Engaging the Private Sector
Using Public-Private Partnerships to Meet the Facility Needs of Public School Districts

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Submitted to the Department of Urban Studies and Planning
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and
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ABSTRACT

The United States is in the midst of an educational facility crisis that is affecting educational achievement and teacher morale. This crisis has resulted from decades of neglect of the country's stock of public school facilities. Meanwhile, population changes are creating new competing needs for scarce government resources and making it difficult to gain voter approval for the issuance of school construction bonds.

The severity of the crisis suggests that there are problems with the current method of public school provision in the U.S. Many of these structural problems seem to be solvable with traditional construction management tools. However, the fact that they have not yet been solved suggests the existence of a structural problem in the current methods of facility provision.

Some districts are using public-private partnerships to address their facility needs. This thesis studies the literature as well as the cases of Niagara Falls High School in Niagara Falls, NY, Oyster Elementary School in Washington, DC, and Horton High School in Greenwich, NS (Canada), in order to answer the following questions:

- What lessons can be learned from the experiences of school districts involved in public-private partnerships about the management and design of partnerships for school provision?
- What functional role can public-private partnerships play in preventing future educational facility crises in the U.S.?

The evidence from the three cases suggests that one method of preventing future educational facility crises may be to align the interests of school building owners with those of school building users. The three cases studied illustrate that public-private partnerships have the potential to facilitate this alignment of interests. They also suggest that successful partnerships rely heavily on clear goal definition, participatory planning processes, capable leadership, and appropriate role assignment.

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Introduction

A Growing Problem

Over the past 20 years, a growing body of research has sought to understand the relationship between educational facility condition and student achievement. This issue has become of such importance that both the American Institute of Architects (AIA) and the Council of Educational Facilities Planners International (CEFPI) have set up research centers to study it. Researchers have found that the quality (and cosmetic features) of facilities are related to academic achievement, decreased disciplinary action, teacher morale, and teacher effectiveness. While these studies approach the issue in different ways, their findings share a common theme: the quality of educational facilities plays an important role in the effective delivery of education in America.

Despite the seemingly important links between educational facility condition and student achievement, school facility conditions have been allowed to deteriorate over the past 50 years. A 1999 report from the National Center for Education Statistics noted that the average age of a public school in America is 42 years, and that these school buildings begin rapid deterioration after 40 years (Riley). This rapid deterioration is a symptom of the current crisis in educational facilities. Often, when faced with the task of cutting spending to meet budgetary constraints, capital budgets are the first to be impacted. As a result, a generation of schools that was built in the 1950’s are now coming to the end of their useful lives, while schools that were built to last longer are suffering from deferred maintenance and neglect.

In 1995, the General Accounting Office performed a study that painted an even bleaker picture of the state of America’s school facilities. Among the findings of the study was that:

- Two-thirds of U.S. schools need repairs and renovations to improve accessibility for disabled students or address health and safety problems;
- Half of America’s schools reported unsatisfactory environmental conditions, such as, poor ventilation, furnace problems, inadequate lighting, or insufficient physical security;
- Forty percent of schools needed to repair or replace building features such as, roofs or plumbing;
- One-third of America’s schools (serving 14,000,000 students) needed extensive repair and building replacements;
- Thirty percent of rural districts, thirty-eight percent of urban districts, and twenty-nine percent of suburban districts have at least one building in need of extensive repair or total replacement.

The price to address these problems and bring the schools to “good” condition was estimated at $112 billion in 1995. This number was revised upwards in 2000 by the National Education Association
(NEA). The NEA estimate for repairing and upgrading America's public schools was $322 billion, nearly three times the 1995 estimate (Farrell).

In 2000, the U.S. Department of Education reported that there were 53.2 million children in elementary and secondary schools. The student population is expected to remain flat over the next ten years, but then is expected to grow at a 6% rate between 2010 and 2020 (Riley). As student populations increase, the severity of America's facility problems will be compounded.

The children who will enter schools between 2000 and 2010 will be the grandchildren of the Baby Boomers and the children of the increasing number of families immigrating to the United States in the last 20 years (Riley). In addition to the billions of dollars necessary to bring current facilities up to code, millions more will be necessary to accommodate these future students.

While the condition of school facilities is deteriorating and the demand for school space is growing, people are living longer, increasing the average age of the population. Over the next 40 years, the share of prime working-age adults will decline from about 59 percent of the population to about 56 percent. Over the same period, the share of older adults (65 and over) will increase from just over 12 percent to almost 21 percent of the population (Urban Institute). Since public school construction is typically funded through local bond referendums, these demographic trends are likely to have a significant adverse impact on traditional public school construction financing. With many elderly voters living on fixed incomes and unable to afford higher taxes, it is likely to become more difficult to pass the requisite legislation to issue the bonds to pay for these much needed facility upgrades, repairs, and replacements.

In addition to shifting demographics and deteriorating public schools, the past 50 years have also seen increased suburban development in America. Some argue that this has led to increased socioeconomic segregation (Duany). Families in wealthier suburban districts are able to afford high quality schools; while poorer families, typically found in urban areas, must pay a bigger part of their incomes to support facilities of similar quality. Thus, voters in poorer districts face a substantially higher burden when trying to pay for the repair of an aging infrastructure. As a result, a rift has formed between urban and suburban school districts. The inequality in facilities has been the subject of landmark court cases in both New Jersey and Ohio. In both states, the courts have ruled that inadequacies in urban educational facilities violate the (state) constitutional rights of students to a free education. These states are now legislatively directing funds for facility improvements to urban districts in order to end this inequality and comply with court orders.

In those cities and states that are unaffected by such court rulings, some school districts are employing innovative measures to ensure that students are taught in safe and supportive environments. Some schools, such as the School for the Physical City in New York, are leasing space from private
landlords. Others, however, are using the talents and expertise of the private sector to build brand new schools via public-private partnerships. Public-private partnerships allow school districts to share risk with the private sector in a manner that allows both parties to perform roles that match their expertise. Partnerships also allow innovative financing arrangements to be used. Many times, school districts have non-monetary assets that can be liquidated to finance new school construction. These non-monetary assets may include underutilized land, sharable space, large service contracts, or even, sometimes, goodwill. This thesis explores how public-private partnerships are being used in three North American school districts in order to offer insights to how partnerships can be used in other school districts that are looking for ways to finance their long-term facility needs.

The Research Questions

The use of innovative public-private partnerships to address a national crisis provides an excellent research opportunity. This thesis is directed towards educational leaders who are interested in learning from the experiences of others in order to help meet their own educational facility needs. It studies the cases of three North American school districts that used public-private partnerships to finance new school construction, as well as literature on public-private partnerships and privatization to answer the following research questions:

1. What lessons can be learned from the experiences of school districts involved in public-private partnerships about the management and design of partnerships for school provision?
2. What functional role can public-private partnerships play in preventing future educational facility crises in the U.S.?

Thesis Structure

The thesis is organized in three parts. Part I provides background information about public-private partnerships and their application to public school construction. It begins with Chapter 1, which reviews the privatization and partnership literature. This chapter offers definitions and distinctions between the two concepts, as well as a brief history of partnerships. It ends with an examination of the benefits and limitations of partnerships as reported in the literature. Chapter 2 relies on the literature to provide guidance for leaders who are deciding whether to enter into partnership. It then sets forth the key elements of a well-structured partnership and explores the life cycle of a public school using the concept of an “event chain”. Part II contains three chapters that present individual cases of public-private partnerships that were used to construct new public schools. Each case illustrates a different partnership structure and offers lessons to school districts that are struggling to meet their facility needs. Each case concludes with a brief analysis of the factors that contributed to, prevented, or threatened the success of
the partnership. Finally, Part III of the thesis presents the findings and conclusions of the thesis. It also suggests potential areas of future inquiry.

Methodology

The field of public-private partnerships is recently reemerging in the real estate industry. As a result, there is limited literature available for review. This thesis relies on selected books on public-private partnerships and privatization. It also relies on books, class readers, government publications, and web pages to inform the discussion on the current state of educational facilities and the outlook for the future. The three cases presented are based on information gathered via web searches, site visits, and 18 personal interviews. In addition, special materials provided by interviewees were used in the analysis of each case.

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\(^1\) Berner researches conditions in Washington, DC, schools and finds a correlation between facility condition and academic achievement; Bowers and Burkett find that test scores of 5th and 7th graders are higher in modern school buildings. They also find decreased disciplinary action and increased self-concepts. Cash finds that test scores in small rural VA high schools were lower for students of low quality school buildings. Cosmetic factors seemed to have more of an effect on achievement than structural factors, however. Chan finds a significant relationship between school building age and achievement in 8th graders. Corcoran performed a study of teacher working conditions and found that physical conditions affect teacher morale and teacher effectiveness. (Moore and Warner).

\(^2\) In New Jersey the Court ruled in Abbott vs. Burke that the disparity in urban and suburban facility conditions constituted an unconstitutional denial of educational opportunity. In a similar suit, the plaintiff prevailed in Dale De Rolf et. al vs. the State of Ohio.

\(^3\) Throughout this thesis, “long-term” facility needs should be understood to include all activities from initial facility planning through facility decommissioning. It is significant that this includes the maintenance and operation of the school facility, although it does not include the delivery of educational services.
Part I: Partnerships and Public Schools
Chapter One: Public-Private Partnerships

Introduction

Abraham Lincoln once said, “The legitimate object of government is to do for a common of people whatever they need to have done but cannot do in their separate and individual capacities,” (Donahue). Public-private partnerships allow governments, unable to fully fund the services that they wish to provide, an opportunity to shift a portion of their financial burden to the private sector.

This chapter begins by differentiating between traditional government procurement, complete privatization, and two different types of partnerships. It continues with a brief overview of the 150-year history of public-private partnerships and ends with a discussion about the benefits and limitations of their use in the delivery of government services.

Definitions

Government decisions to enter into partnerships (also called joint ventures) often attract scrutiny and evoke great passion, as citizens and municipal workers fear losing the accountability and consistency that single-entity delivery of government services can offer. Many confuse the idea of partnerships with government service privatization. Few realize, however, that partnerships can be designed as relationships between multiple public sector entities or between the public and private sectors. Both forms of partnership differ from outright privatization. This section provides perspective on the various forms of partnership, comparing them to traditional government delivery of projects and outright privatization. It is important for government leaders contemplating the partnership decision to understand these differences.

Traditional Government

Donahue suggests three reasons that governments decide to use their own resources to provide a good or a service. The first is market failure. In the case of a market failure, some reportedly desirable result is deemed achievable only through a collective (government) effort. The second reason is based on morality. When morality drives government service provision, leaders observe a consensus among the electorate that provides a moral imperative for a government response to a non-market goal. Finally, Donahue suggests that government decision-making is sometimes based on individual opportunism. In these cases, a proponent anticipates a personal gain from a government endeavor without consideration of the broader gain or loss to fellow citizens.
Regardless of how a government identifies a desirable good or service to provide, it typically matches the perceived need with an existing department in government's bureaucracy. That department is then responsible for allocating resources and assigning a team of bureaucrats to administer the initiative. Given the scarcity of personnel and budgetary resources in government, these projects must be prioritized. This prioritization often takes place according to the goals and agendas of the individual department responsible for the initiative. This prioritization methodology necessarily implies that decisions are not always made with the best interests of the jurisdiction in mind, but rather with the best interests of the department's constituency in mind. It is possible that these two sets of interests are not always aligned. This can lead to a duplication of services, inferior delivery of services, or both due to the limits of departmental budgets and staffs.

**Privatization**

Privatization refers to the private delivery of some good or service that traditionally has been delivered by the government. Privatization exists in many forms. It can refer to the delivery of a service by a private firm to a government entity for a fee – such as the private provision of janitorial services or waste management. In these cases, the public sector continues to pay for the services but the private sector dictates the structure of the organization that will deliver those services. Another form of privatization involves the disposition of public assets to the private sector. This type of privatization took place in the 1980's when the British government sold British Telecom, Jaguar, and British Airways to facilitate their operation by the private sector (Donahue). In either case, privatization leads to the forfeiture of day-to-day control over whatever is privatized.

Proponents of privatization argue that the private sector is able to deliver services more efficiently than government. Explanations for this increased efficiency vary, but include:

- Better alignment of incentives to strive for efficiency that are created by the opportunity for economic profits; and,
- Increased accountability and attention to quality introduced by the free-market threat of substitution, bankruptcy, liquidation, and hostile takeover.

In order to test the validity of these efficiency arguments, Donahue performed a series of empirical studies that estimated the differences in efficiency for public and private firms performing similar tasks (Donahue). After studying programs in garbage collection, Pentagon support services, office cleaning, fire-fighting services, transportation, and utilities, he concluded that while a profit-seeking private firm has the potential for increased efficiency, this potential is only realized under certain circumstances. He finds that while the public or private nature of the provider is an important determinant of the level of efficiency, it is more important for a credible threat of substitution to exist. Donahue concludes his empirical review by asserting "when a well specified contract in a competitive
context can enforce accountability, the presumption of superior private efficiency in delivering public services holds true.” He continues, “Yet, it is just as true, unfortunately, that half of a market system – profit drive without meaningful specifications or competitive discipline – can be worse than none,” (Donahue, pg. 78).

Partnerships

Partnerships are used in the provision of government services to allocate responsibilities to entities that are experienced in managing specific risks. A properly structured partnership can help avoid some of the weaknesses of both traditional government delivery of services and privatization. There are generally two types of partnerships: public-public partnerships and public-private partnerships. Both are discussed in this section.

Public-public partnerships involve two or more government bodies working together to administer a program, deliver a service, or provide a good. By setting up a partnership, the various government bodies are able to share risk and responsibility and dedicate funds to projects in a more efficient manner. Public-public partnerships are capable of realizing the synergies that can be achieved by pooling the resources and agendas of public agencies that have common purposes. This type of partnership arrangement allows initiatives to be prioritized in a more efficient manner that better reflects their value to the entire jurisdiction, rather than just a single department. Because of this macro approach to benefit analysis in public-public partnerships, initiatives with broader social benefits can be implemented and gather a broader base of political support.

A public-private partnership combines the benefits of privatization, government services, and partnerships in general. Importantly, public-private partnerships can protect against some of the dangers of outright privatization by maintaining partial governmental control over government initiatives (Miller).

Gunyou defines a public-private partnership to be “any mutually beneficial activity undertaken by government and business to solve community problems that yield benefits to both the private interest and community at large,” (Gunyou, pg. 3). The overarching goal of a public-private partnership is to solve the community problem in a “win-win” manner. Stainback notes, however, that these types of partnerships do not always depend on finding middle ground, but rather finding new ways to solve different problems. Many times the outcome of a public-private partnership is one that neither partner would have produced if acting only in its own self-interest.

A public-private partnership is distinguished from privatization by the recognition that the delivery of government services can be segmented into discrete events, some of which are best delivered by government and some of which are best delivered by industry. By properly allocating responsibility
over these events, transactions can be structured to accommodate government and industry interests—
even when these interests initially appear to contradict each other.

Public-private partnerships, like any form of partnership, rely on sharing risk, reward, and
responsibility through specialization. The result, in theory, is a more efficient process of government
service and infrastructure delivery. Most public-private partnerships are government initiated and
succeed by allocating the various risks that government is not well equipped to handle. In any partnership
agreement, each party will require compensation that is proportional to the amount of risk that they take.
In an ideal partnership, the public and private sectors will value risks differently. This mismatch in risk
valuation creates arbitrage opportunities and can facilitate mutually beneficial partnerships.¹

The History of Public-Private Partnerships

Proponents of public-private partnerships often describe their methods as “new” or “innovative”.
Although it is true that public-private partnerships have become more popular in recent years, a careful
look at history reveals that such arrangements have been used in the U.S. to build public infrastructure
since the founding of our country (Miller).

For over 150 years, infrastructure projects have been funded with dedicated funds (either from
taxes or tolls) or with money that was borrowed and guaranteed by projected future revenue streams from
infrastructure projects. In fact, America’s $3 trillion stock of public infrastructure is a product of
innovative partnership arrangements between government, industry, and individuals. Throughout this
history, the degree of private participation in infrastructure projects has shifted as public needs and the
public will have changed.

Miller notes that, “since 1789, the federal government has not had sufficient public resources to
pay for all public infrastructure facilities and services,” (Miller, pg. 87). Two of the earliest reasons for
this lack of resources were a poor credit rating immediately following the American Revolution and weak
tax receipts. The first large federal spending for infrastructure—the National Road—taught the country
that speculating in infrastructure was a poor way to spend limited resources. After this and other
government-funded infrastructure speculation nearly bankrupted several states, public officials became
less inclined to invest heavily in such projects and began to rely on private sources to help fund them.

Between the end of WWII and 1972, the country enjoyed a strong economy, allowing the federal
government to fund as much as 90% of the initial design and construction of municipal wastewater
treatment plants and the interstate highway system (Miller). During Nixon’s presidency, an era of “New
Federalism” began in which governmental power was decentralized. Under New Federalism, the federal
government shared a portion of the taxes it collected with state and local governments. This practice,
referred to as “revenue sharing,” continued from 1972 to 1986. Later, Reagan used the term “New

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Federalism” to describe his policy of transferring responsibility for dozens of health, education, welfare, and transportation programs to the states. The Reagan program provided federal "block grants" to the states, which then individually decided how to use the money (Grolier’s).

With Reagan’s implementation of the New Federalism, direct federal support for infrastructure subsided and state and local governments became responsible for funding a greater share of the operation, maintenance, and replacement costs of their infrastructure. Despite the practices of revenue sharing and the issuance of block grants, many municipalities were forced to raise taxes to maintain their infrastructure. However, voter aversion to tax increases made this an unsustainable vehicle for financing the looming infrastructure needs.

Believing that privatization always resulted in increased efficiency, governments began to use “outsourcing” to meet the public’s infrastructure needs while minimizing the impact on taxes. As the privatization movement matured throughout the 1980’s, services, like waste management and highway maintenance, moved to the private domain. Leaders realized that the private sector could not independently structure and implement the design, development, and operation of government needed facilities (Stainback). Despite the difficulty of “privatizing” real estate, governments realized that there was a role for the private sector to play in the procurement of public real estate. Thus, public-private partnerships began to be used for community development, government construction, and urban renewal projects (Stainback). Examples of such partnerships include the redevelopment of the Baltimore Inner Harbor (1960-1980), the redevelopment of New York’s 42nd Street (1990s), and the development of Copley Place in Boston (1985).

The Benefits of Public-Private Partnerships

Public-private partnerships offer two main advantages over traditional government provision of services: they are more flexible and they allow for specialized management of risk. Proponents of public-private partnerships decompose these advantages into a litany of benefits in order to support their claim that this partnership structure is superior to any other. The most relevant of these benefits are summarized in the descriptions below.

*Freedom from Anachronistic Regulation*

Many public infrastructure projects are subject to protectionist regulations that were put in place years ago. Sometimes, however, these regulations have perverse and costly effects.iii A 1993 study of one such regulation, Wick’s Law,iv performed by New York’s Division of the Budget, estimated that this regulation adds as much as $400M per year in construction costs throughout New York State (Lindy). Ideally, such regulations would be legislatively abolished or rewritten. In fact, in the case of Wick’s Law
carefully planned and written labor contracts have achieved many of the desirable outcomes - such as worker wage protection - at a much lower cost. Special interest groups, however, have been successful in preventing the outright abolition of such laws (Thurnau). Instead, projects have relied on individual exemptions from the law. Such exemptions are often attainable with single projects, including public-private partnerships, since they are seen as less threatening to special interest groups than a complete regulatory overhaul.

Public-private partnerships can also free governments from anachronistic regulation by assigning certain regulated roles to partners that are not subject to the regulations. For example, a school district seeking to avoid anachronistic bidding rules for classroom furnishings could structure a partnership that called for the private partner to provide all furnishings and fittings for the school. Such avoidance of anachronistic regulation can be accomplished in a responsible manner without threatening public welfare.

