MSBA Roundtable

June 19, 2013
## Marked Up Building Only Construction Cost

<table>
<thead>
<tr>
<th></th>
<th>2009 (9)*</th>
<th>2010 (12)*</th>
<th>2011 (5)*</th>
<th>2012 (12)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schematic Design</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Average</td>
<td>$250</td>
<td>$243</td>
<td>$240</td>
<td>$270</td>
</tr>
<tr>
<td>Range</td>
<td>$229 - $271</td>
<td>$218 - $268</td>
<td>$231 - $249</td>
<td>$245 - $295</td>
</tr>
<tr>
<td><strong>Bid Results</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>$209</td>
<td>$231</td>
<td>$236</td>
<td>TBD</td>
</tr>
<tr>
<td>Range</td>
<td>$181 - $236</td>
<td>$205 - $257</td>
<td>$228 - $244</td>
<td>TBD</td>
</tr>
</tbody>
</table>

* Costs exclude Site, Demolition and Abatement

* Averages and Ranges are based on projects with SD and Bid Data only
Construction Cost Trends

PS+B $ Per SF
Standard Deviation

Bid $ Per SF
Standard Deviation

Eligible $ Per SF
Standard Deviation

FY 2009  FY 2010  FY 2011  FY 2012  FY 2013

$400
$375
$350
$325
$300
$275
$250
$225
$200
$175
$150
$125

Jan-09  Jul-09  Jan-10  Jul-10  Jan-11  Jul-11  Jan-12  Jul-12  Jan-13

Massachusetts School Building Authority
Construction Cost Trends

![Graph showing construction cost trends from FY 2010 to FY 2014. The graph displays bid $ per square foot with a general upward trend over the years.]
Recommendations

- Continue current policy of funding up to $275/sf plus eligible demolition and abatement
- Conduct similar analysis with most recent available data and report findings in the Spring of 2014
- Annually conduct construction funding level analysis based on bid/GMP data from the two previous fiscal years
Change Order Analysis

June 19, 2013
CONSTRUCTION CONTINGENCY BUDGET

All Districts, All Core Program Model, New & Add/Reno Projects

<table>
<thead>
<tr>
<th>MSBA POLICY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New &amp; Models</td>
<td>5%</td>
</tr>
<tr>
<td>Add/Reno</td>
<td>5-8%</td>
</tr>
<tr>
<td>Repairs</td>
<td>up to 10%</td>
</tr>
</tbody>
</table>
## MSBA Change Order Reviews

<table>
<thead>
<tr>
<th>OPM INPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides Copies of Change Orders to MSBA</td>
</tr>
<tr>
<td>Completes MSBA Standard Change Order Review Sheet</td>
</tr>
<tr>
<td>Reviews Data with MSBA Project Manager</td>
</tr>
<tr>
<td>PCD #</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

**Approximate Cost by Trade** is based on the general description of the work and/or primary subtrade(s) or subcontractor(s) involved in the change and does not necessarily reflect all trades included in or impacted by the change(s).

** MSBA characterization of the reason for any change order is based on information provided by the district and/or its consultant(s) and is intended to reflect the proximate rationale for issuance of the change order and consequent eligibility for grant funding and is not intended to be determinative of the root causes of the change or serve as an assessment of ultimate responsibility for the change.

*S:Capital Planning & CD Master Templates\Change Order Log Template - DOWLOAD CLICK TO OPEN* MSBA Change Order Reviews
# MSBA Change Order Reviews

<table>
<thead>
<tr>
<th>Approximate Cost by Trade*</th>
<th>Reason for Change**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>Design Issue</td>
</tr>
<tr>
<td></td>
<td>New Scope Directed by Owner</td>
</tr>
<tr>
<td>Site</td>
<td>Differing Conditions</td>
</tr>
<tr>
<td>Utilities</td>
<td>New Scope Directed by 3rd Party</td>
</tr>
<tr>
<td>Plumbing</td>
<td>Misc.</td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>HVAC</td>
<td></td>
</tr>
<tr>
<td>Misc</td>
<td></td>
</tr>
</tbody>
</table>
# MSBA Change Order Reviews

<table>
<thead>
<tr>
<th>MSBA DETERMINATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSBA Eligibility Determinations and Completed Review Sheets Mailed to Districts</td>
</tr>
<tr>
<td>Copy to OPM</td>
</tr>
<tr>
<td>Copy to Designer</td>
</tr>
</tbody>
</table>
## MSBA Change Order Reviews

### ELIGIBILITY CRITERIA

<table>
<thead>
<tr>
<th>Typically Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Issues</td>
</tr>
<tr>
<td>Differing Conditions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Typically Ineligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Scope</td>
</tr>
<tr>
<td>Owner Directed</td>
</tr>
<tr>
<td>Third-Party</td>
</tr>
<tr>
<td>Site Work &gt; 8% Cap</td>
</tr>
<tr>
<td>Significant Design Issues</td>
</tr>
<tr>
<td>Schedule Related</td>
</tr>
</tbody>
</table>
# MSBA Change Order Reviews

