

MEETING THE NEED FOR SCHOOL CONSTRUCTION

ANNUAL REPORT ON THE STATUS OF ALTERNATIVE FINANCING, PROCUREMENT,
AND PROJECT DELIVERY FOR MARYLAND PUBLIC SCHOOL CONSTRUCTION

SUBMITTED TO THE BOARD OF PUBLIC WORKS

Governor Martin O'Malley
Comptroller Peter Franchot
Treasurer Nancy K. Kopp

October 3, 2011



Barbara Ingram School for the Arts
Washington County Public Schools
Hagerstown, Maryland

The Interagency Committee on School Construction

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TABLE OF CONTENTS

I.	The Maryland Context for Alternative School Construction Methods	
A.	Background	1
B.	Current Interest in Alternative Approaches	2
C.	Regulations and Procedures	3
D.	Scope of the Public School Facilities Act of 2004	4
II.	School District Initiatives in Alternative Financing, Project Procurement, and Project Delivery	
A.	Alternative Financing	5
	The Experience Abroad: The Design-Build-Finance-Maintain-Operate (DBFMO) Model	6
	Current Projects and Programs Using Alternative Financing	11
	Alternative Forms of Debt: Qualified School Construction Bonds (QSCB)	14
	Energy Performance Contracting	15
	Power Purchase Agreements for Solar Power	18
	Central Administration Buildings	20
B.	Alternative Funding	22
C.	Project Procurement	24
D.	Project Delivery	26
	Conclusion	31
	Appendices	
A.	Alternative Financing Subcommittee, Task Force to Study Public School Facilities	32
B.	Public School Facilities Act of 2004 (Senate Bill 787 / House Bill 1230: Provisions on Alternative Financing and Project Delivery)	32
C.	Workgroup on Project Procurement, Delivery, and Alternative Financing	34
D.	Workgroup on Regulations for Procurement, Delivery and Alternate Financing of Public School Construction Projects	34
E.	Resources: Public Private Partnerships in the English-Speaking World	34

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I. THE MARYLAND CONTEXT FOR ALTERNATIVE SCHOOL CONSTRUCTION METHODS

A. BACKGROUND

In 2002, the Task Force to Study Public School Facilities was formed under the leadership of Treasurer Nancy K. Kopp to determine the adequacy of public school facilities in Maryland. Specifically, the Task Force was charged with determining if these facilities were adequate to support the educational programs that were to be funded through the Bridge to Excellence in Education Act of 2002. The Task Force investigation was broad, including not only the adequacy of existing public schools but also the procedures and practices that govern their procurement, delivery, and financing. A subcommittee of the Task Force investigated the feasibility of using alternative financing mechanisms to assist in building and renovating Maryland's public schools (Appendix A). Based on the experience of school districts in the United States and Canada that had used alternative financing for school construction, the subcommittee developed recommendations that were included in the Final Report of the Task Force, issued in February 2004.

During the 2004 session of the General Assembly, school construction received a great deal of attention. The Public School Facilities Act of 2004 addressed many aspects of school construction procedure and funding, included a section on alternative financing (Appendix B). The statute contains provisions that enabled the local educational agencies (LEAs) and local governments to use several alternative financing arrangements: lease-leaseback, sale-leaseback, public-private partnerships, and performance based contracting. The use of finance-design-build, a variant on the traditional design-build (DB) project delivery methodology in which the DB entity also provides financing for the project, was also allowed. The Act also addressed Construction Management At Risk (CMR), a method of project delivery that had been successful in the private sector but was not previously used for public schools in Maryland because of procurement restrictions. To further these progressive financing and delivery approaches, the statute enabled the local jurisdictions, under appropriate justification, to use alternative methods of project procurement - competitive negotiation, unsolicited proposal, and quality based selection (QBS) – in place of competitive bidding, the sole previous option.

While the 2004 enabling legislation opened a vigorous discussion about alternative financing, and has permitted several LEAs to apply alternative procurement and project delivery methods, it was only in 2009 that an entire school facility was completed that used an alternative financing arrangement. *Washington County Public Schools (WCPS)*, in collaboration with the City of Hagerstown and a community development non-profit organization, and with the input of a private consultant, private counsel, and the Public School Construction Program (PSCP), developed a leaseback structure for the renovation of a historic building in downtown Hagerstown as a visual and performing arts high school. This project, described more fully below, utilized Maryland historic tax credits as a significant component of the financing arrangement. Although access to the historic tax credits presented WCPS with a unique advantage, in other respects the financing structure for this project may provide a valid model for more conventional school construction projects.

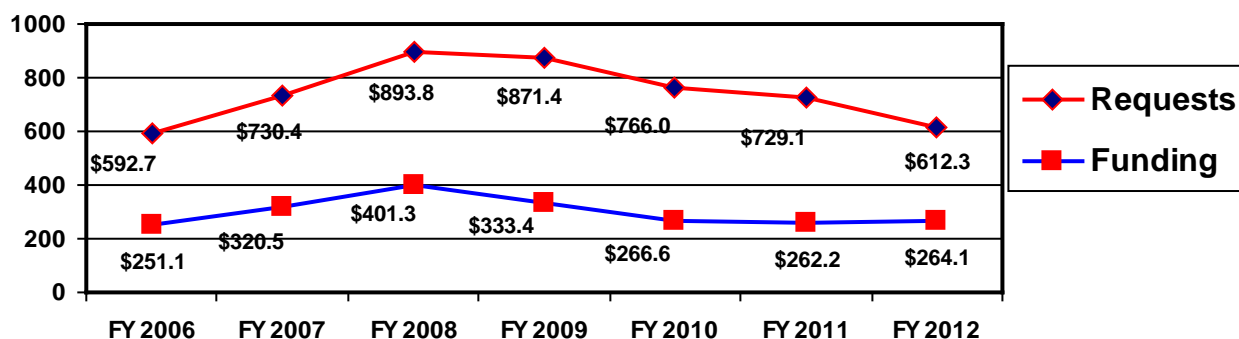
B. CURRENT INTEREST IN ALTERNATIVE APPROACHES

In the current economic situation, in which the constraints on operating budgets may reduce the willingness or capacity of local governments to issue debt, interest in alternative financing appears to be gaining momentum among the local jurisdictions. On September 19, 2011, the PSCP in collaboration with Anne Arundel County Public Schools conducted an all-day seminar on alternative funding and financing of school construction, drawing on public officials and private individuals from Maryland, England, and Canada to discuss three major topics: the design-build-finance-maintain-operate model (DBFMO, see Section II.A, page 6), energy performance contracting (EPC, see Section II.A, page 15), and alternative funding (see Section II.B, page 22). Several attendees expressed particular interest in learning more and investigating the DBFMO approach. On September 28, a meeting of the Public Private Partnership Commission (PPPC), chaired by Lieutenant Governor Anthony Brown, heard testimony from public officials and private firms on a full range of public infrastructure types, with again an emphasis on the DBFMO methodology. On September 29, Fareed Zakaria wrote in the *Washington Post* that with respect to President Barack Obama’s proposed Jobs for America bill, “Relatively small public investments can be leveraged to attract much larger sums of private capital....Compared with other nations, the United States has astonishingly little private-sector involvement in the building of infrastructure....”¹

Several factors may be responsible for this renewed interest:

- The funding gap.** Recognition that even with the large infusions of State and local funding for capital improvements since fiscal year 2006, the gap between facility needs and funding capacity remains very large. Although capital improvement program (CIP) requests for State funds have declined consistently for four years, they still remain at least twice as large as the annual funding that has been available in FY06 to FY12 (see chart below). Local fiscal constraints led in FY 2012 to the withdrawal of projects that had been approved by the Board of Public Works or recommended by the IAC. Capital funding is likely to be further constrained for a number of years due to the decline of property tax and income tax revenues that have resulted from the economic recession.
- The condition of Maryland schools.** The need to renovate and replace older school facilities, since without large infusions of funds to pay for improvements, the condition of many of these facilities may deteriorate to a point at which they can no longer be renewed. Mr. Brian Foret, Director of Facilities for *Wicomico County Public Schools*, noted at the seminar on September 19 that in order to maintain his facilities at the current average Facility Condition Index of 29%, which falls in the Fair to Poor range, annual infusions of approximately \$13.6 million will be needed.² At current annual rates of capital funding, the FCI of the school system is estimated to increase over the next 10 years to 57%.

FY 2006 - 2012 CIP Requests and Funding



¹ “Fixing Obama’s jobs plan”: *The Washington Post*, September 29, 2011, page A17.

² Facility Condition Index, or FCI, is a commonly used single-figure demonstrator of the condition of a facility. It is determined by dividing the estimated cost of building system upgrades and replacements by the cost of replacement of the facility, expressing the result as a percentage. By industry standards, an FCI lower than 5% is considered excellent, between 5% and 10% is good, and higher than 10% is fair to poor.

- **Student achievement.** There is a growing understanding that the condition of the school facility affects the attitudes, behaviors, and performance of students and the morale of instructors.
- **Costs of construction.** A desire to take advantage of the current relatively low construction costs, which also result from the economic downturn.
- **School maintenance.** Recognition that there is a direct connection between capital renewal projects and the maintenance burden borne by the school district: as capital projects reduce the backlog of maintenance deficiencies, staff and other resources can be used more effectively to conduct preventive and routine maintenance, rather than reacting to deficiencies after the fact. *Anne Arundel County Public Schools* has stated that State and local infusions of capital funds is the critical factor that has allowed the system to maintain a pro-active stance relative to facility deficiencies, rather than reacting to deficiencies after they occur.

The DBFMO model deserves particular study to address Maryland's significant funding gap, because it enlists the capital funds available from a number of investment sources to address a pressing social need. The fundamental concepts are outlined in Section II.A: Value for Money, the Public Sector Comparator, the transfer of risk, the availability or concessions payment. A variety of caveats may make this approach unsuitable to Maryland's situation; nevertheless, the fact that it has apparently been addressed with considerable success by England's for the Building Schools for the Future program, by Alberta, and by other governments from the Irish Republic to New South Wales in Australia, implies that a careful review of the approach is needed.

C. REGULATIONS AND PROCEDURES

The 2004 statute charged the Board of Public Works (BPW) with developing regulations to govern the Public School Construction Program, the implementation of alternative financing, and other provisions of the Act. In January 2005 a workgroup consisting of superintendents and facility planners from the Maryland school districts, representatives of local governments, and officials from several State agencies that have an interest in public school construction was convened to study the problem (Appendix C). It was quickly found that project financing, project procurement, and project delivery are thoroughly interwoven with one another. Consequently, in 2005 and 2006 attorneys from the Office of the Attorney General and the Board of Public Works met regularly with the Executive Director and Deputy Director of the Public School Construction Program to develop coordinated regulations on these topics (Appendix D). The regulations of Virginia's Public-Private Educational Facilities Infrastructure Act (the PPEA) were studied, and many features were adapted to Maryland's situation. A consolidated set of regulations was approved by the BPW for publication on December 6, 2006, and following regulatory review, became effective on May 21, 2007 as COMAR 23.03.01 – 23.03.05 (available at http://www.dsd.state.md.us/comar/subtitle_chapters/23_Chapters.aspx). Amendments to the regulations were approved in November 2009 and March 2010; further amendments are under review by the legislative Committee on Administrative, Executive, and Legislative Review (the AELR) at this writing.

In the field of construction procurement, delivery, and financing, new instruments as well as variants on traditional instruments are regularly developed. When interpreting the regulations, the consistent desire of the Interagency Committee on School Construction (the IAC), the five-member board charged with management of the Public School Construction Program, has been to provide realistic guidance to facilitate innovation in the construction of public schools while honoring fundamental principles of public school procurement. These principles can be summarized as:

- Procurement must be open and fair, so that all interested and qualified vendors are provided with an opportunity to participate;
- The process of procurement should result in the best value for the taxpayers of Maryland;

- The process should deliver public school facilities that meet the educational and building performance standards that are expected of all Maryland public school buildings, irrespective of how they are procured, delivered, or financed;
- State requirements for minority business participation, for use of prevailing wage rates, and for high performance buildings must be incorporated into projects procured, delivered and financed under alternative methods when applicable, as they would be for projects procured and financed through conventional methods.
- Public schools should be located and designed whenever possible so as to support existing communities and mitigate urban sprawl, and they should include high performance features that will conserve energy and water, improve the indoor environment for occupants, and reduce their environmental impacts.³

D. SCOPE OF THE PUBLIC SCHOOL FACILITIES ACT OF 2004

The first project to be reviewed by the Office of the Attorney General for conformance with the alternative financing provisions of the Public Schools Facility Act of 2004 was the central administration building for *Harford County Public Schools* (HCPS). A description of the building and its financing structure is provided below on page 10.

In a letter dated September 21, 2004, the Office of the Attorney General (OAG) indicated that projects of the type then proposed by HCPS fall under the authority of the Public School Facilities Act of 2004. Consequently, such projects were required to be procured in accordance with the requirements of the legislation and of regulations that had not, at that time, been drafted. However, because the HCPS project pre-dated passage of the Public School Facilities Act, the OAG excused it from review by the IAC and from the competitive procurement methods outlined in the legislation.