*Depoliticizing Important Projects*

Many times the funding for important infrastructure projects must be approved by voter referendum. Inevitably, such a process involves campaigning by proponents and opponents of the projects. Sometimes this debate can result in the harmful dissemination of misinformation. The debate that results from such campaigning is important. However, oftentimes decisions are made based on political considerations instead of project facts. By offering flexible and innovative financing methods, public-private partnerships can sometimes change the funding question from a debt-issuance issue that requires a referendum to a simple administrative issue. This can help remove politics from the decision-making process (Granto). While this sacrifices voter participation, by conducting an open planning process that incorporates the views of the community, government leaders can limit the negative impact of this sacrifice.

*Efficiency*

One of the most cited reasons for involving the private sector in any government project is efficiency. Proponents of private involvement in government projects argue that the private sector is able to deliver comparable goods and services for lower costs due to the efficiency created by competitive forces (Donahue). Within the realm of real estate-related public-private partnerships, private sector experience can add to this efficiency. In an industry, such as real estate, that relies heavily on staying current with best practices, true costs, and true performance, the fact that private developers are active in the marketplace on a daily basis gives an informational advantage that the public sector - which is concerned with providing education, safety, and other services - cannot match. Public-private partnerships also allow the private sector to apply its creativity in finance, design, development, and
facility management to the development process (Stainback). The breadth of this creativity is enhanced by the diversity of experiences that private sector participants have to draw on. Public sector partners, in addition to having less development volume to refer to, also tend to focus on specific delivery methods and avoid innovation in order to preserve accountability.

Since partnerships allow each party to focus on its particular talents, project duration can be reduced and efficiency can be enhanced. In a well-planned partnership, the public partner can add to this efficiency by “fast tracking” (streamlining the design and development approval) the project. In addition to saving time, this also results in lower costs for the developer. The private partner can add to this efficiency by calling on lessons learned from previous work, accelerating his movement over the “learning curve”.

**Access to Capital**

By the end of the 1980’s, taxpayers were increasingly frustrated with increased government spending and became unwilling to vote to raise taxes to fund infrastructure projects. As government borrowing increased, many jurisdictions suffered from lowered credit ratings. Cities like Niagara Falls, NY, suffered from low credit ratings by the late 90’s. A sufficiently low credit rating could result in the classification of any bond issued by the city as “below investment grade” or “junk.” Oftentimes large institutional investors are prohibited from investing in such low rated securities. Without access to large institutional flows of capital, a low-rated municipality can be virtually cut off from the capital markets.

Many experienced developers, on the other hand, are active in the capital markets each day and support highly sophisticated teams of professionals who are able to structure financial arrangements that are attractive to investors. By using special legislation to dedicate certain funds towards the payment of debt service on partnership-structured instruments, a municipality can gain easier access to the capital markets.

Public-private partnerships also allow municipalities to access private equity capital. By optimizing the levels of private equity and debt financing, municipalities can reduce the amount of investment required of them. Reducing the necessary public investment in a project can protect a municipality’s debt capacity – allowing it to fund other essential government activities.

**Long-Term Commitment**

In an infrastructure project that includes a form of private investment, the private partner is vested with his or her assets. Thus, projects are likely to be built in a manner that allows for on-time and on-budget delivery while ensuring the long-term maintenance of the property to the highest standards in order to protect that investment in the long run (Stainback). This long-term private interest helps protect
public-private partnership projects from problems like inferior material selection and deferred maintenance.

**Improved Risk Management**

In any development project, there are a multitude of risks, including finance risk, construction risk, tenancy risk, operation risks and political risks. These risks add to the cost of projects, and their mismanagement can have a compounding impact on cost. For almost every risk, however, an entity exists that has developed an expertise in the management of that risk. Some of these entities are public, while others are private. By identifying these risks and assigning a specialist partner to manage them, a government can reduce the overall project risk and deliver a project at a lower cost (Stainback, pg. 20).

**Capitalizing Underutilized Government Assets**

As mentioned previously, after the 1980’s, many governments lost electoral support for tax increases and overextended their borrowing, resulting in low credit ratings that all but excluded them from the capital markets. Governments in the United States, however, control over $4.5 trillion of land (Stainback). By partnering with a private entity, governments can invest underutilized land assets in infrastructure projects without necessarily losing all control over the land. By contributing potentially valuable land to a public infrastructure partnership, a government entity can avoid raising taxes, protect its borrowing capacity, and benefit from improved infrastructure.

**The Limitations of Public-Private Partnerships**

Public-private partnerships can provide the flexibility necessary to craft an innovative solution to the funding of a public need. Like any policy tool, however, the benefits of public-private partnerships are limited. By understanding the limitations of public-private partnerships, as well as their strengths, government leaders can make better-informed decisions about their use.

Many of the shortcomings offered by public-private partnership opponents (and proponents) can be managed under a carefully structured partnership. Others are actually benefits that, when poorly managed, can turn into liabilities. Those limitations identified by opponents of public-private partnerships, however, are sometimes more severe and require careful planning to overcome.

**Reduced Control**

Stainback, a noted proponent of partnerships, warns that under a public-private partnership, it is possible that a public partner will suffer from reduced control over the design, delivery, quality, and even the use of the facility that is being built. This loss of control is consistent with the notion of partnership, however. In any effort that involves financial consideration, including a public-private partnership, those
stakeholders that have a financial interest in the project will generally seek control over as many elements of the process as possible. Stainback points out that any loss in design or quality control can be mitigated by using carefully constructed materials specifications and writing highly specific contracts that ensure public control over design, delivery, quality, and use. Just as assigning risk to a partner will increase the “cost” of that partner’s participation, however, so too will taking control away from a partner. Selar, arguing against privatization, warns that writing a fully specified contract – one that fully protects a partner’s rights – is very difficult and sometimes impossible. The difficulty stems from the inability to account for every contingency that may occur. In fact, anecdotal evidence from the three cases presented in this thesis suggests that the intense negotiation that is necessary to draft a complete contract can adversely affect the spirit of a partnership. Rather than working to protect the interests of the project, such negotiations can dissolve into a scramble to protect individual interests. An alternative approach to writing a contract that specifically assigns these elements of control to the public partner may be to structure a partnership in which each partner’s interests are aligned along these important dimensions. While potentially more time-consuming to plan, this approach could lead to a more effective long-term partnership.

**Bad Faith Partnership**

Stainback also offers limitations of public-private partnerships that are cautionary. The first is the threat of a bad-faith partnership. He notes that depending on the structure of a partnership, a municipality may be completely reliant on a developer to obtain financing, manage construction, and operate a facility. Unless the partnership terms are well planned and the municipality is working with a trustworthy partner, there is a possibility of participating in a partnership that does not fairly share the costs, risks, responsibilities, and rewards. Using a carefully designed developer solicitation process, however, can help reduce this risk.

**Partner Uncertainty**

Even when the private partner is carefully chosen and the partnership structure is well thought out, Stainback acknowledges that the public partner may still face partner uncertainty. He notes that in many partnerships the private partner has the option to sell his interest to an unknown third party. A new partner that does not share the same values and goals can disrupt the long-term relationship that is necessary to sustain a successful partnership. By ensuring the survival of the original partnership values and intent in advance, however, the negative effects of bringing on a new, unknown partner can be mitigated. This can be done by maintaining the ability to veto a transfer of partnership interest or by specifying certain selection criteria for potential future partners in advance. Any limitations that are
placed on partner selection, however, will reduce the liquidity of the original private partner’s interests. Public partners should recognize that they are likely to have to compensate their private partner for this loss of liquidity.\textsuperscript{6}

\textit{Media Scrutiny}

Stainback’s final cautionary limitation is the threat of controversy. Controversy can begin in many ways, but the most common source of controversy can come through the intense media scrutiny that public-private partnerships often attract. Because public-private partnerships require the public and private sectors to work more closely than normal, the public often becomes concerned about improprieties and accountability. Sometimes, intense media scrutiny can insure against inappropriate decisions or compromises by public officials. However, sometimes this scrutiny can be less constructive.

\textit{Monopoly Power}

Sclar points out that a key ingredient to the successful privatization of a government service is the threat of substitution. Because many government services do not have a private sector analog, and because many partnerships have long durations, the competition necessary to present a credible threat of substitution is rarely achieved. The implications of Sclar’s arguments are that the private partner’s near monopoly position may result in either uncompetitive pricing or diminished service quality. This is similar to the economic argument against market power concentration that justifies the U.S. antitrust laws (Carlton). By creating a partnership in which public and private interests are aligned, the monopoly problem can be mitigated. Another useful tool is to incorporate performance criteria into the initial partnership agreement that offers rewards for publicly beneficial behavior and penalizes behavior that causes public harm.

\textit{Unrealistic Expectations}

Finally, Gunyou suggests a limitation that has less to do with partnerships, \textit{per se}, and more to do with the public partners that implement them. He notes that some local agencies view partnerships as a way to replace federal grant money with corporate funds. He cautions public partners against this mindset, pointing out that charity is not the central purpose of the private sector, and, even if it was, businesses are not equipped to handle all of the responsibilities of the public sector. Commenting on the selection of activities that are appropriate for private participation, Gunyou states that public-private partnerships “are most applicable to those activities which produce mutual benefits, on a mutually profitable basis. Unless such opportunities exist, there is little rationale to pursue private enterprise participation for solutions to public problems,” (Gunyou, pg. 4).
Concluding Thoughts

Many different methods have been successfully used to deliver government services throughout the history of the U.S. The three most general methods are public sector delivery, privatization, and partnerships. The perception of government services delivered via the public sector seems to be that they offer greater accountability at the expense of efficiency. Conversely, privatization is perceived to enhance efficiency at the expense of accountability. The literature suggests that some government activities are better suited for privatization than others are. Most importantly, however, it suggests that privatizing a government service could lead to deterioration in quality and escalation of cost if credible threats of substitution do not exist for the private service provider.

Public-private partnerships are a flexible mechanism for delivering government services and infrastructure that have been used for over 150 years. They have the potential to combine the strengths of both publicly delivered services and privatization. However, if not carefully designed, they also have the potential to amplify the weaknesses of both. Partnerships also carry their own set of strengths and weaknesses. Many of the weaknesses of partnerships can be avoided through careful partnership design. Though they are complex and often require “out-of-the-box” thinking, the careful management of partnerships can produce positive outcomes that could not be achieved through the actions of individuals acting in their own self-interest.

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1 This is similar to the concept of “gains from trade” described by Landsburg (Landsburg, pg. 239).
2 The National Road was the first U.S. highway built entirely with federal funds. Starting in Cumberland, MD, it connected Maryland and Virginia to the Northwest Territories. Initially the construction was to be funded from the sale of the Ohio Territory. The initial budget of $30,000 (in 1806) eventually grew to $3,804,524 by 1838. The project caused a great deal of political controversy as people from New England, New York, and other regions began to question why their tax dollars were being used to heavily fund a project that primarily benefited Maryland and Virginia (Miller).
3 For instance, requirements that government contracts be awarded to the lowest bidder are intended to protect the public from cronyism and side deals. However, these requirements have often forced governments to make their procurement decisions based solely on first costs rather than life cycle costs. The result, oftentimes, is the procurement of inferior products and services that cost more over the life cycle of the system.
4 Wick’s Law passed in 1921 by the New York state legislature. After an industry-wide scandal, Wick’s Law was implemented to administer construction contract awards and ensure competition in the pricing of public projects. The law requires that all public construction projects estimated at more than $50,000 award four specific contracts: electrical, plumbing, HVAC, and general trades. This practice, which is meant to increase competition for work and ensure that only the most qualified specialty contractors are selected, stands in contrast to the present day practice of hiring a single general contractor who then subcontracts out certain work to trades (Lindy). Although Wick’s Law was intended to increase competition, it also was meant to protect the interests of specialized laborers who feared losing work to lower-cost general contractors.
5 Moody’s Investment Services rated Niagara Falls, NY, Ba, or “below-investment grade”.
6 The idea that a public partner will have to compensate a private partner for a loss of liquidity is based on the concept of liquidity risk described by Bruggeman & Fisher. They note that the more difficult an investment is to liquidate, the greater the risk that a price concession may have to be given to a buyer should the seller have to
dispose of the investment quickly. Real estate is described as having a great deal of liquidity risk and special purpose properties are described as having an even higher liquidity risk (Bruggeman & Fisher, pg. 326).
Chapter Two: Implementing Public-Private Partnerships

Introduction

Chapter 1 presented the history, benefits, and limitations of public-private partnerships and differentiated them from other mechanisms for delivering government infrastructure. This chapter builds on this work to consider how public-private partnerships can be used in the provision of public schools. It begins with a discussion about other forms of private involvement in public school provision and continues with a section about the decision to enter into a public-private partnership. Once the decision to enter into a partnership has been made, it is important for school officials to gain an understanding of the risks and roles involved in the life cycle of a public school. A section on the public school “event chain” analyzes these risks and roles by breaking the life cycle into three phases. The chapter concludes with discussions about the characteristics of successful public-private partnerships, the key decisions to make when designing a partnership, and the tools available for managing project risk.

Private Involvement in Public School Provision

The embarrassing condition of American school buildings can be attributed to a lack of adequate funding for maintenance and repair of facilities. Most of the problems that exist in American school buildings can be addressed using traditional construction management tools. However, the fact that few have been adequately addressed suggests that something structural is preventing these tools from being implemented. Some contend that the poor conditions have been exacerbated by government inefficiencies. They have advocated for increased private participation in the provision of public schools (Utt).

The private sector has been involved in public school provision in various forms throughout the years. In New York City, the School for the Physical City shares space with office workers in a privately owned eleven-story tower. In Paterson, NJ, a privately owned shopping mall now houses three public school academies in converted retail space. Both of these arrangements treat the school like a commercial tenant, charging an annual rent for the use of the space for a fixed term. Sale-leaseback arrangements of schools have been used between the public and private sectors as well. These involve the purchase or construction of a school by the private sector and a fixed-term leasing arrangement. At the end of the lease term, ownership of the school is transferred to the school district. A program, called the Private Finance Initiative (PFI), has been used in the UK to solicit the assistance of the private sector in providing educational facilities. Similarly, Nova Scotia’s now defunct P3 program engaged the private sector in the development, ownership, and maintenance of public school buildings.
Other types of partnerships between public school districts and developers may help improve the current facility conditions in U.S. schools and prevent a future facilities crisis. Part II examines the cases of three districts that used public-private partnerships to meet their facility needs. These cases offer insights for school leaders contemplating the use of public-private partnerships.

**The Decision to Enter into a Public-Private Partnership**

The decision to enter into a public-private partnership deserves careful consideration. Not all goods and services are created equal. Sciar, like many others, differentiates between public and private goods by comparing their excludability and their rivalry. An excludable good is one that when consumed by one person is not available for consumption by another (Landsburg). A rival good is one that when consumed by one person cannot be provided to others without cost (Ibid). Private goods are said to be both excludable and rivalrous, while public goods are described as non-excludable. An example of a public good is the light of a lighthouse. Sciar introduces a third type of good that he calls a publicly provided good. These goods are somewhat excludable and are rivalrous. They also produce externalities — imposing harm of conferring benefits to individuals other than those consuming them. Sciar uses these externalities, which the free market often fails to properly account for, to argue against the privatization of many government services. In fact, many economists agree that when goods are both non-excludable and nonrivalrous they are particularly susceptible to improper free-market pricing, or market failure (Landsburg). Public school facilities, however, might best be described as a publicly provided good. There seems to be little reason to suggest that their private provision would lead to inefficiencies or public harm.

Based on his research, Donahue observes, “the more complete and fully asserted are ownership rights, the less an organization will suffer from simple waste,” (Donahue, pg. 90). This seems to suggest that, when possible, private sector participation in government services can be beneficial. Partnership, unlike privatization, allows the public sector to take advantage of the efficiencies (and other benefits) of private sector participation, while maintaining control over those elements of a project that produce externalities. This control is important since these elements may be mispriced, and therefore underproduced, in a free-market setting.

Public-private partnerships may not be ideal for every new school construction project, however. Careful consideration must be given to whether private-sector involvement will be mutually beneficial. Gunyou suggests that unless opportunities for mutual gain exist, there is little rationale to pursue private enterprise participation in solving public problems. Often, it will be necessary to relinquish control over some portion of a project in order to facilitate the private gain. In these cases, the public partner must carefully consider how much control can be forfeited while maintaining the public nature of the project.
Other times, it may be necessary to turn over nonmonetary assets, like land or development rights, to the private partner in order to help finance their gain. In these cases, the public partner must carefully consider whether the projected benefits of the partnership provide a fair value for these nonmonetary assets. While public-private partnerships are a powerful vehicle for providing public school facilities, leaders must also reflect on whether their agency has the political will, patience, and resources necessary to undergo the potentially laborious partnership process.

The Public School Event Chain

Before designing a public-private partnership, school officials must understand the process that they will be engaging the private sector in and identify the risks and events involved in that process. Using a framework adapted from Michael Porter’s value chain, this section presents the life cycle of a public school as an “event chain.” This framework is useful for gaining the necessary understanding of the risks and events that occur in the planning, construction, and maintenance of public school facilities.

In his book, *Competitive Advantage*, Michael Porter introduces value chain as a tool for analyzing the sources of competitive advantage among firms. This tool is useful because, as Porter stresses, competitive advantage cannot be fully understood by looking at the firm as a whole. Rather, “competitive advantage stems from the many activities that a firm performs in designing, promoting, and delivering its product.” The value chain “disaggregates a firm into its strategically relevant activities in order to understand the behavior of costs and the existing and potential sources of differentiation,” (Porter, pgs. 33-34). According to Porter, a firm can gain competitive advantage by performing strategically important activities more efficiently and effectively than its competitors.

A similar framework, referred to here as the “event chain,” is useful in identifying the events that contribute to efficiency in public school provision. Studying the elements of the event-chain can help identify the risks that must be managed in the provision of public school facilities. By selecting events that should strategically remain in the public domain and identifying those that are candidates for privatization, an efficient process can be designed. This section segments the lifecycle of a public school facility into three phases and identifies the events and risks in each phase. An understanding of these risks then can guide the strategic assignment of roles in a public school public-private partnership.

*Phase One: Planning & Design*

The first phase in the lifecycle of a public school facility is the planning and design phase. This phase begins with the identification of the need for a new facility. The perceived needs of a community will differ by district and depend on factors such as district resources, demographic characteristics, civic expectations, and government values. Typically, before engaging in a new construction process, a district
will undergo a facility master planning process. This process involves evaluating the education needs and policies of the school district and projecting their implications into the future. This can help leaders quantify and prioritize the system-wide facility needs of a district. Once the need for a new facility has been established, sources of funding can be identified. These will also differ by district. Areas rich in commerce or industry may have large tax bases or philanthropic corporations that can help finance a new facility. Residential districts may have to raise taxes in order to fund a construction project. Districts that suffer from poverty and low property values may have to rely on state aid to finance their new facilities.

Once the decision to build has been made, the planning at the site level begins. During this planning process, decisions about site location and site programming are made. The process should begin by identifying and reaching out to as many stakeholders in the school provision process as possible. By reaching out to these stakeholders, leaders can gain voter support for a project and further manage the scrutiny that often accompanies school projects. This outreach may also help identify opportunities to program the school space to meet the needs of the entire community, not just the school district.

Decisions about facility priority and site selection require careful management of political risk. This risk is most pronounced when decisions are made based on noneconomic incentives. Political risk is present throughout the public school provision process; and, if not properly managed, can lead to a stagnant process in which leaders are unwilling to make decisions for fear of constituent retribution. Risk, however, can also have an upside that is equally crippling. Such is the case with projects whose success offers handsome political rewards. In these cases, the frenzy of political leaders seeking to impact the process may slow it down to an unacceptable pace.

