategic partnerships is critical.

MEC recommends that the commission recognize the authority of local school districts to determine space needs for the unique populations that they serve. And to ensure longevity and durability, MEC recommends that public schools continue to be built to high quality standards.

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**Testimony of Elizabeth Ysla Leight
President, Maryland PTA
Before the
21st Century School Facilities Commission
Dr. Martin G. Knott, Jr., Chair
Maryland House of Delegates
Appropriations Committee
July 21, 2016**

The following comments on the Maryland State Student Assessments are submitted on behalf of Maryland Congress of Parents and Teachers (“PTA”).

Good morning Chairman Knott and members of the Commission. My name is Elizabeth Ysla Leight. I am a volunteer who serves as President of the Maryland Congress of Parents and Teachers (PTA), and I appear before you today on behalf of the more than 160,000 parents, teachers, students, administrators and education advocates in more than 914 schools across the State of Maryland who together fulfill the mission of advocating on behalf of children and youth in the schools, in the community, before government bodies and all organizations that make decisions impacting children. Maryland PTA is a nonprofit association committed to the advancement of the educational excellence for all students across the State. Maryland PTA’s members volunteer thousands of hours every day to ensure that all students reach their full potential to be college and career ready. Maryland PTA also provides countless hours of training to families to enable them to become fully-engaged at their students’ schools and in their student’s educational success every day. As the state’s oldest and largest child advocacy organization, PTA is a powerful voice for all children, a relevant resource for families, schools and communities and a strong advocate for public education.

Maryland PTA appreciates the opportunity to testify today and applauds the 21st Century School Facilities Commission for recognizing that parent, community and others stakeholders are essential parts of a meaningful, decision-making process.

This Commission will study how to maximize our public investment in school facilities to address the future needs of students across the State. You have a high bar. Parents and students, educators and the general public will be watching to see what your vision of the future of education will bring. We anticipate your insight in reaching out to educators, boards of education, parents, students, community members and other industry experts will bring innovative future school design ideas.

Given the significant school construction needs and the disparity in building conditions statewide, Maryland PTA strongly urges the Commission to:

- Ensure high quality and properly designed school buildings support a 21st century education
- Ensure equity in funding for all school districts, especially low-wealth and significantly diverse districts

- Ensure that each school building meets the program, safety, health and community needs of each facility including:
 - Separate rooms for food service and indoor physical education/recess
 - Science/Technology labs, Art/Music Rooms, etc.
 - Space for Before/After School Programs, School/Community meetings/events, etc.
 - Ensure adequate funding so that school districts can mitigate health and safety issues and other high priority school construction needs within a reasonable time frame

Maryland PTA supports:

- Involving parents and community stakeholders in opportunities for public input and oversight of construction projects.
- Funding for public school construction and modernization that revitalizes the physical condition of school buildings, and the capacity of buildings to provide the appropriate space for:
 - State-rated class sizes.
 - Physical education & recess,
 - Career/technology education,
 - Art & Music that is grade appropriate
 - School meals, and
 - School & Community Meetings/Events
- Eliminating the use of portable structures and limit the duration of their use when they are necessary.
- Reviewing and modifying state-rated capacity formula and teaching stations including adjustments required for Special Needs and other Special Population Students.
- Maintaining adequate, safe and up-to-date school buildings and grounds regardless of the age of the building.
- Including effective security features in all school buildings.
- Ensuring that school facilities meet the needs of each enrolled student, group or program and serve all school communities.
- Using school construction materials that are cost effective, energy efficient, and structurally sound without lowering building standards.

In 1915, when Maryland PTA was first established, school classrooms were very different and teachers represented a common teaching method. Today, teaching methods have changed, and the student enrollment has become more diverse, but often the design of the classroom has remained static. The monolithic classroom with its rows of desks created a classroom environment that many of our students still use today.

It takes a village to make school construction more efficient and effective for future students. The last time a Maryland Commission looked into this issue was in 2004, and over the years, the cost to construct an average elementary school has more than doubled. So, the question remains—how are we going to maximize ongoing State investment so that every child has a safe and modern school facility that meets their educational needs?

It takes a village to raise a child is a popular proverb with a clear message: the entire community has an essential role to play in the growth and development of all our children. There is no better partnership than engaging parents, families, educators and communities to assure that all students—pre-K to high school—have the support and resources they need for success in school, in life and to reach their full potential.

Today, the model of parent involvement is characterized more inclusive with school-family-community partnership that engages mothers and fathers, stepparents, grandparents, foster parents, and other caregivers, business leaders and community groups—all participating in goal-oriented activities linked to student achievement. This is critical because the needs of students are as diverse as the families in our schools, we have at-risk youth and English Language Learners as well as STEM students in the same classes. It is in all our interest to ensure that all children receive a quality education. Our democracy, as well as our economy, depends on an educated citizenry and skilled workforce.

As this Commission discusses creating the school of the future, we trust that you anticipate a school that engages all school communities--two-parent as well as single-parent families, and foster families as well as families headed by grandparents raising their grand children. We ask that this Commission anticipate the need for effective communications in various languages and anticipate the ongoing technological needs the schools of the future will require to meet the needs of communities with multi-lingual and multi-cultural backgrounds. Whether this means greater bandwidth, or whether it means copiers that automatically translate into many languages, we need to plan for this eventuality now. We believe that the Commission should consider in future schools, a design that incorporates areas for special needs students as well as gifted and talented students who may want to take advance online classes within their own school.

Maryland PTA believes that the future of school design should include flexibility for each of the State's 24 school districts to address the needs of their distinct populations. In some communities, that school building may incorporate a food bank or health services that support the needs of the surrounding community.

Maryland PTA recommends that this Commission study and develop a new and equitable way to distribute state school construction funding to ensure that low-wealth districts are not at a disadvantage.

We strongly recommend that the Commission recognize the autonomy of each school system to engage parents in decisions based on the priority needs of the community. As we meet the need to accommodate these needs, engaging parents in the planning process becomes even more important.

We ask the Commission develop an equitable way to distribute state funding for school construction, by studying the capacity of each local district to address its own needs. The Commission should include looking at how other State or Local Agencies such as Park & Recreation, Health, Social Services, etc. may be able to share school facilities and funding.

The school environment impacts students and teacher's health, work, leisure, emotions and sense of place and belonging. When the school environment works well, students' lives and educational performance are enhanced. Schools with inadequate ventilation can make students drowsy and lower their performance and classrooms with poor acoustics and visual distractions can divert attention from lesson plans. Congested hallways, can fuel student tensions while schools that lack social gathering spots make school less inviting as a place to learn. Creating schools that are less restrictive for students with visual and hearing impairments as well as physical and mental limitations should be a priority. An engaged planning process that incorporates input from parents and students can help avoid these problems and strengthen student and parent's school community.

We encourage the Commission to design a process that engages parents and other community members in the design of the schools and maintenance of each school. It is better to hear from parents in the planning stage, rather than later as they report that their children are sweltering in classrooms that lack air conditioning, or report that children are attending school in classrooms with mold on the walls, or sit in classrooms alongside pails that collect the water when it rains.

As this Commission works to identify a long-term plan to address jurisdictions with growing enrollment, as well as those with flat or declining enrollment, we encourage you to explore existing utilization of public and private partnerships as alternatives to traditional general obligation debt to secure construction and ongoing maintenance dollars.

Tomorrow's school will require innovation in the ways we can only imagine. Students will be expected to learn new skills in new ways. Tomorrow's educational leaders will be designers of multi-generational learning communities who will utilize their knowledge, skills, experience and strategies in multiple disciplines: digital information technology and social networking as a way to ignite creativity and nurture innovation.

Each child is unique in his or her development, and classrooms designed for the future will bolster different experiences to promote personalized learning. Parents will see themselves as agents of transformative change that identifies and develops individual and collective student potential.

We ask the Commission to view the schools of the future as school communities that will value technology, and harness it to ensure all student academic learning is strengthened through the use of technology and remote online learning. All students, including Gifted and Talented Students, will engage remote learning in schools, so that a calculus professor at the University of Maryland can teach students in Allegany County or on the Eastern Shore in real time. These classes will be available to all students, especially those in communities that are rural or impoverished.

Our schools should utilize technology to teach children when they are the most alert and most focused. The science is clear that adolescents have a different circadian rhythm—they go to bed late and they wake up late. Utilizing technology will enable future students to design their own learning in a way that takes advantage of their peak performance time.

Our future schools will:

- Recognize the importance of having students work in teams and have classrooms that look more like board rooms, rather than the traditional multi-row seat design of today;
- Allow young people to develop skills that tap different subjects and areas of expertise to create new ideas. Students will be rewarded for working in teams or for being a good team member and team leader;
- Allow students time for independent learning online, where competence is demonstrated by the end product, not by simply restating a set of facts or equations;
- Encourage students to explore areas where they have never been taught and become experts through online learning;
- Utilize assessments as sources of data—not for a letter grade, but to see where a child is struggling and what we can do to help. The interactive process between student and teacher will enable teachers to better focus on the mastery for all students.

We foresee the role of parents changing as well, it will be essential for parents to engage learning alongside their children because much of the school work will be a result of both

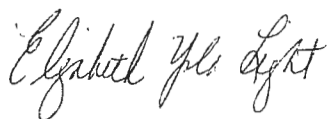
technology and knowledge that didn't exist when parents were in school. We need to engage parents as a way to empowering them, and make them a child's valuable educational ally. We embrace the idea that parents also have a desire to be re-educated so that they can help in the education of their children.

Since our schools will be interconnected, teachers will be able to engage parents on what their children will be learning. Today, parents find out via homework or a test what the child was supposed to know, usually through a report card or grade. Schools will provide parents with online advice and strategies for preparing their children. Much like we do now with National PTA's "Be A Learning Hero" program. This will keep parents engaged and allows them to be true partners with the educational process at school.

How do we prepare every child for the rapidly changing 21st-century world? We've heard it said time and again, with the advancement of technology, the jobs of today will no longer be here tomorrow. The wealth of information available to students at their fingertips will be astounding, but figuring out how to harness this information will be critical. We support creating schools that will help students "crack the code" and think critically. By providing children at an early age with an appreciation and a fluency of the new technology that surrounds them at an early age, they will be better prepared for their future holds. We believe that technology learning has to start early and should be incorporated in the school facility design beginning in Kindergarten, as well as high school. Kindergarten students will have access to and develop an appreciation for computer coding as just another language and as an extension of logic.

In conclusion, Maryland PTA members statewide are committed to advocating for quality public schools that meet the needs of the 21st Century and we look forward to working with members of the Commission, staff other professional and non-profit public education advocacy groups to ensure all children have adequate and equitable access to all of our public facilities in their communities. Thank you for providing us with this opportunity to testify. Maryland PTA stands ready to assist in any way possible to help you in this very important task.

Respectfully Submitted,

A handwritten signature in cursive script, reading "Elizabeth Ysla Leight".

Elizabeth Ysla Leight
President

Maryland Parent Teacher Association
President@mdpta.org

###

Good Morning/Afternoon Chairman Knott and Commission members. My name is Eric Guerci. I am a rising senior at Bethesda-Chevy Chase High School and the Student Member of the Montgomery County Board of Education. I want to start by thanking the Commission for recognizing the importance of incorporating the student voice into the scope of the commission's work plan. As SMOB, students of all walks of life speak with me about the challenges that they face in our school system. Many of their stories revolve around the facilities challenges that we face. They speak of the old, crumbling, uncomfortable and deteriorating buildings they walk into every single day.

The demographics of my County have changed drastically over the years, and, now we have many more poor students than ever before attending Montgomery County schools. Many do not have a permanent home. If they do, its condition is saddening, with limited space and uncomfortable conditions. For many of these students, school is their sanctuary. They will stay at school as long as they can to take advantage of the resources that they lack at home. The last thing that these students can afford is another barrier on their way to academic success.

While I am from Montgomery County, the topic of facilities unites students from around the state. I often speak to students across the issues about problems they face within their jurisdictions. We may face different challenges, but the need for help is a thread uniting us. I hear from students in Frederick who tell me of educational infrastructure that has not kept up with ever increasing enrollment. These students lament the sudden increase in portables that do not reasonably substitute real classrooms. In Baltimore County, overcrowding frequently hinders students' access to technology. It's common for students to be denied the opportunity to use a computer because that classroom must prioritize either accommodating those extra students or technology. This is never a choice our schools should have to face. Our facilities should act as equalizers, not buildings that promote further inequity. In Allegany County, the oldest high school in Maryland still stands. My peers there speak to me about outdated classrooms, overcrowded classes, and facilities in bad shape. These issues do not plague one high school, or one cluster, or one county, these challenges tie every student in the state of Maryland together. And these challenges require action.

And students don't want finger pointing. I never tell a student who asks that it is the county council's fault, or that it is incumbent on the state to chip in a little more so that their school can be expanded or renovated. Our challenges cannot be a Board of Education problem or an executive branch problem. It's a Maryland challenge. It is on all of us to improve the conditions of our facilities on behalf of students of our great State.

The physical condition of a school transcends aesthetics or tangible indicators. The investment we place in the brick and mortar of our schools signals to our student how much we value their education. Before a student even walks in the door, the outside of the building can welcome a student or deter him or her from possessing a yearning to learn. Students notice when their friend's school is being rebuilt. Their optimism increases when they learn that their school is next, or just a few years away.

The impacts have proven to be about more than just viewing enhancement or maintenance performance upgrades. Just this year MCPS renovated the formerly-decrepit, under enrolled Wheaton High School, which is part of a choice consortia of schools. Students within the consortia rank the high schools they would like to attend. Wheaton consistently lagged behind in terms of interest. Students only attended Wheaton because they did not get selected to go to their first or second choice. But this year when we opened a state-of-the-art facility interest surged, the programs became incredibly competitive to attend, teacher morale increased, and students have felt a new sense of belonging and pride in their school.

Again, I thank you for giving me the opportunity to testify today.

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(1883-1974)

WILLARD HACKERMAN
(1918-2014)

TIMOTHY J. REGAN
PRESIDENT AND CEO

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INFRASTRUCTURE
SUSTAINABILITY

July 20, 2016

Whiting-Turner's experience renovating and building Maryland schools spans 30 years. The construction of a school facility is one of the most rewarding projects that we undertake as contractors. These buildings are central to our communities and our future. In order to maximize the benefit for our communities we need to periodically re-evaluate the process, systems, methods and materials that are used to build these buildings. Many advances in technologies, processes and materials have occurred over the last decade that can improve upon how we build and renovate schools.

1. **Involve the contractor early in the design process:** The level of complexity of building construction is only increasing. It is no longer sufficient for the designers to indicate the size and composition of a building and leave the means and methods of the construction to the contractor. Construction means and methods and design are becoming more integrated and can have large schedule and cost impacts if not coordinated. Bringing the contractor on early in the design process allows for the contractor's experience in the marketplace and on past projects to influence the design and develop a project that is more schedule and cost effective. This is especially true in multi-phase or occupied campus projects where logistics impacting safety and construction schedules are very demanding.

The Construction Manager at Risk (CMaR), Construction Manager Agency (CMA) and possibly the use of Design Build (DB) provide these benefits.

2. **Include the maintenance staff in the design and construction process:** The construction of a facility may only take 1 to 2 years to build while the maintenance of that facility will be 40 plus year effort. Buildings need to be designed to be maintained. The maintenance staff tasked with maintaining the school system's facilities has a wealth of learned knowledge in what materials and equipment stands up over the years and what items create maintenance, "headaches". Incorporation of their input in the preconstruction process contributes to easier to maintain buildings and helps with standardization of some building materials and equipment with the school system. During the construction process the maintenance staff should frequently tour the ongoing construction and interact with the contractor and sub-contractors. Owner maintenance training should be formalized, well planned and extensive.
3. **Look at renovation options in lieu of new construction:** Changes in building technology, specifically in mechanical systems, provide options that increase the viability of renovation projects in lieu of building new facilities. While renovation of existing structures is not always viable, due to age of structure, existing conditions, layout or other factors there are many construction technology options

available that make renovation a cost effective option. Renovation projects by their nature are more complex and to be successful benefit from having the contractor on the team during the preconstruction process to work with the owner and design team on feasibility, schedule, cost estimating, phasing and logistics.

4. **Utilize technology to provide higher quality/lower cost construction:** Recent advances in building and design technology can provide benefits in school construction allowing for reduced conflicts, early detection of design issues, higher coordination and faster construction. Technology such as Building Information Modeling, (BIM), electronic scanning of existing spaces, total station layout, information sharing technologies are powerful tools to build better faster and more cost effectively. To realize the optimum benefit of these technologies the contractor should be brought on in the preconstruction period.
5. **Develop funding mechanism that would allow projects to follow a normal construction schedule instead of being abnormally drawn out or delayed because of cash flow issues:** On some projects the schedule is dictated by the availability of funding. This can cause projects to be delayed, thereby subject to material escalation and other schedule impacts. Also, project durations can be artificially lengthened because of the need to spread the project over a series of fiscal years. Over long project durations increase costs. A funding mechanism that prevents project delays and drawn-out schedules would be cost effective.
6. **Develop pre-fabrication options for school building components:** Prefabrication of building components has greatly expanded in a number of construction market sectors. The adoption of building information modeling technologies has enhanced the viability of prefabrication. While schools do not generally have the same level of identical space consistency that a hotel or hospital may have they can benefit from prefabrication efforts. Prefabrication offers the following benefits: (1) higher quality as the components are made in a factory environment instead of in the field, (2) quicker installation as these components are unitized and can be installed much more rapidly with fewer workers, (3) cost effective—as the construction of the units are at a factory level of production with significantly less waste and in situations involving prevailing wage are not subject to the prevailing wage rate.

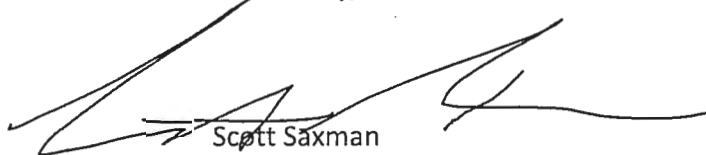
Some of the aspects of a school that could benefit from pre-fabrication are panelized building wall sections made out of structural studs, plumbing wet walls for bathrooms, mechanical systems and piping. Taken to a high level it is possible to build entire above ceiling mechanical sections including, HVAC, electrical, data, sprinkler and lighting in rack systems for ease of installation. The trend of prefabrication is expanding and will become a prevailing method of construction in the years to come.