Subsequently, discussion between the OAG and the PSCP has led to a reappraisal of the scope of the legislation. In brief, the position of the PSCP and of the OAG is that neither the intention of the original legislation nor the traditional review and approval functions of the IAC and its designees warrant an extension of these activities into the arena of central administration buildings. The legislation was focused on the capacity of school facilities to support educational programs, not on the other functions of public school systems. As administrative buildings are not funded by the State under the Capital Improvement Program (CIP) or the other programs that the PSCP manages, they have traditionally not been subject to the review and approval of the IAC. Nor do they contain the educational functions that warrant review and approval of locally funded projects by the State Superintendent.

As a result of this discussion, the regulations regarding alternative financing explicitly exclude “a building that is not used primarily for the instruction of students, including an office building, warehouse, or vehicle maintenance or repair building.” COMAR 23.03.05.01.B. Clarification of the scope of the Public School Facilities Act of 2004 with respect to central administration buildings not only preserves the traditional focus of the Public School Construction program on facilities that support educational programs, but also provides greater latitude to the LEAs to explore innovative solutions to their facility concerns. Some of the most important and interesting alternative financing projects in recent years have concerned central administration facilities, providing experience that may benefit the eventual application of alternative financing to school facilities (see below, page 10).

³ The amendments to the regulations currently under review will (among other provisions) require new schools, and replacement schools in which there is an increase of capacity, to be subject to Priority Funding Area (PFA) review in a manner similar to other State capital funding projects. It is anticipated that the regulations will be effective in the fall of 2011 and will be applicable to requests for approval of funding and financing submitted in the FY 2013 Capital Improvement Program.

II. SCHOOL DISTRICT INITIATIVES IN ALTERNATIVE FINANCING, PROJECT PROCUREMENT, AND PROJECT DELIVERY

A. ALTERNATIVE FINANCING

Although interest in the use of alternative financing methods among LEAs and local governments has been renewed because of the economic outlook, these parties remain extremely hesitant to initiate action in this field. Based on the public exposure of school facilities and the vulnerable population they serve, public school systems are highly risk-averse, a factor that constrains the adoption of innovative techniques, not only in alternative financing but also in alternative methods of procurement, delivery, and construction. Of equal importance is the question whether alternative financing offers any financial advantage over conventional financing using general obligation bond revenues. In 2005, *Charles County Public Schools* and *Harford County Public Schools* explored alternative financing for a new middle school and the replacement of an existing high school, respectively, and both concluded that their projects could be carried out at lower cost and with less risk using conventional bond financing. In the alternative financing proposals that were reviewed, neither school system found schedule advantages that might have warranted the higher financing costs which would have resulted from use of these methods. *Cecil County Public Schools* reported that it had abandoned study of alternative financing for the construction of a new technology high school. *Montgomery County Public Schools* reported that because of its AAA bond rating, it does not consider alternative financing to be effective (however, the school system remains receptive to its use under appropriate circumstances). *Baltimore County Public Schools* also believes that the local government's AAA bond rating and its available borrowing capacity make traditional financing the most likely source of capital for school construction work.⁴

The general hesitancy of the LEAs and local governments to use alternative financing for school construction corroborates the findings of the alternative financing subcommittee of the Task Force to Study Public School Facilities. In 2003, the members of the subcommittee recognized that there was no evidence, all other things being equal, that a project can be delivered through alternative financing at lower cost than through the use of conventional general obligation bonds. The private sector does not have access to funds at the same favorable interest rates as do local and State governments, which can pledge the full faith and credit of the public to support the bonds. This disadvantage is fully acknowledged by almost all private sector vendors of alternative financing methods and throughout the literature on public private partnerships. Only three circumstances appear to warrant these additional costs: when alternate financing can accelerate a project sufficiently to address an urgent educational issue or to offset the increased finance cost by forestalling construction cost escalation; when the LEA can leverage a valued but underutilized asset as a component of the financial transaction; or when efficiencies in the life-cycle costs of the project can be calculated to show that there is an overall Value for Money in the use of private sources of funds. Special circumstances, such as the historic tax credit used in the Washington County project described below, can also influence the decision to use alternative financing over more conventional financing methods.

The fiscal conservatism of local governments and the limitations of internal staff capacity in the school districts have also been cited as blockages to the use of alternative financing by smaller jurisdictions. While showing that alternative financing may allow a project to move forward in the absence of State and local capital funding, *Washington County Public Schools* also wrote in 2007 that "The coordination of multiple partners and potential donors can be cumbersome. Determining each party's role and responsibility, and the scope of work outside of any donations, all while procuring the work within COMAR regulations can be daunting and time consuming."⁵ The fact that WCPS proceeded with a very complex financing arrangement for the Barbara Ingram School indicates that these barriers are not necessarily insuperable (see below). However, there is no question that the institutional structures that have been established in other countries to procure, award, and manage public private partnership (PPP or P3) contracts are daunting in their complexity and demands for expertise.

⁴ George Sarris, Baltimore County Public Schools, June 2011

⁵ Boyd Michael, Assistant Superintendent for School Operations, Washington County Public Schools, email dated August 9, 2007.

Interest on the part of financiers in alternative financing for school buildings diminished significantly after 2004/2005. *Montgomery County Public Schools* stated that developers have a strong interest in the parcels that the school system owns for its central administration buildings because of their location in high-use corridors, and a relatively weak interest in MCPS schools, because they are located in residential areas. Aside from administrative buildings, developer interest until recently has been focused on the use of alternative *funding* sources in order to provide capacity to remove Adequate Public Facility Ordinance (APFO) closures to housing construction (see Section II.B below).

In counterpoint to these general trends, in the last year interest in alternative financing appears to have revived in at least two jurisdictions. The Baltimore City Government partnered with *Baltimore City Schools* to explore alternative financing mechanisms for capital projects, inclusive of school construction. *Wicomico County Public Schools* reports that it is working together with the Wicomico County Executive and the County's finance representatives to develop an alternative funding/project delivery solution in order to proceed with a replacement middle school.⁶ In early 2009 the school system formed an Alternative Finance Committee composed of a variety of financial, political and school facility stakeholders to investigate alternative financing options to address its large backlog of project needs. Based upon the committee's input, the system is working with a consultant to align specific capital project needs with the appropriate alternative finance option. On the basis of the September 19 seminar, the president of the Board of Education of Montgomery County expressed interest in studying the DBFMO method further.⁷

THE EXPERIENCE ABROAD: THE DESIGN-BUILD-FINANCE-MAINTAIN-OPERATE (DBFMO) MODEL

The current economic recession, with its reduction of private sector financing for office and residential construction, has resulted in a high degree of competition for public school construction contracts and the lowest prices seen in almost a decade. There is evidently a great deal of private capital that seeks safe investment opportunities.⁸ In an effort to take advantage of this situation, the Public School Construction Program is investigating whether P3 initiatives in Canada, the United Kingdom, the Irish Republic, and Australia may have application to our situation in Maryland.

Features of the DBFMO Model. With variations, the programs studied have followed the Design-Build-Finance-Maintain-Operate (DBFMO) model, which typically consists of these basic elements:

- **Overview.** The capital costs to design and construct the school are financed through a long-term contract that also includes the costs of selected facility management services and the cost of finance;
 - Payments do not begin until the school is complete and ready for occupancy;
 - The services selected depend on an assessment of which risks are properly retained by the public sector, which can be entirely shifted to the private sector vendor, and which should be shared.
 - Services provided may include a combination of hard facility management services (HFM), particularly maintenance, and soft facility management services (SFM) – custodial, food services, security, etc. - for an extended period, generally 25 or 30 years.
 - All educational and related services, e.g. health, remain a responsibility of the public owner.
- **Determination to use DBFMO.** A Value for Money (VfM) analysis is performed to determine whether the project should be executed through conventional procurement or through a P3 arrangement.

⁶ Brian Foret, Director of Facilities, June 2011

⁷ Andrew Ujifusa, "Montgomery Board of Ed president intrigued by privatizing construction, maintenance": The Gazette, September 21, 2011.

⁸ Glenn Stone, formerly of Grant Thornton LLP, has noted that the California Teachers Union holds large sums that have not been invested. Seminar, September 19, 2011.

- A Public Sector Comparator (PSC) is developed to compare the P3 delivery to conventional project financing and delivery.
 - All costs are addressed in the comparison, including first costs, life cycle costs, and the costs of transferring risk from the public to the private.
 - A quantifiable methodology is used to determine the costs of transferring risks; for each risk, the likelihood of the risk occurring and the potential cost if it does occur are analyzed through extensive discussion among stakeholders.⁹
- **The private sector partner.** The private sector partner, called the Special Purpose Vehicle (SPV) in England and Canada, typically consists of a consortium that includes a financial entity, a design-build firm, a facilities management firm, and other specialized service providers as needed (e.g. security).
 - **Procurement.** Procurement is a complex process that generally involves multiple stages; below is the outline of the method used by Alberta Infrastructure. The procurement methods of other jurisdictions vary in complexity, length, and whether final award is based on price only or a combination of price and qualifications.
 - Invite consortia to submit qualifications (RFQ);
 - Short list to three consortia;
 - Invite short-listed teams to submit detailed proposals (RFP), including designs based on a core design developed by an architect engaged to the province. During the RFP process:
 - Staged technical submissions are required;
 - Legal agreement terms and conditions are optimized;
 - There is opportunity for the vendors to present innovations in design;
 - If the proponents pass all stages of the RFP, then each submits a fully-priced bid;
 - Contract is awarded on basis of lowest NPV bid only, and there is no negotiation of price after award.
 - **Accountability.** To ensure that both the capital improvement and the facility management services throughout the life of the contract are delivered at the standard of quality that is expected:
 - The project is designed to the standards of the jurisdiction, with several stages of review;
 - The project must be accepted by the jurisdiction before it is occupied;
 - The availability and quality of facility management services is conducted routinely, and penalties are levied for non-performance. The contract can be terminated for repeated non-compliance;
 - Periodic reviews of performance and building condition are conducted, and in Alberta, a review is conducted five years before the termination of the contract to ensure that all deficiencies are corrected before ownership of the facility is returned to the public authority.
 - **Public Access.** Two models are used:
 - Ownership of the school facility is held by the private sector partner. In this case, the payments are termed availability payments; or
 - Ownership of the school facility remains with the public, and the payments are made on a concessions basis.
 - **Employees.** In some cases, maintenance and operations staff of school district are engaged by the private vendor on the same terms that they enjoy in the public sector.

DBFMO in the English-Speaking World. The Canadian Council for Public-Private Partnerships has provided brief summaries of the programs in a number of jurisdictions, the following of which are of particular interest to Maryland:¹⁰

⁹ See Infrastructure Ontario, “Assessing Value for Money: A Guide to Infrastructure Ontario’s Methodology” (2007).

- **United Kingdom:** Building Schools for the Future (BSF), an initiative of Prime Minister Tony Blair dating from 2004 that built on the already established Private Finance Initiative program of 1992, proposed to rebuild or renovate all of England's 3,500 secondary schools. The program aimed beyond school facility improvement to also stimulate educational transformation and to provide a range of community services and facilities.

BSF has come under criticism for a number of reasons: because of the multi-layered and complex institutional structure that has been established to procure and manage the projects; because of assessments that VfM was not achieved;¹¹ and because of charges that the public was not benefitting from refinancing and other transactions that profited the Special Purpose Vehicle members.¹² However, the response from teachers, heads of school, and students themselves appears to be overwhelmingly positive. As of the summer of 2010, 178 schools had been replaced or renovated, with another 230 then under construction or in procurement. Although the program was halted by the newly elected government of Prime Minister David Cameron in early 2010, under public pressure a limited version of BSF will continue.

- **Irish Republic:** After more than five years of careful evaluation of the financial, legislative, and statutory implications of P3, the government in mid-2005 undertook a program of 23 secondary and four new primary schools. A further wave of 17 P3 projects combined with 18 conventionally delivered projects was announced in late 2005. The total value of the P3 projects is estimated at 270 million euros.
- **Nova Scotia:** Facing a movement of population from the countryside to the cities and a concurrent decrease in overall enrollment, the provincial government in 1997 launched a program to build 39 new schools. Leases were established that allowed the government to buy the building for about 50% of the cost, continue the lease, or abandon the contract at the end of the 20 year term of the services contract. Since lease payments represented less than the full construction cost, the private vendors, which held ownership of the facilities, were obligated to find tenants to deliver the balance of the payments.,

A new provincial government in 1999 determined to complete the 29 schools but to discontinue the use of P3 in schools, under arguments that the program was too expensive, too political, and "out of control." Concurrently, the provincial auditor could not determine if VfM had been achieved.

On assessment, a provincial official has stated that of five objectives that were outlined when the program began – off balance sheet financing, speed of delivery, risk transfer, trouble-free turnkey operation, and innovative technology – only speed of delivery was achieved.¹³ This is, of course, a very important achievement in itself. Another official commented that the quality of construction was somewhat less than would have been delivered through the conventional public delivery and financing process, but that he would support continuing the process if schools were needed.

