Public School Construction in Massachusetts

CM at Risk Delivery Method
Presentation Overview

- Construction Delivery Methods Defined
- Comparison of Design–Bid–Build vs. CM at Risk
- The CM Advantage
- Chapter 193 – Massachusetts Construction Reform
Types of Construction Delivery Methods

- Design – Bid – Build (Chapter 149)
- Construction Management at Risk (Chapter 149A)
- Design – Build (Public Works Projects)
- Construction Management Agency (Not Used in MA)
Construction Delivery Methods Defined

Design-Bid-Build (D-B-B)

- “Traditional approach” for construction of schools
- Project designed by a team of Architects and Engineers to 100% Construction Documents
- Once plans are completed, bids are solicited from General Contractors and Trade Contractors
- A complete set of design documents is finished before the builder becomes involved
- Low “responsive” bidder is awarded project
- Contract is based on a “Lump Sum” amount

“This method is the one with which most Owners are familiar. It is a linear process where one task follows completion of another with no overlap possible. Plans and specifications are completed by the architect and then bids are issued. Contractors bid the project exactly as it is designed with the lowest responsible, responsive bidder awarded the work.”

– Getting the best value for our construction dollars, A primer on construction delivery methods for owners, Maricopa Community Colleges
Construction Delivery Methods Defined

Design-Bid-Build (D-B-B)
Construction Delivery Methods Defined

Construction Management at Risk (CMr)

- Hired early in design process
- CM provides design phase and preconstruction services
- CM becomes builder of project (Contractor)
- CM has ability to “drive” the entire process
- Owner participates in Trade and Subcontractor selections
- Option for phased or fast-track schedule
- Contract is based on “Guaranteed Maximum Price” (GMP)
- Open book accounting

“A construction manager-at-risk is intended to assume the risk for construction at the contracted price in the same manner as a general contractor; but also provides consultation to the school district regarding construction during and after the design of the facility”

Construction Delivery Methods Defined
Construction Management at Risk (CMr)
Construction Delivery Methods Defined

Delivery Method Usage Nationally

Comparison of D-B-B vs. CMr

Design-Bid-Build

Advantages
- Familiar delivery method
- Simpler process to manage
- Fully defined project scope for construction
- Lowest price proposed and accepted; pricing, including contractor fee and overhead, secured competitively; “best price”
- Owner can completely control design
- **BEST SUITED FOR:** less complicated projects that are budget sensitive but are not schedule sensitive and not subject to change.

Disadvantages
- Linear process means longer schedule duration than other methods
- “Hard” price not established until bids are received; may require redesign and rebid if bids exceed budget.
- Not a schedule or budget driven process
- No builder input in design, planning or budgets
- The designer may have limited ability to assess scheduling and cost ramifications as the design is developed which can lead to a more costly final product
- Quality of Trade contractors and subcontractors not assured
- Fosters adversarial relationships between all parties and increases probability of disputes
- Prone to changes and claims which may increase final project cost
Comparison of D-B-B vs. CMr

Construction Management at Risk

**Advantages**
- Construction Manager selected based on qualifications, experience and proposed team rather than low cost
- Design phase assistance with budgeting, planning and constructability results in ability to influence outcome by addressing issues early
- Early cost estimates and feedback to help in the design development process resulting in a more accurate cost model earlier
- Fast Track schedule delivery possible
- Team concept with owner and designer
- BEST SUITED FOR: new or renovation projects that are schedule sensitive, difficult to define or subject to potential changes; also for projects requiring a high level of construction oversight due to multi phases, technical complexity or multi-discipline coordination

**Disadvantages**
- Requires an OPM or Owner with an understanding of experience in CM process and GMP mechanics
- Difficult for the Owner to evaluate the GMP and determine if best price achieved
- Potential for higher up front cost due to “filling holes” in scope and/or documents (with result of eliminating future change orders and associated delays)
- Potential adversarial relationship when design intent is challenged when “design-to-budget” or “price cutting” is pushed
- Owner or OPM must be versed in pricing negotiations
## Comparison of D-B-B vs. CMr

### Lump Sum vs. Guaranteed Maximum Price (GMP)

**Lump Sum**
- Based on cost of the work, general conditions and desired profit of GC
- Price fixed at lump sum bid amount with additions for change orders
- Price based on “plans and specs”, or exactly what is indicated on contract documents. GCs look at documents as “black and white”
- Savings on actual costs below the bid “lump sum” amount become contractor profit
- No opportunity or incentive for negotiation

**Guaranteed Maximum Price (GMP)**
- Based on bids for work packages, general conditions, contingency and set fee
- Essentially a “cost-plus” contract with guaranteed maximum
- Final price is based on actual bids received, amount of contingency used, and agreed upon general conditions/fee
- Any savings on actual costs revert to the owner
- All items of GMP are negotiable with the exception of the CM fee and Trade Contractor Bids
- Can include allowances for work that is unclear or undefined to ensure no financial surprises

“One pitfall to look for is that sometimes builders will intentionally bid low in order to win the project and then hope to make up the loss in profits through change orders.”
- Construction Contracts and Delivery Methods, New Hampshire Department of Education
The CM Advantage

Chapter 149

Claims
Delays
Quality Concerns
Change Orders
Adversaries

TWO YEARS AND STILL COUNTING: The Wachusett Regional High School project was supposed to be completed in August 2006.

The high school renovation project in Falmouth is more than two years behind schedule.