7. **Building Envelope Analysis:** Building shells are becoming more efficient and more complicated. The correct design and construction of these building envelopes is vital to the energy efficiency and overall life of the structure. Failures in building envelopes allow air and moisture infiltration. In poorly sealed new structures that air infiltration can overwhelm the ability of the building mechanical systems to adequately heat, cool and dehumidify the structure. Utilizing a building envelope consultant during preconstruction, construction and the commissioning phase can eliminate building envelope issues that can be difficult to resolve post construction.

8. **Overhaul the way information is transmitted to the school systems at the conclusion of the project:** Building systems have exponentially increased in complexity over the last 50 years. However the post construction deliverables that contractors provide to owners, (as-builts, operation and maintenance manuals, equipment schedules etc.) have not changed. The volume of information transmitted to owners is tremendous but the format of that information is largely transmitted in 3 ring binders. This is of limited use to the school system staff that is tasked with maintaining these buildings as the information is too large, disjointed and rarely updated. An electronic system consisting of a dynamic, searchable and cross-referenced database that is compatible with maintenance tracking software will provide facility planners and maintenance staff the useful information, when they need it detailing how the project was actually built and what is required to maintain the many complex systems. Good maintenance of a facility will lengthen its useful life. Providing more accessible, correct and updatable information of the building will help school systems maintain their facilities.
9. **Commissioning:** As previously stated the complexity of the building systems that are installed in schools has increased dramatically in recent years. To ensure the optimum operation of these systems a formal commissioning process provides a high rate of return for the investment. The commissioning process is a verification that the systems are installed as designed and operating at optimum efficiency. Additionally, installation errors, faulty equipment or design errors can be uncovered before the project is turned over preventing energy inefficiency, premature equipment failure or issues that impact end user satisfaction.
10. **Green Building:** While green building technology provides a host of benefits to the schools systems, students and faculty there is a cost to the formalized system. Green building protocols provide increase energy savings, better air quality, less distractions in the educational environment and in general help protect the environment of our communities and state. A number of our clients in other industries follow the LEED program but without going through the formalized submission and administrative process required for the certification. This would lower cost both in design and in construction.

THE WHITING-TURNER CONTRACTING COMPANY

Sincerely,



Scott Saxman
Regional Manager



City of Rockville
111 Maryland Avenue
Rockville, Maryland
20850-2964
www.rockvillemd.gov

240-314-5000
TTY 240-314-8137

July, 19, 2016

Martin G. Knott, Chair
21st Century School Facilities Commission
c/o Department of Legislative Services
Legislative Services Building
90 State Circle
Annapolis, MD 21401

Dear Chairman Knott:

The City of Rockville is pleased to provide comments to the 21st Century Commission on school construction issues. For many years, the Rockville Mayor and Council has advocated in support of Rockville students attending sufficiently sized and updated school facilities.

The dual challenges of overcrowded schools and aging facilities are plaguing school systems throughout the State, and must be addressed in order to preserve the long term viability of local neighborhoods and economies. The need is most urgent in Montgomery County, where a total of 18,171 additional students enrolled in the public school system since the 2007-2008 school year. In Rockville, the Richard Montgomery and Rockville School Clusters are experiencing major overcrowding and the facilities are aging, and the Wootton Cluster has outdated facilities that need to be modernized.

It is widely known that the demand far outstrips available resources at the State and County levels. Now more than ever, it is critical that innovative, efficient, and cost effective practices are used to build schools that cost less, and enable school systems to adapt to rapid enrollment growth and needs for new programs. During the 2016 Session, Senator Rosapeppe spoke to the MML Legislative Committee about alternative and innovative school construction approaches including new building technologies, materials, and contracting processes used to build contract and charter schools in Baltimore City, Glenn Burnie, and Laurel. These initiatives sound promising and we are pleased to see the State's acknowledgement by appointing a representative from the Children's Guild, who led the efforts, to the Commission.

Commission materials state that the average Maryland cost to construct schools ranges from \$26 million for elementary schools and \$68 million for high schools, which is very expensive. Montgomery County Public Schools has some of the highest per student construction costs with an average of \$48,498 to \$59,513 per student. According to the Children's Guild, the per student construction cost of their projects range from \$13,018 to \$15,456 per student, which is significantly lower. Public school systems should be open to these innovative approaches and rethink the school construction paradigm, so that changes can be made to dramatically decrease costs and expedite construction schedules.

MAYOR
Bridget Donnell Newton

COUNCIL
Beryl L. Feinberg
Virginia D. Onley
Julie Palakovich Carr
Mark Pierzchala

ACTING CITY MANAGER
Craig L. Simonseau

CITY CLERK
DIRECTOR OF COUNCIL OPERATIONS
Kathleen Conway

CITY ATTORNEY
Debra Yung Daniel

Martin G. Knott, Chair

July 19, 2016

Page Two

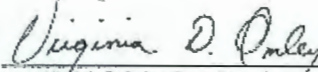
We request that the Commission recommend requirements for school systems receiving State funding to provide annual reporting that includes metrics which show the total cost of the problem that the school system is facing, and what percentage of the problem the system is addressing in each year of its Capital Improvements Program. Using metrics that measure progress will stimulate public school systems to fully embrace school construction challenges and to make the necessary improvements to address them.

Rockville appreciates the opportunity to share our views with the Commission. It is our hope that the Commission's Final Report will be a catalyst for innovation and improvements to public school construction processes in Maryland.

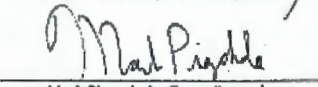
Sincerely,

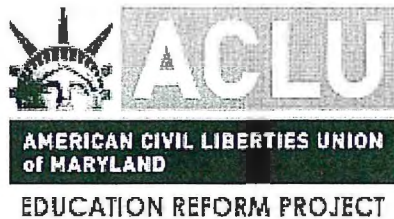

Bridget Donnell Newton, Mayor


Beryl L. Feinberg, Councilmember


Virginia D. Onley, Councilmember


Julie Palakovich Carr, Councilmember


Mark Pierzchala, Councilmember



Testimony for the 21st Century School Facilities Commission

July 21, 2016

Prepared by: Frank Patinella, Education Advocate, ACLU of Maryland Education Reform Project

The ACLU of Maryland believes that safe and healthy school facilities equipped to support modern academic programming are integral to providing a quality education. For schools with high concentrations of poverty and homeless students, it is also essential that space is allotted for services beyond the academic program – such as school-based health clinics, afterschool enrichment programs, family support services, and other services under the rubric of Community Schools. Given the dire school construction needs statewide, the ACLU commends Senate President Miller and House Speaker Busch for establishing the 21st Century School Facilities Commission to study and make recommendations to improve state school construction policies and practices. The commission should be guided by the state's Public School Construction Program goal to "equalize educational facilities and opportunities throughout the State." To this end, in accordance with the objectives laid out by these legislative leaders, the ACLU urges the commission to:

1. Recommend that the state complete another "Kopp" survey to comprehensively assess the condition of each school building in each district;
2. Recommend a funding level and revenue options to address critical facility needs;
3. Review the state's cost-share formula and local wealth and effort towards school construction to inform new ways to distribute funding to Maryland districts equitably; and
4. Ensure the school districts have the flexibility and authority to design and build schools according to their population's unique needs.

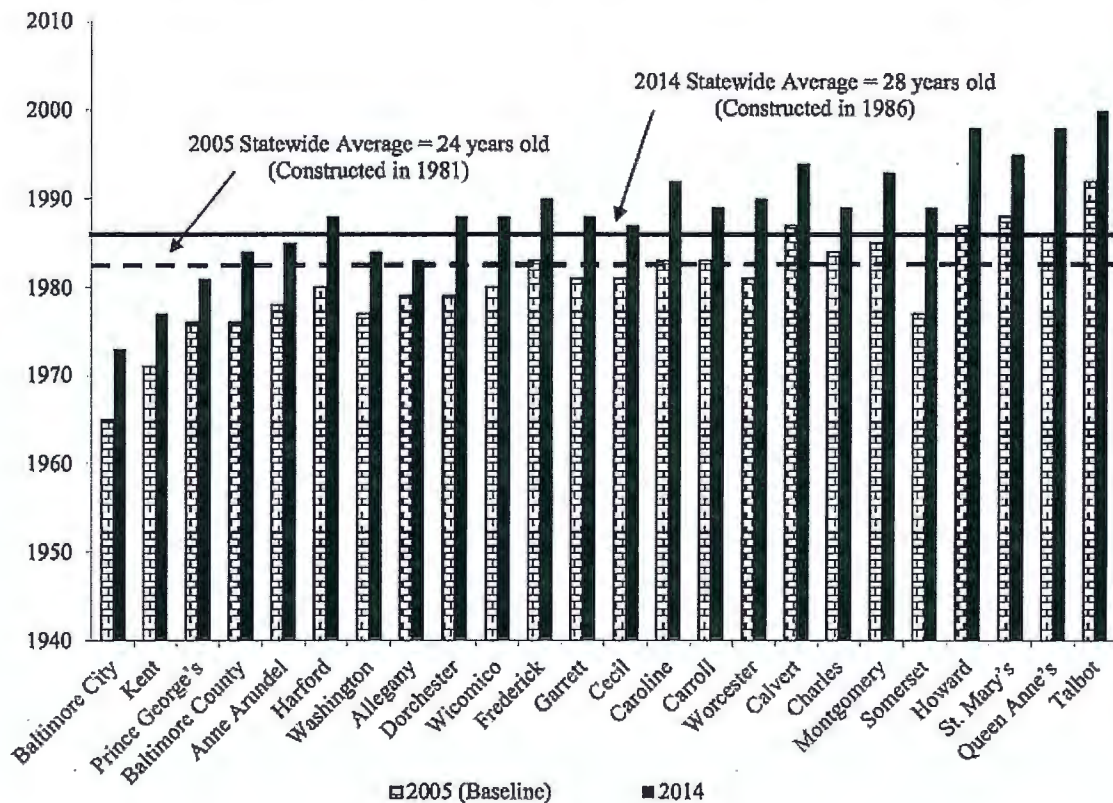
Another "Kopp"-type Survey is Necessary

The Kopp Task Force was established in 2002 to study "issues related to the adequacy and equity of the State's public school construction program." The final report touted the completion of the Facility Assessment Survey as the Task Force's "most important accomplishment" for "policymakers and the public in the long-term." To continue working towards adequacy and equity, it is critical that another school building survey be completed. Based on the survey in 2004, the Kopp Task Force reported that "Maryland faces a crisis in public school construction" and that nearly \$4 billion was needed to bring all Maryland school facilities to "minimum" adequacy. The survey showed a large disparity in building conditions, with low wealth districts having the most deficiencies. The report stated that many of these schools need to be fully renovated or rebuilt as "the building systems in these schools are at the end of their useful life and do not align with contemporary educational standards." The survey also reported on additional capacity needed in school buildings to accommodate enrollment growth. Since then, the state and local governments have made significant investments in school infrastructure but the state has not tracked the progress on its goal to meet standards of adequacy and equity. As one of the stated tasks, the 21st Century School Facility's Commission should review "the Kopp Commission findings and progress toward implementation." Given recent reports from the IAC showing that the estimated need statewide has grown to roughly \$15 billion, it is imperative that another comprehensive facility assessment be completed to show progress in each district over the past 12 years and to determine how the state's school construction program can achieve adequacy and equity for all of Maryland's public schoolchildren.

State Funding Should Be Increased

While changes in state school construction policies and practices can improve efficiencies and allow for more construction to be completed, it is imperative that the commission highlight the connection between the statewide need and available funding. The state's investment of approximately \$300 million annually in school construction falls far short of the estimated \$15 billion in needs, especially given the dramatic rise in construction costs over the past decade. If the status quo continues, school construction needs will continue to outpace funding resources – especially in low wealth districts. The chart below shows the average age of school buildings in Maryland districts, which is one critical measure of the need and disparities in facility conditions statewide.

Average Construction Year of School Facilities in Each Maryland District

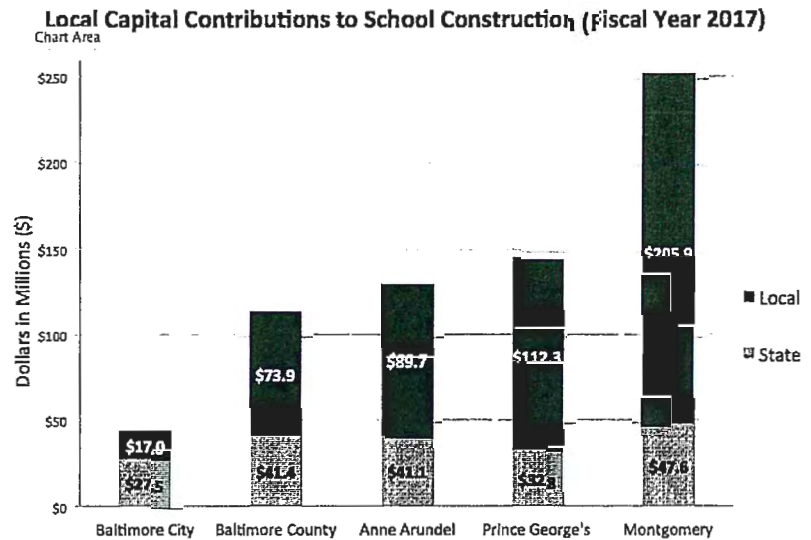


Source: Interagency Committee on School Construction, *Fiscal 2005*; Governor's Budget Books, *Fiscal 2014*

In exploring funding options for Maryland's school construction program, the Kopp Task Force reviewed several programs in other states. In Arizona, litigation forced the state to reform its school facility finance program to ensure that enough funding was available for districts to address deficiencies and rebuild old facilities based on a statewide survey. North Carolina also undertook a similar survey and funded their school construction program by a corporate tax. They also distributed funding based on local wealth and allowed counties to use a local option sales tax to meet cost share obligations. The Kopp Task Force report also provided a review of potential revenue sources for Maryland to consider. The commission should update revenue options reported by the Kopp Task Force and explore new revenue options for the state's school construction program (i.e. combined reporting).

Ensure Equitable Distribution of State School Construction Dollars

The capacity of each district to incur debt or contribute PAYGO funds to school construction is based on local wealth and varies greatly among Maryland districts. While all districts have historically given approximately 30% of their capital budget for school construction – showing similar local effort – low-wealth districts have a lot less capacity and therefore, cannot generate large amounts of funding for school construction. And the state's cost-share formula does not address this disparity – it does not guarantee more funding for low wealth districts and less for high wealth districts. The cost-share formula only applies to individual projects that are approved by the IAC, and does not consider the total amount given to each district.



Given Baltimore City's low capacity and high need, the ACLU proposed an innovative program to begin rebuilding city school facilities, using a third party borrower for the financing. This approach was adopted by the legislature in 2013. The school system has committed \$20 million each year in operating funding towards this effort and the City passed a 5-cent beverage container tax to meet its \$20 million annual obligation, along with the state's \$20 m. contribution. This program will end in 2021 and more than 100 city school buildings will continue to deteriorate if they continue to be dependent on the limited CIP funding provided by the city and state. Recently, certain counties that have a large number of relocatable classrooms and are growing significantly in student enrollment have successfully advocated for an additional \$40 million in state capital funding for school construction. There are many other districts – especially low-wealth rural districts – that have high needs and are not included in these programs. Thus, it is critical to not only comprehensively assess facility needs statewide, but also analyze the local wealth and effort of each district to determine how state funding should be distributed.

The commission should also explore alternative financing options for districts that have low capacity and high needs. Greenville Public Schools in South Carolina formed its own nonprofit organization to issue bonds for its \$1 billion school construction program and used its existing funds to pay off the debt over 25 years. Other districts increased their borrowing for school construction through their Industrial Development Authorities or through public-private partnerships. However, increased borrowing will demand additional funding to pay off debt. The commission should examine these financing models but ensure that recommendations for state support is based on local wealth and capacity.

Local Authority Is Important

Educational specifications for school buildings are adopted by each district's school board. It is important that the state continues to allow local school districts to determine their own space requirements so that schools can be designed to meet the unique academic and social-emotional needs of their students. For at-risk populations, space for small group learning, counseling, remedial courses, family support services, and other resources might be needed.

Testimony for the Knott Commission

Presented by Paul Geller, PTA Member

Thursday, July 21, 2016

Dear Commission Members,

My name is Paul Geller and I serve as a volunteer and officer at the local, county and state level within PTA. PTA is a passion I never knew would become part of my life. For some reason things start to click when someone comes to me with an issue, question or challenge. The wheels start spinning, I do more in-depth research and the advocacy begins.

And that is why I am honored to be here before you today.

Having done plenty of advocacy for school construction projects at the county and state level, I know the challenges involved in securing funding for projects. School construction needs are a serious issue throughout the Great State of Maryland. And today I am going to both express those needs and, as is my custom, provide you with some ideas for ways to fulfill these needs.

Idea #1: Managing Community Expectations

One of the most curious obstacles I have yet come across were the incredulous looks I received when advocating against a full-blown, tear down and rebuild of a school in my very own community where I led my local PTA/PTSA for four years. Realizing first hand how difficult funding was to come by, it became apparent that instead of razing a good building, we should do what homeowners and companies have done for years: a renovation, albeit a substantial one. The challenge is the resistance I received from the construction department of my very own public school system. I was given all sorts of assurances about how my school was not well built, how these types of renovation projects are not quality (read: long lasting) ones and more. Yet, one day, when I spoke with an architect whose company specializes in school building renovations I was told these types of projects go forward all the time. However, their company never seemed to be able to make inroads in our county. She went on to tell me there were other companies such as hers that would love to have even a chance to assess our schools and I could contact any one of them.

So what is the disconnect?

