

Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER)

Report to
the Mississippi Legislature



Benefits and Limitations of the Use of Construction Program Management by Mississippi's Public Entities

One of the methods available to public entities to help yield timely and economical construction of quality facilities is the use of construction program management (CPM) services. Such services may be obtained by hiring an independent CPM contractor to monitor and oversee the construction project and represent the public entity's interests with constructors, by developing internal CPM service capability, or by contracting for specific design and oversight services the entity deems essential.

Public entities should be aware that the benefits of using a CPM contractor may be compromised by a lack of criteria and standards for the appropriate use of CPM and by deficiencies in the contracting process. Also, because the state has not established regulatory requirements for governing who is qualified to provide CPM services, public entities have no assurance that CPM providers meet minimum competency requirements. Should a public entity choose to use a CPM contractor, the entity should recognize that such an agreement is a "buyer beware" proposition which does not reduce risks or assure timely completion of a quality facility except to the extent stipulated in enforceable contractual provisions.

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A standing joint committee, the PEER Committee is composed of five members of the House of Representatives appointed by the Speaker and five members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms with one Senator and one Representative appointed from each of the U. S. Congressional Districts. Committee officers are elected by the membership with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of three Representatives and three Senators voting in the affirmative.

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The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

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The Mississippi Legislature

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July 13, 1999

Honorable Kirk Fordice, Governor
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Members of the Mississippi State Legislature

On July 13, 1999, the PEER Committee authorized release of the report entitled **Benefits and Limitations of the Use of Construction Program Management by Mississippi's Public Entities.**

A handwritten signature in cursive script, reading "Tommy Horne", written over a horizontal line.

Representative Tommy Horne, Chairman

This report does not recommend increased funding or additional staff.

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Benefits and Limitations of the Use of Construction Program Management by Mississippi's Public Entities

Executive Summary

A common perception is that the current system of managing the construction of public buildings is a failure because facilities may not be completed on time and within budget or may not meet quality requirements. Several management and oversight solutions are available to address such problems and to help insure construction of a quality facility that will meet an entity's needs and be completed on time, using minimal resources.

For legislatively appropriated building projects, the Bureau of Building represents the interests of the public entity and exercises independent oversight of the constructor team.

The Department of Finance and Administration's (DFA) Bureau of Building, Grounds, and Real Property Management is responsible for administration, management, and decisionmaking for public building projects constructed with funds appropriated by the Legislature. If a state entity's construction project is funded with self-generated funds or if the funds have been placed under the direct control of the entity constructing the project, the bureau will provide its services at no charge if the entity requests assistance.

Some public entities hire a construction program management contractor to fulfill this oversight function.

An entity may choose to improve its internal capability to perform this oversight function or contract for external expertise. One possible solution is for public entities to hire a **construction program management** (CPM) contractor for monitoring and oversight of the construction project. This manager should be independent of the constructor team and should represent the public entity's interests throughout the construction process.

Public entities have no established standards for using CPM contractors and the state has not established regulatory requirements for governing who is qualified to provide CPM services.

Benefits of using of a CPM contractor may be compromised by weaknesses in public entities' CPM contracts. PEER found that many local entities lack criteria and standards for using CPM contracts and have deficiencies in their contracting process. Also, because the state has not established regulatory requirements for governing who is qualified to provide CPM services, public entities have no assurance that CPM providers meet minimum competency requirements. Such factors reduce assurance of the protection of the public interest.

The benefits of hiring a CPM contractor through a well-written contract may also be achieved through other methods such as developing internal capabilities or procuring services from other private providers.

Hiring a CPM contractor does not offer any benefits that could not be achieved through other methods available to a public entity. By exercising diligence in procuring the necessary services, state and local public entities are capable of achieving purported CPM contract benefits. An entity's decision to enter a CPM contract does not afford any additional guarantee of protection of an entity's interest, or ensure that purported benefits will accrue. Should a public entity choose to use CPM, the entity should recognize that such an agreement is a "buyer beware" proposition which does not reduce risks or assure timely completion of a quality facility except to the extent stipulated in the contractual provisions.

Recommendations for Legislative Action

The Legislature should authorize the Board of Public Contractors to regulate CPM contractors. The board should establish minimum qualifications for education and experience and require applicants to demonstrate competency in CPM specialty areas.

1. The Legislature should amend MISS. CODE ANN. Section 31-3-13 (1972) to vest or grant authority to regulate construction program managers to the Board of Public Contractors and require it to set its certification standards in conjunction with the Department of Finance and Administration's Bureau of Building. This program should ensure that certified individuals have the knowledge and proficiency to perform various CPM tasks in the four phases of the construction process.

The requirements for certification should include a bachelor's degree in architecture, engineering, building science, construction management, or construction technology and a minimum of four years' experience in managing multi-phased, high-cost construction projects. If an individual does not have one of the required degrees, he or she should have five years' documented experience in performing CPM management of construction projects.

The certification examination should test the applicant's knowledge and proficiency in CPM issues. Some examples are health, environmental and safety regulations, interpretation of architect and construction contracts, budgeting, constructibility reviews, cost accounting, financing, life cycle costing, planning, programming, scheduling, value engineering, and project administration of construction projects.

2. The Legislature should expand the Board of Public Contractors to include one member who is a program manager and one member who is a construction manager.
3. The Legislature should continue to allow optional use of CPM service contracts since they are one viable method to manage large, complex, and costly projects. However, it should consider prohibiting a CPM contractor from

participating in the public bidding for actual construction work on the same project. The CPM firm should be independent of the constructor team in order to represent the public interest and reduce the entity's risk.

Recommendations for Administrative Action

4. The Department of Finance and Administration should conduct a cost study to determine the benefits of organizing, staffing, and funding its Bureau of Building, Grounds, and Real Property Management to perform the CPM function for public entities (e.g., as does the Florida Department of Management Services). If this study shows that centralized availability of construction program management services would benefit governmental entities in terms of cost, schedule, or construction quality, DFA should propose legislation in the 2000 regular legislative session to accomplish this goal.
5. Upon request, the Director of the Bureau of Building should provide a copy of the DFA Planning and Construction Manual to each public entity as a comprehensive informational resource for completing construction projects and contracts through the state construction process. Published changes to this manual should also be provided to the public entities.
6. The Director of the Bureau of Building should establish objective standards for determining the need for and evaluating the benefits of hiring a CPM contractor. At a minimum, these standards should include an evaluation of existing staff CPM capability, the project's impact on the existing staff workload, the project's size and complexity, the number of individual projects and work locations, the anticipated project cost, and the cost/benefit of using a CPM contractor.
7. The Director of the Bureau of Building should prepare a model CPM contract with appropriate services alternatives which will be furnished to each public entity as a comprehensive informational resource for designing CPM contracts. This contract should allow the public entities to select desired tasks in all phases of the construction process.

The Bureau of Building should establish standards for determining need for and evaluating the benefits of hiring a CPM contractor. The bureau should also prepare a model CPM contract and establish guidelines for administering a CPM proposal process.

This model contract should include provisions which:

- A. establish performance outcome measures for the contractor in order to measure satisfactory performance. These measures should be tied to the project cost, schedule, and construction quality goals of the public entity.