Cape Cod Times/Steve Heaslip
The old so-called design-bid-build process was so notorious for problems…. contractors derisively referred to the system as "design-bid-build-sue."

Robert Petrucelli, president of
Associated General Contractors of Massachusetts

"It's the same names that keeping popping up again and again," said Katherine Craven, executive director of the Massachusetts School Building Authority. "Repeated poor performance is getting rewarded with more business, and that's bad."

Katherine Craven, Executive Director, Massachusetts School Building Authority

A number of school building committees… have reported problems with shoddy or overdue work. In some instances, fed-up town officials booted general contractors from job sites, and the disputes have led to costly court battles.

Boston Globe, New Rules for School Contracts,
November 30, 2006
"Cost savings can be realized in a number of ways. By hiring the CM during the design phase, early coordination is possible, which can increase the speed of the project and strengthen coordination between the Architect/Engineer and the CM. Since the client hires the construction manager based on qualifications, it ensures a CM with a strong allegiance to the client, because their business relies on references and repeat work. Finally, transparency is enhanced, because all costs and fees are in the open, which diminishes adversarial relationships between components working on the project."

- Issue Brief - Construction Management at Risk, Current Issue Position and Analysis, American Institute of Architects

"The ability of the CM to input constructability reviews, construction phasing, material availability, and cost estimating throughout the design process reduces the probable occurrences of change orders, project construction delays, and increased project costs due to contractor identification of these elements in the design phase instead of the construction phase."

- Construction Management at Risk: An Innovative Project Delivery Method at Stormwater Treatment Area in the Everglades, Florida, Young H. Kwak, Ph.D. and Randal Bushey, P.E.
"According to the results of this year’s survey, owners are also recognizing that there are alternative construction delivery methods that will achieve their goals. For instance, we found that 66% of respondents use the design-bid-build delivery method most often, but only 23% believe that that method offers the best value...it makes sense that, over time, more owners will migrate to the delivery method that offers the best value.

-FMI/CMAA Sixth Annual Survey of Owners, 2005
The CM Advantage

A question of value

Courtesy of the FMI/CMAA Sixth Annual Survey of Owners, 2005

Exhibit 7
Which delivery method do you believe offers the best value, whether you have used that method or not?

- Design / Bid / Build
- Design / Build (with or without bridging)
- CM-at-Risk (aka CMC, CM/GC, GC/CM)
- Turnkey
- Other
The CM Advantage

Key Drivers

- Team Approach
- Cost Factors
- Schedule Considerations
- Subcontracting
- Quality
The CM Advantage

Team Approach

− CM Process based on relationships and teamwork
− CM motivation is project success because future work is solely tied to references and past experience
− Cost reimbursement structure and fixed fee promotes CM as advocate of owner

“The CM at Risk process is based on team building between the owner, the design architect/engineer, and the contractor-construction manager from the beginning of the project conceptual design through the final construction and operation or occupancy of the facility. The team approach provides for input from all of the team members throughout the design and the construction phases.”

- Construction Management at Risk: An Innovative Project Delivery Method at Stormwater Treatment Area in the Everglades, Florida, Young H. Kwak, Ph.D. and Randal Bushey, P.E.
The CM Advantage

Cost Factors

- 1% Additional Reimbursement from MSBA for utilizing CMr
- Fee set at time of contract. No motivation for CM to “inflate” costs because savings revert to owner
- GC motivated to find “holes” in documents to reduce bid amount and make up with later change orders
- CM involvement in preconstruction to assist design team in maintaining budget and optimizing value/constructability
- Continuous budget feedback and control
- Open book accounting and purchasing
- Ability to obtain GMP earlier in process than traditional bid
- More ability to handle change in design and scope
- Minimizes changes and claims once in construction
The CM Advantage