Amazingly enough, I feel the expectations of the community are the easiest to manage. I held a meeting of my PTSA and explained the situation we were in regarding our building. For years we have been on a lengthy waiting list to get a new school built. I also shared with them something many already knew - I had advocated for school construction projects funding for a while and the funds were challenging to come by. My community was open to a new way of thinking and universally expressed an interest in considering a renovation project of our current

building. Our teachers and staff requested more natural light, better storage and other improvements. And, by being open and candid with my community from the start, they understood. Sure a couple of people still wanted a new building, however we needed some other options to guarantee something would happen.

To me the disconnect occurred with the school system's construction staff. I know several of them and respect them greatly. What I have been unable to convey to them is the fiscal reality of the situation. Despite greatly increasing enrollment and aging buildings, new money is not flowing in for construction projects to keep pace. Nor will it in the foreseeable future. We need to think about this situation in an entirely different manner. Instead of stacking these projects up like huge timbers of cord wood, we need to split some logs (read: pursue renovation projects) so we can clear this tremendous backlog.

The key point for managing community expectations, in my opinion, is to offer the following: instead of holding out hope for a major project that may or may not get funded, the PTA should work together with the county school system for them to provide the school with a renovation project that meets the needs of that particular community in a cost effective manner. In this way, several projects can move forward at once for the same cost of one complete tear down and rebuild.

Idea #2: Casino Gambling Revenues from Table Games

If ever there was a way to perk people up about funding our schools, simply mention the split in revenues between casinos and the Education Trust Fund here in Maryland. When first sold to the Good Citizens of Maryland, it was implied that casinos would be a boon for education. Politicians smiling faces were featured on fliers mailed to our homes hyping and extolling the benefits of allowing casinos in our state. Moreover, we were told that if we did nothing, our neighboring states with casinos would reap all the rewards (read: receive all the revenue) of having these bastions of entertainment within their borders.

Well, in my view, these virtues all fell far short of the touting that was behind them. And table games are the worst "deal," pardon the pun, of all.

Do you have any idea of what the revenue split is between the casinos and the state education trust fund for Casino Gambling Revenues from Table Games? Yes? Then you are probably as dismayed as I am. No? Well, I hope you are sitting down for this one.

Maryland casinos generated gross revenues from Video Lottery Terminals and Table Games combined of more than \$1,143,000,000! That is correct, over \$1.14 billion!

The split of revenues for Video Lottery Terminals (also known as video slot machines, one armed bandits,...) for the Fiscal YTD as of June 2016 is 41% for the casinos (\$304,279,274.18), 43.4% for the Education Trust Fund (\$322,049,188.64) and a handful of other organizations get the remainder such as horse racing (\$57,061,943.96), local impact grants (\$39,656,341.66), Maryland Lottery (\$7,832,057.62), and Small, Minority, and Women-Owned Business

(\$10,815,365.89). While not optimal in my view, it is far fairer to the schools than the "craps" we rolled with table game revenues.

Despite all the hyperbole and promise of casinos being a financial windfall for our educational system, right now Maryland casinos reap a ridiculous 80% of revenues from table games. Yes, you read that correctly, EIGHTY PERCENT!!! And what do our kids get? A measly 20%. Yes, with \$402,278,787.58 in revenue the casino operators raked in an astounding \$321,823,030.08 while the Education Trust Fund only cleared \$80,455,757.50. And this is before the newest casino even comes online later this year. What kind of raw "deal" is this?

Basically, it is hard to infer anything other than we get the crumbs of a paltry 20% of revenues for our schools.

This needs to change.

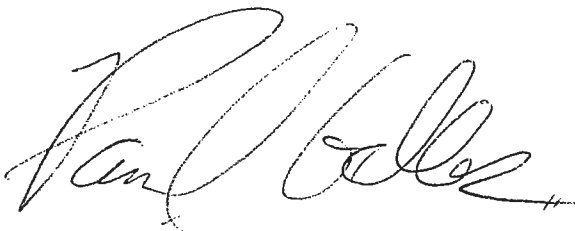
The difference in making this a reverse 80/20 split in favor of education would be great. And it could, if done right, benefit both construction and operating budget needs for all 1,400+ of our public schools, the bedrock of our state's educational system.

Imagine a \$241,000,000 influx of revenues into the Education Trust Fund for BOTH school construction projects AND for operating budgets EACH YEAR. This would go a tremendously long way in cutting down on the significant backlog of school construction projects statewide and providing more teachers and staff to help level the Opportunity Gap that exists among our students' educational achievement.

Please see Attachment A for a spreadsheet that gives a few scenarios for reallocation of these funds.

I thank you for your time and service to this great state of ours and, most importantly, doing all this work for our public school students...my/our pride and joy.

All the best!

A handwritten signature in black ink, appearing to read "Paul Geller", with a stylized flourish at the end.

Paul Geller
Proud PTA Volunteer

Local Unit	Total Enrollment	Total Percentage of Statewide Enrollment	Local Unit w/Each 5% Shift Of Table Games Revenue	Amount Gained Per Unit if 80/20 Table Games Revenue Was Reversed	Amount Gained Per Unit if a 50/50 Table Games Revenue Split	Increase Per Local Unit w/ Each 5% Shift Of VLT Revenue
Allegany	8,865	1.014%	\$203,896.19	\$2,446,754.28	\$1,223,377.14	\$375,929.88
Anne Arundel	79,518	9.093%	\$1,828,924.67	\$21,947,096.08	\$10,973,548.04	\$3,372,046.48
Baltimore City	84,976	9.717%	\$1,954,459.41	\$23,453,512.87	\$11,726,756.44	\$3,603,498.86
Baltimore	109,830	12.559%	\$2,526,104.74	\$30,313,256.90	\$15,156,628.45	\$4,657,459.51
Calvert	16,031	1.833%	\$368,715.15	\$4,424,581.82	\$2,212,290.91	\$679,811.83
Caroline	5,592	0.639%	\$128,616.75	\$1,543,401.01	\$771,700.50	\$237,134.79
Carroll	25,879	2.959%	\$595,220.47	\$7,142,645.68	\$3,571,322.84	\$1,097,426.88
Cecil	15,681	1.793%	\$360,665.10	\$4,327,981.26	\$2,163,990.63	\$664,969.70
Charles	26,258	3.003%	\$603,937.52	\$7,247,250.29	\$3,623,625.15	\$1,113,498.79
Dorchester	4,796	0.548%	\$110,308.64	\$1,323,703.72	\$661,851.86	\$203,379.55
Frederick	40,782	4.663%	\$937,991.47	\$11,255,897.69	\$5,627,948.84	\$1,729,404.66
Garrett	3,858	0.441%	\$88,734.52	\$1,064,814.21	\$532,407.11	\$163,602.65
Harford	37,536	4.292%	\$863,333.04	\$10,359,996.46	\$5,179,998.23	\$1,591,754.53
Howard	53,685	6.139%	\$1,234,762.21	\$14,817,146.47	\$7,408,573.24	\$2,276,570.28
Kent	2,106	0.241%	\$48,438.28	\$581,259.39	\$290,629.70	\$89,307.20
Montgomery	154,434	17.659%	\$3,552,002.73	\$42,624,032.75	\$21,312,016.37	\$6,548,940.20
Prince George's	127,576	14.588%	\$2,934,265.12	\$35,211,181.49	\$17,605,590.74	\$5,409,997.76
Queen Anne's	7,724	0.883%	\$177,653.04	\$2,131,836.44	\$1,065,918.22	\$327,544.54
St. Mary's	17,887	2.045%	\$411,403.40	\$4,936,840.81	\$2,468,420.41	\$758,517.51
Somerset	2,938	0.336%	\$67,574.39	\$810,892.73	\$405,446.37	\$124,589.06
Talbot	4,630	0.529%	\$106,490.62	\$1,277,887.46	\$638,943.73	\$196,340.14
Washington	22,327	2.553%	\$513,524.00	\$6,162,287.96	\$3,081,143.98	\$946,800.50
Wicomico	14,545	1.663%	\$334,536.95	\$4,014,443.43	\$2,007,221.71	\$616,796.40
Worcester	6,654	0.761%	\$153,042.89	\$1,836,514.72	\$918,257.36	\$282,170.04
SEED School	406	0.046%	\$9,338.05	\$112,056.65	\$56,028.33	\$17,216.87
Totals	874,514	100.000%	\$20,113,939.38	\$241,367,272.58	\$120,683,636.29	\$37,084,708.60



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VLT Gaming Revenue – Total

	June 2016	Calendar YTD 2016	Fiscal YTD 2016
Gross Terminal Revenue	\$59,395,661.59	\$370,138,186.30	\$741,694,171.95
Education Trust Fund	\$25,775,472.23	\$160,827,446.09	\$322,049,188.64
Casino Operators	\$24,412,939.04	\$151,736,660.94	\$304,279,274.18

Horse Racing	\$4,548,114.77	\$28,477,994.44	\$57,061,943.96
Local Impact Grants	\$3,164,992.32	\$19,791,070.06	\$39,656,341.66
Maryland Lottery	\$630,963.51	\$3,907,450.23	\$7,832,057.62
Small, Minority, and Women-Owned Business	\$863,179.72	\$5,397,564.54	\$10,815,365.89

Table Games Revenue – Total

	June 2016	Calendar YTD 2016	Fiscal YTD 2016
Non-Banked Games	\$2,482,739.00	\$17,451,656.75	\$35,207,619.25
Banked Games	\$31,487,518.37	\$193,505,612.16	\$367,071,168.33
Total	\$33,970,257.37	\$210,957,268.91	\$402,278,787.58
Education Trust Fund	\$6,794,051.47	\$42,191,453.77	\$80,455,757.50
Casino Share	\$27,176,205.90	\$168,765,815.14	\$321,823,030.08
Total	\$33,970,257.37	\$210,957,268.91	\$402,278,787.58

VLT Gaming Revenue – Hollywood Casino Perryville

	%	June 2016	Calendar YTD 2016	Fiscal YTD 2016
Gross Terminal Revenue	100	\$5,120,441.44	\$33,316,978.91	\$65,670,049.05
Education Trust Fund	45	\$2,304,198.65	\$14,992,640.51	\$29,551,719.99
Casino Operator	39	\$1,996,972.18	\$12,993,621.84	\$25,611,063.19
Horse Racing	8	\$409,635.31	\$2,665,358.28	\$5,253,619.30
Local Impact Grants	5.5	\$281,624.28	\$1,832,433.86	\$3,611,852.71
Maryland Lottery	1	\$51,204.40	\$333,169.74	\$656,743.13
Small, Minority, and Women-Owned Business	1.5	\$76,806.62	\$499,754.68	\$985,050.73

Table Games Revenue – Hollywood Casino Perryville

June 2016 Calendar YTD 2016 Fiscal YTD 2016

Knott Commission Testimony
Presented by Melissa McKenna
July 21, 2016

Dear Chairman Knott and Commissioners,

Mr. Chairman, I find your appointment to this Committee an amusing twist of fate since the subject of school construction is such a tangled and “knotty” issue, if you’ll forgive the pun. As the parent of a public school student in this great state, I am very concerned about the condition of our schools and seeing the condition of some of them turns my stomach in knots.

What is an elementary school, or rather what else is a school other than just a school?

- In the morning, it is before care starting at 7 am,
- It is collocated with a family service resource center,
- It is collocated with social services programs for infants, toddlers, students, and their parents,
- It is collocated with a school-based health and wellness center,
- It is a pre-K and HeadStart center,
- It is a special education center for children with Autism,
- It is the location of before- and afterschool programs,
- It is after care until 6 pm,
- It is a restaurant serving breakfast, lunch, and afternoon snacks,
- It is a community recreation facility on evenings and weekends,
- It is the fields location for intermural sports practices and games,
- It is a shelter in severe weather and active shooter situations,
- It is a concert hall for the school band and chorus performances,
- It is a community center hosting reading nights, plays, talents shows, carnivals and festivals,
- It is an assembly hall for faith-based organizations,
- And, don’t forget, for 6½ hours a day, 5 days a week it is JUST an elementary school.

That’s a lot of programs, services, and uses to get out of JUST one building.

While the list would be slightly different for middle and high school, it would be just as long. To families and communities, schools are so much more than a single-use structure. Keeping all those uses in mind, wouldn’t it make sense to build the most solid, long-term, efficient structure possible? You’d get a lot of bang for your building dollar.

I have been fortunate in my daughter’s school building. If I were to grade it, a C+ seems fair. Mostly adequate, sturdy, pretty safe, clean, well maintained, no frills. I have seen far too many that easily get an F. Compare that to the education she’s received inside those walls, A+, hands down. There are many permutations of grades on building adequacy and quality of instruction, but the bottom line is that the structure itself can help or hinder the instruction going on inside its walls. Having a healthy and safe facility to meet the well-being and social-emotional needs of its

occupants would go a long way to healthier occupants, better relationships, and overall better morale. Better morale equals happy staff. Happy staff yields better instruction, and better instruction means a better education for all students.

Would you consider the conditions we are subjecting our school children to as an acceptable working environment for yourself? Following are just a few examples to give you a taste, or smell, of a small sample of conditions in our school buildings on a daily basis.

The following scenarios are real but the names have been changed to protect our hard-working building services staff. They continue to do more with less, service more square footage every year with the same number of staff, and struggle to maintain aging systems and structures that have suffered the effects of irregular or no maintenance in the face of budget constraints.

Room 20 in Special Education Elementary School. It's November and the room temperature is in the 50s because the heat doesn't work. While the adults shiver in sweaters, the children are in short sleeves. They cannot wear extra layers due to sensory issues that would cause meltdowns affecting them not only for the school day but into the night at home. Because a change in routine, such as switching to another, warmer, room, or joining another class, can be traumatically disturbing for these children, these options are just not possible. So they suffer a frigid day, or 2 weeks, until the system can be fixed, for now. Imagine being cold for 5 hours a day. How well could you concentrate?

Rooms 9 and 10 at ABC Elementary School. It's late June and the building services staff are methodically and thoroughly cleaning and preparing the school for the fall. They have not had an opportunity to do so for many years since the school ordinarily hosts summer school, giving them only 2 weeks to turn the building around in between school sessions. Industrial fans are brought in to dry the floors after waxing, however there is a strong "fish tank" odor. Upon investigation and a nose full of algae inhalation from the air conditioning vent, it's determined that condensation from the unit does not flow out of the drainage tube immediately but has settled and grown rank. Can't do much for much everyone's upper respiratory tract, much less those with allergies or mold sensitivity. Imagine inhaling that air for roughly 5 hours a day. How many times would you be sick?

The Hallway at XYZ High School. The hallway is built on a slope. Not too bad. For a change it's ADA compliant. However, when the school was built the lockers were put in straight not following the slope of the floor. So what? So the lockers gradually get higher and higher until some are almost 2 feet above the floor. That's not going to be very accessible to the 5-foot-tall Freshman it was assigned to. Yes, Freshman, because there are only enough lockers in the school to accommodate the number of students in the Freshman class. Imagine you are that student. Could you even reach the combination lock to use the locker? How embarrassed would you be every day when your peers laugh at your situation?

Portable 10 at PDQ Elementary School. It's a fall afternoon and empty of occupants. It's a very good thing the students are inside for an assembly because there is an active shooter situation at the corner convenience store across the street. Students shelter in place. For those who had come in from the portables for an assembly that meant spending the next 3 hours inside the security of

a brick building but also losing 3 hours of instruction waiting in the gym while other classes could carry on in their regular (indoor) classrooms. One day in the late Spring, those same students were hastily summoned inside upon the principal learning of a derecho storm warning. Portables may be able to withstand the huffing and puffing of The Big Bad Wolf but not so much high winds or bullets. Imagine your former second grade (7-year-old) self in those situations. How safe would you feel returning outside to that temporary structure called a portable classroom?

Overcrowded Elementary School. With 10 portables only accessible via one secure, key card access door, those students share two restrooms (one boys and one girls) with the six classrooms in that wing. The result: ~260 students using two restrooms. There is a bathroom schedule. Really. Can't make this stuff up. And, yes, there are plenty of stories from parents that their children don't want to drink during the day so they don't have to use the bathroom. Imagine how you would feel: dehydrated and trying to conform your biological needs to an arbitrary schedule. How many urinary tract infections does this cause? How long could you concentrate, if you could, when you "have to go?"

There are many more examples I could include, however, it is so much better to see the real thing. So I hereby extend an open invitation for anyone willing to venture out to tour a school. My contact information is at the bottom of this testimony.

Without being too presumptuous, I think most of us adults would never suffer these situations as satisfactory working environments. I personally would not tolerate them for very long. Yet, we subject our children, little kids as young as 3 years old, to spending 6.5 to 11 hours (before and aftercare) in unacceptable conditions in these buildings 180 days a year. They can spend more time awake in a school than at home. Wouldn't you want your child in a better environment than the ones I've described?

Where the child goes, so goes the parent. A school is a community whether attended by neighborhood children or also by students in a magnet program. Kids make friends; parents make friends; relationships are built among families and school staff. The end result is that the school building is where people will gather. The surrounding area is also where the parents will end up before and after school and while waiting around for activities to end. A strong school builds and supports a strong community. Because my daughter was in a magnet program for the past 6 years, I have spent more time in a community that is not in my neighborhood. I've met friends for coffee and lunch at the neighborhood cafe, ran errands and supported local businesses, volunteered at school, became involved in the PTA, and even became involved in City government as it affected schools and students. I also am not the only one. Parents of all stripes become invested in the school and the community because that is where their children are. The level of active involvement may differ but all care equally.

I became involved first in my local PTA working up to (now on) the county level. I do it because I care, because if it doesn't directly affect or benefit my daughter it is for someone's child and they are all important, and because I can. So I make every effort to speak for all those that cannot for whatever reason, whether uncomfortable speaking in English or have work or home life challenges.

My point is that I and many other dedicated PTAers are not just here to complain. We have become part of the solution, working with appropriate school system staff, the Board of Education, and elected City and County officials and staff by offering creative and new ideas and challenging what has always been done.

We are working with the school system and various planning departments to better coordinate City/County growth to align the school capacity demands that new residential development brings with the planning timelines of both agencies. We worked with school system staff and County staff to study alternate school designs and the repurposing of office buildings. (Spoiler alert: they can be done but aren't any less costly.)