- **Alberta:** Experiencing high enrollment growth, the provincial government carried its experience of P3 in road construction into the delivery of 18 new schools in Calgary and Edmonton. The contracts are based on a 30 year term in which ownership of the facilities remains with the local authority and most "soft" facility management services are retained by the school districts. A second wave of 14 schools was initiated in 2010, all but four of which will be delivered through

¹⁰ Canadian Council for Public-Private Partnerships, *Schools: The Case for a Canadian PPP Application* (November 2007), pp. 54

¹¹ House of Commons Treasury Committee, "Private Finance Initiative", August 2011

¹² See various reports by Unison, the British public sector union (available at <http://www.unison.org.uk>)

¹³ Darrell Youden, currently Senior Executive Director, Corporate Services, Department of Education; presentation November 2006.

P3. The province reports that VfM was \$97 million Canadian in the first wave and \$105 in the second wave.¹⁴

Alberta used a standard “core” design developed by an architectural firm independent of the vendors. Enrollment differences were addressed through the use of modular classroom units that were craned into place and can be moved if enrollments shift.

- **New South Wales:** In 2001, the state initiated the New Schools PPP (Project 1) program to deliver nine new schools in a 25-month period at a cost of \$131.4 million Australian. The projects were delivered two years ahead of schedule compared to a conventional delivery approach, and the Value for Money was estimated at 7.3%. Based on the success of Project 1, NSW launched a New Schools PPP (Project 2) program, which included ten additional schools completed between 2007 and 2009.

America shares with the UK, the Irish Republic, Canada and Australia not only the English language, but a legacy of democratic institutions and values, a high priority given to private initiative, and a common law tradition. The federal systems of Canada and Australia establish further grounds of kinship, reflected not only in governmental institutions but also in a general tendency to devolve considerable responsibilities from the federal government to the states or provinces, and from the states or provinces to the localities. These cultural commonalities are reflected in the character of the educational systems of the countries: like America, they have local school districts, a variety of curricula based on local needs and preferences, and a high level of responsibility and independent initiative allocated to the school administration itself.

Emerging from the literature and the discussions with officials in other jurisdictions is the picture of a rapidly maturing process for successfully carrying out P3 school construction projects. On the public sector side, the procurement and contractual oversights of the early participants in this arena have been recognized and have apparently been corrected in later procurement and contractual instruments and processes. On the private sector side, financial institutions and large constructors are now familiar with the selection and contractual processes, and a large interest on the part of the private market has been reported.¹⁵ Certain common lessons learned have also emerged:

- The need for contract documents that spell out in great detail the expectations and requirements of all parties.
- The advantage of retaining public ownership of the facility through a concessions contract, rather than an availability fee.
- The advantage of bundling multiple projects to achieve economies in the transaction costs, in staff effort, and in purchasing of contractor services.
- The advantage of using repeat architectural designs that are site adapted and modified to address the particular enrollment and demographic characteristics of the localities.
- The transfer of risk must be assessed carefully: while initially it was believed that a great number of risks could be transferred to the private sector, including enrollments and energy costs, it was found that this led to higher costs than were warranted with no clear advantage to the public. Current practice appears to expand on the traditional package of transferred risks, namely cost of construction and schedule delay, by adding at least the hard facility management services that are involved in preventative maintenance and replacement of building equipment and systems.

¹⁴ John Gibson, Director of Alternative Procurement, Alberta Infrastructure; presentation September 19, 2011.

¹⁵ For a different view, see House of Commons report, op cit., p. 17ff.

- All stakeholders must be involved in the decision to use a P3 methodology. Of particular importance are the labor unions, which evidently came to support P3 in England and Canada after an initial period of objection.

To assist Maryland in its investigation of the application of public private partnership arrangements to our school construction task, resources are available from the jurisdictions mentioned as well as others. Solicitation and contract forms, methods of addressing the concerns of communities and labor unions, even design parameters for the school buildings themselves, have been developed by these jurisdictions and could be adapted to the requirements of Maryland law and Maryland culture. Infrastructure BC (British Columbia), which has not undertaken schools as P3 projects to date, nevertheless has considerable experience in the P3 procurement and contracting of major road, hospital, and other projects, and offers consultation services to jurisdictions in Canada and the United States.¹⁶ Certain aspects of school construction are unique to our country and state. For example, none of the jurisdictions mentioned appears to place emphasis on minority business enterprise participation in contracts. Other objectives, for example the attainment of high performance building certification (e.g. LEED Silver or better), the concern about community involvement in decision-making and community access to school facilities during non-school hours, and the requirement to provide contracting opportunities for local contractors and subcontractors within the larger (and often international) framework of the P3 contract, are very familiar themes we hold in common.

According to all sources, DBFMO appears to work best when it is applied to new construction, in which the risks, particularly those related to unforeseen conditions, are far more manageable than in renovation work. However, because enrollments are stable or in decline in the majority of Maryland's school districts at this time due to the economic recession, the state's main building task at this time is renovation or replacement of its existing school plant. Replacement projects, consisting essentially of new construction and some component of complete demolition of the existing facility, pose essentially the same risks as new construction. Since renovation work carries higher levels of risk that appear to inhibit the DBFMO method, it remains to be seen whether Maryland can use this method profitably pending the need to build new school capacity during a future wave of enrollment growth.

In our current state of understanding of P3, we see that the methods used elsewhere could have application in Maryland under certain circumstances;

- For a massive but short term building task:
 - Local and State funds cannot be concentrated within the period of need
 - Few other large projects are on the horizon within the jurisdiction, so that future availability or concession payments will not compete with other other capital needs.
- When the local board has an asset that can be leveraged:
 - A historic property that can obtain a historic tax credit, as in Washington County's Barbara Ingram School for the Arts.
 - Land or building assets can develop a long-term revenue stream, for example when currently owned board property can be developed for commercial or residential use. This approach was taken in the replacement of the Oyster School in Washington, DC: a portion of the property was developed as a high-rise apartment building, with the property taxes being dedicated to repaying the financing of the school construction project.
- When a critical project is needed, but the normal capital improvement program priorities can not be disturbed:
 - Specialized magnet school may lift the standing of the entire school district, but may serve a very small population of students. The Barbara Ingram School for the Arts in Hagerstown again provides an example of this need, and how the P3 approach allowed it to be accomplished without disturbing other capital improvement projects.

¹⁶ Sarah Clark, President and CEO, Infrastructure BC.

- The Lorton High School in Fairfax County, Virginia, was built by leveraging a portion of the property for housing; meanwhile, no projects in the approved CIP list were displaced.
- An opportunity presents itself:
 - A developer wishes to end an APFO closure by building school capacity. Although there are several instances of Maryland developers providing the funding to build school facilities, it is also conceivable that a developer would assist in alternative financing of facilities.
 - A developer wishes to promote an economic development project in which a school will be a major attractor. This describes the approach East Baltimore Development Inc., which includes a proposed school facility in its plan for an 88 acres mixed-use / mixed-income community in the area north of the Johns Hopkins Medical Campus.
 - Land can be leveraged to serve public and private uses. Stafford County, VA: developed elderly housing and a YMCA on the same site as schools two schools, with integration of educational programs among the schools and between the schools and the private facilities.
 - A financing opportunity is available, for example, historic tax credits can only be accessed by private entities that hold ownership of the building. The Baltimore School for the Fine Arts was renovated and expanded through a combination of conventional public funding and private financing obtained by a non-profit private entity that held title to the historic mansion adjacent to the main school building.
- When the overall task is greater than the available and anticipated resources. The current need for upgrading, replacing, and building school facilities in Maryland is so great that the additional administrative burdens of P3 may be worth considering. Without such an infusion of capital improvement, the prospect of facility deterioration will leave a large number of school children with inferior facilities that will to some measure impair their abilities to learn.

Accounting for both the similarities and the differences between Maryland and the jurisdictions studied to date, the Public School Construction Program will continue to investigate the matter, and will report to the Public Private Partnership Commission, the Interagency Committee, and the Board of Public Works on the feasibility and advantage of pursuing the public private partnership concept for school construction in our state. A list of relevant resources is provided in Appendix E.

CURRENT PROJECTS AND PROGRAMS USING ALTERNATIVE FINANCING

Washington County Public Schools has renovated a historic structure in downtown Hagerstown to house a visual and performing arts high school, the Barbara Ingram School for the Arts. This project is noteworthy not only for its innovative financing approach, but also because it is a component of the redevelopment of downtown Hagerstown as a cultural and arts center for Western Maryland, and because the educational program uses the nearby public library, a downtown theater, and a University of Maryland facility to supplement the facility requirements of the program, with the renovated building serving for core program offerings in the arts. While in many respects this educational program is modeled on the very successful Baltimore School for the Fine Arts, its use of public and private institutions in the urban surroundings to extend the educational opportunities available to the students is a genuine innovation that has larger planning implications. If new schools are to be built within growth areas in order to promote walkability and become centers of community activity, it is likely that school districts will need to consider smaller sites that may not be able to support a full array of physical education and interscholastic sports facilities. A working model for the joint use of neighboring facilities owned by other government or community entities will assist school districts to investigate smaller sites that can be used in conjunction with local facilities to fulfill the educational program.

The existing Hagerstown building, a three story iron-frame and masonry office structure dating from 1903, was donated to the City of Hagerstown specifically to house the arts high school. In turn, the City transferred the building title to a local non-profit corporation, the Hagerstown Neighborhood Development Partnership (HNDP). Washington County Public Schools (WCPS) entered into a 20 year, triple-net operating lease with HNDP, with a stipulation that ownership of the facility will be transferred to the school system at the end of the lease term. A private consultant engaged jointly by WCPS and HNDP

competitively solicited financing for \$8.3 million to pay for the largest component of the renovations and additions required to support the educational program. The results on bid day exceeded expectations, and in combination with the historic tax credit, delivered project financing at a total cost below conventional general obligation bond financing.

The proceeds of the private financing were placed in an escrow account under an Escrow Manager. Once a financing vendor was selected, HNDP assigned the lease to the vendor but retained responsibilities as owner of the facility. HNDP and WCPS were jointly responsible for engaging the constructor; HNDP held the contract but WCPS supervised it as agent to HNDP, drawing from the proceeds of the lease transaction as needed to provide payments. WCPS was responsible for all costs that exceed the available financing; however, conservative management allowed the project to be completed within the established budget.

The total project cost of \$10.93 million was funded from various sources in addition to the \$8.3 million financing component. As a private entity, HNDP was eligible for and received State of Maryland Historic Tax Credits equal to 20% of the eligible costs of construction, a credit equaling \$1,300,035. Portions of the work eligible for the tax credit included restoration of the existing building but excluded a new fourth floor, a 5,000 square foot rear addition, and interior furnishings and equipment. Upon receiving the tax credit, HNDP assigned the funds to WCPS to further retire project debt.¹⁷ The balance of the funds needed (\$1,082,125) was obtained through Legislative Bond Bills, a Maryland Department of Business and Economic Development (DBED) grant, and a Community Legacy grant.

All parties in this arrangement demonstrated a great willingness to comply with the State regulations governing alternative financing of public school facilities, and provided both the required preliminary determination of justification as well as drafts of the comprehensive agreement and other legal instruments for early review by the PSCP. As a locally funded project that had not been submitted or approved in the State Capital Improvement Program, the agreement and the construction contract were subject to approval by the State Superintendent, not the IAC. However, in accordance with the spirit and letter of the regulations, the PSCP advised the Superintendent on the viability of the arrangement, and in particular its conformance to State requirements regarding competitive solicitation of the financing. The PSCP provided an informational report to the Interagency Committee on September 19, 2007. The separate construction contract, once submitted to MSDE for approval by the State Superintendent, was reviewed similarly to other construction contracts. The architectural design was fully reviewed by MSDE and was approved to proceed to bid by the State Superintendent.

¹⁷ The transfer of credits was reviewed and approved by the Attorney General for the Maryland Historic Trust.



Historic Structure, Potomac Street
Hagerstown, MD



Barbara Ingram School for the Arts, Rear Facade



Historic Meeting Space Renovated as Dance Studio

Washington County Public Schools included a request for planning and partial reimbursement of the Barbara Ingram School in their FY 2011 and FY 2012 CIP submissions. The project was reviewed according to the same factors that govern any project submission, namely local priority, enrollment, educational program, schedule, cost, and availability of funds, and both requests were approved by the Board of Public Works. Because the cost of the project is spread across a number of years through the lease payments, the State is able to use a multi-year approach to reimburse the funding for this project, with annual funding allocations equal to WCPS's yearly lease payments up to the limit of eligible funding. This contrasts with the lump-sum grant approach that is typically applied to project funding. The reduced annual CIP allocations for this project allow the State to apply its available funding to more projects in both Washington County and elsewhere in the state. However, these payments will be subject to the availability of State operating funds for capital projects. In accordance with Internal Revenue Service rules as interpreted by the Office of the State Treasurer, when more than 18 months have elapse from final payment to the contractor, State tax-exempt bond proceeds cannot be used to reimburse local capital expenditures. In recent years, the availability of State operating funds for capital projects has been highly constrained. Thus despite its eligibility for State funding, the project may not be able to receive State funds beyond FY 2013.