With the needs of the school and community in mind, the programming and design of the educational space can begin. Careful programming and design can help avert the risk of a proposed project not meeting the required standards or community needs throughout its life. This risk, termed "planning risk," is amplified when designers fail to communicate with the end-users of the facilities or when end-users are uncertain about their own needs. A related risk, referred to here as "designer risk," is the risk that the designer will be unable to design a facility that incorporates the entire program, reflects the district’s vision and values, is constructible, is safe, and is on-budget. With such strong demand for school design services, and the limited number of high-quality K-12 projects to draw lessons from over the past 40 years, this risk is very important to manage carefully. Using a designer selection process that involves personal architect interviews, review of portfolios of comparable work, and visiting or contacting officials at sites that an architect has designed, can help manage this risk. This type of process will reduce the chances of working with an incompetent architect. Even the most competent architect, however, will not be able to design an appropriate facility if the district’s needs are not communicated
clearly. Thus, it is important for the school district to understand their needs in advance and be able to communicate them in a manner that the architect can understand.

The design process affects more than the activities that can take place within the school. The choices that are made about the materials and systems that are used also affect the performance and lifecycle cost of the building. These decisions will affect two risks that appear in the operation and maintenance phase of the facility lifecycle: maintenance cost risk and residual value risk. The durable nature of public school facilities amplifies the importance of making sound, far-sighted decisions about the materials and systems in this early stage.

If a school will be financed with a traditional bond issue, voters will typically have to approve the issuance of the additional municipal debt. Payments on this debt are often financed through increases in the local property tax levy. Thus, it is important to have community support for the school early in the process in order to improve the chances of voter approval. It is also important for voters to believe, in the event of a necessary tax increase, that no other alternatives to building a new school and financing it via a traditional bond issue exist.

Different financing arrangements are associated with different degrees of financial risk. Financial risk increases with the amount of debt that is used to fund a real estate project; but is also dependent on the maturity of the instrument being used (Brueggeman & Fisher). Changes in interest rates affect the yields that investors require on investments and thus will affect the cost of capital of a school district. Publicly issued debt, which is usually backed by the full faith and credit of the issuing government, is often tax-free and thus requires a lower yield than corporate debt. Such debt, however, is limited in volume by the credit rating of the issuing government.

**Phase Two: Construction**

The construction process sometimes begins while the planning and design phase is still underway; but most often occurs after the design is completed. Before any construction can occur, however, a site must be secured and contractual relationships between the owner and constructor must be established. During this phase, it is important to ensure that the project is completed on time and on budget. It is also vital that the project not suffer from flaws in design or workmanship. The risk of going past schedule or over budget can be influenced by weather, macroeconomic conditions, labor disagreements, or disagreements over the scope of a project. Many of these factors are impossible to control. Others factors can be controlled by experienced management. General contractors and construction managers are often employed to supervise the pace and quality of work during construction and to certify that the work is being done according to standards. Experience and incentives are two of the most important factors in the management of these risks.
During this phase, another risk, called "legislative risk," becomes a factor and increases in severity throughout the planning and construction process. The severity of this risk increases throughout the process. Legislative risk is the risk that a project's viability will be compromised by changes in legislation. Among the possible changes are changes in tax status, design requirements, environmental requirements, and labor force requirements. Although public education is planned and provided at the local level, it is regulated at the state and federal level. Therefore, a portion of the legislative risk is out of the control of the local entity and subject to political lobbying and other influences.

**Phase Three: Operation and Maintenance**

Once the school facility is constructed, the operation and maintenance phase of its lifecycle begins. In addition to the ordinary operation of the school, during this phase the daily maintenance, preventative maintenance, and capital improvements to the facility take place. At the municipal level, this phase also involves the collection of revenues through property taxes to fund these activities and pay the debt service on the bonds that financed the school.

During this phase, the district must carefully manage ownership risk. Ownership risk can be decomposed further into utilization rate risk and residual value risk. Utilization rate risk is the risk that a facility will be used more or less than expected during its life. An unexpected boom or decline in district population can increase this risk. Such population dynamics depend on immigration, area birth rates, and macroeconomic factors. Such risk can either be transferred to the landlord of a building or the tenant, depending on the structure of lease terms. Since schools are typically owned by the school district, however, the district often bears the risk.

Public school districts also bear residual value risk in traditional school construction. This is the risk that a facility will become obsolete and need replacement earlier than expected. This risk is amplified by the high impact use that characterizes schools, as well as the history of deferred maintenance in public schools. Differences in the expected lives of politicians' careers and school facilities may explain the poor management of this risk over the past 50 years. A politician, or bureaucrat, has very little to gain by protecting the condition of a building whose residual value will not be realized for another 20-30 years.

**Characteristics of Successful Public-Private Partnership**

One of the attractive features of public-private partnerships is their flexibility. Partnerships can usually be structured to meet the needs of all partners involved. This structuring involves multiple decisions about how risks, responsibilities, control, and rewards will be shared among the partners. Various experts have written on the importance of the following elements of a successful partnership:
mutual interests (Gunyou), strong leadership (Gunyou), properly allocated roles and responsibilities (Gunyou, Stainback), reasonable sharing of rewards (Stainback).

In order to design a successful partnership, clear communication of shared mutual interests to address a specific community problem must be established. The first step in defining mutual interests is to carefully study the local context of the problem in order to identify both opportunities and constraints. Historical relationships between the community and the private sector, along with local assets and liabilities, will play an important role in determining the feasibility of entering into a partnership (Gunyou). School construction projects affect the lives of all members of the community, including its least represented members: children. As a result, community members are likely to be more protective of their interests in school facility projects than with other types of projects. This protection should be acknowledged and accounted for by all of the partners.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Essential Elements</th>
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<tbody>
<tr>
<td>Shared Mutual Interests</td>
<td>Study of local context</td>
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<tr>
<td></td>
<td>Communication between partners</td>
</tr>
<tr>
<td></td>
<td>Honesty about partner concerns</td>
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<tr>
<td>Strong Leadership</td>
<td>Involvement of capable leaders</td>
</tr>
<tr>
<td></td>
<td>Priority on leaders' agendas</td>
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<tr>
<td>Appropriate Role</td>
<td>Robust risk assessment</td>
</tr>
<tr>
<td>Definition</td>
<td>Understanding of each partner's risk tolerance</td>
</tr>
<tr>
<td></td>
<td>Identification of each partner's expertise</td>
</tr>
<tr>
<td></td>
<td>Communication between partners</td>
</tr>
<tr>
<td>Sharing of Rewards</td>
<td>Understanding of each partner’s values</td>
</tr>
<tr>
<td></td>
<td>Fair allocation of rewards</td>
</tr>
</tbody>
</table>

Partners must also honestly communicate with each other about areas of concern throughout the partnership process, especially early in the process. This will help to openly and honestly establish the objectives, capacities, and constraints of each party. Gunyou also stresses the importance of capable leadership, on both sides of the partnership, in order for the venture to be successful. Involving top level corporate and government leaders should ensure long-term commitment and adequate staff support necessary to complete a project. He also suggests that in order to be successful, any partnership must be a priority of these leaders. It is critical for officials to fully understand the advantages and disadvantages of entering into a partnership and to be part of the decision-making process that leads to participation in the partnership.

Properly defining the roles necessary to complete a transaction and assigning these roles to the appropriate partners are to other key elements to a successful partnership. In addition to the traditional roles of financier, designer, project (construction) manager, constructor, client, and maintainer, Gunyou stresses the importance of organization in partnerships. He even suggests using a broker or facilitator to foster inter-partner communication.
In assigning the roles in a partnership, tolerance for risk should also be considered. Certain partners, by virtue of their daily activities, are better able and more willing to manage different risks. Sometimes, this ability to control risk comes from experience; while at other times, it may come from direct influence over the factors that lead to that risk. Generally, the partner best able to control a risk should be assigned a role that allows them to manage that risk.

Every partner that takes on a risk, whether adept at managing that risk or not, will expect compensation for bearing the risk. A risk-averse public partner must be willing to compensate a private partner for taking on added risk. This compensation can take the form of direct payment, first rights to economic returns, or indirect payments. The fair distribution of reward, whether it is political or monetary, is essential to a successful partnership (Stainback). Ideally, partners will be chosen that value various rewards differently, allowing highly valued payments to be made to partners at relatively low “cost”.

In assigning roles, however, risk and reward should not be the only concerns. Expertise is important as well. One of the attractive features of public-private partnerships is that they allow parties to use their expertise effectively, freeing them from activities that they are not good at. This allows the partners to focus their energies on more pressing tasks.

Designing a Public Private Partnership

The design of public-private partnerships requires the careful management of risks. This risk management can be accomplished using traditional construction management tools and proper role assignments. This section describes the use of these tools.

Project Requirements

In designing a public-private partnership, it is critical for the public partner to fully specify the project requirements. These requirements include the values that will guide behavior throughout the project as well as the overall scope of the project.

Once the decision to enter into a partnership has been made, the public partner’s values must be established and documented. Since the public sector often has a moral obligation to protect certain values that the private sector doesn’t, it is critically important that these be documented and communicated to potential partners. Systematically evaluating and documenting public values will allow the government to respond to its duties and will send a signal to potential private partners about what cost-saving measures are not available for use. This will help minimize costly and embarrassing disagreements between partners later in the process and will help guide the planning and private partner solicitation processes.
An important value judgment, especially in public school construction, concerns the level of involvement that the community will have in the planning process. Generally, when more individuals feel that they have been involved in the planning and design of a project, the number of project supporters will increase. By reaching out to the community early in the process, the partnership can receive critical public buy-in and will gain individual champions for the project. Such support is critical to the success of the partnership, especially given the intense media scrutiny that public-private partnerships often attract. The disadvantage of public participation, however, is that it can draw out the predevelopment process. Thus, the public partner should decide in advance on the level of participation that it will solicit and clearly communicate this decision to potential partners. This will ensure that the private partner shares the public values and will protect these values from being compromised.

Incorporating the values that the public partner defines, the next step in the partnership design process is to carefully define the scope of the project. In public school construction, decisions about grade configuration, community access, and third-party space sharing are commonly made. Each of these decisions will influence the rest of the planning process.

Role Assignment

Role assignment is an important way to manage risks and take advantage of the benefits of public-private partnerships. Properly assigning roles requires using a tool, like the event chain, to identify all of the elements of the project and honestly assessing the strengths and weaknesses of each project partner. Once the scope of the project is understood, Miller suggests using a "4-quadrant" approach to allocating the various roles in infrastructure delivery. The allocation of roles in a project is described by the project's "delivery method". Over the years, certain successful combinations of responsibility allocation have been documented and named. The benefits and limitations of selected combinations are discussed in this section.

Miller's 4-quadrant framework for making decisions about the private role in infrastructure delivery decomposes the provision of public infrastructure into two "axes," thus creating a quadrant. The first of these axes describes the choices available for a public partner to make with respect to project finance. At one extreme is the direct finance method, which involves the complete public finance of an infrastructure project through appropriations. At the other extreme is the indirect finance method. With this method, governments use incentives, mandates, or dedicated income streams to encourage the private sector to act in a manner consistent with government goals. The second axis describes the extent to which the typical elements of a project—planning, design, construction, operation, and maintenance—are combined with each other in a single contract. Once again, the framework offers two extremes. With a segmented process, each of these steps in the procurement process is separated and potentially handled by
a different partner. Under a combined process, all of these steps are packaged together to procure a completed facility. Figure 2.1 graphically depicts Miller’s Four Quadrant framework.

![Figure 2.1 - Miller’s Four Quadrant Framework](image)

In general, there are six parts to any public infrastructure construction process. The first is the initial planning of a facility, next comes design, followed by financing, construction, operation, and maintenance. The manner in which these roles are assigned is referred to as the delivery method. Miller describes four generic project delivery methods. Depending on the sophistication and risk tolerance of the public partner, different delivery methods will be appropriate for different projects.

The first is referred to as “Design-Bid-Build” (Quadrant IV). This, according to Miller, is a delivery strategy that fully separates construction from design and separates both of these from facility maintenance and operation. In a Design-Bid-Build project, a school district provides separate planning and financing of the project. One major drawback of this process, however, is that it fails to include the builder in the design of the facility. This increases the likelihood of ending up with an inefficient or unworkable design (Roth). To avoid such a problem, it is possible to hire a general contractor as a consultant in the preplanning phase.

In a “Design-Build” project (Quadrant IV), the client procures the facility design and construction from a single producer. Initial planning, functional design, financing, maintenance, and operation of the facility, however, remain as separate elements of the project. Each is provided by the client. A design-build construction process is easy to manage and is best used for simple, or “commodity”, buildings (Roth). While some feel that this procurement method can result in cost savings, some checks and balances are sacrificed with this method compared to other procurement methods. Thus, school districts using this delivery method may experience some degree of corner cutting in the final facility (Roth).
In a “Design-Build-Operate” infrastructure project (Quadrant I), the client procures design, construction, maintenance, and facility operation from a single producer. Under this delivery method, the school district is responsible for the initial planning and functional design of the project. Typically, the private partner relies on cash flows guaranteed by the school district to finance the tasks assigned to it. This financing is typically done in one or both of the following ways. The first is through direct cash payments by the school district to the private partner. The second is through the transfer of rights, such as the right to collect user charges at the facility.

**Table 2.2 – Allocation of Responsibility Under Different Project Delivery Methods**

<table>
<thead>
<tr>
<th></th>
<th>Planning</th>
<th>Design</th>
<th>Financing</th>
<th>Construction</th>
<th>Operation</th>
<th>Maintenance</th>
</tr>
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<tbody>
<tr>
<td>Design-Bid-Build</td>
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<tr>
<td>Design-Build-Operate</td>
<td>○</td>
<td>●</td>
<td>○</td>
<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>Design-Build-Finance-Operate</td>
<td>○</td>
<td>●</td>
<td>○</td>
<td>●</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

School District               ○
Private Partner #1             ●
Private Partner #2             ○

Finally, the Quadrant II “Design-Build-Finance-Operate” (also called “Build-Operate-Transfer”) delivery method is another extension of Design-Build. This delivery method assigns the responsibility of design, construction, finance, maintenance, and operation to a single private partner. Under this delivery method, the school district provides only the initial planning and functional design. The risk of collecting insufficient funds to cover project costs is placed entirely on the private partner.

When making choices about which type of delivery method to use, an owner must be conscious of the fact that the only parties they will be able to maintain control over are those with whom they have a legally enforceable contract. While maintaining contractual ties enables tighter control over the design and construction process, it also complicates the management of the process. When a project is very large, or when an owner is not very sophisticated, they may consider using a project manager or construction manager to look over the project. These members of the development team are hired for a fee and have a fiduciary duty to represent the best interests of their owners.
Aligning Interests & Enforcing Performance

When making decisions about how to deliver services and infrastructure, one of the major factors to consider is accountability. Any arrangement, whether it involves the public sector or private sector, must include sufficient mechanisms for preserving accountability and protecting the rights of the users that the project will serve. This introduces what economists call the Principal-Agent Problem.

A principal is one who commissions an individual, referred to as an agent, to act on his behalf. Donahue notes, “in general, the agent’s interests do not entirely coincide with those of the principal; the principal does not have complete control over the agent; the agent has only partial information about the principal’s interests; and the principal has only partial information about the agent’s behavior,” (Donahue, pg. 38). The problem refers to the difficulty of ensuring that the principal is faithfully served and the agent is fairly compensated. Landsburg notes that if the principal could be sure of getting what he pays for, he could offer a higher wage for better work, thus benefiting everyone involved.

Donahue contends that different types of public tasks call for different types of relationships with the agents that carry them out. He distinguishes between the profit seeker (private participant) who agrees to deliver a product in exchange for a price and the civil servant (government participant) who agrees to accept instructions in exchange for a wage. Their behavior is influenced by two very different sets of incentives.

Aligning interests and structuring incentives is a key element to solving the principal-agent problem. Contracts are the legal mechanism for documenting incentives and enforcing desirable behavior. Specification of an appropriate contract type is essential to the success of any construction project. In a public-private partnership, special care should be taken to ensure that the chosen contract type is compatible with the strengths of each partner. In general, there are four types of contracts: lump-sum, unit price, cost-plus, and guaranteed maximum price. Lump-sum and unit price contracts are said to be “fixed price” contracts, while cost-plus and guaranteed maximum price contracts are described as “reimbursable contracts”. The decision of what type of contract to use should center on risk allocation, especially financial risk. Optimizing the cost of a project will depend on properly assessing and allocating these risks and ensuring that each party is able to properly manage the risks allocated to them (Gordon).iii

A fixed price contract is one that sets a certain price for a given scope of work; typically, before the work has started. With a fixed price contract, any cost overruns become the responsibility of the contractor. The contractor, however, is the beneficiary of any cost savings on the project. Examples of fixed price contracts include lump-sum contracts and unit price contracts.

A lump-sum contract is one that stipulates that the contractor will do a certain amount of work for a fixed amount of money (Gordon, citing Clough 1981). Typically, these contracts cover the cost of all
labor, materials, overhead, and profit. The final cost may be arrived at through competitive bidding or through negotiation. Lump-sum contracts are typically used on projects that are relatively simple, fully designed, unlikely to change, and not time sensitive.

With a unit price contract, the contractor is paid a fixed cost per unit of each item. This cost per unit commonly includes labor, material, overhead and profit. While the unit prices are fixed in advance of the project, through either negotiation or competitive bidding, the total cost for the project is unknown and depends on the total number of units used. Unit price contracts are almost exclusively used on simple items that have a well-defined scope of work, but only an approximate quantity count.

A reimbursable contract is one in which the contractor is reimbursed for all expenses relating to materials, labor, and other direct costs, along with a fee to cover overhead and profit. Two types of reimbursable contracts exist. In the first, the contractor is reimbursed for wages and material costs that he actually pays. In the second type, the contractor is reimbursed for labor and materials that are competitively bid through subcontractors. An example of a reimbursable contract is the cost-plus contract.

In a cost-plus contract, the contractor is reimbursed for the cost of performing work as it is completed. This reimbursement includes labor, materials, overhead, plus a fee. This fee may be a fixed sum, a percentage of the total contract cost, or a combination of both. Cost-plus contracts have the potential to escalate in cost since the total project cost is not guaranteed before construction, and because there is an incentive for the contractor to slow down the construction process. Cost-plus contracts, however, are extremely flexible and allow for fast-tracked projects, and changes throughout the project. As a result, this contract type is commonly found in emergency repair situations, when complete design and bidding are prohibited by time constraints.