What do we want?

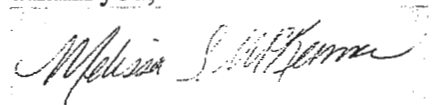
- We want to see our schools built to be the most solid, long-term, efficient (both in cost and energy usage) structures possible. We are looking for longevity and security. We expect our houses to last at least as long as our mortgage. Our schools should last as long as it will take to pay off the bond funding their construction.
- We want a fair funding formula based on the number of students in the public school system as a percentage of the students in the state. Increases and decreases in school enrollment would have a proportional impact.

What can we suggest?

- We suggest the creation of specific education bonding by the state for school construction and capital projects.
- Alternatively, we ask you to consider allowing counties to bond on their own to fund needed school construction and capital projects.

You may be able to tell by now that I feel very strongly that a great disservice is being done to our students. A quality education is the foundation of our children's lives and futures. The future of all of us depends on their success. To begin challenged on an impermanent, insecure footing endangers the sustainability of Maryland far into the future. The work of this commission will impact generations of our students to come. I appreciate your thoughtful consideration of this testimony and sincerely hope you take me up on my offer to tour a school.

Thank you,



Melissa McKenna

Capital Improvements Program Committee Chair,
Large County PTA

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Mark Coles
Executive Director

www.CHOICEworks.org

Project Labor Agreements and Community Workforce Agreements

Project Labor Agreements (PLAs) provide owners and managers with a tool for creating a stable, uniform labor management foundation that is open and fair for methodically planning and scheduling a project.

Yet project labor agreements do much more than ensuring economic and jobsite efficiencies for project owners. PLAs also permit public and private owners to leverage capital facility investments, through what are known as Community Workforce Agreements (CWAs), in order to generate significant and substantial benefits for local communities.

Over the past decade, Community Workforce Agreements (CWAs) have emerged as one of the best vehicles for establishing strong job quality standards on publicly-funded or subsidized construction projects, and for outlining a plan to recruit and hire low-income workers onto those projects using apprenticeship readiness programs (ARPs). ARPs create pathways both to registered apprenticeship and to the middle class.

CWAs are powerful and effective tools for a number of reasons. Negotiating a CWA provision brings building trades unions together with the project user/owner, the general contractor, government officials and community organizations to jointly develop the terms of the project.

Local governments in New York, Boston, Cleveland, Chicago, Seattle, Los Angeles, San Francisco, and Oakland, to name just a few, have pioneered efforts to negotiate and implement CWAs that provide employment and career training opportunities for local residents, reducing the need for publically subsidized services.

In sum, PLA's/CWA's create a strategic investment that provides an opportunity to improve the quality of life for individuals that live and work in our neighborhoods. They also strengthen the local economy by creating middle class jobs that support and attract local businesses.

Respectfully submitted;

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COMMUNITY HUB *for* OPPORTUNITIES *in* CONSTRUCTION EMPLOYMENT

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10. Toyota says to Yes to PLA’s – Toyota construction costs are 1/3 of their competition that eschew the use of PLA’s. Ten vehicle assembly facilities in the U.S and Canada all built under a PLA. The last one in Mississippi (a right to work state)
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THE NORTHWESTERN ACADEMY OF INTERNATIONAL STUDIES

A Transformational Blueprint for Reclaiming Academic Excellence

Presented by

The Northwestern High School Advisory Board

October 9, 2013

I. OVERVIEW OF EDUCATIONAL CONCEPT

A. Objective: To Transform Northwestern High School into a gold-standard city-wide academy that is founded on the core educational principles, curriculum elements, and professional teaching standards. Many of these standards are modeled after those of set forth in the International Baccalaureate Organization's (IBO) International Studies Model for diploma program high schools, without requiring that students submit to a rigorous year IBO examination. (Pursuit of official IBO recognition may be goal later, but not initially).

1. Embracing global diversity
2. High quality instruction and standards for academic excellence
3. Multi-disciplinary curriculum that combines common core instruction with international studies focus
 - a) *Foreign languages (e.g., Hebrew, Russian, Arabic, Chinese dialects, Urdu, Farsi, Hindi, Spanish, French and Portugese, since much of the Port of Baltimore's export business is with Brazil, which has the highest level of consumerism in the world outside of the U.S.)*
 - b) *International trade and business transactions (legal framework, international currency issues, transactional documents, trade agreements, tariffs, port administration)*
 - c) *Comparative government, civics, and world events courses*
 - d) *World Cultures and Civilization (geography, history, religion, literature, art, music, dance, sports, drama)*
 - e) *Comparative economics courses with speakers from the Baltimore World Trade Center Internship and Mentoring Program and the Greater Baltimore Committee an Johns Hopkins School of International Studies.*
 - f) *JROTC Leadership Academy (core concentration)***
4. Co-Curricular Activities
 - a) *Music / Dance*
 - b) *Sports / Athletics*
 - c) *Theater / Communications*

- d) Formalized mentoring programs (academic and career development)*
- e) International student exchanges*
- f) White House, State Department, Foreign Embassy and United Nations Internship program*
- g) School participation in the People to People Student Ambassador Program*
- h) Develop a formal link to two well established, nationally recognized leadership programs which place emphasis on early student involvement with corporations (that also provide college scholarships, mentors and summer jobs) , such as the HOBY and Inroad programs, but of which require that students be nominated by their school.*

B. Integrating JROTC Leadership Academy programs as a core concentration within the overall Academy of International Studies to prepare future military leaders and enlisted servicemen to more effectively achieve mission objectives when immersed in foreign multi-cultural environments. Providing a strong educational platform for NWHS students will increase their eligibility for college ROTC scholarships.

II. THE NEED

- A. Significant international demographic component to prospects for sustained population growth of Baltimore City: Mayor's objective of 10,000 new households
- B. Expanding Port of Baltimore (with widening of Panama Canal), significant increases in international cargo traffic and the need to maximize foreign import / export opportunities will create unprecedented workforce demands (port management, homeland security, and related career opportunities)
- C. Workforce development to service increasingly diverse global consumer demands and the needs of international business partners in a highly competitive global economy
- D. Building bridges across cultural divides in an increasingly diverse city
 - 1. African (Nigerian, Ghanaian, Ethiopian), / Caribbean
 - 2. Jewish and Eastern European Immigrants
 - 3. Hispanic
 - 4. Asian – Pacific Rim (China, Japan, India, Pakistan, Korea)
- E. Low utilization of educational resources caused partly by failure to bridge cultural gaps and divisions
- F. Park Heights Community Ethnic / Cultural Divide
 - 1. Racial tensions
 - 2. Crime
 - 3. Segregated housing and schools
 - 4. High vacancy rate / population census decline
- G. Cross-cultural leadership vacuum in governance, business, and community

III. THE SOLUTION

- A. Building upon the history of NWHS's founding legacy of integration and co-operation across cultural divides in pursuit of academic excellence (1969 – 1979) (50% black and 50% Jewish student population at its inception)
- B. Training an open-minded, culturally sensitive, globally aware workforce and cadre of leaders that are empowered with the necessary skillsets to govern and to lead Baltimore into an increasingly multi-cultural world and global economy
- C. Building strategic alliances and community partnerships across cultural divides to support the success of the school (attracting and recruiting faculty, students, and funding)
- D. Upgrading a campus that provides ample open-air spaces and a unique barrier-free suburban environment conducive to creative thinking and learning; re-designing that instructional space to fit its new educational focus and needs (e.g., state of the art language lab facilities)

IV. WHY NORTHWESTERN???

- A. NWHS Advisory Board
 - 1. **Who we are:** distinguished alumni, elected officials, and concerned citizens of great professional accomplishment and significant influence and standing in the community
 - 2. **Why we care:** strong sense of gratitude for the education we received at Northwestern; highly motivated by sense of moral obligation to “give back” to those students that follow behind us; the preservation of our living legacy of academic excellence is important to us, and can only be achieved through close interaction and support of current students and parents.

3. **Why we will make a difference** in the transformation of the school-- We acknowledge the following truths: that the school needs us now more than ever; that there is no waiting for Superman to fix the problems of this school and this community; that at this stage of our lives, we must do what Northwestern trained us to do – build community bridges, reach back, and lift up the next generation; that the Northwestern motto (“To strive, to seek, to find, and not to yield...”) is ingrained in our DNA. We are passionate Wildcats that never, ever yield.
4. Northwestern is uniquely geographically situated in one of the most culturally and racially diverse communities in Baltimore City.
5. Northwestern was from its genesis the first public high school to open as a fully integrated high school in Baltimore City.
6. Northwestern has the physical, plant, size, land and is geographically located within the fastest growing section of Baltimore City, the northwest district, to successfully accommodate two specialty programs, JROTC Leadership Program (which requires a large field to conduct drills) and an International Academy.

- B. Reconnecting the School with its history – reinforcing standards and expectations of academic excellence
- C. Unique interpersonal relationships among alumni, educators, elected officials, community leaders, mentoring organizations, foundations, business leaders, and other key stakeholders
- D. Ideal location and campus layout

V. THE ASK

- A. One year for completion of strategic plan for transformation of Northwestern Academy of International Studies with full cooperation of BCPS and negotiated responsibilities for NWHS Advisory Board during this planning phase
- B. Immediate suspension of plans to close Northwestern High School and similar suspension of plans to transition NWHS students to alternative schools, accompanied by a formal public announcement of the one-year study period for completion of strategic plan / feasibility study for establishment of new educational model at NWHS
- C. Immediate investment by BCPS in critical and necessary **soft cost (non-capital) maintenance improvements to the NWHS building to provide a conducive learning environment for current students. These would include:**
 - Replace 45 year old broken or missing 2” wide window blinds at every window in the school with new mini-blinds that can provide shade, hold in warmth and block distracting sunlight.
 - Remove all wooden planks from windows.
 - Restore all four existing boilers to full functionality so that there is adequate heat for students and faculty in the building.
 - Power-wash the entire exterior of the red brick building which has faded to a very drab and depressing brown.
 - Replace all of the current fluorescent light bulbs with modern, daylight fluorescent light bulbs which are safer and less harsh on the eyes than regular blue light fluorescent bulbs. Daylight fluorescent bulbs provide the illusion and some of the physical and mental health benefits of regular daylight, and do not cost more than old-style blue-light bulbs.
 - Immediately restore to Northwestern the \$10,000 student funding that has heretofore been deemed necessary to successfully administer the JROTC program, funds that were cut last year from the Air Force JROTC program at Northwestern. Without these funds

students cannot have the same level of readiness, training and drill preparation experienced by their predecessors or other students from JROTC programs where those funds were available.

- Purchase Promethean Interactive Instructional White Boards with pen intuitive and multi-touch functionality (cost \$5000 each) in every classroom. Retrain teachers in use of current teaching technologies, such as the Promethean Interactive White Boards allow easy creation and storage of unlimited lesson plans, and because they replace blackboards, chalk, paper handouts and flip charts, pay for themselves in one to two years. Promethean ActivBoards are now in most elementary and middle school level schools in Baltimore County where they are found in every classroom. About half of all County high school classrooms, and eventually all, will have and utilize Promethean ActivBoards for a faster, more interactive computer based instructional experience that levels the playing field for student with learning and writing challenges or other physical limitations. Prometheans allow testing, as well as calculation and tracking of individual student test scores, which lightens the workload on teachers.
- At the time of its establishment Northwestern was given the privilege of selecting for three years the top tier of all incoming new high school level teachers, which laid a foundation for a highly enriched learning environment that lasted for years since they brought with them the most recent technical skills and instructional techniques, and should be permitted to do so again. They are likely to be able to quickly acquire the skills necessary to utilize the interactive white boards computer based instructional equipment and utilize the Active Inspire to develop lesson plans.
- Quarterly benchmarks to be negotiated regarding respective roles and deliverables from NWHS Advisory Board and BCPS in conducting due diligence and in completion of strategic plan

VI. ADDITIONAL RESEARCH

- A. IBO requirements for international studies curriculum, faculty, and physical building and campus
- B. Identification of potential feeder schools and student populations for new high school
- C. Other high school models from around the nation for international studies programs
- D. Optimal demographics for school (student population, ethnicities / nationalities, socio-economic status, academic diversity)
- E. Optimal physical facility design for curriculum elements and proposed co-curricular activities
- F. Strategic alliances and community partnerships supportive of new school concept
- G. Revised capital and operational budgets for new school
- H. Training of faculty and recruitment of adjunct faculty for international studies instruction and JROTC
- I. Public and private sources of funding to augment instruction, curriculum, and physical plant upgrades
- J. Other considerations for transition?

VII. Important Consideration for BCPS:

There is a need to seriously consider that a decision to allow the now racially isolated Northwestern High School to continue declining, and now its possible closure, may trigger a HUD and Justice Department investigation into why Northwestern High School, which has the greatest opportunity for integration in Baltimore City was selected for closure, especially if plans are for it to be replaced by a private or parochial school for members of a racial group who presently reside within Northwestern boundaries, but refuse to attend the school. The motivation of the decision makers and parties who may benefit may be considered all too transparent to HUD and the Justice Department, which enforced civil rights laws.

There was a withdrawal of millions of dollars in HUD Community Development Block Grant (CDBG) funds last year. Baltimore City's failure to desegregate certain communities, like Upper Park Heights, was noted in HUD's Analysis of Impediments report, and the City was ordered to take corrective action. Before Northwestern is closed there needs to be serious consideration given to the legal and fiscal implication this may befall Baltimore City's budget due to a failure not only to desegregate the residential properties immediately surrounding Northwestern High School, which is still nearly all Jewish, but HUD may deem that the closure of a public high school in the northwestern community created a deliberate impediment to its desegregation.

VIII. WHAT BCPS NEEDS FROM US?

Northwestern International/JROTC Academy

Northwestern High School, 6900 Park Heights Avenue, Baltimore, Maryland

Presented on March 11, 2016 to:
The Baltimore City Legislative Delegation

Presented by:
Northwestern High School Advisory Board (NWH SAB); Northwestern National Alumni Association; Parent Advisory Council; NW Student Leadership Team



Greetings:

Thank you for this opportunity to present to the Baltimore City Legislative Delegation.

Celebrating its 50th anniversary this year, Baltimore City's Northwestern High School's legacy is strong and far reaching. A diverse coalition of Northwestern High School alumni, parents, students, city officials and community leaders speak in one voice to request that Northwestern High School be permanently removed from the closure list. Our goal is to work together to transform Northwestern High School at 6900 Park Heights Avenue into the Northwestern Academy of International Studies with a comprehensive JROTC program. We believe just as the National Opportunity to Learn Campaign states, *"You can't improve schools by closing them."*

Spearheading Northwestern's transition to an Academy of International Studies with a JROTC Program is the Northwestern High School Advisory Board (NWSAB) formed in June 2013 for the purpose of supporting public education and the operations at Northwestern High School by providing vision and leadership to transform the school into a top-notch academic institution.

Since 2003, Northwestern has been victimized - threatened with closures four times, served by five principals and five superintendents. Presently, Northwestern is not offered as a "choice" for high school aged children, thus the school has witnessed a decrease in enrollment. School closings disrupt whole communities. Children pushed from closing schools generally do not end up in better schools, and school districts often realize no significant financial benefit from closing schools. Baltimore City Public Schools has itself contributed to the circumstances that have de-stabilized and degraded the academic atmosphere at Northwestern High School.

Northwestern High School is the only city high school in the far northwestern section of the city. Northwestern is one of the few high schools in Baltimore City that sits on nearly 5 acres of grassland in a quiet, middle class neighborhood. A respite for many students, the peace and tranquility of the school's physical space lends itself to a perfect studying environment free of the many social ills that plague other City locations. Close to the beltway, business centers and thriving upscale and various cultural communities such as Mount Washington and northern Park Heights, the location adds to the learning experience of its students--exposing them to new communities and new cultures.

The original architecture and physical structure of the Northwestern High School building provide a large and spacious building with great amounts of natural light through numerous windows- perfect opportunity to use the building as a solar collector. A fully restored greenhouse on its roof, thanks to the kind generation of an alumnus, and other aspects of the building make Northwestern a great environmental resource that can easily be further developed into a full fledged "green" building—unique to other school or city structures. The campus includes an off-street parking lot and plenty of open space for expansion. In addition, this northwest corridor will benefit from the work of the Park Heights Renaissance where land and economic development, along with human development will influence this thriving and sustainable community. In the past ten years, the following investments have been made at Northwestern: football bleachers; tennis courts; volleyball court; sound system (gymnasium and auditorium); 900-seat auditorium with new air conditioning; renovated dance room; and renovated 450-seat library. The campus also houses the Home and Hospital School, the city-wide teaching program for children who are physically unable to attend school.

Northwestern has always had an open door policy with the surrounding communities including Fallstaff, Cross Country, Pimlico, Glenn and Pikesville who use the building and grounds for meetings, activities and events. Groups have access to the music rooms and instruments; track and field; gymnasium; pool, as well as classrooms.

When it comes to boosting student performance, the investment that BCPS makes in careful planning, community engagement, talented administrative staff, effective instructors, and curriculum offerings inside the four walls of a shiny new school are far more important than the billion dollars being spent on the new bricks and mortar. It appears that the North Avenue bureaucrats are simply inclined to throw in the towel and say "it's too hard" or "we don't have the resources" to change what's going on on the inside of these schools. And God forbid such important considerations might possibly delay the construction schedule by which many design firms and contractors stand to make a mega-fortune in the next few years!

Northwestern students deserve no less than the quality of education their parents and grandparents received at Northwestern High School in the 1960s and 1970s.