Cost and the Ability to Influence Design

Cost to Make Changes

Ability to Influence Design

Development of Design over Time
## Value Management Savings

<table>
<thead>
<tr>
<th>Owner/Project</th>
<th>Accepted Value Management Proposals</th>
<th>Initial Estimate Per Design</th>
<th>Value Management Savings (Capital Costs Only)</th>
<th>Preconstruction Fee</th>
<th>Percent Savings</th>
<th>Return on Precon Investment (Capital Cost Only)</th>
<th>Additional Schedule Reduction</th>
<th>Life Cycle Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of West Georgia Wellness Center</td>
<td>Steel Frame, Shallow Foundations, Increasing Size of Metal Panels, etc. ILO Opposite</td>
<td>$29,789,295</td>
<td>$6,781,368</td>
<td>$148,946</td>
<td>23%</td>
<td>4552.89%</td>
<td>4 Weeks</td>
<td>N/A</td>
</tr>
<tr>
<td>Virginia Tech Engineering Research Laboratory</td>
<td>Various: All Building Systems</td>
<td>$27,083,551</td>
<td>$3,933,000</td>
<td>$135,418</td>
<td>15%</td>
<td>2904.35%</td>
<td>Not Specified</td>
<td>N/A</td>
</tr>
<tr>
<td>Dept. General Services State of CA Central Plant Renovation</td>
<td>Build New Facility ILO Renovate Existing</td>
<td>$211,000,000</td>
<td>$30,000,000</td>
<td>$1,055,000</td>
<td>14%</td>
<td>2843.60%</td>
<td>36 Weeks</td>
<td>✓</td>
</tr>
<tr>
<td>Brandon School District Burt/Swanson Elementary School Roof Replacement</td>
<td>Liquid-Applied Neogard System Coating ILO Total Roof Replacement</td>
<td>$590,000</td>
<td>$295,000</td>
<td>$14,750</td>
<td>60%</td>
<td>2000.00%</td>
<td>2 Weeks</td>
<td>N/A</td>
</tr>
<tr>
<td>Miami-Dade County Public Schools Miami Senior High School Additions and Renovations</td>
<td>Various: All Building Systems</td>
<td>$111,663,984</td>
<td>$9,766,226</td>
<td>$667,920</td>
<td>9%</td>
<td>1748.81%</td>
<td>26 Weeks</td>
<td>✓</td>
</tr>
<tr>
<td>Harbor Towers HVAC Rehabilitation</td>
<td>&quot;Slip-In&quot; Replacement Fan Coil Unit ILO Extensive Wall/Window Sill Demolition</td>
<td>$50,500,000</td>
<td>$2,500,000</td>
<td>$252,500</td>
<td>5%</td>
<td>990.10%</td>
<td>24 Weeks</td>
<td>✓</td>
</tr>
<tr>
<td>Trinity Health Services St. Joseph's Hospital Lab Renovation</td>
<td>Build Exterior Areaway and Permanent Access to Improve Materials/Workers Path of Travel</td>
<td>$3,983,058</td>
<td>$394,000</td>
<td>$49,788</td>
<td>10%</td>
<td>791.35%</td>
<td>Not Specified</td>
<td>N/A</td>
</tr>
<tr>
<td>Southeast Oregon Regional Airport New Terminal</td>
<td>Various: All Building Systems</td>
<td>$22,768,137</td>
<td>$5,307,137</td>
<td>$682,744</td>
<td>23%</td>
<td>777.32%</td>
<td>8 Weeks</td>
<td>N/A</td>
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<tr>
<td>Royal Oak Public Schools Royal Oak Northwood Elementary School</td>
<td>Air Cooled Chiller ILO Water Cooled Chiller w/ Cooling Tower and Mechanical Room Addition</td>
<td>$12,368,187</td>
<td>$948,580</td>
<td>$123,582</td>
<td>8%</td>
<td>767.57%</td>
<td>Not Specified</td>
<td>✓</td>
</tr>
<tr>
<td>Kimpton Hotels Hotel Marlowe</td>
<td>Horizontal Low Voltage Cabling ILO Empty EMT Conduit to Each Room</td>
<td>$30,000,000</td>
<td>$1,030,000</td>
<td>$150,000</td>
<td>3%</td>
<td>666.87%</td>
<td>3 Weeks</td>
<td>N/A</td>
</tr>
<tr>
<td>T.F. Green Airport Security &amp; Baggage Handling Upgrades</td>
<td>Various: All Building Systems</td>
<td>$72,534,968</td>
<td>$2,480,000</td>
<td>$362,675</td>
<td>3%</td>
<td>683.81%</td>
<td>Not Specified</td>
<td>N/A</td>
</tr>
<tr>
<td>Harvard Real Estate Services Inn at Harvard</td>
<td>Shotcrete Foundation Wall ILO Wall Cast with Two-Sided Form</td>
<td>$12,100,000</td>
<td>$100,000</td>
<td>$121,000</td>
<td>1%</td>
<td>82.64%</td>
<td>Not Specified</td>
<td>N/A</td>
</tr>
</tbody>
</table>
The CM Advantage

Schedule Considerations

- Builders viewpoint on “how to build” for planning and logistics integration into design
- Opportunity for fast-tracking and prepurchase of equipment
- CM Design-phase input allows for facilitation of biddable fast-track package documents

### Traditional Approach

- **Design**
- **Bidding**
- **Construction**

### Fast Track Approach

- **Design**
- **Bidding**
- **Construction**

<table>
<thead>
<tr>
<th>Traditional Approach</th>
<th>Fast Track Approach</th>
<th>Schedule Savings</th>
</tr>
</thead>
</table>
The CM Advantage

Subcontracting

- CM leads subcontractor bidding and manages bid process.
- CM involvement in prequalification of Trade Contractors
- Allows owner “screening” of subs through review of bid lists and qualifications
- Significant bid coverage for all trades due to CM relationships in marketplace
- With GC process, Filed Sub-Bidders do not know who GC is at time of bidding
- Ability for CM to create specific scopes of work for subcontractors as basis for bidding
- Early involvement and knowledge of project helps CM mitigate gaps in purchased scope
- Ability to perform “scope debriefs” to ensure bidder understanding of documents and expectations
“The basic difference between a construction manager and a general contractor is in their approach to managing subcontractors and in keeping the owner’s costs down. A true construction manager, whose fee is not affected by the result, will attempt to negotiate the best value for the owner in selecting subcontractors. A general contractor will tend to negotiate in a way that maximizes his profit.”

- Construction Contracts and Delivery Methods, New Hampshire Department of Education

“Many contractors who call themselves construction managers will expect to self perform significant portions of the project. That means that they will use their own firm’s employees, rather than subcontractors, to do much of the actual construction work. This arrangement may not result in the best value to the owner. A good rule of thumb is that if the firm owns anything larger than a pickup truck, they are not construction managers”

- Construction Contracts and Delivery Methods, New Hampshire Department of Education
Specific Scopes of Work, excerpts from electrical scope:

7. This Subcontractor shall refer to the mechanical and plumbing drawings for coordination with electrical for a complete and functional system.