- B. place the contractor at risk for poor performance based on performance outcome measures. Such a provision could prohibit the award of future contracts for a specified period or a financial penalty which reduces the CPM fees.
 - C. sufficiently answer the questions of what, when, where, how, and how often. The contract should also define the management information system for tracking and reporting which has subsystems for the cost, schedule, financial, and technical parameters.
 - D. define allowable reimbursable expenses for the contractor.
 - E. establish a contract performance period which covers the approved completion time for the entire project.
 - F. establish a compensation method for the contractor which protects the public entity's interest and reduces its risk of increased cost.
8. The Director of the Bureau of Building should establish guidelines for administering a CPM proposal process including a written request for proposals, the minimum evaluation criteria, and a thorough proposal evaluation process. The request for CPM proposals should cover the following minimum requirements:
- A. a project description;
 - B. the contractor's project management requirements and other responsibilities such as surveys, soil borings, permits, licenses, inspections, and tests;
 - C. the organizational relationships between the contracting parties;
 - D. the required project management and reporting system, as well as the cost control system;
 - E. the contractor's quality control responsibilities and other required project support services such as constructibility review, life cycle cost studies, value analysis studies, conceptual cost estimates, and floor plan schematics of completed project;
 - F. CPM work requirements in sufficient detail;
 - G. insurance requirements;

- H. detailed instructions for submitting a CPM cost proposal, including the public entity compensation methodology, allowable reimbursable expenses, and maximum allowable expense;
- I. detailed instructions for a letter of interest in which the firm provides information which shows it can and has accomplished project of the type being bid;
- J. detailed instructions for submitting an organization and management plan for the project, which includes detailed résumés and work histories for the firm's project staff; and
- K. selection criteria for the proposal process.

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Benefits and Limitations of the Use of Construction Program Management by Mississippi's Public Entities

Introduction

Authority

In response to a legislative request, the PEER Committee authorized a review of the use of construction program management (CPM) by Mississippi's public entities. PEER conducted this review pursuant to the authority granted by MISS. CODE ANN. § 5-3-57 et seq. (1972).

Scope and Purpose

PEER sought to determine whether using CPM results in unique, identifiable, and measurable benefits, and whether the use of CPM contractors in the construction of public buildings has increased. Also, PEER sought to determine:

- whether CPM can be clearly defined to include a set of knowledges, skills, and abilities which are unique to CPM and not possessed or practiced by other professions inside or outside the construction industry;
- whether specific, objective criteria exist (including measures of cost savings or cost avoidance) which decisionmakers in the public sector could use to determine the feasibility and benefits of using a CPM contractor; and,
- the extent of current regulatory controls governing the use of CPM.

Method

PEER reviewed information from the construction industry, state statutes, proposed legislation, Attorney General opinions, and regulations and policies of Mississippi and other states governing the use of CPM. PEER also interviewed

personnel in the construction industry and government officials from Mississippi and other states.

PEER conducted field reviews of two current CPM contracts and analyzed available CPM contract documents and records from public entities and CPM firms. To gather data on activities specific to Mississippi local entities, PEER conducted a written survey of Mississippi counties and school districts and conducted a telephone survey of the fifteen certified state construction management firms.

Appendices A and B, pages 31 and 32, provide details for the fourteen CPM contracts reported by counties and school districts. This information includes the name of the public entity, project description, project budget amount, final project cost for completed contracts, project status, and CPM contract cost.

Background

Construction of Public Buildings in Mississippi

The construction process for public buildings in Mississippi is a four-phased, sequenced construction process with multiple participants. The public entity and a constructor team normally enter a contractual relationship for a project, with the participants responsible for various tasks (see Exhibit 1, page 4, and Appendix C, page 33). Appendix E, page 36, defines terms used within this report which are related to the construction of public buildings.

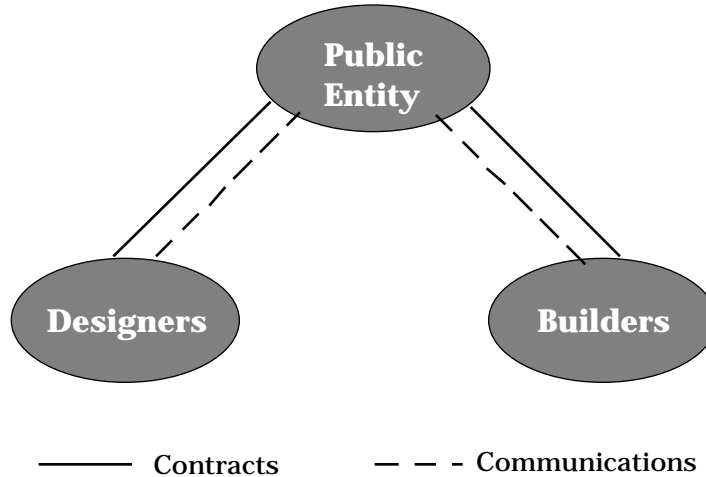
The four phases of the construction process carry a project from conception to completion through a design, bid, and build method.

Following are the phases of the construction process for public buildings and the respective responsibilities of the public entity and the constructor team within that process.

1. **Pre-design phase** - The public entity is responsible for the planning, programming, scheduling, budgeting, and financing responsibilities for a construction project which it has determined to be necessary and feasible. At the public entity's discretion, for an additional fee, the architect may perform additional services, such as planning and programming. Architects' design service fees cover their basic services in the design phase.
2. **Design phase** - The public entity contracts with an architect, engineers, or other consultants to design a construction project with definitive plans and contract documents for bidding and awarding the construction contract to a general contractor. During this phase, the entity is responsible for reviewing and analyzing the architects' and engineers' deliverables to help ensure that the designed project will achieve its goals for cost, schedule, and construction quality.
3. **Construction phase** - The public entity contracts with a general contractor to build the construction project in accordance with the architect's plans and any entity-approved modifications. The general contractor also conducts the contract award process for trade contractors and exercises contract administration.

During this phase, the public entity may hire the architect (for an additional fee) to supervise and administer the work of the general contractor and trade contractors. The entity retains responsibility for project management.

Exhibit 1: Diagram of Relationship Between the Public Entity and the Constructor Team

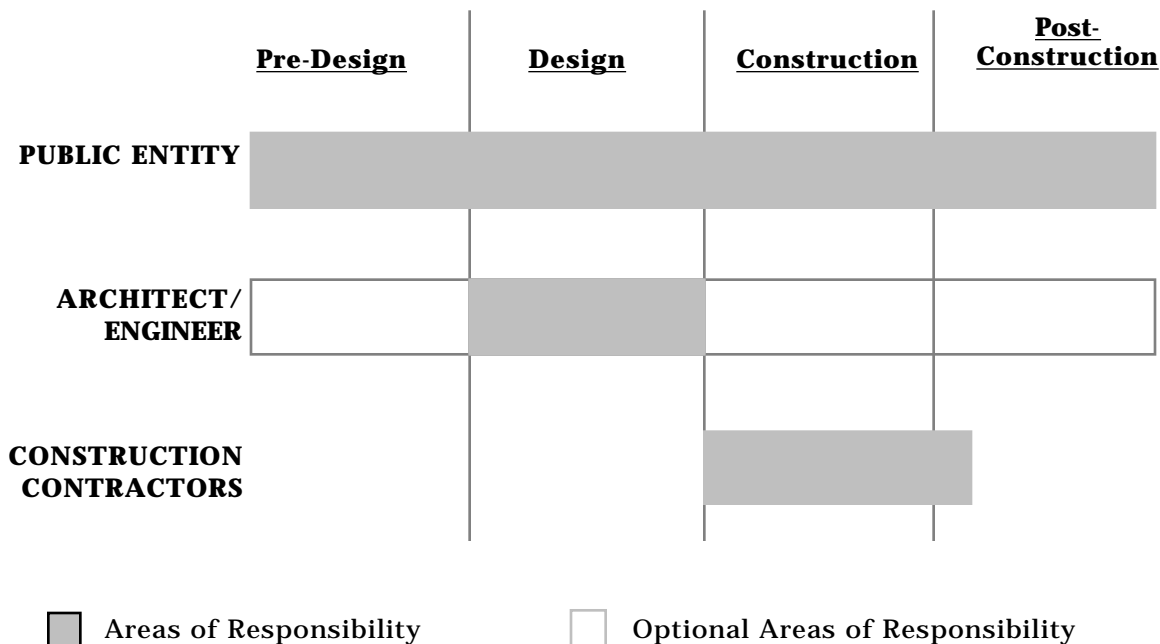


SOURCE: "Handbook of Project Delivery," American Institute of Architects, California Council.