Sincerely,

Michael Haynie

Chairman, NWSAB

International Education Transformation

- 1. Embracing global diversity
- 2. High quality instruction and standards for academic excellence
- 3. Multi-disciplinary curriculum that combines common core instruction with international studies focus:
 - a) Foreign languages (e.g., Hebrew, Russian, Arabic, Chinese dialects, Urdu, Farsi, Hindi, Spanish, French, Portuguese, Japanese)
 - b) Comparative economics courses: International trade and business transactions (legal framework, international currency issues, transactional documents, trade agreements, tariffs, port administration)
 - c) Comparative government, civics, and world events courses
 - d) World cultures and civilization (geography, history, religion, literature, art, music, dance, sports, drama)
 - e) ROTC Leadership Academy (core concentration)

Northwestern Colin Powell JROTC Academy

- **The Northwestern Colin Powell Junior ROTC Academy** program prepares cadets for leadership roles while making them aware of their rights, responsibilities, and privileges as American citizens. The program promotes graduation from high school and provides instruction and opportunities to benefit the student, community and nation.
- **The Northwestern Colin Powell Junior ROTC Academy** consists of four levels of Leadership Education Training (LET) instruction. Each LET level must total 140 academic hours or the number of academic hours required meeting school requirements for 1.0 credit in courses such as math or English. **Army, Air Force, Marines and Navy Academy** awards credit toward graduation for each year of the JROTC program. The curriculum is linked to the McREL (instructional leadership resource) national standards. Every lesson and assessment actively engages students in higher-order thinking and skill performance. The program of instruction provides the flexibility to link the standards for elective credit and additional credit in subject areas such as physical education, health, wellness, life management skills, freshman orientation, government, civics, practical and performing arts, careers and so forth.
- The main goal of all **The Northwestern Colin Powell Junior ROTC Academy** learning experiences is the cadet's success. The JROTC curriculum is based on the principles of performance-based, learner-centered education.
- As a result, cadets:
 - Learn skills they can use, not outlines of information or isolated facts.
 - Know the performance expectations from the beginning.
 - Engage as active partners in the learning process.
 - Document accomplishments and competence.
 - Learn how to learn.

An Educational Community of Diversity

Northwestern
International/JROTC
Academy



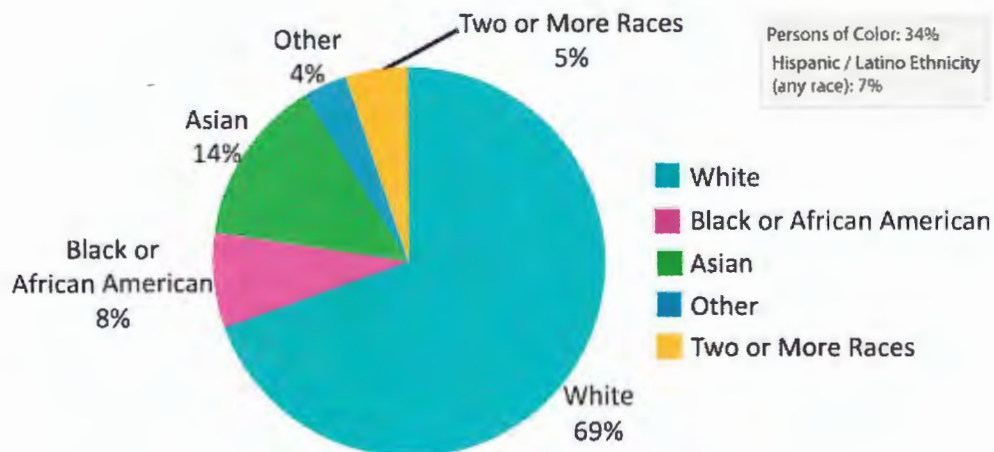
Growing Our Militaristic Intelligence



What are our Demographics?

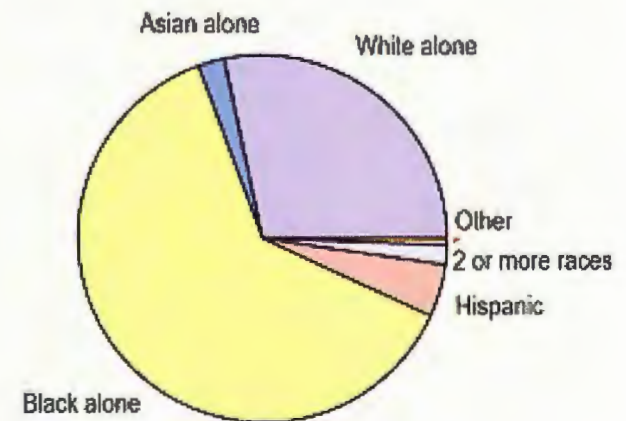
State of Maryland

Race and Ethnicity



Sources: 2010 Census, U.S. Census Bureau

Races in Baltimore, MD



Languages as a Teaching Science

- One of the most important and exciting programs at the International High School is Language Immersion. These are content area classes given completely in French or Spanish. The Language Immersion process means that students can improve and master their chosen foreign language in an actual subject area. All of the Language Immersion programs allow eighth grade students with prior experience from other language immersion schools, to continue this process as they transition into our ninth grade.
- For example, French Immersion is used for Social Studies. The class is taught by a teacher that is fluent in French and knows the content area; thereby, increasing the students' academic vocabulary in the foreign language.
- French Immersion Geography
- French Immersion Civics
- Spanish Immersion is offered in Social Studies and some science classes.
- Second Language Acquisition
 - Arabic
 - Chinese
 - French
 - Spanish

Co-Curricular Activities

- Music / Dance
- Sports / Athletics
- Theater / Communications
- Formalized mentoring programs (academic and career development)
- International student exchanges
- White House, State Department, Foreign Embassy internships, United Nations Internship Program
- School participation in People to People Student Ambassador Program

Co-Curricular Activities



Our Future Leaders

Integrating JROTC Leadership Academy programs as a core concentration within the overall Academy of International Studies to prepare future military leaders and enlisted servicemen to more effectively achieve mission objectives when immersed in foreign multi-cultural environments. Providing a strong educational platform for Northwestern students will also increase their eligibility for college ROTC scholarships.

- United States service academies environment in a high school setting.
- Room and Board options for those who need a environment change.

JROTC In Action...



Building a Culture of Diversity

Building bridges across cultural divides in an increasingly diverse Baltimore city.

- **African (Nigerian, Ghanaian, Ethiopian)**
- **Caribbean**
- **Jewish and Eastern European Immigrants**
- **Hispanic**
- **Asian – Pacific Rim (China, Japan, India, Pakistan, Korea)**

NOTE: There is a low utilization of educational resources caused partly by failure to bridge cultural gaps and divisions.

Diversity in Action...



The Solution

- A. Building upon the history of Northwestern High School's founding legacy of integration and co-operation across cultural divides in pursuit of academic excellence (1969 – 1979) (50% black and 50% Jewish student population at its inception)
- B. Training an open-minded, culturally sensitive, multi-lingual, globally aware workforce and cadre of leaders that are empowered with the necessary skillsets to govern and to lead Baltimore into an increasingly multi-cultural world and global economy
- C. Building strategic alliances and community partnerships across cultural divides to support the success of the school (attracting and recruiting faculty, students, partners and funding)
- D. Upgrading a campus that provides ample open-air spaces and a unique barrier-free suburban environment conducive to creative thinking and collaborative learning; re-designing that instructional space to fit its new educational focus and needs (e.g., state of the art language lab facilities)

Why The Campus at Northwestern High School?

- 1. **WHO WE ARE:** distinguished alumni, parents, students, elected officials, and concerned citizens of great professional accomplishment and significant influence and standing in the community.
- 2. **WHY WE CARE:** strong sense of gratitude for the education we received at Northwestern; highly motivated by sense of moral obligation to “give back” to those students that follow behind us; the preservation of our living legacy of academic excellence is important to us, and can only be achieved through close interaction and support of current students and parents.
- 3. **WHY WE WILL MAKE A DIFFERENCE IN THE TRANSFORMATION OF THE SCHOOL** --We acknowledge the following truths: that Northwestern needs us now more than ever; that there is no waiting for Superman to fix the problems of this school and this community; that at this stage in our lives, we must do what Northwestern trained us to do – build community bridges, reach back, and lift up the next generation; that the Northwestern motto (“To strive, to seek, to find, and not to yield...”) is ingrained in our DNA. We are passionate Wildcats who never, ever yield.
 - Reconnecting the school with its history – reinforcing standards and expectations of academic excellence.
 - Unique interpersonal relationships among alumni, educators, parents and students, elected officials, community leaders, mentoring organizations, foundations, business leaders, and other key stakeholders.
 - Ideal location and campus layout.

Future Culturally Diverse Leaders



OUR SCHOOLS ARE NOT FOR SALE!



Testimony for 21st Century School Facilities Commission
July 21, 2016

Montgomery County Public Schools

Introduction

Good Afternoon Chair Knott and members of the Commission. My name is Seth Adams and I am the director of the Division of Construction for Montgomery County Public Schools (MCPS). As a member of the facility planners statewide and also as MCPS facilities management team, we are all excited about the charge of this commission and believe that this forum is a great opportunity to share some of the experiences, challenges, and successes we have witnessed over the past decade as 21st Century educational design and construction has evolved.

As we have navigated through this evolution of teaching and learning, it is important to point out the 21st Century Learning phrase has at times been viewed as ambiguous. However, we have come to learn the fundamental elements of this concept are the ability to use current tools, media, and cultural patterns for learning while shifting focus to the knowledge and skills that are essential for success in this environment. The importance and impacts of the educational facilities on this delivery model have subsequently been raised to a level not seen for many decades.

National Trends

The national trends associated with 21st Century educational facilities have primarily been focused on five key elements—

1. Small Learning Communities
2. Flexible Learning Environments
3. The Incorporation of Technology
4. Green and Sustainable Buildings
5. Distance Learning

The small learning community concept ranges from project-based learning to career readiness education in a way that demands spaces where students can collaborate and participate in real-life environments and learn the importance of working as teams. This concept is important as it's a shift in the century old educational delivery model and one that truly relies on the facility design to create a collaborative environment that expands beyond a standard classroom setting.

The flexible learning environment certainly goes hand and hand with the small learning communities and is one that should never be overlooked. From furniture and equipment specifications to the size and shape of classrooms, are all opportunities to encourage collaboration. The ability for teachers to rearrange a space quickly for different modes of educational delivery and having appropriate program adjacencies can have positive impacts on students.

A major element to flexible spaces is also having the ability to utilize technology when needed. Technology infrastructure is of paramount importance when talking about building connections and using all indoor and outdoor spaces for learning opportunities. Incorporation of technology must be at the forefront of design decision making and impacts all areas ranging from electrical and data capacity to furniture solutions.

The next element is green and sustainable buildings. This should certainly not be a surprise to anyone as good design and construction practices have a tremendous impact on education and communities as a whole.

And finally, distance learning. Distance education practices have developed traction during the last several decades. However, technological innovation in communications have pushed distance education approaches to the forefront of educational practice at the start of the 21st century. While this concept may not have reached its full potential, it is important to understand as technology and communications evolve this may very well impact a large portion of future students and could have major implications on physical elements of various schools and programs.

Goals and Opportunities

While it is important to understand the nation trends and background of the 21st Century learning movement, it is equally important to understand the goals and opportunities as it relates to school facilities within the State of Maryland. Within the state, we acknowledge the national level practices but we also understand they will continue to change and evolve as we move forward. Therefore, the discussion and participation in these topics, such as this commission, are vital for state facilities leaders to make the appropriate decisions to reflect the high standards of Maryland education.

The other aspect to decision making is the data that we all track and collect and its impact on our state facilities decisions. It is a well-documented fact that people spend most of their time indoors and the various aspects of the indoor environment affect the occupant's well-being and performance. Design of high performance green buildings promises a better and healthier environment for its occupants and it is this promise that drives the construction industry to opt for sustainable construction and LEED certified buildings. While, it is proven that LEED certified buildings help in resource conservation and economic benefits, more research needs to be conducted to understand its true impacts on student performance and success.

There has been a slow but steady increase of research on the impact of public school facilities on educational achievement, but we feel more can be done to link facilities to student performance and success. Research has found that indoor environmental quality has significant impacts on the learning environment with major factors consisting of indoor air quality, ventilation effectiveness, thermal comfort, acoustics, and the quality of lighting. While comfort and space conditions are well documented, the acoustic and lighting elements have often been neglected.

Both have tremendous importance on learning, however little data has been developed to link student performance and general physiology to these physical building elements.

In addition to physical building elements, we feel it is important to understand the overall impact and holistic approach of a state and local school system sustainability plan. At MCPS, we have incorporated environmental sustainability into the curriculum and programs in order to equip our students with skills, knowledge, and an ethic of sustainability. We feel this commitment and changes in culture help create healthy and living learning environments by integrating economic, social, and environmental considerations into all of our decisions.

Linking this holistic sustainability approach to facility design and construction allows for sustainability to be the foundation of timeless design. This approach lends itself to a construction ecology approach that helps bridge the gap between facility decision makers and data driven decision making processes. A perfect example of this approach is the decision making involved in the quality of construction as well as a determination on the modernization of existing school facilities. The life cycle assessment method for determining the environmental and resource impacts of individual materials, products, and even an overall building over its life is an effective tool in this decision making. When linked with facility data involving student performance and anticipated outcomes, it is an approach that cannot be argued based on opinion.

Challenges for LEAs

While these goals and opportunities sound straight-forward and achievable, it must be noted there are many challenges facing Local Educational Agencies (LEAs) to successfully incorporate many of these best practices. Over the next several months, you will hear many discussions related to existing facility backlogs and deferred maintenance. As reported, over a span of more than 20 years, different organizations, public and private, have looked at the deficiencies in school infrastructure and have come up with a wide range of estimates of how much it would cost to bring education facilities into good condition. Although the numbers vary, the findings had this in common— the money that was being allocated to address the problem was inadequate, and the problem would become only worse as buildings continued to deteriorate and break down.

To reiterate the Interagency Committee on School Construction (IAC) report on facility maintenance, it is well understood that good maintenance of building systems and equipment will defer or reduce the need for major capital investments. In addition, a judicious, well-timed use of capital investment should reduce the burden on maintenance staff, time and resources while prolonging the life of the building. However, MCPS alone, with over 25 million square feet of built infrastructure, certainly has a monumental task of sustaining and maintaining these existing assets. Coupled with unprecedented student enrollment growth, balancing the limited capital investments between maintenance of existing school facilities and addressing space shortage is at a critical juncture.

In addition to the challenges noted above, several other issues remain and must be addressed by the Maryland LEA's. Challenges such as building and construction legislation that creates unfunded mandates; making determinations of what is a true best practice versus industry propaganda; shrinking labor forces in the construction industry coupled with exponential cost increases; and issues associated with technology implementation outpacing capabilities of construction trades and maintenance personnel. All while still meeting student and stakeholder expectations.

Recommendation/Conclusion

So with that said, I would again reiterate the importance of this commission to all state facilities decision makers and, if I may speak on behalf of all of us, the overall willingness to work with this commission to develop well-rounded recommendations. Moving forward, it is our goal to support the leadership in Annapolis to both help make the case for additional capital dollars for school construction, and also work to ensure legislation is vetted in a way to promote the efforts of the various LEA's, and not be derailed by the implementation of unnecessary or overly burdensome mandates. In addition, we understand that each LEA shares a common mission but is obviously operating under varying constraints. It may be worth discussing the option of providing LEA's with more flexibility in managing facilities. Areas such as administrative procedures at the state level and the inconsistencies between state and local jurisdiction requirements all add scheduling and cost control challenges for the varying LEA's. Within Montgomery County, we are currently and will continue to face the student enrollment changes but will also have to explore innovative ways to meet the overall needs of the county as it continues to urbanize. Many of today's standards and state administrative formula's may prove to penalize growing counties in their efforts to combine resources and maximize their overall capital dollars. It is through dialogue and understanding that flexibility can be introduced and red tape removed for LEA's to begin tackling local issues and priorities.

I thank the commission for the opportunity to testify today on this important issue.



FOUNDATION FOR FAIR CONTRACTING

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July 21, 2016

21st CENTURY SCHOOL FACILITIES COMMISSION

Prevailing Wage and Public School Construction

Chairman Knott and Members of the Commission:

The Foundation for Fair Contracting (FFC) is a non-profit organization created by labor and management in order to monitor all public works construction projects covered under a locality's Prevailing Wage Law and the Davis- Bacon Act. We accomplish this by reviewing public documents prepared and/or submitted by the owner and the contractor(s). We focus on proper payment of prevailing wage rates, proper classification of workers, licensing, and properly administered state apprenticeship standards.

As this commission explores efficiencies and cost-saving measures with regard to construction and maintenance of our state's public schools, it is critically important that we also use this as an opportunity to protect and strengthen our prevailing wage law. There is a common misconception perpetuated amongst those that oppose the law that prevailing wage significantly inflates the cost of school construction. But that's simply not the case.

In May of 2016, Kevin Duncan, Ph.D., Professor of Economics at Colorado State University-Pueblo, submitted a study entitled, "*Prevailing Wage Requirements, Contractor Bid Behavior, and School Construction Costs in Maryland: Evidence from Side-By-Side Bids.*" A copy of that study is attached hereto for the committee's review and reference. Professor Duncan found that:

Local education agencies (LEAs) are under considerable pressure to fund as many school construction projects as possible under constraining budgets. It is understandable that under these conditions LEAs seek cost-saving approaches including the avoidance of prevailing wage requirements. But, the preponderance of research, including a study of school construction costs in Maryland suggests that eliminating the payment of prevailing wages will result in, at best negligible cost savings. Furthermore, this desire to cut construction costs, along with a project award process that favors the lowest bid, increases other costs for Maryland taxpayers. When the low bid wins a publicly funded project, contractors are also under pressure to cut costs by decreasing wage costs, reducing health and retirement benefits, and shedding training costs that are needed to prepare the next generation of construction workers.

His study further found that an increase in bid prices from contractors competing for school construction work was not due to prevailing wage, but instead due to a low level of competition. His findings indicated that, "the difference in side-by-side bids is negatively related to the level of bid competition," and that the "bid mark-up decreases as the number of competing contractors increases."

Professor Duncan concluded that "if the State of Maryland were to repeal or substantially weaken its prevailing wage standard, it is unlikely that significant cost savings would result from lower construction costs."

In fact, the extensive body of peer-reviewed research conducted in the last 15 years has consistently found that repealing or weakening prevailing wage laws will not save taxpayer dollars, will not reduce overall school construction costs, and actually will not free up additional budget resources to build more schools.