8. Provide all miscellaneous steel for hanging of electrical devices, equipment, and light fixtures, etc.

9. This Subcontractor will furnish and layout access panels required for his Work.

10. Provide all code required service switches whether indicated or not.

11. Provide all necessary coring, fireproofing, and firesafing at all penetrations in connection with this Work to maintain appropriate fire rating.

12. Include setting embeds or drilling for floor junction boxes.

13. Include temporary electrical system complete, including removal of temporary lights. Temporary heat detectors tied into the fire alarm system are included.

14. This Subcontractor includes sufficient temporary light and power to meet the requirements of all trades working on the project including maintenance. Temporary power will be brought into the building from an existing location on the site. This includes power for temporary hookup for the interior elevator during the construction phase.

15. This Subcontractor shall bag smoke detectors at installation, then remove bag and clean smoke detectors prior to inspection and testing as directed by the Construction Manager.

16. This subcontractor shall install a temporary heat detector loop complete in buildings 1, 2, 3, and 4 (all floors). Heat Loop system to be tied into Masterbox and Dialer for notification to the Fire Department.

17. Removal and refeed work indicated in detail 1/E4n.1d is included. The “D2” note is incorrectly tagged to this run.
The CM Advantage

Quality

- CM Selection process is based on qualifications, experience, proposed team and success on past projects
- Lump Sum process promotes cost cutting to increase profit
- With General Contracting, heavy owner involvement is required to ensure no “cutting corners” on quality
- GC bids are based on “plans and specs” with no opportunity for scope clarification
- CM early involvement in project leads to greater understanding of complex logistics and design details
- Review of constructability during design phase utilizes builder’s knowledge of means and methods and subcontractor abilities to ensure a design that will result in a “buildable” high quality product
“The absence of a contractor’s input into the project design may limit the effectiveness and constructability of the design. Important design decisions affecting both the types of materials specified and the means of construction may be made without full consideration of a construction perspective.”

- Choosing the Best Delivery Method for your Project, Construction Management Association of America
Massachusetts Construction Reform

Chapter 193 of the Acts of 2004

“An Act Further Regulating Public Construction in the Commonwealth”

- Enacted July 19, 2004
- Most comprehensive construction reform since 1981
- Higher thresholds for general and filed sub-bidders
- DCAM Certification requirements for filed sub-bidders
- Prequalification requirements for bidders and sub-bidders
- OPM requirements
- MBE/WBE requirements
- New Statute: Chapter 149A to permit the use of the Construction Management at Risk alternative delivery method
Massachusetts Construction Reform

Chapter 149A

- Allows for the use of CMr for building contracts of $5 Million or more
- Requirement for advance approval by the Inspector General’s Office to use CMr
- Two phase process for selecting CM: Prequalification & Proposal
- Two part proposal: Technical and Price
- Agency contracts with highest ranked firm with which committee concludes successful “non-fee” negotiations
  http://www.mass.gov/ig/creform/refinfo.htm
Massachusetts Construction Reform

Steps for approval of CMr approach

- Contract with OPM
- Contract with designer
- Perform feasibility study
- Finalize project funding with MSBA
- Obtain community approval for project
- Initiate Application to Proceed process for CMr delivery method
Massachusetts Construction Reform

Planning Steps for Application Process

- Prepare feasibility study including proposed budget
- Establish proposed schedule
- Plan CMr “oversight” organization (how will contract, change orders, gmp be handled)
- Create CMr plan and procedures on how project will be managed
- Establish reporting and record-keeping systems
- Establish project organization chart and roles/responsibilities
- Obtain authorization from “governing body”
- Submit project specific Application to Proceed to Inspector General for consideration
- IG has 60 days from receipt of complete application to approve or deny request
Massachusetts Construction Reform

Criteria for Inspector General approval

“The Office of the Inspector General will issue a Notice to Proceed when the public agency has demonstrated that:

a. The public agency has authorization from its governing body to enter into a contract with a construction management at risk firm. The authorization shall include the results of any public vote if applicable.

b. The public agency has the capacity, a plan and procedures in place and approved of by the governing body, where appropriate, to effectively procure and manage construction management at-risk services for the specific project and has retained the services of a qualified owner's project manager.

c. The public agency has in place procedures to ensure fairness in competition, evaluation and reporting of results at every stage in the procurement process.

d. The building project has an estimated construction value of $5,000,000 or more.

e. The public agency has determined that the use of construction management at risk services is appropriate for the building project and states in writing the reasons for the determination.”
Massachusetts Construction Reform

Steps in CM procurement process

1. Establish prequalification committee (OPM, Designer, at least two public representatives)

2. Prepare and advertise RFQ

3. Evaluate responses and prequalify at least three CMs

4. Establish a selection committee (can be same as prequalification committee)

5. Prepare RFP and distribute to prequalified firms

6. Receive, evaluate and rank proposals (interviews are permitted if conducted with all proposers)

7. Negotiate non-fee terms with selected proposer and award contract
Summary

CM at Risk creates the opportunity to:

- Hire a sophisticated, experienced team member based on qualifications
- Save time on the schedule through fast tracking and prepurchase
- Design a “buildable” building with a great deal of thought about value, quality, durability and user benefits
- Manage the budget process and see all costs via open book accounting
- Have a greater opportunity to select and prequalify subcontractors for the project resulting in significant quality improvement
- Reduce changes and claims through preconstruction involvement, design-to-budget, and effective purchasing and scope delineation
- Engage in a positive and collaborative design and construction process
- Gain an advocate looking out for your interests
Contact Information