-
4. **Post Construction phase** - Working with the general contractor, the public entity is responsible for final acceptance, start-up, and occupancy of the project. As an option, the architect will perform these responsibilities for the entity, charging an additional fee since it is not a basic design service.

Exhibit 2, page 5, illustrates the roles of the public entity and the constructor team within the phases of the construction process.

Exhibit 2: Distribution of Participant Responsibilities in the Four Phases of Construction Projects



SOURCE: PEER review of design, bid, and build construction delivery systems.

Public Entities' Management of the Construction Process

While the goal of any construction project is a finished building which meets the owner's needs, the public entity and the constructor team have different perspectives and competing interests in the project. The public entity wants a quality constructed project which is delivered on time at the lowest possible cost, while constructor team members want to maximize profits in the course of fulfilling their contractual agreements.

A construction program manager, a third party representing the public entity's interests, may oversee a building project independent of the constructor team.

Ultimately, the public entity is responsible for ensuring that the finished project is within budget and meets needs. To assist them in managing and monitoring construction projects, public entities may enlist assistance of an independent third party. This party should represent the interests of the public entity and exercise oversight independent of the constructor team. This function, known as **construction program management**, is commonly performed either by the Department of Finance and Administration's Bureau of Building, Grounds, and Real Property Management (hereafter referred to as the Bureau of Building) or by a private construction program management contractor.

Role of the Bureau of Building in the Construction of Mississippi's Public Buildings

For legislatively appropriated building projects, the Bureau of Building represents the interests of the public entity and exercises independent oversight of the constructor team.

The Department of Finance and Administration's Bureau of Building is responsible for administration, management, and decision making for public building projects constructed with funds appropriated by the Legislature. If a state entity's construction project is funded with self-generated funds or if the funds have been placed under the direct control of the entity constructing the project, the Bureau of Building will provide construction program management services at no charge if the entity requests assistance.

The Bureau of Building has authority to compel adherence to contract specifications and apply sanctions to constructor firms that do not fulfill their responsibilities.

In the context of construction program management, the bureau serves as the construction program management agent for such state entities, representing the interests of the entity and exercising independent oversight of the constructor team. When the Bureau of Building performs the construction program management function, the bureau exercises oversight of architects, engineers, or construction contractors. Because the bureau does not have the in-house capability to perform some of the design and construction tasks which some private CPM contractors can provide, it may employ engineers, contract analysts, architects and building inspectors to manage and monitor projects. (See Appendix D, page 35, for specific responsibilities.) The bureau has authority to compel adherence to contract specifications and schedules, applying sanctions to firms or individuals within the constructor team which do not fulfill their responsibilities. However, although the bureau employs measures to help ensure contractors' compliance with budgetary and time limits, there is no absolute assurance that a quality project will be completed on time and within budget. ,

As noted in the following chapter, the entity also has the option of choosing a private CPM contractor to oversee the project.

Role of Construction Program Management Contractors in the Construction of Mississippi's Public Buildings

A CPM-managed project ultimately entails the same risks and responsibilities as a non-CPM-managed project.

Public entities which choose to engage a private CPM contractor use the construction program manager to fulfill the entity's project management responsibilities for the building's construction. The only difference in a CPM-managed project and a non-CPM-managed project is that a public entity hires an independent contractor to represent and protect the public entity's building interests during the process.

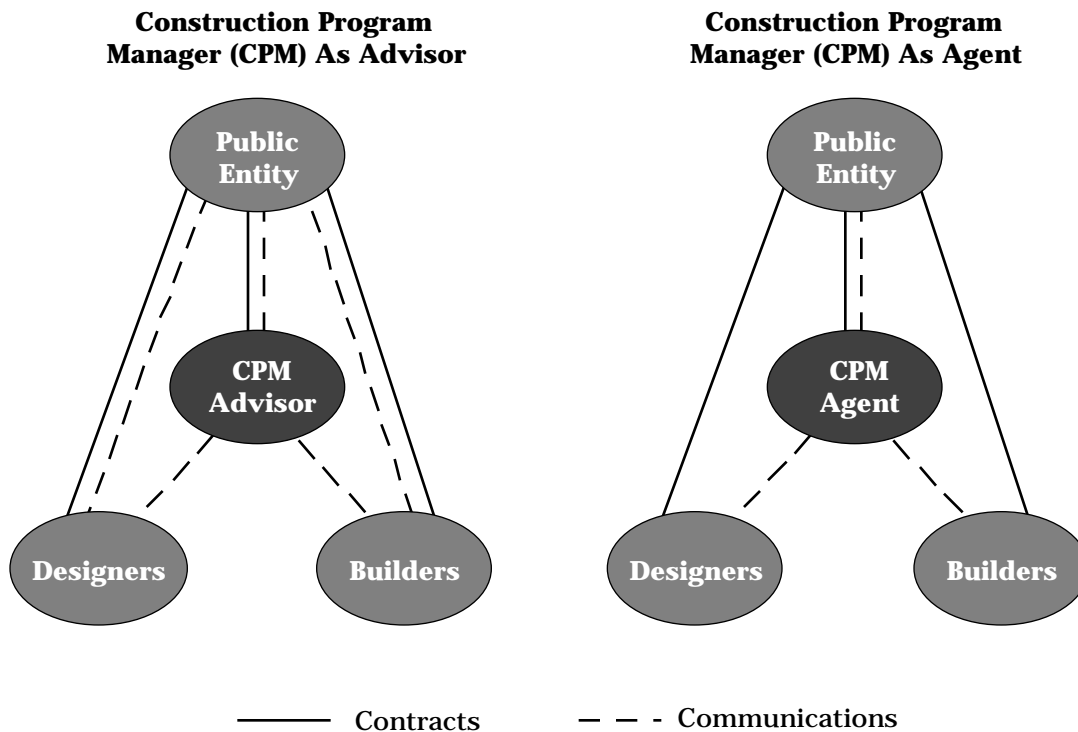
Even when hiring a CPM contractor, the public entity retains decisionmaking authority and is ultimately responsible for ensuring that the finished project is within budget and meets needs.

This CPM contractor may advise or act as the agent of the public entity to assist in or actually perform its project management and coordination tasks in any of the construction process phases. In this capacity, the CPM individual or firm is independent of the constructor team and represents and protects the entity's interest (see Exhibit 3, page 9). The public entity retains decisionmaking authority throughout the construction project and must ensure that the contractor competently delivers services in order to minimize risks of excessive cost, schedule delays, and poor quality construction.

Types of CPM Contracts Commonly Used

A public entity in Mississippi may choose from two types of commonly available CPM contracts: program management or construction management. The type of CPM contract is determined by whether the contractor will assist in or complete the pre-design phase responsibilities.

Exhibit 3: Diagram of Relationships Between the Public Entity, the Construction Program Management Contractor, and the Constructor Team



SOURCE: "Handbook of Project Delivery," American Institute of Architects, California Council.

Program Management Contracts

A program management contract usually provides services in all four phases.