In 1999, Associate Professor of Economics at SUNY Cortland, Mark J. Prus, Ph.D., published a study entitled, "*Prevailing Wage Laws and School Construction Costs: An Analysis of Public School Construction in Maryland and the Mid-Atlantic States.*" The study found that, "For all practical purposes there is no statistical [cost] difference between building a public school in a state with or without a prevailing wage law."

In 1998, Peter Phillips, Ph.D., Professor of Economics at the University of Utah, published a study entitled, "*Delaware's Prevailing Wage Law: Its History, Purpose and Effect,*" which analyzed construction costs of schools built in states with and without prevailing wage laws from 1991-1997, including 1,700 elementary schools, 900 middle schools, and 600 high schools. The study found that, in states with a Prevailing Wage law, public elementary schools cost only 3% more to build than private elementary schools. However, in states that do not have a Prevailing Wage law, public schools cost 8% more to build than private schools.

Similarly, a 2001 study conducted by Professor Peter Phillips entitled, "*A Comparison of Public School Construction Costs in Three Midwestern States that Have Changed Their Prevailing Wage Laws in the 1990s,*" found that a comparison of school projects in three Midwestern states with and without prevailing wage laws had "no statistically significant difference between those public schools built with prevailing wages and those public schools built without this regulation. ... The higher wage rates required by prevailing wage regulations insure that all contractors bidding on the job will use skilled labor when building the school.... Thus, prevailing wage regulations offer school boards some assurance that the project will be skillfully built and workers on the job will be carefully managed. Consequently, prevailing wage regulations provide some assurance against cost overruns and downstream maintenance costs."

A variety of other studies examining states across the nation have ascertained the same findings: eliminating prevailing wage requirements on school construction projects created no savings to taxpayers. On the contrary, quality of workmanship, timeliness, and availability of skilled craftsmen suffered.

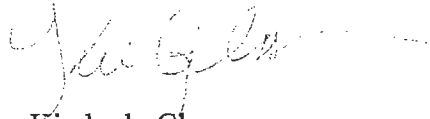
- A 2013 study of the effect of Ohio exempting its schools from prevailing wages in 1997 found that Ohio did not save any money from its school exemption. "*Comparison of Union and Non-Union Bids on Ohio School Facilities Commission Construction Projects*," Alan Atalah, International Journal of Economics and Management Engineering, Mar. 2013, Vol. 3 I, pp. 29-35.
- A study examining construction costs in West Virginia and five neighboring states found no statistically significant difference in construction costs for elementary schools, secondary schools and universities between jurisdictions with and without prevailing wage laws. "*West Virginia's Prevailing Wage: Good for Business, Good for Workers*", Sean O'Leary, West Virginia Center on Budget & Policy, January 2015.
- A nationwide, peer-reviewed study of 4,000 new schools built nationally found that there was no statistically significant effect of prevailing wage regulations on total construction costs. "*Making Hay When It Rains: The Effect Prevailing Wage Regulations, Scale Economies, Seasonal, Cyclical And Local Business Patterns Have On School Construction Costs*," Hamid Azari-Rad, Peter Philips, and Mark Prus, Journal of Education Finance, pp. 997-10 (Spring 2002).
- And, a study comparing new school construction costs in Kansas to surrounding Great Plains states that retained their prevailing wage laws found no difference in square foot construction costs. Wages were cut substantially and yet there were no construction savings because training and productivity both declined. "*Kansas and Prevailing Wage Legislation*", Peter Philips, University of Utah, February, 1998.

The facts are clear. The prevailing wage law is not a factor when considering school construction costs in Maryland. In fact, prevailing wage laws protect Maryland taxpayers by ensuring our skilled workers receive family-sustaining wages and benefits. In addition, prevailing wage laws also protect our Local Education Agencies (LEAs) by ensuring that they receive a quality product built safely, on time and within budget.

The FFC would like to serve as a resource to this Committee. Should any Committee members have questions regarding the prevailing wage, or if there is any additional information we can provide, please do not hesitate to contact our office.

Thank you for the opportunity to present this information.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kim Glassman", written in dark ink.

Kimberly Glassman
Director

Enclosure

**Prevailing Wage Requirements, Contractor Bid Behavior, and School
Construction Costs in Maryland:
Evidence from Side-By-Side Bids.**

Submitted to:

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Foundation for Fair Contracting
5829 Allentown Rd.
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David Lever
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By

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May 4, 2016

About the Author: Kevin Duncan, Ph. D. is a Professor of Economics at Colorado State University-Pueblo and will be a visiting scholar at the Institute for Research on Labor and Employment at the University of California, Berkeley in 2016. He teaches business and regional economics in the Hasan School of Business, has participated in U.S. Bank economic forums, served as the Director of the Center for Business and Economic Research, and held the position as Senior Economist of the Healy Center at CSU-Pueblo. In these capacities he has conducted applied research for the local chamber of commerce, the economic development corporation, state and local policy proposals, businesses, non-profits, and labor unions. Duncan has also examined the effect of prevailing wage laws on construction costs and productivity, construction worker poverty and reliance on public assistance, minority employment in the construction industry, and the economic impact of the wage policy. Duncan has provided testimony and research related to construction labor market policy to state legislatures in Colorado, Hawaii, New Hampshire, and Vermont. His research on prevailing wage laws has appeared in leading national and international peer-reviewed academic journals such as *Construction Management and Economics* (University of Reading, UK), *Industrial and Labor Relations Review* (Cornell University), and *Industrial Relations* (UC Berkeley). He received his Ph. D. in Economics from the University of Utah and his BA in Economics from the University of California, Riverside.

Acknowledgments: The author is indebted to David Lever, Director of the Public School Construction Program of the State of Maryland for providing the bid data used in this report and for useful insights. The author would also like to thank Kimberly Glassman, Executive Director of the Foundation for Fair Contracting, for providing additional information that was also used in the report.

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Executive Summary

The State of Maryland has a vigorous and ongoing public policy debate over prevailing wage regulations. For example, in the 2016 legislative session several proposals were made to either expand coverage, exempt coverage, or alter enforcement of the existing policy.¹ Much of the debate in Maryland, as elsewhere, is centered on the effect of the wage policy on construction costs. Information provided by the Public School Construction Program indicates that prevailing wage requirements add 11.7% to the cost of building schools. Evidence of this claim is obtained from side-by-side comparisons of contractor bids; one based on the payment of prevailing wages and the other ignoring the wage policy. This study conducts a detailed statistical analysis of these bids. Results indicate that differences in side-by-side bids vary with the level of bid competition, bid history, peak bid month, bid rank, and contractor reactions to the 2014 policy expansion. Since these bid data do not isolate the effect of prevailing wages from other factors, these data do not accurately measure the influence of prevailing wages on construction costs. As a consequence, any cost estimate obtained from this information is too high. Prevailing wage requirements may increase the cost of public school construction in Maryland, but this cost impact cannot be accurately measured by differences in side-by-side bids.

Side-by-side bids for school roof replacement projects located in Carroll, Frederick, Howard, and Washington counties are used in this study. These projects were selected because they provide for an “apples-to-apples” comparison and there are a relatively large number of these projects. The study takes advantage of 10 roofing contractors who bid on more than one project between 2012 and 2015. As a consequence, the study is based on 75 bids by these ten contractors all of which are open shop businesses.

Table E-1 includes data on the least and greatest difference in contractor side-by-side bids. To illustrate, consider Contractor #1. In one of these bids, the difference between the prevailing wage bid and the bid without prevailing wages was as low as 5.3%. In another bid by this same contractor, the difference in side-by-side bids was as high as 30.1%. There is considerable variation between contractors. Note that Contractor #5 submitted at least one bid where there was no difference between the prevailing wage and non-prevailing wage bid (where the lowest bid difference is 0.0%). On the other hand, Contractor #6 had one bid where the difference was as high as 42.1% (see highest bid difference for #6).

Table E-1. Percent Differences in Side-By-Side Bids (With and Without the Payment of Prevailing Wages) by Contractor for Roof Replacements, 2012-2015.

Contractor Identity	Lowest Bid Difference	Highest Bid Difference	Average Bid Difference
Contractor #1	5.3%	30.1%	12.7%
Contractor #2	1.8%	16.7%	5.5%
Contractor #3	3.4%	33.1%	10.2%
Contractor #4	3.4%	15.4%	11.7%
Contractor #5	0.0%	5.3%	3.2%
Contractor #6	8.9%	42.1%	17.4%
Contractor #7	1.1%	5.7%	3.0%
Contractor #8	8.1%	17.7%	13.5%
Contractor #9	1.5%	26.8%	14.7%
Contractor #10	5.7%	12.5%	9.8%
Overall Averages	3.9%	20.5%	10.2%

Source: Public School Construction Program.

¹ For examples see House Bills 859, 860, and 1257 as examples. Accessed at <http://mgaleg.maryland.gov/2016RS/bills/hb/hb0859f.pdf>, http://mgaleg.maryland.gov/2016RS/fnotes/bil_0000/hb0860.pdf, and <http://mgaleg.maryland.gov/2016RS/bills/hb/hb1257f.pdf>.

Many of the “highest bid differences” reported in Table 1 exceed labor costs as a percent of overall costs for this type of construction activity. Information from the *Economic Census of Construction* indicates that labor costs (wages and benefits) for specialty trade roofing contractors in Maryland are approximately 19.3% of total construction costs. So, the bid by Contractor #6 that is 42.1% higher with the payment of prevailing wages is approximately 2.2 times larger than typical percent labor costs for roofing projects. If the effect of prevailing wages is isolated from other factors that also influence bid costs, the impact of prevailing wages on bids should be fairly uniform from one project and bid to the next. For example, if prevailing wage rates add 10% to the cost of roof replacements, the side-by-side bids should uniformly vary by about 10%, depending on wage differences between counties or over time. Clearly, the variation in side-by-side bids indicates that factors other than the payment of prevailing wages have an impact on bid differences.

The statistical analysis examines the effects of the number of bidders, accumulated bid history, the peak bid submission month, contractor bid ranking/place, and contractor bid reaction to the 2014 policy expansion on side-by-side bids.² A summary of these results are reported in Table E-2. To illustrate, consider the impact of bid competition. If there is no competition for a project (only one bidder) the difference between bids with and without prevailing wages is 16.6%. When two bidders are involved, the difference is side-by-side bids decreases to 15.1%. With eight bidders the difference falls further to 5.7%.

Table E-2: Summary of Results from the Statistical Analysis:
Factors Affecting Differences in Average Side-By-Side Bids
(with and without Prevailing Wage Rates).

Project Characteristic:	Difference in Average Bids With and Without Prevailing Wages
Bid Competition:	
One Bidder	16.6%
Two Bidders	15.1%
Five Bidders [†]	9.9%
Eight Bidders	5.7%
Bid History:	
First Bid	14.5%
Fifth Bid [†]	9.9%
Thirteenth Bid	-0.4%
Peak Bid Month (March):	-8.0%
Contractor Bid Ranking:	
First Place	7.8%
Third Place [†]	9.9%
Eighth Place	18.1%
After 2014 Policy Change:	4.5%

Source: Public School Construction Program. [†] Estimate based on average values (5.293 for number of bidders, 4.64 for bid history, and 3.107 for bid ranking).

The results with respect to bid history suggest that as contractors gain experience with the dual bid approach, the differences in side-by-side bids decreases. For example, with the first bid, the gap between the two tenders is 14.5%. By the fifth bid experience the disparity falls to 9.9%. The statistical estimate indicates that the difference in the two bids collapses by the 13th bid. The difference in side-by-side bids

² The statistical analysis examines the change in each factor on side-by-side bids taking the other factors into account.

is also related to the eagerness of a contractor to win a project. During the peak bidding month of March, the gap between the two bids is 8% percentage points lower than off-peak times of the year. Similarly, findings for bid ranking/place indicate that when a motivated contractor places the lowest bid, the difference in side-by-side bids is 7.8%. With a third place finish the difference is 9.9%. When a contractor finishes in eighth place the difference rises to 18.1%. Results also indicate that bids submitted after the 2014 policy change that expanded prevailing wage coverage of school projects, the difference in the average side-by-side bid increased by 4.5% (compared to bid differences before the policy change).³

The results reported in Table E-2 illustrate how factors that are not related to prevailing wage requirements affect differences in side-by-side bids. These results indicate that the bid data do not isolate the cost effect of prevailing wages from other influences and, as a consequence, do not accurately measure the influence of prevailing wages on costs. Prevailing wage requirements in Maryland may increase the cost of public school construction, but this cost effect cannot be accurately measured by differences in side-by-side bids.

Local education agencies (LEAs) are under considerable pressure to fund as many school construction projects as possible under constraining budgets. It is understandable that under these conditions LEAs seek cost-saving approaches including the avoidance of prevailing wage requirements. But, the preponderance of research, including a study of school construction costs in Maryland suggests that eliminating the payment of prevailing wages will result in, at best negligible cost savings. Furthermore, this desire to cut construction costs, along with a project award process that favors the lowest bid, increases other costs for Maryland taxpayers. When the low bid wins a publicly funded project, contractors are also under pressure to cut costs by decreasing wage costs, reducing health and retirement benefits, and shedding training costs that are needed to prepare the next generation of construction workers.

There are aspects other than construction costs to consider when evaluating prevailing wage policy. For example, research by Manzo, Lantsberg, and Duncan indicates that states with adequate prevailing wage regulations experience less construction worker poverty and reliance on public forms of insurance and assistance. A comparison of states with no or very weak prevailing wage laws to states with average or strong wage policies indicates that construction workers in states with at least adequate prevailing wage laws are less likely to earn an income below the official poverty level. On average, 9.4% of construction workers in states with average/strong wage policies earn incomes below the poverty level while 15.2% of these same workers in states with weak or no prevailing wage laws earn below poverty-level incomes. As a consequence of lower poverty rates, only 5.1% of blue-collar construction workers receive aid from the Supplemental Nutrition Assistance Program (SNAP) in states with average/strong prevailing wage laws

³ Since the effect of the policy change is measured by comparing bids submitted before and after July 1, 2014, other factors that changed over this time period may also influence the estimated 4.5% increase. One possible influence is the increase in prevailing wage rates over time that would inflate bids if the wage policy applies. However, growth in prevailing wage rates for roofers/water proofers in the four counties included in this study was relatively low. Between 2012 and 2015 the prevailing wage and benefit rates for this job classification increased by an average of 3.5%. This increase is substantially lower than the overall 9.2% increase in the producer price index for nonresidential roofing contractors over the same period. These data suggest that prevailing wage growth in Maryland increased proportionately less compared to overall costs. Also, given that labor costs are a low percent of total costs for Maryland roofing contractors, the impact of the increase in prevailing wages on total costs is disproportionately low. If wages increase by 3.5% and labor costs are 19.3% of total costs, the effect of the wage increases is approximately 0.7% ($3.5\% \times 19.3\% = 0.7\%$). Consequently, the change in prevailing wage rates is insufficient to account for the 4.5% increase in side-by-side bids after 2014. The remaining explanation is that the increase in side-by-side bids is due to the reaction of nonunion contractors who are 'promising' greater savings without the payment of prevailing wages at a time when the wage policy is expanding.

while 9.2% of construction workers in states with weak or no wage policies receive SNAP. Similarly, 12.2% of construction workers in states with at least average laws receive Earned Income Tax Credits (EITC) while 15.3% of counterparts in states with less than average prevailing wage laws qualify for these credits. These data reveal how strong or average prevailing wage laws play a significant role in fostering self-sufficient, middle-class incomes for construction workers. These data also reveal how adequate prevailing wage laws reduce tax payer-funded programs that are related to poverty.

Research by Peter Philips indicates that enrollment in apprenticeship training programs decreases substantially after prevailing wage repeal. For example, program enrollment decreased in Colorado and Kansas by approximately 40% after these states repealed their wage policies in the 1980s. Most formal training in the construction industry is sponsored by joint labor-management programs. Since repeal weakens unions, fewer resources are available to train future generations of apprentices. The decrease in union-sponsored training after repeal in Colorado and Kansas was not offset by a corresponding increase in training by the open shop sector. Also, by protecting local wage rates, prevailing wage laws also protect work for local contractors and their employees. Without prevailing wage protection, more work is completed by contractors from other areas and states. Repeal not only opens a state's construction industry to more out-of-state competition, but the reduction in apprenticeship training creates a greater reliance on firms from other areas to perform skilled work. Together these factors increase the leakage of construction spending out of a region or state and reduce economic activity. As an illustration of the economic impact of prevailing wage laws, Manzo, Lantsberg, and Duncan estimate that if efforts to repeal the wage policy are successful in Michigan, an additional \$670 million in construction value will be completed by out-of-state contractors. The economic impact of this spending leakage will ripple through the state's economy affecting businesses that are unrelated to the construction industry. Repeal would decrease economic activity in Michigan by approximately \$1.5 billion with the loss of over 9,700 jobs and decreases in state and local tax revenue by over \$55 million. This analysis illustrates how prevailing wage laws can be considered built-in economic development policies where local tax dollars are used to employ local companies and employees.

The research on prevailing wage laws indicates that if the State of Maryland were to repeal or substantially weaken its prevailing wage standard, it is unlikely that significant cost savings would result from lower construction costs. It is much more likely that Maryland taxpayers would face increased fiscal burdens with repeal due to increased construction worker poverty and reduced economic activity.

Maryland's Prevailing Wage Coverage Thresholds, Side-By-Side Bids, and Previous Research on School Construction Costs

Between 2000 and 2014 prevailing wage requirements applied to school construction projects with a value of at least \$500,000 and when state funding was 50% or more of project construction costs. As of July 1, 2014 prevailing wages are required on projects with a value of at least \$500,000 and when state funding is 25% or more of total construction costs. Local education agencies (LEAs) have the choice of opting out of prevailing wage requirements by accepting less than 25% in state funding (or less than 50% prior to July 2014). When projects

are expected to be close to either the \$500,000 value threshold or to the minimum state funding, LEAs may ask contractors to submit two bids for the same project; one based on the payment of prevailing wages with the other ignoring this minimum wage requirement. These side-by-side bids allow a LEA to determine which pay schedule is most advantageous by comparing the decrease in state funding to the bid-cost saving associated with avoiding the payment of prevailing wages. For example, if the side-by-side bids of the lowest submissions indicate a project cost savings of 20% by opting out of the wage policy and if state funding for the project decreases by 10% if the wage regulations are avoided, it is practical for the LEA to forgo the additional funding and the payment of prevailing wages.

