

Public School Capital Improvement Programs

Basic Elements and Best Practices:

GUIDANCE FOR THE DISTRICT OF COLUMBIA

Prepared for The World Bank Group



July, 1999

The Scientex Corporation
2000 – 14th Street, Suite 300
Arlington, VA 22201

The 21st Century School Fund
1816 12th St, NW
Washington, DC 20009

PREFACE

The World Bank has agreed to provide resources to assist the District of Columbia (District) in strengthening the infrastructure for effective management of public school construction. Pursuant to an agreement among the District of Columbia Financial Responsibility and Management Assistance Authority (DCFRMA), the D. C. Agenda, a nonprofit entity, and the World Bank, such assistance will be focused on setting priorities and evaluating resource allocation. The Scientex Corporation and The 21st Century School Fund were commissioned by the World Bank to conduct a review of the management of public school construction, locally and nationally, and provide a framework for rational decision-making by the District. The purpose of this report is to present the findings of this review and to suggest implications for the District's infrastructure.

Residents of the District expressed their perception of the importance of public education in a June 1997, survey on the quality of government services. Respondents were asked to rank twenty-seven (27) services and to indicate their view of services as satisfactory or unsatisfactory. Findings of the survey revealed priority services, in rank order, as follows:

1. Public education;
2. Police protection;
3. Protection against crime in the neighborhood;
4. Ambulance and emergency services;
5. Safe drinking water;
6. Fire protection; and
7. Youth programs

In terms of satisfaction or dissatisfaction with services provided by the District, residents ranked metro rail services highest and street repair and maintenance lowest. When the priority services were weighted with the degree of satisfaction and dissatisfaction with a specific service, public education remained the number one (1) priority. Findings of the study clearly revealed the importance of public education, including the condition of school facilities, in the public's overall perception of the quality of District services. Moreover, continuous, recognizable, and sustained improvement of public school facilities is fundamental to creating an exemplary school system capable of supporting quality education.

The Scientex Corporation and the 21st Century School Fund are pleased to present this report in anticipation of its contribution to informed decision-making on public school construction in the District.

TABLE OF CONTENTS

PREFACE.....	2
TABLE OF CONTENTS	3
LIST OF TABLES	5
LIST OF FIGURES.....	6
LIST OF APPENDICES	7
Executive Summary	8
1.0 INTRODUCTION	10
1.1 Purpose of This Study	10
1.2 Methodology.....	10
1.2.1 Literature Review	10
1.2.2 Interviews	11
2.0 BASIC ELEMENTS OF A CAPITAL IMPROVEMENT PROGRAM.....	13
2.1 Accurate Information Systems.....	14
2.2 Sound Planning.....	15
2.2.1 The Long-Range Facilities Master Plan	15
2.2.2 Capital Improvement Plan	17
2.2.3 Annual Maintenance Plan.....	19
2.3 Needs Based Decision-Making Process.....	20
2.4 Reliable Funding.....	22
2.5 Effective Project Management.....	23
2.6 Oversight and Monitoring.....	25
3.0 SURVEY OF MANAGEMENT OPTIONS FOR PUBLIC SCHOOL CAPITAL IMPROVEMENT PROGRAMS.....	28
3.1 “In-house Management”	28
3.2 “Other Governmental Management”	31
3.3 Private-Sector Management.....	32
4.0 MANAGEMENT OF THE PUBLIC SCHOOL CAPITAL IMPROVEMENT PROGRAM IN THE DISTRICT OF COLUMBIA.....	36
4.1 District of Columbia Public School system Division of Facilities.....	36
4.2 History of the Management of the Capital Improvement Program in DCPS.....	36
4.2.1 General Services Administration	37
4.2.2 Department of Public Works	37
4.2.3 District of Columbia Public Schools	37
4.2.4 The Control Board	38
4.3 The Effect of Management History on the Basic Elements of a Well-Managed Capital Improvement Program	39
4.3.1 Information Management.....	39
4.3.2 Planning	40
4.3.3 Decision-Making	40
4.3.4 Project Management	41
4.3.5 Funding	42
4.3.6 Oversight and Monitoring.....	43
5.0 RECOMMENDATIONS FOR MANAGING THE DISTRICT OF COLUMBIA PUBLIC SCHOOLS CAPITAL IMPROVEMENT PROGRAM.....	45
5.1 INTRODUCTION	45
5.2 Recommendations.....	47
APPENDIX A.....	49
APPENDIX B.....	59
Materials Reviewed and Interviews	59
List of Materials Reviewed from DCPS (See endnotes for detail).....	60
List of Materials Reviewed from other School Systems	60
List of Persons Interviewed.....	60
APPENDIX C.....	61
Guidelines for Evaluating for School Districts (MGT of America, Inc.).....	61
Best Financial Management Practices.....	61

APPENDIX D.....	69
State Schools Capital Improvement Program	69
Organizational Charts	69
APPENDIX E.....	87
Memorandum of Agreement between the Army Corps of Engineers, District and DCPS.....	87
APPENDIX F.....	95
Excerpts from District of Columbia Public Schools FY 2000 – FY 2005	95
ENDNOTES.....	101

LIST OF TABLES

Table 3-1	Comparative Analysis of Construction Management in Three School Districts	30
Table 3-2	Chicago Public Schools Capital Improvement Expenses	36
Table 4-1	Investigations or Audits Conducted on the Management of the DCPS Capital Improvement Program	48

LIST OF FIGURES

Figure 2-1	Long Range Master Plan	16
Figure 2-2	Capital Improvement Program Development Process in Chicago Public School System (CPS)	18
Figure 2-3	Project Manager’s Responsibilities	24
Figure 2-4	The Basic Elements of A well Managed School Construction Program	28
Figure 4-1	Date of Construction for Currently Operating Public Schools In the District of Columbia	39
Figure 4-2	History of Capital Expenditures for District of Columbia Public Schools for FY 1985 – FY1998	46
Figure 5-1	Government of the District of Columbia, FY2000 – 2005, Capital Improvements Plan and FY2000 Capital Budget, June 1, 1999	50
Figure 5-2	Capital Improvements Plan Expenditures and Budget Projections for FY1985 – FY2000	51

LIST OF APPENDICES

APPENDIX A:

National Clearinghouse for Educational Facilities (NCEF) Hot Topics: School Construction Project Delivery and Acceptance Methods

**Online Resources
References to Books and Other Media
References to Journal Articles
Related Web Sites**

APPENDIX B:

Materials Reviewed and Interviews

**List of Materials Reviewed from DCPS
List of Materials Reviewed from other School Systems
List of Persons Interviewed**

APPENDIX C:

**Guidelines for Evaluating for School Districts (*MGT of America, Inc*) – Fairfax County
Best Financial Management Practices -State of Florida**

APPENDIX D:

**State Schools Capital Improvement Programs
Procedures Guide from Maryland
Guidelines and Procedures from West Virginia**

Organizational Charts

**Montgomery County Public Schools: Division of Construction
Fairfax County Public Schools: Department of Facilities Services
Fulton County Public Schools: Capital Programs Department**

APPENDIX E:

Memorandum of Agreement between the Army Corps of Engineers, District and DCPS

APPENDIX F:

Excerpts from District of Columbia Public Schools FY 2000 – FY 2005

Executive Summary

After decades of deferring school improvements, the District is developing a comprehensive long-range educational facility master plan and has approved \$619 million in the FY2000-FY2006 Capital Budget for modernization of its public school buildings. The school system is in the planning stages of a complete modernization of eight elementary schools and one middle school, and has begun the replacement of the Oyster Elementary School through a public/private partnership.

At the request of the World Bank, The Scientex Corporation (Scientex) and The 21st Century School Fund (21st CSF) undertook a review of the current capital improvement programs and practices of seven school districts and the history of the management of public school capital improvement programs in the District of Columbia. This review was undertaken in order to assist the District of Columbia Public School System in identifying expectations and options for effectively, efficiently and equitably delivering school facilities that are educationally appropriate, modern, and safe. This report can be used to inform public discussion about the execution of the District of Columbia's public school capital improvement program.

After a thorough review of the literature and best practices in the management of school construction programs, a team from Scientex and The 21st Century School Fund conducted interviews with individuals from school systems, communities and private industry in an effort to understand the management of capital improvement programs in seven locations throughout the United States: Fairfax County, VA.; Montgomery County, MD.; Anne Arundel County, MD.; Fulton County, GA.; the state of West Virginia; New York City, NY; and Chicago, IL and in one location in Canada: Nova Scotia.

This study found that all well-managed capital improvement programs consist of six basic elements: accurate information systems; comprehensive, multifaceted planning; clear decision-making structures; sufficient and stable funding; skilled project management; and effective oversight and monitoring. Underpinning all of these elements is public trust and support. In the seven school systems' capital improvement programs reviewed in this study, overall program management of the capital construction program and its basic elements took three different forms, or models.

- local school system management (in-house management);
- management by another public agency (other governmental management); and
- management by private sector firms (private-sector management).

The District of Columbia capital improvement program has had serious shortcomings in each of the basic elements, shortcomings attributable in some degree to the management history of public schools in the District. To ensure the effective application of the new capital funds, Scientex and 21st CSF recommend that the leadership of the District of Columbia—the Mayor, the Council, and the Control Board, Superintendent, and Board of Education—do the following:

- acknowledge the need to evaluate the current systems and structures for managing the D. C. Public Schools capital improvement program by initiating a formal review of the program by an agency or entity without a financial interest in the outcome;
- ensure that the evaluation include an economic analysis of the cost of project management, planning, design, construction, and information management;
- review the laws, regulations, and policies that provide the framework for managing the program effectively, efficiently, and equitably;

- include citizens and private-sector interests in a discussion on how to implement the capital improvement program.

The challenge of Government reform is to work toward improving or creating new systems and structures while responding to day-to-day demands for required services. As such, management of the capital improvement program of the schools cannot be placed on hold while an evaluation is done to determine how to do it better. Thus, the evaluation must be approached in a way that does not create instability in the program management but rather assures continuity for work in progress. Moreover, the leadership must realize that the District of Columbia will not gain the trust of the public or produce required school construction that is affordable without effective, efficient systems and structures in place.

1.0 INTRODUCTION

1.1 Purpose of This Study

The District of Columbia is currently planning a comprehensive initiative to build new schools and modernize existing school facilities. To generate and sustain the requisite level of public support, that initiative—the first in 30 years—requires the development of a well-managed capital program. Additionally, a program of such magnitude must be guided by best practices of the public and private sectors and must include educational and community requirements in planning and designing school buildings.

The major objective of this report is to provide decision-makers in the District with information to assist them in evaluating options for effective and efficient management of a capital improvement program for public school facilities. Such a program must support equity in the allocation of resources and be able to deliver educationally appropriate, modern school buildings effectively and cost-efficiently. Supporting objectives of this report are as follows:

- to identify and describe basic elements of a well-managed school construction and modernization program,
- to discuss strategies used by other school districts in the application of the basic elements of a well-managed construction and modernization program,
- to review capital program management options used by other school systems and the private sector,
- to provide an historical context for understanding the management of school construction in the District,
- to analyze implications of the findings of this review, and
- to recommend immediate steps towards developing a well-managed capital program in the District.

1.2 Methodology

Scientex and The 21st Century School Fund conducted a review of the literature and best practices in the management of school construction programs. Information-gathering methodology included Internet searches, face-to-face and telephone interviews with current or former managers of school construction programs in seven school districts one in Canada, and review of primary and secondary source documents from the District of Columbia and the eight school districts in which interviews were conducted.

1.2.1 Literature Review

Through the National Clearinghouse on Educational Facilities (NCEF) and the Educational Research Clearinghouse, Scientex and 21st CSF team identified numerous reports, articles, and recent publications on school construction management. Additionally, the team studied documents related to the management of school construction programs in the District; Montgomery County, MD; Fairfax County, VA; Fulton County, GA; the state of West Virginia; New York City; Chicago, IL, and the province of Nova Scotia. Those documents, which included current master and capital plans, board of education policies, and capital budgets, provided extensive information on the infrastructure and basic elements of a well-managed capital

improvement program. These basic elements are discussed in Section 2.0 of this report, and the list of source documents appears as **Appendix A**.

1.2.2 Interviews

Scientex and 21st CSF conducted a series of in-depth interviews with facilities managers and managers of school construction programs representative of different contexts and approaches to the management of capital programs. In addition, they interviewed both community and private sector representatives actively engaged in advocating for improvements to school facility infrastructure and working with school systems to implement capital programs.

1.2.2.1 School Systems

Fairfax County, VA

The team conducted a face-to-face interview with James Johnson, Planning Director, and Gene Kelly, Director for Design and Construction, for the Fairfax County Public School System. Fairfax County Public Schools enrolls 160,000 students. Their annual capital budget is \$130 million. Older schools are scheduled for renewal every 25 years, and the school age population of the County continues to increase. There are already 670 temporary classrooms in use in the County and the Fairfax County Public Schools have plans in progress to build 9 and 12 more planned in the current capital budget.

Montgomery County, MD

The team conducted a face-to-face interview with Bob Weston who has served in several capital program management positions in the Montgomery County Public School System and is currently serving as Director of Construction Finance. Montgomery County enrolls 131,000 students and operates 169 schools. The long range educational infrastructure strategy for Montgomery County provides for major renovation of old schools every 25 years. Montgomery County is experiencing increased school age population and has plans for the new construction of 4 schools and 5 full modernizations. Two County high schools are among the five schools being entirely modernized and two others were just recently completed. The annual capital budget for Montgomery County over the next five years is expected to average \$113 million per year.

Anne Arundel County, MD

In Anne Arundel County, Maryland, the team conducted a face-to-face interview with Mark Moran, P.E., Technical Support Officer, Facilities Planning, and Construction Division of the Anne Arundel Public School System. Anne Arundel is a smaller system, with 74,000 students and 115 schools. Their current capital budget is \$112 million. They are currently building 3 schools, with plans for 3 new schools, 3 additions, and 3 replacements. Included in the current capital budget is significant funding to reduce the backlog of maintenance, repairs and to do component replacements.

Fulton County, GA

The team conducted telephone interviews with Mike VanAirsdale, Head of Operations, and Marcus Ray, Director of the Division of Facilities, of the Fulton County, Georgia Public School System. When they assumed responsibility for facilities in the district, approximately three years ago, the school system was at the end of a five-year bond program, and the capital program was \$100 million over budget. Nevertheless, to honor a commitment to voters, the county still had to construct two more schools. In little more than three years, the management of the capital program has become exemplary.

Fulton County is a diverse and rapidly growing located near Atlanta. The enrollment is 67,000 and there are 66 schools. Their most recent proposed capital budget averages approximately \$551 million. Almost seventy-five percent of their budget is for new construction, additions, and program driven renovations.

West Virginia

Clayce Williams, Executive Director of the West Virginia School Building Authority indicated that an equity lawsuit in 1988 resulted in the state's embarkation on a \$1 billion school construction program. Counties are responsible for its planning and implementation and the state shares in the funding and provides guidelines, oversight, and technical assistance, as needed.

New York City, NY

In New York City, the team interviewed representatives of the Parent Organizing Consortium (POC) and Kavitha Medarata of the New York University Institute for Education and Social Policy who discussed their concerns with management of the school construction program by the School Construction Authority. The team also attended a meeting of community and Board of Education representatives to discuss funding needs of the New York Public Schools. Additionally, in 1995, while developing the Preliminary Facilities Master Plan 2005, Scientex and 21st CSF had an opportunity to meet with the executive board of the School Construction Authority and visit new schools in New York City. The New York City Board of Education provides 1,180 school buildings for over 1 million students. Funding has not been stable, but the school system hopes to expend approximately \$11 billion for school construction in the next 5 years.

Chicago, IL

In Chicago, the team interviewed Avram Lothan of DeStefano and Partners, the firm responsible for managing new construction in the Chicago Public Schools. Early in 1999, 21st CSF also had the opportunity to visit new schools in Chicago and meet with representatives of the Small Schools Coalition and the Business Partnership and participate in discussions on creating flexible prototype designs to accommodate small schools and schools-within-schools.

Chicago Public Schools enrolls 435,000 students in 630 schools. The 5-year capital improvement plan includes \$2.5 billion for new construction, major repairs, and renovation, but is not entirely funded.

Nova Scotia

Attended a seminar on public private partnerships sponsored by the Heritage Foundation and had an opportunity to listen to and afterward talk with Doug Nauss the executive director of Education and Culture Facilities Planning and Operations for Nova Scotia public schools. There has been a freeze on the amount of capital funds in Nova Scotia since 1990. This district has developed a way to cut the cost of building schools through selling public schools and then leasing them back from private owner/developers.

1.2.2.2 Private Sector

The team also interviewed individuals in private-sector firms engaged in project management of independent schools and office buildings. Interviews with Jim Wilson, President of JFW, Inc., Mike McShea and Bill Skoda of the Staubach Company, centered on project management techniques currently used in the private sector.

A list of persons interviewed for this report is presented as **Appendix B**.

2.0 BASIC ELEMENTS OF A CAPITAL IMPROVEMENT PROGRAM

A major responsibility of school systems is the management of the school facilities within which educational programs and services are provided. Facilities managers in public school systems are responsible for more buildings than most private-sector firms or other governmental entities. In fact, only the General Services Administration (GSA), which is responsible for all federal buildings, manages more facilities than the New York City Public School System, which operates 1,130 public schools.

School districts require well-managed capital improvement programs for developing and implementing long-range plans for the repair and modernization of facilities. The planning and budgeting processes must ensure public accountability, provide fiscally responsible management of capital funds so the maximum value for tax dollars is realized, and assume fair and equitable distribution of funds for school facility improvements. Moreover, contractors engaged in school design and construction should expect that contracts will be awarded in accordance with clearly defined and consistently applied laws, policies, and procedures; and that contracts, payment, and oversight will be executed in a timely and professional manner.

From the literature review and interviews with facilities personnel in other school districts, Scientex and 21st CSF, identified the following six basic elements of a well-managed public school capital program as follows:

1. Accurate information systems;
2. Sound planning;
3. Clear process for needs-based decision making informed by public input,
4. Sufficient and stable funding,
5. Skilled project management; and
6. Effective oversight and monitoring.

All six elements are required to ensure that capital funds are spent effectively, efficiently, and equitably. In the following subsections, those elements are described and examples are provided of their practice in the school systems interviewed.

2.1 Accurate Information Systems

The facilities in large public school systems are complex, consisting of many buildings of varying ages, conditions, capacities, and functions. Furthermore, even within a single building, systems and components can be of different types, ages, and condition. Accurate data and information on the facilities inventory are at the foundation of a well-managed capital program. Data needs include the following:

- Base Building Data

Age,
building and site size,
location,
use,
zoning,
title status, and
design.

- Capacity and Utilization

School capacity and space utilization,
attendance zones,
demographic trends and enrollment projections,
housing starts or other developments that will affect schools, and
transportation.

- Building Condition

Age and condition of components,
renovation history,
life cycle data, and
outstanding maintenance and repairs.

- Budget/Expenses

Appraisal, assessment, and market value;
capital budget projections/capital history; and
operating budget projections/operating budget history.

The conditions of school facilities changes each time a repair or improvement is required or made. Therefore, the school system needs an information system that can provide baseline assessment data and is capable of updating information as the work is done or needed.

Facilities managers must also stay abreast of factors affecting the utilization and cost of facilities. Such factors include current and planned educational programs and services; special education programs and accessibility requirements; organizational patterns and grade configurations; policies affecting class size and pupil-teacher ratios; high school schedules; and curricula for all levels, including vocational and career education programs, science and language laboratories, and the use of technology. Additionally, facility managers need to be aware of plans for providing security, food services, and transportation, and must know the regulatory requirements that affect facilities and educational programs. They must maintain close contact with local schools and the public so that information not readily quantifiable can be included in the information base that is used to make facilities decisions.

A comprehensive and accurate information base sets parameters for decision-making and indicates influences that might have an adverse impact on such decisions and on the fair and equitable distribution of resources. Several school systems use simple spreadsheets for organizing such facilities data as age, condition, capacity, and enrollment/utilization; informing the public debate about the allocation of school construction funds; and setting priorities for construction projects. A useful application of information technology is in the development of needs-based priorities for capital projects, and a data-driven priority listing of projects can help ensure fairness and eliminate favoritism in the distribution of scarce construction resources. Almost everyone interviewed stressed the importance of the “list” of priorities and its relationship to public trust. When the citizens trust that the priorities on the list are the priorities of the District, they will support capital budgets even in years when their particular schools are not scheduled for improvements because they are confident that “their turn will come.” Fairfax County uses a Geographical Information System (GIS) to support its planning functions, project enrollment, and assist in decisions on where new schools are needed.

Even though a number of school systems are still exploring the utilization of information technologies to complement experienced-based knowledge, the need for accurate, current information is universally recognized.

2.2 Sound Planning

Planning on the following levels is a necessity in capital improvement programs:

- Long-range facilities master plan
- Capital improvement plan, (CIP) and
- Annual maintenance plan.

2.2.1 The Long-Range Facilities Master Plan

The long-range facilities master plan is a critical component of a well-managed capital program. With accurate and current data on facilities, planners are able to integrate the building-based elements of public schools to demographic, educational, and community considerations to formulate a long-range educational facilities plan. This long-range plan should include at least two capital budget cycles, usually five or six years each, resulting in a long-range facilities plan for a period of ten to twelve years. As indicated previously in this report, a long-range planning process based on objective, accurate, and current data supports the development of a plan that is devoid of immediate political pressure and is focused on the larger vision. Such planning requires significant community input and must reflect the public's ambition and vision for schools. Without community input, public funds and the patience necessary to implement the plan will be difficult to obtain or sustain.

A long-range educational facilities plan also must incorporate the ideas and requirements expressed by principals, teachers, security personnel, food-service staff, maintenance personnel, students, and others who will use the new, modernized, or improved facility on a daily basis. Many problems with the quality or character of such facilities can be avoided through better understanding of the needs and priorities of the users. Many school districts are structuring operations to support greater school-based control, and a long-range educational facilities master plan should provide sufficient flexibility so the local school councils or governing bodies can affect school-specific projects.

Both Maryland and West Virginia require each county to submit a long-range facilities master plan. Such plans are often developed by school district planners or when the school district does not have a planning department or needs assistance, the plans are prepared with hired consultants. These long-range master plans are reviewed and approved both locally and by the state. Maryland requires the counties to update the plan annually and to rewrite it completely every three years.

The educational facilities master planning process (see **Figure 2-1**) is the vehicle for synthesizing the educational methodology, programs, and services with the demographics, operations, finances, and architecture in the school district. Those familiar with schools can best achieve the connection between the facility and the educational programs with the mission and activities of the schools. Consideration of school size, grade configuration, class size, curriculum, pedagogy, and technology affect decisions on the quality, priority, and cost of a district's master plan. Accurate student enrollment projections on system-wide and local school bases are essential variables in quality planning. Beyond the demographics and educational underpinnings, the master plan must be consistent with and seek to complement municipal initiatives for economic and housing development. The master planning process also allows a jurisdiction to test various funding scenarios and build commitment to funding for long-term benefits. With or without adequate funding for full implementation, the plan provides clarity of direction within which difficult decisions can be made and priorities established for school construction and improvement.