Finally, a guaranteed maximum price (GMP) contract is a hybrid of the fixed price and reimbursable contract. With a GMP contract, the contractor is reimbursed the cost of doing work, including labor, materials, overhead, and a fee up to a predetermined maximum price. The risk that the total project cost will exceed this price is placed entirely on the contractor. It is common practice for any cost savings to be shared between the owner and contractor. This helps to maintain the incentive to minimize project costs. Macomber notes that a GMP contract can help align incentives between the contractor and the owner (Gordon).
### Table 2.3 – Advantages and Disadvantages to the Owner of Select Contract Types*

<table>
<thead>
<tr>
<th>Contract Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lump Sum</strong></td>
<td>• Competitive bidding can be used, resulting in a low price;</td>
<td>• Contractor may use a large contingency to compensate for increased risk;</td>
</tr>
<tr>
<td></td>
<td>• Owner does not have to monitor and approve each expenditure;</td>
<td>• Change orders are often difficult and expensive for the owner;</td>
</tr>
<tr>
<td></td>
<td>• Total cost is known at start of construction;</td>
<td>• Major bidding errors may result in contractor default and costly delays;</td>
</tr>
<tr>
<td></td>
<td>• Risk of completing work on-budget lies with contractor, not owner.</td>
<td>• Construction documents must be complete before construction begins, slowing down the development process.</td>
</tr>
<tr>
<td><strong>Fixed Fee</strong></td>
<td>• Fast track schedule can be used;</td>
<td>• Total cost is not known before the start of construction, which can cause financing and other problems;</td>
</tr>
<tr>
<td></td>
<td>• Pre-construction advice from the contractor is available;</td>
<td>• Owner must be sophisticated and heavily involved to guard against overcharging and uncompetitive purchasing.</td>
</tr>
<tr>
<td></td>
<td>• Owner changes within the original scope are easily accommodated;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Adversarial relationships can be replaced by teamwork;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sophisticated management can reduce costs by eliminating contingencies, claims, and bidding.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Incentive to increase project cost eliminated by fixing contractor’s overhead.</td>
<td></td>
</tr>
<tr>
<td><strong>Unit Price</strong></td>
<td>• Competitive bidding can be used, resulting in a low price;</td>
<td>• Owner must carefully measure quantities on site;</td>
</tr>
<tr>
<td></td>
<td>• The owner only has to measure quantity to determine payment;</td>
<td>• Construction documents must be complete before construction begins, slowing down the development process.</td>
</tr>
<tr>
<td></td>
<td>• Some flexibility in making changes exists;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Total cost approximations can be made before start of construction.</td>
<td></td>
</tr>
<tr>
<td><strong>Cost Plus</strong></td>
<td>• A fast track schedule can be used;</td>
<td>• Total cost is not known before the start of construction, which can lead to financing problems;</td>
</tr>
<tr>
<td></td>
<td>• Pre-construction advice from the contractor is available;</td>
<td>• Owner must be sophisticated and heavily involved to guard against overcharging and delaying the development process;</td>
</tr>
<tr>
<td></td>
<td>• Owner changes within the original scope are easily accommodated;</td>
<td>• Competition may be reduced by the elimination of lump sum bidding.</td>
</tr>
<tr>
<td></td>
<td>• Adversarial relationships can be replaced by teamwork;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sophisticated management can reduce costs by eliminating contingencies, claims, and bidding.</td>
<td></td>
</tr>
<tr>
<td><strong>Guaranteed Maximum Price</strong></td>
<td>• Maximum price is known at the start of construction;</td>
<td>• Owner must be sophisticated and heavily involved in project to guard against overcharging and uncompetitive purchasing;</td>
</tr>
<tr>
<td></td>
<td>• A fast track schedule can be used;</td>
<td>• Competition may be reduced by the elimination of lump-sum bidding;</td>
</tr>
<tr>
<td></td>
<td>• Pre-construction advice from the contractor is available;</td>
<td>• It may be difficult to establish a reasonable GMP.</td>
</tr>
<tr>
<td></td>
<td>• Owner changes within the original scope are easily accommodated;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Adversarial relationships can be replaced by teamwork;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sophisticated management can reduce costs by eliminating contingencies, claims, and bidding.</td>
<td></td>
</tr>
</tbody>
</table>

* Adapted from Gordon
Communicating Project Requirements

Clear communication is one of the most overlooked ways to manage risk in a partnership. Communication plays a key role in setting expectations in the private partner solicitation process and in the contractor bidding process. In the solicitation process, communication can be improved by choosing an appropriate method to solicit private interest in the partnership. In the contractor bidding process, the communication is improved by using the appropriate type of well-written materials and systems specifications.

Stainback notes that the developer solicitation process is often the first opportunity that the public sector has to communicate with the private sector about a project. Because of this, it is a critically important step. Public school districts must be clear in their communication so that potential private partners will know what they are getting into. Establishing trust and communication is key. Fitzgibbons notes the importance of gaining understanding and comfort with each partner’s motives to participate in the partnership. In general, she identifies three main private sector objectives: McShea identifies a fourth:

1. Return on investment
2. Minimum “hassle”
3. Pride in the final product
4. Name recognition to facilitate entry into a new market

Fitzgibbons also identifies four main objectives that the public sector has for participating in a public-private partnership:

1. Economic stimulation
2. Appropriate land use
3. Environmental safety
4. Political feasibility

Once these objectives are understood and accepted, the public partner can use this understanding to shape its solicitation for private interest. While there are multiple ways to solicit interest from the private sector, Stainback describes six generic processes to facilitate the communication of public partner objectives and solicit private partner interest.

The first method of private sector solicitation is what Stainback calls the “Three Step RFI/RFQ/RFP Process”. The first step in this process is to issue a request for information (RFI) to solicit ideas and concepts from the private sector. The RFI should ask private sector whether there are additional issues not foreseen by the public partner that should be addressed prior to issuing a request for qualifications (RFQ). The RFI also functions as an announcement of a development opportunity and an advertisement that “sells” the opportunity to developers by providing market data, demographics, and scheduled public improvements that relate to the development. The RFI is then followed by an RFQ, and, finally, a request for proposals (RFP) from select developers. One of the major benefits to this method of solicitation is that it can gauge initial reaction from the private sector in order to gain market, economic,
and development insights that only companies actively involved in the marketplace ordinarily have access to. There are two major weaknesses of this method, however. The first is that this method is costly to both the public and private sectors. When compared to other solicitation methods, the time required to develop, issue, and analyze (and even respond to) an RFI can be excessive. The second is that many developers will not reveal any insights about the project for fear of losing their competitive advantage in the process. It is important for officials to understand that many sophisticated developers will not even provide intelligent and insightful questions about a project that uses this solicitation method because the questions and corresponding answers will become publicly available to others who may be competing for the same opportunity.

Stainback’s second method of developer solicitation is the “Two Step RFQ/RFP Process”. He describes this as the most popular of all solicitation processes. The Two Step Process reduces the time required to complete the developer solicitation, but still allows access to a wide spectrum of developers. Such a process can involve local, regional, and national developers, as well as, developers of specific building types that public partners may not have much experience working with.

A third solicitation process is the “Single Step RFP Process”. This method is typically used by governments, universities, and school districts. Stainback notes, however, that many developers dislike this approach since it requires the developer to submit to a costly and time intensive process to prepare a competitive proposal when he may be one of a large number of candidates competing for the project. Developers complain that they have no idea how many candidates will submit proposals, nor do they know the caliber of the potential competitors. Thus, they are unable to make informed decisions about whether the expense of preparing a proposal is justified.

Stainback’s fourth solicitation method is the “Pre-qualified Developer RFP Process”. This method eliminates the developer’s concern about investing time and money into a proposal that may compete with a large pool of developers of superior caliber. Typically, a pre-qualified RFP process involves between five and seven developers that are identified by the public partner as having the expertise and financial capacity necessary to carry out the desired project. When developers realize that they are among a small group of candidates of similar ability, they are more likely to invest the time and money necessary to prepare a thorough response to the RFP. One of the keys to the success of this solicitation method, however, is the public partner’s ability to identify qualified developers. Stainback suggests that if the public partner does not know the development industry well enough, they can hire a consultant that specializes in public-private development to assist with the pre-qualification or selection process.

The fifth solicitation technique described by Stainback is the “Sole Source Developer” technique. This technique may be appropriate if a public entity has an established relationship with a developer and
feels comfortable working with them on a one-on-one basis. However, given the intense scrutiny that public-private partnerships often attract, this method of developer solicitation may cause problems. Among the potential problems are:

1. "Backlash" from local developers who feel that they are equally qualified for the position but were not given access to the process;
2. Other public partners not sharing the same feeling of comfort with the chosen developer;
3. Community and media concern about the lack of a competitive selection process for a private partner; and,
4. Community and media concern about the integrity of the process used to select the partner.

Finally, Stainback describes the "RFQ/Negotiation" method of private partner selection and suggests that this may be the most efficient and effective method of solicitation. Under this method, the public partner can avoid the lengthy RFP process, reducing the actual time of developer selection by up to 50%. He claims that the development community appreciates this method because it saves time and significantly reduces predevelopment costs. Even though the developer selection process is accelerated under this solicitation method, the use of an RFQ ensures that the private partner is chosen using a highly competitive process. The RFQ also helps to forge a sense of collaboration between the future partners, as they must work closely together during the solicitation process to complete many of the same steps that compose the early stages of a partnership. According to Stainback, this form of solicitation embodies the truest form of partnership between the public and private sectors and can lead to the fairest allocation of costs, risks, responsibilities, and rewards, thus ensuring a successful transaction.

While communicating partnership goals and values to potential partners is important, it is equally important to clearly communicate with contractors who are bidding to do the work on the project. This will promote the submission of well-informed bids and reduce the likelihood of expensive change orders. Depending on the contractual structure of the partnership, these extra expenses will create either public ill will (if they are borne by the public sector) or private distrust (if they are borne by the private sector). Given that public-private partnerships often attract intense media scrutiny, it is especially important that the expectations of all parties are understood and met. Failure to do so could result in intense public controversy and threaten the success of a project.

One way that expectations are communicated to private partners and to architects is through specification documents, or "specs". Oftentimes, contractors that are bidding on a project will rely on a literal reading of the specifications to prepare their cost estimates and help them understand the scope of the project. The specification author should keep in mind that these contractors are only responsible for complying with exactly what is written in the specification. Any deviation from what is written and what is wanted can result in a costly change order.
<table>
<thead>
<tr>
<th>Specification Type</th>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive</td>
<td>• Contractors have wide discretion in the selection and purchase of materials and individual components; • Competition amongst bidders is maximized; • Approval of material submittals by the design professional offers a less substantial basis for the rendering of judgments of legal liability.</td>
<td>• Quality and ultimate performance are difficult to predict and control; • Unskilful use of descriptive specs can lead to disputes; • The time required to research and write detailed descriptions of components, applications and necessary restrictions of use and performance requirements may be prohibitive.</td>
</tr>
<tr>
<td>Proprietary</td>
<td>• Allows for control of product selection; • Assures technical integrity and performance of a product through manufacturers’ data based on product research, testing, and performance; • Simplifies the bidding process; • Simplifies technical communication; • Limits the design professional’s exposure to contingent liability for product failure.</td>
<td>• Reduced competition; • Little flexibility for the contractor.</td>
</tr>
<tr>
<td>Performance</td>
<td>• Improved products and applications are often elicited from innovative industrial producers; • Constructors competing for the contract have greater flexibility in eliciting competitive bids; • Gives spec author more latitude in combining descriptive specifying techniques with performance criteria; • Generally satisfies government and public project nonproprietary requirements.</td>
<td>• Author must confirm that current technology and manufacturers are capable of meeting the spec criteria; • An incomplete performance spec can result in loss of quality control for the materials, assemblies, equipment, and workmanship that go into a project; • If performance criteria are the primary means of specifying, many or most of the related contract documents must also be specially written and designed in order to prevent ambiguity and conflict; • “Creative innovation” may not be attainable given the time limits set for the availability of CD’s and the bidding process.</td>
</tr>
<tr>
<td>Reference standard</td>
<td>• Tedious and lengthy descriptions of materials can be avoided; • Allows for the blending of descriptive specs with performance specs so that info included can be used by the contractor economically and efficiently; • Allows specification of most advanced technology available from recognized specialists in the specified field through incorporation of industry standards; • Can serve as an additional resource to the design professional’s judgment and choice of materials.</td>
<td>• Not all standards are adequate for every purpose; • Some standards refer to more than one class of product.</td>
</tr>
</tbody>
</table>

* Adapted from Poage.
Poage identifies four types of specifications, each of which has its advantages and disadvantages. These advantages and disadvantages are summarized in Table 2.4. Public partners should carefully consider the type of specification they will use in order to communicate their expectations to contractors.

The first of the four specification types is the descriptive specification. This is a written description that details the required properties of a material, product, or piece of equipment. With this type of specification, there are no manufacturer, trade, or proprietary names used. The descriptive specification is used in many public processes that require public bidding but cannot use name brands of products.

A second type of specification is the proprietary specification. Unlike the descriptive specification, this type of specification actually identifies desired or acceptable products by name, model number, trade name, or manufacturer. Poage differentiates between “open” and “closed” proprietary specifications. With a closed proprietary specification, only those products that are specifically listed in the specification may be used in the project. Open proprietary specifications, however, include provisions for the use of “similar” or “equal” quality products or systems. This offers more flexibility in the final choice of product.

A third type of specification, the performance specification, describes the results that are expected from a material, product, or piece of equipment. This type of specification typically includes certain criteria that can be used to verify compliance with the desired results. Because performance specifications specify outcomes rather than inputs, they offer contractors the flexibility to be creative, while ensuring client satisfaction.

Finally, Poage describes the reference standard specification as one that is based on industry standards. The descriptions in a reference standard specification refer to highly technical definitions that are produced by industry associations, professional societies, and private research organizations. Since the documentation that describes these definitions is readily available and universally understood, reference standard specifications add convenience and clarity to the specification process.

**Concluding Thoughts**

The private sector has been involved in the provision of educational space in various forms over the years. Public-private partnerships offer another way for school districts to draw on the resources and experiences of the private sector to provide new school facilities. These partnerships, however, are not likely to be appropriate for every facility need. The literature suggests that to be effective, both partners must have something of value to offer each other. It also reports that the most successful partnerships have the following characteristics: mutual interests between partners, capable leadership, appropriate role definition, and adequate distribution of benefits.
While the flexibility of partnerships adds to their appeal, it also adds to their complexity. Partnership design involves many steps and decisions. Among the most important elements of partnership design are: clear definition of project values and goals, role assignment, adequate enforcement mechanisms, and communication. It is also important to fully understand the risks and roles involved in the lifecycle of a public school. The public school “event chain” is one tool that can facilitate this understanding by breaking the lifecycle of a public school into three phases.

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1 Investors generally require equal yields for equally risky investments. Investors use after-tax returns to compare yields since after-tax returns are the most useful to them. As a result, tax-free bonds can offer lower pre-tax yields than similarly risky taxable bonds.

2 The importance of documenting public sector values is revealed by reviewing the literature of public-private partnership proponents. For example, Utt, a supporter of partnerships, cites several potential cost savings that can be achieved by the private sector but not the public sector. Among these are savings on “grandiose designs” and “expensive minority hiring quotas,” (Utt, pgs. 8-9). Before taking advantage of such cost savings, however, a public partner should consider whether these “expenses” reflect government values. For instance, a government should reflect on whether it considers architecture as a means of expressing its commitment to the people it serves. If it does, the public partner may wish to maintain a greater degree of design control in the final partnership agreement. Similarly, the public partner should decide whether it sees itself as a protector of the rights of all people, including minority workers. If it does, and if it believes that fair racial and ethnic representation are unlikely to be achieved without intervention, then it should consider maintaining provisions in the partnership agreement that regulate hiring practices.

3 This section relies heavily on the work of Christopher Gordon (“Compatibility of Construction Contracting Methods With Projects and Owners”, MIT Department of Civil Engineering 1991).
Part II: Three Innovative Partnerships
Chapter Three: Niagara Falls High School

Background

The Niagara Falls High School is located in Niagara Falls, New York, a small city in the western part of the state that lies along the Canadian border. The city’s population, which was over 102,000 in 1960, is now just 61,840 and is plagued by poverty (NFSD, Rating Agency Presentation). The average per capita income is $10,500 per year (Katz-Stone, Design Challenge) and over half of the population receives some form of government assistance (Contract). As a former home to a strong industrial economy, the area has remained heavily unionized.

The boundaries of the Niagara Falls School District (NFSD) are coterminous with the city limits and encompass 17 square miles. The system serves 8,900 students, 63% of whom receive some form of government aid. The system was originally served by two rival high schools with unique cultures. La Salle High School was considered the “uptown” high school and Niagara Falls High School was the “downtown” high school. In February of 1994, the District decided that because of the deteriorating conditions at these high schools, they both needed to be either repaired or replaced. An 18-month facilities evaluation was started that resulted in a series of nine recommendations for upgrading the high schools. After more than 40 public forums, a decision was made to build a single new facility to accommodate students from both schools on a centrally located site.

The school board leadership required the new building to house a world-class educational facility for the children of Niagara Falls. For a city experiencing an economic depression, however, this was a daunting task. The economic decline of the area reportedly resulted in a citywide inferiority complex and people openly wondered, “How could an aging, economically declining area like Niagara Falls fund or develop anything that could be considered ‘world class’?”

Given the city’s economic circumstances and its below-investment grade bond rating, the school board faced a considerable number of hurdles in its effort to fund the school. The school board lacked the current funds to build a new school and knew that raising taxes to build a new school would be politically infeasible: the community simply could not afford such an increase. At the time, Marshall Wingate, Vice President of the National Fuel Gas Company and a prominent local business leader in Buffalo, was a strong advocate of private sector involvement in public project financing. His advocacy helped to steer the school board and superintendent towards the idea of soliciting help from the private sector to finance the new high school.
Project Planning

In the planning of the new Niagara Falls High School, one value took precedence over all others: to always do what was best for the students. While this value seems very appropriate, it was not nearly as evident in the other two cases presented in this thesis. It was most apparent in the District’s rationale for building a single school; namely, that a single school would promote equity in the school system. This proclamation came in the wake of the Columbine massacre amidst a national call for smaller, more personal schools. The new combined facility not only achieved equity for students within the district, but also parity with the conditions of some of the best performing districts in the area. Another important value that shaped the process was to try to accommodate the needs of all project stakeholders before proceeding with construction. As a result, the final design of the building and the partnership incorporated the needs of the community, seniors, parents, students at both schools, as well as the strong union interests in town. The outcomes of this procedure include an innovative project labor agreement, the community performing arts center at the school, and the central location of the school. Finally, the board was determined not to let the new building dictate the educational program of the school. Rather, they sought to have a newly designed educational program reflected in the new building, while allowing for flexibility in future programming. The school board then took the initiative to design an entirely new curriculum for the high school, recognizing that in educational outcomes teaching quality matters as much as facility quality.

Through the planning process, the District established the following goals for the construction of the new high school:

- Build a high quality facility designed to serve the best interests of students;
- Finance the project without raising taxes;
- Build a school that could be maintained easily and at a low cost;
- Avoid being held captive by the lowest bidding contractors; and,
- Turn over management of the process to an experienced and trustworthy private partner.

Project Team Selection

In order to select a private partner, the NFSD issued an RFP seeking a developer to either build a new high school, or redevelop the old ones, on a turnkey basis and then enter into a 30-year sale-leaseback agreement with the district. Although the RFP was open for anybody to respond to, the Honeywell Corporation of Minneapolis, Minnesota, was specifically encouraged to respond. Between 1995 and 1997, Honeywell provided energy retrofit upgrades to 18 district buildings using performance based contracting. The successful relationship that the District and Honeywell enjoyed suggested that if Honeywell were chosen as the developer of the new high school, a similar relationship would ensue.
According to Steve Rollins, the project executive from Honeywell, the invitation to participate in the RFP process came at a time when the people in Honeywell's business development unit were being challenged to "think out of the box" in order to generate new business (Farrell). As this project certainly qualified as "out of the box," Honeywell accepted the District's invitation and responded to the RFP. Two well-respected local companies also responded: the Louis P. Ciminelli Construction Company and Benderson Development.

The District relied on four criteria, which it published in the RFP, to select the preferred developer. The first criterion was the developer's experience. This was judged in terms of development volume and length of time in business. The District also considered the developer's proposed method for providing maximum facility value for the lowest possible life cycle cost. The second criterion was the developer's finances, including their ability to secure adequate funding for the project and their ability to demonstrate creative methods of leasing and financing. The third criterion was cost. The District was interested in proposals that specified all new costs that the project would place on the school system. Finally, the District evaluated the proposals based on the degree to which they varied from three designs suggested in the RFP. Honeywell, who had significant experience managing large retrofit projects, was ultimately chosen as the preferred developer for the new school.