Based on an examination of 266 side-by-side bids for 67 separate school construction projects built between January 2012 and December 2015, the Public School Construction Program found that, on average, bids based on prevailing wage rates were 11.7% higher than bids without prevailing wages. The cost impact is based on the comparison of all bids, including the lowest bid and all other tenders. The result obtained from this analysis is viewed as “incontrovertible evidence” that prevailing wages increase construction costs.⁴

The evidence based on the side-by-side comparisons is at variance with earlier research of Maryland schools. For example, Professor Mark Prus finds no statistically significant cost difference in schools built in counties with and without prevailing wage requirements.⁵ Prus’

⁴ See page 34 of “The Cost of School Construction: A Comparison of the Monarch Global Academy and Conventional School Facilities.” Report to Governor Larry Hogan and the Board of Public Works. October 28, 2015. See page 3 of Appendix 1 for a description of the data. Accessed at: <http://www.pscp.state.md.us/Reports/Monarch%20Final%20Report%2010-28-15.pdf>.

⁵ Mark Prus. 1999. “Prevailing Wage Laws and School Construction Costs: An Analysis of Public School Construction in Maryland and the Mid Atlantic States.” Prepared for the Prince George’s County Council, Maryland. Accessed at: http://www.faircontracting.org/PDFs/prevailing_wages/Prevailing%20Wage%20Law%20and%20School%20Construction%20Cost%20in%20Maryland.pdf. The findings by Prus are consistent with 80% of peer-reviewed studies

findings are consistent with 80% of recent peer-reviewed research that examines the impact of prevailing wages on school construction costs. These studies compare schools built in states with and without prevailing wage laws, schools built before and after the introduction of prevailing wage requirements, and the effect of the wage policy on construction productivity and efficiency. Regardless of the research methods employed, the overwhelming majority of these studies find no statistically significant evidence that the wage requirement is related to school construction costs.

Why wouldn't prevailing wages increase construction costs? First, labor costs comprise a low share of total costs in the construction industry. According to data from the *Economic Census of Construction*, labor costs (wages and benefits) represent about 23% of total construction costs for the entire U.S. construction industry in 2012.⁶ Second, peer-reviewed

that fail to find a statistically significant cost effect of prevailing wages on school construction. For a review of this research see Kevin Duncan, Peter Philips, and Mark Prus. 2014. "Prevailing Wage Regulations and School Construction Costs: Cumulative Evidence from British Columbia." *Industrial Relations*, Vol. 53, No. 4, October, pp. 593-616. Accessed at: <http://onlinelibrary.wiley.com/doi/10.1111/irel.12072/abstract>. Statistical analysis makes a distinction between 'statistically significant' and 'statistically insignificant' results. A statistically significant result is unlikely to have occurred due to chance. If a result is statistically insignificant, then the measured result is likely to have occurred due to chance.

⁶ The *Economic Census of Construction* for 2012 does not report labor costs as a percent of total costs. This ratio must be calculated based on other data. Here, labor cost as a percent of total construction cost is derived by dividing total construction worker payroll, plus proportionally allocated total fringe benefits, by the net value of construction work. The net value of construction is based on the value of work completed by a contractor, less the value of work subcontracted to other contractors. The *Economic Census of Construction* defines construction worker payroll as the gross earnings paid in the reporting year to all construction workers on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to deductions such as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The *Economic Census of Construction* defines the net value of construction as the receipts, billings, or sales for construction work done by contractors, less the value of construction work subcontracted to others. The net value of construction does not include contractor business receipts from retail and wholesale trade, rental of equipment without operator, manufacturing, transportation, legal services, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also excluded. Nonoperating income such as interest, dividends, the sale of fixed assets, and receipts from other business operations in foreign countries are also excluded. See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_23A1&prodType=table.

research indicates that when wages increase in the construction industry, skilled workers replace less-skilled workers and more capital equipment is utilized.⁷ These changes increase productivity and tend to offset the impact of higher wages.⁸

An important difference between the study by Prus and the side-by-side comparisons of bid-costs in Maryland is that Prus examines an array of school projects (new construction and renovations) while the side-by-side analysis is based on projects that are close to the project value and state funding thresholds. This is a critical distinction that influences contractor incentives, the disparity in side-by-side bids, and the implied cost estimate of prevailing wages. When LEAs request side-by-side bids they are sending a signal to contractors that some state funding may be sacrificed *if* significant savings can be promised by avoiding the payment of prevailing wages. Under these circumstances, contractors, particularly nonunion contractors have an incentive to inflate estimates on prevailing wage bids.

To illustrate, consider a project with one nonunion bidder. Without any competition, both bids, with and without the payment of prevailing wages will be inflated.⁹ If this contractor wishes to avoid the payment of prevailing wage rates and other requirements such as the submission of certified payrolls, apprenticeship registration, arranging benefits that meet prevailing standards, and other administrative responsibilities, the bid based on the payment of

⁷ See William Blankenau and Steven Cassou, "Industry Differences in the Elasticity of Substitution and Rate of Biased Technological Change between Skilled and Unskilled Labor." *Applied Economics*, 2011, Vol. 43, pp. 3129-3142 and Edward Balistreri, Christine McDaniel and Eina Vivian Wong, "An Estimation of U.S. Industry-Level Capital-Labor Substitution Elasticities: Support for Cobb-Douglas." *The North American Journal of Economics and Finance*, 2003, Vol. 14, No. 3, 343-356.

⁸ Additionally, research also indicates that in states where construction worker wages and benefits are higher, material, fuel, rental equipment and profit rates are lower. See "The Cost of Repealing Michigan's Prevailing Wage Policy: Impacts on Total Construction Costs and Economic Activity," by Kevin Duncan, Alex Lantsberg, and Frank Manzo IV, June 17, 2015. Accessed at: <http://illinoisepi.org/countrysidenonprofit/wp-content/uploads/2014/06/The-Cost-of-Repealing-Michigans-PWL-FINAL.pdf>

⁹ Based on information provided by personnel from the Public School Construction Program, bidders on public works projects in Maryland not only know how many bidders there are, but even their identities.

prevailing wages will be particularly inflated.¹⁰ Expanding this concept to a more realistic setting with multiple bidders suggests that when bid competition is low and the likelihood of winning is relatively high, the difference in side-by-side bids may be relatively large. However, in a more competitive situation, the disparity in side-by-side bids may collapse as the likelihood of winning decreases and uncertainty over how other bidders will behave increases.¹¹

Contractor experience with side-by-side bidding may also influence the gap in bids. Those who are new to prevailing wage projects may have greater uncertainty regarding all of the attendant requirements and regulations associated with the wage policy. As a consequence, less experienced contractors may pad these bids accordingly. As experience with this bidding format and the wage policy increases, contractors may reduce the disparity in bids that do and do not require the payment of prevailing wages. This suggests that relatively new bidders will have larger differences in side-by-side bids and that the gap between bids will decrease as bid involvement increases.¹²

When a contractor is motivated to win a project, regardless of whether prevailing wages are required, it is likely that differences in side-by-side bids are reduced. This outcome may be

¹⁰ For a description of Maryland's law see "Prevailing Wage – Division of Labor and Industry," Maryland Department of Labor, Licensing & Regulation. Accessed at: <https://www.dlir.state.md.us/labor/prev/>.

¹¹ A tacit or collusive agreement to increase disparity in side-by-side bids may be made between contractors when bid competition is low. This type of arrangement is in the best interest of all nonunion contractors bidding on projects requesting two submissions and may be considered self-reinforcing to some extent. But, this agreement may break down to some degree when the number of competing contractors increases due to increased uncertainty as the number of participating parties increases.

¹² The data used in this study span 4 years and are insufficient to identify entrant bidders. Hence, this study examines the effect of bid participation of contractors over the period. Others have examined the bids of new, entrant contractors. The bids of entrant firms may be influenced by the lack of experience in a new area or by incomplete information about the costs of bid components. Li and Philips find that the bids of entrants are more widely dispersed around the central bid tendency. De Silva, Dunne and Kosmopoulou find that entrants bid more aggressively than incumbent firms Sheng See Li and Peter Philips (2012). Construction Procurement Auctions: Do Entrant Bidders Employ More Aggressive Strategies than Incumbent Bidders?" *Review of Industrial Organization*, 40, 3, 191-205 and De Silva, D., Dunne, T. and Kosmopoulou, G. 2003. "An Examination of Entrant and Incumbent Bidding in Road Construction Auctions." *The Journal of Industrial Economics*, Vol. 21, No. 3, pp 295-316.

observed during the peak bid season. For the counties and projects examined in this study, 41% of all roof replacement projects are open for bidding in March with 48% of all bids submitted during this peak month. It is likely that contractors who are very eager to win projects during the peak season submit low bids regardless of the payment of prevailing wages. Several other factors such as a backlog of unfinished work or the desire to work with a particular owner may also influence a contractor's motivation to win a project.¹³ When a contractor is not eager to win, both bids may be higher with the bid based on prevailing wages being particularly high. Under these conditions, a contractor's bid may also be less competitive and finish with a higher ranking/place. This illustration suggests that if a contractor is highly motivated to win a bid, regardless of prevailing wage coverage, it is expected that the bid ranking will be lower as will disparity in side-by-side bids.

The policy change in 2014 that lowered the threshold for prevailing wage coverage to school projects receiving 25% state funding would also affect the behavior of contractors and their side-by-side bids. According to information reported by the Department of Legislative Services, this change made virtually all K-12 projects funded by the State of Maryland eligible for the payment of prevailing wages that exceeded the \$500,000 value threshold.¹⁴ Under these conditions, nonunion contractors participating in projects requesting side-by-side bids may have responded to expanded prevailing wage coverage by inflating bids based on prevailing wages if they wished to avoid the requirements of the wage policy. This possible explanation suggests that the disparity in side-by-side bids will be larger after the July 1 policy change.

¹³ Previous research indicates that bids are higher when a contractors' productive capacity is obligated to previously awarded projects. See Jofre-Bonet, Mireia and Pesendorfer, Martin. 2003. "Estimation of a Dynamic Auction Game." *Econometrica*, Vol. 71, No. 5, pp. 1443-1489.

¹⁴ See House Bill 860, "Prevailing Wage Law -- Applicability to the University System of Maryland, Morgan State University, and St. Mary's College of Maryland," Fiscal and Policy Note, Department of Legislative Services, Maryland General Assembly, 2016 Session. Accessed at: http://mgaleg.maryland.gov/2016RS/fnotes/bil_0000/hb0860.pdf.

Nonunion contractors employing the same workers and techniques may experience increased labor and total construction costs on prevailing wage projects. This may explain some of the difference in the side-by-side bids. The point of the analysis presented in this report is to illustrate that the side-by-side bids vary with factors other than those strictly related to the effect of prevailing wage rates on labor and total construction costs. As a consequence, these data do not accurately measure the cost impact of the policy.

Side-By-Side Bid Data and Results

Side-by-side bids for school roof replacement projects located in Carroll, Frederick, Howard, and Washington counties are used in this study. These projects were selected because they provide for an “apples-to-apples” comparison. There are several mechanical projects included in the data set, but these range from broiler replacements to HVAC to other work and represent more of an “apples to oranges” comparison. Another advantage of roof replacements is that there are a relatively large number of projects and contractor union signatory status can be determined. This study takes advantage of the 10 roofing contractors who bid on more than one project between 2012 and 2015. Configuring the data set in this way allows the differences between contractors that affect the side-by-side bids to be taken into consideration in the statistical analysis. As a consequence, the study is based on 75 bids by these ten contractors all of which are nonunion.¹⁵

Table 1 includes data on the lowest and highest differences in contractor side-by-side bids. To illustrate, consider Contractor #1. In one of these bids, the difference between the prevailing wage bid and the bid without prevailing wages was as low as 5.3%. In another bid by

¹⁵ The single union roofing contractor included in the master data file bid on only one project over the time period.

this same contractor, the difference in the side-by-side bids was as high as 30.1%. There is considerable variation between contractors. Note that Contractor #5 submitted at least one bid where there was no difference between the prevailing wage and non-prevailing wage bid (where the lowest bid difference is 0.0%). On the other hand, Contractor #6 had one bid where the difference was as high as 42.1% (see highest bid difference for #6). The averages for the 75 bids included in the study indicate a mean low difference in side-by-side bids of 3.9%, a mean high of 20.5%, and an overall average gap in the two bids of 10.2%.

Table 1. Percent Differences in Side-By-Side Bids (With and Without the Payment of Prevailing Wages) by Contractor for Roof Replacements, 2012-2015.

Contractor Identity	Lowest Bid Difference	Highest Bid Difference	Average Bid Difference
Contractor #1	5.3%	30.1%	12.7%
Contractor #2	1.8%	16.7%	5.3%
Contractor #3	3.4%	33.1%	10.2%
Contractor #4	3.4%	15.4%	11.7%
Contractor #5	0.0%	5.3%	3.2%
Contractor #6	8.9%	42.1%	17.4%
Contractor #7	1.1%	5.7%	3.0%
Contractor #8	8.1%	17.7%	13.5%
Contractor #9	1.5%	26.8%	14.7%
Contractor #10	5.7%	12.5%	9.8%
Overall Averages	3.9%	20.5%	10.2%

Source: Public School Construction Program.

Many of the “highest bid differences” reported in Table 1 are greater than labor costs for this type of construction activity. Information from the most recent *Economic Census of Construction* indicates that labor costs (wages and benefits) for specialty trade roofing contractors in Maryland are approximately 19.3% of total construction costs. A bid, like that of Contractor #6 which is 42.1% higher with the payment of prevailing wages, is approximately 2.2 times larger than percent labor costs for these types of projects. If the effect of prevailing wages is isolated from other factors that also influence bid costs, the impact of prevailing wages on bids

should be fairly uniform from one project and bid to the next. For example, if prevailing wage rates add 10% to the cost of roof replacements, the side-by-side bids should uniformly vary by about 10%, depending on wage differences between counties and over time. Clearly, the variation in side-by-side bids indicates that factors other than the payment of prevailing wages have an impact on bid differences.¹⁶

The statistical analysis and estimate (presented in full detail in Appendix 1) examines the effect of the number of bidders, bid history, contractor eagerness to win a project (measured by the peak bid submission month and contractor bid ranking), and the policy change in July of 2014 on the differences in side-by-side bids. Results of this analysis are presented in Table 2. The statistical estimate is used to measure the change in side-by-side bids when one of the factors changes, taking into consideration all other factors. To illustrate, consider the effect of bid competition. The statistical estimate indicates that if there is one bidder on a project, the difference between bids with and without prevailing wages is 16.6%; taking into account the other factors (bid history, eagerness to win, and the policy change in 2014). When two bidders are involved, the difference in side-by-side bids falls to 15.1%. With eight bidders the difference falls further to 5.7%. These findings indicate that the difference in side-by-side bids is

¹⁶ One possible explanation for varying side-by-side bids is that, while roof replacements are relatively homogenous projects, some may require sheet metal work. Without the payment of prevailing wages, a nonunion contractor would likely have a roofer with suitable experience perform this work under the same wage arrangement. But, Maryland's prevailing wage regulations, like the federal Davis-Bacon Act and most other state laws, set wage rates for workers performing specific jobs. As a consequence, under the wage policy an employee who splits their time between roofing and sheet metal work must be paid the rates for each job classification. On average, the total hourly prevailing wage compensation of sheet metal workers is 27.9% higher than the comparable compensation for roofers. This substantially higher rate suggests a substantial contribution to the bid differences reported in Table 1. However, this assertion must be tempered by the fact that labor costs are a low percent of total roofing construction costs. Even if all employees were upgraded to the sheet metal rate, it would affect a relatively small component of total costs and bids. For example, if all roofer labor costs rose by 27.9% to the sheet metal rate and labor costs are 19% of total costs, overall costs would increase by about 5.4% ($27.9\% \times 19.3\%$), assuming that all else is unchanged. Prevailing Wage data used in this illustration was obtained from Informational Rates Prevailing Wage, Department of Labor, Licensing, and Regulation, State of Maryland. accessed at: <https://www.dlrl.state.md.us/PrevWage/web/content/PWRequestRates.aspx>

negatively related to the level of bid competition. This is consistent with the view that nonunion contractors inflate their prevailing wage bids to avoid adherence to the wage policy, but that the bid mark-up decreases as the number of competing contractors increases.

Table E-2. Summary of Results from the Advanced Statistical Analysis: Factors Affecting Differences in Average Side-By-Side Bids (with and without Prevailing Wage Rates).

Project Characteristic:	Difference in Average Bids With and Without Prevailing Wages
Bid Competition:	
One Bidder	16.6%
Two Bidders	15.1%
Five Bidders [†]	9.9%
Eight Bidders	5.7%
Bid History:	
First Bid	14.5%
Fifth Bid [†]	9.9%
Thirteenth Bid	-0.4%
Peak Bid Month (March):	-8.0%
Contractor Bid Ranking:	
First Place	7.8%
Third Place [†]	9.9%
Eighth Place	18.1%
After 2014 Policy Change:	4.5%

Source: Public School Construction Program. [†] Estimate based on average values (5.293 for number of bidders, 4.64 for bid history, and 3.107 for bid ranking).

The results reported in Table 2 also reveal that the disparity between the two bids decreases as contractors accumulate experience with the dual bid format. For example, with the first bid, the gap between the side-by-side bids is 14.5%. After the fifth bid the difference decreases to 9.9%. By the 13th bid the gap has essentially collapsed with the bid based on the payment of prevailing wages being lower by 0.04%.¹⁷ The data also reveal the impact of a contractor's motivation to win a project. During the peak month of March, bid disparity

¹⁷ The thirteenth bid is the upper end level of the data for bid history.

decreases by 8.0% compared to off-peak times of the year. Also, when a motivated contractor places the lowest bid, the difference in bids with and without prevailing wages reported in Table 2 is 7.8%. However, when a contractor finishes in eighth place the difference rises to 18.1%. This result is consistent with the notion that when a nonunion contractor is eager to win a project, the gap between the side-by-side bids is reduced. When a contractor is not eager to win a project, the gap between bids increases.