Skanska USA Building
253 Summer Street
Boston, MA 02210
P: 617.574.1400
F: 617.574.1399

Daniel P. Lanneville
Sr. Project Manager
E: daniel.lanneville@skanska.com
Procedures relative to receiving a Notice to Proceed to Use Construction Management at Risk Services

June 2005
Table of Contents

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Attachment: CERTIFICATION OF AUTHORITY TO USE THE
CONSTRUCTION MANAGEMENT AT RISK DELIVERY
METHOD
Office of the Inspector General
Construction Management at Risk Application to Proceed

Prior to using the construction management at risk (CM at risk) delivery method to procure a contract for the construction, reconstruction, installation, demolition, maintenance, or repair of any building estimated to cost $5 million or more, an awarding authority must obtain a Notice to Proceed to use the CM at risk delivery method from the Office of the Inspector General.

The Office has developed a CM at risk application to be completed on a project specific basis. The application process will be important to awarding authorities in assessing the qualifications and commitments that are necessary to the process to ensure construction of a high-quality, cost-effective public building project.

The Office of the Inspector General will issue a Notice to Proceed when the public agency has demonstrated that:

a. The public agency has authorization from its governing body to enter into a contract with a construction management at risk firm. The authorization shall include the results of any public vote if applicable.

b. The public agency has the capacity, a plan and procedures in place and approved of by the governing body, where appropriate, to effectively procure and manage construction management at-risk services for the specific project and has retained the services of a qualified owner's project manager.

c. The public agency has in place procedures to ensure fairness in competition, evaluation and reporting of results at every stage in the procurement process.

d. The building project has an estimated construction value of $5,000,000 or more.

e. The public agency has determined that the use of construction management at risk services is appropriate for the building project and states in writing the reasons for the determination.

The Office will review an awarding authority’s complete application and within 60 days from the date received will determine whether the awarding authority meets the requirements necessary to obtain a Notice to Proceed.

Pursuant to M.G.L. c. 149A, if the Office of the Inspector General declines to issue a Notice to Proceed to an awarding authority, the Office shall provide in writing to the awarding authority the reason(s) for the decision. An awarding authority not receiving a Notice to Proceed may resubmit its application upon correcting or responding to the reason(s) provided to the awarding authority by the Office of the Inspector General.
The Office of the Inspector General shall make a timely review of the resubmitted application and, if the awarding authority meets the requirements, the Office will issue a Notice to Proceed.

The Inspector General shall decline to issue a Notice to Proceed to an awarding authority that has failed to provide complete and accurate answers to all questions in the application and all other information and documentation required by the Office of the Inspector General. Providing false, misleading, or incomplete information will be considered grounds for denial.

The Office is accepting applications for review as of January 2005. Applications must be submitted to: Office of the Inspector General, Room 1311, One Ashburton Place, Boston, MA 02108.

If you have any questions regarding the application process, contact Mary Kolesar, Senior Analyst, Legal and Public Policy Division, at 617-722-8809 or by e-mail at kolesarma@maoig.net or Nick Read, Deputy General Counsel at 617-722-8852 or by e-mail at readni@maoig.net.
## Schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Day 1</strong></td>
<td>Date and time stamp application</td>
</tr>
<tr>
<td>Awarding Authority Submits Application to Proceed (by mail) to:</td>
<td>Date and time stamp application</td>
</tr>
<tr>
<td>Office of the Inspector General</td>
<td>Date and time stamp application</td>
</tr>
<tr>
<td>One Ashburton Place, Room 1311</td>
<td>Date and time stamp application</td>
</tr>
<tr>
<td>Boston, MA 02108</td>
<td>Date and time stamp application</td>
</tr>
<tr>
<td><strong>Day 1 – 15</strong></td>
<td>Complete checklist</td>
</tr>
<tr>
<td>1. OIG reviews application in a timely manner.</td>
<td>Complete checklist</td>
</tr>
<tr>
<td>2. OIG sends written notice (e-mail) acknowledging receipt of the application</td>
<td>Complete checklist</td>
</tr>
<tr>
<td><strong>Day 1-60</strong></td>
<td></td>
</tr>
<tr>
<td>1. OIG determines whether additional information is necessary and if so, requests awarding authority to send information</td>
<td>• Verify info</td>
</tr>
<tr>
<td>2. OIG reviews application to determine whether awarding authority meets requirements and will be issued a Notice to Proceed</td>
<td>• Request more information, if necessary</td>
</tr>
<tr>
<td>3. OIG sends Notice to Proceed or Denial of Notice to Proceed</td>
<td>• Analyze credentials based on evaluation criteria;</td>
</tr>
<tr>
<td><strong>As applicable</strong></td>
<td></td>
</tr>
<tr>
<td>Upon completion of project, awarding authority submits report to OIG within 70 days of completion (945 CMR 2.09)</td>
<td>Review summary report</td>
</tr>
<tr>
<td><strong>Year 5 – January 2010</strong></td>
<td></td>
</tr>
<tr>
<td>OIG issues report on CM at risk to legislature with legislative recommendations, if any</td>
<td>Write report</td>
</tr>
</tbody>
</table>
**Application**

Please submit one original with signatory pages and three copies of the following information. Use additional sheets where necessary. To assist in the evaluation process, please submit and identify information and documents with the item numbers on this application form.