Other examples of alternative financing in Maryland include:

- *St. Mary's County Public Schools* has used \$2 million in tax-exempt financing to purchase school-based equipment, STEM (Science, Technology, Engineering, and Mathematics) equipment, and busses.
- *Prince George's County Public Schools* procured the furnishings and equipment for the new Dr. Henry A. Wise, Jr., High School, which opened in August 2006, through a lease-purchase financing agreement for \$6,500,000 in moveable and infrastructure equipment. School board operating funds are being used to repay the five-year financing agreement. Redirecting the cost of this equipment to the operating budget released county debt to complete the construction of the school.

ALTERNATIVE FORMS OF DEBT: QUALIFIED SCHOOL CONSTRUCTION BONDS (QSCB)

The American Recovery and Reinvestment Tax Act of 2009 established a new tax-credit bond program that can be applied to all aspects of school construction, including new construction as well as renovation, modernization, and repair. A total of \$11 billion was authorized by Congress for 2009, with 40% of the authorization distributed by the Secretary of Education to 100 "large educational agencies", that is, school districts with the largest number of children from families living below the poverty level, and 60% to the States in proportion to their Title I eligible student populations. The 2009 authorization to the State of Maryland was \$50.4 million and the 2010 authorization was \$45.2 million. Maryland has three large educational agencies, Baltimore City, Baltimore County, and Prince George's County, which received separate federal authorizations of \$58.1, \$19.4, and \$25.1 million respectively in 2009, and \$53.5, \$20.0, and \$25.8 million respectively in 2010. All projects funded with QSCB proceeds are subject to Davis Bacon wage rates; 10% of the proceeds must be encumbered within six months of issuance, and all of the proceeds must be expended within three years of issuance. A further condition applied to the authorizations granted to the large educational agencies, which were required to issue the 2010 bonds prior to December 31, 2010, or lose the authorization.

The State issued its 2009 authorization in lieu of an equivalent amount of general obligation bonds authorized by the General Assembly for the FY 2010 Public School Construction Capital Improvement Program. By issuing \$50.3 million in tax-credit bonds in place of the same amount of general obligation bonds, the State anticipates a savings of almost \$11 million in avoided interest costs. The balance of the FY 2011 CIP authorization, or \$209.7 million, was issued as general obligation bonds. The QSCB bond proceeds are applied to FY 2010 CIP projects that are about to begin construction, have begun

construction but are not yet complete, or will be initiated and completed within three years of the issuance in the fall of 2009. A similar approach has been taken for the 2010 authorization, which was applied to the FY 2012 CIP.

For the three school districts that have received individual QSCB authorizations, our current understanding is that:

- *Baltimore City Public Schools* (BCPSS) sold approximately \$50 million of its federal authorization under the remaining balance of the \$100 million bond authorization cap that was approved by the General Assembly in 2000 (Annotated Code of Maryland, Education Article §4-306-2).¹⁸ Legislation passed in the 2010 session of the legislature exempts the QSCB (and the related Qualified Zone Academy Bond, or QZAB) authorizations from the 2000 authorization cap, freeing the School District to issue the balance of the 2009 federal authorization as well as the entire 2010 authorization. BCPSS used its QSCB bond proceeds to provide the local match for projects that were concurrently funded through the State's QSCB proceeds, as well as a large number of "summer" projects that support the realignment of schools in preparation for school openings in the following autumn. BCPSS estimates that it may save as much as \$19 million in avoided interest through issuance of the 2009 and 2010 QSCB authorizations.
- *Baltimore County Public Schools* (BCPS) allowed the County Government to issue the bonds on its behalf, as permitted under the federal rules, on October 27, 2009. The bonds were issued with a premium and proceeds used for renovations to Parkville High School and Milford Mill Academy.
- *Prince George's County Public Schools* (PGCPS) allowed the County Government to issue its QSCB authorization in early December 2009.

All local projects funded with QSCB proceeds are subject to State design and contract award review under the same conditions that now apply to locally funded and State-funded capital projects

ENERGY PERFORMANCE CONTRACTING (EPC, also called Performance Based Contracting and Guaranteed Performance Contract)

A number of LEAs are now involved with energy performance contracting, in which savings that accrue from energy-related capital improvements are used to finance the improvements over an extended amortization period. As energy costs continue to rise, this approach has become increasingly attractive in order to improve the energy performance and the comfort of Maryland's many older facilities, which were frequently built to low energy standards in the 1960s and 1970s.

In a pure EPC, the entire capital cost is funded by a financing entity, with the owner providing no upfront funding. Financing may be provided by the vendor, or may be obtained independently by the school district. Due to the cost of financing, the total project cost is likely to be greater than if were financed through conventional general obligation bond proceeds, but these expenditures become manageable within local government budgets by being spread over a longer time frame. Financing costs can be reduced through infusions of conventional capital funds, for example CIP allocations from the State. In addition to the energy-related improvements, the scope of work may include components that have no energy-saving potential, e.g. expansion of a media center. By combining projects in this way, greater efficiency in procurement and better overall costs are obtained. Since the energy service companies (ESCOs) that provide the improvements must guarantee savings for a number of years (typically 15), they are obligated to provide routine preventive maintenance on the equipment that they install. If the savings are not realized, the ESCO is obliged to reimburse the "lost" savings to the local board. Following are current instances of this approach:

¹⁸ Baltimore City Public Schools is the only school district in Maryland that has the authority to issue bonds on its own account.

- *Baltimore City Public Schools (BCPSS)* entered into agreements with four ESCOs under the Department of General Services EPC program. Each ESCO has provided energy improvements to a number of schools, and each was in addition contracted to provide preventive maintenance (PM) for mechanical systems in the schools that receive energy improvements as well as in selected geographically related schools, irrespective of whether the HVAC equipment was installed by the ESCO or not. The HVAC preventive maintenance tasks that lay outside of the ESCO's normal obligations with respect to the equipment they install were funded through the school system's operating budget.

Due to budget constraints, the PM responsibilities for items not installed by the ESCOs were not as extensive as originally envisioned when the idea was broached in 2005. The energy improvements were often funded from several sources, for example lump-sum funding through the State's Capital Improvement Program and Aging School Program were combined with the proceeds of the Qualified School Construction Bonds (see above, p. 14), financing secured by the long-term energy savings, and other local funds to execute the capital projects. As BCPSS closed a number of schools in the 2006 through 2009 school years, priority was given in recent summers to capital projects in the schools that were assigned to receive students from the schools scheduled to close; these schools also received other improvements unrelated to the EPCs, e.g painting, renovated media centers, and new ceilings. Energy savings are reported to have been less than anticipated because of community use of the facilities in non-school hours.

Reports in late summer 2006 indicated that the ESCOs performed above expectations and that the level of quality was high. The Chief Operating Officer reported in 2009 a significant decrease in the number of complaint calls that are received from schools. However, it has also been found that staff oversight is an exceptionally important factor in maintaining the quality of PM that is performed by the ESCOs. In addition, BCPSS has developed the practice of evaluating each prospective capital project to determine if it is more economical to procure it through one of the ESCOs or to follow conventional procurement and project delivery practices.

- *Caroline County Public Schools* has entered into a second performance contract with an energy management company, valued in excess of \$3.5 million, that includes replacing existing steam boilers with new oil fired hot water boilers at two schools, in addition to a number of other energy saving projects (lighting, control upgrades, high efficiency HVAC equipment, solar domestic hot water heater, solar tracking skylights, etc). As a result of this contract, combined with other energy conservation efforts, all ten of the schools in the county are now Energy Star certified.¹⁹
- *Carroll County Public Schools* has entered into a fourth performance contract with an energy management company that includes new air conditioning (AC) projects for three schools in addition to energy saving projects (lighting, bathroom fixtures, control upgrades, high efficiency HVAC equipment, billing evaluation services, etc). With the year of installation and the first year of operation included in the performance period of July 1, 2008 to June 30, 2009, a net cost avoidance of \$2.2 million has been achieved, exceeding by \$774,000 the cost avoidance that was originally estimated for the period.
- *Harford County Public Schools (HCPS)* entered into two energy performance contracts for infrastructure upgrades to many of its schools. Implementation of Phase One began in fiscal year 2002, with installation of the approved energy conservation measures in eight school buildings. The total project value for the first phase was \$3.4 million, with an average yearly cost avoidance of \$430,000. The total expected cost avoidance for Phase One over the fifteen year term is \$6.7 million. The Second Phase of energy performance contraction was implemented in fiscal year 2004 with seven additional school buildings retrofitted with approved energy conservation measures. The total project value for the second phase was \$4.3 million, with an average yearly cost avoidance of \$421,000. The total expected cost avoidance for Phase Two over the fifteen

¹⁹ Milton Nagel, Chief Operating Officer, Caroline County Public Schools, June 2011

year term is \$6.3 million. A committee has been assembled to investigate a third phase of the Energy Performance Contracting. This third phase will be implemented utilizing the Department of General Services' Energy Performance Contract (EPC) to upgrade, replace, and maintain building and energy components in identified schools and offices. To date the committee has collected proposals from six energy service companies (ESCO) for review and identified schools for inclusion in the program.

Harford County Public Schools has initiated a variant of the energy performance contract method. In an effort to reduce overuse demand of electricity on the public service grid, Baltimore Gas and Electric (BGE) offers financial incentives to individuals and companies which make an active effort to upgrade their electrical equipment. HCPS has actively pursued these funds as an alternative financing source for energy efficiency upgrades. To date, HCPS has utilized this program on 26 projects, resulting in \$225,290 of funds redirected toward additional projects such as exterior LED lighting and retrofitting existing obsolete T12 fixtures.

- *Howard County Public Schools* is in the fourth year of a multi-year energy performance project. To date, 13 schools have been contracted for conservation measures. An estimated \$600,000 in annual savings has been projected for the 13 schools. However, the school system is moving away from future energy performance contracts in favor of owner financed projects with a shorter term return on investment. For example, Howard County is mid way through installing occupancy sensors in all twelve of high schools, using Baltimore Gas and Electric (BG&E) rebates to help reduce costs by as much as 35%.
- *Prince George's County Public Schools (PGCPS)* is utilizing a Department of General Services' Energy Performance Contract (EPC) to upgrade, replace, and maintain building and energy components in schools and offices. PGCSP operating funds are used to service the debt on the financing agreement. Debt service and other costs of the projects will be fully recovered over a 15 year period through guaranteed lower energy and maintenance costs resulting from the improvements. Contracts totaling \$50.5 million are in place, funded from a combination of existing CIP systemic project resources (\$15.8 million) and lease-purchase financing (\$34.7 million). Implementation of the contract began in fiscal year 2007, with installation of the approved energy conservation measures scheduled over the following two years.

A second phase of the Energy Performance Management initiative is under consideration that will expand efforts by another \$100 million, to include additional schools and offices funded from a combination of existing CIP resources (approximately \$35 million) and future lease-purchase financing (approximately \$65 million). Prince George's County Public Schools writes that use "of alternative financing...provides a cost-effective vehicle (i.e., cost neutral over the financing term due to lower guaranteed energy and maintenance operating costs) for accelerating needed facilities improvements that would otherwise be deferred to future years based on available bond or pay-go funding."²⁰

- *St. Mary's County Public Schools*. Over the last 15 years, SMCPS has entered into three energy performance contracts for the majority of its schools. A recent benchmark analysis by the vendor showed that St. Mary's County public schools use considerably less energy per square foot than the national medians for these types of facilities. The study also found few opportunities for additional equipment modifications to realize further savings over a 15 year term.
- *Somerset County Public Schools* engaged the services of Energy Education, Inc. (EEI) to help manage and track energy consumption. The contract is restricted to human behavior issues, not capital equipment; however, this is a performance contract in that if SCPS does not save enough in energy expenditures to cover the costs of the consultant, the latter will make up the difference. A base year has been established, and at the conclusion of the first anniversary a determination

²⁰ Eric Walker, Interim Chief Administrator for Supporting Services, Prince George's County Public Schools, letter dated August 10, 2007.

of savings will be made. Settlement will occur after reconciliation of figures by both parties, a process that will account for changes in energy sources and weather conditions. Thus far the system has saved about \$900,000 in cost avoidance, allowing SCPS to reallocate monies to instructional programs. Other LEAs have used a similar human behavior approach, but without the guarantee of savings: Allegany County Public Schools was the first county to run a full four year contract cycle, which they renewed after the initial contract period. On the Eastern Shore, other LEAs that participate with EEI are Queen Anne's, Talbot, Kent, Dorchester and Caroline.

- *Wicomico County Public Schools* is investigating performance based contracting for a HVAC systemic project as a means to leverage limited funding, broadening this concept beyond the typical opportunities for potential energy savings.
- *Garrett County Public Schools* has completed a Preliminary Audit and is in the process of issuing a Request for Qualifications (RFQ) to perform a detailed energy audit with the seven (7) pre-approved IDCs through the Department of General Services.