Standards

Standards play two crucial functions for a school system. First, they provide concrete descriptions of the size, kind, and quality of buildings, classrooms, libraries, gymnasiums, playgrounds, offices, building systems, and components that the school system aspires to provide for its students, teachers, school-based administrators and support staff. Second, it provides a public measure against which the condition of a school can be evaluated. It makes it possible to objectively establish priorities for major construction projects and consequently earn and maintain the public trust that is essential for a successful capital improvement program.

School districts must develop district-wide standards against which to assess existing school conditions, and without such standards, a district is vulnerable to the creation, exacerbation, or continuation of inequitable conditions across its district.

In 1997 Charleston, SC, tried to pass a bond issue for \$350 million worth of badly needed school construction. The Charleston school district had hired an engineering and construction firm to conduct an assessment of all of its facilities and prioritize its capital needs. The firm assessed schools by holding hearings in each school in the district to listen to facilities-related concerns from school administrators, teachers, parents and members of the community. The school district and the firm used this input and an engineering assessment to determine the work to be performed in each school. An unanticipated consequence of that approach was that since there were divergent expectations and standards for what was educationally appropriate or required across the school district, the project list from school to school varied according to the standards articulated within that community. For example, one school suffering from particularly severe roof problems focused on getting the basic components replaced, while another school had articulated its greatest need as a state-of-the-art library media center. As communities became aware of variations in the work to be performed across schools, they became disenchanted with the overall process. While this alone did not cause the failure of the bond issue, it contributed to it, since the natural constituency for bond funds did not fully support the issue. A community-supported standard for the assessment of schools would have facilitated recommendations and a work schedule designed to raise all schools to a comparable level and would have engendered greater public support.

The complex nature of comprehensive planning may be one reason that some school districts decide to forego long-range planning and simply prepare a capital improvement plan (CIP) that conforms to budgetary limitations of the school district. Although seemingly practical in responding to immediate needs and frequently a common response in school systems with deferred maintenance or overcrowding, a CIP without a master plan is unlikely to provide for important design modifications to schools of earlier eras or to support current and future programs and services. The reactive approach is typically limited to a patchwork of component replacements. When a school district completes crisis projects, such as the roof, boiler, and window repair or replacement, experience has shown that for several years major capital projects will not be undertaken to address facility deficiencies that affect the educational programs or community utilization. In Chicago, where some impressive work in the delivery of its construction has been accomplished, there are

concerns among a number of community groups about the lack of long-range planning and participation of the school-based educators and communities in developing standards for school design. This has resulted in the use of a prototype design that while created to be a "kit of parts" and flexible, appears less responsive to the needs of the school-based educators as one would want a new school to be.

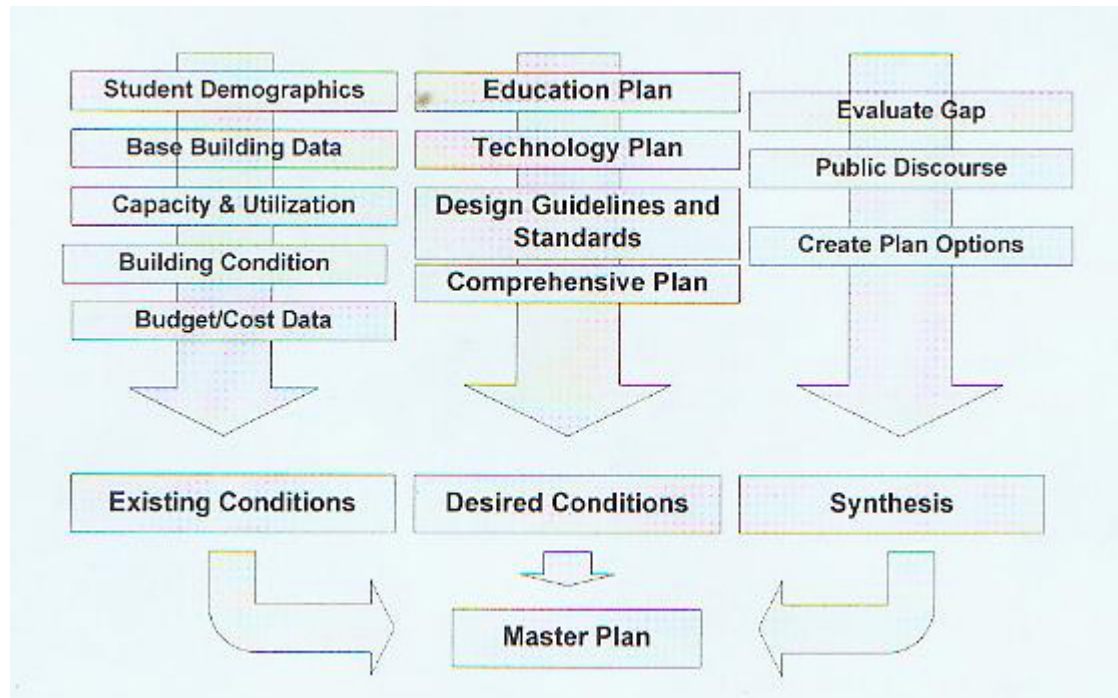


Figure 2-1 Long-Range Master Plan

2.2.2 Capital Improvement Plan

A capital improvement plan (CIP) provides the basis for developing a capital budget, a five or six year estimate of the cost of specific projects. The CIP results in a priority listing of schools, projects, and cost estimates with justifications for their placement. Such justifications must be needs-based and firmly rooted in the master plan.

Considerable effort goes into developing a credible CIP. Because changes in capital budgets are constrained by law, important preliminary work is necessary before including a project in the capital budget. Sufficient study of feasibility, project-specific planning, and quality cost estimates should be completed. That preliminary work helps build trust among the public, the boards of education, and the facilities managers. Only through doing that early work can the school system make accurate representations to the public about when a project can be done and how much it will cost.

Fairfax County, VA

To ensure fairness in the selection of projects to be given priority in the capital budget, the Fairfax County Public School System contracts with a consultant to evaluate the condition of their schools. The assessment includes an evaluation of the physical condition, the building capacity to support the educational programs of the school, and the durability and sustainability of the design, systems, and structures. The current condition is compared to the Fairfax County design and building standards and schools are ranked according to greatest need. The schools are then placed in a construction queue, referred to as “the list.” The public approves final decisions and justification for overall direction and specific projects in the capital plan and

budget through bond referenda and governing boards. The quality of planning is tested by public reaction to the capital plan and bond referenda. In Fairfax County, the plans have been virtually sacrosanct. In 15 years there has been only one out-of-turn school building renewal. Additionally, the public and school board members have supported bonds in years in which their school or district had few projects on it, knowing that the previous bond or perhaps the next bond would include projects in their schools and districts.

Fulton County, GA

Fulton County, GA, also engaged an outside firm to conduct a system wide needs assessment that included community input. At the time, schools were in various states of disrepair, and an approach was required to define the scope and chronology of repair and renovation. The priority assigned to capital projects was based on three criteria:

- Life/safety code issues,
- Education specification issues, and
- Other needs (usually defined by the community and sometimes not funded. As an example, one community desired removal of aqua-colored stucco from its, school, and that need was not considered a priority.)

Chicago, IL

The Chicago Public School System raised \$800 million in capital funds in 1995 and by 1998 had initiated or completed more than 700 individual projects, including 7 new schools, 23 annexes, and 35 modular units totaling 544 additional classrooms. Also included in the capital projects already completed were 192 major renovation projects as well as facilities improvements, such as wiring for Internet access, renovating science laboratories, increasing energy efficiency, ensuring compliance with the Americans with Disabilities Act (ADA), and revitalizing career development and recreational facilities in various schools. Two critical factors noted in Chicago were the political leadership, particularly that of the Mayor, who has an active and sustained role in improving school facilities and the clarity and simplicity of the decision-making structure and process.

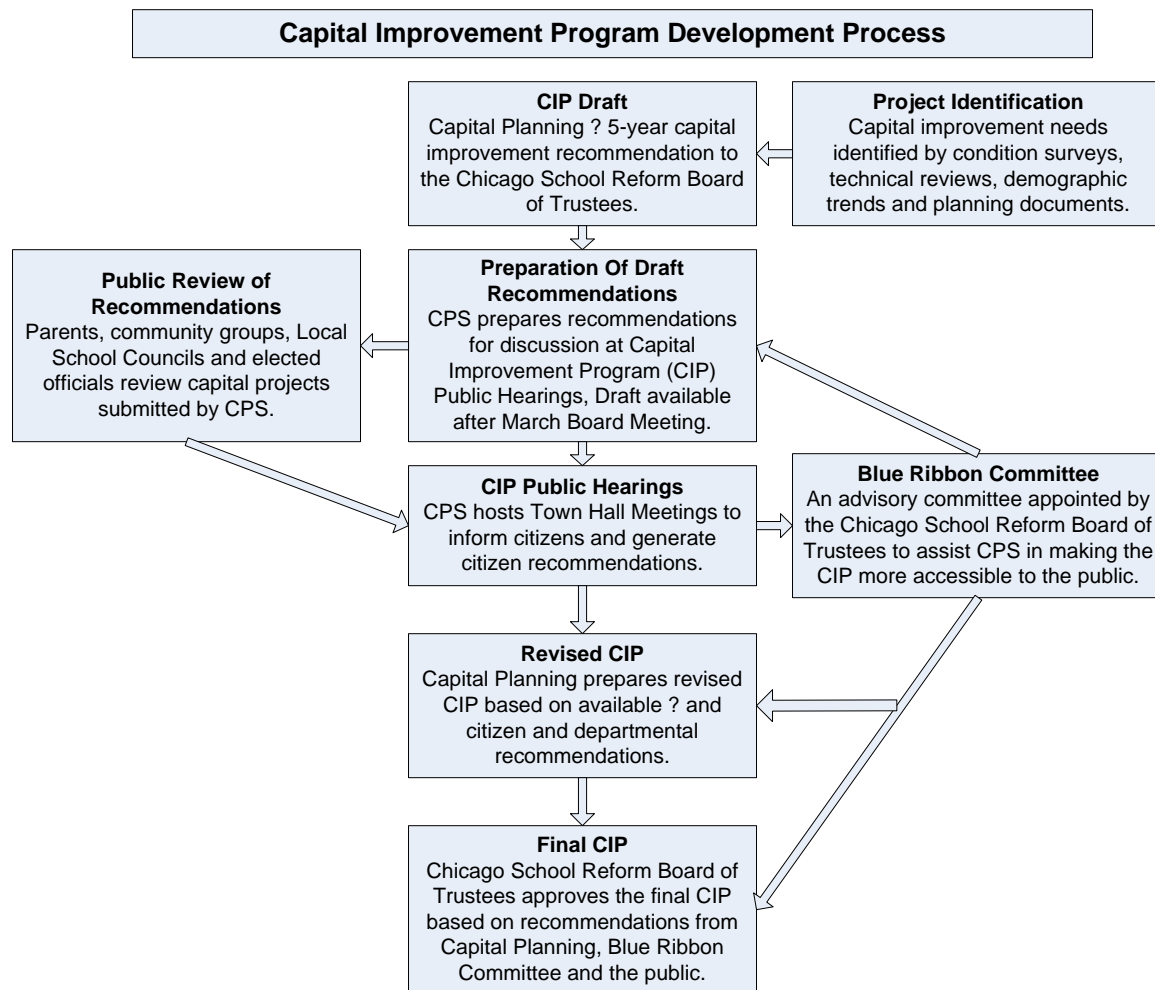


Figure 2-2 Capital Improvement Program Development Process in Chicago Public School System (CPS)

2.2.3 Annual Maintenance Plan

An annual maintenance plan is essential, not only for maintaining facilities but also for continuing support of capital investment. The plan should include a routine work schedule, a definition of the scope of work, and benchmarks for preserving improvements and maintaining and repairing school buildings awaiting placement or not included in the capital plan. An adequately funded maintenance-and-repair operation, in addition to reducing pressure on the capital budget, will engender greater public confidence that taxes paid for capital improvements will be well spent because the life of these improvements will be protected. Maintenance is typically funded from the school system’s operating budget and allotted in an annual appropriation. Unfortunately, funding of maintenance and repair work is frequently a vulnerable item in the overall school system budget; however, such funding must be sustained at levels sufficient to maintain buildings in good repair. Maintenance and repair are usually managed in a different section of the division of facilities; therefore, planning and communication with the capital section are necessary to prevent undertaking major repairs on systems scheduled for replacement or forgoing repairs on systems not scheduled for replacement for a number of years.

2.3 Needs Based Decision-Making Process

The development of the long-range educational facilities master plan and the capital improvement plan and budget is the responsibility of the school administration; however, approval of the plans rests with the elected or appointed governing bodies. In the formulation of such plans, the school system is governed by existing laws, policies, and regulations or must include provisions for changes in these in the planning process. The quality of planning has a significant effect impact on the public support required to implement the master plan and adopt a capital budget; and the quality of communication and information available to the public and decision-makers affects attitudes and decisions.

Communication with the public is critical to the overall capital improvement process, and all school districts interviewed have established web pages for broad dissemination of information relative to the capital improvement program. Fulton County, GA uses a web-based project management tracking system. Montgomery County, Maryland Public Schools has a web page with information on the Board of Education, school district policies, capital budget, project lists, planning policies, an organizational chart, and other information. The Chicago Public School System also has a web site with the full fiscal year 2000 operating budget and the capital improvement plan. Chicago's on-line information covers major building repairs, new construction, and educational technology projects.

An annual cycle for regular review and approval of long-range and capital plans should be structured into policy or law. The schedule must include time lines for submission of the plans to the appropriate governing bodies and the public, hearings, a public comment period, and the final approval or voting by the governing body. Additionally, the process for revising the plan should be conducted publicly so that changes in the approved plan will not occur behind closed doors. Schools, the most prolific of public institutions, often define a neighborhood; and, clarity with respect to master and capital planning decision-making is essential to garnering and maintaining public support and confidence. Also, because significant aspects of the planning processes are legitimately political, leadership by public officials, particularly in new initiatives, is essential.

Clarity relative to who decides and the process for establishing priorities in the capital plan is also essential. In Montgomery, Fairfax, and Anne Arundel counties, not only did public representatives formally approve the CIP and budget, but also each project was presented to the boards of education on four separate occasions for their approval. In Anne Arundel County, the Board of Education approved:

- (1) a feasibility study;
- (2) schematics;
- (3) the design development documents; and
- (4) the construction contract.

This process was considered neither onerous, nor dangerously political. In the well-managed systems, the boards trusted the facilities managers who had promised to build or renovate schools by specified times, for specified costs, and at standards which the community supported. They had delivered on their promises over many years, and this generated trust.

An important political decision necessary at the onset of a major capital program concerns other benefits the community desires to achieve from the expenditure of large sums of public funds. Examples of such benefits are as follows:

Anne Arundel County

Anne Arundel County will increase funding for individual schools to accommodate up to 3,000 square feet of space for community use.

New York City

The 1990-1994 capital program provided a small percentage of the construction budget for the integration of art projects into the school design. The art projects, most frequently involving students, included etched glass of children's work in the main entrance of the school; mosaics of animals in water habitats on the ceiling of the lobby; and specially glazed animal tiles in bathrooms. Without the arts-in-the-school budget set aside, it is unlikely that these projects would have been included in the school design and construction budgets.

New York City subsequently eliminated the arts-in-the school requirement because of a cut in overall funding of school construction budget for the City.

Chicago

The Chicago Public Schools wished to maximize business opportunities for Minority and Women-Owned Business Enterprise (MWBE) through its capital program. Its 1998 Five-Year Capital Program revealed that 45.8 percent of all program contracts went to MWBE and that 47.5 percent of all skilled labor hours and 71.3 percent of unskilled labor hours on CIP projects were performed by minority workers. Chicago estimated that the small number of MWBE firms and staffing shortages in critical labor categories increased the cost of construction by 15 - 20%.

However, the Montgomery County School System, which is strongly committed to using minority contractors, has been able to utilize between 14 to 40 percent minority contractors on school construction jobs and still build schools at the lowest cost per square foot in the state. The County has targets, not requirements, but its commitment to meeting and exceeding those targets is strong. (See the Joint Resolution Between the National Association of Minority Contractors and Montgomery County Public Schools, signed on August 4, 1993, **Exhibit A**.) The Director of Construction Finance attributes this success to close and regular communication with minority firms and majority firms and the ability and requirement on the part of Montgomery County to "quick pay." In Montgomery County, all approved construction invoices from the general contractor are paid within 24 hours and the subcontractors must be paid within three days. That payment reliability increases the pool of available contractors, and the County estimates that the payment schedule reduces the cost of construction by 10 percent.

Other examples of capital program benefits to the community include the following:

- Improving the local economy through preference for local contractors;
- Creating construction job opportunities for local youth with requisite training and hiring;
- Creating job opportunities for local residents by requiring a quota of local residents of any age;
- Designing and constructing space in schools for services and activities, such as health clinics, recreational facilities, including pools or enhanced gymnasiums and playing fields; day programs for the elderly and mentally challenged of all ages; day care and before-and-after school care; and space for performing arts and community meetings/activities.

The expenditure of large sums of public funds without an examination of other benefits to be derived would be imprudent. Such secondary requirements must be identified during the initial capital planning process, and their costs and benefits must be carefully analyzed so they can be factored into the capital improvement

budget. It would be irresponsible of decision-makers to weigh down the school construction program with so many other requirements that the ability to provide safe, healthy, educationally appropriate, and modern public schools is compromised. Effective communication, planning, and management, however, provide many opportunities to enhance the benefits of school construction programs.

2.4 Reliable Funding

Stable and sufficient funding, which is both multiyear and reliable, is a necessary element of a well-managed school construction program. Without such funding school systems cannot successfully accomplish comprehensive projects and will be unable to develop the requisite structure for managing high quality work over the long term. Capital funds should be efficiently applied so that the majority of improvements will have a life span at least equal to the life of the bond, which is typically 20 years. Examples of capital projects are as follows:

- Replacement of major systems: roofs, heating, ventilation and air-conditioning; plumbing; and electrical systems;
- Modernization of schools: replacement of component systems while providing for design changes to support the educational program;
- New construction: building new or replacement schools or additions;
- Site acquisition: - providing for the purchase or cost of retaining land or buildings in the school system's inventory;
- Furniture, fixtures, and equipment: the purchase of FF&E, including computers and other instructional technology, for new or renovated schools.

Operating funds, appropriated on an annual basis, provide for annual maintenance, repairs, and operating costs, which include utilities and custodial support. Tremendous pressure is placed on the public school operating budget that supports the demands associated with delivery of the instructional program. Such demands include teacher and staff salaries and benefits; books and other instructional materials; professional growth and development programs; programs for students with special needs (e.g., special education, gifted and talented, and limited and non-English proficient students); student assessment; and a number of other educational requirements.

Increasingly, the public expects schools to prepare children for learning, not just to teach them, that preparation includes the provision of ancillary services and programs, which further strains operating budgets. Although spending for public education has increased, a smaller proportion is used for facilities maintenance and repair resulting in \$113 billion in deferred maintenance which the General Accounting Office (GAO) estimated, in 1995, was needed nationwide to meet federal mandates and bring schools into good repair. Not included in the GAO estimate was the requirement for new construction to accommodate increased student enrollment, a challenge faced by many school districts throughout the country.

Operating budgets for education are generally funded at an average of 7% by the federal government and the balance shared between the state and local school districts depending upon the wealth of the local district. However, school construction historically has been funded 100 percent locally. There is virtually no federal money for school construction. Congressman Owens, from Brooklyn, NY estimated that in 1998, the federal government spent only \$12 million nationwide on school construction, a large percentage of which was used for schools destroyed by natural disasters, the Bureau of Indian Affairs Schools, and Overseas Department of Defense Schools. However, federal interest is increasing and during the 106th Congress, eight bills were introduced in the House of Representatives and four in the Senate to provide federal assistance to local districts for school construction. On May 14, 1999, a bill was introduced into the House of Representatives

to add \$110 billion to the Elementary and Secondary Education Act (ESEA) for grants to local districts. Only this bill is of the scale to support the level of funding necessary to eliminate deferred maintenance and provide facilities to accommodate increasing enrollments on a national level.

The most common source of local revenue for school construction is local property taxes, which a local school system or municipality pledges to use to repay bonds issued to raise revenue for school construction. Some municipalities or school systems use money from current revenue, rather than borrowing money, although a combination of borrowed money and current revenue may be used.

Court cases challenging the equity of school funding formulas for operating budgets have been expanded recently to include funding formulas for school construction, most notably in West Virginia, New Jersey, and Arizona. Even without court interventions, a number of states support school construction in local districts with funding formulas based on need. Examples include the following:

Boston, MA

New construction is proportioned on the basis of 20 percent from local revenue and 80 percent from state revenue.

Baltimore, MD

Capital improvement is 70 percent state funded and 30 percent locally funded.

Montgomery County, MD

Montgomery County, a growing county with a high per capita income, receives state funds for school construction. The county is entitled to state payments up to 50 percent of *eligible expenditures*. However, since all related expenditures, such as site acquisition and various other costs are not *eligible expenditures*, Montgomery County's state benefits actually amount to approximately 25 percent of all hard and soft school construction costs.

Fairfax County, VA

Virginia provides limited state support for school construction. The sustained growth and wealth of Fairfax creates the revenue to support its substantial school construction program.

Local school districts are acquiring increased state funding for school construction. In the districts interviewed by Scientex and 21st CSF, with the exception of New York City where the Mayor and the Board of Education are not in agreement over capital funding and many other public education concerns, school construction is a top priority.

2.5 Effective Project Management

Even when capital funds, the public will, and other elements required build schools are available, many school districts do not manage to implement at the capital improvement program well. That inadequacy leaves the private contracting community and the public frustrated and suspicious, and conditions in schools substandard. To progress from an approved capital budget line item to an educationally appropriate modern school building, effective project management is essential. Creating a project team and then planning and scheduling the steps to be taken by each member must be executed before the effects of good information, planning, decision-making and funding are realized.

According to Young, Clark and Associates, Atlanta-based Project Management Consultants, Project management is a process through which a set of generic concepts, principles, and structured techniques are

applied to achieve project definition, thorough planning, and execution to achieve established objectives. Project management can be done in-house by qualified, experienced project managers, or contracted out to firms that provide project management services. A project manager is responsible for all aspects of a project, from planning to execution.

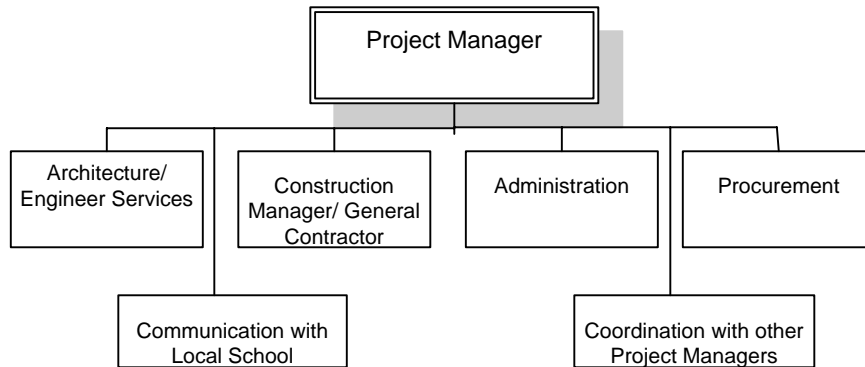


Figure 2-3 Project Manager Responsibilities

In an interview with Jim Wilson of JFW, Inc, a firm currently engaged in the project management of over \$100 million of construction for independent sector schools and churches, he cautions against the misconception that the method of contracting is a substitute for strong project management by the owner. "Do not confuse a construction manager with a project manager," he warns. "The project management role is responsible for all aspects of the project--programming, total project budget, overall project schedule and procurement for all services required. The project manager should report to the chief of operations of the governing body. A construction manager is responsible only for the *construction side* of the design and construction process and reports to the project manager. The contracting method is a decision based on risk management; it has nothing to do with the need for a skilled project manager. "

Good project management leads to projects being completed on time, within budget and in accordance with specifications.