**Part A: General Information**

1. Awarding Authority name_________________________________________
2. Address______________________________________________________
3. Phone number_______ Fax number_______ __ E-mail_____________
4. Narrative description and brief history of the project:
   _______________________________________________________________
   a. estimated square feet__________
   b. program type__________________
   c. building type___________________
5. Project schedule elements, including, but not limited to:
   a. Feasibility study completion date (if any)_______________________
   b. Owner's Project Manager contract execution date (if not an employee)___________________________________________
   c. Designer contract execution date_________________________
   d. Projected procurement milestone dates, including but not limited to the following items: Request for prequalification issuance, request for proposals issuance, CM at risk firm contract execution date, other . . .
   e. Projected completion date (use and/or occupancy) ______________
6. Submit an estimated total project budget, including but not limited to line items for the following items:
   a. Owner's Project Manager contract amount (if not an employee)
   b. Designer contract amount
   c. Estimated construction cost
   d. Other costs
   e. Identify the source of the estimated project budget and estimated construction costs.
7. Submit the attached certification form regarding the authorization from the awarding authority’s governing body that the awarding authority may enter
into a contract with a construction management at risk firm, including the date of authorization. Submit the results of any public vote if applicable.

8. Submit the name(s) and title(s) of the individuals authorized to sign the CM at risk contract on behalf of the awarding authority.

9. Submit written evidence of the approval of the governing body of the plan and procedures, if applicable.

10. Submit the written determination by the awarding authority that the use of construction management at risk services is appropriate for the building project and the reasons for the determination.

Part B. Awarding Authority Capacity Information

11. Provide a brief narrative and organization chart of the project organization showing each individual or entity’s role and responsibilities. Identify the individuals and entities within the awarding authority that will participate directly on the project, the contracted individuals and entities that will participate directly on the project, and the contracted individuals and entities that will have indirect responsibility for aspects of the procurement, contracting, implementation, auditing, or other phases of the project.

12. Provide the name, affiliation, and contact information for all key members of the project team. List all relevant qualifications and experience, including any public project experience and any CM at risk experience (public or private) on project(s) of similar size and complexity or on any other projects, including:

   a. the individual/s within the awarding authority that will make project decisions for the awarding authority and that will supervise the Owner’s Project Manager,

   b. the Owner’s Project Manager (OPM),

   c. the Designer,

   1 M.G.L. c. 149A, §3(a) states that “Before procuring the services of a designer . . . and prior to submitting an application to use the construction management at risk delivery method . . . , the awarding authority shall procure or otherwise employ the services of an owner's project manager pursuant to section 44A 1/2 of chapter 149. The owner's project manager may assist the awarding authority in the procurement of the designer. “

   2 M.G.L. c. 149A, §3(b) states that “Before submitting an application to use the construction management at risk delivery method . . . , the awarding authority shall procure the services of a designer for the building project. In procuring the services of a designer, the awarding authority shall do so in a manner consistent with sections 38A ½ to 39O, inclusive, of chapter 7. The designer procured by the awarding authority shall be independent of the owner's project manager and the construction management at risk firm. “
d. any other members of the project team or special consultants to be used to support the project (e.g., counsel, accountant/financial advisor)

13. Submit a copy of the scope of services portion of the OPM contract or, if the OPM is an employee, the individual’s title, job description, and scope of work related to the CM at risk project, and a copy of the scope of services portion of the designer’s contract.

14. Submit the awarding authority’s detailed and comprehensive plan and procedures outlining the expertise/ability of the awarding authority and the project team to effectively procure and manage construction management at risk services. Provide information regarding each of the following components of a CM at risk project:

14a. The awarding authority’s plan and procedures for acquiring appropriate expertise to assist where the team may not have the necessary experience to meet anticipated challenges.

14b. The awarding authority’s plan and procedures for conducting the two-phase selection process for hiring a construction manager at risk firm and the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement.

14c. The awarding authority’s plan and procedures for developing the cost-plus not to exceed guaranteed maximum price form of contract. Include information on negotiating the contract, including establishing the general condition items, CM at risk fee, cost of the work, and other contract components. Include information on what level of design development the awarding authority plans on establishing the GMP, contingency, and other components of the final contract amendment.

14d. The awarding authority’s plan and procedures for conducting the two-phase selection process for obtaining trade contractors and the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement.

14e. The awarding authority’s plan and procedures for obtaining subcontractors [M.G.L. c. 149A, §8(j)] and the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement.

14f. The awarding authority’s plan and procedures relative to administering and coordinating the project and maintaining project communications.

14g. The awarding authority’s plan and procedures relative to monitoring and auditing all project costs.

3 The plan and procedures must be approved by the governing body, where appropriate. [M.G.L. c. 149A, §4(a)(2)]
Do not submit requests for qualifications (RFQs), requests for proposals (RFPs), draft contracts, or other such documents related to the CM at risk delivery method procurement.
Evaluation Process

Office of the Inspector General’s Evaluation Process

The Office will review the information submitted by the awarding authority and assess whether the plan and procedures provide an adequate framework for procuring and managing a CM at risk delivery method project. The following criteria will be used in making a determination whether to issue a Notice to Proceed.