POWER PURCHASE AGREEMENTS FOR SOLAR POWER²¹

The Power Purchase Agreement (PPA) has emerged as a well-tried method for the implementation of solar power at public schools. *Montgomery County Public Schools* currently has eight schools with photovoltaic (PV) solar arrays financed through PPAs (see chart below). In the standard PPA financing arrangement, a third-party investment group contracts with a solar vendor through a Special Investment Vehicle (SIP) to install and maintain a solar array on the roof of a school building. The investors, who retain ownership of the solar array, receive federal tax credits valued at 30% of the cost of the installation and sell Renewable Energy Credits (RECs) to Maryland electricity providers.²² The school contracts to host the PV array for 20 years and to purchase the electricity generated by the array from the owner at a competitive pre-determined rate which includes a cost escalation factor. Typically, the MCPS systems are sized to carry 20 – 40 percent of the building load during full building operations.

MCPS states that the benefits of a PV system include that it:

- Provides competitively priced electricity at a fixed rate for a long term.
- Lowers peak summer demand for electricity by 20 to 40 percent, and reduces very expensive capacity charges. Some of the MCPS systems are producing more electricity than can be used on weekends and holidays. MCPS is credited for the extra power that is produced that cannot be used at the time of generation. The Maryland Net Metering law requires the electric utility to give the user credit for that power and to provide that power back to the user at a time when it is needed, i.e., at night.
- Generates educational opportunities to study PV technology with real-time monitoring of electric production.
- Provides a regional benefit to the community by hosting local renewable energy production, reducing the stress and congestion on the electric distribution system.
- Supports Montgomery County's Climate Change Commitment and 2009 Climate Protection Plan.
- Large scale PV Solar projects generate attention from the media, students and staff, the board of education, local governmental leadership, and the county council, and well as from other government agencies, institutions, and potential host sites.

²¹ The information in this section is taken from a presentation by Mr. Joseph Lavorgna, Acting Director, Department of Facilities Management, Montgomery County Public Schools to LEA Facility Planners on May 7, 2010; a presentation to the Hyattsville Elementary Smart Sites Committee on June 23, 2010, by Mr. Lee Bristol of Standard Solar, Inc.; and emails dated June 24, 2010, from Mr. Sean Gallagher, Assistant Director, Department of Facilities Management, MCPS.

²² For private sector owners, direct installation and ownership of the solar array provides access to the tax credits. This avenue is not available to public owners since they have no tax liabilities.

School	Capacity (kW AC)	Number of Panels	Construction Value (\$)	Completion
				Date
Clarksburg HS	260	1,466	\$1,504,000	1/23/2009
Lakelands Park MS	133	770	\$790,000	2/10/2009
College Gardens ES	86	497	\$510,000	2/12/2009
Richard Montgomery HS	135	784	\$804,000	6/30/2009
Parkland MS	151	851	\$873,000	1/20/2010
Francis Scott Key MS	100	564	\$578,000	12/20/2009
Quince Orchard HS	319	1799	\$1,846,000	12/20/2009
Sargent Shriver ES	80	495	\$508,000	12/20/2009
Totals:	1,264	7,226	\$7,413,000	

Lessons learned to date by MCPS include:

- Since the cost of coordination is high, the rate must be set far enough below market rates to generate a cost avoidance that can justify the effort.
- The cost avoidance achieved through a PV PPA is not particularly large as compared to that achieved through other energy conservation programs. The PV PPAs should consequently not be viewed as the most important prong of a comprehensive energy management program.
- MCPS is credited for the extra power that is produced that cannot be used at the time of generation.
- A PPA PV system should not be installed on a roof that is not expected to last 20 years, or one that is expected to have significant problems.
- PV systems work best on the large roofs associated with middle and high schools.
- Stormwater management regulations must be taken into account, since the roof surface may be needed as a vegetative roof in order to offset the loss of pervious area cause by a later addition.

According to MCPS, there are several risks associated with the PPA approach. The contract for the PPAs requires the vendor to insure that the system installation will not void the 20 year NDL (no dollar limit) existing roof warranties, and if it does, to assume responsibility for this warranty. In addition, while the vendor is responsible for any roof leaks or problems that result directly from the installation and operation of the system which are outside of the NDL roof warranty, the owner is responsible for all leaks that result from other causes. Second, there is a very significant cost to be borne by the owner if the system needs to be partially or fully removed or relocated. This risk exposure needs to be understood and appreciated, and any projected savings should be discounted accordingly. Third, a potential cost exposure is related to the agreement to purchase the power for 20 years at a PPA contracted price with annual escalation. After comparing the unit price offered to the price being paid for conventional power, MCPS found that the differential was great enough, even with an escalation rate of 3% and with conventional rates stagnant or falling, to give confidence that some cost avoidance would be achieved.

Although the school system does not pay for the installation and maintenance of a PV PPA, MCPS believed that since the matter involves both the purchase of the full electricity output of the system as well as the hosting relationship of the system on the roof, it is necessary to procure the PPAs through a competitive process. Unit price as well as the experience, capabilities, and record of satisfactory projects of the vendor are considered in the selection. Sample solicitation and contract documents are available on request to the PSCP or to MCPS.

Other variations of the PPA approach include:

- *Harford County Public Schools* currently has six schools with photovoltaic (PV) solar arrays financed through PPAs. This financing option has the benefit of no upfront costs for HCPS. Through the strategic solar power service agreement with SunEdison, SunEdison financed and constructed the solar deployments, and will operate, monitor and maintain the solar power plants

for 20 years. In return, HCPS will purchase the energy produced at long-term predictable energy rates. Combined, the six solar power systems will produce an estimated 1.56 million kilowatt hours (kWh) of energy in the first year of operation alone and over 28 million kilowatt hours (kWh) over 20 years. The combined systems are expected to provide an annual cost avoidance of approximately \$100,000.

- *St. Mary's County Public Schools* entered into a 15 year PPA with Standard Solar for a 500 kW photovoltaic (PV) energy system at George Washington Carver Elementary School in October 2010. The project utilized \$500,000 in Project Sunburst grant funds from the Maryland Energy Administration (MEA). The contractor was selected through an open request for proposal process, and the technical capabilities, proposed energy pricing, and the potential buy-out options were considered. The installation was begun in December 2010 and installation was completed at the end of March 2011. The solar system became operational at the end of April 2011. Based on the system's initial experience, the solar photovoltaics are contributing in excess of 70% of the electricity currently consumed by the school.
- *Washington County Public Schools (WCPS)* applied for and was awarded a \$340,000 Project Sunburst grant from the Maryland Energy Administration for the installation of a photovoltaic solar array to generate electricity at Northern Middle School. However, as an indication of the difficulties that can arise in the implementation of these types of projects, an engineering analysis performed by the PPA vendor determined that the roof structure of the school would not support the weight of the solar array and the project was ultimately cancelled and the grant returned to the Maryland Energy Administration. Despite this setback, WCPS remains open to PPA arrangements in the future if the right fit can be found.

CENTRAL ADMINISTRATION BUILDINGS

Prior to the recent resurgence of interest in P3, activity in alternative financing of LEA facilities was largely focused on central administration functions. After the initial interest in school buildings that was generated by the Public School Facilities Act of 2004, investor interest may have shifted to this type of facility for several reasons:

- A reluctance on the part of county governments to issue debt for administration facilities, in which the State does not participate through its capital funding programs. Consequently, school systems are often forced to seek other funding and financing arrangements to improve their central office facilities.
- Anticipated improvement of administrative and operating efficiencies by consolidating functions previously housed in geographically separated and obsolete buildings into a single facility, sometimes using the avoided costs of rent payments or the sales of the former administration buildings to offset the costs of the new structure.
- The view of developers and financiers that administration buildings that are built to office standards offer more possibilities for re-use and marketability than do school buildings, and consequently offset the risks associated with potential non-appropriation of lease payments.
- As noted above, developers appear to have a stronger interest in the parcels that the school system owns for its central administration buildings because of their location in higher density corridors, while schools tend to be located in low-density residential areas.

The following central administration projects are at various stages of development or completion:

- *Frederick County Public Schools (FCPS)* will not use any alternative financing approach in the foreseeable future to build a school facility; they wrote in August 2005 that "public financing is judged to be least expensive for long term project financing." However, the school system did

implement a lease-purchase arrangement for the new central administration office in the City of Frederick, completed in the fall of 2010. The office building consolidates functions formerly housed in four inefficient buildings located several miles apart. As the Frederick County government did not want to issue debt for the project, the County and Board agreed that the new administrative building could be funded through the Board's operating budget.

An original concept, in which a developer would build and lease the facility to the Board, was rejected because the developer would not have access to tax-exempt debt and the property would be subject to real property taxation. Instead, the Board executed a tax-exempt lease-purchase agreement that funded land acquisition from the City of Frederick, construction of the project, contingencies, and costs of closing. The Board will ground-lease the land for 40 years to the selected lease provider, which will in turn leaseback the land and the building for 25 or 30 years to the Board. The transaction is structured as a conditional purchase agreement, whereby the Board will own the property at the end of the 25 or 30 year period. Purchase installments, which are considered a current expense of the Board subject to non-appropriation and not as debt, have a principal and interest component. The interest reflects tax-exempt rates that are approximately 30-40 basis points over general obligation debt, due to the non-appropriation risk and the illiquidity of the lease purchase agreement.

Advantages that FCPS sees in this arrangement are:

- The 40-year ground lease enables the lease provider to realize the economic value of the property in the event that the Board of Education does not appropriate funds to make the purchase installments.
- The arrangement overcomes several obstacles, including County constraints on issuance of debt for the administration building, the inability of the Board to issue debt on its own or secure real estate with a deed of trust, and the requirement of the Board and the County that payments fall within preconceived limits.
- While the interest component of the purchase installments is above what the County would have paid had it agreed to issue general obligation debt, issuance costs are lower. In addition, the occupancy cost will be significantly lower than if a developer had built and leased the building directly to the Board of Education.

In December 2006, FCPS issued a Request for Proposals (RFP) for design-build services for the new building, with alternates regarding the size of the building (75,000 or 90,000 square feet) and the extent to which it would be finished and furnished. Technical proposals from five entities were received, of which three were invited by the Evaluation Committee to submit cost proposals. One proposal submitted by a local team was approved by the Board of Education in June 2007. Financing through Sun Trust was approved in October 2007 and settlement on the land with the City of Frederick occurred in December 2007. Construction was completed in July 2010. Staff has moved into the building and plans are underway to sell the newly vacant excess properties.

- *Harford County Public Schools (HCPS)*. In 2005, HCPS completed a 73,000 square foot central administration building in downtown Bel Air through a lease-leaseback financing arrangement. Central office functions previously housed in an administration building dating from 1872 and in four other leased offices were consolidated into the new facility. Avoided rents on two of these administrative offices are used to partially fund the lease payments. The deteriorated condition of the existing facilities precluded their further use as administrative quarters. It is expected that the administration of the school system will improve in efficiency through centralization of central office functions. Following competitive negotiation to procure a combined construction and finance package, the construction contract was awarded, but it was then decided to procure the financing separately through competitive negotiation with a number of banks. The term of the lease-leaseback finance agreement is 25 years, with a ground lease on the land only and assumption of title by the Board of Education after 25 years. There is no pre-payment penalty.

Construction funds were placed in an escrow account through a Mutual Fund consisting of US Treasuries.

It is anticipated that the savings generated through avoided lease costs will reach a break-even point at 7.5 years. In the analysis of the payback period, HCPS compared renting an equivalent amount of space vs. the lease-leaseback option. The new administration building was designed to achieve a LEED (Leadership in Energy and Environmental Design) Silver certification, but was actually awarded a higher ranking of LEED Gold.²³

- *St. Mary's County Public Schools (SMCPS)* used tax-exempt financing from a 15 year mortgage through Sun Trust for the purchase and construction of an addition to its main administrative facility in 2002. As a result of its conservative fiscal practices, SMCPS has accumulated a sufficient fund balance to pay off the remaining mortgage balance eight years ahead of schedule.

B. ALTERNATIVE FUNDING

Five school districts have reported on using or exploring alternative *funding* mechanisms to build public school facilities. In alternative funding, construction monies are provided from a third source – private developer, private foundation, non-profit organization, grants – to replace part or all of the local obligation for a project. The local government may use conventional general obligation bond revenues for the balance of their project funding, and the project is usually procured and delivered through conventional means, with the addition of State funds if the project is approved through the CIP process. Several current examples of alternative funding are provided below. Not included are charter schools facilities, which are funded through private fund-raising or other mechanisms: although charter schools in Maryland are approved by the local boards of education and their students are public school students, they are typically housed either in facilities already owned by the board of education, or are in buildings that are privately owned or leased. These latter facilities do not add to the building stock in the local board's inventory.