The Fairfax County Public School System uses the traditional design, bid, build process to implement its construction program, and the architect is selected based on quality, with fees negotiated, rather than low bid contract selection. The school system has a separate construction procurement division within the Facilities Department that manages the bid and award process, and construction contracts are awarded to a general contractor who submits the lowest responsible bid.

Within the last decade, the use of construction managers on construction projects has gained popularity in numerous school districts. In this method, instead of placing the entire construction contract out for bid, a construction manager, is selected based on qualifications, and the school system negotiates the fees. The construction manager manages the schedule and award bids to subcontractors to complete the project. Typically, the construction manager's fee is a percentage of the actual cost of construction; and, depending upon the size of the construction project, the fee ranges from 4 percent for large projects to 10 percent for small projects. A variation of the construction manager approach is the construction manager "at risk." A construction manager who works "at risk" has agreed to deliver a school according to agreed-upon plans and specifications for a maximum price and by a specified date. The pressure on school facility managers to deliver high quality, fixed-cost schools within demanding time constraints is contributing to the increasing popularity of this approach.

The utilization of construction managers enables a school system, in theory, to retain the general contractor's mark-up, which is likely to be greater than the fees paid to the construction manager. Moreover, this strategy places the school system in greater control of the project with the construction manager performing

as the school system's agent. The construction manager can be hired early in the design process, thereby increasing the potential for effective coordination between design and construction, and reducing costs through value engineering. The possibility of decreasing design and construction time also is made possible by coordinating phases of construction. When a school system hires a construction manager, it gains full disclosure of all costs and can have more voice in the selection of subcontractors.

Numerous construction delivery strategies are available; the options are described in an essay "Project Delivery Strategies," by 3DI. It summarizes with the following:

"Early in a project, a client must select a process for design and construction. The process will affect the financing, the selection of the project team, the schedule and cost."

"We have worked as architects, engineers, project managers, construction managers and design-build contractors. We have worked with fast-track, bridging, and traditional processes. We have worked with GMP (Guaranteed Maximum Price), cost-plus, target-price and fixed-price contracts."

"All these processes are flawed, but they can all be made to work. The best choice is governed by the exigencies of the project. The biggest issue is the quality of the people. The best way to get a good project is to get good people to do it, set the environment for collaboration and make sure responsibilities are clear."

A study prepared by the Construction Industry Institute echoes a similar conclusion. "The level of trust in construction industry relationships has a direct impact on the ultimate cost of the project." v The study found that successful projects (high trust/low cost) were characterized by open discussion of value engineering, constructability, contract administration, risk allocation, and dispute resolution. High levels and quality of communication were found in successful projects. The study concluded, "Relationship issues must be addressed by anyone interested in saving money on construction projects. Attention to open and honest communication, professional competence and integrity of the parties, and the willingness to adapt and implement changes for the betterment of the project will give participants in the construction process the biggest bang for the buck." vi It is the project manager's challenge to foster these relationships and make sure responsibilities are clear. In Montgomery, Fairfax and Fulton County the facilities managers responsible for project management expressed their interest in learning about problems early, working closely with the construction contractor or construction managers, architects and engineers so they could prevent the problems that arise from becoming crises.

2.6 Oversight and Monitoring

Oversight and monitoring of school construction programs are important components of a well-managed public construction program.

In the systems interviewed by Scientex and the 21st Century School Fund, regular reporting to the boards of education and public were standard, and routine documentation of the scope, progress, and cost of projects was readily accessible upon request. Additionally, school systems were subject to annual external audits of capital expenditures and periodic management reviews by outside consultants.

Fairfax County recently underwent a management audit that included a detailed review of planning and construction management. A copy of the elements of the facilities management program that were evaluated is included in **Appendix C**.

In addition to the fiscal and management audits, engineering audits are a regular part of construction programs. Moreover, in each county interviewed, a post-occupancy evaluation or "after work review" is conducted to identify problem areas and assesses the strengths and weaknesses of project implementation. Regular communication with contractors to get feedback on the procurement process also is conducted by

the school districts interviewed. These school districts evidenced a willingness to face problems in the construction programs and generate strategies for resolution.

State Role in School Construction

Maryland

For school systems in Maryland, the State Department of Education, School Construction Division provides a strong measure of oversight to the local districts, as long as the local district is engaged in school construction. In the case of Baltimore City, lack of local matching funds of 30 percent resulted in a small amount of construction and the deterioration of schools.

In districts in which construction projects are planned, the state reviews all plans and contracts. Approximately 25 state employees in various offices oversee the \$500 million state school construction program. Detailed procedures on planning, contracting, and budgeting have been developed by the state.

West Virginia

The School Building Authority in West Virginia provides strong leadership and oversight of school construction programs. As has Maryland, West Virginia has developed a comprehensive Guidelines and Procedures handbook that describes the policies and processes to which local school systems must adhere. Functional areas outlined in the handbook include information management, planning, approval process, management, oversight, and funding.

As a result of a school funding equity court case, West Virginia had to embark upon a major initiative to improve school facilities. In 1988, the West Virginia state legislature passed Article 18-91 of the West Virginia Code, which created the School Building Authority of West Virginia (SBA). The mission of the SBA is to “facilitate and provide state funds for the construction and maintenance of school facilities to meet the needs of the people of West Virginia in an efficient and economical manner.” From 1988 to 1998, West Virginia spent nearly \$1billion on school construction. The goals of the SBA are:

- To make all funding determinations;
- To assess existing school facilities and each facility plan in relation to the needs of the individual student, the general school population, and the communities served;
- To adopt guidelines for assuring the prudent and resourceful expenditure of state funds. Such guidelines shall state the manner, time line, and process for submission of plans to the Authority; project specifications; and indicators on how the specific project furthers the overall goals of the Authority; and
- To implement expeditiously the programs of the School Building Authority of West Virginia by making funds available to counties for the purpose stated in the mission of the Authority.

The SBA does not actually implement the county school district’s construction program, but like other states actively involved in school construction, it has provided an important framework by requiring comprehensive planning, setting standards, providing funding, and monitoring the process. The state involvement improves, but does not guarantee, efficient, equitable, educationally appropriate school construction.

The table of contents of the Procedures Guide from Maryland and the Guidelines and Procedures from West Virginia are presented in *Appendix D*.

Florida

The state of Florida requires a regular audit of each school district to determine the quality of financial management practices. The review also provides a detailed study of each district's practices concerning long range facilities planning, capital budgeting, site acquisition, development of school capacity estimates, educational specifications, procurement, and building commissions. The evaluation measures used in these reviews are included in *Appendix C*.

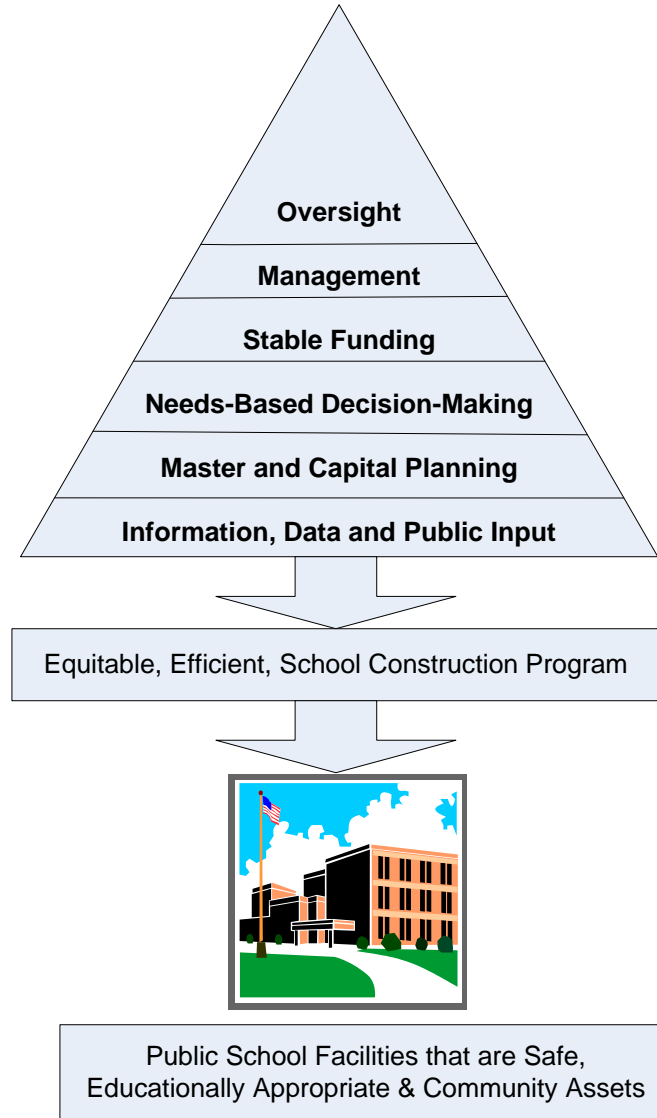


Figure 2-4 The Basic Elements of A Well Managed School Construction Program

3.0 SURVEY OF MANAGEMENT OPTIONS FOR PUBLIC SCHOOL CAPITAL IMPROVEMENT PROGRAMS

Scientex and 21st CSF reviewed a wealth of information on the management of public school capital programs. The review included interviews and discussions with practitioners in the field, district and state officials, school administrators and staff, and community persons as well as the study of numerous primary and secondary source documents. The scope of the study did not allow for a detailed management audit of the various systems, but provided sufficient support to reveal three basic models for managing school construction, each of which evolved from the particular history, condition, and sociopolitical milieu of the school district. Readers are encouraged to examine all three models and study other information about the management of public school capital programs before making critical decisions on approaches to be used by a particular school district.

The following three models, identified by Scientex and 21st CSF, are discussed in this section:

- “In-house Management” where the local school system manages the capital program;
- “Other Governmental Management” where another public agency, not the school system, manages of the capital program; and
- "Private-sector Management" where one or more private firms manage the capital program under contract with the school system.

3.1 “In-house Management”

The primary quality that defines the “In-house Management” is that some capacity for facility planning, design, engineering, and project management is retained by the employees within the public school system. Additionally, procuring contracts for design, engineering and construction, budgeting and tracking costs are the responsibility of school system employees using systems and structures established within the public school system. Organizational charts of the construction and facility divisions that show the staffing use to support capital programs in Montgomery County, Fairfax County, and Fulton County school districts are presented in **Appendix D**. In school systems in which the school system employees manage the capital improvement program, there is typically a companion planning division, separate from the design and construction division, but reporting to the same deputy superintendent for operations, or other high level school district official.

Table 3-1 Comparative Analysis of Construction Management in Three School Districts

School District	Staff Positions	FY2000 Construction Budget (Approximate)	Comments
Montgomery County	29	\$125 Million	Construction management firm currently manages 50% of projects and 80% of construction dollars. Students use swing space during construction.
Fairfax County	54.5	\$130 Million	School district manages construction in-house. Renovation is undertaken in occupied schools which requires more intensive local school inspection. (15inspectors).
Fulton County	23	\$95 Million	68% of construction budget is for new construction. Construction management firm provides staff support. CM-at-risk is used.

Within the "in-house management" model there are variations in how the basic elements are put into operation. Both Fulton County and Montgomery County depend heavily on consultants for management of specific projects, although both school systems have some qualified staff engaged in managing construction. Fairfax, on the other hand, manages the design and construction only with experienced in-house staff. Another area of variation is the extent of involvement of an oversight agency. The State of Virginia has little involvement in decisions or projects approved and constructed in the local districts. Maryland has an active and involved school construction division with state funding and process requirements. Fairfax County has a construction procurement office separate from the district's general procurement, and Montgomery County has construction procurement specialists who are responsible for the design and construction procurement process in the district-wide procurement office.

Although these systems differ in some respects, they share many common characteristics, which are described below.

RELATIONSHIP BETWEEN THE CONSTRUCTION DIVISION AND THE PUBLIC

In all three school districts, the relationship between the construction division and the public is strong because the districts

- recognize the boards of education and the public as clients, which includes an active effort to earn their trust;
- adhere to a formal and regular schedule for reporting to the boards of education;
- solicit board of education approvals on each project: (1) inclusion in CIP; (2) specific program scope; (3) design contract; and (4) construction contract;
- display a keen awareness of the legal and policy framework within which they operate;
- maintain close linkages to the planning division and have a clear understanding that only approved plans and projects are to be implemented; and
- exhibit a knowledge of, and sensitivity to, public concerns.

CONSTRUCTION MANAGEMENT PERSONNEL

The in-house management model for design and construction programs embodies the following approaches with respect to construction management personnel:

- School construction programs are managed highly experienced, qualified directors with direct construction experience in private industry and/or government.
- Salaries of management personnel are considerably less than those of their counterparts in private industry.
- Leadership of the capital programs is stable.
- In-house personnel are available for master and capital planning;
- Architectural and engineering capability is provided by licensed and experienced in-house architects and engineers.

- Multiple projects are managed by project managers who have the authority to resolve problems or disputes with contractors.

RELATIONSHIP WITH THE PRIVATE SECTOR

In-house staff establish and maintain relationships with the private sector through the following actions:

- regular communication among design, construction management, and construction firms and professionals, including associations and organizations;
- deliberate efforts to earn the respect and trust of private firms engaged in business with the district;
- cooperation with design and construction firms for a “user-friendly” procurement process; and
- continuous evaluation of work quality.

PROCUREMENT

In the procurement process, the in-house management model approach provides the following:

- a systematic and predictable process;
- specialization to meet construction program requirements;
- a quality-based process for selecting architects and construction managers;
- acceptance of low, responsive bids for construction contracts;
- timely approval of work and timely payment for completed work; and
- facilitation of construction delivery through a “user-friendly” system.

CONTROL

The in-house management model enables the construction personnel to establish and maintain control through

- familiarity with, and use of, public data and information on design and construction costs, enrollment projections, school utilization data, and educational facility trends;
- external auditing of regular budget;
- regular reporting to the board of education
- a strong sense of pride in the quality, timeliness, and economy of the completed work;
- awareness of legal protection against fraud and other construction-related improprieties;
- maintenance of a close working relationship with individual project staff for early identification of problems;

- an understanding of the potential for problems, and an emphasis on strategies for resolving them;
- a careful review of the recent work history of potential contractors; and
- an in-depth review and evaluation of all completed work to improve product, cost, and delivery time.

3.2 “Other Governmental Management”

In the second model for managing a capital improvement program, a governmental agency other than the school system, is primarily responsible for managing the school construction. That model is used in the District of Columbia Public School System, whose school construction program has been managed by the U.S. Army Corps of Engineers since April 1998. The model is also used in New York City where the state created a School Construction Authority (SCA) to manage the capital improvement program of the New York City Board of Education.

New York City, NY

The New York City school system had not managed large-scale school construction in a number of years, and in 1988, a Capital Planning Task Force estimated it would take the City ten years to build a school. In as much as the student enrollment was increasing by thousands of students per year, that length of time was unacceptable. The public understood the need for school construction, and a portion of the necessary funds was available; however, the public had a low level of confidence in the school system’s capacity to manage the money or deliver the product. In 1988-89, the City and State were willing to appropriate \$4 billion for the first five-year capital program, but would not appropriate the funds to the New York City Board of Education. In an effort to address that issue, the State and City created the New York City SCA. New York was familiar with other authorities, such as the Dormitory Authority and the Port Authority. The SCA was to be controlled publicly with three trustees: the mayor, the chancellor, and an appointee of the governor, but was to function like the private sector. The SCA was exempt from particularly onerous procurement requirements, such as the Wickes Law, which did not allow the school district to use general contractors for school construction. Because the SCA was a new entity with funding but without organizational infrastructure and because of the politics associated with terminating hundreds of personnel positions from the NYC Board of Education, 150 employees were transferred from the school system to the SCA. Thus, the SCA leadership was new, but, to a great extent, the working structure remained unchanged.

An excerpt of the report, New York City School Construction Authority: The First Five Years (1990-1994), reads as follows:

“In the process, as was also intended by Governor Cuomo and the legislature, the SCA has served as a model of reform for the management of public works. The model demonstrates how an organization dedicated to a single purpose can galvanize varied resources in disparate ways to serve that purpose -- and make a difference in doing so.”

In reality, the story of the agency over the long term has been more complex. Early in 1999, a community task force concerned with the management of the SCA in New York City reported the following:

Funding

- City, state, and federal funding for school construction and maintenance was insufficient; and
- The system for allocating funds was complicated and incomprehensible.

Planning

- The planning process was ineffective;

- A comprehensive plan reflecting actual needs had not been prepared;
- Local input had not been made in selecting new sites for schools or in school design and construction;
- Coordination between leasing and new construction units was nonexistent; and
- Site selection and acquisition was inadequate.

Construction

- The SCA leadership changed constantly;
- There was a lack of clear accountability existed between the Public School System's Department of School Facilities and the SCA for getting work done;
- Construction was mismanaged;
- Money was mismanaged;
- SCA hired bad contractors;
- Corruption existed in awarding contracts; and
- Not enough supervision was exercised over contractors.

These concerns reveal the frustration of New York City communities faced with severe overcrowding and other substandard conditions in the public schools, and reflect their disappointment in the SCA, an agency that initially made important promises and commitments to the public but failed to deliver on many of them.

3.3 Private-Sector Management

The third and most recently developed model of capital program management is used by the Chicago Public School System, and a variation is also found in the Nova Scotia, Canada public schools. The private-sector model depends almost entirely on the private sector to manage the capital program. The District of Columbia, through a public/private development partnership to replace the Oyster Elementary School, is using private-sector management of the school financing, design, and construction; however, this application of the private-sector model represents a unique project rather than an overall *programmatic* approach.

Chicago Public School System

Chicago is the only system interviewed by Scientex and 21st CSF that has “out-sourced” capital program management, not merely project management. Overall management, project oversight, and budget tracking, which are performed in house in Fairfax, Fulton, and Montgomery counties are out-sourced in Chicago to a firm, Education Design Group (EDGE). EDGE is the managing architect team, led by DeStefano and Partners and comprised of 11 private-sector firms. It provides architectural, engineering, specification writing, cost estimating, scheduling, printing and reproduction, and environmental and geotechnical services for the Chicago Public Schools. In 1995, when Chicago raised \$800 million for its first capital program in a generation, the city had not built a new school in twenty years and did not have the internal capacity to monitor or manage school design or construction. Also, there was little confidence that the school system would be able to create the needed capacity quickly or effectively, despite the fact the public will and money were available.

The mayor, having recently assumed control of the public schools, was determined to achieve results quickly. An advisor to the mayor, who also was head of the Public Building Commission, realized that in order to manage a school construction program, the school system had to treat projects as a program, not as individual projects. Rather than seeking assistance from another government agency or creating a new agency like the SCA in New York City, the mayor decided to go to the private sector and harness existing capacity to build high-quality buildings quickly. The belief was that by organizing projects into a large program, the public sector would benefit by economies of scale and private-sector efficiency in design and construction.

To implement the simultaneous construction of multiple prototypical school buildings, DeStefano and Partners developed a system for transferring partially completed construction documents to various architects-of-record who then completed the contract and bidding documents within established budgetary and aesthetic parameters. This system forms the basis of the current Managing Architect Team Program under which a new school can be built in 20-22 months instead of the traditional 32 - 36 months.

Planning, teamwork, and state-of-the-art technological support are crucial to achieving this accelerated construction schedule. DeStefano and Partners personnel have developed a streamlined management delivery system featuring standardized instructional manuals and communications protocols, as well as document tracking for continuous and simultaneous monitoring of the progress of multiple projects. Automated schedules facilitate the bulk, pre-purchasing of major construction materials, such as steel for multiple buildings, a measure that contributes to economy of time and money.

A unique feature of this project delivery system is the “transfer package” consisting of computer-generated writings and drawings that are transferred to the architect-of-record for each new school project. “Transfer package” components include three bound volumes of information such as general guidelines, recommendations to complete documents, site information, specifications, code analysis, and design standards. All written information may be retrieved on-line, updated, and adapted to individual projects. To complete the package, Auto-CADD (automated computer-aided design and development) construction drawings, numbering approximately 50 per project, are transferred in hard copy and electronic formats; drawings are 30 percent complete for additions and 50 percent complete for new schools.

DeStefano and Partners coordinates the efforts of team members who provide such key services as structural and mechanical engineering, zoning variances, cost estimation, specifications, scheduling, and geotechnical site analysis. Key personnel continue to monitor the program and report to the Chicago Public School System on the progress of architects-of-record responsible for completion of the documents, bidding, permit acquisition, and traditional contract administration through the construction phase of the project.^{ix} Numerous aspects of the system for new construction, such as the following, have contributed to a decrease in time for the Chicago Public Schools to deliver new school construction:

- Prototype new school design;
- Bulk pre-purchasing of construction components such as structural steel, elevators, and kitchen equipment;
- Pre-qualification of contractors and suppliers;
- Coordination of architect-of-record and public agencies;
- Standardized project documentation and budgeting; and
- Comprehensive project tracking.

The managing architect manages the procurement of the architect-of-record. The architect-of-record is responsible for applying the prototype design to particular sites and modifying the “kit of parts” and for managing procurement of the construction contract. Chicago uses a highly traditional design, bid, build system, similar to that of the Fairfax County Public School System. Rather than being managed by school district employees, however, management is by the architect-of-record. Chicago has two firms engaged as managing architects, one for new construction and one for major renovation. The managing architects are responsible for budget planning and tracking, as well as regular reporting to the Reform Board of Trustees, and they serve at the pleasure of the trustees. The managing architect responsible for new construction is paid 2 percent of actual cost of construction for use of the prototype design and 2 percent for program management; and the architects-of-record are paid 4 percent of the actual cost of construction. The volume of work associated with school construction programs makes it a worthwhile contract for the managing architect.

According to the Managing Architect, this project delivery system provides the following benefits:

- Coordinated delivery system for multiple projects simultaneously;
- Budgetary and schedule control over multiple schools;
- Implementation of the district’s special focus throughout the program;
- Single point of accountability for the municipality;
- Mandates local progression participation;
- Controls costs per school;
- More rapid delivery than an individual school delivery system; and
- Standardized building maintenance programs in new buildings because of common design and materials.