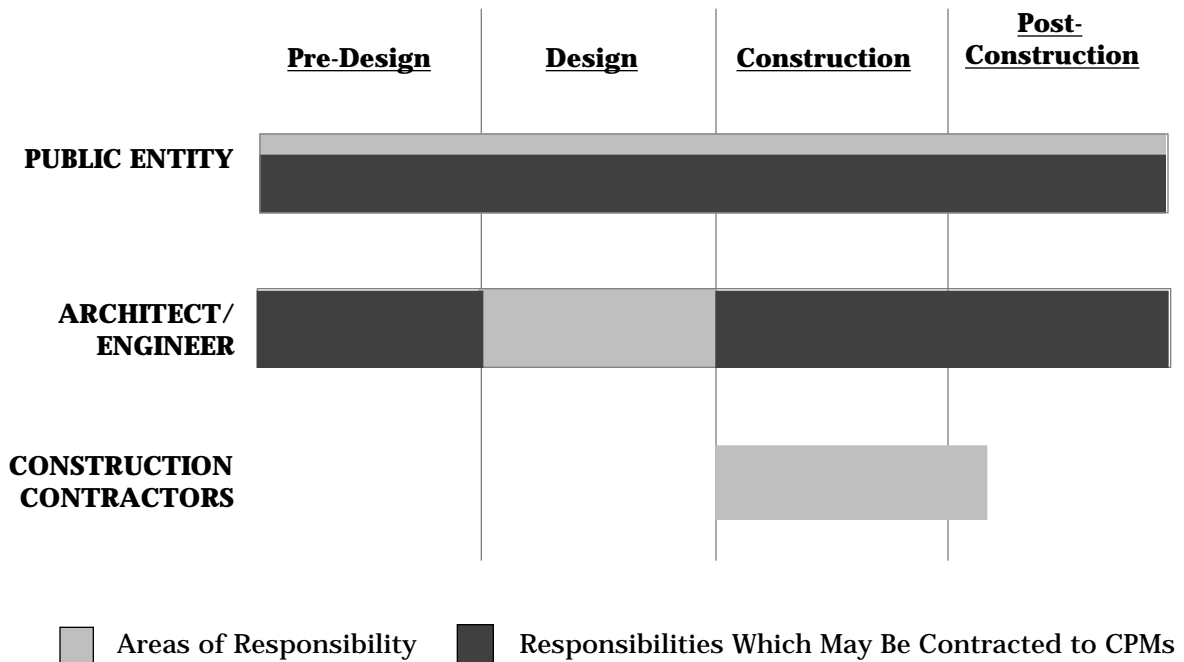
A program management contract provides project management services to a public entity with more than one construction project underway at the same time and which wants to standardize project criteria and maintain consistent control, reporting, and contract administration. This contract usually requires contractor involvement in all four phases of the construction process for:

- a single project which is large and complex with multiple participants and facilities at one location. For example, a public entity might build a new high school complex with three buildings and athletic facilities for baseball, basketball, football, and soccer at one location; or,

- a construction project with multiple projects, participants, facilities, and locations. For example, a public entity might build additions at several schools and conduct renovation or repair projects at numerous other schools.

The CPM contractor is hired to conduct most of the entity’s oversight responsibilities and perform some services traditionally provided by architects or engineers in the pre-design, construction, and post construction phases. Exhibit 4, below, denotes phases in which services may be contracted to a CPM contractor. The contract period is usually a fixed period (two to five years).

Exhibit 4: Distribution of Participant Responsibilities When Using a CPM Contractor in the Four Phases of Construction Projects



SOURCE: Compiled by PEER.

Construction Management Contracts

A construction management contract usually provides project management services only in the design and construction phases of the construction project.

A construction management contract usually requires contractor involvement during the final stages of design, the bid/award phase for a general contractor, and the construction phase. This type of contract is used for a project when the entity will hold multiple contracts with trade contractors who will be managed by the construction manager instead of a general contractor, or when the entity chooses to use a construction manager instead of an architect to supervise the construction phase of a building project.

Methods of Compensating CPM Contractors

The public entity and CPM contractor determine the contract compensation method during the negotiation process.

The public entity usually compensates a program manager in one of two ways: a fixed hourly rate basis up to a maximum contract cost or a negotiated fee based on a percentage of the total construction budget or cost. The entity may also choose to reimburse some or all of the contractor's operational expenses with or without an established maximum reimbursement cost for the documented expenses.

The public entity usually compensates a construction manager in one of two ways: a combined payment method of an hourly rate and a percentage of the total construction cost or a negotiated fee based on a percentage of the total construction budget or cost. As with compensation for a program manager, the entity may choose to reimburse some or all of the contractor's operational expenses with or without an established maximum reimbursement cost for the documented expenses.

A construction management contract can also include a requirement for a guaranteed maximum price. This requires the contractor to guarantee that the public entity will not have to pay more than a contractually agreed-upon price for project construction regardless of any project changes in the construction process. If the final cost is less than the approved construction budget, the public entity has the option to share a portion of the savings with the contractor. If the final cost exceeds this amount, the contractor must pay the excess cost out of contract fees.

Regulation of CPM Contracts Under State Law

State law governs the construction of public buildings in Mississippi (MISS. CODE ANN. §31-7-13 and §31-11-1 et seq.). As noted on page 7, the Department of Finance and Administration's Bureau of Building is responsible for administration, management, and decision making in the construction of buildings funded with state-appropriated funds or local funds. The Bureau of Building's authority does not extend to projects funded with self-generated funds or in instances in which funds are placed under the direct control of the state entity constructing the project.

See Appendix F, page 37, for a brief discussion of the state procurement regulations applicable to these types of contracts.

Allowances for the Use of CPM Contractors

Attorney General interpretations of state law provide a public entity with flexible authority for awarding multiple contracts, negotiating a guaranteed maximum price contract, and contracting project construction work with its CPM contractor.

The Attorney General has issued a series of opinions from 1981 to 1997 for using the CPM process. Three of the six opinions provide a public entity with flexible CPM contracting authority for a construction project. The public entity may award multiple contracts directly to the trade contractors working in a construction project instead of paying a general contractor to perform this function. The entity may also contract with a CPM contractor on the basis of a guaranteed maximum price, as long as the entity conducts a public bidding and award process for the general and trade contractors. Finally, the entity may also contract a portion of the construction project work to the CPM contractor when the public entity complies with the public purchasing laws and all other laws regarding public contracts for the construction work.

Restrictions on the Use of CPM Contractors

Attorney General interpretations of state law establish restrictions on the contract type, the number of CPM fees, and the CPM contractor's authority.

The other three opinions restrict a public entity's or CPM contractor's authority for a construction project. A public entity must procure CPM contracts through a competitive negotiations process using a professional qualifications and proposal basis, since they are not construction work subject to public bidding laws. The entity must pay only one contract fee to an architectural firm which provides architectural services for a construction project if the entity decides to negotiate a CPM contract with this same firm for the same project. The CPM contractor for the entity must not enter into trade contracts on behalf of or in the stead of the public entity.

Purported Benefits of CPM Contracts

CPM contractors purport to do a better job than public entities in managing construction projects because they claim to produce project benefits throughout the four phases of construction which impact timeliness, cost, and quality. Proponents of CPM contracting claim to apply program management and construction administration principles systematically to construction projects. These principles translate into management actions which are focused on accomplishing the public entity's construction goals for project cost, schedule, and construction quality (see Appendix C, page 33). CPM proponents claim that project benefits result from this systematic management of the construction project.

CPM contract proponents claim that their construction delivery process provides benefits which produce the savings to pay for the contract.

During Mississippi's 1997 and 1998 regular legislative sessions, CPM proponents attempted unsuccessfully to persuade the Legislature to mandate the use of CPM contractors in proposed legislation authorizing and funding state construction projects. The proponents claimed that CPM contractors could provide benefits to the state which were superior to the present state construction process and which would essentially pay for CPM contracts. According to industry claims, these benefits included:

- more effectively accomplishing project management and coordination responsibilities;
- reducing the state's risk of excessive cost, schedule delays, and construction quality problems;
- enhancing opportunity for savings, cost avoidance, and meeting the scheduled completion date; and,

- allowing the public entity to focus more time on accomplishing its mission responsibilities by minimizing the amount of time spent on construction management.