## MSBA PROCESS

<table>
<thead>
<tr>
<th>Reviews Performed Quarterly</th>
</tr>
</thead>
<tbody>
<tr>
<td>COs Reviewed Sequentially</td>
</tr>
<tr>
<td>Eligibility Ends Once Entire Contingency Budget is Committed – Regardless of Prior Eligibility</td>
</tr>
</tbody>
</table>
MSBA Change Order Reviews

**REIMBURSEMENTS**

- Make Reimbursements Upon Issuance of Determinations and District Submission of BRR
- All Change Order Reimbursement Documentation Subject to MSBA Audit
Massachusetts School Building Authority

Steven Grossman
Chairman, State Treasurer

John K. McCarthy
Executive Director

Data

June 19, 2013
Data Review– Basis of Analysis

- 52 Projects over 75% Complete Reviewed
  - 22 New, 17 Add/Reno, 8 Repairs, 5 Models
  - 31 DBB and 21 CM-R

- 828 Change Orders comprised of 6,297 PCOs

- $1.66 B in Awarded Value
  - Total COs = $52.4 M or 3.2%
  - Ineligible COs = $33.5 M or 2.1%
  - Eligible COs = $18.9 M or 1.1%
New Projects and Model Projects Change Order Summary

Total Projects: 27 (Over 75% complete)
Of the 27, 8 Projects are between 75% and 95%, 19 Projects are over 95%

<table>
<thead>
<tr>
<th>Total CO %</th>
<th>% Eligible CO's</th>
<th>Design Related CO's</th>
<th>Differing Conditions (Unforeseen)</th>
<th>Owner Directed</th>
<th>3rd Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.66%</td>
<td>-0.15%</td>
<td>0.95%</td>
<td>0.53%</td>
<td>1.21%</td>
<td>0.22%</td>
</tr>
</tbody>
</table>

Design Related Change Orders:

- Model: 0.62%
- New: 1.02%
New Projects and Model Projects: Total Change Orders (Average)

Total Change Order % (Average): 3.17%
New Projects and Model Projects: Total and Eligible Change Orders (Average)
New Projects and Model Projects: Eligible Change Orders (Average)

Eligible Change Order % (Average): 0.92%
Addition and Renovation Projects Change Order Summary

Total Projects: 17 (Over 75% complete)
Of the 17, 5 Projects are between 75% and 95%, 12 Projects are over 95%

<table>
<thead>
<tr>
<th></th>
<th>Total CO %</th>
<th>% Eligible CO's</th>
<th>Design Related CO's</th>
<th>Differing Conditions (Unforeseen)</th>
<th>Owner Directed</th>
<th>3rd Party</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>0.32%</td>
<td>7.94%</td>
<td>3.96%</td>
<td>-0.02%</td>
<td>4.63%</td>
</tr>
</tbody>
</table>
Addition and Renovation Projects:
Total Change Orders (Average)

Total Change Order % (Average) - 3.96%
Addition and Renovation Projects: Total and Eligible Change Orders (Average)
### Addition and Renovation Projects: Eligible Change Orders (Average)

<table>
<thead>
<tr>
<th>Change Order % (Average)</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1.00%</td>
<td></td>
</tr>
<tr>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>1.00%</td>
<td></td>
</tr>
<tr>
<td>2.00%</td>
<td></td>
</tr>
<tr>
<td>3.00%</td>
<td></td>
</tr>
<tr>
<td>4.00%</td>
<td></td>
</tr>
<tr>
<td>5.00%</td>
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</tr>
</tbody>
</table>

Eligible Change Order % (Average) - 1.77%
**Repair Projects**

**Change Order Summary**

- This Category only includes Major Repair Projects. Accelerated Repair Projects and Green Repair Projects are not included in the data.
- All Green Repair Projects and Accelerated Repair Projects are capped at 5% Construction Contingency and 2% Owner’s Contingency.

### Repair Projects Change Order Summary

**Total Projects: 8 (Over 75% complete)**
Of the 8, 1 Projects are between 75% and 95%, 7 Projects are over 95%

<table>
<thead>
<tr>
<th></th>
<th>Total CO %</th>
<th>% Eligible CO's</th>
<th>Design Related CO's</th>
<th>Differing Conditions (Unforeseen)</th>
<th>Owner Directed</th>
<th>3rd Party</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Repair</strong></td>
<td>Total 8</td>
<td>Low 1.40%</td>
<td>High 13.22%</td>
<td>Avg 6.74%</td>
<td></td>
<td>Avg 0.34%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low .52%</td>
<td>High 8.23%</td>
<td>Avg 3.76%</td>
<td></td>
<td>Avg 2.13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Avg 2.13%</td>
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<td></td>
<td></td>
<td>Avg 2.13%</td>
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<td></td>
<td>Avg 2.18%</td>
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</table>

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Repair Projects: Total Change Orders (Average)

Change Order % (Average) - 6.74%
Repair Projects:
Total and Eligible Change Orders (Average)
Repair Projects: Eligible Change Orders (Average)

Eligible Change Order % (Average) - 3.76%
Next Steps

- Continue informational sessions
  - Designer Selection Panel – July 9, 2013
- Prepare recommendation for revisions to:
  - Eligibility Levels
  - Submittal Process
  - Review Process