The Chicago Public School System Improvement Plan reported that approximately 3 percent of the total capital budget was spent on administration:

Table 3-2 Chicago Public Schools Capital Improvement Expenses

Fiscal Year	Construction	CPS Administration	Total	Percent Administration
1996	84,559,325	2,500,000	87,059,325	3%
1997	426,462,714	12,800,000	439,262,714	3%
1998	637,617,321	19,000,000	656,617,321	3%
TOTAL	1,148,639,360	34,300,000	1,182,939,360	3%

While the private sector management model appears to have many advantages in its ability to deliver design and construction, it is not without problems. The selection of managing architect in Chicago was not competitively bid and as a result has engendered some concern. Although there is a capital plan, there is not a master plan and various architects, local school educators and community groups have begun to work together to try to improve the prototype design in order to generate school designs more responsive to educational programs and services. The private sector design, engineering and construction industries have significant techniques, skills and experience to apply to solving the problems of public education infrastructure, but the school systems must be smart clients. They must direct their contractors in what they need, and retain qualified, experienced personnel who are able to oversee and manage the work of the contractors.

Nova Scotia, Canada

In public school systems, the owner of the school buildings is generally the school district or the county or municipality in which the school district is located. The school district, as owner is responsible for the overall condition of its facilities. In Nova Scotia, roughly 41 schools are expected to be privately owned by 2001. The school system is entirely responsible for the educational programs that take place during the school day and year, but the building is owned and managed by a private owner who may lease school space to others after school hours. The design, construction, and building maintenance and operations are managed and financed by the private developer/owner. A promotional brochure from the Nova Scotia Department of Education and Culture reads:

"Private sector partners build the schools and lease them to government, allowing more schools to be built faster without adding to the provincial debt. The competitive process guarantees high value at a reasonable price. These experts in design and construction partner with the parents, teachers, and other members of the community who get together to plan a school that fits their needs. School boards and the Department of Education and Culture remain responsible for curriculum and all educational issues."

These developments have occurred for a number of reasons. (1) to transfer ownership of property that one still needs to use and yet be relieved of responsibility for its maintenance and improvements; (2) to enable the owner to capture the equity in the property and use the equity for other purposes; (3) to obtain the improvements through lease payments rather than through traditional government bond financing so that the municipal debt limit is not increased and (4) to obtain savings in the cost of improvements and operations through productivity increases and economies of scale that may be available from the private developer/owner.

As is illustrated by the variety of ways school systems manage their capital programs, there are many options. In each case, the management structure responded to particular economic and political realities. Fairfax and Montgomery County have strong central administrations, a long history of growth, and a population with high standards for public education that includes school facilities. Their strong in-house capabilities are consistent with their context. Fulton and Anne Arundel Counties are experiencing more recent growth and do not have the history of strong management of their capital programs, but have been able to build in-house capacity and in the case of Fulton County, supplement it with private sector construction managers. The creation of the School Construction Authority for New York City responded to the lack of confidence the City and the State had in the Board of Education. The new Authority enabled politicians to respond to the overcrowding crisis by funding a major increase in the school system's capital budget. The SCA also addressed particular constraints in procurement, hoping to speed up the length of time it took to build a school under the laws and regulations as they existed in 1988. The Chicago Public Schools was able to fund their capital program before they had the capacity to manage it in-house. The City, which had taken over the school system, was under pressure to show results quickly. Since the school system had not built a school in a generation, the Mayor needed help turning the capital dollars into school improvements. The school system, under the Mayor's guidance turned to the private sector. Finally, a weak economy in Nova Scotia led to a freeze on capital budgets in 1990 and the Department of Education and Culture needed to find a way to build new and modernize old schools, even as there were no public funds to do so. They were able to create alternative ways to finance their much needed school construction through the sale lease-backs.

4.0 MANAGEMENT OF THE PUBLIC SCHOOL CAPITAL IMPROVEMENT PROGRAM IN THE DISTRICT OF COLUMBIA

4.1 District of Columbia Public School system Division of Facilities

In 1997, the District of Columbia had an inventory of 181 public school buildings totaling 17,767,898 square feet of space. Currently, its public school system operates 146 schools; however, the Realty Office is responsible for the leasing and sale of closed and vacant schools. Additionally, 27 public charter schools are operated under the District of Columbia Nonprofit Corporation Act (*D. C. Code, sec. 29-501, et seq.*). Public charter schools are responsible for locating, buying or leasing, managing, and improving their own facilities, unless two or more charter schools lease space from the District of Columbia Public Schools (DCPS) in a “public charter school hub.”

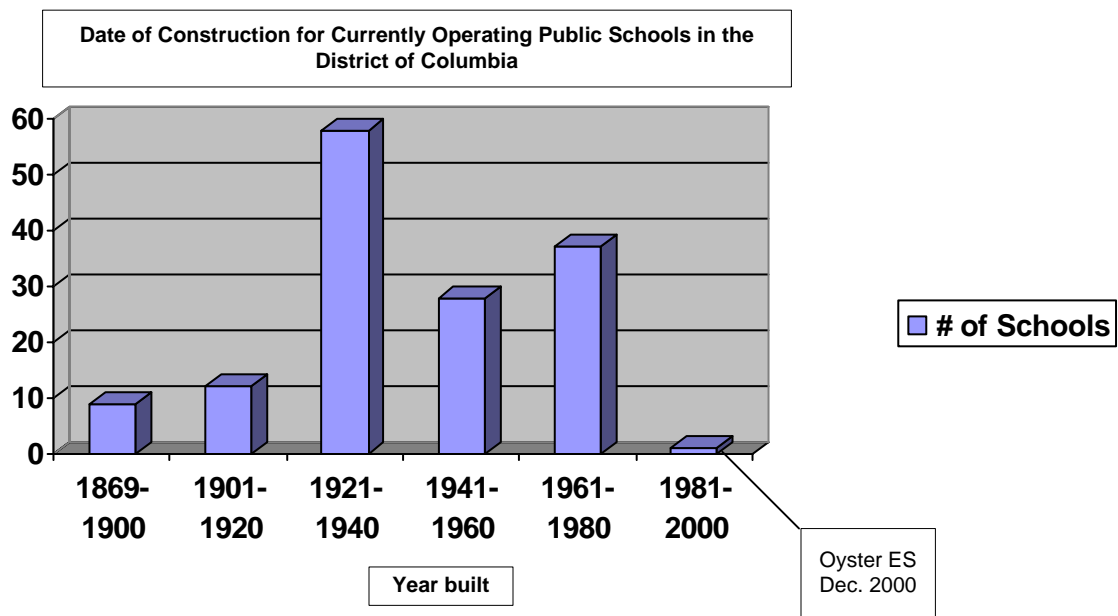


Figure 4-1 Date of Construction for Currently Operating Public Schools in the District of Columbia

4.2 History of the Management of the Capital Improvement Program in DCPS

The need for strengthening management of the capital improvement program in the DCPS is rooted in the history of funding and management of school facilities in the District. A review of the DCPS history relative to program management and its six basic elements reveals a pattern of instability and lack of consistency in lines of authority and accountability as well as considerable problems with the management of the basic elements.

Since 1912, four agencies have been responsible for overall management of the capital improvement program of the DCPS: the General Services Administration (GSA) (1912 - 1983), the District of Columbia Department of Public Works (1983-1990), the District of Columbia Public School System (1990 - 1996), and the Control Board (1996 - 2000). The processes and procedures for managing capital improvements changed each time the accountable agency changed, often with the capital program undergoing multiple shifts in overall management. The approach to the six basic elements was altered each time a new party assumed responsibility and, frequently, the systems installed by one agency were eliminated by the next.

For only one relatively short period, from 1990 until 1996, was the school construction program managed entirely by the school system. Otherwise, other governmental agencies, both federal and local, have managed the capital improvement program of the schools.

4.2.1 General Services Administration

During the period in which the GSA provided the administrative infrastructure for management of the District's public buildings, schools were the major component of GSA's district-wide responsibilities. GSA, one of the largest manager of building space in the United States, applied its policies, procedures, and practice to the District's public buildings. The District could use contractors under contract with the GSA and had GSA purchasing power. Moreover, the District used GSA computers, architects, estimators, and lawyers, and the entire infrastructure for management of the school maintenance, repair, and construction program was provided, by GSA.

On April 22, 1968, Congress granted the District the authority to elect the Board of Education (Board). Shortly thereafter, the appointed Council of the District of Columbia gave the Board authority over the school building program; the Board would then submit building program requirements to the Bureau of the Budget of GSA. DCPS had serious problems with the quality of some work managed by the GSA in the early 1970s. During that time, a new school, proposed as a vocational school, was constructed in northeast, Washington. The construction was so poor that the District refused to accept the building and the newly constructed facility was torn down before it was ever put into service. The construction of the Fort Lincoln School, recently renamed the Thurgood Marshall Elementary School, although accepted by the DCPS, also had major defects. It was vacant for many years before being put into service, and then it suffered from recurring roof and other problems.

The problems with the construction managed by GSA and the District's effort to build the city's municipal structure eventually resulted in the transfer of responsibilities for District buildings, including schools, from GSA to the District government.

4.2.2 Department of Public Works

Under the District's Reorganization Plan of 1983, the department of public works was given responsibility for construction of capital projects in the District. The Deputy Corporation Counsel, in a letter dated February 8, 1984, to the Director, Department of General Services, opined relative to public schools construction, "Based on [the Department of General Services'] DGS's general authorization, on the expressed lack of authorization to the Board of Education, and in the absence of any delegation of authority to DCRA [], it is our view that the authority for the construction of public school buildings currently resides with the Department of General Services. Accordingly, when the authority for the construction of capital projects is transferred to DPW [Department of Public Works], the general authority to construct public school buildings will be transferred also." Responsibility for public schools construction then remained with the department of public works until transferred to the DCPS in 1990.

The District government still maintains budgetary control, and the capital budget for schools is allocated as a portion of the District's capital budget.

4.2.3 District of Columbia Public Schools

A new initiative to repair school buildings was begun in 1990, largely because of the work of the Committee on Public Education (COPE), a civic group organized to identify resources and approaches for improving public education in the District. The Council of the District authorized expenditures of \$50 million per year, for five years for the DCPS capital budget, and the school system hired architects and engineers and began to build an in-house staff to manage school construction projects and the overall school construction program. In 1990, the DCPS Division of Facilities Management obtained authority within DCPS to

establish a construction procurement branch within the Facilities Division to avoid the constraints of the central DCPS Procurement Office. In 1991, the school system started an ambitious program of component replacements -- roofs, windows, doors, electrical upgrades, and boiler replacements, and began design work on a program called "Schools of Distinction" to upgrade middle school and junior high school facilities for improved support of the mathematics, science, technology, and overall educational programs.

The focus on the deteriorated state of the District's public school facilities was further highlighted with a lawsuit against the Mayor and the Fire Department filed on behalf of parents by Parents United for DC Public Schools. While the lawsuit resulted in periodic school closings because of fire code violations, it also inspired a concerted effort to eliminate fire code violations by DCPS and created pressure on the District to fund school facilities improvements.

In 1995, a Task Force on Education Infrastructure, under the DCPS Superintendent, formulated a Preliminary Facility Master Plan 2005 and explored the feasibility of establishing a construction authority to address concerns about the management of school construction.

Also in 1995, the District was approximately \$350 million in debt, and Congress established the District of Columbia Financial Responsibility and Management Assistance Authority (the Control Board), to ensure restructuring of the District's finances and management. Of further concern to Congress was the quality of public education in the District, including the condition of public school facilities. With the Reform Act of 1995, Congress directed the District to work with the GSA in the management of school facilities. In the spring of 1996 the Director of Facilities Management left and a series of acting directors were assigned from within DCPS. During the summer of 1996, DCPS entered into an agreement with GSA for management of various construction projects, with payment at the rate of 6 percent of the cost of construction. GSA used contractors already under contract and was able to undertake roof and boiler replacement projects. GSA worked intensively with DCPS until the January 1997 appointment of the new Chief Operating Officer and Director of Facilities and continued to assist DCPS by managing a number of roofing contracts during the 1997 summer roofing program.

4.2.4 The Control Board

In November 1996, the Control Board assumed control of the District's public school system, stripped the Board of Education of its powers, fired the Superintendent of Schools, hired former Army General Julius Becton as Chief Executive Officer, and appointed a Board of Trustees. In January 1997, the CEO appointed a retired General from the Army Corps of Engineers as Chief Operating Officer and Director of Facilities. He led an aggressive strategy to close and sell underutilized and surplus school buildings. During that same period, DCPS was under a congressional mandate to prepare a long-range facilities master plan by April 27, 1997, and Congress had appropriated funds for implementing long-deferred capital projects, such as roof and boiler replacements. District Superior Court Judge Christian, assigned to the Parents United Case, was closely monitoring the status of fire code violations in all public schools and ordering the closing of schools as she deemed necessary. The Control Board and Congress demanded immediate and dramatic results. Funds were allocated for the required facilities work, but the demands were made at a time when the following conditions existed:

- The position of Director of Facilities Management had been vacant for 9 months before the new Chief Operating Officer/Director of Facilities was appointed;
- DCPS project managers, planners, budget specialists, and other middle management staff members and building specialists, such as architects and engineers, in the Division of Facilities Management had been resigning because capital funds for the previous 2 years had been drastically low (\$11.6 million for FY 95 and \$21 million for FY96);

- A reduction in force that included planners, architects, engineers, and project managers in the Division of Facilities Management had been mandated, further reducing in-house capacity to manage projects;
- DCPS was under court order to abate all fire code violations with a prohibition on construction in occupied schools;
- The contract with ServiceMaster, a private facilities management firm that had been supporting the DCPS Division of Facilities Management for the past 4 years, was terminated; and
- The District was not meeting financial obligations with private contractors, which was a contributing factor to the bankruptcies of a number of contractors.

After a summer roofing initiative that was extremely costly and poorly managed, the Chief Operating Officer/Director of Facilities resigned in April of 1998; thus, the Chief Executive Officer of DCPS was left without the management infrastructure to implement already approved and funded projects. The Chief Executive Officer, then, turned for help to the construction agency with which he was familiar, the U. S. Army Corps of Engineers. He engaged the assistance of the United States Army Corps of Engineers on a sole-source basis to assist DCPS in the management of school facilities. The Control Board, the Chief Procurement Officer, and CEO entered into a sole-source agreement for the Army Corps of Engineers, Baltimore District, to manage the capital program of the District's public schools. The definitions of roles and responsibilities are outlined in a broad Memorandum of Agreement signed April 17, 1998 (See Appendix F). The more specific activities undertaken by the U.S. Army Corps of Engineers are defined in 13 separate support agreements, each of which was negotiated as the need for services arose; they delineate with greater specificity the tasks and cost to the District.

4.3 The Effect of Management History on the Basic Elements of a Well-Managed Capital Improvement Program

The effect of changing authorities for school facilities has been a lack of institutional planning and the underdevelopment of the six basic elements of a well-managed capital program. The signs of weak overall management can be found in each of the elements. Important work required to implement effective, efficient, and equitable capital improvement programs has not been done, and that inadequacy has resulted in a lack of investment in education facility infrastructure.

4.3.1 Information Management

The DCPS has never had an integrated information system. Facilities management personnel have had to depend on standalone databases on Access, Excel, and Lotus applications to maintain and track information about capital projects or budgets. Important renovation history is still in card files.

A million-dollar assessment of the condition of school buildings and cost estimates to bring them into good repair was undertaken by the construction firm 3DI in 1990. It found \$584 million worth of deferred maintenance and life-cycle replacement costs. A tremendous amount of information was collected on every building in the DCPS inventory; however, DCPS did not have the staff expertise and relational database management system needed for using, arraying, and reporting data. Moreover, facilities information was not kept current, nor was it linked with work order requests for maintenance and repairs.

In 1995, the Superintendent's Task Force on Education Infrastructure conducted an extensive survey of on school facilities. It asked principals and building engineers of all DCPS schools to provide information on both the educational appropriateness of space and the condition of the school facility. The results of the survey were entered into a GIS database and used in the preparation of the Preliminary Facilities Master Plan 2005. Subsequently, in the spring/summer of 1998, the Army Corps of Engineers conducted a complete building assessment, the results of which are in Access data files and in school reports. The DCPS

administration also has up-to-date information on capacity and utilization of each school in a standalone database maintained by the Realty Office. Information on attendance zones is in paper files and, for many years, was maintained in a geographical system. In summary, the DCPS has depended on a mosaic of information systems for full information about the history, design, cost, condition, capacity, and utilization of school facilities.

4.3.2 Planning

The last major building program in which the federal government played a significant role was the 1967 master plan prepared by The National Capital Planning Commission (NCPC), which was responsible for planning all District facilities. That master plan projected an increase in the number of school-age children from 145,000 to 180,000 by 1985. In actuality, the population plummeted to 85,000 students, considerably fewer than had been projected. Nonetheless, the District undertook a massive building program and, between 1967 and 1980, added approximately 4.5 million square feet of space to its inventory.

Since the 1980s, funding has been so unstable that the school system either gave up planning, or found that after completing planning, the programs planned in earlier years could not be implemented. It was not until the Preliminary Educational Facilities Master Plan 2005 was developed in 1995 that the District of Columbia directed its attention to developing a comprehensive plan for its public school facilities.

DCPS prepared “The District of Columbia Public Schools Long-Range Master Facilities Plan: Years 1997-2007; Your Road Map to Quality, Safe Public Schools” in April, 1997 to respond to the 1995 mandate from Congress to prepare a long-range master plan. The plan fell short of what was needed to guide the development of its capital improvement program, school consolidations, and funding priorities. The Emergency Board of Trustees approved that plan, but the Control Board, the Council, and the Mayor did not. It has largely been abandoned by DCPS.

The School System has promised the Council and the Mayor that it will prepare a Long-Range Facility Master Plan before 2000. The U.S. Army Corps of Engineers has a support agreement that assigns it the responsibility for developing that plan for the administration.

4.3.3 Decision-Making

The Board of Education is responsible for articulating the need for capital improvements in the schools. Historically, the description of DCPS facilities needs have originated within the school system, and the DCPS administration has prepared numerous reports dating back to the beginning of public education in the District that describe the condition of, and deficiencies in, school facilities.

Because budget and contract authority have not been under the control of the school system except when DCPS had contract authority during the short period from 1990-1996, the school system has depended on others to implement a capital program. Decisions that are routinely made by boards of education in other localities—approving architecture contracts, construction contracts, designs, and project priorities—are not structured into the District Board of Education regulations or experience.

Genuine confusion characterizes decision-making associated with school facilities in the District. Although the Control Board has assumed District Board of Education powers, the Board of Trustees still meets regularly and the Board of Education is involved in developing the transition back to power; thus, exactly who is making decisions is unclear. For example, when the Long Range Educational Facility Master Plan is completed late this fall, will it be submitted to the Board of Education for review and approval and then sent up to the Council, the Mayor, and the Control Board for approval? Or does it need to be approved by the Control Board with the recommendation of the Board of Education because the Control Board has the Board of Education powers and then perhaps sent to the Council and the Mayor? Do the Council and the Mayor have to approve the master plan at all or is the point at which they make a decision the statutory requirement

to approve the District's capital improvement plan? Will Congress need to approve the master plan or have the National Capital Planning Commission sign off on it in some way?

Little statutory, regulatory, or policy guidance exist on the authority over school construction. Such absence of guidance has contributed to the management problems with school facilities.

4.3.4 Project Management

Since the implementation of the capital improvement program was the responsibility of either GSA or the District Department of Public Works until 1990, the school system was not responsible for managing projects. Once the school system had the authority to manage and contract capital projects in 1990, it hired architects, engineers, and project managers to oversee approved design and construction projects. From FY91 to FY95, the school system expended \$109.6 million on hundreds of primarily small capital improvement projects that were managed in house. In that process, lack of systems of control led to other problems. In some cases, change orders exceeded 100 percent of the value of the original contract, and the overall cost of design and construction was high by most industry standards. While little corruption was specifically identified, the conditions for abuse were endemic to the management of the construction program, and two DCPS procurement representatives were convicted for taking kickbacks for work done during that period.ⁱ

In a 1993 audit of the DCPS Capital Improvements Program, the D. C. Auditor stated:

“There are no clearly defined written priorities for DCPS’ capital program. Nor are repair and maintenance priorities or related capital projects delineated in budget requests. In the 1992 and 1993 budgets, for example, capital funding was requested and approved for large general lump sum projects with details relative to specific schools to be developed later at DCPS’ discretion. As a result of this practice, in our opinion, capital projects for DCPS are poorly defined and scopes of work are too inadequate to determine what is to be accomplished. In essence, capital budgeting in this manner results in the creation of a gigantic slush fund looking for projects.”ⁱⁱ

In the absence of construction management and procurement processes and controls, the implementation of the FY 97 capital program was no better than similar work was under former DCPS management. Although roof replacement in 55 schools during one summer was a major accomplishment, a GAO audit in March 1998 indicated that the accelerated process resulted in increased cost that far exceeded industry standards for roof replacement. The roof program resulted in a 3-week delay in the opening of school and the likelihood that funds were spent on new roofing projects for schools that may not be retained in the school system inventory. An audit commissioned by the Control Board evaluated the procurement and project management procedures employed by the school system during the 1997 roofing program; the Auditor, David Cotton, in his remarks before the U. S. Senate, reported that the process used by the District to procure and manage services was of poor quality. The report concluded:

“...the statute authorizing the CIP and the Authority’s Resolution and Order establishing the DCPS Board of Trustees required DCPS to follow Federal procurement rules and regulations until the Authority prescribed some other procurement rules and guidelines (or until DCPS itself adopted such policies and guidelines). DCPS did not follow Federal procurement rules and did not adopt any other procurement rules or procedures.”

“DCPS did not maintain complete and organized records of procurement decisions and actions. Contract files were incomplete and disorganized. This was largely the result of minimal in-house project management capabilities due to staff departures.”

The Audit found that:

- *Documentation requirements were ignored;*

- Segregation of duties requirements were bypassed;
- Project managers (rather than procurement officials) decided what contractors to invite to submit bids;
- Project managers (rather than procurement officials) received and opened bids;
- Project managers (rather than procurement officials) made contract award decisions;
- Contracts and contract modifications were executed without first certifying that funds were available;
- Contract work was allowed to commence without evidence that required bonds were obtained;
- Contract compliance requirements were ignored; and
- Millions of dollars of change orders were approved without justification of written findings and determinations.

“Nothing in the Board of Education procurement procedures — emergency or otherwise — permits such practices. These were the conditions cited in our report as being conducive to fraud.”ⁱⁱⁱ

4.3.5 Funding

A review of the recent 14-year history of capital expenditures reveals a picture of instability. **Figure 4-2** illustrates the fluctuations in capital expenditures from 1985 through 1998, a major problem affecting the condition of school facilities and management of the capital improvement program.