As part of their role as developer, Honeywell agreed to take on the responsibility of hiring a general contractor. This was done to prevent the possibility of undue influence in the contractor selection process and because general contractor evaluation was not one of the District's specialties. Noting the interest expressed in participating in the project by the Louis P. Ciminelli Company, as well as their significant construction experience, Honeywell chose them as the general contractor. In an effort to use the best elements of all of the RFP responses, Honeywell and the District also decided to sell the old La Salle High School to the Benderson Development Company in order to be redeveloped.

After internal problems between the partners of the first architecture firm that was hired to design the new school resulted in an overdrawn budget and stalled progress, a new firm was sought to replace them. Steve Rollins, Honeywell's project executive, suggested that The Hillier Group of New Jersey had both the talent and resources to complete the project in the reduced timeframe. Rollins reportedly had worked with Hillier on a project years earlier at Rutgers University. Using an interview process, the school board eventually hired Hillier using a lump-sum contract. Besides the initial suggestion of Rollins, Honeywell reportedly exerted very little influence in the final architect selection.

Finally, Honeywell worked with JP Morgan to arrange financing for the project using so called certificates of participation (COPs). COPs are a financial instrument used to securitize expected future cash flows. In this case, the certificates represented "direct, undivided, and proportionate interests" of their holders in the lease payments that were to be made by the Niagara Falls School District to 4455
Porter Road Corporation, a special purpose entity that was established to facilitate the financing of the project (COPs Prospectus). The offering of the COPs was fully subscribed in 11 minutes and offered access to capital that a school district, especially one with a credit rating as poor as Niagara Falls, would not ordinarily enjoy.

Delivery Methods

The construction of Niagara Falls High School most resembles a Design-Bid-Build delivery method that used four primary participants. These participants were Honeywell, the developer and project manager; Ciminelli, the general contractor; Hillier, the project architect; and the Niagara Falls School District, the client. This section details the responsibilities and risks of each.

As developer and project manager, Honeywell was responsible for overseeing the entire project. Honeywell had a fiduciary duty to represent the best interests of the District that was formalized through a development agreement. Honeywell also performed the following activities:

- Facilitated the financing and business structure for the project;
- Assisted in lobbying efforts to enact special legislation;
- Selected the general contractor (Ciminelli);
- Assisted the Architect and the District in the development of the master schedule;
- Assisted the Architect and the District in the monitoring of progress, performance, quality and contract compliance of the project;
- Assisted the District in performing life cycle cost evaluations on systems and materials for operational, maintenance and energy efficiency;
- Managed the Ciminelli’s payment requests;
- Assisted the Architect and the District in the design of leading edge environmental and safety controls for the building.

Ciminelli was responsible for the coordination of construction and hiring of subcontractors. These responsibilities were spelled out in Ciminelli’s contract with the 4455 Porter Road Corporation. In its role as general contractor, Ciminelli was required to use a guaranteed maximum price contract. Thus, all risk of cost overruns was placed on Ciminelli. However, any cost savings were split between Ciminelli and the District. The first million dollars of cost savings solely benefited the District. After that, every dollar was split between the District and Ciminelli with $0.40 going to the District and $0.60 going to Ciminelli. This arrangement created the necessary incentives for Ciminelli to improve efficiency without enticing them to cut corners.

Hillier was hired by the NFSD as the architect for the project. As such, they were responsible for the programming and design of the building. Their contract was with the District, however, not with Honeywell or with the 4455 Porter Road Corporation. Hillier did not bear any additional risk beyond the typical design and liability risks that an architect typically bears.
The final partner was the District. Their responsibility was to organize and facilitate feedback into the design of the school. Once the school opened, they would also be responsible for maintaining it. Realizing that they hired a capable project manager to represent their interests, the school board, representing the District, was careful not to micromanage the project. They allowed Honeywell to use their expertise to manage the project, confident that the contractual obligations and incentives that were designed into the partnership would support desirable behavior by all parties. By making the decision to give up control to their private sector partner, the District was able to minimize their risk exposure. In the final partnership structure, these risks were limited to political risks, which they minimized by involving all stakeholders; maintenance cost risk, which was minimized by using life cycle costing in the material selection; and risk of obsolescence, which they minimized by ensuring a flexible design.

Communication Methods

Communication in this project was described as very collaborative by nearly everyone involved. Rather than relying on strict contract interpretations and preestablished protocol, many partnership decisions were delegated to the responsible partner. Even in terms of building design, the wishes of NFSD were expressed with a program of elements they wanted to include, a budget, and a mandate from district superintendent Carmen Granto that the new facility not feel “institutional”. Beyond that, they encouraged the architect to “think out of the box” and to be innovative. Old facilities standards were not used; rather, entirely new specifications were written by the architect that reflected the unique vision of the project. Of course, all materials and systems were required to meet the New York State safety standards; but beyond this, there were few preestablished rules to follow.

Economics of the Deal

While the Niagara Falls High School is accurately described as an innovative combination of public and private interests, the economics of the deal are fairly straightforward. Essentially, the project is a 30-year sale-leaseback agreement facilitated by the creation of a special purpose entity.

The Niagara Falls School District entered into a 99-year lease with the City of Niagara Falls for a 75-acre parcel in the geographic center of town. This land was then subleased to the 4455 Porter Road Corporation. The 4455 Porter Road Corporation then issued $83M in COPs in order to fund the project and will pay back the COPs holders over the next 30 years. The annual principal and interest (P&I) due on these COPs is approximately $5M. Eighty-three percent of these P&I payments will be funded by state aid and the rest will be funded locally. Each year, the Niagara Falls School District receives approximately $60M in aid from the State of New York to help pay for capital improvements and educational expenses. In order to provide security for the COPs holders, a special “lockbox” mechanism
was created. All $60M of state aid flows into the lockbox and is available for P&I payments. This alone gives an 11.9x debt service coverage ration on the COPs debt. Each year, subject to voter approval, the school district is expected to contribute its share of the P&I payments to the lockbox. The local share is funded by energy savings resulting from the new design, operational savings due to the consolidation and modernization of the two high schools, earnings on a COPs reserve fund, and the proceeds from the disposition of the two original high schools. Once the annual P&I payments are made, any remaining state aid is released from the lockbox and can be used for its intended purposes.

Honeywell, as the private partner in this project, received a $5M project management fee. This provided them with the proper incentives to act in the best interests of the school district. As a major manufacturer of control systems, they also received the benefit of having their systems specified throughout the building. This will allow them to use the Niagara Falls High School as a showcase for their systems. Of course, school officials also point out that Honeywell generated a great deal of goodwill by their involvement in this project and suggest that this goodwill may have been almost as important as the financial motivations.

As the public partner, the Niagara Falls School District got their new school on-time and on-budget and met all of their goals. Most importantly, using a public-private partnership, they were able to design and pay for a world-class facility designed to serve the best interests of the students without having to raise taxes.

**Special Legislation to Permit the Deal**

In order to allow the Niagara Falls High School partnership, the State of New York had to pass special legislation exempting the district from certain public construction regulations. With the assistance of Honeywell, school leaders lobbied representatives in Albany for passage of the Facilities Alternatives for Schools to Expedite Replacement (FASTER) Act. The provisions of this act are estimated to have saved the District as much as $15M on the project (Zernike).

The FASTER legislation allowed the district to contract for the design, construction, reconstruction, financing, and ownership of the new facility and to amortize the costs over a period of 30 years. Since ownership of the building was expected to be private (for the first 30 years), a provision allowing state aid to fund part of the project had to be specially included. The legislation also allowed for the issuance of tax-free COPs to fund the project.

The FASTER legislation also specified the bidding and contracting procedures that the District could use on the high school project. First, it exempted the District from normal bidding procedures, which require contracts to be awarded to the lowest bidder. This allowed the District to consider more than just first costs in their budget decisions and allowed them to consider quality and long-term costs as
well. Second, it allowed them to bypass Wick’s Law. Wick’s Law is a labor protection law in New York State that requires public projects of over $50,000 to issue separate bids for HVAC, plumbing, and electrical contractors. Since most projects also use a general contractor, Wick’s Law has the effect of requiring 4 separate bidding contractors on each job. The exemption allowed the District to hire a single general contractor who was responsible for hiring the appropriate trades as subcontractors.

Finally, the FASTER legislation allowed the Niagara Falls School District to dispose of the old high schools without voter approval. These funds were used to help offset the local share of the project costs. By removing the requirement for voter approval, the assets could be sold more quickly without becoming a political issue. The last provision of the legislation was to allow the property to remain tax-exempt, even though it would be owned for a period by a nonpublic entity. This tax exemption included exemption from all state imposed sales taxes on building materials and furnishings as well.

Other Extraordinary Circumstances

When studying any set of case studies, it is important to note extraordinary circumstances that may impact the extent to which the case can be generalized for future decision making. The case of Niagara Falls High School relied extensively on the willingness of a major corporation to act in a unique manner to protect the interests of the school. While this may seem extraordinary, it may actually be quite replicable, considering that school districts around the country have the potential to provide access to millions of dollars in equipment orders, advertising revenues, and educated workers. However, three key factors may not be as replicable for all school districts. The first is the passage of special legislation to exempt the school district from labor and bidding laws. While these exemptions seem to be in the public’s interest, Honeywell’s lobbying presence, no doubt, played an important role in passing the legislation. Second, this school was funded with 83% state aid. This figure can only be matched by the very poorest districts across the country. Finally, the school relied on a $7M grant from a local company (Niagara Power Authority) to fund almost half of the local share of the project. This type of corporate philanthropy cannot be counted on to finance public schools in all districts. Each of these, while critical to the success of the project, is not an inherent attribute of a partnership, however.

Even though the financing of this project may not be replicable without the three key factors mentioned above, the process that led to the success of the partnership is. This process relied on the willingness of project participants to expend a great deal of energy structuring a set of parameters for a partnership that would be used for only one facility. The willingness of the District to work with labor leaders to craft a project labor agreement is one example of extraordinary project dedication. This agreement, and the State legislature’s willingness to waive anachronistic regulations, contributed significantly to the cost reductions and success of the partnership.
Reported Outcomes

After nearly seven years of planning and construction, the new Niagara Falls High School finally opened on September 1, 2000. The new facility is a four-story, technology rich high school capable of serving 2,500 students in grades 9 through 12. The configuration of the school is such that the curriculum can be delivered in a team setting or departmentally, offering flexibility for future advances in teaching styles. The school is split into two sections with a centrally located high-tech multimedia library acting as the focal point to the whole school. The academic section of the school holds the four four-story academic theme-based houses of the school. Each has office space for its own administration, allowing the large high school to function according to the ‘school within a school’ concept. The nonacademic section of the school includes three gymnasiums, a competition swimming pool, a performing arts center, a black-box TV studio, and two cafeterias. These extracurricular areas are placed in such a way that they can be used during the day by the community without posing a threat to the students. Similarly, they can be used during weekends or at night by the community without the need to grant access to the entire school building. The quality of the space is exceptional as well. The conductor of the Buffalo Philharmonic is said to have commented that the new performing arts center is among the best spaces (acoustically) that he has ever played in the Buffalo area. The space has already been booked by community groups for the entire upcoming year.

The total project cost was $83M, after almost 2,000 changes to the design were made. The process ensured, however, that the only changes allowed to add to the budget were those initiated by the District. As part of the development agreement, the District agreed to specify Honeywell systems throughout the building. Thus, the thermal controls, life safety, and security systems all are made by Honeywell. According to George Luaces at The Hillier Group, the Honeywell systems were cost competitive with rival systems. In a break from traditional school construction, this project relied on life cycle costing to choose building systems and materials. Life cycle costing allowed long-lasting materials, like terrazzo flooring and ceramic tile walls, to be used in the building, making it a “maintenance friendly” building.

The new facility has increased student pride in the school. Carmen Granto, the district superintendent, notes that the students see the community’s effort to build the school as a sign of the value that it places on them. This would not have been possible without this partnership. With this generous gift of the community, Granto expects that the children will have the tools to start giving back to the community and to themselves. Rachel Rafferty, a NFHS student, was quoted in the New York Times as saying that the new school “took all the excuses out of school. Before, you could complain that everything’s out of shape, it’s broken. Now everything works. If you don’t succeed, it’s because you aren’t doing something, it’s not because of resources.” (Zernike). In a class that I visited, students
commented on the good feeling they had knowing that they had access to resources unavailable to students in surrounding districts. It seems that the school and academic achievement have once again become sources of pride for these students.

In addition to increasing student pride, the construction of the new Niagara Falls High School also helped to increase the pride of the community. It has given them a sense of accomplishment and made them realize that even Niagara Falls can build something wonderful. An unintended consequence of the high quality of the school was that the enrollment for the first year was 210 students higher than projected. Among these students were some who were coming from private schools to the public school, some who were coming from other districts, and even four students from Canada!

After going through the development process, Honeywell reportedly decided that it would no longer pursue opportunities similar to the Niagara Falls project. Although it was a successful endeavor, the company has decided to focus on its core business of manufacturing and selling control systems. However, Superintendent Granto is actively promoting the process used in this case as a national model for poor urban districts to pay for upgraded facilities. The City of Buffalo is taking advantage of the lessons learned in Niagara Falls and using an adapted version of the FASTER legislation to build seven new schools. Other New York cities and towns have approached Niagara Falls to find out how they can do the same.

**Case Analysis**

The process used in Niagara Falls produced a world-class high school in an environment that could not support the necessary tax increases to build a school. Incorporating the needs of the entire community and choosing a location that could serve the best interests of the entire city helped achieve the necessary buy-in from the community. The facility planning and construction process, which took place over a period of seven years, ensured that every voice had a chance to be heard. According to George Luaces, the project architect, the emotional build-up that this process produced had a large impact on the final design outcome. When the project was completed, Carmen Granto commented that in an undertaking like this, “process matters”. He is now promoting this process as a way to build community support for educational infrastructure.

A large part of the success of the school seems to stem from the heavy involvement that Granto had in the process. He spent 2 1/2 years dedicated to this project, adhering to the Gunyou’s prescription that high-level commitment is critical to the success of a public-private partnership. Despite the heavy involvement of Granto, the District did not micromanage the implementation of the project vision. Instead, they took full advantage of the strengths of all of their partners in this process. In addition to using Honeywell to oversee the construction project and act as a construction manager, the District wisely
called upon Honeywell for their lobbying strength in Albany. This helped achieve passage of the FASTER legislation, which was critical to the success of the project. The District also used Honeywell to reduce the appearance of impropriety in their decision-making. Since one of the goals of the NFHS project was to "not be held captive by the low bidder," it was especially important to eliminate such appearances of impropriety. This was best done by having an impartial agent making contract decisions. The hands-off approach of the school board, and their willingness to pay for extra "features" on the school allowed Hillier to design an innovative, high quality facility.

The funding of the project was one element of the event chain that did not rely heavily on the private partner. While Honeywell did facilitate innovative securitization of lease payments, which was the ultimate mechanism for financing the school, the cash flows that were securitized originated from traditional sources. That 83% of the project costs were funded with state aid, another 8% with a corporate grant, and 6% with land dispositions, makes this funding structure replicable in only the poorest school districts in the country. However, the planning process that was used, and the implementation of project values, can act as models for school systems throughout the nation.

A novel aspect to the implementation was to encourage the participation of all of the RFP respondents in the final solution. By using Ciminelli as the general contractor and Benderson as the developer of the La Salle High School site, the political risk associated with having unhappy RFP participants was well managed.

One potentially controversial element of the planning process was the decision to allow Honeywell to specify their systems throughout the new facility. In this case, the systems were cost competitive with comparable systems, although some were more complex than might normally be installed. Other school systems that are considering an arrangement similar to the Honeywell-Niagara Falls deal should be certain to protect themselves from inflated product pricing. They should also be careful not to blindly commit to long-term service contracts. Control systems companies reportedly earn most of their profits by servicing their equipment, not by selling it. A long-term service agreement could end up bleeding a school district of money late in the life cycle of the building. In the case of Niagara Falls High School, however, there was no obligation to use Honeywell's service technicians, although the District expects to use them on a year-by-year basis.

Niagara Falls High School is a high quality building that meets Carmen Granto's requirement of not feeling "institutional". The quality of the final building originates from this vision, as well as the willingness of the District to break the mold of traditional school design – and pay for it. The District's long-term approach to the planning of this school and use of life cycle costing as a main criterion for material and system choices also contributed to this quality. By reducing the maintenance costs on these systems, Niagara Falls has made it less likely that the new high school will suffer from the decay and
deferred maintenance that the old high school suffered from. Regrettably, however, there are no provisions in the development agreement or in the formal operations of the school that will guarantee protection from such decay. vi Even the mechanisms of state aid in New York fail to protect against decay. State officials report that these policies are being studied; but, as of yet, they have not been changed. In this regard, although Niagara Falls High School is a facility that meets all of its programmatic goals, it does not serve as a long-term solution to the facilities crisis in Niagara Falls.

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i A program that was published for the opening ceremonies of the new high school includes press clippings from the opening of the old Niagara Falls and La Salle High Schools. The old Niagara Falls High School was reportedly considered one of the “finest high school buildings in the State, with every modern convenience,” while La Salle “represent[ed] the finest example of school architecture”.

ii Moody’s rated the city Ba, which is below investment grade and considered a “junk” rating.

iii To gain the favor of union leaders and workers, the Niagara Falls School District entered into a project labor agreement with all unions. This agreement provided an economic benefit to the District while creating favorable work rules for contractors. Among the elements of the agreement were that 1) the project was not exempt from prevailing wage rules, 2) all contractors were required to be bound by collective bargaining agreements, 3) an expiring bargaining agreement was extended through this project to allow for uninterrupted work on the project, and 4) workers would benefit from adjustable starting times. This agreement helped protect workers even in the absence of Wick’s Law. (Slide Presentation – NFSD).

iv In the Honeywell/Niagara Falls School District performance-based contracts, the entire cost of the retrofit was financed through energy and maintenance savings. This enabled the district to upgrade its facilities without increasing spending levels.

v This roughly corresponds to a 4.34% interest rate on $83M of COPs.

vi Niagara Falls, because it is such a poor school district, is eligible to have over 90% of reimbursable construction costs funded by the state. The local funds that the District was able to raise through cost savings, property dispositions, and corporate grants were able to be used for certain nonreimbursable expenses that helped to increase the quality of the building. The increase in nonreimbursable expenditures reduced the state’s share of total construction costs to 83%.

vii New York State funding formulas do not allow for the funding of maintenance. This has some perverse effects. Consider the example of a district that is eligible for an 80% reimbursement of allowable capital expenditures. If this district were to experience a leaky roof that would cost $30 to fix or $100 to replace, the district would have an economic incentive to defer maintenance on the roof until it required a reimbursable capital expenditure – in other words, until it collapsed. This clearly is not in the public interest. (Thurnau).
Chapter Four: Oyster Elementary School

Background

The Oyster Elementary School is located in Washington, DC, a city of 572,059 people. Although it is the Nation’s capital, Washington suffers from high poverty levels, segregation, and municipal leadership problems. The District of Columbia Public Schools (DCPS) are responsible for educating 69,000 students in 149 schools. In November 1996, the elected board that governed the DCPS was replaced by a “control board” in an attempt to resolve the leadership issues and address the city’s financial problems.

In their 2000 Facilities Master Plan, DeJong & Associates paints a grim picture of DCPS facility conditions. They point out that of the 149 schools in the district, 92 were over 45 years old and only eight had ever undergone major renovation. Many of these school facilities lacked full air-conditioning; some had no air-conditioning at all. DeJong suggests that the unmet capital needs and deferred maintenance in the District’s buildings had caused the increase in the number of operational emergencies, unsafe conditions, energy inefficiencies, and increasing maintenance expenditures.