CPM contractors may provide some or all of these benefits to public entities. However, because of problems with the lack of criteria for using CPM, deficiencies in entities' processes for contracting with CPM providers, and the lack of assurance that CPM providers meet minimum competency requirements (see pages 21 through 22), there is no absolute assurance that a quality construction project will be completed on time and within budget.

While some CPM contractors may have sufficient in-house capability to provide a wide variety of services, others may have to sub-contract with professionals outside their organization to supply the desired services.

Purported Pre-Design Phase Benefits

During the pre-design phase, the CPM contractor may assist with tasks such as developing the project plan, program, and budget; researching financing and location options; and negotiating a contract with an architect.

A CPM contractor in the pre-design phase could convert a public entity-determined need for new, expanded, or renovated facilities into a master project plan and program for a construction project. These documents define the "what, where, when, and how much" for a project which will achieve the public entity's goals and requirements.

Once these actions are accomplished, the CPM contractor could assist the entity in researching options for project financing and acquiring a suitable location. Further, it could develop a management information control system to monitor the established project cost, schedule, financial, and technical requirements throughout the construction process. Finally, it could assist the entity in the proposal and negotiation process for an architect. This purpose of the negotiation process is to select an architect that demonstrates that he or she could design a constructible facility within the budgeted cost which could be delivered in a timely manner.

Purported Design Phase Benefits

During the design phase, the CPM contractor may assist with constructibility reviews, cost analysis studies, or value engineering studies.

A CPM contractor in the design phase could review and analyze the architect's project design in order to produce a clear set of contract documents and specifications for a general contractor. To accomplish this goal, the contractor could assist by performing:

- **Constructibility Reviews** - These reviews help to ensure clear plans and specifications for a constructible facility

and to reduce design modifications during construction that could lead to higher costs and delays.

- ***Life Cycle Cost Studies*** - These studies balance construction cost with operating/maintenance costs over the anticipated life of the facility in order to provide the facility at optimum cost to the public entity.
- ***Value Engineering Studies*** - These studies evaluate alternative systems, materials, specifications, and construction methods in order to determine the best combination of price, schedule, constructibility, function, and aesthetics for each project segment.
- ***Conceptual Cost Estimates*** - These estimates for each design continuously monitor and modify the anticipated project cost of the designed project.
- ***Problem Resolution of Design Issues*** - The contractor conducts resolution meetings for design issues between the architect, engineers, and other consultants.

Purported Construction Phase Benefits

During the construction phase, the CPM contractor may assist with performing tasks such as cost analysis studies, value engineering studies, construction inspections, and change order control; project cost accounting; and monitoring timely completion of the construction project.

A CPM contractor in the construction phase could perform actions to complete the project in accordance with goals for cost, schedule, and construction quality. To accomplish this goal, the CPM contractor could assist the public entity in the contracting process for the general contractor as well as the construction administration and management responsibilities for the contractor's construction work. The CPM contractor could operate the cost accounting and construction cost estimating systems. Further, the CPM contractor could manage the change order control system for modifications to the approved construction plans, specifications, and materials. Finally, the CPM contractor could monitor the construction project for timely completion and resolve issues among the constructor team participants.

Purported Post-Construction Phase Benefits

During the post-construction phase, the CPM contractor may assist the public entity in performing tasks related to the start-up, acceptance, occupancy, document recording and checking, warranty reviews, and post-construction evaluations.

CPM actions in the post-construction phase complete the construction project. The CPM contractor could help to ensure that the occupants of the finished project have an operational facility and systems that have been built in accordance with the approved design specifications. The CPM contractor could ensure that the occupants have been trained in maintenance and operation of the new facility. Also, the CPM contractor might ensure the checking and recording responsibilities for the various construction documents. Finally, the CPM contractor could coordinate completion of warranty reviews and post construction evaluations with the general contractor and the public entity.

Public Entities' Recent Experience in Contracting for Construction Program Management

Extent of Public Entities' Use of CPM Contracts Over the Past Five Years

PEER conducted a survey to determine how extensively public entities have used CPM contracts during the past five years. PEER received 187 responses from those counties and school districts responding (approximately 80%). Twelve public entities reported entering into fourteen CPM contracts out of 2,201 awarded contracts (less than 1%) since January 1, 1994. Additionally, one state entity entered into a CPM contract during this period.

Use by State Entities

State entities rarely use CPM contracts for state-funded projects.

Although no central information source exists with data on state entities' use of CPM contracts, PEER interviewed state officials with responsibility for construction projects, who reported that state entities under their purview have not used CPM contracts since January 1, 1994. According to the Director of the Bureau of Building, the bureau has not used a CPM contract for any state entity construction project utilizing general funds. According to the Associate Commissioner for Construction and Physical Affairs of the Institutions of Higher Learning, universities have not used CPM contracts for projects financed with self-generated funds. PEER identified one state entity, the State Port Authority, which has used a CPM contract during the period reviewed. The State Port has a CPM contract for its strategic capital construction plan for multiple industrial projects costing approximately \$45,000,000 in self-generated funds.

Use by Local Entities

Since 1994, local entities have used CPM contracts in less than 1% of projects funded with local or state funds.

Twelve local entities (four counties and eight school districts) have entered into fourteen CPM contracts since January 1, 1994. These contracts (which include new construction, additions, modifications, and maintenance projects) represent less than 1% of the total 2,201 awarded during the period. Four counties and seven school districts entered into one contract each; an additional school district has entered into three separate contracts.

These reported CPM construction projects included four county or regional detention facilities and ten school/administration construction projects in which the number of actual projects ranged from 1 to approximately 340. Their cost ranged from \$3,903,970 to \$33,145,000. Only four projects have been completed as of this date. See Appendices A and B, pages 31 and 32, for specific information about each CPM contract.

Problems with Public Entities' Use of CPM Contracts

Hiring a CPM contractor does not protect the public entity's interest by reducing risks and assuring timely completion of a quality facility except to the extent stipulated in the contract's provisions. Should a public entity choose to use CPM, the entity should recognize that such an agreement is a "buyer beware" proposition which does not automatically grant any protection for a public entity's interests.

In hiring a CPM contractor, it is incumbent upon an entity to assure that the services sought are clearly specified and capable of being verified upon delivery. An entity's burden to fulfill these responsibilities is compromised by the lack of guidelines for assessing the need for CPM services, procuring them, and developing contracts. The entity must exercise caution in contracting, because there is little assurance that CPM providers have the competency to deliver the services sought.

Lack of Criteria and Standards for Using CPM Contracts

Public entities have no established standards for using CPM contractors and evaluating their performance.

One cause of CPM contracting problems is that decisionmakers of public entities have no objective standards for determining CPM services needed and evaluating potential benefits. As a result, they must make this decision based on their knowledge and understanding of the construction process and CPM's purported benefits. If they do not have sufficient knowledge of the CPM contracting process, the decisionmakers may not make the best decisions in contracting.

Public entities have no established standard contracting guidelines for CPM contracts such as those for the state construction process.

Another cause of problems with CPM contracts is that the state has no established contract guidelines for the CPM process. As a result, decisionmakers in a public entity must negotiate and write a contract which accomplishes project goals while protecting the public interest and minimizing risk. If decisionmakers have limited knowledge and understanding of the CPM process, they will be at a significant disadvantage in negotiating contract provisions. They lack an objective source to provide guidelines and standards for designing contract provisions.