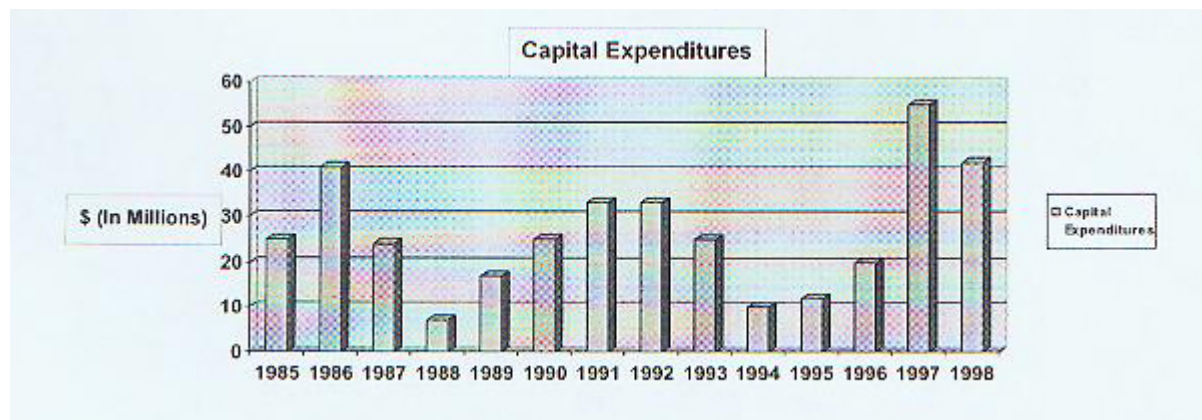


Figure 4-2 History of Capital Expenditures for District of Columbia Public Schools for FY 1985 – FY 1998

Not only have funding levels varied, but the level of funding was consistently around one-third the amount required to maintain the inventory of school facilities in good repair. The cumulative disinvestment over the period preceding 1995 created the deferred maintenance that has been so frustrating to principals, teachers, students, parents, and communities. In fact, the expenditure history is somewhat misleading because the school system frequently used capital funds for maintenance and repair, such as painting, chemical treatment of boilers, and removal of pigeon infestation, not just for major component or system replacements with longevity.

When public buildings were managed by a Director of the District Department of General Services, Congress appropriated funds annually for maintenance, repair, improvement, replacement, and new construction. All construction, repairs, and improvements were performed on a “pay as you go” basis. The federal government did not borrow funds for capital projects. The school system is fiscally dependent on the City and the schools often have been unable to translate the urgency of facilities needs into the stable and sufficient funding required to operate an effective capital improvement program. For example, a 1965 Report of DCPS on school facilities states:

“While Congress has authorized a significant amount of school construction since 1953, the difference between needs and accomplishment remains disturbing and disappointing.

‘From 1953 to 1966, only 49.4 percent of the Board of Education’s construction funding request was approved by the Commissioners and Congress.’^{iv}

It was not until 1984 that the District was empowered and received authority to go to the bond market to finance capital projects. After home rule, the Council and the Mayor had the power to decide whether to meet the budget request of the Board of Education. Since then, schools have had to compete with overall District needs and often they have lost out on needed repairs. The expenditures during FY1985 to FY1995, the District of Columbia Public Schools represented only 9.3% of the District’s capital budget.^v

The unstable and insufficient funding for school construction has seriously eroded the trust of the public in the District’s commitment to providing quality public schools. Promises have been made to replace windows, modernize Sharpe Health, and install state-of-the-art science laboratories in the junior high schools among many other projects. In some cases the plans were drawn up to meet those promises and the dates were set for construction, but the funding did not follow the budget authority approved by the Council and the projects were abandoned.

4.3.6 Oversight and Monitoring

The oversight and monitoring of the capital improvement program for the schools have not been well institutionalized. Both have been done primarily in response to requests from public officials concerned that some fraud, waste, or abuse may exist in the capital improvement program or that an inequity problem or another condition not desirable to the community may be present in the allocation of capital funds or the implementation of the program. The oversight and monitoring activities can respond to occasions of fraud, waste, or abuse or to political controversy, but they are not structured to prevent such problems. **Table 4-1** shows the four investigations or audits of the management of the DCPS capital improvement program that have been conducted in the recent past.

Table 4-1 Investigations or Audits Conducted on the Management of the DCPS Capital Improvement Program

Report	Auditor	Date
1. Review of the DCPS Capital Improvements Program	D.C. Auditor, Otis Troupe	May 6, 1993
2. Report on the Need for Capital Improvement Funds and the District’s Capability to Manage Them	Congressional Office of Surveys and Investigations	Spring 1996
3. DCPS Performance Audit: Fiscal Year 1997 Capital Improvement Program Procurement Process	Cotton & Cotton, LLP at the request of the Control Board	January 12, 1998
4. DCPS Availability of Funds and the Cost of FY 1997 Roof Projects	U.S. General Accounting Office (GAO)	March 1998

This list shown in Table 4-1 is not complete, but it gives an indication of the range of agencies that have authority over the DCPS capital improvement program. The Office of the Inspector General also has the capacity to audit and investigate issues of fraud, waste, or abuse that are reported; that office, for example, carefully investigated the ServiceMaster contract with DCPS. The FBI works with the Office of the Inspector General to follow up incidents that may involve criminal wrongdoing. The FBI was responsible for the investigative work that led to the conviction in 1997 of the two DCPS contract specialists employed by the Procurement Branch of the District.

Aside from audits and investigations, oversight hearings are regularly held by the Council's Education Committee to track the management of school construction. These hearings are vitally important and generally respond to, rather than prevent, public concerns. According to the District Charter, The Board of Education has oversight of the DCPS administration. However, largely as a result of insufficient oversight and monitoring, the Control Board transferred the oversight authority of the Board of Education to the Board of Trustees. The Board of Trustees, however, had no mechanism to monitor the elements of a capital improvement program to ensure that it was well managed. Under their watch, the school system suffered from a late start of the roof projects that led to the astronomical costs and the late opening of the school year. With proper oversight, the school system could have avoided both hardships.

5.0 RECOMMENDATIONS FOR MANAGING THE DISTRICT OF COLUMBIA PUBLIC SCHOOLS CAPITAL IMPROVEMENT PROGRAM

5.1 INTRODUCTION

The relative inexperience of the District of Columbia Public School System in managing the demands of a major capital improvement program partially explains the shortcomings cited in Section 4.0 of this report. Before undertaking a massive modernization of public school facilities, however, the school system has an opportunity—and a responsibility—to make deliberate, informed decisions about how it will manage its capital improvement programs. Concurrent with the master planning process in which the school system is engaged, should be examination of not only *what* needs to be accomplished, but also *how* it will be accomplished.

As pointed out in Section 3.0, public school capital improvement programs can be managed by an experienced, in-house school system staff, by another government agency structured to manage school construction, or by private-sector firms. As is illustrated by the variety of ways school systems manage their capital programs, there are many options. However, in each case, the management structure responded to particular economic and political realities.

- Fairfax and Montgomery County have strong central administrations, a long history of growth, and a population with high standards for public education that includes school facilities. Their strong in-house capabilities are consistent with their context.
- Fulton and Anne Arundel Counties are experiencing more recent growth and lack the history of strong management of their capital programs, but have been able to build in-house capacity and in the case of Fulton County, supplement it with private sector construction managers.
- The creation of the School Construction Authority for New York City responded to the lack of confidence the City and the State had in the Board of Education. The new Authority enabled politicians to respond to the overcrowding crisis by funding a major increase in the school system's capital budget. The SCA also addressed particular constraints in procurement, hoping to speed up the length of time it took to build a school under the laws and regulations as they existed in 1988.
- The Chicago Public Schools was able to fund their capital program before they had the capacity to manage it in-house. The City, which had taken over the school system, was under pressure to show results quickly. Since the school system had not built a school in a generation, the Mayor needed help turning the capital dollars into school improvements. The school system, under the Mayor's guidance turned to the private sector.
- Finally, a weak economy in Nova Scotia lead to a freeze on capital budgets in 1990 and the Department of Education and Culture needed to find a way to build new and modernize old schools, with inadequate public funds. The school system developed alternative ways to finance its much needed school construction through sale lease-backs.

Under every model the decisions about priorities and standards were established by the school system. The school system, as owner, is ultimately responsible for providing safe, educationally appropriate school facilities. Even if the school system finds another public agency or firm prepared to assume some risk, the public will always hold the school system, the Council, and the Mayor accountable for the condition of the public school facilities.

It is clear from the FY 2000-2005 Capital Improvement Plan of the District of Columbia that the District government is committed to modernizing and improving the District's public schools (see **Appendix F**). The proposed budget (see **Figure 5-1**) will enable the school system to spend \$100 per square foot on approximately 6 million square feet of school space, or slightly less than half of the school system's operating school inventory of 15.6 million square feet.

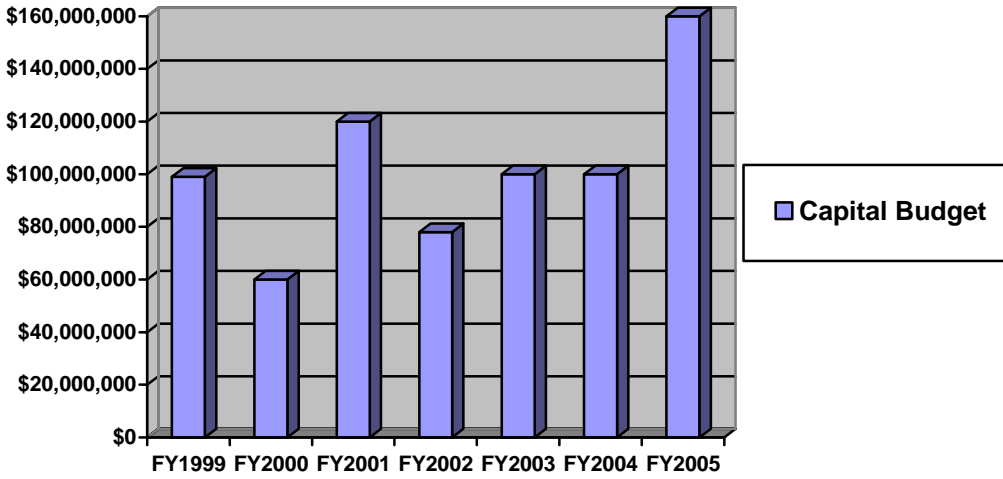


Figure 5-1 Government of the District of Columbia, FY 2000-2005, Capital Improvements Plan and FY2000 Capital Budget, June 1, 1999.

Combining the history of capital expenditures and the projections for capital expenditures, as in **Figure 5-2**, illustrates the importance of the District's decisions on school construction management.

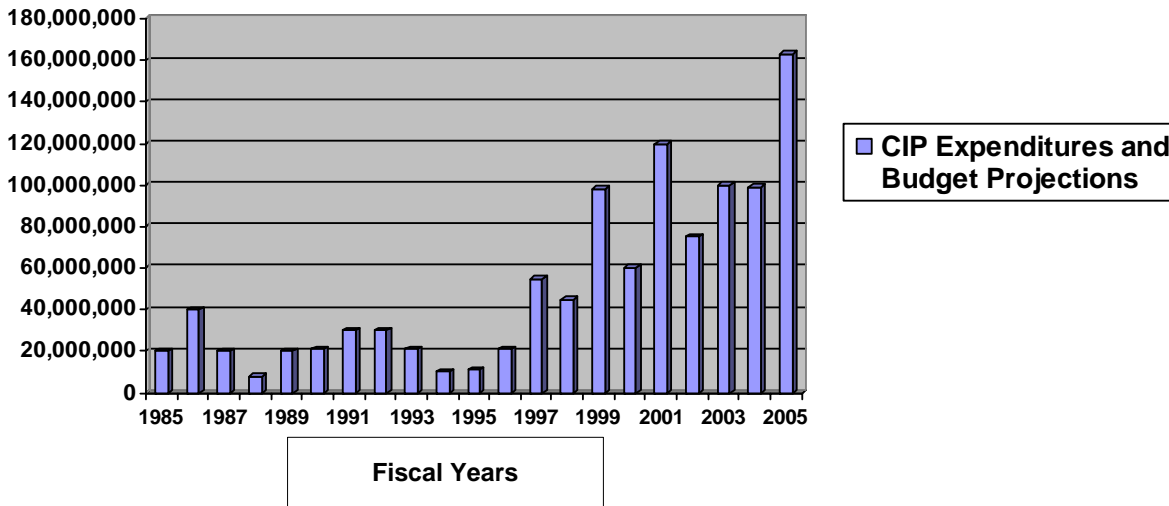


Figure 5-2 Capital Improvements Plan Expenditures and Budget Projections for FY1985 - FY2000.

5.2 Recommendations

On the basis of the findings of this study, Scientex and 21st CSF recommend the District of Columbia leadership take the following actions:

1. Acknowledge the need to evaluate the current systems and structures for managing the DCPS capital improvement program. Any one of the responsible parties--the Mayor, the Council, or the Control Board or Board of Education--should initiate a formal review of how the District's public school capital improvement program is being managed and whether the District has the management systems and structures that will sustain a cost-effective, equitable, high-quality capital improvement program.
2. Decide who should evaluate the systems and structures. The leadership should make sure that the evaluation is conducted by an agency or entity without a financial interest in the outcome and that the school system is fully committed to and engaged in the evaluation.
3. Decide how to conduct the evaluation. The evaluation should include an economic analysis of the cost of project management, planning, design, construction, and information management. It should assess the quality of construction work produced and the capability of the capital program to produce timely work of good quality at competitive costs. Furthermore, along with the assessment of the management operations, the evaluation should review the laws, regulations, and policies that provide the framework for managing the capital improvement program effectively, efficiently, and equitably.
4. Include the public in discussions of the school system's capital improvement program.
5. Convene a task force to recommend how the District should manage its capital improvement program based on the analysis and review of the District's current capabilities, the findings of the study presented in this report, and other pertinent input. The recommendations of that task force should address the following:
 - how decisions on the capital improvement program will be made;
 - process by which procurement of capital contracts will be handled, and by whom;
 - amount of in-house capacity the school system should retain;
 - whether the District should engage in a long-term relationship with the U.S. Army Corps of Engineers to manage the capital improvement program;
 - whether or not the school system should contract out as much of the capital improvement program as is feasible, as does the Chicago Public School System does;
 - whether or not the DCPS needs to build an educational planning division in the school system;
 - whether the District wants affirmative action targets or requirements and what they should be;
 - who will be responsible for regular audits and oversight;
 - process by which the District will ensure against fraud or corruption in its capital program;
 - the stability and sufficiency of the current capital budget commitment of the District is;
 - the laws, policies, and regulations need to be put in place to create and support the recommendations about the management of the DCPS capital improvement program;
 - personnel are needed to implement the recommendations of the task force;

- strategies the public school system can use to build sufficient confidence in the procurement process with the private sector to attract competent contractors to bid on school projects; and
- the role the federal government should have in funding the District's capital improvement program.

The challenge of government reform is to work to improve or create new systems and structures while responding to day-to-day demands for the services that must be provided. It is not possible to stop managing the capital improvement program of the schools while an evaluation is done to determine how it can be done better. Thus, the District of Columbia leadership must approach the evaluation in such a way that it does not create instability in the management of the capital program but, rather, assures continuity for work in progress. At the same time, however, the District will not produce quality school construction without effective, efficient systems and structures in place.

To many, the prospect of the District's willingness to spend \$619 million over the next 6 years on school construction is a business opportunity. In the embryonic stage of this exciting new initiative in the District—the first major program to be undertaken since the 1967 Master Plan—all interested parties need to cooperate before they compete. If the District does not create a well-managed capital improvement program for its public schools, one that is trusted by the public, then the likely prospect is the District will find another way to spend its hard-earned revenue. The economic benefit will be diminished, and most significantly, the educational benefit of healthy, safe, educationally appropriate learning environments owed to the children of the District of Columbia will be lost.

APPENDIX A

National Clearinghouse for Educational Facilities (NCEF) Hot Topics: School Construction Project Delivery and Acceptance Methods



Updated: May 12, 1999

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Prepared by the:
 National Clearinghouse for Educational Facilities
 at the National Institute of Building Sciences
 1090 Vermont Avenue, N.W., Suite 700
 Washington, D.C. 20005
 Tel: 202/289-7800 or 888/552-0624
 Web: www.edfacilities.org

Contents:
[Full Text Online Resources](#): 12
[References to Books and Other Media](#): 4
[References to Journal Articles](#): 22
[Related Web Sites](#): 4

Full Text Online Resources

obtaining books and other media

Are You Ready for At-Risk Program Management?

http://www.sommag.com/articles/1999_04_April/article196.html

Echols, C. Williams

School Planning and Management, Apr 1999

This article discusses a relatively new project delivery method, "CM at-risk." The author claims that it may offer all benefits of other proven project delivery methods providing for complete responsibility and single accountability for an entire school construction improvement program.

Project Delivery Strategy

<http://www.3di.com/essays/pds.htm>

3D/International, 1999

Early in a project, a client must select a process for design and construction. The process will affect the financing, the selection of the project team, the schedule and the cost. This essay discusses phases of design and construction; when to contract for construction; contract documents; key decisions; typical project delivery methods.

CM at Risk

<http://www.3di.com/essays/cmatrik.htm>

3D/International, 1999 Construction Management at Risk (CM at Risk), similar to established private sector methods of construction

A-2

contracting, is gaining popularity in the public sector. The author claims that it is a process that allows a client to select a Construction Manager (CM) based on qualifications; make the CM a member of a collaborative project team; centralize responsibility for construction under a single contract; obtain a bonded guaranteed maximum price; produce a more manageable, predictable project; save time and money; and reduce risk for the client, the architect and the CM. This essay discusses some history of CM, how to do it; terms of payment, and minimizing risk and cost.

Bridging

<http://www.3di.com/essays/bridge.htm>
3D/International, 1999

The author claims that bridging combines many of the strengths of design-build with the advantages of design-bid-build. The article states that bridging delivers cost-effective construction, centralizes responsibility for the project, produces an enforceable price in less time for less cost than the traditional process and reduces claims and change orders. It puts architects in collaboration with contractors, specialty subcontractors and manufacturers. This essay discusses an overview of bridging, how to do it, the argument for bridging, and the Federal Acquisition Reform Act of 1996.

What is Facilities Program Management?

<http://www.nsba.org/sbot/toolkit/Facilities.htm>
National School Board Association Toolkit

Facilities program management is a comprehensive method of managing all capital resource needs, including planning, design, and construction. Program management provides a single-source professional agent representing the school board, like an in-house facilities department. Program management may be provided by a construction company, architect, or engineering firm. It is most successful when provided by a company that specializes in this service.

Obtaining Professional Services for Construction Projects

<http://www.nysed.gov/fmis/facplan/articles/A051.txt>
New York State Department of Education, 1994

School districts must contract for various professional services to complete capital construction projects. Professional services involve architects, engineers, surveyors, and attorneys. Other services involve a clerk of the works and construction managers for various supervision activities.

Construction Management Guidelines for Capital Outlay Program Projects

<http://www.doe.k12.ga.us/facilities/rulesandguidebooks.html>
(Georgia State Department of Education, Facilities Services Unit, Atlanta, GA 1998)

The Georgia State Department of Education recognizes two separate methods for utilizing construction management services by local school systems when state capital outlay funds are involved. This report details both methods. It first describes the Construction Management-Agency approach, which allows a CM-Agency manager to enter into a professional services contract with the local board of education. The CM-Agency performs no work with its own employees, receives no additional fees or expenses provided for in the contract, and maintains a position in the project independent from the designer and contractors. It also explains the Construction Management-at Risk

approach, whereby a construction services contract with the local board of education in which the CM-at Risk manager contracts the various components of the project the way a general contractor would. The CM-at Risk manager does not usually perform any portions of the work except for those items specified under the general conditions of the contract such as cleanup, layout, and security.

Guidelines for Successful Supervision of School District Capital Construction Projects

<http://www.nysed.gov/fmis/facplan/home.html>

(New York State Education Department, Office of Facilities Planning, 1998)

These guidelines attempt to clarify the interrelationships and expected actions on the part of school representatives, the A/E, the construction manager and the clerk of the works during the important phase of supervision of construction. 7p.

Project Delivery Systems: What's the Difference?

<http://www.spmmaq.com/articles/NewPage76782.htm>

Konchar, Mark; Sanvido, Victor

School Planning & Management, v37 n7p22-26 Jul 1998

Discusses project delivery systems in school construction management and why it is important to both scheduling and budgeting to choose the right system. Design-build, construction management at risk, and design-bid-build variations are examined. Also discussed are study data of quantitative costs, scheduling, and quality performance involving 351 building projects and the systems used.

Will Low Bid Be Replaced with CM@Risk?

http://www.spmmaq.com/articles/jan_1998/article95.html

Murphy, John

School Planning and Management; v37 n1 p67-68 Jan 1998

Explains how putting the construction manager at greater risk for the projects he or she manages is of benefit to school districts. Why the low-bid process doesn't work and why school districts are still using it are discussed.

The Merits of Construction Management

http://www.spmmaq.com/articles/may_1996/article011.htm

Wright, Dorothy

School Planning and Management; v35 n5 p28-33 May 1996

Fulton County (Georgia) is using construction management for all of its school construction jobs. This strategy allows the board to select a manager purely on the basis of merit and to have more control over subcontractor selection (including selection of more minority contractors) and management.

Option for Qualifications Based Selection for Design-build Teams (Florida Senate Bill 1880)

<http://www.thehaskellco.com/news/industry.htm>

(Haskell Company News Release, 1998)

Describes option for local governments and school boards to select design-build teams in a more streamlined manner.

NCEF Resource List on Obtaining Design Services

A listing of online resources, books and journal references, and Web sites on hiring a professional designer.

[Return to Contents](#)

[References to Books and Other Media](#)

[Obtaining
Books
and
Other
Media](#)

Design-Build Contracting by Virginia Public Bodies

Lowe, James K., Jr.

Paper presented at the Commonwealth of Virginia Department of Education Facilities Conference (Blacksburg, VA, February 23, 1998).

In an effort to depoliticize design-build contracts, the Commonwealth of Virginia created a management review board to determine whether a locality should be authorized to use a design-build contract in lieu of competitive sealed bidding. This paper explains that process. In order to employ a design-build contract for a specific construction project, the Commonwealth and its departments, institutions, and agencies must seek and secure the prior approval of the Director of the Division of Engineering and Building. For public bodies other than the Commonwealth and its departments, institutions, and agencies, the public body must seek and secure the approval of the Design-Build/Construction Management Review Board prior to using a design-build contract for a specific construction project. For such contracts, prior to determining whether to use a design-build approach for a specific project, a professional advisor must be enlisted and a request for review submitted; the review process includes a judicial review. Information on the selection, evaluation, and award of design-build contracts is covered, as are details on proposal requests, the selection of qualified offerors, and project evaluation. 11p.

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<http://www.edrs.com>

The Building Commissioning Handbook

Heinz, John A.; Casault, Rick

(Association of Higher Education Facilities Officers, Alexandria, VA., 1996)

This book discusses building commissioning, which is the process of certifying that a new facility meets the required specifications. As buildings have become more complex, the traditional methods for building start-up and final acceptance have been proven inadequate, and building commissioning has been developed, which often necessitates the use of outside consultants to monitor the process. One-half of the guide details the roles of the consultant, contractor, test engineer, commissioning agent, and owner. It describes the process, the needed equipment testing, systems functional performance testing, scheduling, documentation, training, costs, and the process of hiring a commissioning agent. Chapters include an overview of commissioning and discussions of: approaches to commissioning, design requirements, contract documents requirements, the steps of the commissioning process, selecting the commissioning agent, and the costs of commissioning. A case study of commissioning a science building is provided. The other half of the guide consists of a description of terms and 15 different guide

A-5

specifications in the form of detailed documentation and testing checklists, divided to indicate specific tasks and tests (e.g., general, mechanical, electrical facility startup/commissioning; commissioning--general requirements; HVAC systems, supply air systems, exhaust air systems, environmental control systems, etc.) 311p.