Finally, results indicate that for bids submitted after the policy change, the difference in the average side-by-side bid increased by 4.5% (compared to bid differences before the policy change). Since the effect of the policy change is measured by comparing bids submitted before and after July 1, 2014, other factors that changed over this time period may also influence the estimated 4.5% increase. One possible influence is the increase in prevailing wage rates over time that would inflate bids if the wage policy applies. However, growth in prevailing wage rates for roofers/water proofers in the four Maryland counties included in this study was relatively low. Between 2012 and 2015 the prevailing wage and benefit rates for this job classification increased by an average of 3.5%.¹⁸ This increase is substantially lower than the 9.2% increase in the producer price index for roofing contractors over the same period.¹⁹ These data suggest that prevailing wage growth in Maryland increased proportionately less compared to overall costs for nonresidential roofing contractors. Also, given that labor costs are a low percent of total costs for Maryland roofing contractors, the impact of the increase in prevailing wages on total costs is disproportionately low. If wages increase by 3.5% and labor costs are

¹⁸ In Carroll and Howard Counties the total prevailing rate (wages and benefits) increased by 2.1% between 2012 and 2015. The corresponding percentage change was 2.4% in Washington County and 7.5% in Frederick County. Data were obtained from "Prevailing Wage Information Rates," Department of Labor, Licensing and Regulation, State of Maryland. Accessed at: <https://www.dllr.state.md.us/PrevWage/web/content/PWRequestRates.aspx>.

¹⁹ See "Producer Price Index by Industry: Roofing Contractors, Nonresidential Building Work," U.S. Bureau of Labor Statistics. Available from the Federal Reserve Bank of St. Louis, accessed at <https://research.stlouisfed.org/fred2/series/PCU23816X23816X>.

19.3% of total costs, the effect of the wage increase is approximately 0.7% ($3.5\% \times 19.3\% = 0.7\%$).²⁰ Consequently, the change in prevailing wage rates is insufficient to account for the 4.5% increase in side-by-side bids after 2014.

It is also unlikely that the mere expansion of the policy to projects receiving at least 25% in state funding would increase contractor costs and bids. If prevailing wages have a cost impact, it would be measured directly at the level of the project. That is, if a contractor bids on a project that requires prevailing wages and if the contractor expects increased costs as a result, the bid on that project will be higher. The policy change in 2014 would not have an across-the-board impact on project costs and bids. The impact of prevailing wages would still be measured at the project level, regardless of the change in the state funding threshold. Bid-costs may increase if the expansion of the policy reduced bid competition. However, the 4.5% increase in side-by-side bids after July 2014 is measured with the level of bid competition held constant.²¹ The remaining explanation is that the increase in side-by-side bids is due to the reaction of nonunion contractors who are 'promising' greater savings without the payment of prevailing wages at a time when prevailing wage coverage is expanding.

²⁰ This method of estimating the increase in total costs due to an increase in prevailing wage rates is over-simplistic as other factors that change with wages (such as labor productivity) are ignored. This method is used here to illustrate that the impact of wage increases on total costs is very low.

²¹ When the statistical model is estimated without a control for the number of bidders, the measured effect of the 2014 policy change is relatively unchanged in terms of magnitude and statistical significance (6.27% with a computed z-statistic of 3.36). This suggests that even if the level of bid competition is not taken into consideration the effect of the policy change in side-by-side bids does not change. If the 2014 policy change had an effect of the level of bid competition, the percentage change would be larger than 6.6%. Additionally, the two academic studies that examine the effect of prevailing wage laws on bid competition both fail to find a statistically significant impact. See Kevin Duncan. 2015. "The Effect of Federal Davis-Bacon and Disadvantaged Business Enterprise Regulations on Highway Maintenance Costs." *Industrial and Labor Relations Review*, Vol. 68, No. 1, pp. 212-237 and JaeWhan Kim, Kuo-Liang Chang, and Peter Philips. 2012. "The Effect of Prevailing Wage Regulations on Contractor Bid Participation and Behavior: A Comparison of Palo Alto, California with Four Nearby Prevailing Wage Municipalities" *Industrial Relations*, Vol. 51, Issue 4, pp. 874-891, October.

These results illustrate how factors that are not related to prevailing wage requirements affect differences in side-by-side bids. These results indicate that these bid data do not isolate the cost effect of prevailing wages and, as a consequence, do not accurately measure the influence of prevailing wages on costs. Prevailing wage requirements in Maryland may increase the cost of public school construction, but this cost effect is not accurately measured by differences in side-by-side bids.

Other Factors to Consider When Evaluating Prevailing Wage Policy

LEAs are under considerable pressure to fund as many school construction projects as possible under constraining budgets. It is understandable that under these conditions LEAs seek cost-savings approaches including the avoidance of prevailing wage requirements. But, the preponderance of research, including a study of school construction costs in Maryland suggests that eliminating the payment of prevailing wages will result in, at best negligible cost savings. Furthermore, this desire to cut construction costs, along with a project award process that favors the lowest bid, increases other costs for Maryland taxpayers. When the low bid wins a publicly funded project, contractors are also under pressure to cut costs by decreasing wages, reducing health and retirement benefits, and shedding training costs that are needed to prepare the next generation of construction workers.

Research informs us that there are aspects other than costs to consider when evaluating prevailing wage policy. For example, states with adequate prevailing wage regulations experience less construction worker poverty and reliance on public forms of insurance and

assistance.²² A comparison of states with no or very weak prevailing wage laws to states with average or strong wage policies indicates that construction workers in states with at least adequate prevailing wage laws are less likely to earn an income below the official poverty level. On average, 9.4% of construction workers in states with average/strong wage policies earn incomes below the poverty level while 15.2% of these same workers in states with weak or no prevailing wage laws earn below poverty-level incomes. As a consequence of less poverty, only 5.1% of blue-collar construction workers receive aid from the Supplemental Nutrition Assistance Program (SNAP) in states with average/strong prevailing wage laws while 9.2% of construction workers in states with weak or no wage policies receive SNAP. Similarly, 12.2% of construction workers in states with at least average laws receive Earned Income Tax Credits (EITC) while 15.3% of counterparts in states with less than average prevailing wage laws qualify for these credits. These data reveal how strong or average prevailing wage laws play a significant role in fostering self-sufficient, middle-class incomes for construction workers. These data also reveal how adequate prevailing wage laws reduce tax payer-funded programs that are related to poverty.

Other research indicates that enrollment in apprenticeship training decreases substantially after prevailing wage repeal. For example, program enrollment decreased in Colorado and Kansas by approximately 40% after these states repealed their wage policies.²³ Most formal

²² Frank Manzo IV, Alex Lantsberg, and Kevin Duncan. 2016. "The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry." Accessed at: <http://www.smartcitiesprevail.org/wp-content/uploads/2016/02/PW-national-impact-study-FINAL2.9.16.pdf>.

²³ Peter Philips. 2015. "Wisconsin's Prevailing Wage Laws: An Economic Impact Analysis." Accessed at: <http://www.wispolitics.com/1006/150410PrevailingWage.pdf>.

training in the construction industry is sponsored by joint labor-management programs.²⁴ Since repeal weakens unions, fewer resources are available to train future generations of apprentices. The decrease in union-sponsored training after repeal in Colorado and Kansas was not offset by a corresponding increase in training by the open shop sector. Also, by protecting local wage rates, prevailing wage laws also protect work for local contractors and their employees. Without prevailing wage protection, more work is completed by contractors from other areas and states. Repeal not only opens a state's construction industry to more out-of-state competition, but the reduction in apprenticeship training creates a greater reliance on firms from other areas to perform skilled work. Together these factors increase the leakage of construction spending and reduce economic activity. As an illustration of the economic impact of prevailing wage laws, it is estimated that if current efforts to repeal the wage policy are successful in Michigan, an additional \$670 million in construction value will be completed by out-of-state contractors.²⁵ The economic impact of this spending leakage will ripple through the state's economy affecting businesses that are unrelated to the construction industry. Repeal would decrease economic activity in Michigan by approximately \$1.5 billion with the loss of over 9,700 jobs and decreases in state and local tax revenue by over \$55 million. This analysis illustrates how prevailing wage laws can be considered built-in economic development policies where local tax dollars are used to employ local companies and employees.

²⁴ See Robert Glover and Cihan Bilginsoy. 2005. "Registered Apprenticeship Training in the U.S. Construction Industry," *Education & Training*, Vol. 47, No. 4/5, pp. 337-349.

²⁵ Frank Manzo IV, Alex Lantsberg, and Kevin Duncan. 2016. "The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry." Accessed at: <http://www.smartcitiesprevail.org/wp-content/uploads/2016/02/PW-national-impact-study-FINAL2.9.16.pdf>.

The research on prevailing wage laws indicates that if the State of Maryland were to repeal or substantially weaken its prevailing wage standard, it is unlikely that significant cost savings would result from lower construction costs. It is much more likely that Maryland taxpayers would face increased burdens with repeal due to increased construction worker poverty and reduced economic activity.

Appendix 1: Statistical Analysis.

Data and Method

Data for the study were obtained from the Public School Construction Program, Interagency Committee on School Construction, Board of Public Works, State of Maryland. From January 2012 to December 2015, the Public School Construction Program collected 266 side-by-side bids for 67 school construction projects completed throughout the state. These projects largely consist of renovation work involving a variety of trades and tasks such as carpentry, concrete, demolition, drywall, electrical, flooring, HVAC, masonry, and roofing, etc. Roof replacement projects are selected for this study due to the relative homogeneity of these types of projects and the relatively large number of bids. Over the period there were 83 side-by-side bids by 18 different contractors on 17 roof replacement projects. Since 75 of these bids were submitted by 10 contractors who participated in at least two projects, an unbalanced panel was created to estimate the following one-way fixed effects models.²⁶

$$\begin{aligned} \% \text{ Difference in Bids}_{it} = & \beta_0 + \beta_1 \text{ Contractor}_i + \beta_2 \# \text{ Bidders}_{it} + \beta_3 \text{ Bid History}_{it} + \beta_4 \text{ Bidder Rank}_{it} \\ & \beta_5 \text{ Peak Bid Month}_{it} + \beta_6 \text{ 2014 Policy}_{it} + \beta_7 \text{ Real Midpoint Bid}_{it} + \beta_8 \text{ County}_{it} + \mu_{it} \end{aligned}$$

²⁶ The minimum number of bids submitted by any of the 10 contractors included in the panel is three and the maximum 16.

where % Difference in Bids is the difference between the prevailing wage bid and the bid without prevailing wages, divided by the bid omitting prevailing wages (x 100) for roof replacement bids submitted by contractor i in time period t . # Bidders equals the number of contractors who submitted a bid for each of the 17 projects. Bid History is the accumulated bid experience of each contractor. This information is collected using the longitudinal aspect of the data set where the number of project bids submitted by each contractor is traced from 2012 through 2015.²⁷ Bidder Rank is equal to the order of each bid by the contractors included in the panel. Peak Bid Month equals one for bids submitted in March, zero otherwise. 2014 Policy is a binary variable equal to one for the projects that were completed after the July 1, 2014 prevailing wage policy expansion that lowered the state funding threshold to 25%. Since this variable captures a time component, year dummy variables are not included for a two-way effects estimate. Since the effects described above may vary with the size of a project, the Real Midpoint Bid is added as a control. This variable is the inflation-adjusted midpoint between a contractor's side-by-side bids and allows for the effects of the number of bidders, and bid history, etc. to be measures taking the contractor's perceived value of the project into consideration. County is another control variable that takes into consideration regional differences in market and economic conditions. County is a dummy variable identifying projects in Carroll, Frederick, and Howard counties with Washington County as the reference category. μ is the error term.

Results

Summary statistics for the variables included in the model are reported in Table A-1. The average difference between the prevailing wage bid and the bid estimated without the payment of

²⁷ When projects share the same bid date, the measure of bid history is the same for both projects.

prevailing wages is about 10%. Across the 10 contractors this difference was as low as 0.0% and as high as 42%. The number of bidders ranges from two to eight participants per project with an average of 5.3. The bid history of these contractors is traced longitudinally over time and ranges between 1 to 13 bids with an average of 4.6.²⁸ The bid ranking of any contractor ranges from the first to the eighth position with an average of about third place. Roofing projects are open to bids in six months of the year.²⁹ The peak month for bidding on roof replacement projects is March when 41% of the projects are let and 48% of the bids are placed. One-third (25) of the projects were open to bidding after the policy change in July of 2014 that reduced the state funding threshold to 25% of construction costs. Fifty of the projects were available for bidding under the previous state funding threshold of 50%. The distribution of roof replacements was unevenly distributed with 57% of projects located in Howard County, 21% in Frederick, 16% in Carroll, and 5% in Washington County. The inflation adjusted midpoint between the bid based on the payment of prevailing wages and the bid omitting the wage requirement is approximately \$1.2 million³⁰

²⁸ As a consequence of tracing bids over time, bid history varies for each contractor and this impact is not removed in the fixed effects estimate.

²⁹ Bids are considered in January, February, March, May, August, and December.

³⁰ Bids are adjusted for inflation with the "Producer Price Index by Industry: Roofing Contractors, Nonresidential Building Work," U.S. Bureau of Labor Statistics. Available from the Federal Reserve Bank of St. Louis, accessed at <https://research.stlouisfed.org/fred2/series/PCU23816X23816X>.

Table A-1. Summary Statistics of Side-By Side Contactor Bids (with and without Prevailing Wage Rates), Fiscal Year 2012-2015

Variable	Mean
% Difference in Bids	9.940 (7.704)
# Bidders	5.293 (1.514)
Bid History	4.640 (2.990)
Bidder Rank	3.107 (1.805)
Peak Bid Month (March)	0.480 (0.503)
2014 Policy	0.333 (0.478)
Carroll County	0.160 (0.369)
Frederick County	0.213 (0.412)
Howard County	0.573 (0.498)
Washington County	.053 (0.226)
Real Midpoint Bid	\$1,178,718 (610,602.8)
N	75

Source: Public School Construction Program, State of Maryland. Standard deviations in parentheses.

Regression results for the fixed effects estimate are reported in Table A-2.³¹ Because there are *a priori* expectations regarding the effects of the number of bidders, bid history, contractor bid rank, peak bid month, and the 2014 policy change, the coefficients for these variables are evaluated with one-tailed tests. All other coefficients are evaluated with two-tailed tests. Results indicate that the effect of another bidder decreases the gap between bids that are, and are not based on prevailing wage rates by approximately 1.6 percentage points. Findings also support the notion that as contractors gain experience with side-by-side bidding, the gap between the two bids decreases. The coefficient for Bid History reveals that the gap in side-by-side bids decreases by about 1.2 percentage points with each bid experience. The effects of bid competition and bid history are significant at the 0.05 level (for a one-tailed test).

³¹ Standard errors reported in Table 2 are corrected for heteroskedasticity.

Table A-2. Fixed Effects Regression Results of Side-By Side Contactor Bids (with and without Prevailing Wage Rates), Fiscal Year 2012-2015. Dependent Variable = % Difference in Bids.

Variable	Coefficient
# Bidders	- 1.558 ^{^^} (.737)
Bid History	- 1.242 ^{^^} (.532)
Bidder Rank	1.021 ^{^^^} (.257)
Peak Bid Month (March)	- 8.005 ^{^^^} (2.252)
2014 Policy	4.500 [^] (2.647)
Carroll County	0.625 (0.369)
Frederick County	13.948 ^{***} (2.181)
Howard County	4.775 ^{**} (2.069)
Real Midpoint Bid	-0.0001 (0.0001)
Constant	18.110 ^{**} (5.828)
N	75
F	211.24
R2 (overall)	0.423
F test, all individual effects = 0	4.58

Source: Public School Construction Program, State of Maryland. Standard errors corrected for heteroskedasticity in parentheses. ^{^^^} Significant at the 0.01 level (one-tailed test), ^{^^} Significant at the 0.05 level (one-tailed test), and [^] Significant at the 0.10 level (one-tailed test). *** Significant at the 0.01 level (two-tailed test), ** Significant at the 0.05 level (two-tailed test), and * Significant at the 0.10 level (two-tailed test).

Model estimates also support the view that eagerness to win a project affects differences in bids. An increase in bid ranking or place increases the gap by approximately one-percentage point while side-by-side-bids submitted during the peak month of March are closer by 8 percentage points. Both of these results are significant at the 0.01 level for a one-tailed test. Differences in side-by-side bids increased by 4.5 percentage points after the expansion of the prevailing wage policy in 2014. This effect is significant at the 0.10 level. Holding all other factors constant, differences in side-by-side bids are larger in Frederick and Howard counties compared to Washington County (by about 14 and four percentage points, respectively). While the impacts for these two counties are significant at least the 0.05 level, there is no statistically significant difference in bids between Carroll and Washington counties. The estimate for Real Midpoint Bid is essentially zero in terms of magnitude and statistical significance. This finding indicates that the difference between the two bids does not vary with project size. The results of the F test indicate that the null hypothesis that all coefficients equal zero is rejected at the 0.01 level.³² The model explains 42% of the total variation in side-by-side bids. The F-test implying that individual contractor effects are zero is also rejected at the 0.01 level.³³ This test result indicates that the fixed effects estimate is preferred to an OL estimate that does not control for individual contractor effects.

The regression results reported in Table E-2 are used to obtain the data reported in tables E-2 and 2 above. To derive the results reported in these tables, the regression equation is solved with a given value of one variable, number of bidders for example, holding all other variables at their average values. Since the precision in which the coefficients are estimated varies, the results reported in these tables do not take into account the confidence intervals of the

³² The critical F statistic is 5.35 at the 0.01 level.

³³ The relevant critical F statistic is 2.72 at the 0.01 level.

coefficients or the standard error of the overall regression estimate. As a result the data are used to only illustrate how factors other than prevailing wage requirements cause disparity in side-by-side bids.