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WATERTOWN
Massachusetts

Watertown Public Schools
School Building Committee

Construction Delivery Method Review

August 7, 2019



Objectives

- Understanding the **Selection Process** between **Chapter 149 General Contractor (GC)** process and **Chapter 149A Construction Manager (CM) at Risk**
- Understanding the **Management Process** of the **Construction Budget** for each
- Understanding the **Pro's and Con's** of each approach
- **Assessing the Risk** – Discuss which approach is most advantageous for each of the school projects



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Selection Process- Massachusetts General Laws Chapter 149

General Contractors Bid – Design / Bid / Build

- Design the project to 100% complete set of construction and bidding documents
 - Schematic Design / Design Development / Construction Documents
- **Prequalify general contractors** – Projects greater than \$10 million must follow Prequalification Procedures. Establish a prequalification subcommittee (Owner's Project Manager, Designer, 2 representatives from the Owner)
- **Invite** prequalified contractors to Bid
- Each Contractor submits an **all- inclusive price** for total construction cost
- Award to the lowest-priced, prequalified general contractor
- Begin Construction



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Selection Process **Massachusetts General Laws Chapter 149A**

Before undertaking a building project using Construction Management at Risk (CM@Risk) services, a public agency shall notify and submit a detailed application to proceed to the Office of the Inspector General (IG)

- Application process for approval is detailed and extensive and can take up to 30 days to complete.
- Applications submitted for approval shall be considered in a timely manner - not less than 60 days from the date the application is submitted to the IG.



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Selection Process Massachusetts General Laws Chapter 149A

During the **Design Process** a **2-Phase selection** process occurs in the selection of a **"Construction Manager at Risk"** firm. First phase is RFQ, second phase is RFP

- Establish a **Selection Committee** (Owner's Project Manager, Designer, 2 representatives from the Owner) for soliciting, reviewing and evaluating Requests for Qualifications (RFQ).
- **Solicit Qualifications** (RFQ) from Construction Manager at Risk firms. The RFQ is focused more on the general qualifications and capabilities of the firm. Review and shortlist at least 3 firms to be invited into the RFP process.
- Establish a selection Committee for soliciting, reviewing and evaluating Requests for Proposals. **Issue the RFP to the 3 shortlisted firms**. The RFP is focused more on the technical approach the firm will take toward the project, their staffing, and the fees for their services. **IT DOES NOT INCLUDE** their proposal cost for construction of the project.
- **Review** proposals, **interview** firms, **rank** the firms. **Begin negotiations** with the highest ranked firm.
- At the time the **Construction Manager at Risk** is brought on board, there is no commitment with regards to the construction cost of the project. From this point forward the Construction Manager at Risk will determine the construction costs of the proposed project.
- Complete design
- Begin Construction





Managing the Construction Budget

Massachusetts General Laws Chapter 149

At the following phases of design, **two separate and independent cost estimators** (one contracted by the OPM and one contracted by the Designer) prepare detailed and comprehensive cost estimates for the total construction cost of the project

- Schematic Design
- 100% Complete Design Development Documents
- 60% Construction Documents
- 90% Construction Documents

At each of these phases of design, the two estimates are reconciled to confirm scope, quantity, and unit pricing. If the project is over budget, a value management strategy is developed by the cost estimators, designer, and the OPM to provide options for adjusting the project design to meet the established budget.

These options are reviewed with the Building Committee for approval and implementation into the design.



Managing the Construction Budget

Massachusetts General Laws Chapter 149

Construction related costs within the total project budget include the following:

Lump Sum Bid

- Includes the General Contractor's Lump Sum Bid Amount

Construction Contingency

- Construction contingency budget – typically 5% on new construction

The construction contingency is utilized to cover unanticipated or unforeseen construction related costs. It can also be utilized to add needed additional scope to the project as the Owner's discretion. The Lump Sum Bid amount cannot be increased without a contractual modification (Change Order) to the original Construction Contract.



Managing the Construction Budget

Massachusetts General Laws Chapter 149A

At the following phases of design, the **CM at Risk develops** a construction budget for the project. An **independent cost estimator** (generally contracted by the Designer) also prepares detailed and comprehensive cost estimate at each of these stages.

- Schematic Design
- 100% Complete Design Development Documents
- 60% Construction Documents
- 90% Construction Documents

The independent estimate is utilized as a benchmark for evaluating the CM's proposed cost; however, the **CM's cost budget** is ultimately adopted as representative of the cost of the project. In the event that the CM's proposed cost is over budget, the entire team works collaboratively to develop value management strategies for reducing the construction cost of the project.

These options are reviewed with the Building Committee for approval and implementation into the design.





Managing the Construction Budget

Massachusetts General Laws Chapter 149A

Construction related costs within the total project budget include the following:

Guaranteed Maximum Price (GMP - Cost-Plus Contract according to AG)

- Subtotal of all subcontractor costs
- Contractors General Conditions and General Requirements (5.5 ~ 8%)
- Escalation (3~6%)
- Winter Conditions Allowance (\$100K - \$500K)
- GMP Contingency (2-3%)
- Permits and Insurance (1-2%)
- Performance and Payment Bonds (0.5-1%)
- Construction Manager Fee (generally 2-3%)
- Preconstruction Services (currently budgeted at \$550K for all three schools)

Construction Contingency

- Construction contingency budget – typically 5% on new construction

The construction contingency is utilized to cover unanticipated or unforeseen construction related costs. It can also be utilized to add needed additional scope to the project as the Owner's discretion. The GMP amount cannot be increased without a contractual modification (Change Order) to the original Construction Contract.