Also not included in this report are the numerous grants that school systems receive for a variety of purposes, some of which involve facility improvements. Since the interest of the Task Force to Study Public School Facilities was on methods to engage the private sector in the building of schools, grants that are provided through community and non-profit organizations, the State of Maryland, and the federal government are not covered. This includes grants provided through the State Fiscal Stabilization Fund of the American Recovery and Reinvestment Act of 2009. While the majority of these funds were used by LEAs to enhance their instructional resources, a few LEAs have used portions of the funds for facility work, including renovation of shops and classrooms for Career and Technology Education (CTE) programs and upgrade of special education classrooms to enhance security (*Charles County Public Schools*)

Current instances of alternative funding include:

- *Anne Arundel County Public Schools*
 - Broadneck HS Addition: A local developer has fully funded and constructed an eight classroom addition to increase the capacity of the high school, resolving one of the adequate public facility ordinance (APFO) issues required for approval of a housing development. In this turnkey arrangement, the developer designed, constructed and furnished the addition utilizing AACPS standards. The contractor was selected and managed by the developer in coordination with AACPS.
 - Imagine School: A developer is proposing to construct a kindergarten - eighth grade school to be operated by an outside school management company. The contract school developed educational standards that were approved by the Board of Education. The developer will

²³ A Powerpoint presentation on this project is available on request

lease the facility to the contract school using the per pupil allowance for Anne Arundel County as their funding source. The new school will draw students from three area elementary schools that are currently overcrowded.

- Meade HS Addition: A local developer is exploring the option of fully funding and constructing a twelve classroom addition to address the overcrowded conditions at the high school. Similar to Broadneck HS, by increasing the school capacity the developer will be able to resolve one of the APFO issues that prevent approval of a housing development. As proposed, the developer will design, construct and furnish the facility using AACPS standards in a turnkey operation.
- *Frederick County Public Schools* has three projects that have been or are using alternative funding sources:
 - A wing for Tuscarora High School, which opened in 2003, was funded entirely by a private developer to allow housing projects to move forward against an APFO restriction. The project, which was designed and procured according to FCPS standard methodologies, opened in phases, with the first phase completed for the beginning of the 2007-08 school year and the second phase for the second half of the school year. Funds were accessed by FCPS through a line of credit, and the project was completed by the school system using conventional methods of design, procurement, and construction. This project has been successfully completed and closed out.
 - A \$4.5 million Earth Space Science Laboratory was partly funded through private donations in the amount of approximately \$800,000. This highly popular program, which is attended by every elementary school child in the school system, had been housed in an obsolete wing of Lincoln Elementary School in Frederick City. The replacement structure is co-located on the same site with the school, which is currently under renovation. The Earth Space Science Lab project was completed for the beginning of the 2009-10 school year.
 - An addition to a middle school that opened in September 2006 received partial funding from a developer. To stay on schedule, the county funded and the school system built the addition even in the absence of State planning approval. The developer agreed to pay the interest for up to seven years on the funds that the County borrowed in advance of the State share it anticipated receiving through the CIP approval process. If State funds had not been received at the end of seven years, the county agreed to assume the interest payments from the developer. However, State funding for the project was completed in FY 2008, releasing the developer from the obligation.
- *Garrett County Public Schools* has completed an addition to Grantsville Elementary School that includes spaces for both kindergarten and a Head Start program. The Head Start portion of the addition is funded by a federal Community Development Block Grant (CDBG) secured by Community Action, a local non-profit entity. This approach mirrors projects carried out elsewhere that have used funds from public sector entities or non-profits, e.g. the Maryland-National Capital Park and Planning Commission in Prince George's County, to build facilities that provide services to the public in the same facility that houses a school. The approach reinforces the identity of the school as a community center.
- *Montgomery County Public Schools*. In 2008 MCPS entered into a cooperative financing agreement with Real Maryland, a professional soccer team, to help finance the installation of an artificial turf field at Richard Montgomery High School. In exchange for funding approximately 30 percent of the cost of the field, the team was granted preferred scheduling of the field during non-school activity hours. The arrangement also provides additional hours of use for other community users through the county's office of Community Use of Public Facilities. A similar arrangement

has been approved for a local youth soccer organization to help finance an artificial turf field at Walter Johnson High School as part of the school's renovation project.

- *Washington County Public Schools.* In 2002 a community group approached WCPS to build a stadium and track for North Hagerstown High, which did not have a stadium and shared facilities with South Hagerstown High School. The community group obtained \$3,500,000 in pledges and donations for design and construction costs in the form of funds and in-kind donations from private and corporate donors, contractors and suppliers, the State's Program Open Space (POS) fund, the City of Hagerstown, and State general obligation bond proceeds (outside of the Public School Construction Program). On the basis of pledges for future and periodic donations secured by the community group, the County Commissioners provided interim cash flow and financing for the project. The project was delivered through a Construction Management Agency method using competitive sealed bidding of trade contractors. Using this project as a model, the Board is encouraging other community groups to develop similar cooperative projects.

The use of historic tax credits can also be considered a form of alternative project funding. As described above, both the Baltimore School for the Fine Arts and the Barbara Ingram School for the Arts in Hagerstown used historic tax credits for the renovation of their facilities. Since these credits are only available to private entities, access to them requires establishing a third party, typically a non-profit 501(c)3 corporation, as intermediary. There are few school buildings in Maryland that are eligible for historic designation, but this source of funding can be considered in unique circumstances.

C. PROJECT PROCUREMENT

Competitive sealed bidding remains the preferred procurement method among the LEAs for construction services. The method has the advantage of complete objectivity, since selection is based on a single factor, price. The simplicity and transparency of the method are also attractive. St. Mary's County Public Schools writes, "Given ample planning time and quality design documents, competitive sealed bids have consistently resulted in cost effective and high performance educational facilities."²⁴ A major drawback, however, is the potential for the bid prices to be substantially higher than the budget allows, because estimates by the owner, architect, or even professional estimator may not reflect the precise bid climate that prevails on bid day. If costs are high relative to budget, the owner has three options, all unattractive: seek additional funds from the local fiscal authority; re-bid the project with the same scope, with the risk that market conditions may be even worse on the new bid day; or re-scope the project, incurring substantial delays and again with no assurance about the condition of the bidding market on a now distant bid day.

A further drawback to this procurement method is that a bidder who has not adequately covered the project scope may have a strong incentive to reduce quality during construction. Both problems increase during times of rapid construction escalation and de-escalation. In periods of escalation, the bidder must shoulder enormous cost risks, particularly for items or systems that have volatile pricing, e.g. petroleum-based products, or that have very long lead times, e.g. mechanical equipment and windows. Paradoxically, the problem has re-emerged during the current economic downturn, in which the competition for public sector work has increased significantly and contractors have a powerful incentive to underbid the work, sometimes at or below cost. This dangerous practice can lead to either a reduction of quality or to change orders as contractors seek to recoup their losses. Large change orders or lack of accountability for schedule delays can also result from the adversarial relationship between owner and contractor that competitive sealed bidding tends to generate. While payment and performance bonds, required of all general contractors and of major subcontractors in some jurisdictions, alleviate some of these risks, dissatisfaction with this form of security has increased due to the slowness of the cure process and the refusal of some sureties to honor their obligation to remedy the defaults of their bond holders. General experience indicates that institutionalized security can only supplement, not substitute for, the experience, integrity, and personal commitment provided by a good contractor.

²⁴ J. Bradley Clements, Chief Operating Officer, St. Mary's County Public Schools, letter dated June 23, 2009

As a result of the liabilities inherent in competitive sealed bidding, a number of jurisdictions have embraced the **multi-step sealed bid process**, which requires bidders to pre-qualify for the specific project, often in addition to a general pre-qualification that applies to all projects. Short-listed constructors can then submit bids for the project. This approach typically results in a higher quality of bidder and consequently less risk to the owner, particularly with respect to change orders, schedule adherence, and a general improvement in teamwork and professionalism. School systems that use this method report a high level of satisfaction with the results, and the PSCP actively promotes the use of the approach whenever it is realistic. However, in locations where the supply of contractors and subcontractors is limited, there is concern that use of a method of selection based on any factor other than cost will diminish future competition by shrinking “an already small pool of prospective bidders. If, for example, the same electrical contractor was selected based on quality of bid rather than price, other prospective electrical bidders may stop coming to the table.”²⁵

Montgomery County Public Schools uses a variant of the multi-step sealed bid process, in which contractors and subcontractors are pre-qualified for groups of projects based on their past record of successfully completing projects of similar scope and size. In order to become pre-qualified to bid on an upcoming project, a new subcontractor must submit qualification documents at least 30 days prior to the bid date. The 30-day requirement allows for the submission of references to a third-party survey company and the final evaluation of qualifications by MCPS staff, actions that must be completed prior to the time required for MBE outreach (10 days prior to bid-opening day). MCPS typically has two categories of projects for general contractors, those below \$1 million and those between \$1 million and \$10 million. Projects greater than \$10 million are procured using the Construction Management At-Risk method.

Competitive negotiation, in which a vendor is selected based initially on qualifications followed by negotiation over scope of services and cost, continues to be the preferred method of obtaining professional design and Construction Management Agency (CMA) services. In these areas of professional practice, quality of service is a paramount concern and the measures of successful service are less objective than the cost of “bricks and mortar.” This method is also being successfully used to procure the services of the construction manager in Construction Management At-Risk (CMR) projects; generally, this procurement method is combined with competitive sealed bidding for the trade packages (see COMAR 23.03.03.10).

While there is still hesitation to pay more than the lowest price for hard construction costs, competitive negotiation substitutes the concept of “best value” for “best price,” under the argument that a well-constructed, professionally delivered facility will ultimately be of greater value, and potentially of less cost, to the public than one that is fraught with defects and has been built through a contentious and possibly litigious process. Competitive negotiation is the only procurement method that seems reasonable when the project is at less than 100% completion of design on the date of award, for example in the Design-Build or in some variants of the Construction Management At-Risk delivery methods, because it allows the owner to work with the constructor and others to arrive at the scope of services and project scope that fit the budget objectives.

Maryland has seen an increase in **intergovernmental purchase agreements** for school construction projects, a process in which an LEA procures construction services through another governmental agency’s previously competed contract with a vendor. The method appears to work best for small projects that involve very uniform materials, standard construction details, and extensive, multi-project scopes, such as roofing and paving. *Baltimore County Public Schools* has procured roofing replacements through the Pennsylvania Education Joint Purchasing Council (PAEJPC), a member of the twenty-two state Association of Educational Purchasing Agencies (AEPA). The AEPA solicits bids for products and services through national advertisements and makes award to the lowest, responsible, and responsive bidder. PAEJPC members who use the program benefit from the ability to pick from quality contractors at pre-established bid prices for any type of roofing system. Since members do not have to solicit their own bids, project approval times can be significantly reduced. All multi-state vendors are fully bonded and

²⁵ Joseph Price, Facility Planner, Worcester County Public Schools, email dated August 1, 2007.

have met the bidding requirements for the various states in which they propose to work. BCPS reports that it has enjoyed guaranteed, quality workmanship overseen by the PAEJPC, and that the ability of the roofing services vendor to pick qualified roofing contractors has provided an almost risk-free roof replacement program. The services that are currently being provided include full time project management, allowing the school system to significantly reduce its commitment of staff to manage the projects.

D. PROJECT DELIVERY

With the high level of State and local funding now dedicated to school construction, project delivery has become a lively arena for investigating new methods and discussing lessons learned. Project delivery affects every aspect of the project: the design approach, the schedule, the costs, the quality, and ultimately the satisfaction of the owner and the building's users. In September 2007, the Public School Construction Program led a discussion among LEA facility planners to assess their current perceptions of the advantages and disadvantages of the various delivery methods described below. Since then, the Construction Management At-Risk (CMR) delivery method has been developed by a number of LEAs in accordance with State regulations; while experiences vary widely, the method appears to offer schedule, cost, teamwork, and risk advantages that make it an attractive alternative to more traditional approaches. Use of this trend was made possible through the 2004 legislation that liberalized project procurement requirements to allow for competitive negotiation in place of competitive sealed bid.

General Contracting (GC) remains the project delivery method used for the majority of public school construction projects. In this method, the services of the general contractor are almost invariably procured through competitive sealed bid. The method is appropriate for straightforward projects in which the design is complete on bid day and there are no unusual schedule, site logistic, or construction demands. The simplicity of having a single point of responsibility and of knowing all costs on bid day recommends this method. Most school systems pre-qualify their bidders; however, since the capacity of most LEAs to conduct in-depth investigations into contractors' experience and qualifications is highly constrained by their limited staff and time, the ability of the contractors to obtain bonding often stands as a substitute for other, more complex pre-qualification criteria. Unfortunately, experience shows that bonding can be easily obtained by contractors who later prove to be irresponsible, under-qualified, or unresponsive, and that bonding does not always provide sufficient protection to the owner in the event of contractor default. The result has been, in some cases, excessive change orders, poor coordination among subcontractors, and deficient quality requiring extensive close-out corrections and proceedings. In these circumstances, the architect as agent to the owner and author of the construction documents is frequently placed in an adversarial role relative to the contractor, a time-consuming situation that works at odds with the concept of a team approach. Consequently, some LEAs have moved toward other forms of project delivery, as well as to the use of the multi-step competitive sealed bid approach described above, in order to pre-qualify general contractors for specific projects or types of projects.