- Is the estimated construction cost $5 million or more?
- Did the awarding authority receive approval from the appropriate governing body?¹⁴
- Did the awarding authority’s governing body approve the plan and procedures?
- Are the awarding authority’s goals and objectives for using the construction manager at risk method reasonable and designed to maximize competition?
- Has the awarding authority established an experienced and effective project organization structure, including an owner representative as a point of contact, an owner’s project manager, and a designer?
- Is the decision–making authority clear?
- Do any project team members have relevant CM at risk experience for the size and scope of the project?
- Does the plan and do the procedures demonstrate an appropriate assessment of the owner’s tasks and responsibilities associated with a CM at risk contract, including all aspects of coordination and administration of the CM at risk delivery method?
- Has the awarding authority established a plan for acquiring appropriate expertise to assist where the team may not have the necessary experience to meet anticipated challenges?
- Does the plan and do the procedures provide an adequate framework for conducting the two-phase selection process for a construction manager at risk firm and clearly delineate the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement, and otherwise comply with all statutory requirements?
- Does the plan and do the procedures provide an adequate framework for negotiating the cost-plus not to exceed guaranteed maximum price form of contract?
- Does the plan and do the procedures provide an adequate framework for conducting the two-phase selection process for trade contractors and clearly delineate the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement, and otherwise comply with all statutory requirements?

¹⁴ The “appropriate governing body” varies, depending on an awarding authority’s charter and other factors.
Office of the Inspector General
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Does the plan and do the procedures provide an adequate framework for obtaining subcontractor contracts and clearly delineate the methods that will be used to ensure fairness in competition, evaluation, and reporting of results at every stage in the procurement?

Does the plan and do the procedures provide an adequate framework for administering and coordinating the project and maintaining project communications?

Does the plan and do the procedures provide an adequate framework for auditing and monitoring all project costs?

Is the schedule realistic?

Although the Office will rely primarily on the information presented in the application to make its determination, the office reserves the right to obtain additional information and to verify information.

Certification

The undersigned hereby certifies under the pains and penalties of perjury that all answers and all information contained in this application is, to the best of my knowledge, true and correct.

__________________________________________  ______________________________
Signature  Date

__________________________________________  ______________________________
Title  Awarding Authority
If the office’s review results in a determination that an awarding authority appears to lack sufficient capacity to effectively procure and manage a CM at risk construction project, the office will provide in writing to the awarding authority the reason(s) for the determination. An awarding authority may resubmit a detailed application, correcting or responding to the reason(s) identified by the office. The office shall review the resubmitted application.

If the office’s review results in a determination that an awarding authority has demonstrated sufficient capacity to effectively procure and manage a CM at risk construction project, the Office shall issue a Notice to Proceed. Along with the Notice to Proceed, the office will provide a summary report form to be completed by the awarding authority within 70 days from completion of the building project or termination of the contractor on the CM at risk building project.

The Inspector General shall decline to issue a Notice to Proceed to an awarding authority that has failed to provide complete and accurate answers to all questions in the application and all other information and documentation required by the Office of the Inspector General. Providing false, misleading, or incomplete information will be considered grounds for denial.
CERTIFICATION OF AUTHORITY TO USE THE CONSTRUCTION MANAGEMENT AT RISK DELIVERY METHOD

I, _________________________, [legal counsel for the governing body as identified below] do hereby certify to the Office of the Inspector General of the Commonwealth of Massachusetts, in accordance with M.G.L. c. 149A, §4(a)(1), regarding using construction management at risk services for the following project_______________________________________ (“Project”), as follows:

(1) That ___________________________ is a public agency as defined in M.G.L. c. 149, §44A, is duly organized and existing under the laws of the Commonwealth of Massachusetts, and has received the necessary authority and power from ______________________ [its governing body] to enter into a contract with a construction management at risk firm and to perform all its obligations in connection with the Project.

(2) That a public vote of the governing body, attached hereto (if applicable) was duly adopted and is currently in effect.

Signature

[SEAL]

Title

Date
Conclusion

This report has presented survey data and interview information regarding the experience of public owners that have used the M.G.L. c. 149A CM at risk process to deliver their building projects since January 1, 2005, when M.G.L. c. 149A took effect. Because most of the CM at risk projects were not yet complete at the time that the data and information were collected, the final costs, schedule, and quality of these projects are as yet unknown. Moreover, baseline data enabling a comparison of M.G.L. c. 149A CM at risk projects with traditional M.G.L. c. 149 design-bid-build projects are not available. Nevertheless, the preliminary evidence of owners’ attitudes toward and experience with CM at risk under M.G.L. c. 149A presented in this report is clear and consistent.

Overall, this study shows that public owners are satisfied with CM at risk. Most owner representatives interviewed for this study reported that the quality of their project designs and project budget estimates had been improved by the preconstruction services, such as value engineering, constructability reviews, and phasing reviews, provided by their CM at risk firms; that their project schedules had been shortened by the early construction work and ordering of long lead time items enabled by the CM at risk process; and that their projects had benefited from collaborative and productive working relationships among the designer, the CM at risk firm, the OPM, and the owner as a result of the CM at risk process. The ability to select their CM at risk firms through a process that emphasizes experience and expertise is important to owners, and many expressed positive views of the expertise and performance of the CM at risk firms they had selected. DCAM and Massport, the largest and most experienced owners included in this study, reported that high-quality CM at risk firms that had not previously competed for their M.G.L. c. 149 contracts had competed for their CM at risk contracts, indicating that M.G.L. c. 149A has expanded the pool of qualified contractors competing for public building contracts.