ERIC NO: ED408876

TO ORDER: APPA: The Association of Higher Education Facilities Officers

http://www.appa.org/resources/publications_cf/construction.html

Professional Construction Management Including C.M., Design-Construct, and General Contracting

Barrie, Donald S.; Paulson, Boyd C.

McGraw Hill College Division, 1991

577 p.

ISBN: 0070038899

Construction Management for Educational Facilities: Professional Services' Procurement and Competitive Bid Statutes

Goldblatt, Steven M.; Wood, R. Craig

National Organization on Legal Problems of Education, Topeka, KS., 1985)

Construction management is utilized when a school district engages a firm to coordinate a total project. Construction management seeks to save an owner time and cost primarily through better contractor coordination and project management. Services may include the planning and design phases of the project as well as the actual construction of the facility. State laws regarding construction management are placed in categories according to whether construction management is authorized, apparently authorized, not authorized, or not addressed. An examination of the status of construction management for public school districts throughout the country reveals a mixed picture. The construction of educational facilities is clearly within the purview of the state legislatures. Generally, this state responsibility is delegated to the local school districts. While the responsibility is delegated, so too is the observance of public bid statutes. Within the past few years, many states have moved toward more flexible approaches to how school districts may construct educational facilities. 18p.

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[Return to Contents](#)

References to Journal Articles	Obtaining Journal Articles
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Third Party Project Management: A Coming Reality for an Increasingly Unrealistic World

Griffin, Jeff

Facilities Manager; v14 n2 p19-23 Mar-Apr 1998

Third party management of the development and facilities delivery process is a response to trends in the design, construction, and legal

industries. Changes in the process and the architect's organization, the role of the project manager, drawbacks to third party management, and the relevance for educational construction projects are discussed.

Easing the Pain McGovern, Gene American School & University; v71 n5 p37-40 Jan 1998 Discusses school building program planning for construction projects on occupied school campuses. Advice is given for choosing a general contractor, scheduling the work to limit its disruptive effects on the school community, establishing safety procedures, preparing the surrounding community for the inconveniences that construction may cause, and raising funds.

Setting the Vision: The School Board's Role in School Construction

Rasicot, Julie

Learning By Design; p10,12-15 1998

Defines the school board's role in school construction, its use of outside consultants, the responsibility of securing building funds, and the influence of politics in the decision making process. Discusses some school boards' changing approach to community involvement

Commissioning Success

Lillie, E. Thomas

American School & University; v69 n8 p46,48 Apr 1997

Explores the use of a commissioning agent (CA) during school construction projects to ensure that all building systems work together and to specifications. The types of work done by a CA, the cost involved, and the overall benefits derived are outlined.

The Kids Are Coming.

Jones, Rebecca

American School Board Journal; v184 n4 p20-24 Apr 1997

The 51.7 million students enrolled in public and private schools this year outstrip the 51.3 million mark set in 1971. Today's taxpayers are reluctant to pay for new schools; therefore, school leaders need to be creative in handling the enrollment crunch. Experts in fast-growing districts offer tips, including design-build.

Alternative Project Delivery Approaches for School Construction

Concannon, Michael

Illinois School Board Journal; v64 n5 p18-20 Nov-Dec 1996

The most common delivery systems for school construction projects are general contracting and the more proactive construction-management and program-management approaches. The most beneficial aspect of construction management, with simultaneously selected construction managers and architects, is its system of checks and balances. Program management by an outside consultant is ideal for multiple or complex projects.

Manage Construction In-House and Save Dollars.

Stewart, G. Kent

School Business Affairs; v62 n5 p52-54 May 1996

Except for unusually large and complicated school building projects, it is more cost-effective to use consultants and in-house personnel for project administration than it is to retain an outside construction-management firm.

Keeping the Roof on Building Costs

Rydeen, James E.

School Administrator; v51 n6 p8-13 Jun 1994

School construction overruns and other disappointments usually stem from inadequate planning, mismanagement, and inexperienced individuals. This article shows how to compute "ballpark" estimates based on a district's unique planning requirements for curriculum, scheduling, and class sizes; screen firms' and individuals' qualifications; devise a realistic budget, monitor the design and construction process; and develop shared responsibility for outcomes.

Master Builder

DeBray, Bernard J.

American School Board Journal; v180 n4 p37-38 Apr 1993

A Missouri school district found the most cost-effective means of designing, bidding, and constructing new facilities to be hiring a construction management firm. With a construction manager, the school district's interests come first, and the district can tailor project-delivery strategies to specific needs. Outlines how the process works.

Construction Program Management: An Effective Tool for the Delivery of Educational Facilities on the International Scene

Campbell, Robert W.

Educational Facility Planner; v30 n6 p8-10 1992

All international endeavors of major size and duration have been conducted under the concept of construction program management. Examples in Saudi Arabia, Qatar, Brazil, and Guyana illustrate the constancy and coordination that international construction program management provides.

Construction Manager or General Contractor?

McKinley, John

School Business Affairs; v57 n1 p12-15 Jan 1991

Unlike the general contractor approach, the construction management firm acts on behalf of the school district in school construction. Examines the development and nature of construction management, and cites its advantages and disadvantages.

Reflections on a Building Program

Hertz, Karl V.

School Business Affairs; v56 n1 p22-24 Jan 1990

Describes one school district's plan for constructing new facilities. Preparing the community for the project and attendant costs is essential. Tips are provided for choosing an architect, selecting financial advisers, gaining community acceptance, choosing a construction manager, meeting the construction deadline, and involving school staff.

Alternative Construction Contract Approaches

Cross, Donald R.

Educational Facility Planner; v27 n1 p29-31 Jan-Feb 1989

Overview of five construction delivery approaches.

Construction Program Management for Educational Facilities Programs and Projects

Powell, Marvin

Educational Facility Planner; v27 n1 p16-17 Jan-Feb 1989 Lists 12 steps that ensure success of a construction program in outline form.

Construction Management: A Sensible Alternative when Building New Schools

Weinert, Ronald A.

School Business Affairs; v53 n1 p16-21 Jan 1987

Characteristics of construction management (CM), general contracting, and design/build contracting are defined. CM is shown to be a cost-effective alternative to the other project delivery systems. Explains the four forms of CM and provides guidelines for selecting and rating a CM firm.

Construction Management and Local Contractors—A Good Team for the Owner

Kluenker, Charles

School Business Affairs; v53 n1 p22-23 Jan 1987

Using local contractors for construction work benefits the community by keeping money in the area and reducing the cost of imported management and labor. To accomplish this, the construction management firm must have the commitment to working with the local contractors throughout the entire design, bidding, and construction period.

Features of Construction Contracts to Expedite Construction Work, Reduce Owner's Financial Risks and Expenditures

Birrell, George S.

CEFP Journal; v24 n6 p15-19 Nov-Dec 1986

Describes the array of contractual features between the project owner and the main contractor that can lead individually or in permutations to expediting the construction process and reducing the financial risks and expenditures of the project owner.

How to Hire a Construction Management Company

Kluenker, Charles H.; Haltenhoff, C. E.

School Business Affairs; v52 n5 p58-62 May 1986

Outlines procedures to be used in hiring a construction management firm. Four exhibits are shown including an interview rating form and a qualification questionnaire.

Construction Management—Exploding Some Myths

Kluenker, Charles

CEFP Journal; v24 n2 p13-15 Mar-Apr 1986

Construction management on educational facility projects provides boards of education with documentation showing the project is on track. Eight "myths" surrounding construction management are explained.

How to Buy Construction Management Services

Heyman, Martin H.

Business Officer; v18 n11 p40-43 May 1985

The nature of fast-track construction scheduling is described, the qualities and resources related to superior construction management performance are discussed, and the types of contract alternatives available are examined.

Why Schools Choose Construction Managers

Hultgren, Steve

CEFP Journal; v23 n6 p7-9 Nov-Dec 1985

A construction manager can relieve administrators of much of their uncertainty in building or renovating schools in the areas of

scheduling, quality, and costs.

[Return to Contents](#)

Related Web Sites

Obtaining
Journal
Articles

Associated General Contractors of America

<http://www.agc.org/index.asp>

Web site contains articles from Constructor, the construction management magazine; a catalog of publications; legislative issues; job site safety information; and a directory of contractors.

Construction Management Association of America

<http://www.access.digex.net/~cmaa/index.html>

CMAA is a national association dedicated to the promotion and enhancement of Construction Management as a professional service among CM practitioners, project owners, and others playing a role in the construction process. Web site explains construction management, lists publications, and has a directory of members.

Design-Build Institute of America

<http://www.dbia.org/>

Represents practitioners from all phases of the design-build process. Web site includes publications, including ordering information on model contract documents, useful links, calendar of events, and an online directory of members.

Design-Build Magazine

<http://www.designbuildmag.com/>

Published by McGraw-Hill, this is the online version of the magazine for the design-build industry.

[Return to Contents](#)

[NCEF Home](#)

[Search](#)

[News & Events](#) | [Information Resources](#) | [About NCEF](#) | [About ERIC](#)

APPENDIX B

Materials Reviewed and Interviews

- **List of Materials Reviewed from DCPS**
- **List of Materials Reviewed from other School Systems**
- **List of Persons Interviewed**

List of Materials Reviewed from DCPS (See endnotes for detail)

1. Transition Report
2. Preliminary Facilities Master Plan 2005
3. Alternative Facilities Master Plan 2007
4. District of Columbia Capital Budget 2000-2005
5. David Cotton Audit of DCPS Procurement of FY1997 CIP
6. GAO Audit of FY1997 Capital Budget
7. History of Public Education Governance in the District of Columbia, Steve Diner

List of Materials Reviewed from other School Systems

1. Annual Report of SCA
2. SCA Legislation
3. Audit of SCA 1996
4. FY2000 Capital Budget Fairfax County
5. Montgomery County Planning Policy
6. State of Maryland Administrative Handbook
7. West Virginia Handbook
8. Chicago Public Schools Capital Improvement Program
9. Fulton County, Georgia Capital Budget Summary

List of Persons Interviewed

1. Jim Johnson, Director of Planning
Fairfax County Public Schools
2. Gene Kelly, Director of Design and Construction
Fairfax County Public Schools
3. Bob Weston, Director of Construction Finance
Montgomery County Public Schools
4. Mark Moran, P.E., Technical Support Officer
Division of Design and Construction
Anne Arundel County Public Schools
5. Mike VanAirdale, Chief of Operations
Fulton County Public Schools, Georgia
6. Marcus Ray, Director of Construction
Fulton County Public Schools, Georgia
7. Clayce Williams, Executive Director
School Building Authority
West Virginia
8. Avram Lothan
DeStephano and Partners
Chicago, Illinois
9. Mike McShea
The Staubach Company
Washington, DC
10. Jim Wilson
JFW, Inc.
Gaithersburg, Maryland

APPENDIX C

Guidelines for Evaluating for School Districts (MGT of America, Inc.)

- Fairfax County

Best Financial Management Practices

- Florida

COMPONENT A: FACILITIES MANAGEMENT, CONSTRUCTION AND UTILIZATION

1. Does a district facilities management policy exist? If yes, does the policy:
 - a. include guidelines to determine the priority needs for facilities such as:
 - health and safety of students and employees? *no sure*
 - instructional needs? *no for guidelines*
 - operational efficiency?
 - cost effectiveness?
 - b. recognize facility needs (both short and long term)? *assessments done term no life cycle analysis*
 - c. provide for an effective facilities master plan?
 - d. provide a means to address emergency facility needs? *yes (open ended)*
2. Are the facilities management procedures published and distributed to appropriate staff and community members? Are the procedures being implemented effectively and efficiently?
3. Are provisions made for input, review, and evaluation by teachers, principals, clerical staff, operation staff, maintenance staff, district administrators, and community members? *no*
4. Is the district facilities master plan reviewed, evaluated and revised on a periodic basis? *no*
5. Does the district's facilities management plan include a financial section which identifies funds budgeted for short term and long term projects? Are funds also budgeted for contingency and emergency facility needs? *sort of*
6. Does the district's long-range facility master plan include a projection of facilities needs for at least five years? Is there a corresponding financial plan to meet the facilities needs? *only*
7. Has the district assigned specific staff to administer the facilities management program? Does the program include:
 - a. clearly defined responsibilities for management and control? *no*
 - b. coordination of projects with maintenance and other related departments? *no*
 - c. standardization of materials as feasible? *no*

- d. procedures for authorization and selection methods for architects and other professional service firms? *no*
 - e. resources for support staff (i.e., in-house architect or construction supervisor)? *no*
 - f. a clear definition of the role of outside architects and contractors? *no*
8. Are the following components included in the district's construction management program:
- a. a complete review of all plans and specifications to ensure compliance with relevant codes? *no*
 - b. the monitoring of insurance coverage and all bonding requirements? *consulting placement*
 - c. provisions for a thorough check of references of the general contractor and subcontractors? *no*
 - d. inspections to provide quality control? *no*
 - e. lines of communications maintained with the general contractor through the project architect? *no*
 - f. effective procedures for progress payments? *?*
9. Are change orders for construction projects:
- a. clearly specified and fully documented? *?*
 - b. signed and approved by the architect, superintendent and board? *no*
 - c. coordinated through the project architect? *?*
10. Have effective procedures been established for acceptance of the completed facility projects such as:
- a. a system to monitor the timely completion of any priority items? *no*
 - b. an assurance that complete as-built plans are delivered to the district? *no*
 - c. approval by the construction supervisor, architect, appropriate inspector(s), and administration? *?*
 - d. a requirement for retaining funds until final acceptance of the project? *yes*

11. Is the training provided to facilities management staff effective? Does it include:
 - a. orientation regarding changing federal, state, and local laws, regulations, and procedures?
 - b. in-service training for principals, site administrators, custodians and maintenance staff on the identification of facility needs and inspection of all facilities? *NO*
 - c. resources for staff to attend state and local facility planning, construction and financing seminars? *some from school*
12. Do facilities design plans include energy conservation measures as well as maintenance and custodial requirements? *NO*
13. Do specific staff, that are assigned responsibility for various facilities planning functions on a regular basis, take into account the following:
 - a. demographic studies?
 - b. enrollment projections?
 - c. school capacity projections?
 - d. class size requirements by school?
 - e. educational program specifications?
 - f. special education facility requirements?
 - g. projected bonding capacities?
 - h. space utilization tracking data?
14. Are facilities management services evaluated to determine their effectiveness and efficiency? For example, are performance measures calculated on a per gross square foot of building space or other basis to evaluate cost efficiency?
Yes Are capacity statistics tracked? Are improvements in the facilities management function evident as the result of evaluation efforts?
15. How does the district's gross square feet (GSF) compare to the following:

▪ elementary school	90-100 GSF/student?	<i>- 129-143 existing</i>
▪ middle school	100-115 GSF/student?	<i>150</i>
▪ high school	110-130 GSF/student?	<i>150</i>

Best Financial Management Practices – State of Florida

USE OF STATE AND DISTRICT CONSTRUCTION FUNDS

- A. The district uses educational facilities construction funds to meet its construction and renovation priorities in a cost-effective manner.
 - 1. The district approves use of construction funds only after determining that the project(s) are cost efficient (in comparison with other feasible alternatives) and in compliance with the designated purpose of the funds.
 - 2. The district uses capital outlay funds for facilities construction projects and uses operational funds for facilities maintenance and operations. If the district does not implement this practice, it demonstrates that there are no unmet facilities needs.
 - 3. When designing and constructing new educational facilities, the district incorporates factors to minimize the maintenance and operations requirements of the new facility.
 - 4. The district uses, accounts for, and reports the use of educational facilities construction funds in a proper manner.

FACILITIES CONSTRUCTION

- A. The district has a framework for long-range facilities planning to meet the needs of the district in a cost efficient manner.
 - 1. The district has established authority and assigned responsibilities for educational facilities planning.
 - 2. The district has allocated adequate resources to develop and implement a realistic long-range master plan for educational facilities.
 - 3. The district has established a standing committee that includes a broad base of school district and community stakeholders.
 - 4. The district has assigned one person with the authority to keep facilities construction projects within budget.
 - 5. The district has assigned budget oversight of each project or group of projects to a single project manager.
- B. The district balances facility needs, costs, and financing methods through a capital-planning budget.
 - 1. The district uses a capital planning budget based on comprehensive data collected in early stages of the master plan.
 - 2. In developing the capital planning budget, the district considers innovative methods for funding and financing construction projects.
 - 3. The capital planning budget accurately lists facilities needs, costs and recommends methods of financing for each year of a five-year period.

C-5

- C. The district uses a proactive system to select and economically acquire proper school sites in a timely manner.
 - 1. The district brings school site selection well in advance of expected need with the establishment of a broadly representative site selection committee.
 - 2. The district has developed school site selection criteria to ensure schools are located to serve the proposed attendance area economically with maximum convenience and safety.
 - 3. The Board considers the most economical and practical locations for current and anticipated needs, including such factors as need to exercise eminent domain, obstacles for development, and consideration of agreements with adjoining counties.
 - 4. The district has a system to assess sites to ensure prices paid reflect fair market value.
 - 5. For each project or group of projects, the architect and district facilities planner develops a plan to serve as a decision-making tool for future facilities needs.

- D. The district identifies future needs for sites and facilities based on an analysis of valid enrollment projections.
 - 1. The district can demonstrate that its identified facilities needs are based on thorough demographic study.

- E. The district systematically determines the student capacity and educational adequacy of existing facilities and evaluates alternatives to new construction.
 - 1. The district uses the official Florida Inventory of School Houses (FISH) inventory to analyze student capacity and classroom utilization.
 - 2. The facilities planning leader, in cooperation with the instructional leader and the director(s) of maintenance and operations, conducts an evaluation of the physical condition and education adequacy of existing facilities and ensures that school facilities' inventories are up-to-date.
 - 3. In determining actual space needs, planners consider alternatives to new construction such as year round education, extended-day schools, changes in grade-level configuration, changes in attendance boundaries, and use of relocateable facilities (portables) to help smooth out the impact in peaks and valleys in future student enrollment.

- F. The district secures appropriate architectural services to assist in facility planning and construction.
 - 1. The district uses an architect selection committee to screen applicants and identify and evaluate finalists.
 - 2. The district involves architects in all key phases of the planning process.

C-6

3. The architect selection committee reviews and evaluates the architects' performance at the completion of projects and refers findings to the board.
- G. The district develops educational specifications for each project to meet student education needs.
1. The district develops a general project description that includes a brief statement as to why each facility is being built, where it will be located, the population of students it is intended to serve, its estimated cost, the method of financing, the estimated time schedule for planning and construction, and the estimated date of opening.
 2. Educational planners, instructional staff, and the architect develop a complete set of educational specifications before the architect begins to design a facility.
 3. The specifications include an educational program component relating the curriculum, instructional methods, staffing, and support services, and also include a statement of the school's philosophy and program objectives.
 4. The specifications include a description of activity areas that describe the type, number, size, function, special characteristics, and spatial relationships of instructional areas, administrative areas, and services areas in sufficient detail that the architect will not have to guess at what will occur in each of these areas.
 5. The district communicates general building considerations, including features of the facility and the school campus in general, to the architect.
 6. The district uses the educational specifications as criteria for evaluating the architect's final product.
 7. All School Board-approved program requirements are communicated to the architect before final working drawings are initiated.
 8. The Board minimizes changes to facilities plans after final working drawings are initiated in order to minimize project costs.
- H. The district uses generally accepted architectural planning and financial management practices to complete projects on time and within budget.
1. The Board determines whether each new facility will be constructed using the traditional system of public works or by using some innovative system such as design/build or a construction manager.
 2. The architect prepares the building specification document.
 3. The architect coordinates plans, specifications, and questions concerning the project.
 4. After bids are opened and tabulated, they are submitted to the Board for awarding the contract. Legal counsel makes certain that bid and contract documents are properly prepared and that the award is properly authorized.
 5. The district requires the contractor to submit a signed owner-contractor agreement, workers' compensation insurance certificates, payment bond, performance bond and guarantee of completion within the time required.

C-7

6. The architect recommends payment based on the percent of work completed. A percentage of the contract is withheld pending completion of the project.
 7. The district requires continuous inspection of all school construction projects.
 8. Buildings are not occupied prior to the notice of completion.
- I. To maximize use of new facilities, minimize operation costs, and provide feedback for future construction planning, the district trains building users and evaluates building use.
1. The district conducts a comprehensive orientation to the new facility prior to its use so that users better understand the building design and function
 2. The district conducts comprehensive building evaluations at the end of the first year of operation and periodically during the next three to five years to collect information about building operation and performance.
 3. The district analyzes building evaluations to determine whether facilities are fully used, operating costs are minimized, and changes in the district's construction planning process are needed.
 4. The district analyzes maintenance and operations costs to identify improvements to the district's construction planning process.

APPENDIX D

State Schools Capital Improvement Program

- Table of Contents of the Administrative Procedures Guide from Maryland
- Table of Contents of the Guidelines and Procedures from West Virginia

Organizational Charts

- Montgomery County Public Schools: Division of Construction
- Fairfax County Public Schools: Department of Facilities Services
- Fulton County Public Schools: Capital Programs Department

PUBLIC SCHOOL CONSTRUCTION PROGRAM
ADMINISTRATIVE PROCEDURES GUIDE

STATE OF MARYLAND

Board of Public Works

William Donald Schaefer, Governor
Louis L. Goldstein, Comptroller
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September, 1994

D-2

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ON

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Department of General Services

Public School Construction Program
200 West Baltimore Street
Baltimore, Maryland 21201
(410) 333-2500

D-3

FOREWORD

The Interagency Committee on School Construction has approved this Administrative Procedures Guide to reflect changes in the operation of the program consistent with the revised Rules, Regulations, and Procedures for the Administration of the School Construction Program as approved by the Board of Public Works, June 10, 1981, and as amended September 21, 1982, September 17, 1986, December 30, 1987, October 11, 1989, and October 6, 1993.

This publication provides State and local personnel, architects, and governmental officials with an understanding of the method of operation and administration of the Public School Construction Program. The material is arranged in sequential order and follows a project from inception through design, construction, and occupancy.

Formal review stages and approvals are required by the Committee in the development of a project. These required approvals are in no way meant to restrain local initiative in program or project development but are instead a means of monitoring the prudent expenditure of State funds.

The guide is organized and presented to facilitate additions or modifications as developed. It can be kept up-to-date with future insertions or changes. We will review the procedures periodically to make them more effective. Suggestions you may have that would add clarity or improve effectiveness are always welcome.

This document should contribute to the improvements in the planning, design, and construction of public school buildings in the State of Maryland. Through the cooperation and interaction of the local school district staffs, architects, and the staff of the committee, improved educational facilities and learning environments can be developed.