Deficiencies in Entities' Contracting Processes

Lack of an RFP Which Describes in Detail the Entity's Needs and Expectations

A public entity must conduct the CPM contracting process in a thorough and comprehensive manner in order to achieve its desired contract objectives and CPM benefits. Decisionmakers must understand the strengths and weaknesses of CPM contracts. After becoming informed about the CPM process, the entity should conduct a proposal process which includes a written request for proposals (RFP) and its thorough evaluation.

The RFP document is critical to achieving the entity's project goals for a CPM contract. It provides information about the project, organizational relationships, proposal submission requirements, contractor responsibilities, and evaluation criteria for the proposals. This information enables a potential CPM provider to submit an informed proposal with all required information and the proposed cost.

Proposal negotiations should produce a contractual agreement which contains the necessary provisions and safeguards. The basis for this agreement should be an RFP which clearly specifies services sought and the verification of delivery. If the public entity administers this contract properly, it should help to achieve the purported CPM benefits, protect the public interests and minimize the entity's risks for excessive cost, schedule delays, and construction quality.

The public entity has the ultimate responsibility for assuring that a CPM contractor delivers the needed services to produce the desired benefits.

Lack of a Written Contract Which Sufficiently Protects the Entity's Interest

PEER examined four CPM contracts negotiated within the past three years, finding several weaknesses. Three of the four public entity contracts PEER reviewed did not include a detailed written request for proposals. The public entities discussed the project with one or more CPM firms, which then submitted written proposals. The firm's proposals were the primary basis for specifying the contractual responsibilities and the compensation method.

Some of these CPM contracts did not sufficiently protect the public entity's interest or minimize the project construction risk. Specifically:

- ***Four contracts placed the public entity at risk financially, rather than the contractor.*** They included no penalties for

The CPM contracting process of local entities does not always protect the public interest or minimize the entity's risk.

poor contract performance short of termination, nor did they contain required performance outcomes. For example, the entities did not establish a methodology for reducing the contractor's fee if the contract failed to achieve defined performance measures for the cost or completion goals of the project.

Weaknesses of local entities' CPM contracts included: placing the entity at financial risk, rather than the contractor; providing inadequate details in service delivery provisions; failing to include a maximum project expense reimbursement amount; not requiring that CPM services be provided throughout the entire project; and, including compensation provisions which computed the contractor's fee as a percentage of the project cost.

- **Three contracts contained service delivery provisions which did not give sufficient detail to the contractual parties.** For example, the contract of one public entity identified the specific CPM responsibilities for the specific projects, but it did not define the “when, where, how, and how often” or specify the method of tracking and reporting progress and performance.
- **Three contracts required that the public entity reimburse the contractor for all documented project expenses, with no established maximum amount in the contract.** The public entities agreed to reimburse expenses which should be considered a contractor's “cost of doing business,” such as:
 - copying, mailing, and handling expenses for documents other than drawings and specifications;
 - unlimited and undefined long-distance communication charges associated with the contract;
 - paying insurance premiums for required coverage exceeding the amount of coverage normally carried by the contractor; and,
 - paying the contractor to use computer-aided design and drafting equipment time for the project.
- **Two contracts contained performance periods which did not cover the entire construction project period.** As a result, the entity did not require that the CPM services be provided throughout the entire project. If the entities choose to procure additional services for the remainder of the project, this could have resulted in additional costs due to inflation, increased overhead factors for established hourly salary rates, or new reimbursable cost demands of the incumbent or a new contractor for existing contract provisions.
- **Two contracts contained compensation provisions which computed the contractor's fee as percentage of the project construction cost.** Under this agreement, the entity's interests are not protected because the contractor's fee will increase any time the project experiences a cost increase.

Lack of Assurance that CPM Providers Meet Minimum Competency Requirements

State law does not give authority to any state regulatory entity to establish a certification process for CPM providers.

The state has not established regulatory requirements for governing who is qualified to provide CPM services.

The governing laws for the state boards of architecture, registration for professional engineers and land surveyors, or public contractors do not authorize them to regulate CPM providers through a certification process. This situation allows any firm to represent itself as a qualified CPM provider regardless of its knowledges, skills, and abilities regarding the CPM process.

In December 1996, the Board of Public Contractors assumed authority over construction manager regulation, although no statute specifically grants this authority. The board began requiring firms to obtain a certificate of responsibility as a construction manager, which is a specialty classification of building construction. Since 1996, the board has issued approximately forty certificates of responsibility for construction managers to architectural, building construction, engineering, real estate, and other firms.

The board started requiring these certificates of responsibility for two reasons. One reason was the board believed that the construction manager performs the same work as a building construction contractor. Another reason for requiring the certification was that a firm which did not hold a certificate of responsibility as a building construction contractor could get construction manager contracts to perform the CPM tasks in an oversight capacity over the certified building construction contractors.

The Board of Public Contractors began certifying CPM contractors in 1996. However, the board does not require applicants to demonstrate competency in some CPM specialty areas, nor has it established minimum qualifications for education or experience.

The Board of Public Contractors uses insufficient qualifications for the certification of construction managers. Although most CPM contracts require expertise in fields such as constructibility reviews, life cycle cost studies, value analysis studies, and conceptual cost estimating, the process and fees for construction management certification are the same as for building construction.

To demonstrate their competency for this certificate, an applicant must pass the same test as the building construction applicant. While this test covers some of the knowledge, skills, and abilities required by a construction manager, it does not test their competency in other specialty areas as those noted above. The board has not established any professional

qualifications for education or minimum years of field experience for certification purposes.

By purporting to regulate CPM contractors but not requiring contractors holding certificates to demonstrate competency, the Board of Public Contractors provides a false assurance to the entities deciding whether to use a CPM contractor. Its official endorsement further complicates the existing “buyer beware” environment, since these board-certified firms have not demonstrated competency to perform all CPM responsibilities. As a result, a public entity may hire a firm that is not capable of performing its contractual responsibilities. The performance of such a contractor could prevent the public entity from achieving the desired benefits, compromising its efforts to protect the public interest, minimize risks, and accomplish construction project goals.

Methods of Achieving Construction Management Benefits without Entering CPM Contracts

The benefits of hiring a CPM contractor through a well-constructed contract may also be achieved through other methods available to a public entity. By exercising diligence, public entities may achieve the purported benefits of CPM by developing internal capabilities or procuring such services from other private providers.

Developing Internal Capabilities

Public entities may achieve the benefits of construction program management by improving or enhancing internal capabilities. These include expanding capabilities of an existing state entity, hiring permanent or time-limited staff members, or augmenting existing staff.

Expanding Capabilities of an Existing State Entity

One option for developing internal CPM capability is to allow or require entities to use the services of an existing state entity (such as Mississippi's Bureau of Building) which can perform all CPM functions from the pre-design to post construction phases for a construction project. Another variation of this is to use the state agency in conjunction with a private contractor who can perform specific CPM tasks not offered by the agency.

Georgia uses a state agency to perform mandatory CPM tasks for state governmental entities, except these tasks are performed in the design through the post construction phases.

An example of an entity which performs a wide range of CPM responsibilities is the Department of Management Services in Florida. This department has a full-time building construction division to perform CPM tasks for state projects (which must use the department's services) and local government, community college, and school district projects (which have the option of using these services). The department is currently staffed with fifty-one personnel and some contract construction inspectors. This division annually manages projects totaling approximately \$600,000,000.

Florida's Department of Management Services is funded by fees paid by the state or local entities (approximately \$3,400,000 annually). Entities pay the department approximately 1.5% to 2% of total construction cost in comparison to a private CPM firm's fee of approximately 4% to 6%. The department limits its

reimbursable expenses to travel expenses only, while a contract with a CPM firm may entail reimbursement of total project expenses.