The original Oyster Elementary School was a 26,700 square foot school built in 1926 on a 1.7-acre parcel in the Woodley Park section of Washington. Woodley Park is among the wealthiest areas in the city. Oyster, however, draws its students from the entire city and thus serves a poorer population. The school is nationally known for its 30-year-old bilingual education program that teaches a standard curriculum to every student in both Spanish and English. By the early 1990’s, the original building was suffering from overcrowding and poor maintenance. Over one quarter of the school’s 326 students were housed in temporary trailers that were 10-20 years old. The building had no air conditioning and was very outdated, making it a hindrance to Oyster’s innovative program. Considering these poor conditions, the 2000 Facilities Master Plan placed Oyster on a list of 40 schools to either be closed or consolidated.

Over the years, parents and administrators became increasingly concerned with the conditions at Oyster. The placement of the school on the consolidation/closing list helped solidify support for improving these conditions and saving the school. The parents and administrators approached DCPS and requested funds to replace the temporary classrooms that were housed in portable trailers at Oyster. At the time, however, the District had no money for capital expenditures and future trailers were earmarked for those schools with the worst conditions. Though parents and administrators were concerned with the effect of the Oyster facilities on the educational program, these were not the worst conditions in the District. It appeared that it would be a long time before the conditions at Oyster were a high enough
priority to justify funding. Realizing this, the parents sought, and were granted, permission from DCPS to explore alternative financing arrangements – including involvement of the private sector.

Although the Oyster site was 1.7 acres, only about half of that was used for the school. The other half was a large playfield that was primarily used by students. The area around the school was heavily developed with mid-rise luxury apartment buildings, which suggested that a large playfield was not the highest and best use for the site. Between 1994 and 1995, the 21st Century School Fund (21CSF), a non-profit group with close ties to the Oyster community, and DCPS completed a feasibility and market study that indicated that development of the playfield was feasible. The property taxes on this parcel ultimately funded the construction of the new Oyster Elementary School.

Project Planning

The planning process for the Oyster Elementary School was quite a bit different from that in Niagara Falls. One of the major reasons for this difference was that the idea for the public-private partnership originated with the community, not the school district. Most of the process was lead by the 21CSF, a non-profit group that advocates for better school facilities in urban areas. The 21CSF was started by Mary Filardo, an Oyster parent. Mrs. Filardo, though not an elected official, had a great deal of power in the planning process, as she and her organization essentially drove the process from start to finish. Her legitimacy was derived by the fact that she was a recognized leader of the Oyster community. As such, the DCPS allowed her quite a bit of discretion in her work.

The first step in the process was to perform a feasibility study to see if some of the school’s underutilized land could provide enough value to finance the school’s replacement. With the help of the Staubach Company, a regional real estate services firm, 21CSF was able to establish that the demand for the land was high enough to justify its disposition.

With a source of funds identified, the 21CSF advocated for the involvement of the community, teachers, and the PTA in the design of the new facility. In this case, it was not necessary to re-design the school’s educational program, since a highly effective curriculum was already in place. However, the curriculum was studied extensively to determine how the building design could contribute to its effectiveness. Among the results of this study were specially designed classrooms meant to facilitate dual-teacher teaching and an outdoor play area that was designed to serve as an outdoor teaching laboratory. The community’s input was critical to the planning process as well and helped determine the massing, layout, and physical form of the new structure.

Unlike the NFHS example, the Oyster School’s values were not as focused on the final product of the process. The reported values were simply to work together to save the school that had been an important part of the community for 72 years, and to ensure that all stakeholders were kept up to date on
progress through all stages of the project. These values, along with cost considerations, shaped the final goal of constructing a new school, while limiting the District’s contribution of assets to land, talent, and time.

**Project Team Selection**

The project team was selected through an RFP process that was managed by The Staubach Company. Staubach’s professionals were able to translate the contents of the various proposals for the DCPS so that they could be compared on an “apples-to-apples” basis. They also worked very hard to maintain the interest of strong national and regional developers. LCOR, a Maryland-based development company that specializes in public-private partnerships, was one of the strong regional developers whose participation was sought, because of both their financial strength and their experience. Ultimately, LCOR was chosen by the District from a pool of three respondents to be the project developer. Reportedly, the decision to work with LCOR was made based on their focus on the community, not because of their innovation or their financial strength. Their community focus was exemplified by the medium through which they presented their proposal. In addition to the traditional slide and lecture presentation, LCOR developed a large-print children’s book that told the story of the new Oyster school construction from the point of view of an Oyster student. In order to reflect the school’s diverse community, LCOR wrote and presented the story in both Spanish and English. Similar thoughtful gestures helped LCOR earn the community’s trust and support.

Sverdrup was the architect for the project. The firm, now called Jacobs Facilities, is a broad-based technical professional consulting firm that has some experience designing schools. Unlike the Niagara Falls process, in which the architect was chosen and hired by the District, Sverdrup was chosen by LCOR to be part of the RFP response team. Thus, when LCOR was chosen by the District, Sverdrup was implicitly chosen.

Initially, Sverdrup was also LCOR’s choice for general contractor. After a miscommunication regarding the scope of their involvement, however, they were replaced by Donohoe Construction. In Washington, DC, finding a construction team with K-12 experience that was willing to work for DCPS was quite a challenge, since DCPS did not have a good record of paying contractors on time. The leadership of a large regional developer helped in finding good contractors to bid on the project.

**Delivery Methods**

The Oyster project was originally structured as a design-build project, with Sverdrup performing both the architecture and construction services. However, after LCOR replaced Sverdrup with Donohoe, the process turned into one that more closely resembled design-bid-build.
LCOR, the private partner, was responsible for financing, designing, and building the project. In this process, contracts with the architect and general contractor originated with LCOR. LCOR also took responsibility for the furnishing of the building. By having LCOR procure the furnishings, DCPS was able to avoid a regulation that required the solicitation of three bidders for every item, thus streamlining the process. In their role, LCOR carried all financial risk, construction risk, and interest rate risk. Since LCOR is a major regional developer interested in expanding their presence in the growing Washington market, they also were exposed to some political risk in the project.

The public partner, DCPS, was responsible for programming the school, setting standards, and maintaining the school. Although the maintenance was DCPS’ responsibility, LCOR took the initiative to train the DCPS maintenance staff on the proper care of the building and planned to create a video training program to ensure that future staff members would use proper maintenance techniques. DCPS was also responsible for choosing the furnishings for LCOR to purchase, as well as the finishes for the school. This is a clear reflection of the fact that the ultimate users of the facility are in the best position to know what types of furniture are best to work with. The risks that DCPS took on were environmental risks and political risks. In a politically unstable environment like Washington, this political risk was significant. By the time the entire process was complete, there had been seven different facilities chiefs and three changes in DCPS administration (Gross).

Maintaining contractual ties between LCOR and Sverdrup created the potential for systematic conflicts of interest, since the contract originator had no long-term interest in the success of the school building. This lack of long-term interest stemmed from two sources: first, LCOR was not the ultimate user of the school and thus had no stake in the final environment created; second, LCOR was not responsible for maintaining the school, so had no stake in the quality of the materials used in building the school. In order to address these conflicts, an independent architect was hired to mediate all disputes between DCPS and LCOR. All conflicts were resolved by the independent architect, although both parties still reserved the right to dispute the intermediary’s decisions. This helped to reduce project delays without compromising the rights of either partner.

As part of the DCPS team, The Staubach Company played a major role in the process as well. They were primarily responsible for bolstering the sophistication of the DCPS Facilities Department. Staubach represented the interests of DCPS in all negotiations with private partners, oversaw the solicitation of private partners, and represented the District in procurement negotiations. Their role was similar to the program manager role that Honeywell played in the Niagara Falls project, although they lacked contractual control over any of the project participants.
Communication Methods

The last time that DCPS built a new school was in the mid 1960's. Since then, the work of the facilities and planning department centered mainly on emergency management and repairs. As a result, there was not much in-house expertise available to represent the District in the construction process. DCPS used two documents to guide LCOR and Sverdrup (Jacobs) in designing the new school. The first was a set of facilities standards. These were very specific technical specifications. Because it had been so long since the District had built a school, however, these standards were somewhat outdated and did not reflect the state of the art. In fact, many of the items that they specified no longer existed! The other guiding document was called the educational specification. This was a very vague set of performance specifications for items such as the wall system, mechanical systems, roof, and windows. The vagueness of these specifications led to disputes between LCOR and the District about whether the built product represented what the District specified.

Economics of the Deal

The Oyster Elementary School project was unique in that it required no public expenditure of funds. The entire public share of the construction cost was financed through transfer of land title and a continuance of tax-free status on the transferred land for 35 years. In this deal, DCPS transferred 88 acres of land to LCOR — without compensation — to allow for the construction of a mid-rise luxury apartment building. Property taxes were waived on the building for 35 years in order to facilitate a payment in lieu of taxes financing arrangement. During this period, LCOR will pay the principal and interest on the revenue bonds that were used to construct the new Oyster Elementary School. Their annual payments of approximately $717,000 are almost 2% of the $37M valuation of the new apartment building. This is slightly higher than the current DC property tax rate for multifamily properties. At the end of 35 years, ownership of the school will revert to DCPS, and LCOR will be responsible for property taxes on the apartment building at the prevailing tax rate.

Initially, the budget for the project was unlimited and was purely a function of the attainable revenues of the apartment building and the period of tax exemption. Eventually, however, the District capped the budget at $11M and set the term of the tax exemption at 35 years. As part of the development agreement, both cost savings and cost overruns would accrue solely to the developer. In the end, the hard costs on the project exceeded the budget by approximately $1M.

The bonds that were issued for the school construction are referred to as Payment in Lieu of Taxes (PILOT) bonds. Although they were issued by the District of Columbia, the bonds were not guaranteed by the faith and credit of the District. As a result, they did not increase the District's total indebtedness. The bonds will be paid exclusively by the PILOT payments and are secured by the
assignment of rents or leases from the apartment project, money and investments on deposit in the debt service reserve fund, and money on deposit in certain other funds and accounts.

Since this project relied on the successful completion of two facilities, special provisions had to be put in place to ensure that both facilities were completed in a timely and appropriate manner. In order to avoid completion of the apartment building construction coming at the expense of the school construction, the District required that progress on the apartment building never exceed 75% of the progress on the school. An additional penalty of $5,000 per day was also assessed to LCOR for any delays in the school construction that they caused.

Special Legislation to Permit the Deal

In order for the economics of this project to work, special legislation needed to be passed. In 1998, the Council of the District of Columbia enacted the Oyster Elementary School Construction and Revenue Bond Act of 1998. This Act, which symbolized a high level of cooperation between the District and DCPS, authorized the sale of $11M in bonds, secured by 35 years of property tax payments on the apartment property, to fund the construction of the new Oyster Elementary School. The Act also authorized the District to transfer a portion of the original Oyster site to LCOR for the construction of the apartment building. Since the development on the adjacent site was already zoned for residential development, no special land-use provisions were necessary.

Other Extraordinary Circumstances

The case of the Oyster Elementary School is replicable. However, there were two extraordinary circumstances critical to its successful completion. The first was that the process involved a group of citizens who were very committed and politically sophisticated. That the idea for a partnership with the private sector came from this group enabled the necessary community buy-in to be established with greater than normal ease. It is also noteworthy that a great deal of time was donated to the DCPS by very sophisticated real estate professionals, including lawyers and development consultants. Having sophisticated representation ensured that the interests of the DCPS were protected throughout the process. The second critical circumstance, of course, was the value of the land that was part of the original Oyster property. As discussed in the section about the economics of the deal, the private funding available for the school relied entirely on the valuation of the apartment building that was to be built. Being in one of the most desirable parts of Washington, DC, during a rising real estate market, resulted in a high valuation and thus a higher budget than may be achievable in other parts of the country.
Reported Outcomes

At the time that this thesis was written, the new Oyster Elementary School had not yet opened for classes. However, in July of 2001 the project was completed and celebrated with a grand opening. The new school is 47,000 square feet and is designed for 450 students. It is almost twice the size of the original school. The new school also boasts a fully air-conditioned environment, as well as ADA compliance – the first school in the District to achieve this. The site conditions at the new Oyster school prevented a surface parking lot from being built. Instead, teachers rely on a 33-car underground garage for their parking. The use of underground parking allowed for the highest use of the land and maximized the available play area for the students.

Members of the development team claim that the strict budget of the school limited the innovation of the project. The budget guidelines, along with the incentives that the process created, resulted in a final product in which quality standards were met, but seldom exceeded. Despite the strict budget, the architect reports that the program of the school was never compromised. Instead, exterior details suffered the most from “value engineering”.

The exterior of the building is designed to refer to the Washington Federalist and the Spanish Mission architectural style. Together, these styles reflect the heritage of the students at Oyster. In addition to referring to these two architectural styles, the architect also consciously designed the street-facing facades differently from the facades of the interior courtyard. This was done in order to respect the formality of the neighborhood, while providing the children with a rich, but less formal, exterior element. The courtyard includes a playfield, a basketball court, and an outdoor amphitheatre. However, the adjacent 8-story apartment building causes this space to feel somewhat confined.

The interior of the building, though it did not suffer as much from the budget guidelines, does suffer from materials that are not as aesthetically pleasing as in Niagara Falls High School. The fact that the Oyster development team used first-costs in its material selection decision rather than life cycle costs may have something to do with this. Rather than the elaborate terrazzo floors that are used in NFHS and last up to 200 years, Oyster used vinyl tile floors that will only last 10 years. The walls in the school's common areas are made of concrete masonry block. While this is a highly durable material, it creates an environment that feels institutional. NFHS avoided the institutional feeling by using tile-covered walls instead of concrete block. Finally, the interior color scheme was chosen by the Principal of the school, not a trained designer. As a result, rather than being filled with inspiring bright colors that compliment each other, the halls are painted a dull yellow that is reminiscent of the current generation of schools that is being replaced. Oddly enough, some students have commented that they like the new colors because it reminds them of the old school. While this nostalgia may be well intentioned, it seems symptomatic of a missed opportunity to create a vibrant interior.
The choice of paint colors was not the only part of the design process inappropriately influenced by DCPS. Another was the placement of the media center and gymnasium within the building. In the design of this four-story school, the media center is stacked on top of a two-story gymnasium and a single story multipurpose room. This is the configuration initially requested by DCPS. However, during the design phase, Sverdrup noted that by stacking the gym on top of the media center and the multipurpose room they could achieve significant cost savings. These savings would be achieved by simplifying the design and using smaller steel beams. Despite these cost savings, and the trivial impact that the design change would have on the function of the building, DCPS refused to allow the change. Similar decisions caused frustration for LCOR, and, in the presence of cost constraints, sometimes strained the LCOR/DCPS relationship.

Case Analysis

The partnership between the DCPS and LCOR helped to create a state of the art elementary school in a city that had not built a new school in 30 years. The Oyster partnership, however, was stymied by a lack of leadership at the school district level. While a well-connected parents group (21CSF) tried to assist the District, their experience as an advocacy group made it difficult to make the kinds of decisions and concessions required of an owner in a successful partnership.

Unlike the teachers at Horton High School (Chapter 5) and Niagara Falls High School (Chapter 3), teachers at Oyster did not travel to innovative model schools to get ideas for their new school design. As a result, the DCPS didn’t know what design features were available in the new school — they only knew what they already had. Similarly, the District’s lack of experience building new schools prevented it from knowing how to trim costs from the construction budget through innovative design and obscured their long-term vision. This resulted in the use of first-cost, rather than life cycle cost, criteria in material and system selection. Frustration regarding the District’s shortsightedness caused a strain in the LCOR/DCPS relationship.

The overall process seemed to be compromised by well-intentioned participants performing activities for which they weren’t ideally suited. Examples include involvement in bond issuance, partnership negotiation, and interior color selection. One of the most admirable parts of the process, however, was the involvement of a sophisticated team of advisors. Using the services of The Staubach Company and Rick Gross, a corporate attorney, to structure the deal allowed the District to better represent their interests to LCOR. The District’s unwillingness to allow these private representatives act independently, however, prevented the process from moving as swiftly as possible. Mike McShea, of The Staubach Company, estimates that a negotiation process that took between one and one and one-half years
to complete could have been executed in less than 120 days if left to private professionals. He adds that in private development projects, such delays can “kill a deal”.

The case of the Oyster Elementary School is most useful as an example of extracting value from nonmonetary assets. The use of an underutilized playing field to finance a new school building is a technique that, given the right market conditions and location, could be replicated by many school districts. Similar deals could be designed using transferred development rights or land swaps.

Although the new Oyster Elementary School is a state-of-the-art facility, and far superior to the old Oyster Elementary School, the quality of the new building does not reflect a desire to solve the long-term facility needs of the District of Columbia. Because of the incentive structure of the deal, the developer had very little incentive to ensure the quality use of materials and space. The lack of incentive is compounded by the fact that the population that Oyster serves generally does not come from the surrounding neighborhood. Thus, the school adds very little value to LCOR’s new apartment building. Although LCOR is addressing the issue of maintenance with an advanced training program, the manner in which DCPS approached the project seems short sighted. Without a solution to long-term maintenance of the new facility, and with the use of similar material selection criteria as in the past, Oyster Elementary School seems destined to suffer from the same decay as the original school.

\[\text{As of April 2000 (http://www.pe.net/~rksnow/dc.htm).}\]
\[\text{As of December 2001 (DeJong & Associates, Inc.).}\]
\[\text{Reportedly, Sverdrup understood that they would be involved in the apartment building construction as well as the school construction and submitted their bid accordingly. This arrangement differed from the intentions of LCOR and resulted in the replacement of Sverdrup with Donohoe as general contractor.}\]
\[\text{The District of Columbia agreed to pay the first $445,000 of environmental clean-up fees (Oyster PILOT Prospectus, pg. 8).}\]
\[\text{In addition to insisting on an inefficient stacking order for the large rooms in the building, the district also insisted on using operable windows in the classrooms despite LCOR’s warning that using operable windows could unbalance the carefully calibrated air handling system in the school.}\]
Chapter Five: Horton High School

Background

Horton High School is located in the Annapolis Valley of the province of Nova Scotia, Canada. The Province has a population of approximately 947,000, most of whom are located in the metro-Halifax area. The area has been suffering an economic decline since the North Atlantic fishing industry dried up. As a result, unemployment in 1999 was slightly above 10% (Utt).

Unlike the American system of school construction, which is primarily controlled at the local level with varying levels of aid from the state, in Canada schools are built at the provincial level. The motivation for provincial-level construction is reportedly to promote equity in the distribution of facility quality throughout the province. Under the Canadian system, the Province oversees all expenditures on new schools, as well as the construction of all schools. These expenditures are realized in the year of the construction. This results in an uneven set of cash flows for the Province over the life of the facility. This practice is contrasted with corporate behavior, which allows expenses to be realized over a period of many years in order to better reflect the actual impact of the payments made on the debt that financed the construction.

Horton is a regional high school and serves students from the university town of Wolfville, the shopping village of New Minas, the town of Hantsport, and the area of North Kentville. The original Horton High School was built in the 1960's. As fiscal troubles of the Province resulted in cutbacks in capital expenditures for schools and other public buildings, the original facility began a period of decay. Eventually, the poor condition of the school gained it a spot on a list of schools to be renovated in the Province. However, the cost of renovation was so high, that replacing it seemed more prudent.

At the time that the decision was made that Horton needed to be either renovated or replaced, the Province was faced with a large inventory of ill-conditioned schools and was nearly bankrupt. It could not afford to issue sufficient debt to cover the cost of all of the construction. In order to meet the needs of Nova Scotians, the Province sought an alternative method of financing the projects. Noting that under existing Canadian law operating leases could be entered into with third parties without affecting the debt capacity of the Province, the Province decided to create a province-wide program to facilitate the rapid construction of new schools. This initiative, called the P3 initiative, sought to shift the ownership and maintenance of public schools to the private sector, allowing the school system to focus on its specialty – teaching. Rather than funding a new construction project with a 30-year bond and expensing it in a single year, under the P3 initiative the Province would enter into a 20-year operating lease with a private company that owned a suitable school facility. This idea, which would allow for faster and more efficient
building, was tested in three areas with three different types of schools. The Anapolis Valley was one of the test areas for the program and Horton was the first high school built using this methodology.

