



**Town of Hanover, Massachusetts**  
Hanover High School



**PMA Construction Services**  
Owner's Project Manager

## **HANOVER HIGH SCHOOL PROJECT** *March 2010 – Monthly Status Report*

<b>Project:</b>	Hanover High School	<b>Building Size:</b>	157,000	<b>Ph1 Substantial Completion:</b>	June 2011
<b>Current Phase:</b>	Construction	<b>Enrollment Projection:</b>	800 Students	<b>Ph2 Substantial Completion:</b>	May 2012
<b>Construction Type:</b>	NEW	<b>Facility Type:</b>	High School	<b>Project Total Duration:</b>	32-months
<b>Construction Start Date:</b>	28Sep09	<b>Reimbursement Rate:</b>	48.21%	<b>Day 184 of 611 to Ph1 Substantial:</b>	25.1%

### Open Scope / Potential Issues

- High Ground Water Level Due to Historic Rain Affecting Some Site Construction Activities (i.e. BioClere Install)
- Evaluating Backup for Cost Extras Associated with Stop Work Order
- Bldg Envelope Material Submittals / Approvals (i.e. Light Gauge Metal Framing)
- Building Façade Mockup Construction
- Evaluate Additional Ductbank Scope Due to NGRID Design Changes
- Planning Loam Stockpile Relocation During April Vacation
- Implementing Schedule Saving Ideas Such as:
  - Early Site Packages/Utility work
  - Double Shifts / Weekend Work
- Reviewing Schedule Saving Ideas Such as:
  - Early Partial Abatement of Existing Building
  - Stored Materials

### Budget Status

**Total Project Budget:** \$50,076,069\* as of 3/31/10  
**Actual Incurred to Date:** \$9,127,546 as of 3/31/10 (18.2%)  
**Contingency Remaining:** \$2,579,044 (98%)  
*\*Subject to Final Revised PFA Agreement*

#### Construction Cost Summary:

Award Value (Callahan):	\$38,652,255.00
Previously Executed CO's (Net)	\$0.00
Previous Contract Value:	\$38,652,255.00
CO's Executed this Month:	\$0.00
<b>Current Contract Value:</b>	<b>\$38,652,255.00</b>

#### Construction Payment Summary:

Previous Gross Amount:	\$5,406,040.00
This Month's Gross Amount:	\$1,291,964.21
Gross Amount to-Date:	\$6,698,004.21
Retainage To-Date @ 5%:	\$334,900.21
Retainage Released	\$0.00
Current Retainage	\$334,900.21
<b>Total Net Payable To-Date:</b>	<b>\$6,363,104.00</b>

<b>Remaining Balance to Finish (gross):</b>	<b>\$31,954,250.79</b>
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### Project Status

#### **March 2010 Progress**

- Slab on Deck Concrete Placement Started 3/31/10 and was 40% Completed
- Structural Steel ~85% Erected, Detailing & Metal Deck Placement Continued
- Foundations Completed (Incl. Waterproofing, Insulation, Backfill & Compaction)
- UG Plumbing Approximately 90% Complete & Backfilled
- UG Electric Conduit Approximately 85% Installed
- Site Drainage System Installation Progressing

#### **April 2010 Forecasted Items**

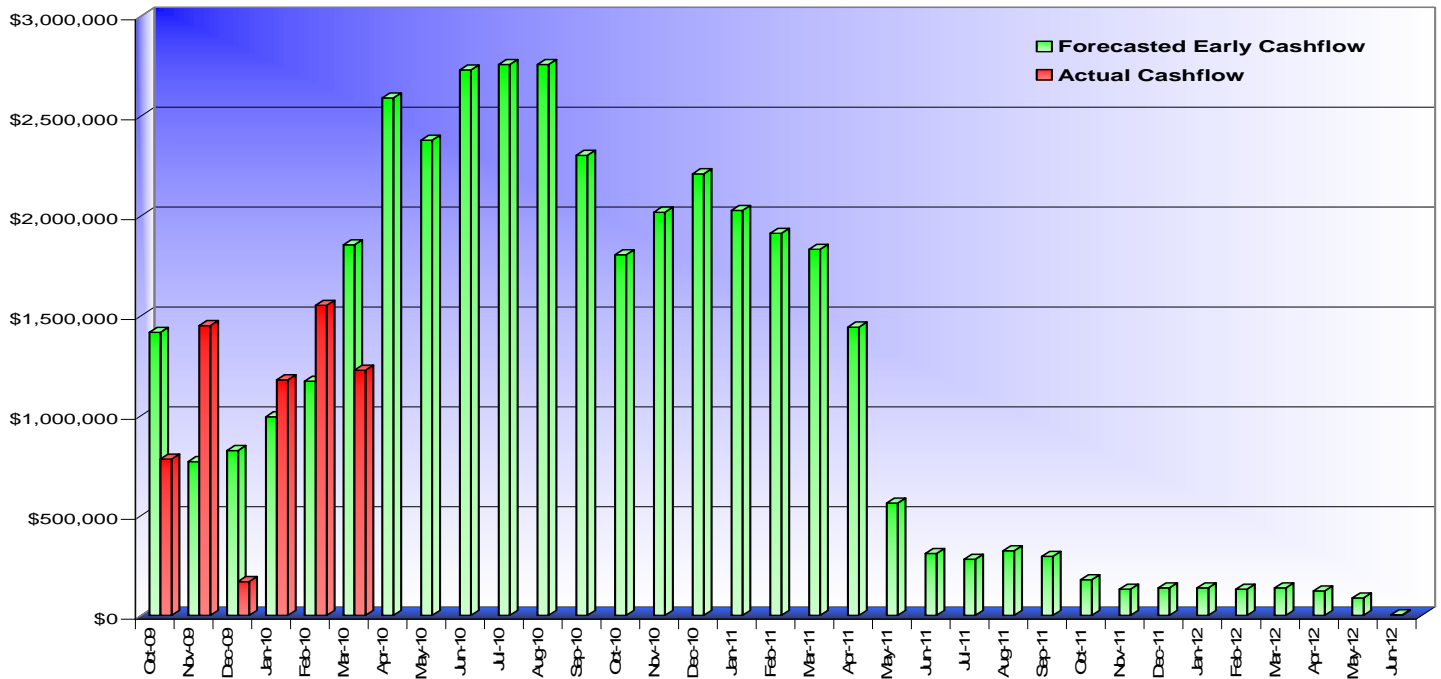
- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Top Off Structural Steel – Ceremony 4/8/10, 10:00AM</li> <li>• Complete Steel Detailing &amp; Decking Installation</li> <li>• Continue Slab on Deck Placement</li> <li>• Continue Installation of Underground Plumbing</li> <li>• Continue Installation of Underground Electric</li> <li>• Continue Installation of Site Drainage</li> </ul> | <ul style="list-style-type: none"> <li>• Begin Construction of Outbuilding Exterior Envelopes</li> <li>• Begin Roof Blocking</li> <li>• Begin MEP Hangers &amp; Prep for Spray Fireproofing</li> <li>• Install Utility Ductbank from Cedar Street to Bldg</li> <li>• Review &amp; Process March Invoice</li> <li>• Finalize &amp; Approve Delay Cost</li> </ul> |
|---|---|