By applying cost saving measures in FY 1998, the Department of Management Services saved about 13% in new facility construction costs compared to private industry averages. Reportedly, these savings were due, in part, to the use of two prototype office buildings and subsystems for state offices, guaranteed maximum price contracts, a non-traditional pre-qualification process for all construction contractors, and state purchases of building supplies, which saves sales tax.

As noted earlier in this report, Mississippi's agency in charge of the construction of public buildings is the Department of Finance and Administration's Bureau of Building. Although the bureau currently performs the role of construction program manager for most state entities, its services do not extend to some state or local entities. Also, the bureau, as presently staffed and funded, does not have the in-house capability to perform some of the design and construction tasks which some private CPM contractors purport to provide.

Hiring Permanent or Time-limited Staff Members

Entities may choose to hire permanent or time-limited staff members to perform CPM duties.

An example is one county school district that has employed a construction program manager for its state-funded construction program through the Mississippi Adequate Education Program. This retired general contractor works with the district's superintendent and purchasing agent to perform CPM duties for this major construction program.

In this case, adoption of the CPM approach has reduced the construction cost per square foot compared to the use of a private sector general contractor. Specifically, this school district has built 65,929 square feet of new construction to date at approximately \$58 per square foot for a total cost of \$3,813,350. This cost per square foot is approximately \$10 per square foot less than another school district which used a general contractor.

Augmenting Existing Staff

Entities can augment existing staff by hiring contractors from various professions to perform CPM tasks.

An example is a school district which hired a CPM contractor to augment its existing facility maintenance and management staff for its state-funded construction program through the Mississippi Adequate Education Project. The CPM contractor performs project management tasks that the school district determines are necessary. This contractual agreement allows the school district to manage this four-year construction program without impacting the daily workload of permanent staff.

Contracting with Other Private Providers for Services

As an alternative to improving or expanding internal CPM capabilities, public entities have the option to contract with private providers other than CPM contractors to procure services they deem beneficial. Services sold by CPM contractors are available both within and outside the construction community, whether from architects, engineers, or other professionals. In fact, CPM firms which do not have in-house staff to provide services often must procure those services from professionals outside their organizations like accountants, planners, or programmers.

In a case in which an existing state entity does not have staff to provide all desired CPM services, it may supplement its internal capability by contracting for specific services from a construction professional. By contracting for services needed only occasionally, a state CPM entity could avoid bearing the recurring support costs of hiring additional staff.

Recommendations

Legislative Recommendations

The Legislature should authorize the Board of Public Contractors to regulate CPM contractors. The board should establish minimum qualifications for education and experience and require applicants to demonstrate competency in CPM specialty areas.

1. The Legislature should amend MISS. CODE ANN. Section 31-3-13 (1972) to vest or grant authority to regulate construction program managers to the Board of Public Contractors and require it to set its certification standards in conjunction with the DFA Bureau of Building. This program should ensure that certified individuals have the knowledge and proficiency to perform various CPM tasks in the four phases of the construction process.

The requirements for certification should include a bachelor's degree in architecture, engineering, building science, construction management, or construction technology and a minimum of four years' experience in managing multi-phased, high-cost construction projects. If an individual does not have one of the required degrees, he or she should have five years' documented experience in performing CPM management of construction projects.

The certification examination should test the applicant's knowledge and proficiency in CPM issues. Some examples are health, environmental and safety regulations, interpretation of architect and construction contracts, budgeting, constructibility reviews, cost accounting, financing, life cycle costing, planning, programming, scheduling, value engineering, and project administration of construction projects.

2. The Legislature should expand the Board of Public Contractors to include one member who is a program manager and one member who is a construction manager.
3. The Legislature should continue to allow optional use of CPM service contracts since they are one viable method to manage large, complex, and costly projects. However, it should consider prohibiting a CPM contractor from participating in the public bidding for actual construction work on the same project. The CPM firm should be independent of the constructor team in order to represent the public interest and reduce the entity's risk.

Administrative Recommendations

The Bureau of Building should establish standards for determining need for and evaluating the benefits of hiring a CPM contractor. The bureau should also prepare a model CPM contract and establish guidelines for administering a CPM proposal process.

4. The Department of Finance and Administration should conduct a cost study to determine the benefits of organizing, staffing, and funding its Bureau of Building, Grounds, and Real Property Management to perform the CPM function for public entities (as does the Florida Department of Management Services). If this study shows that centralized availability of construction program management services would benefit governmental entities in terms of cost, schedule, or construction quality, DFA should propose legislation in the 2000 regular legislative session to accomplish this goal.
5. Upon request, the Director of the Bureau of Building should provide a copy of the DFA Planning and Construction Manual to each public entity as a comprehensive informational resource for completing construction projects and contracts through the state construction process. Published changes to this manual should also be provided to the public entities.
6. The Director of the Bureau of Building should establish objective standards for determining the need for and evaluating the benefits of hiring a CPM contractor. At a minimum, these standards should include an evaluation of existing staff CPM capability, the project's impact on the existing staff workload, the project's size and complexity, the number of individual projects and work locations, the anticipated project cost, and the cost/benefit of using a CPM contractor.
7. The Director of the Bureau of Building should prepare a model CPM contract with appropriate services alternatives which will be furnished to each public entity as a comprehensive informational resource for designing CPM contracts. This contract should allow the public entities to select desired tasks in all phases of the construction process.

This model contract should include provisions which:

- A. establish performance outcome measures for the contractor in order to measure satisfactory performance. These measures should be tied to the project cost, schedule, and construction quality goals of the public entity.
- B. place the contractor at risk for poor performance based on performance outcome measures. Such a provision could prohibit the award of future

contracts for a specified period or a financial penalty which reduces the CPM fees.

- C. sufficiently answer the questions of what, when, where, how, and how often. The contract should also define the management information system for tracking and reporting which has subsystems for the cost, schedule, financial, and technical parameters.
 - D. define allowable reimbursable expenses for the contractor.
 - E. establish a contract performance period which covers the approved completion time for the entire project.
 - F. establish a compensation method for the contractor which protects the public entity's interest and reduces its risk of increased cost.
8. The Director of the Bureau of Building should establish guidelines for administering a CPM proposal process including a written request for proposals, the minimum evaluation criteria, and a thorough proposal evaluation process. The request for CPM proposals should cover the following minimum requirements:
- A. a project description;
 - B. the contractor's project management requirements and other responsibilities such as surveys, soil borings, permits, licenses, inspections, and tests;
 - C. the organizational relationships between the contracting parties;
 - D. the required project management and reporting system, as well as the cost control system;
 - E. the contractor's quality control responsibilities and other required project support services such as constructibility review, life cycle cost studies, value analysis studies, conceptual cost estimates, and floor plan schematics of completed project;
 - F. CPM work requirements in sufficient detail;
 - G. insurance requirements;
 - H. detailed instructions for submitting a CPM cost proposal, including the public entity compensation methodology, allowable reimbursable expenses, and maximum allowable expense;

- I. detailed instructions for a letter of interest in which the firm provides information which shows it can and has accomplished projects of the type being bid;
- J. detailed instructions for submitting an organization and management plan for the project, which includes detailed résumés and work histories for the firm's project staff; and
- K. selection criteria for a proposal process.

Appendix A: CPM Construction Contract Information for Counties since January 1, 1994

County	Project Description	Project Budget	Project Cost	(Over)/Under Budget	CPM Cost
Bolivar	detention center	\$6,482,000	N/A	N/A	\$301,933
			(in progress)		(4.7%)
Lee	detention center and sheriff's facility	\$5,750,000	\$5,780,000	(\$30,000)	\$250,000
			(completed on time)		(4.3%)
Marion	regional detention center	\$5,800,000	\$5,800,000	0	\$303,000
			(completed on time)		(5.2%)
Tunica	detention center and justice facility	\$5,289,035	\$5,289,035	0	\$414,688
			(completed 50 days late)		(7.8%)

SOURCE: PEER survey responses from Mississippi counties and CPM firms.