Yale Stenzler
Executive Director
September, 1994

TABLE OF CONTENTS

	<u>Page</u>
Foreword	ii
General Information	1
1. Public School Construction Program	2
1.1 Authority	2
1.2 Organizational Structure	2
1.3 A School Capital Improvement Project	2
1.4 State Funding	2
Exhibit 1 - Organizational Structure - Primary Responsibilities	4
Exhibit 2 - Outline of Procedures for a School Capital Improvement Project in the State School Construction Program	5
100 Programming	1-1
101 Local Education Agency Educational Facilities Master Plan	1-2
101.1 Master Plan Requirements	1-2
101.2 Outline for the Preparation of an Educational Facilities Master Plan	1-4
101.3 Interagency Committee Review and Response	1-7
102 Capital Improvement Program	1-8
102.1 Submittal of Capital Improvement Program	1-8
102.2 Current Year Project Planning Approval Requests	1-9
102.3 Current Year Funding Requests	1-11
102.4 Future Project Requests	1-13
102.5 Summary and Status Forms	1-14
102.6 Amendments	1-14
102.7 Evaluation of Project Classifications	1-14

	<u>Page</u>
102.8 Development of Maximum State Construction Budgets and Allocations	1-16
102.9 Capital Improvement Program Approval Procedure - Summary ..	1-19
102.10 Amendments to Approved Capital Improvement Program	1-20
103 Architect Selection	1-21
103.1 General Requirements	1-21
103.2 Selection and Agreement	1-21
103.3 Construction Budget and Fixed Construction Cost	1-21
104 Site Selection	1-23
104.1 Procedure for Site Selection	1-23
200 Planning	2-1
201 Project Planning Process	2-2
201.1 The Project Planning Process	2-2
201.2 Procedures by the LEA for Establishing the Project Planning Committee	2-2
201.3 Composition of the Project Planning Committee	2-3
201.4 Responsibilities of the MSDE School Facilities Specialist	2-3
202 Educational Specifications and Schematic Designs	2-4
202.1 Developing Educational Specifications	2-4
202.2 Review of Educational Specifications	2-4
202.3 Developing the Schematic Design	2-4
202.4 Schematic Design Approval	2-5
300 Construction	3-1
301 Pre-Design Development Meeting	3-2
301.1 Procedure	3-2

	<u>Page</u>
302 Design Development Documents	3-3
302.1 Design Development	3-3
302.2 Review Process	3-7
303 Construction Documents	3-9
303.1 Construction Documents Submission (Bidding Documents)	3-9
303.2 Interagency Committee Review and Comment	3-13
303.3 Pre-Qualifying of Bidders	3-14
303.4 Minority Business Enterprise Program	3-14
303.5 Approval for Construction Contract Award	3-14
304 Alternative Construction Methods	3-16
304.1 Construction Management	3-16
304.2 Fast Track	3-17
304.3 Lease-Lease-Back	3-19
305 Change Orders	3-21
305.1 Change Order Submittals	3-21
306 Finance	3-23
306.1 General	3-23
306.2 Payments to Contractors, Vendors, or the LEA	3-23
306.3 Financial Reports	3-24
306.4 Auditing	3-26
400 Systemic Renovations	4-1
401 Systemic Renovation Projects	4-2
401.1 Definition	4-2
401.2 Categories of Systemic Renovation Projects	4-2

	<u>Page</u>
401.3 Project Eligibility	4-2
401.4 Systemic Renovation Requests	4-3
401.5 Project Design and Submissions	4-4
500 Disposal of Property	5-1
501 Facilities Changes	5-2
501.1 Facilities Status Changes	5-2
501.2 Easements, Rights-of-Way, Transfers of Portions of School Sites	5-3
501.3 Procedures for the Disposition of School Facilities	5-3
501.4 Temporary Closure of a Public School	5-8
600 State-Owned Relocatable Classroom Buildings	6-1
601 Relocatable Classroom Buildings	6-2
601.1 State Ownership	6-2
601.2 Types of Installations	6-2
601.3 Initiation of Requests	6-2
601.4 Eligibility Requirements	6-3
601.5 Selection of Architects/Engineers	6-4
601.6 The Planning Process	6-5
601.7 Movement and Installation	6-5
601.8 Change Orders	6-6
601.9 LEA Responsibility after Installation	6-6
601.10 Budgeting Local Funds	6-6
601.11 Disposition of Buildings and/or Components or Parts	6-7
700 Appeals	7-1
701 General Appeals	7-2

	<u>Page</u>
701.1 Appeal Process	7-2
800 Maintenance	8-1
801 Maintenance of School Facilities	8-2
801.1 General	8-2
802 Comprehensive Maintenance Plan	8-3
802.1 General	8-3
802.2 Purpose of the CMP	8-3
802.3 Components of the CMP	8-3
802.4 Submission of the CMP	8-4
803 Maintenance Expenditures Report	8-6
803.1 General	8-6
803.2 Guidance for Preparing Form 803.1	8-6
804 Verification and Compliance	8-11
804.1 Maintenance Surveys	8-11
804.2 Compliance	8-11

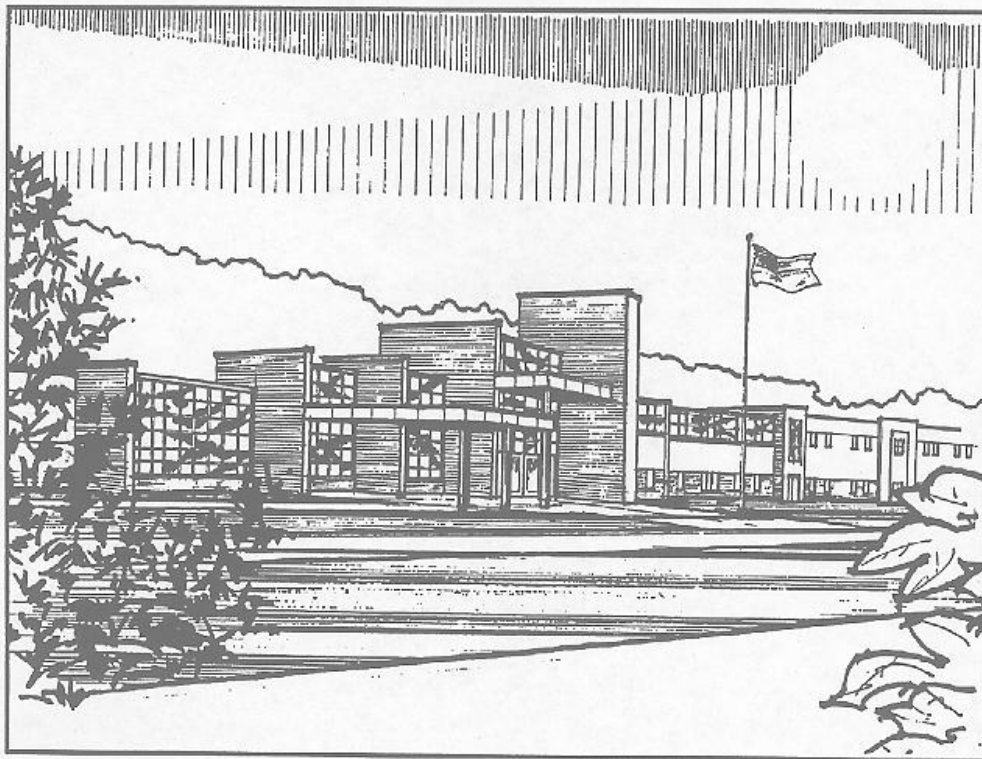
Appendices

A Rules, Regulations, and Procedures for the Administration of the School Construction Program	A-1
B Movable Furniture and Equipment	B-1
C Capacity and Space Formula	C-1
D Outline for Educational Specifications	D-1
E Construction Sign/School Plaque	E-1
F Procurement Laws Applicable	F-1
G Life Cycle Cost Analysis and Energy Conservation	G-1
H Table of Forms	H-1

1999
Guidelines & Procedures
of the



School Building Authority



Printed by the West Virginia Department of Education

D-10



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1998-99**

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D-11

TABLE OF CONTENTS

	PAGE
Comprehensive Educational Facilities Plan	1
Requirements	2
Inter-County Feasibility Studies	3
Synopsis of Public Comment	3
Objective Evaluation of Implementation	4
Additional Requirements and Adm. Assurances	4
Amending the Plan	4
Funding SBA Projects	5
Distribution of Funds	5
Awarding of Funds	7
Utilization of Funds	10
SBA Funds Accounting	11
Reimbursement Procedures	11
Funding Specific Facility Plans	12
Building Gross Areas	12
Design Capacity	12
Allowable Construction Costs for New Construction	13
Renovations	14
Project Administration and Review	15
Geotechnical and Radon	15
Occupancy of New Facilities	15
Maintenance and Custodial Care	16
SBA Contracts and Agreements	17
Grant Agreements	17
Bid Documents	17
SBA Report Procedures	18
Financial Reports	18
Project/Construction Related Reports	18

APPENDICES

		PAGE
A.	Handbook on Planning School Facilities	Appendix A
B.	Facility Classification Form	21
C.	SBA School Facilities Evaluation Instrument	22
D.	Economies of Scale	56
	1. Provision of Waiver	57
	2. Economy of Scale Waiver Request	58
E.	Application for Amendment	59
F.	Requisition Form - Exhibit A-1	62
	Exhibit B	61
	Exhibit C	63
G.	Executive Summary - Construction Fund Project "Needs"	64
H.	Procedures for Review of "Needs" Projects	66
	1. Procedures for the Plan Review Team	69
	2. Project Evaluation Form	70
I.	SBA Grant Contracts	74
J.	Architectural and Construction Regulations	79
	1. Application for Project Approval P-1 (Attachment 1)	79, 87
	2. Procurement of Architectural/Engineering Services and Construction Managers (Attachments 2,3,4 & 5)	79 88, 91, 93, 95
	3. Design Fees	80
	4. Building Component Requirements	81
	5. Disqualification of Contractors	81
	6. Construction Project Development	81
	7. Construction Project Submission and SBA Review (Attachment 6 & 7)	82 97, 106
	8. Real Estate Acquisitions Using SBA Funds	83
	9. Clerk-of-the-Works Requirements (Attachment 5)	84, 95
	10. Construction Project Bid Coordination and Reporting	84
	11. Contractor Evaluation (Attachment 8)	85, 112
	12. Architect Evaluation (Attachment 9)	85, 113
	13. Construction Observation Report (Attachment 10)	86, 115
	14. Certificate of Project Completion (Attachment 11) Multiple Prime Project (Attachment 12)	86, 117 118
	15. SBA Occupancy Report (Attachment 13)	119
K.	SBA Supplemental, General and Special Conditions	120
	Contract Document Requirements	120
	General Requirements	120
	Contract Forms	120
	Contractor Registration Certificate and Tax Releases	121
	Contractor Licensing	121
	Bid Bond	122

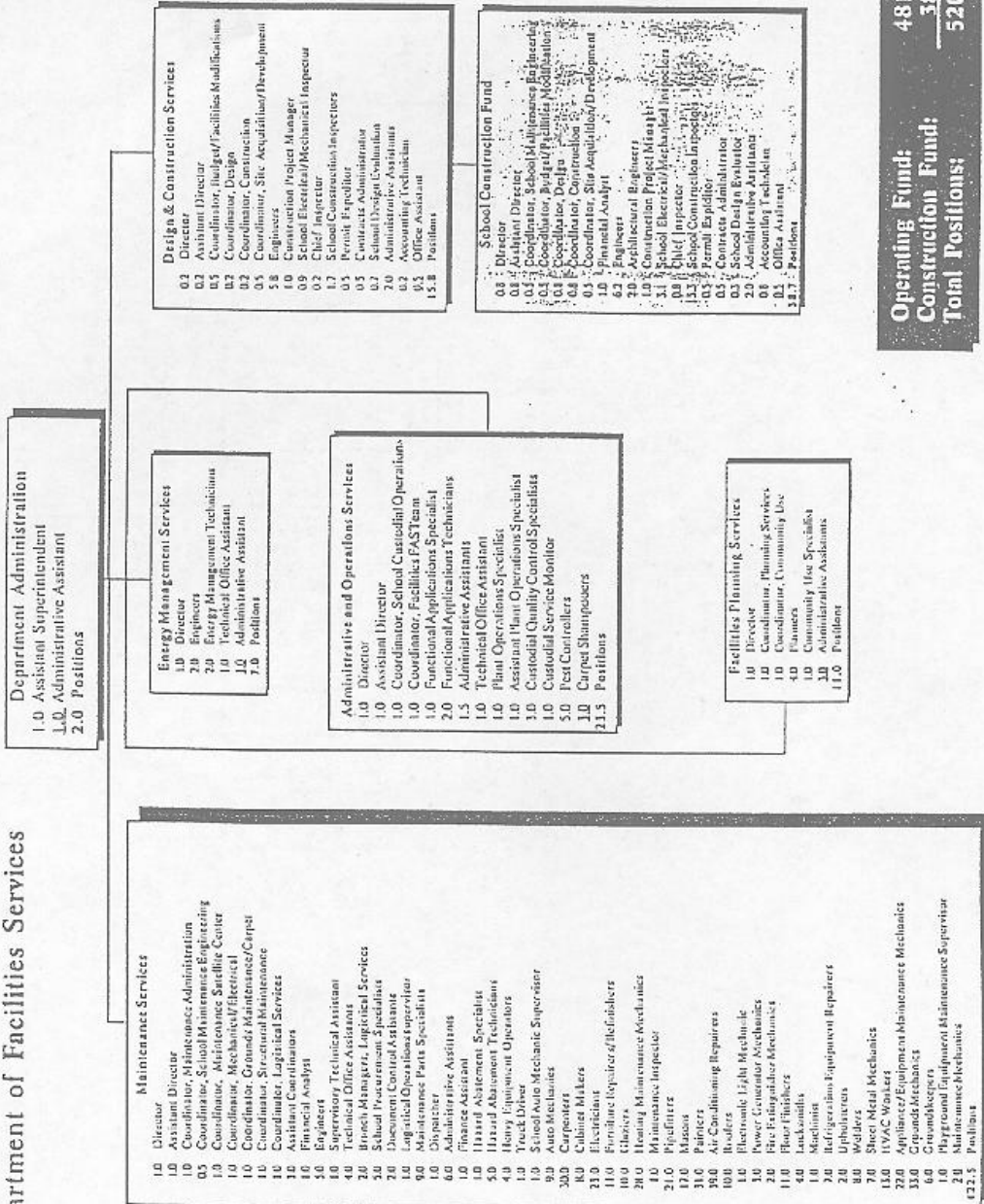
	PAGE
Performance Bond	122
Contractor Insurance	123
Permits and Licenses	125
Semi-Proprietary Specifications	125
Wage Rates and Certified Payroll	125
Processing of Payment Applications	125
Retainages	126
Liquidated Damages	126
Standards of Quality and Codes	126
Bid Withdrawal	127
Rejection of Bids	127
Submittal of Subcontractors and Major Equipment And Material Suppliers (Attachment 1)	127 132
Contractor Qualification and Financial Statement (Attachment 2)	128 136
Award of Contract (Attachment 3)	128, 142
Project Job Signs and Plaques (Attachment 4 & 5)	129, 143, 144 & 145
SBA Project Observation	129
Construction Project Close-Out	130
Asbestos Abatement Requirements	130
L. Semi-Annual Financial Reports	146
M. School Major Improvement Plan	148
General	149
Key Elements of the Plan	149
Goals and Objectives of the MIP	150
Historical Data	151
Maintenance Plan	151
MIP Finance Plan	153
Objective Evaluation	155
Project Submission Requirements	155
Annual Update	156
Public Input Assurances	156
MIP Executive Summary (Attachment 1)	158
Prioritized List of Proposed Projects (Attachment 2)	161
Completed or On-Going Projects (Attachment 3)	162
MIP Project Evaluation Form (Attachment 4)	163
N. Emergency Fund	164
O. SBA Architectural/Engineering Services Agreement	166
P. Annual Update - Comprehensive Educational Facilities Plan	181
Q. Maintenance and Custodial Care Site Visit Report	193
R. Planning Grants	195
S. Comprehensive Educational Facilities Plan Forms	199

SBA FORMS

		Page
WVDE 103B	Semi-Annual Financial Report	146
SBA 104A	Exhibit B - Requisition Form	61
	Exhibit A-1 - Project Description & Finance Plan	62
	Exhibit C - Project Finance Plan Amendment Form	63
SBA 105	Contractor's Qualification Statement	136-141
SBA/WVDE 106	Application for Amendment	59-60
SBA 113	Construction Observation Report	115-116
SBA 116	Facility Classification Form	21
SBA 120	Construction Fund Project "Needs" Executive Summary	64-65
SBA 123	List of Proposed Subcontractors, Equipment/Material Suppliers	135
SBA 124	Contractor Evaluation Form	112
SBA 125	Grant Contractor	74-78
SBA 131	Economy of Scale Waiver Request	58
SBA 132	High School Attendance Area	189
SBA 134	Facility Evaluation Form	22-55
SBA 138	Architect/Engineer Evaluation Form	113-114
SBA 139	Certificate of Completion - Multiple Prime Project	118
SBA 141	Ed. Specs. - SBA Subject Area Space Allocation Data	102
	Ed. Specs. - Summary of Spaces	101
SBA 143	Maintenance & Custodial Care Site Visit Report	193-194
SBA 145A	Completed or On-Going Projects	162
SBA 145B	Prioritized List of Proposed Projects	161
SBA 146	SBA Occupancy Report	119
SBA 147	Translating Educational Needs into Facility Needs	202
	Building Improvement Cost Summary	203
SBA 148	Proposed Building Use and Capital Improvements	204
SBA/WVDE 149	Evaluation Instrument - Ten Year CEFP	199-201
SBA 152	Abandoned Schools Report	205
SBA 156	Building Program Utilization Worksheet	103 & 206
WVDE P-1	Application for Project Approval	87
WVDE BP-13-A	Certificate of Project Completion	117
Annual Update	Comprehensive Educational Facilities Plan - Executive Summary	183
CEFP	CEFP - Progress Report #1	197
CEFP	CEFP - Progress Report #2	198
MIP	Major Improvement Plan - Executive Summary	158-160

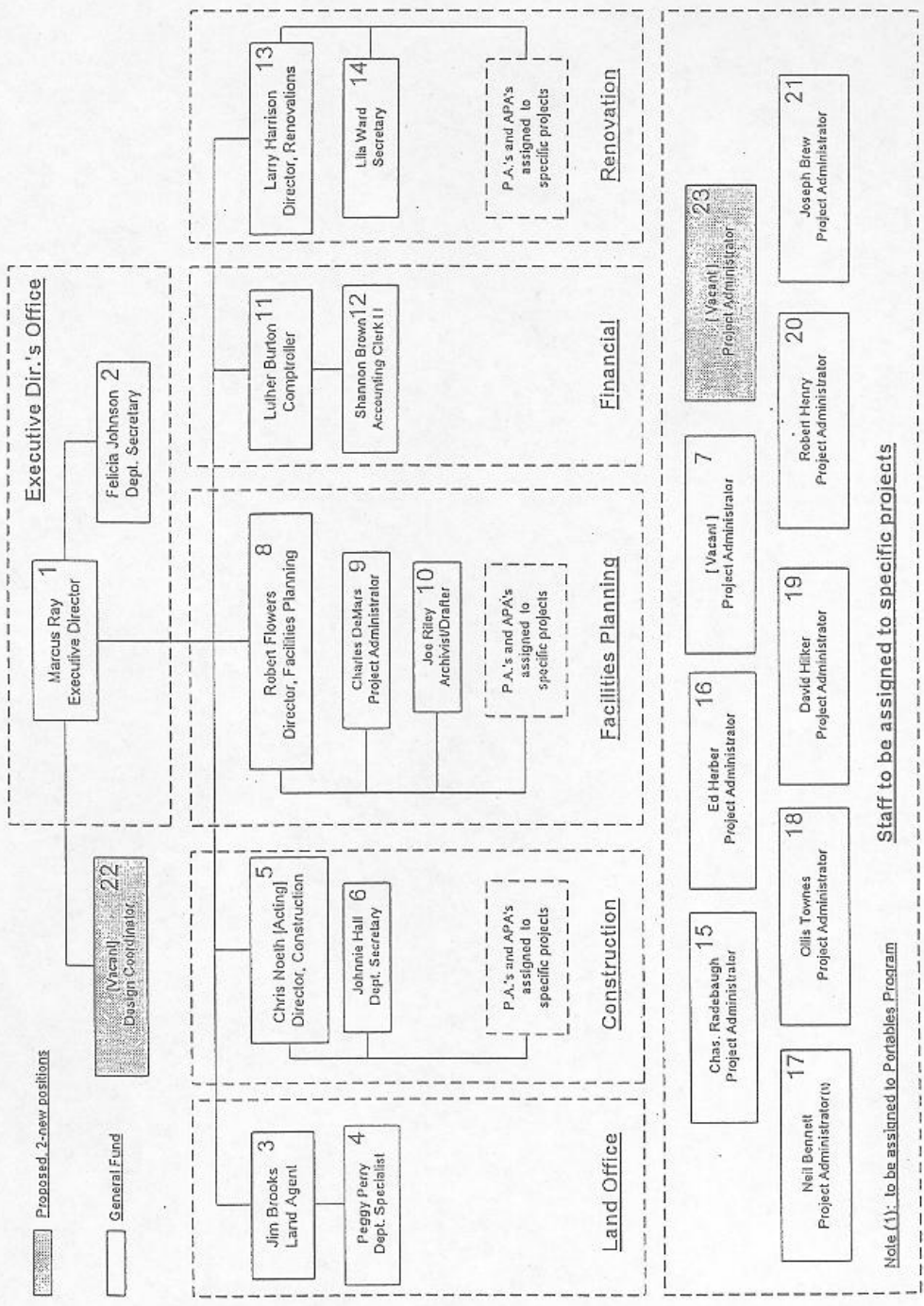
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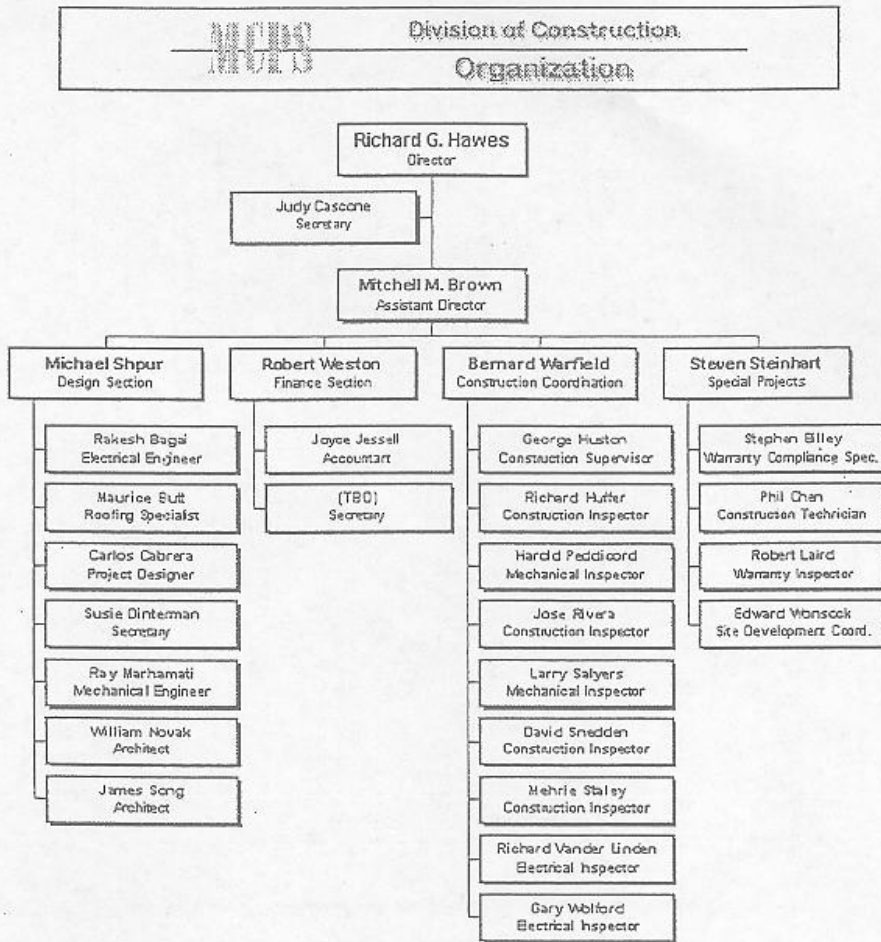
Organization Section



Operating Fund: 481.8
 Construction Fund: 38.7
 Total Positions: 520.5

'99 - '00 Capital Programs Department (total: 23)





APPENDIX E

Memorandum of Agreement between the Army Corps of Engineers, District and DCPS

MEMORANDUM OF AGREEMENT
BETWEEN THE
DISTRICT OF COLUMBIA PUBLIC SCHOOLS
AND
UNITED STATES ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT

ARTICLE I - PURPOSE AND AUTHORITY

This Memorandum of Agreement ("MOA") is entered into by and between the United States Army Corps of Engineers, Baltimore District ("Baltimore District") and District of Columbia Public Schools ("DCPS") ("the parties") for the purpose of establishing a mutual framework governing the respective responsibilities of the parties for the provision, by the Baltimore District, of engineering, procurement, and technical services related to and in support of the Baltimore District's overall responsibility, as specified in Support Agreements ("SA(s)"), for project management of the assessment, renovation, restoration, operation and maintenance of public schools in the District of Columbia. This MOA is entered into pursuant to 31 USC 6505.