Construction Management Agency (CMA), in which the LEA holds multiple trade contracts but engages a professional construction manager to provide pre-construction consultation as well as construction-phase management services, has in the last fifteen years joined general contracting as a conventional project delivery approach for Maryland public schools. Some school systems, for example *Howard County Public Schools* and *Anne Arundel County Public Schools*, use it for all or almost all their major projects. CMA is advantageous during periods of economic prosperity when there are a large number of bidding opportunities available to general contractors in the private and public sectors, often making it difficult for school projects in general, and school projects in remote areas in particular, to receive sufficient competition. Since CMA allows local trades to bid directly on projects, the owner and CM can reach out to smaller trade contractors who otherwise would only participate through a general contractor. Depending on the local capacity in a particular trade, the results have been very mixed, but the method allows an owner to re-bid specific trade packages when the results of the initial solicitations are not satisfactory. The method also allows the owner to break up trade packages into smaller components, making them more accessible to firms with lower bonding capacity, increasing the participation of small and disadvantaged contractors. *Anne Arundel County Public Schools* writes "AACPS will continue using CMA for our large projects and general contractors for smaller projects. This method is currently the best

way for us to attract local small and minority businesses and compete for the contractors who are working on the many federal construction projects that are in our area.”²⁶

CMA is also attractive because the constructor is not in an adversarial relation to the owner and therefore can act as an extension of staff, a point that is particularly important for large jurisdictions executing multiple projects, or for small jurisdictions with severe staff limitations. *Worcester County Public Schools* writes:

“WCBOE Facilities Department consists of one individual. This staffing makes the use of construction management (agency) delivery method invaluable. CM is responsible for execution of the work and management of the prime contractors reducing the amount of project oversight required of the Facilities Department as compared to general contractor method.”²⁷

Experience indicates that the most important common factor in projects that have used CMA successfully is the experience and commitment of the construction management firm itself, implying that selection of the CM needs to be done carefully and using well-tested procurement instruments that fully define the scope of services that are expected to be provided. A negative aspect of CMA is that the construction manager, as agent to the owner but not holder of the trade contracts, is not at risk for the schedule, cost, or quality of the project. This point has led some LEAs to adopt the Construction Management At-Risk (CMR) method described below. LEAs that like the CMA method have tended to use the same construction management firms for repeat projects, building up a solid client-consultant relationship and mitigating the effects of problematic projects with those that run smoothly. There have been instances, however, in which LEAs experienced excessive CMA fees when projects were extended past their completion dates due to bankruptcy or other performance issues among the trade contractors. LEAs also report that not being at risk, CMAs appear to be less inclined to fight for the owner’s interests in disputes with the trade contractors, and to demand the level of accountability and contract follow-up that is necessary to maintain the schedule.²⁸ Just as CMA procurement needs to ensure that the construction manager is capable of forcefully managing the project with the owner’s interests in mind, CMA contracts need to be written very carefully in order to limit the liabilities of the LEA in the event of unforeseen conditions, an extended schedule, or trade contractor default.

Worcester County Public Schools has utilized the CMA method for four major school construction projects since 1999, and will use the method for the Snow Hill High School Renovation/Addition project scheduled to begin construction in 2012. The facility planner writes of the advantages of the method:

“Throughout the course of these four projects, Worcester County has been successful in developing, expanding, fine-tuning and communicating the Board of Education’s expectations regarding the construction manager’s performance and project execution methods from pre-construction services through project close-out. Employing lessons learned from each project has mitigated or eliminated many communication-, coordination-, schedule- and construction-related issues on each successive project.”²⁹

²⁶ Sandra Hughes, Manager of Facilities, Anne Arundel County Public Schools, email dated June 29, 2009.

²⁷ Joseph Price, Facilities Coordinator, Worcester County Public Schools, email dated August 1, 2007

²⁸ Brian Foret, Director of Facilities Services, Wicomico County Public Schools, email dated September 5, 2007

²⁹ Joseph Price, Facilities Coordinator, Worcester County Public Schools, email dated July 2011.



Worcester Technical High School, Worcester County - 2008

Construction Management At-Risk (CMR) is a method in which a construction management entity is involved in the project during design and then offers a Guaranteed Maximum Price (GMP) prior to the start of construction. It is frequently stated that CMR combines the advantages and corrects the deficiencies of both the General Contracting and the Construction Management Agency delivery methods. Like General Contracting it establishes a single point of responsibility, the CMR, which carries all risk for the project schedule and cost; like Construction Management Agency, it allows this constructor to be deeply involved in the early design process, helping to tailor the project scope to the approved budget before the owner is obligated to make a decision to proceed, and it provides considerable flexibility in the selection of the trade contractors.

In the private sector, in which negotiated contracts are the rule, the GMP is generally offered before the construction documents are complete, allowing the owner to work with the CM to arrive at a final scope of work that meets both the performance objectives of the project and the owner's project budget. In the public school construction arena, LEAs that have used CMR have selected the CM through a competitive negotiation process early in the design process, giving high priority to the CMR's qualifications, including previous experience with similar projects and their overall record of responsibility, integrity, and responsiveness. However, in contrast to the private sector, these LEAs have elected to have the trade contractors selected through a competitive sealed bid process, based on 100% complete construction documents. While this approach reduces the flexibility of the CMR to put forward value engineering suggestions in order to align the project scope with the budget, it also has a level of objectivity that virtually ensures that protests will not be upheld based on a charge of subjectivity in the selection of the trade contracts. The process of trade selection is already very familiar to the bidding community, and it allows Minority Business Enterprise goals and subgoals to be established for each individual trade package. However, in distinction to the individual package goals and subgoals that apply to the trade contractors, the CMR is obligated to meet or exceed the overall *project* MBE goal and subgoals, or to request a waiver. While trade contractors must meet the MBE goal and/or subgoals for their particular trade or request a waiver if the goal and/or subgoals cannot be met, the CM has the latitude to work with the trade contractor during the post-bid, pre-GMP period to increase the MBE participation within the trade. Without violating the integrity of the State MBE process, the CMR method used by Maryland introduces a level of flexibility that has produced high MBE participation levels in areas of the state which previously delivered very little participation.

Since the CMR approach works best if the GMP can be negotiated between the owner and the CM, it was not widely used for public schools in Maryland before the Public School Facilities Act of 2004 enabled the use of competitive negotiation for project procurement. In the standard method for procurement

described above, the entirety of the construction value consists of the CM's fee and general conditions, procured through competitive negotiation, combined with the total value of the trade contracts procured through competitive sealed bid. Under the regulations that govern delivery of public school construction projects (COMAR 23.03.04.06), if the entire GMP were obtained through negotiation, the LEA would be obligated to re-solicit the contract, a procedure that introduces a delay of at least 28 days and could possibly result in engagement of a different CMR for the construction phase of the project.

Those LEAs that have put CMR into effect report that teamwork has improved on the project, change orders have been reduced, and project schedules have exceeded expectations. Several school systems that are using CMR report that their projects were completed substantially ahead of schedule. *Caroline County Public Schools* writes about the Colonel Richardson High renovation/addition project that "Our previous two major projects were performed using a different methodology and neither was completed on time, yet this project is ahead of schedule. The major difference is the increased level of risk associated with not completing on time that is passed on to the Construction Management firm."³⁰ However, it should be noted that during the current economic downturn, a number of projects using conventional delivery methods have also been reported ahead of schedule. It is difficult to determine if the reported acceleration is due to the schedule risk that is passed on to the Construction Management firm in a CMR structure, or to the increased availability of quality subcontractors who have sufficient workforce in place. It may also be due to a unique combination of these factors: quality contractors are attracted to the CMR arrangement, and concurrently the CM is incentivized to deliver the project ahead of schedule due to the large risk associated with delays. Knowing that future awards by the same or other LEAs will depend on qualifications as well as cost may also provide a strong motivation to perform above expectations.

- *Carroll County Public Schools* is using CMR for a large high school HVAC replacement project. The CMR was selected via a two step procurement process utilizing qualifications to develop a short list and sealed competitive bids for the selection of the successful firm, establishing the GMP. This method was possible because the design documents were 100% complete and pre-construction services had been provided by a firm other than the successful firm. This school system is also using CMR for the replacement of a middle school. The CM for this project was selected through a competitive sealed proposal process and the trade packages were selected through competitive sealed bids in order to establish the Guaranteed Maximum Price (GMP).
- *Caroline County Public Schools* and *Dorchester County Public Schools* have utilized CMR services, respectively, for renovation of a major high school and replacement of the Dorchester Career and Technology High School (DCTC). In each case, the CMR was selected through competitive negotiation and the trade packages through competitive sealed bid. The facility planner for Dorchester County Public Schools, who has extensive private-sector experience with a variety of delivery methods, has written:

"[We] are convinced that CM at Risk is the best delivery method to control cost, schedule, engender a team approach to the project and ultimately to deliver a high quality, well thought out facility that will stand the test of time. The project team has the incentive to pursue both quality and profit in an atmosphere of trust and mutual respect. The owner mitigates the risk on the front end by knowing the "price tag" for a given scope at the outset."³¹

Dorchester County Public Schools reported that the project proceeded on budget and on schedule, despite losing over 60 days due to the severe weather during one winter of construction.

- *Montgomery County Public Schools* has used a modified form of the CMR approach, in which the LEA procures certain major trades independently through a multi-step sealed bid process and

³⁰ Milton Nagel, Chief Operating Officer, Caroline County Public Schools, email dated August 3, 2010.

³¹ Christopher Hauge, School Facilities Engineer, Dorchester County Public Schools, email dated July 24, 2007.

then assigns them to the CMR as part of the GMP. The balance of the trade packages are procured by the CMR through competitive sealed bids.

- *Prince George's County Public Schools* has obtained pre-construction and construction-phase services for a major high school replacement project through a process of competitive negotiation that was exceptionally objective, involving a rigorous point system. The CMR will present the GMP during the Design Development phase, i.e., at approximately 50% to 70% of design completion. The trade packages will be procured through competitive sealed bidding, obligating the CMR to re-bid or re-scope individual packages as necessary in order to bring costs within the GMP.
- *Wicomico County Public Schools* has used CMR for the replacement of the James M. Bennett High School. Since the construction documents were 100% complete, the CMR was selected using a two-step competitive negotiation process. The GMP was then finalized by using competitive sealed bidding for the individual trade packages. WCPS writes that "we have found ... that the CMR contract structure creates a more cooperative project team during construction in comparison to our CMA experiences providing the Owner with quicker solutions. In addition the Owner is more insulated from the overall number of contract disputes that are inevitable in any construction project."³² Based upon this experience, WCPS intends to use CMR with a similar procurement approach for the replacement of Bennett Middle School. A complete overview of the advantages and the process of CMR was provided by Mr. Brian Foret, Director of Facilities, at the convention of the Association of School Business Officials in May 2011; the presentation is available on request.

Design-Build (DB), in which a single entity is responsible for both design and construction of the project, has been used only for small projects, e.g. replacement of a portion of a mechanical system, science classroom renovations, and open space classroom enclosures. No large school construction project in Maryland has been carried out using DB. This is partly due to the increased management responsibilities placed on the owner, requiring qualified owner staff or contracted outside services to ensure proper oversight. In addition, there are concerns about releasing control of the design process to an entity other than the owner's architect, who in a conventional design-bid-build arrangement serves as an independent check on the constructor. In a 2005 experience in Prince George's County, the constructor wing of the DB entity refused to honor its initial cost estimate for a major addition project because of cost escalation, and withdrew from the project just before construction was to begin. Since a performance bond is not normally in effect for the pre-construction part of the DB process, the LEA in this situation had no recourse but to convert the project to a conventional general contracting approach, with attendant delays and costs. This failure of the DB to deliver as promised stands as a warning about a potential vulnerability in the DB process when applied to large projects.

The financing method described above, design-build-finance-maintain-operate (DBFMO), does of course involve design-build. In Alberta, the province developed a core design that was presented to the short-list vendors for development. This "bridging" approach appears to be one way that the public owner can ensure that design and building performance measures are met while still allowing the vendors to exercise their creativity and innovation in providing high quality building designs.

Job Order Contracting (JOC), in which a constructor bids only on the overhead and profit associated with an extensive fixed-price list of construction items, has been used successfully for smaller projects by several LEAs. It can be used in combination with a design-build approach, for example with mechanical system retrofits and open space classroom renovations that are relatively small in scope but require initial investigation to uncover existing conditions and arrive at the best solution. With the exception of locally-funded science classroom and open space classroom renovation projects in Prince George's County, no school system has used this method to build a major project. *Montgomery County Public Schools* writes

³² Leisl Ashby, Facility Planner, Wicomico County Public Schools, email dated July 27, 2010.

that “for most systemic projects, it is less expensive to do public bids with defined scopes and drawings.”³³

CONCLUSION

Following enactment of the Public School Facilities Act of 2004, the private sector was active in soliciting the interest of school boards and county governments to use alternative financing arrangements for school construction. To date, the response of the LEAs has been largely tentative: many are interested, but almost all want to see a successful educational project completed in another jurisdiction before they are willing to engage in the complexity and risk of developing their own procurement. Two jurisdictions, after initiating studies to determine if alternative financing could accelerate needed projects or expand the range of projects that could be undertaken, determined that it was better to procure and deliver the projects conventionally. The Barbara Ingram School for the Arts project in Washington County, although unique in its use of a historic building within an established urban setting, may encourage other LEAs to investigate alternative financing for their school construction tasks. For an interval after the initial wave of interest, attention shifted toward the construction of central administration facilities.