Advantages Often Attributed to

Massachusetts General Laws Chapter 149

- Increased bidding competition results in lower construction cost.
- Design and documentation is 100% complete prior to the construction award.
- The construction cost is known and fixed at the time of construction award
- Gives Owner / Owner's Project Manager greater control of the design and construction



Advantages Often Attributed to

Massachusetts General Laws Chapter 149A

- Ability to interview and select contractor independent of costs.
- Construction Manager (CM) involved in design process and ability to make recommendations on Schedule, Logistics, Phasing, Constructability, Costs, and Process.
- Construction Manager (CM) begins a relationship with the Owner and the Team prior to construction commencement.
- Ability to begin construction before design is 100% complete and before Guaranteed Maximum Price (GMP) is finalized. This may shorten the overall construction schedule but does have associated risks.



Things They Have in Common

Massachusetts General Laws Chapter 149 and 149A

- Some contractors participate in **both approaches** – might have same contractors regardless of approach
- In **both** processes you can prequalify the subcontractors and general contractors who may potentially be involved in the project.
 - Chapter 149A offers the additional opportunity to interview
- In **both** process, the subcontractors for the following work and the process for selection are identical:
 - *Roofing & Flashing; Waterproofing, damproofing and caulking; Lathing & Plaster; Marble; Terrazzo; HVAC; Painting; Masonry; Sprinkler fitter (FP); Glass & Glazing; Plumbing; Electrical; Elevators; Metal Windows; Misc. & Ornamental Iron; Acoustical Tile; Resilient Floors*
- The actual construction process is very similar in both approaches



Differences At A Glance

Massachusetts General Laws

Chapter 149

- Contractor selects you through their low-bid
- Traditional delivery system
- Lowest price on bid day
- Tight Documents are essential
- Variation from bid day plan often results in exposure to cost and time claims
- General Contractor at risk for all costs and all the profit
- Low initial cost that will rise due to change orders

Massachusetts General Laws

Chapter 149A

- Contractor selection is a qualifications based process – you select the CM.
- CM's input is received before bidding
- Allows flexibility to fast track project.
- Contract is open book and costs are audited
- Variation is managed through contingencies to reduce cost and time claims
- Profit and fee is stipulated and limited
- Higher initial cost, but change order costs managed better within initial cost.



Chapter 149 or 149A?

"It's all about Risk Management"



Assessing Project Risk

Massachusetts General Laws Chapter 149 verses Chapter 149A

Design / Bid / Build – Chapter 149

- All risk factors need to be addressed prior to filed sub-bid process without input of GC

Simpler projects - Lower risk projects more appropriate for Chapter 149

Where there is less chance for changes during construction, Chapter 149 will be more economical.

Construction Manager at Risk – Chapter 149A

- CM engaged in pre-construction process to address early release packages and risk factors prior to issuing trade and non-trade bid packages

Complex projects - Higher risk projects more appropriate for Chapter 149A

Where there is a greater chance for changes during construction, (**multiple phases, occupied buildings**) Chapter 149A can help control costs and mitigate these risks



Assessing Project Risk

Massachusetts General Laws Chapter 149 verses Chapter 149A

Construction Manager at Risk (Chapter 149A) in the public sector does not provide many of the freedoms and advantages of Construction Manager at Risk in the private sector offers due to the Massachusetts General Laws and regulations that govern Chapter 149A

- *One of the main factors that is different in the "Private Sector" project utilization of Construction Manager at Risk verses a "Public Sector" project utilizing the Construction Manager at Risk approach is that approximately 50% of the scope of work will follow the same procurement process in both Chapter 149 and 149A*



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Back up Slides



Selection Process **Massachusetts General Laws Chapter 149A**

Before undertaking a building project using Construction Management at Risk services, a public agency shall notify and submit a detailed application to proceed to the Office of the Inspector General (IG) demonstrating the following:

- Has authorization to enter into a contract with a CM at Risk firm. The authorization shall include the results of any public vote if applicable.
- Has the capacity, a plan and procedures in place and approved of by the governing body, to effectively procure and manage a CM at Risk services for the specific project and has retained the services of a qualified owner's project manager.
- Has in place procedures to ensure fairness in competition, evaluation and reporting of results at every stage in the procurement process.
- Has an estimated construction value of \$5,000,000 or more.
- Has determined that the use of CM at Risk services is appropriate for the building project and states in writing the reasons for the determination.
- Once all requirements are met the IG shall issue a notice to proceed for CM at Risk delivery method. If the IG declines to issue a notice to proceed, they shall provide in writing to the public agency the reason or reasons for the decision.
- A public agency not receiving a notice to proceed from the IG may re-submit.
- Applications submitted for approval shall be considered in a timely manner - not less than 60 days from the date the application is submitted to the IG.