**Project Planning**

Unlike the previous two cases, which featured ideas originating at the local and community levels, the Horton partnership was a creation of the Province. From the beginning, the community lobbied passionately for renovation of the original Horton High School, while the Province promoted the idea of new construction. Eventually, the Province prevailed and a new high school was built.

The P3 process revolutionized Canadian educational facility provision and reintroduced a participatory planning process. For the past 15-20 years, the Provincial view of community participation in the planning of facilities like Horton High was that community participation was too expensive and too risky to pursue. It was widely believed that involving citizens would create too much uncertainty in an already complex process. The P3 process at Horton, however, involved the local school board, parents, businesses, community representatives, and university representatives. It also, of course, involved representatives of the Province. The main decision-making body included equal representation from the Department of Education (Provincial representatives) and the local school board. Throughout the process, everyone was invited to participate, including teachers. According to Andrew Clinch, principal of Horton High School, those who participated in the design and planning of the new school are the most satisfied members of the school community.

The planning process also included student representation. Three student representatives sat on the Horton High steering committee to ensure that the best interests of students were served by the process. Their insights, combined with the community participation actually resulted in design changes in the final building. One example is the daycare facility that was added to the high school. It now serves the children of students, staff, and the community. When the idea for including such a facility was initially introduced, leaders were skeptical of its political feasibility. Although many leaders supported the idea, they feared accusations that the school was encouraging teen pregnancy. As a result, nobody wanted to introduce the idea to the community. When two Horton students spoke passionately at a public meeting about the need for daycare, however, they received a standing ovation and the support of the community.

The P3 process was characterized by a consistent focus on the needs of the community, staff, and students. This is evidenced by the value placed on community participation during the process. Shortly after the P3 process started, the Provincial government underwent a change and the Liberals lost power. As a result, the P3 process was discontinued and the traditional method of procuring schools reemerged.
The strong emphasis that the P3 process placed on community participation, unfortunately, has not been preserved by the new government.

As it entered the design phase, the Province sought to create a school that reflected the values of the community as well as the needs of staff and students. Thus, many goals influenced the design of the partnership and the school. The first was to create a school that was accessible to the community and able to meet their needs without adversely impacting the delivery of education. The second was to include technology that was up to date, as well as provisions for refreshing that technology throughout the life of the building. Third, the building was to include some revenue generating capability to make it appealing to a private partner. Fourth, the school was to create an environment that put the processes of education and learning, as well as the results of that education, on display. Finally, the new building was meant to provide a “living laboratory for lifelong learning” where children would be “limited only by their imaginations”.

**Project Team Selection**

With the values and goals decided, the Province solicited developer interest using an RFP process. The RFP was distributed throughout the province and asked respondents to address the issues of facility design, finance, and maintenance in their responses. The Province used cost, ingenuity, and potential to enhance the educational process as their criteria for creating a shortlist of developers. Respondents were then individually interviewed by the steering committee and a private partner team was chosen. This process led to the choice of a Halifax-based development team for the Horton High School project. The team included The Hardman Group as lead developer, Barrie & Langille Architects as architects, and the Lindsay Group as general contractor. The Province also sought respondents for a maintenance contract that ran coterminously with the lease on the building. The Hardman Group was selected to be the maintenance partner as well.

**Delivery Methods**

Under the P3 program, private-partner consortiums were responsible for the design, construction, maintenance, and structuring the finance of P3 schools. The design included the interior design and furnishings. For both of these functions, the private partner relied heavily on the expertise of those who would use the building every day for feedback. They then used this feedback to guide the decisions of the development team’s design professionals. For instance, when the community found the initially proposed color scheme to be distasteful, it suggested a focus on brighter colors. A professional interior designer then took this suggestion and reworked the entire color palette for the school to create a unified and coherent interior color scheme.
The budget of the building was influenced by the cost that the government was willing to pay for its lease. In order for the province’s lease payments to qualify as off-balance sheet financing, lease payments could not exceed 89% of the capitalized cost of the building. Theoretically, the project costs could have been as high as the private sector partner wanted, but this would likely require him to pay more than the 11% of the capitalized cost necessary under the final agreement. This would add to the private partner’s risk. In addition to influencing the budget, the Province also determined the size of the building and set facilities standards. Although the Province had no contractual power to influence the construction process, they also sent representatives to supervise the progress and quality of the work that was being done.

Once the building was constructed, The Hardman Group became responsible for keeping the building and furniture up to date. Included in this responsibility was the maintenance of building systems and replacement of fixtures and furniture on a regular basis. In addition, they were required to provide a clean working environment for the students and teachers. This maintenance was financed with an annual capital expenditure allocation. At the end of the 20-year term, any unspent money in the capital expenditure account would be split evenly between the Province and Hardman.

All service contracts, including the architect’s contract and general contractor’s contract, originated with Hardman in this project, while all partnership contracts – one for facility delivery and one for facility maintenance – originated with the Nova Scotia Educational Facilities Society. The risks of the project were primarily borne by the private partner. Most financial risk, for example, was taken by Hardman. Most notably, Hardman took on the risk in the residual value of the school. The lease payments on the school were guaranteed by the Province, however, and the occupancy of the school was assured with a guarantee that the Province would not build another high school to replace Horton in the next 20 years. Hardman also took on maintenance cost risk by entering into the long-term maintenance contract. Political risk in the process was borne entirely by the Province. This risk manifested itself in provincial elections as the Conservatives capitalized on the public’s misunderstanding of the P3 process to successfully criticize and unseat the Liberals. The change of government resulted in the termination of the P3 initiative.

**Communication Methods**

Since Horton High was built as a prototype in the P3 process, there were very few formal requirements in place. Michael Barrie, the project architect, described the time as one when “the old rules had been thrown out, but the new rules were not yet in place.” As such, a very general set of standards was used that do not meet any of the specification definitions offered in Chapter 2. Instead, the architect was allowed to stray from the very detailed specifications of a typical “Crown-Construct” project if the

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new materials and systems met or exceeded the performance standards of the original specification. In the event that they did not meet or exceed the performance, a nonconforming material or system could still be specified if a reasonable case could be made for its use. This reflected one of the goals of the P3 process: to take full advantage of industrial innovation.

Economics of the Deal

The economics of the Horton High deal depend, in large part, on the residual value of the facility. Under the terms of the partnership, the government contracted with Hardman to build the new school. Upon completion of the school, an independent body called the Nova Scotia Educational Facilities Society (NSEFS) purchased the new Horton School from the Province using long-term debt that it issued. After purchasing the school, the NSEFS sold an option to purchase the facility at the end of 20 years to the Hardman Group. The next step in the deal was for the NSEFS to sign a lease with the Province for a term of 20 years that specified annual lease payments of $2.36M, or 89% of the capitalized cost of the school. The Province also entered into an agreement with Hardman at the time to provide facility management services for the term of their lease. Meanwhile, part of Hardman’s deal as developer was to find a tenant to pay market rents for a portion of the building. This would cover a portion of the 11% of the capitalized cost not financed by the Province. The rents from the market tenant, along with the rents from the Province, were to be used to pay off the debt issued by the NSEFS and to provide scholarships to financially needy students.

The incentives that this deal created are quite clever. Hardman, as the holder of an option to purchase the property in 20 years, has an incentive to build the school using high quality materials that will increase the residual value of the building at the end of the lease term. Because they sold an option to the Province, however, they also have an incentive not to overspend on the building. Similar incentives exist for the maintenance of the building. Hardman has the incentive, and contractual obligation, to ensure that the building is maintained in good order so that it does not lose value. On the other hand, it has the incentive not to over-invest in the maintenance of the building; otherwise, the Province will be able to purchase the building at a discount to its true value.

The most innovative part of the Hardman development plan was the inclusion of a third-party revenue stream to fund the debt payments. Initially, a software incubator was supposed to be set up in the school, helping to pay the rent and creating job opportunities for the local economy. This plan fell through, however, because of a miscommunication regarding the Province’s responsibility for funding the business. This miscommunication contributed to the bankruptcy of the business, prohibiting them from moving into Horton. Now, a driver’s education company and the district’s community education office pay for permanent spaces in the school.
Special Legislation to Permit the Deal

Horton High School was built as a pilot project for a province-wide initiative called the P3 Initiative. The P3 program was designed to use existing laws to finance public school construction in an “off-balance sheet” manner with help from the private sector. This required structuring lease payments that accounted for no more than 89% of the capitalized cost of the new facility. Thus, the P3 initiative acted as a compilation of existing legislation, rather than a piece of enabling legislation.

The P3 Initiative required qualified developers to bid to provide one or more school facilities according to the specifications of the Province. The projects were to be delivered on a turnkey basis – i.e. complete with furnishings and equipment – and the developers were responsible for securing their own financing. In the case of Horton High School, lease payments were guaranteed by the Province for 20 years. This initiative was to be implemented throughout the province, however. In order to test the viability of the program, three schools were selected as pilot schools. These three schools represented the different grade configurations that exist throughout the province, as well as the geographic diversity. Horton was the school representing the Anapolis Valley and a grade 9-12 configuration. Each of the pilots was awarded to a different team of developers who each used a different proprietary response to address the Province’s needs.

Other Extraordinary Circumstances

The implementation of the P3 program at Horton High School was affected by many extraordinary circumstances. The first had a direct impact on the political risks of the project. Horton High School, which was chosen as a pilot to test the P3 initiative’s application to high school construction, was located in the sponsor MLA’s riding. This caused many Nova Scotians to question the motivations behind the expenditure of funds at a school “way out in the valley”. It even led to accusations that the developer selection process favored friends of the MLA. Part of the scrutiny was brought about because Horton was part of a pilot program that was meant to be a learning experience. As such, there was not as much pressure to hit cost targets on the project. The public’s distrust of the process was exacerbated by the fact that the financial components of the proposals were not made public, however. Since the P3 initiative could have helped spawn a new industry – namely public school ownership – each respondent saw their financing plan as proprietary information and demanded protection for it. Further complicating matters was the fact that there was no lease signed at the start of the construction process. In fact, negotiations took place through the actual construction of the school, undoubtedly affecting the outcome. All of these circumstances led to the highest level of scrutiny. Ultimately, the scrutiny became destructive. The Conservative Party began using the P3 program as a campaign issue in the 1999 provincial election, using the controversy that surrounded the program to help them take power from the
liberal government. When new plans for the construction of 17 new schools were published in 2000, it was announced that none of them would involve public-private partnerships (Clinch, Success & Failure).

**Reported Outcomes**

By all accounts, the new Horton High School building is far superior to the old one. According to the Principal, Andrew Clinch, “The old school was a place to deface, now the kids are proud of their school,” (Clinch, interview). Those staff members who elected to take part in the design process now have a stronger sense of ownership over the space. Notably, those who chose not to participate in the design process are most critical of the new building.

The new school is a two story, grade 9-12 school with a capacity of 1,000 students. The centerpiece of the school is a two-story interior courtyard that features natural sky lighting and a small performance stage. This courtyard serves as a cafeteria, as well as a gathering space for students and teachers during the day and between classes. Special purpose classrooms with glazing on the corridor walls look out to the courtyard, proudly displaying the process of education. The school also features a large performing arts center that can be rented out to the public. Its inclusion in the school was somewhat controversial since most Nova Scotian schools no longer include large auditoriums of this sort. As mentioned earlier, the school also includes commercial space as well as a daycare center.

Because of the incentives that were designed into the P3 program, the quality of the materials used to build Horton High School are far superior to what they ordinarily would be. They were chosen using life cycle costing methods and were meant to minimize the cost of maintenance. They were also meant to make the building as environmentally sensitive (or “green”) as possible. In fact, Horton won the honor of being Canada’s national entry in the educational facility category of an international green building design competition.

As an expert in facility management, The Hardman Group was well suited to make recommendations about which materials to use. The use of easy to maintain materials, along with the maintenance provisions of the partnership, has made a noticeable difference at the school. When asked about the observable changes in the new Horton High School, one of the first issues that Andrew Clinch mentioned was the improved maintenance. Now, Clinch says, he can look out his window and see perfectly trimmed grass and green fields (or plowed driveways and sidewalks) every day. In the past, this would happen only when work crews were available to do work at Horton, which reportedly was not very often.

The biggest sign of the success of the building thus far is the reaction in the community surrounding Horton. Enrollment at the school has increased and parents now lobby hard for their children
to be able to attend Horton. Some surrounding communities have even lobbied to have their high schools
closed so that they can become part of the area that is served by Horton (Clinch, interview).

Still, despite the success of the project, it became wildly controversial. One of the complaints of
opponents was that the new Horton High School, and, in fact, all P3 schools, undermined the provincial
tradition of equity in school facilities. A lack of communication between the steering committee and
officials in Halifax led to a great deal of confusion regarding the degree of inequality that would be
observed at Horton. Members of the development team report being asked questions like, “Is it true that
the new school will have marble floors?” and “Why are we spending so much money way out in the
Valley?” Horton was even mockingly dubbed the Taj Majal.

With these questions came increased scrutiny. Accusations were made that the Horton project
was benefiting friends of the leaders in charge of it. When the media learned that the Province bought the
Horton site for $400,000 (CDN) more than its assessed value, the accusations gained credibility.
Eventually, the scrutiny became a distraction and hampered the partnership process (and the entire P3
process), turning Horton into a political football. People involved in the project began to fear making
decisions, lest they suffer political backlash.

The Horton process also suffered one of the same problems that the Oyster process suffered: the
district insisted on maintaining control over parts of the process for which they were not best suited. In
this case, it was the coordination and maintenance of the school-wide computer network. Rather than
contracting out this specialized function, the Province wanted to maintain the position of “Network
Administrator” on their staff. As a result, poor decisions were made about the network setup and the
system has reportedly experienced nothing but problems in its first year.

Case Analysis

The concept behind Horton High School is probably the most innovative of the three cases.
However, the fact that the P3 initiative has been discontinued, suggests that the planning process was
inadequately managed. This management failure allows Horton to teach many lessons about planning a
public-private partnership on a state, or provincial, level. While the literature and the two other cases
suggest the importance of a clear and transparent process, clarity becomes even more important in a
project that is a pilot for a large-scale initiative. Process control is also very important. This should have
been managed better at Horton. For example, because leaders were eager to begin the pilot project, work
began on the facility construction before all partnership terms were fully arranged. This should never
have happened. The lack of lease caused a great deal of confusion and threatened the project’s success.
Even with the lease in place, there is a great deal of confusion. It appears that too many details were left
to “mutual understanding” to adequately protect the interests of the school system. This project’s status
as a pilot project should have suggested that it would receive even more scrutiny than the typical public-private partnership. To insulate themselves from this scrutiny, leaders should have written contracts that were more complete. To this day, there are still disagreements over what constitutes an hour of building use, for example.\textsuperscript{iv} Andrew Clinch, the Principal of Horton, suggests that the Department of Education did not have the infrastructure in place to follow through with both a partnership model and a model for radical change in the school construction process (Clinch, Success & Failure). This observation mirrors Gunyou’s call for the management of public-private partnerships by capable leadership. It also, however, highlights the importance of understanding the difficulty in managing change. It seems that the Nova Scotian government did not appreciate the scale of the change that they were trying to implement.

Tying the project to partisan politics also seems to have played a significant role in its fate. Although the planning of Horton was more participatory than any other recent project, a more inclusive planning process that addressed the concerns of all stakeholders would have produced stronger buy-in and may have prevented the P3 process from becoming a political issue that contributed to the unseating of the liberal provincial government.

Horton’s use of a 20-year management contract is potentially worrisome since such a long-term contract removes the credible threat of substitution. However, by aligning the incentives of the private sector with those of the Province, this issue was mitigated. Maintaining the contractual tie between the Province and Hardman Facility Management was wise, however, as it gives the Province more control to evaluate the performance of the maintenance team.

\textsuperscript{1} In order to qualify as an operating lease, the annual lease payments may not exceed 89% of the capitalized cost of the project.
\textsuperscript{2} The Nova Scotia Educational Facilities Society is a not-for-profit corporation whose purpose is to “exclusively develop, promote and improve, in any manner determined appropriate by the board of directors, the educational, sporting, recreational, artistic or literary infrastructure in the Province of Nova Scotia; to purchase, lease, construct or otherwise acquire, a school or schools or an educational facility or facilities and furnish such school or schools – and let or relet – for the education of students; and to carry on its operations without financial gain of its members or its members benefiting.” (Clinch, NSEFS).
\textsuperscript{3} In Canada, an MLA is a member of the legislative assembly. An MLA’s riding is his or her electoral district.
\textsuperscript{4} The lease between Hardman and the Province allows for 3,000 hours of school use per year. During the remaining 5,760 hours of the year, the school is available to Hardman to lease out to mutually agreeable third parties. Disagreement still exists over what constitutes an hour of building use, however. For instance, if half of the building is being used for an hour it is unclear as to whether that constitutes an hour of building use or a half hour of building use. Similarly, it is unclear as to whether the use of playing fields by school sports teams should count against the 3,000 hours of allowed use.
Part III: Findings and Conclusions
Chapter Six: Findings and Conclusions

Introduction

Chapters 3, 4 and 5 presented three detailed examples of North American school districts that used public-private partnerships to meet their facility needs. Table 6.1 presents selected project information and measurable outcomes from the three cases. Chapter 6 draws on these experiences and the literature in order to answer the two research questions set forth in the introduction:

1. What lessons can be learned from the experiences of school districts involved in public-private partnerships about the management and design of partnerships for school provision?
2. What functional role can public-private partnerships play in preventing future educational facility crises in the U.S.?

The findings are presented using a framework similar to that used in the presentation of the cases. Together, these findings answer the first research question. The conclusions are drawn based on these findings. They include a discussion related to the second research question. The final section of the chapter suggests topics for future research.

| Table 6.1 – Select Project Information and Measurable Outcomes of Three Innovative Public-Private Partnerships |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Location | Niagara Falls High School | Oyster Elementary School | Horton High School |
| Setting | Urban | Urban | Rural |
| Public Partner | Niagara Falls School Department | DC Public School Department | Nova Scotia Department of Education |
| Private Partner | The Honeywell Corporation | LCOR | J.W. Lindsay/Hardman Group |
| Architect | The Hillier Group | Sverdrup/Jacobs Facilities | Barrie & Langille Architects |
| Construction Manager / General Contractor | Louis P. Ciminelli Building Company | Donohoe Construction | J.W. Lindsay/Hardman Group |
| Material Selection Criteria | Life cycle cost | First cost | Life cycle cost |
| Total floor area | 400,282 sqft | 47,000 sqft | 135,000 sqft |
| Total construction cost | $83M | $11M | $25M (CDN) |
| Project duration (RFP through opening) | 3 years, 8 months | 3 years, 9 months | 2 years |
| Student capacity | 2,500 | 450 | 1,000 |
| Grade levels | 9-12 | K-5 | 9-12 |
| Number of Floors | 4 | 4 | 2 |
| Extracurricular space | • 3 gyms  • Performing arts center  • Media center  • Pool  • Ambulatory health facility | • 1 gym  • Multipurpose room  • Media center | • 1 gym  • Performing arts center  • Media center  • Daycare center  • Outdoor amphitheater |
| On time? | Yes | Yes | Yes |
| On budget? | Yes | No | Yes (under budget) |
| Being replicated? | Yes | Yes | No (program ended) |
Findings

Part II presented detailed accounts of three innovative public-private partnerships that were used to facilitate the construction of new public schools. While the small number of cases limits the extent to which generalizations can be made, the experiences of the three school districts offer insights on the partnership process and suggest topics of future inquiry. The remainder of this section is organized to reflect the structure of the case presentations. It presents findings in six categories: Existing Conditions, Partnership Planning, Partner Selection, Delivery Method, Communication, and Economics.