The PSCP is now evaluating whether some form of public private partnership (PPP), particularly the design-build-finance-maintain-operate (DBFMO) structure used in the United Kingdom, Canada and Australia, might have application in Maryland. While impressive results have been achieved abroad, there are specific circumstances in Maryland that may militate against using this method. With the encouragement of the Public Private Partnership Commission chaired by Lieutenant Governor Anthony Brown, it will be determined if sensible adaptations of methods used outside of the United States are applicable to the Maryland situation..

While interest in alternative financing remains hesitant, the liberalized procurement and project delivery methods made available by the Public School Facilities Act of 2004 have substantially broadened the range of tools available to the LEAs to achieve their school needs. The ability to negotiate scope and price when justified by circumstances opens the field of public school construction to the Construction Management At-Risk project delivery method, which is currently being applied successfully in a limited number of major projects around the state. Through these techniques and through access to potential private capital, the range of tools available to school districts and county governments to meet their school facility needs has been greatly expanded by enactment of the Public School Facilities Act of 2004.

³³ James Song, Director, Division of Construction, Montgomery County Public Schools, letter dated August 2, 2007

APPENDICES

A. ALTERNATIVE FINANCING SUBCOMMITTEE, TASK FORCE TO STUDY PUBLIC SCHOOL FACILITIES

- Dr. David Lever, Chair, Executive Director, Public School Construction Program
- Ms. Jan Gardner, County Commissioner, Frederick County Board of County Commissioners
- Dr. Nancy Grasmick, State Superintendent of Schools
- Mr. David Harrington, Member, Prince George's County Council
- Senator Patrick J. Hogan
- Mr. Roy Kirby, President, Roy Kirby Construction, Inc.
- Mr. Brian Morris, Member, Board of School Commissioners, Baltimore City Public Schools
- Mr. Daniel Smith, private environmental consultant
- Dr. Yale Stenzler, former Executive Director, Public School Construction Program
- Mr. Konrad Wayson, Member, Board of Education, Anne Arundel County Public Schools
- Mr. Tim Woodring, Member, Board of Education, Allegany County Public Schools

B. THE PUBLIC SCHOOL FACILITIES ACT OF 2004 (SENATE BILL 787 / HOUSE BILL 1230)

Article - Education

Provisions on Alternative Financing and Project Delivery

4-114.

- (a) All property granted, conveyed, devised, or bequeathed for the use of a particular public school or school system:
- (1) Except as provided in subsection (c) of this section, shall be held in trust for the benefit of the school or school system by the appropriate county board; and
 - (2) Is exempt from all state and local taxes.
- (b) Money invested in trust for the benefit of the public schools for any county or city is exempt from all state and local taxes.
- (c)
- (1) A private entity may hold title to property used for a particular public school or local school system if the private entity is contractually obligated to transfer title to the appropriate county board on a specified date.
 - (2) The conveyance of title of school property to a private entity for a specified term under this subsection may not be construed to prohibit the allocation of construction funds to an approved school construction project under the Public School Construction Program.
 - (3) A county or county board may convey or dispose of surplus land under the jurisdiction of the county or county board in exchange for public school construction or development services.

4-126.

- (a) In this section, "alternative financing methods" includes:
- (1) Sale-leaseback arrangements, in which a county board agrees to transfer title to a property, including improvements, to a private entity that simultaneously agrees to lease the property back to the county board and, on a specified date, transfer title back to the county board;
 - (2) Lease-leaseback arrangements, in which a county board leases a property to a private entity that improves the property and leases the property, with the improvements, back to the county board;
 - (3) Public-private partnership agreements, in which a county board contracts with a private entity for the acquisition, design, construction, improvement, renovation, expansion, equipping, or financing of a public school, and may include provisions for cooperative use

- of the school or an adjacent property and generation of revenue to offset the cost of construction or use of the school;
- (4) Performance-based contracting, in which a county board enters into an energy performance contract to obtain funding for a project with guaranteed energy savings over a specified time period; and
 - (5) Design-build arrangements, that permit a county board to contract with a design-build business entity for the combined design and construction of qualified education facilities, including financing mechanisms where the business entity assists the local governing body in obtaining project financing.
- (b) Except when prohibited by local law, in order to finance or to speed delivery of, transfer risks of, or otherwise enhance the delivery of public school construction, a county may:
- (1) Use alternative financing methods;
 - (2) Engage in competitive negotiation, rather than competitive bidding, in limited circumstances, including construction management at-risk arrangements and other alternative project delivery arrangements, as provided in regulations adopted by the Board of Public Works;
 - (3) Accept unsolicited proposals for the development of public schools in limited circumstances, as provided in regulations adopted by the Board of Public Works; and
 - (4) Use quality-based selection, in which selection is based on a combination of qualifications and cost factors, to select developers and builders, as provided in regulations adopted by the Board of Public Works.
- (c) The Board of Public Works shall adopt regulations requiring a project that qualifies for alternative financing methods under this section to meet requirements regarding the advantages of the project to the public that include provisions addressing:
- (1) The probable scope, complexity, or urgency of the project;
 - (2) Any risk sharing, added value, education enhancements, increase in funding, or economic benefit from the project that would not otherwise be available;
 - (3) The public need for the project; and
 - (4) The estimated cost or timeliness of executing the project.
- (d) Projects that qualify for alternative financing methods under this subsection:
- (1) Shall meet the educational standards, design standards, and procedural requirements under this article and under regulations adopted by the Board of Public Works; and
 - (2) Consistent with the requirements of this article, shall be approved by:
 - (i) The county governing body;
 - (ii) The state Superintendent of Schools; or
 - (iii) The Interagency Committee on School Construction and the Board of Public Works.
- (e) Use of alternative financing methods under this section may not be construed to prohibit the allocation of state funds for public school construction to a project under the Public School Construction Program.
- (f) A county board may not use alternative financing methods under this section without the approval of the county governing body.
- (g) The Board of Public Works shall adopt regulations recommended by the Interagency Committee on School Construction to implement the provisions of this section, including:
- (1) Guidelines for the content of proposals, for the acceptance and evaluation of unsolicited proposals, and for accepting competing unsolicited proposals;
 - (2) Requirements for the content and execution of a comprehensive agreement governing an arrangement authorized under this section;
 - (3) Guidelines for content and issuance of solicitations;
 - (4) Requirements for the prequalification of bidders or offerors;
 - (5) Requirements for public notice of solicited and unsolicited proposals and proposed execution of a comprehensive agreement;
 - (6) Regulations that require compliance with requirements applicable to qualified projects that would otherwise be in effect under the state procurement law if the procurement were competitively bid; and

- (7) Regulations that require that contracts and subcontracts adhere to the requirements of title 17, subtitle 2 and title 14 of the State Finance and Procurement Article if the requirements would otherwise be applicable.

C. WORKGROUP ON PROJECT PROCUREMENT, DELIVERY, AND ALTERNATIVE FINANCING

- Dr. David Lever, Chair, Executive Director, Public School Construction Program
- Mr. Adam Zimmerman, Vice-Chair, Program Manager, Public School Construction Program
- Mr. Donald Arnold, Member, Board of Education, Baltimore County Public Schools
- Dr. William AuMiller, Superintendent, Allegany County Public Schools
- Mr. Ray Barnes, Executive Director, Frederick County Public Schools
- Mary Jo Childs, Esq., Counsel, Board of Public Works
- Mr. Bernard Fox, Supervising Budget Examiner, Department of Management & Budget
- Ms. Jan Gardner, County Commissioner, Frederick County Commissioners
- Mr. Richard Hawes, Director, Facilities Management, Montgomery County Public Schools
- Mr. Carl LaVerghetta, Director of Procurement, Department of General Services
- Mr. Rupert McCave, Capital Improvement Program Officer, Prince George's County Public Schools
- Sheila McDonald, Esq., Executive Secretary, Board of Public Works
- Mr. Gary McGuigan, Project Director, Maryland Stadium Authority
- Mr. Mark Moran, Facilities Planner (retired), Anne Arundel County Public Schools
- Mr. John O'Neill, Director of Administration, Harford County Government
- Elizabeth Roese, Esq., Director, Public Finance, Office of the Attorney General
- Dr. Bernard Sadusky, Superintendent, Queen Anne's County Public Schools
- Elliott Schoen, Esq., Assistant Attorney General, Office of the Attorney General
- Dr. Beatrice Tignor, Chair Board of Education, Prince George's County Public Schools; Director of Procurement, Montgomery County Government
- Dr. Jerry Weast, Superintendent, Montgomery County Public Schools

D. WORKGROUP ON PUBLIC SCHOOL CONSTRUCTION REGULATIONS

- Mr. Allen Abend, RA, Deputy Director, Public School Construction Program
- Mary Jo Childs, Esq., Counsel, Board of Public Works
- Dr. David Lever, Executive Director, Public School Construction Program
- Sheila McDonald, Esq., Executive Secretary, Board of Public Works / Treasurer
- Elliott Schoen, Esq., Assistant Attorney General, Office of the Attorney General

E. RESOURCES: PUBLIC PRIVATE PARTNERSHIPS IN THE ENGLISH-SPEAKING WORLD

Note: Many of the items below are available on the internet. Web sites are listed where known.

Canada

- Infrastructure Ontario, "Assessing Value for Money: A Guide to Infrastructure Ontario's Methodology" (2007)
(<http://www.infrastructureontario.ca/en/projects/files/VFM-GUIDE-WEB.pdf>)
- Canadian Council for Public-Private Partnerships, *Schools: The Case for a Canadian PPP Application*, November 2007
- Canadian Council for Public-Private Partnerships, *2010 National Award Case Studies*, June 2011
- Ministry of Public Infrastructure Renewal, "Building a Better Tomorrow: Investing in Ontario's Infrastructure to Deliver Real Positive Change," February 2004
(<http://www.ontla.on.ca/library/repository/mon/7000/10319145.pdf>)

- Office of the Auditor General Nova Scotia, 1999 Report, Chapter 5, “Education: Public-Private Partnerships (P3s) for School Construction – Follow-up Review” (<http://www.oag-ns.ca/1999ag.htm>)
- Office of the Auditor General Nova Scotia, February 2010 Report, Chapter 3, “Education: Contract Management for Public-Private Partnership Schools” (<http://www.oag-ns.ca/feb2010/full0210.pdf>)
- Ontario Secondary School Teachers’ Association (OSSTF/FEESO), “Just say ‘NO’ to Privatization and P# schools: OSSTF Response to ‘Building a Better Tomorrow: Investing in Ontario’s Infrastructure to Deliver Real Positive Change’,” March 30, 2004 (<http://www.osstf.on.ca/adx/asp/adxGetMedia.aspx>)

England

- CABE (Commission for Architecture and the Built Environment), “Creating Excellent Secondary Schools: A guide for clients,” 2007 (<http://www.cabe.org.uk/publications/creating-excellent-secondary-schools>)
- CABE, “Client Guide: Achieving Well Designed Schools Through PFI,” September 1, 2002 (<http://www.cabe.org.uk/publications/achieving-well-designed-schools-through-pfi>) (http://www.nao.org.uk/publications/0809/schools_for_the_future.aspx)
- Department for Children, Schools and Families / Partnerships for Schools, “Building Schools for the Future,” 2008 edition
- Department for Education and Skills, “Private Finance Initiative for Schools: A guide for School Governors and Governing Bodies,” 2002
- Global Legal Group, “The International Comparative Legal Guide to: PFI / PPP Projects 2007,” Chapter 4, “England and Wales”
- House of Commons Treasury Committee, “Private Finance Initiative”, Seventeenth Report of Session 2010-12, printed August 2011
- National Audit Office, “The Building Schools for the Future Programme: Renewing the Secondary School Estate,” 2009
- Price Waterhouse Coopers, “Evaluation of Building Schools for the Future (BSF): 3rd Annual Report,” February 2010 (http://www.teachernet.gov.uk/_doc/14728/DCSF_BSF_Final_Report.pdf)
- UNISON, various publications (<http://www.unison.org.uk>)

Scotland

- Audit Scotland, “Taking the initiative: Using PFI contracts to renew council schools,” June 2002 (http://www.audit-scotland.gov.uk/docs/local/2002/nr_020612_PFI_schools.pdf)
- Scottish Futures Trust (<http://www.scottishfuturestrust.org.uk>)
- Scottish Futures Trust Business Plan 2010 – 2011 (<http://www.scottishfuturestrust.org.uk/docs/80/Business-Plan-2010v1.pdf>)
- Scottish Futures Trust Corporate Plan 2009 – 2014 (<http://www.scottishfuturestrust.org.uk/docs/44/SFT-Corporate-Planv-181109.pdf>)