ARTICLE II - SCOPE

Services which the Baltimore District will provide under this MOA include facilities assessment, engineering services, contract solicitation and source evaluation management, contract administration, construction quality assurance, facility management, environmental compliance services and such other services as may be necessary in support of the assessment, renovation, restoration, operation and maintenance of the public schools in the District of Columbia.

The responsibilities and duties of the DCPS and the Baltimore District with respect to acquisition of design, construction, and related services shall be more specifically elaborated in individual Support Agreements ("SA(s)") executed by DCPS as necessary to respond to Baltimore District recommendations on specific projects required to achieve the necessary facility remediation.

The currently anticipated value of the goods and services the Baltimore District will provide to the DCPS pursuant to this MOA is \$2,500,000 for Fiscal Year 1998. This value may be increased or decreased at the mutual agreement of the parties by the execution of SAs.

ARTICLE III - INTERAGENCY COMMUNICATIONS

To provide for consistent and effective communication between the Baltimore District and the DCPS, each party shall appoint a Principal Representative(s) to serve as its central point of contact on matters relating to this MOA. Additional representatives may be appointed to serve as points of contact on SAs.

ARTICLE IV - SUPPORT AGREEMENTS

In response to Baltimore District recommendations for facility remediation under this MOA, the Baltimore District and the DCPS shall execute mutually agreed upon written SAs, which shall include the following:

- a detailed scope of work statement detailing the specific responsibilities of each party;
- schedules;
- the amount of funds required to accomplish the scope of work as stated above;
- identification of individual project manager(s) for each party;
- identification of the Baltimore District's recommended acquisition strategy and types of contracts to be used, if known;
- identification of which party is to be responsible for government-furnished equipment, contract administration, records maintenance and contract audits;
- identification of each party's responsibilities regarding rights-to-data, software, and intellectual property;
- identification of responsibilities and procedures for coordination with other agencies as may be required; and
- such other particulars as a necessary to describe clearly the obligations of the parties with respect to the requested services.

Services, including incidental acquisitions necessary to carry out the requested services, shall be provided under this MOA only after an appropriate SA has been signed by a representative of each party authorized to execute that SA. The representative for the DCPS will be the Director of the Office of Acquisitions and Contracts Management or, if the Director of the Office of Acquisitions and Contracts Management is not available, the Chief, Capital Improvement Program Unit, Office of Acquisitions and Contracts Management. The representative for the Baltimore District is the Deputy District Engineer for Program Management or, if the Deputy District Engineer is unavailable, the Program Manager. Upon signature by each party's representative, an SA shall be complete.

ARTICLE V - RESPONSIBILITIES OF THE PARTIES

A. Responsibilities of the USACE

The Baltimore District shall provide the DCPS with support and services in accordance with the purpose, terms, and conditions of this MOA and with specific requirements set forth in the SAs.

The Baltimore District shall insure that only authorized Baltimore District representatives sign SAs and identify individual project manager(s) under the SA.

The Baltimore District shall use its best efforts to determine the most effective strategy for providing services under the provisions of this MOA. The Baltimore District shall be responsible for complete development of procurement and acquisition instruments for goods and services required to execute its overall project management responsibilities, as specified in SAs, and shall provide contracts developed for these purposes to DCPS for award. To assure that appropriate business opportunities are afforded to contractors certified as District of Columbia local, small, and disadvantaged business enterprises, the Baltimore District shall follow a process directed by DCPS procurement officials.

The Baltimore District shall provide detailed periodic progress, schedule, financial and other status reports to the DCPS as agreed to in the SA(s). Financial reports shall include information on all funds received, obligated, and expended, as well as forecasted obligations and expenditures.

B. Responsibilities of the DCPS

The DCPS shall pay all costs associated with the Baltimore District's provisions of goods or services under this MOA and shall provide funds in advance in accordance with Article VI.

The DCPS shall insure that only the authorized District representatives sign SAs.

The DCPS shall develop draft SAs to include scope of work statements.

The DCPS shall obtain for the Baltimore District all necessary real estate interests and access to all work sites and support facilities, and shall perform all coordination with and obtain any permits from Federal, state and local agencies, as necessary during the execution of each SA.

The DCPS shall retain responsibility for requirements imposed by other Federal, State, and local agencies.

The DCPS shall retain responsibility for compliance of the project with the provisions of the National Environmental Policy Act ("NEPA") and other applicable environmental statutes or

regulations.

ARTICLE VI - FUNDING

The DCPS shall pay all costs associated with the Baltimore District's provision of goods or services under this MOA. The DCPS shall formally transfer all of the funds necessary to accomplish the work specified in each SA in the form of a check made payable to Finance and Accounting Officer, Baltimore District, prior to the Baltimore District incurring costs or obligation against any SA. The DCPS shall also provide the date upon which the transferred funds expire for obligation, if applicable. The parties to this MOA agree that the Baltimore District does not have any funds that could be used to perform work on behalf of DCPS in advance of receipt of funds and that funds must be received before any work can be performed.

If the Baltimore District forecasts its actual costs under a SA to exceed the amount of funds available under that SA, it shall promptly notify the DCPS of the amount of additional funds necessary to complete work under that SA. The DCPS shall either provide the additional funds to the Baltimore District, or require that the scope of work be limited to that which can be paid for by the then-available funds, or direct termination of the work under that SA.

Within 90 days of completing the work under a SA, the Baltimore District shall conduct an accounting to determine the actual costs of the work. Within 30 days of completion of this accounting, the Baltimore District shall return to the DCPS any funds advanced in excess of the actual costs as then known, or the DCPS shall provide any additional funds necessary to cover the actual costs as then known. Such an accounting shall in no way limit the DCPS's duty in accordance with Article X to pay for any costs which may become known after the final accounting.

ARTICLE VII - APPLICABLE LAWS

This MOA shall be governed by the applicable statutes, regulations, directives, and procedures of the United States. Unless otherwise required by law, all contracts awarded by the DCPS utilizing the services of the Baltimore District shall be governed by the FAR. Unless otherwise provided by law, services provided in support of contracts awarded by DCPS shall be in accordance with applicable DCPS regulations and policies.

ARTICLE VIII - CONTRACT CLAIMS AND DISPUTES

The Baltimore District shall provide assistance to the DCPS in its defense of claims and disputes by prime contractors of DCPS-awarded contracts to which the Baltimore District provided support and services.

ARTICLE IX - DISPUTE RESOLUTION

The parties agree that, in the event of a dispute between the parties, the DCPS and the Baltimore District shall use their best efforts to resolve that dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative dispute resolution mutually acceptable to the parties. The parties agree that, in the event that such measures fail to resolve the dispute, they shall refer it for resolution to an impartial third party to be determined later.

ARTICLE X - LIABILITY

If liability of any kind is imposed on the United States relating to the Baltimore District's provision of goods or services under this MOA, the Baltimore District will accept accountability for its actions, but the DCPS shall remain responsible as the program proponent for providing such funds as are necessary to discharge the liability, and all related costs. This provision shall not be construed to limit the liability of the United States pursuant to the Federal Torts Claims Act as a result of the goods or services provided by the Baltimore District under this MOA.

ARTICLE XI - PUBLIC INFORMATION

Justification and explanation of the DCPS's programs before Congress, the District of Columbia Financial Responsibility and Management Assistance Authority and other instrumentalities of the federal and District of Columbia governments shall be the responsibility of the DCPS. The Baltimore District may provide, upon request, any assistance necessary to support the DCPS's justification or explanations of the DCPS's programs conducted under this MOA. In general, the DCPS is responsible for all public information. The Baltimore District may make public announcements and respond to all inquiries relating to any assistance provided to or requested by the DCPS under this MOA. The DCPS and the Baltimore District shall make their best efforts to give the other party advance notice before making any public statement regarding work contemplated, undertaken, or completed pursuant to SAs under this MOA. The Baltimore District shall consult with the DCPS before making any public statement regarding any procurement action undertaken by DCPS.

ARTICLE XII - MISCELLANEOUS

A. Other Relationships or Obligations

This MOA shall not affect any pre-existing or independent relationships or obligations between the DCPS and the Baltimore District.

B. Survival

The provisions of this MOA which require performance after the expiration of termination of this MOA shall remain in force notwithstanding the expiration or termination of this MOA.

C. Severability

If any provision of this MOA is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

D. Manifests and Related Documents

Baltimore District personnel are authorized to execute all manifests and related documents, Federal and State, on behalf of the DCPS that pertain to work performed under this MOA by the Baltimore District. Baltimore District personnel shall annotate the manifests and related documents with the phrase "On behalf of DCPS." If any applicable regulations do not permit the Baltimore District to sign such documents on behalf of DCPS, the Baltimore District shall contact the DCPS representative for specific guidance. Upon fiscal completion of work under a SA, the Baltimore District shall forward manifests and related documents to the DCPS.

E. Limitations on Contracting

The parties to this MOA understand that the Baltimore District does not, as of the date of the execution of this MOA, have the authority to issue contracts on behalf of the DCPS and that its support hereunder shall be limited to those services that can be provided by in-house resources.

ARTICLE XIII - AMENDMENT, MODIFICATION AND TERMINATION

Either party may request, verbally or in writing, modification or amendment of this MOA. The modification or amendment shall be effective only by written, mutual agreement of the parties.

Either party may request, verbally or in writing, modification or amendment of an SA. The modification or amendment shall be effective only by written, mutual agreement of the parties.

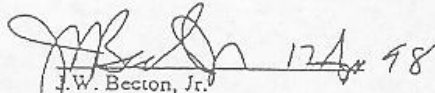
Either party may terminate this MOA by providing written notice to the other party. The termination shall be effective on the sixtieth calendar day following notice, unless a later date is set forth. In the event of termination, the DCPS shall continue to be responsible for all costs incurred by the Baltimore District under this MOA and its SAs.

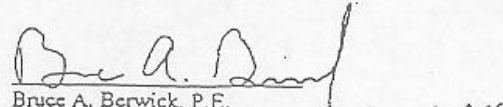
ARTICLE XIV - EFFECTIVE DATE

This MOA shall become effective when signed by both the DCPS and the Baltimore District and approved by the Executive Director of the D.C. Financial Responsibility and Management Assistance Authority and the Chief Procurement Officer for the District of Columbia.

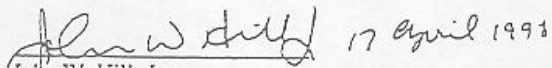
For DCPS

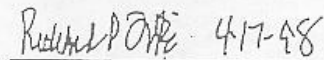
For Baltimore District


J.W. Becton, Jr.
Chief Executive Officer
District of Columbia Public Schools


Bruce A. Berwick, P.E.
Colonel, Corps of Engineers
District Engineer
17 April 98

Approved by:


John W. Hill, Jr.
Executive Director
District of Columbia Financial Responsibility
and Management Assistance Authority


Richard P. Fite
Chief Procurement Officer
District of Columbia

APPENDIX F

Excerpts from District of Columbia Public Schools FY 2000 – FY 2005

Capital Improvements Plan Development Process

The Capital Program, as mandated by Public Law 93-198 - the Home Rule Act, has the annual responsibility of formulating the District's Six-Year Capital Improvements Plan. Each District agency is responsible for the initial preparation and presentation of an agency specific plan. Under the program, projects should complement the planning of other District agencies and must constitute a coordinated, long-term program to improve and effectively use the capital facilities and agency infrastructure. Specifically, the CIP should substantially conform with the Office of Planning's Comprehensive Plan, the District of Columbia Municipal Regulations Title 10 (Chapters 1 to 11), Planning and Development.

Program Participants

The development and implementation of the CIP is a coordinated effort between the District's programmatic, executive, and legislative/oversight bodies.

User Agencies (Programmatic)

User agencies are responsible for:

- Monitoring the condition of a capital facility and the supporting infrastructure
- Understanding the capital program requirements and acting within those requirements to maintain the condition of its facility
- Appointing a Capital Liaison Officer who develops the agency's capital plan, prepares the budget request, and modifies financing proposals throughout the year

CIP expenditure plans and capital budget requests are developed at the agency level. User agencies must review their agency's strategic plan, replacement schedules, condition assessment, specific projects, construction costs, and time schedules. They then submit their proposed project requests and analysis to the Office of Budget and Planning for review. Before submission of projects, agencies perform a thorough analysis and consider fundamental questions in developing their request, for example:

- How does the project promote the goals and objectives of the agency?
- What health and safety issues are addressed?
- What is the essence of the project and what type of service will this project provide to citizens?
- Will this project benefit the District?
- What socio-economic group in the community will this project serve?

Implementing Agency (Programmatic)

Implementing agencies manage actual construction and installation of a capital facility or supporting infrastructure. The implementing agencies are responsible for the execution of projects. This task includes the appointment of a Capital Financial Officer, who monitors the progress of the projects, and ensures:

- The original intent of the project is fulfilled as Congressionally approved
- The highest priority projects established by the user agency are implemented first
- Financing is scheduled for required expenditures

Historically, the Department of Public Works is the implementing agency for over 90 percent of the projects in the CIP.

Office of Budget and Planning (Executive)

The Office of Budget and Planning (OBP) is responsible for issuing "budget call" instructions to District agencies. The OBP provides technical direction to agencies for preparing expenditures plans, project/subproject justifications, priority ranking factors, Operating Budget impacts, cost estimates, milestone data and performance measures. The budget call allows for updates to ongoing projects and requests for additional financing and appropriated budget authority for ongoing and new projects. The OBP coordinates project evaluations to determine agency needs through careful analysis of budget request data, review of current available and future financing requirements, and comparison of project financial needs with the current bond sales and general fund subsidies anticipated to be available for CIP purposes.

Capital Review Team (Executive)

The Director of the Capital Improvements Program chairs the Capital Review Team (the "CRT") with representatives from the Chief Financial Officer, Deputy CFO for Budget and Planning, Deputy CFO for Finance and Treasury, Deputy Mayor for Economic Development, Mayor's Chief of Staff and representatives from the District of Columbia Financial Responsibility and Management Assistance Authority (the "Authority") and Council of the District of Columbia. The technical advisors to the team are the Directors of the Department of Public Works, the Office of Property Management, Office of Planning, and the Office of the Chief Technology Officer. The Office of Budget and Planning - Capital Program provides analysis and all staff support to the CRT. The Capital Review Team evaluates agency requests using criteria developed by the Office of Budget and Planning. For further details see Appendix E - FY 2000 Proposed Projects by Priority Criteria and Appendix F - FY 2000 Planned Expenditures for Proposed Projects by Functional Area.

Mayor (Executive)

The CRT recommendation is then submitted to the Mayor for review, approval and transmittal to the Council. This fiscal year, or in a control year, the CRT's recommendation is submitted to the Mayor, Council and Authority for joint review and consensus approval.

Council, Authority, and Congress (Legislative/Oversight)

There are three levels of legislative/oversight review. They are as follows:

- The Council of the District of Columbia ("the Council")
- The District of Columbia Financial Responsibility and Management Assistance Authority - DCFRMAA (the "Authority")
- The Congress of the United States (the "Congress")

Each body reviews and approves the capital budget and the six-year plan.

Authorizing Projects in the CIP

The OBP reviews and analyzes the CIP with the assistance of the Capital Review Team. The CIP is developed in the four-step process described below²:

Step 1: Budget Call

In the Fall of the current fiscal year, District agencies are requested to provide the OBP with updated information regarding on going projects (increases or decreases in funding or planned expenditures), as well as requests for new projects. The instructions call for agencies to provide detailed information on a project's expenditure requirements, physical attributes, implementation timeframe, feasibility, and community impact. In addition, agencies provide project milestones, estimated costs, expenditure plans, Operating Budget impacts and a prioritized list of potential capital projects. The agency requests are disseminated to all members of the Capital Review Team for review.

Step 2: Agency Presentations

Each agency then presents a briefing to the CRT on its on going projects and new project requests. The purpose of these presentations is to provide members of the CRT more detailed information regarding a project's scope and cost. It also provides the CRT an opportunity to ask questions in order to determine each project's unique qualifications. Occasionally, agencies are requested to re-submit an updated request in order to provide supplemental information for review.

Step 3: Analysis

Project requests submitted in Step 1 undergo a thorough analysis to determine whether they merit inclusion in the District's CIP. This analysis is divided into the following three primary functions:

² A flowchart of the CIP approval process is provided in Appendix D – Authorizing Projects in the CIP.

Function 1 - Project Justification: Each project request is evaluated by the CRT to determine: its relationship with the agency's overall mission; whether the project is duplicative of efforts of another agency's on going project; whether the project is in concurrence with the District's Comprehensive Plan; and whether the expenditure is an operating rather than capital expense.

In addition, project requests are reviewed based on priority criteria and must meet one or more of the factors below³:

- Health/Safety
- Legal Compliance
- Efficiency Improvement
- Facility Improvement
- Revenue Initiative
- Economic Development
- Project Close-out

Function 2 - Cost Analysis: An important factor in the evaluation of a project request is the overall expense it will incur. Cost estimates are developed in conjunction with the Department of Public Works and the Office of Property Management to validate the project costs proposed in the agency submissions. Furthermore, future operating costs are estimated in order to provide supplementary information regarding out-year liabilities once the project is implemented (Operating Budget impacts).

Function 3 - Financing Analysis: The Office of the Chief Financial Officer is committed to finance on going capital projects in a manner in which:

- Funding is committed for the entire CIP
- The District receives the lowest cost of funding available
- The useful life of capital projects matches and does not exceed the average maturity of the liability used to finance the assets

As such, the OBP reviews the useful life of each project and presents this information to the Office of Finance and Treasury (OFT). OFT develops a strategy to match the underlying assets with an appropriate means of financing.

Step 4: Approval

After reviewing all capital project requests with regard to scope, cost, and financing alternatives, the CRT evaluates the projects based on their physical attributes, implementing feasibility, and physical/economic impact on the community. The CRT then formulates a recommendation in the form of a CIP. The proposed "Capital Improvements Plan" is then submitted to the Mayor, Council, and Authority for approval and then to Congress for final Congressional approval.

³ Appendix E provides a complete breakdown of all projects in the CIP by priority criteria.

Phases of a Capital Project

It is assumed that all capital projects are actually the sum total of a series of sections, grouping types of tasks necessary to accomplish the goal of the project. These sections of similar task groupings are defined as "phases." Each project in the CIP is approved and budgeted for five phases. However in some instances projects only need funding for planned expenditures in one particular phase (i.e., major equipment acquisition). Phases are referenced numerically and alphabetically, and are as follows:

- | | |
|-----------------------|------------------------------------|
| 1. Design | (also known as Phase 1 or Phase A) |
| 2. Site | (also known as Phase 2 or Phase B) |
| 3. Project Management | (also known as Phase 3 or Phase C) |
| 4. Construction | (also known as Phase 4 or Phase D) |
| 5. Equipment | (also known as Phase 5 or Phase E) |

The first phase of any capital project is Design. This includes all work completed to define the scope and content of the project. Any architects and engineers the agency employs to analyze the planning for a project would be funded from the design phase. Costs associated with solicitations and proposals also fall within this phase. This phase also would be used to fund any processes necessary for selection of contracts.

The second phase of a capital project is Site Acquisition. This phase covers costs associated with site preparation expenses, legal work or probable demolition and hauling expenses. Site appraisal and survey also would be funded through this phase.

The third phase of a capital project is usually Project Management. All internal agency management and support costs from design to construction are paid through this phase. Activities within this phase include any work of the project manager and other staff.

The fourth phase of a capital project is actual Construction completed for a facility. This would include any and all construction contract work done by other District agencies as well. This phase funds work on a particular construction contract.

The last phase, Equipment, funds any disbursements for specialized equipment. Equipment funded through capital has to be that which is permanently connected to the physical plant and designed to be an integral part of the facility. Equipment defined for funding by this phase includes items such as the purchase and installation of elevators, boilers, generators, and HVAC systems. The Capital Program will not fund office equipment or personal computers. Items such as these are expected to be funded by the operating budget.

Project Milestones

Each phase of a project is monitored and tracked using "milestone" data. Milestone data allows the Capital Program to determine whether projects are being completed on time and within budget. Milestone data is provided by agencies in the quarterly Financial Review Process (FRP) and also in the annual budget submissions as justification for additional funding.

ENDNOTES

ⁱ United States District court for the District of Columbia; United States of America V. Kalyan Bose, Mohan Himnani and Ralph George; Receipt of Gratuity by a Public Official; Payment of a Gratuity to a Public Official. June 19, 1997.

ⁱⁱ Review of the District of Columbia Public School System's Capital Improvements Program 014:93HW; Office of the District of Columbia Auditor, May 6, 1993.

ⁱⁱⁱ "Testimony before the Subcommittee on Oversight of Government Management, Restructuring and the District of Columbia, Committee on Governmental Affairs, United States Senate." David L. Cotton, CPS, CFE, March 9, 1998.

^{iv} "The D.C. Public School System: Capsule Review" October 1965; Public Schools of the District of Columbia, Carl F. Hansen, Superintendent of Schools, Washingtonian Room, M.L. King Library.

^v District of Columbia Capital Improvements Program FY1994-2000; History of Capital Appropriations.