As this report has documented, owners have implemented the provisions of M.G.L. c. 149A using a variety of approaches to some issues, such as the incorporation of CM at risk-related tasks into the OPM and design contracts, the allocation of cost items to and payment of fees and general conditions, and the procedures for approving expenditures from the CM contingency in the GMP. However, a consistent finding of this study is that public owners choose to negotiate the GMP at or very near the end of the design stage, notwithstanding the fact that M.G.L. c. 149A permits the GMP amendment to be executed as early as the 60 percent completion stage. All ten owners surveyed that had executed GMP amendments had done so when their designs were 100 percent complete or, in two cases, 90 percent complete. The majority of these owners, including DCAM and Massport, had completed the bidding process for some or all trade contracts when the GMP amendment was executed.

The explanation for this finding lies in the CM at risk process for developing and amending the GMP. As this report explains, the GMP includes a CM contingency to cover the risk that actual costs will exceed the costs listed in the GMP for items such as labor or materials. (The owner has a separate contingency, not included in the GMP, to cover the costs of changes in scope
and of unforeseen latent or subsurface conditions encountered during the construction phase.) When the GMP is negotiated on the basis of an incomplete design, the risk that the actual costs will exceed those listed in the GMP is high, requiring a high CM contingency amount to cover this risk. As the size of the CM contingency in the GMP increases, the funds available for the cost of the work, general conditions, and fees are correspondingly reduced. Because the GMP amount represents the owner’s construction budget, the project scope is dependent upon the size of the CM contingency. Public owners thus seek to maximize the impact of their project budgets by investing in project scope rather than in the CM contingency. By completing the design and bidding the trade contracts and nontrade subcontracts before negotiating the GMP amendment, owners are able to reduce the size of the CM contingency to which the CM at risk firm will agree. A DCAM representative noted in an interview that the CM contingencies negotiated by DCAM are very low because the GMPs are comprised of hard numbers: trade contract and nontrade subcontract bid amounts, general conditions, and fees.

Thus, this study indicates that under the CM at risk model implemented by public owners to date, owners generally assume the risks for the cost of the project during the design stage and for early construction work performed prior to the execution of the GMP amendment; as discussed in this report, the CM at risk contract is a cost reimbursement contract until the GMP amendment is executed. If the owners negotiated the GMPs for their projects earlier in the design stage, they would shift the risks for the cost of the project to their CM at risk firms earlier; in return, however, the owners would confront higher CM contingencies and reduced funds in their GMPs for the project work. In making this tradeoff, owners have opted to assume more financial risk during the course of the project in return for GMPs with relatively low contingencies. After the GMP is executed, the owner bears the risk for the costs of allowance items; the owner is also responsible for the cost of change orders, which increase the original GMP.

Several public owner representatives interviewed for this study, who were otherwise pleased with the CM at risk process, cited as disadvantages of CM at risk the lack of a firm construction price until late in the project and the lack of financial risk borne by the CM at risk firms. On the other hand, this risk allocation model appears to be a contributing factor to the harmonious working relationships that most owners have enjoyed with their CM at risk firms. As discussed in this report, owner representatives interviewed for this study reported that the interactions among project participants have been collaborative and productive, with few disputes over project costs, in contrast to the adversarial interactions some owners have experienced on M.G.L. c. 149 projects.

This study also shows that the “open book process” of monitoring project costs during the course of the CM at risk project has proved manageable for public owners. Some owner representatives reported that their M.G.L. c. 149A projects required no more contract

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38 As discussed in this report, the GMPs for the projects reviewed for this study included allowances, which are dollar amounts, established by the owner, intended to cover the cost of unpredictable or unknown cost items. The owner, rather than the general contractor, bears the risk of the cost of items designated as allowances in the event that the actual cost of an item exceeds the allowance amount.
administration resources than would have been required if the projects had been bid under M.G.L. c. 149 or stated that they expected the additional resources required to procure and administer their CM at risk contracts to be offset by resource reductions associated with fewer change orders; others, including DCAM, reported significantly higher investments of contract administration resources in their M.G.L. c. 149A contracts.

Notwithstanding these reports of divergent contract administration practices, the importance of assigning an experienced and qualified OPM to protect the owner’s interests on a CM at risk project is a central theme emerging from the interviews conducted for this study. Unlike the CM at risk firm, the OPM serves as the owner’s agent throughout the project. Several owner representatives pointed to the risks of allowing the CM at risk firm to spend the owner’s funds without ongoing scrutiny and oversight by the OPM. Owner representatives also emphasized the need for the owner to remain involved in the project and to review project payments. Overall, public owners were unanimous in the view that the CM at risk process under M.G.L. c. 149A is a valuable option for public owners and that this option is not appropriate for every owner or every building project.

This study provides a snapshot of the experience of the relatively small number of public owners that have used the CM at risk process prescribed by M.G.L. c. 149A during the early years of the law’s implementation. Their participation in this study has provided other public owners with an interest in using M.G.L. c. 149A with valuable data, procedural information, lessons learned, and practical advice. As more experience is gained with M.G.L. c. 149A, public owners would benefit from continued sharing of experience and best practices. CM at risk under M.G.L. c. 149A, like all other construction project delivery methods, offers potential benefits to public owners while also posing potential risks. To the extent that public owners are able to capture these benefits while also minimizing those risks that can be controlled, the public interest will be well served.