Existing Conditions

Each of the three cases took place in poor school districts that suffered from deteriorating building conditions. Two of these districts were urban while one was rural. Regardless of the setting, however, the deteriorating building conditions appear to be linked to the inadequate funding for preventative maintenance, repairs, capital expenditures, and facility upgrades. In New York, the situation is made worse by the perverse incentives created by the state. There, that state reimburses local districts for certain capital expenditures at the same rate as new construction but does not reimburse them for maintenance or repair. Districts with limited funds, therefore, often allow their structures to deteriorate until they need replacement rather than maintain them. This delays the capital expenditure and reduces its fiscal impact on local budgets.

The evidence from the three cases suggests that in poor school districts, long-term facility needs are often given a lower priority than other short-term needs. This prioritization, however, does not seem to reflect the values of the districts, but rather reflects the resources of the districts. In Washington, DC, there was a district-wide need for updated facilities. A concerned group of parents expressed its desire to provide an adequate learning environment but was rebuffed because of inadequate resources. A similar situation was seen in Nova Scotia. In Niagara Falls, where there was both the will to provide adequate facilities and a tradition of doing so, financial obstacles prevented the public finance of a new school. This suggests that acting upon intergenerational responsibility may be more of a privilege than a choice. The three poor school districts studied here were unable to afford this privilege.

Partnership Planning

Although public-private partnerships have been used in public infrastructure projects for over 150 years, they still attract significant public scrutiny. The evidence from the cases suggests that using a transparent partnership process and a participatory planning process can help mitigate the risks associated with this scrutiny. The evidence also suggests, however, that overreliance on grassroots organizations during the planning phase can hamper the partnership process.
The Niagara Falls and Nova Scotia cases provide examples of the benefits that participatory planning can have on a school. In both cases, community input resulted in the design of a better facility. In Nova Scotia, however, the juxtaposition of the local community support for the Horton project with the province-wide outcry against the project suggests that while engaging the local community may be essential to creating support for a single school, engaging a government’s entire jurisdiction may be essential to the implementation of a large-scale initiative. The people of Nova Scotia may not have had enough in common for provincial leaders to build the necessary support for the Horton project. In the Oyster Elementary School case, the process included heavy involvement of a group of politically savvy community leaders. The benefit of such involvement is that it fostered significant community support and very little reported negative publicity. However, the advocacy role that grassroots groups such as the 21CSF are accustomed to playing may have prevented the process from becoming as collaborative as it could have been. Contrary to the Horton experience, the managing entity in the Oyster case (21CSF/DCPS) may have been too closely aligned with its constituents to make the compromises necessary to act in the best interests of the partnership. The evidence suggests then that a competent local authority that is accountable to a cross-section of stakeholders, like the school board in Niagara Falls, may be the best candidate to manage a planning process. Such a planning process, however, should involve as many stakeholders as possible.

Partner Selection

The literature and the evidence from the three cases stress the importance of choosing a partner that will both contribute to the partnership and benefit from involvement in the partnership. Partnerships that included private sector partners with a long-term interest in the success of the building built structures that were more likely to prevent future facility crises. In Niagara Falls, the school district’s interests were aligned with those of Honeywell’s. There, Honeywell planned to use the new school as a showcase for its systems. It also benefited from goodwill generated from the project. The result was a school that used life cycle costing criteria to choose materials and systems that would allow the building to perform well throughout its life. Horton High School also aligned the long-term interests of The Hardman Group with the end users by tying Hardman’s financial return to the residual value of the building after 20 years. As a result, high quality systems were installed in the building. Horton will also be maintained to a high standard throughout its 20-year life in order to protect the value. The innovation in Horton’s design won it the honor of being Canada’s national entry into the K-12 category of the international “Green Building Challenge”. Oyster, on the other hand, lacked an alignment of long-term interests between LCOR and the DCPS. In this project, LCOR’s returns were not tied to the long-term success of the building and their
apartment project reportedly will not benefit from the school as a neighbor. The result was a building where first cost, rather than life cycle cost, drove the process and limited innovation.

Once a set of potential partners has been identified whose long-term interests can be aligned with the end users of the schools, an open and carefully designed partner selection process can help to manage the political risk of a partnership. By communicating the criteria that developers will be judged with, as well as a clear description of the school district’s goals for the partnership, an open and transparent partner selection process can emerge. In Nova Scotia, the lack of transparency led to accusations of favoritism in the selection process, further eroding the public image of the entire P3 process. In Washington and Niagara Falls, this was less of an issue. Niagara Falls further mitigated scrutiny by boldly deciding to use elements of the best RFP responses in its final team composition. As a result, the school board could assign management responsibility over each element of the process to the entity that it thought had the most expertise.

In the Oyster process, there was a strong emphasis on attracting the attention of national or regional developers to be private partners. The evidence from the three cases, however, suggests that the size of the developer may not affect the success of the partnership or the final quality of the school. It seems more important to work with an experienced developer that has a long-term interest in building a successful project. The comments of LCOR’s Jim Turner support this finding. Mr. Turner commented that working on other public-private partnerships did not accelerate LCOR’s learning curve in the Oyster project. Rather, he said, the dynamics of each partnership differs with the municipality, not the property type. Based on the evidence and these comments, the ideal private partner may be a successful developer with an established relationship with a municipality or school board.

The experience in the Oyster case suggests that one way to capture the attention of “ideal partners” is to involve a reputable real estate services firm as an advisor. Mike McShea of Staubach notes that as soon as Staubach became involved in the Oyster process, the development community became more interested in the project. The legitimacy that such an advisor can bring to the process may be especially important for troubled districts, like Washington, DC, that have a poor history of working with the building industry.

**Delivery Method**

Table 6.2 describes the assignment of selected roles in the three partnerships presented in Part II. Since public-private partnerships allow for flexibility in the assignment of risk and roles, it may be expected that roles will be assigned according to partner perceptions about which partner is best suited to manage certain risks. Two patterns emerge when studying the patterns of these assignments. First, in every case, the program was defined through a joint effort of public sector and community. Second, in
each case, the financing and construction management roles were assigned to the private sector. These assignments suggest that the public sector is perceived to be more capable of managing political and planning risk in new school construction, while the private sector is perceived to be more capable of managing financial and construction risks. Neither of these findings is surprising, however, given the similarity between the skills necessary to execute these roles and the skills necessary to succeed in the public and private sectors. Differences in role assignments and project outcomes tell a more interesting story, however. The remainder of this section is dedicated to understanding the implications of various role assignments that differed across the three cases.

Table 6.2 – Role Assignment in Three Innovative Partnerships

<table>
<thead>
<tr>
<th>Role</th>
<th>Niagara Falls High School</th>
<th>Oyster Elementary School</th>
<th>Horton High School</th>
</tr>
</thead>
<tbody>
<tr>
<td>School need identification</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Suggestion of PPP use</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Program definition</td>
<td>○ ○</td>
<td>○ ○</td>
<td>○ ○</td>
</tr>
<tr>
<td>Architect’s contractual client</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Finance project</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Construction oversight</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Owner of site</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Ultimate owner of facility</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>End user</td>
<td>○ ○</td>
<td>○</td>
<td>○ ○ ○</td>
</tr>
<tr>
<td>Facility maintenance</td>
<td>○</td>
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<td>○</td>
</tr>
</tbody>
</table>

○ Community
○ Public Partner
○ Private Partner

Need Identification/Partnership Suggestion

In all three of the cases presented in Part II, the entity that identified the need for a new school also suggested using a public-private partnership. In Niagara Falls and Nova Scotia, both roles were assigned to the public sector. In Washington, DC, they were played by the community. Based upon the evidence, however, it does not seem that the assignment of either of these roles is as important to the outcome of a project as the assignment of the responsibility to manage the partnership planning process.

Architect’s Contractual Client

The contractual relationship with the architect also differed across cases. It is not clear, however, that this relationship played an important role in the outcomes of any of the cases. Nevertheless, the decision of how to design this contract may still be important. Any contractual relationship should reflect the ultimate client of a service provider. With architecture, however, it is unclear whether the client is the end user or the party that will pay for the architect’s services. Ideally, but not always, these two parties
are the same. The three cases suggest that there is not a single ideal relationship to establish, but rather that the type of relationship may vary by the role that the private partner will play in the process.

In the Niagara Falls case, since the school district was paying the bill, would be the ultimate owner of the building, and would be the end user, having a contractual relationship between the architect and the school district seems to make the most sense. At Oyster, however, the choice is less clear. Since LCOR was at risk for any cost overruns in the project, it was important for them to be able to work closely with an architect that understood their goals and constraints. LCOR, however, had no long-term interest in the building. DCPS did have a long-term interest; however, they lacked contractual control over the design of the building. Ideally, this partnership would have shifted the risk of cost overruns to DCPS and established a contractual relationship between the architect and DCPS, since DCPS is the user, future owner, and ultimate payer of services. In Horton, having a relationship between the private partner and the architect may have been ideal. In this case, Horton is just a tenant. Hardman, on the other hand, is an at-risk owner with a long-term interest in the design and performance of the building. Thus, it seems appropriate for the contractual relationship to exist between the architect and Hardman.

Site Ownership

Site ownership also varied by case. The evidence suggests that public ownership of a school site can prevent price gouging and manage media scrutiny. In two of the three cases, site ownership was retained by a public entity and the schools were built on sites that were already part of the public stock of land. This prevented price gouging from increasing the development costs of the buildings. In the Horton case, however, the land that Hardman purchased ended up costing $400,000 (CDN) more than its assessed value, causing some to question the prudence of such a purchase. This also turned the selection of the site into a political issue and fostered accusations of favoritism in site selection.

Ultimate Facility Ownership

The young age of the three partnership schools precludes any findings regarding the ultimate ownership of the school facility through a sale/lease-back mechanism. However, the move toward privately owned schools seems like it may be a threatening change for public school districts to make. The two U.S. districts studied here both retained ultimate ownership over their facilities. This helped to reduce the complexity of the partnership arrangement. The Canadian example, the only one no longer being replicated, may have been too complex to adequately manage. Ultimately, however, such private ownership may allow more flexibility in facility provision and create both the means and incentives to build and maintain high quality school buildings.

End User

In addition to regular educational space, both of the high schools in Part II included space for the community to use. The Oyster Elementary School includes very little non-traditional space that is meant
to serve community needs. The evidence suggests that while community amenities can help gain critical community support for a project, they do not guarantee community support and may not even be necessary for community support. In the Niagara Falls project, the inclusion of a performing arts center, a health facility, and swimming pool helped gain community buy-in. Likewise, the inclusion of a performing arts center fostered local support in the Horton project. The same center also created problems, however. In Horton, amenities like the performing arts center were seen as wasteful by government constituents in other parts of the province. This may have occurred because these constituents were unable to enjoy these amenities and didn’t have similar amenities at their disposal. In Niagara Falls, the amenities are available to the entire community. Negative public reaction to amenity-rich schools could occur in future partnerships that are implemented in large districts (like Washington, DC) or that are part of large-scale partnership initiatives.

Facility Maintenance

Deferred maintenance and a failure to invest in necessary infrastructure have contributed to the deteriorating conditions in many U.S. schools. The two U.S. districts presented in Part II rely on improved materials and more efficient systems to reduce the cost of facility maintenance. Of these two U.S. districts, only Niagara Falls takes a long-term approach to material selection and considers life cycle costs in its material and system selection decisions. Choosing systems with lower life cycle costs can help manage the affordability of adequate maintenance. As maintenance is made more affordable, the expected chances that adequate maintenance will take place increases. In Nova Scotia, the Province used life cycle costs to manage future maintenance expenditures as well as contractual obligations and financial incentives to minimize the chances that adequate maintenance funding would be cut. By writing a contract that specifies service level quality, a public school owner can protect the value of their asset. Evidence from Horton High School suggests that the obligations and incentives in place there are sufficient to adequately maintain the facility.

Communication

Open communication appears to be the key to creating transparency of process and building public trust. Both of these help mitigate the intense media scrutiny that public-private partnerships often attract. In order to communicate effectively, however, school districts must know what they want. This notion is proposed by Donahue who says, “if government does not specify what it wants from suppliers, or does not evaluate what it has received, it should not expect to get what it needs,” (Donahue, pg. 217). In the three case studies, those districts that carefully considered their curricular needs and used innovative facility solutions from other districts to inform their design criteria ended up with the most progressive buildings. These same districts, Niagara Falls and Nova Scotia, also allowed their architects
the most flexibility in the specification of materials and systems. Oyster, on the other hand, relied on a strict interpretation of outdated specifications that reportedly stymied the innovation in the project.

**Economics**

The experiences of the three school districts studied here show that investors have an appetite for investing capital in public school construction, even without government assurances of debt repayment. Lockbox mechanisms (Niagara Falls), dedicated property tax streams (Oyster), and tenants with guaranteed rent streams (Horton) can be successfully used to reduce the risk of school construction projects to an acceptable level.

The evidence also shows that the private sector is willing to participate in such partnerships in a variety of roles. The three cases showed that private sector involvement as a master developer (Niagara Falls), master developer/financier (Oyster), and master developer/financier/owner (Horton) is feasible. The financial incentives designed into the three partnerships presented in Part II were adequate to catalyze action that was previously thwarted by financial constraints.

The evidence presented confirms the conventional wisdom that the economics of a partnership will drive the facility quality. That is, spending more money will yield a higher quality school facility. The quality of the Niagara Falls High School resulted from a willingness to spend more on amenities, first cost items, and labor in order to build above minimum standards. This project included a modest profit for all private members of the project team to give them an incentive to produce the highest quality work possible. When cost became a constraining factor in the Oyster project, innovation and quality reportedly suffered.

The economic structure of a partnership seems to depend heavily on local context. As a result, the economics of the three cases are not equally replicable. For example, the Niagara Falls project relied heavily on corporate grants and state aid to build a top quality school without impacting taxpayers. Clearly, there are many other poor school districts in the country that may be able to match the state aid that Niagara Falls received. However, few are likely to receive the same level of private funding that allowed for such a high quality facility. Such private funding is likely to rely on the economic success of a major area corporation. By definition, it is difficult to find successful corporations in depressed areas.

The Horton model is replicable, but is very complex and is a major shift away from traditional educational facility management. Such a model requires the creation of an entirely new specialty in the real estate industry. In order for schools to be protected against the perils of privatization described by Sclar and Stainback, there must be a threat of substitution which the Horton model does not offer. This threat could exist, however, if schools could easily relocate to facilities that were suitable substitutes for their own buildings, or if the barriers to entry into this “industry” were low.
The Oyster model seems to be the most replicable of all. This economic structure takes an asset that many school districts have – land – and converts it into a liquid currency. Although the market conditions in the Woodley Park area are unlikely to be found in neighborhoods surrounding schools in other poor school districts, treating excess land as an asset and managing it the same way that other capital assets are managed can help finance a school. Although none of the cases took advantage of this fact, the land used to finance a project does not have to be adjacent to the school. It can be part of a portfolio of land spread throughout the district. By executing a series of land swaps, districts can assemble large parcels of land that are likely to attract the attention of private developers. These large parcels can then finance the construction (or redevelopment) of a school, like in the Oyster Elementary School case. Such an arrangement will require school districts to be nimble with their real estate assets and think about managing them as a whole, rather than as individual parts.

Conclusions

The evidence from the three cases suggests that successful partnerships rely most heavily on clear goal definition, using a participatory planning process, capable leadership, and appropriate role assignment. The planning and management of public-private partnerships must be carefully coordinated. Public-private partnerships are complex undertakings and every step, including partner selection, community involvement, and incentive design, must be carefully considered. Underestimating the importance of any of these, the risks associated with partnerships, or the complexity of the partnership process can threaten the success of a partnership.

It may be possible to avert a future educational facility crisis by aligning the interests of school building owners (whether public or private) with those of school building users. Even with aligned interests, however, maintenance and capital expenditures must be adequately funded in order to occur. While public-private partnerships do not ensure that these expenditures will take place, they seem to be able to protect against their inadequate funding in the future.

The allocation of sufficient funds for these activities by the public sector relies on a sense of intergenerational responsibility. Economists disagree about the role that intergenerational responsibility plays in individual decision-making. However, the three cases presented here show that even when a sense of intergenerational responsibility exists, the means to act on this responsibility may not. In a facility owned by the public sector then, its long-term condition will rely on both intergenerational responsibility and economic prosperity. Public-private partnerships, however, allow owner/user incentives to be aligned with contractual obligations and financial incentives. These can be carefully designed and better controlled than citizen responsibility and prosperity. This suggests that public-private
partnerships may have an important role to play in poor school districts whose extraordinary circumstances prevent them from acting on their intergenerational responsibilities.

If public-private partnerships will be used in poor school districts that have few other means of financing school construction, school districts must be careful to ensure that the quality partnership-built facilities are as high as other new facilities. Once these schools are built, they must protect their condition as well. The evidence suggests that private-sector involvement in the provision of public school facilities may be threatening to public school districts. In order to protect themselves from overreliance on the private sector, the U.S. districts studied here have maintained ultimate ownership over the structures. Such an implementation fails to take full advantage of the potential benefits of public-private partnerships and does not address the need for changes in facility maintenance financing. The Canadian implementation of public-private partnerships addresses the full life cycle needs of schools. As U.S. school districts become more comfortable working with the private sector in the early phases of the school life cycle, they may begin to involve the private sector in the latter stages and ultimately implement a system similar to the Canadian initiative.

**Additional Research**

This thesis focuses on poor school districts that were unable to use other mechanisms to construct public schools. While there does not seem to be anything preventing wealthier districts from realizing the benefits of partnerships, it will be useful to determine whether public-private partnerships have a role to play in the provision of public schools in these districts as well. Is there anything that suggests that public-private partnerships are better suited for use in poor districts? Why? What are the equity implications of such a finding?

A related area of inquiry would seek to understand the reasons that districts choose not to enter into public-private partnerships. Understanding the decision-making process of school leaders may help illuminate the strengths and weaknesses of public-private partnerships, especially as they pertain to public school provision.

Another step in creating a body of research about public-private partnerships in public school provision is to document more cases of public-private partnerships and track their performance in order to determine if the benefits of these partnerships materialize in the long-run. Creating matched samples between partnership schools and traditional schools will help researchers understand whether the benefits, if any, are coming from industry-wide improvement in school planning and design or if they are the result of using a partnership approach to facility provision.

A fourth body of research would identify different mechanisms for the public and private sectors to add value to each other in the provision of public schools. For instance, are there ways besides funding
and construction management for the private sector to enhance the quality of education delivery? Similarly, are there novel ways that schools can benefit potential private partners? The answers to these questions could help catalyze the expansion of public-private partnership use in public school provision.

Finally, practitioners may be interested in understanding whether such public-private partnerships can be used on a system-wide basis or if they are better suited for single-project use. Such research may expand upon Miller’s research on the portfolio approach to public infrastructure delivery (see Miller). Among the important issues that this research would address would be whether private partners would be more inclined to participate in projects sponsored by wealthy districts or poorer districts and what the equity implications of this inclination would be. It will be critical to understand this issue before expanding the use of public-private partnerships to a district-wide or statewide level.
Bibliography
Bibliography

18. El-Nasser, Haya, Schools forced to roam in search of more room Districts are setting up shop in vacant commercial properties, USA Today, August 18, 2000.
54. Roth, Peter (Instructor), Class Notes, Building Technology in Real Estate Decision Making (4 453), Cambridge, MA: Fall 2000.
59. Stanton, Michael J., Schools That Teach: A Blueprint for the Millennium (updating school building designs), USA Today Magazine, July 1999
66. __________, Phone Interview, The Heritage Foundation, June 1, 2001.
77. Lease Purchase Agreement By and Between 4455 Porter Road Corporation and the City School District of the City of Niagara Falls, Niagara Falls, NY: July 2, 1998.
78. Niagara Falls High School, Contract Magazine (Reprint), Bill Communications.