Appendix B: CPM Construction Contract Information for School Districts since January 1, 1994

School District	Project Description	Project Budget	Project Cost	(Over) Under Budget	CPM Cost
Greenville	multiple construction and renovations at 15 schools	\$9,151,000	N/A (in progress)	N/A	\$414,289 (4.5%)
Grenada	construction of one school	\$6,475,549	N/A (in progress)	N/A	\$557,437 (8.6%)
Holly Springs	construction of a school and additions or renovations at 4 schools and the central office	\$6,116,769	N/A (in progress)	N/A	\$513,888 (8.3%)
Jackson Public	92 addition, renovation, or repair projects at 29 schools	\$28,712,740	\$28,430,909 (completed on time)	\$281,831	\$361,350 (1.3%)
	construction of one school	\$8,500,000	N/A (in progress)	N/A	\$365,204 (4.3%)
	construction at 5 high schools and 335 additions, renovations, or repair projects at 60 other schools	\$33,145,000	N/A (in progress)	N/A	\$400,000 plus unlimited expenses (1.2%)
Madison County	construction work at 1 high school	\$3,903,970	N/A (in progress)	N/A	\$37,088 (.95%)
Marshall County	construction of 1 school and additions or renovations at 7 schools	\$13,125,000	N/A (in progress)	N/A	\$505,000 (3.8%)
Oxford	construction of 1 school and major additions or renovations at 7 schools	\$14,277,274	N/A (in progress)	N/A	\$764,571 (5.4%)
West Point	construction project with multiple facility renovations	\$10,055,000	N/A (in progress)	N/A	\$379,380 (3.8%)

SOURCE: PEER survey responses from Mississippi school districts

Appendix C: Major Tasks In the Construction Process for Public Buildings

Responsible Party	Pre-design Phase	Design Phase	Construction Phase	Post Construction Phase
Public Entity	need and feasibility of project	project management and approval authority	project management and approval authority	project management and approval authority
	master plan	constructibility reviews	general contractor contract	acceptance and start-up
	master program	life cycle costing	life cycle costing	facility occupancy
	project budget	value engineering	value engineering	warranty reviews
	financing	conceptual cost estimates	monitoring construction timeliness	occupant evaluation
	information control system		cost accounting system	maintenance program
	architect contract		construction cost estimating	operational program
	other professional contracts			close out actions
Architect/Engineers	project management responsibilities of public entity (additional fee)	facility design and related duties	construction supervision (additional fee)	project management responsibilities of public entity (additional fee)
		contracting for necessary engineers	office construction administration	
		materials research in accordance with contract specifications	on-site construction monitoring	
		construction cost estimating	change order control system	
		project manual with construction documents	shop drawing reviews and approvals	
		assistance in selecting general contractor	close out actions	
General and Trade Contractors			construction methods and means	warranty deficiencies
			contract and supervision of subcontractors	post construction evaluation
			owner-approved construction schedule	

Definitions for Appendix C

1. Constructibility Reviews in the design phase ensure clear plans and specifications that produce a constructible facility and reduce modifications during construction, which lead to higher costs and delays.
2. Life Cycle Cost Studies in the design and construction phases balance construction cost with the operating/maintenance costs over the anticipated life of the facility to provide the facilities at optimum cost.
3. Value Engineering Studies in the design phase evaluate alternative systems to determine the best combination of price, schedule, constructibility, function, and aesthetics for each project segment. These studies in the construction phase evaluate cost and time impact of alternatives, material substitutions, or specification changes proposed by the contractor.

SOURCE: PEER review of design, bid, and build construction delivery system information.

Appendix D: Duties and Responsibilities of the Contract Architect and Bureau Staff

Contract Architect

All state construction projects are contracted with a private architect who is responsible for preparing plans, specifications, and contract documents. The private architect is the Bureau of Building, Grounds, and Real Property Management's representative from planning through the construction phase, which terminates upon expiration of the warranty period or settlement of all warranty claims. The private architect is responsible for supervising all phases of construction work performed by the contractor, subcontractors, mechanical and electrical engineering consultants. The private architect also provides a weekly report to the Bureau of Building on the progress of work on the construction site.

Staff Architect

The bureau employs staff architects who are responsible for consulting with state agency personnel to determine the functional and spatial requirements of proposed buildings, reviewing the architectural, structural, and mechanical plans and specifications prepared by the private architect to ensure compliance with building codes adopted by the Bureau of Building. The bureau's staff architects also inspect proposed building sites for suitability through evaluation of size, accessibility, availability, and cost of utilities, and determine minimum size or areas required for proposed buildings and other structures, equipment requirements, and alternative construction methods which would result in lower construction and maintenance costs.

Staff Building Inspectors

The bureau employs staff building inspectors who are responsible for inspecting proposed building sites in order to review locations and physical aspects of sites prior to initiation of construction. The building inspectors are responsible for conducting building inspections throughout construction to ensure conformance of components such as grading, framing, electrical wiring, plumbing, masonry, heating, and refrigeration, ventilation, and air conditioning to building code standards and to ensure compliance with approved plans and specifications. The building inspector issues notices of substandard construction to contractors in order to ensure correction of substandard work and assists architects, contractors, and agency officials in final building inspections to determine contract compliance prior to expiration of contractors' warranties in order to ensure that needed repairs are completed prior to expiration of warranties.

Staff Contract Analyst

The bureau's contract analyst reviews and investigates contract proposals and negotiations. The contract analyst also initiates bid specifications, solicitations, and advertisements and presides at formal bid openings.

SOURCE: PEER analysis of public and private sector construction delivery systems.

Appendix E: Glossary of Terms Related to CPM

Report Term	Definition
Public entity	any local or state governmental entity
State entity	receives state funds or expends self-generated funds for construction; can also include a <u>local public entity</u> if the Legislature gives DFA control of its appropriated state funds for construction projects
Local entity	has the authority to enter into construction contracts paid with public funds or self-generated funds
Construction process	uses the design, bid, and build system for delivering a construction project through a constructor team of private contractors after the public entity plans, programs, schedules, budgets, and finances the project
Constructor team	includes architect(s), engineers, other consultants, general contractor(s), and trade contractors who design and build the construction project
General contractor	firm or individual who contracts with a public entity to construct the project. These contractors usually contract directly with the trade contractors and directly supervise their work on the construction project.
Trade contractor	firm or individual specializing in a building trade necessary to construct a project; examples are brick masons, electricians, painters, plumbers, and roofers
Construction program management	an independent third party which oversees designated phases of a construction project. This party represents a public entity's interest and exercises oversight independent of the constructor team.
Construction goal	a well-constructed project which meets the entity's needs and is delivered on time at the lowest possible cost

SOURCE: PEER analysis of public and private sector construction delivery systems.

Appendix F: State Purchasing Regulations Applicable to CPM Contracts

Should a state entity choose to contract with a CPM provider, the entity would be subject to regulations of the Personal Services Contract Review Board. For contracts in the \$50,000 to \$99,999 range, the entity would be required to obtain at least three bids or proposals from prospective contractors. For contracts above \$100,000, the entity would be required to advertise and solicit bids and proposals and to award the project to the lowest or best bidder; the contract would then be subject to approval by the Personal Services Contract Review Board. Contracts with architectural or engineering components would fall outside the scope of these regulations (MISS. CODE ANN. Section 25-9-120), and local public entities' contracts would not be subject to the board's regulations.

SOURCE: PEER review of state purchasing laws and regulations.

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