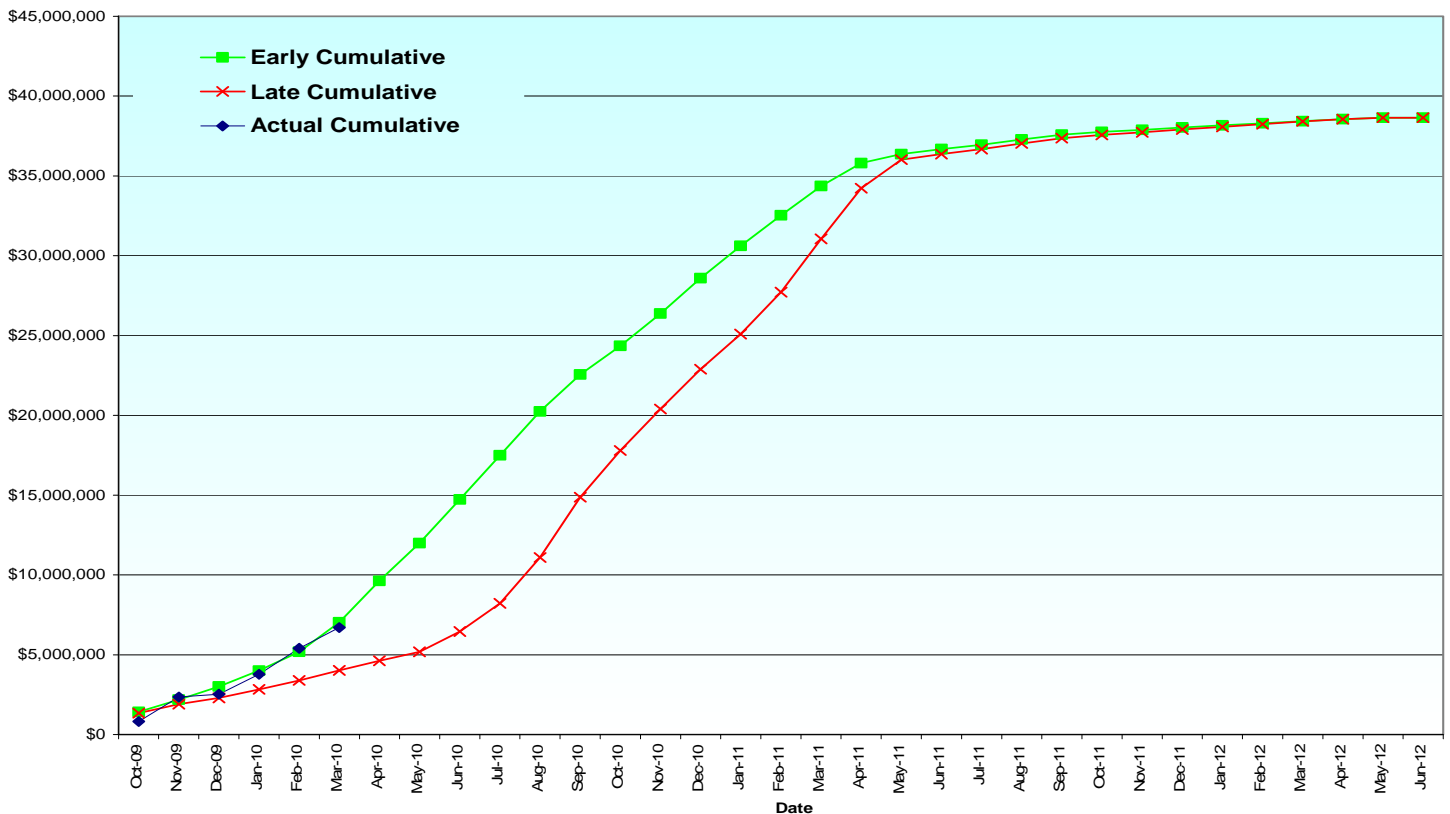
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### Monthly Cashflow Projection



### Cumulative Cashflow Projection



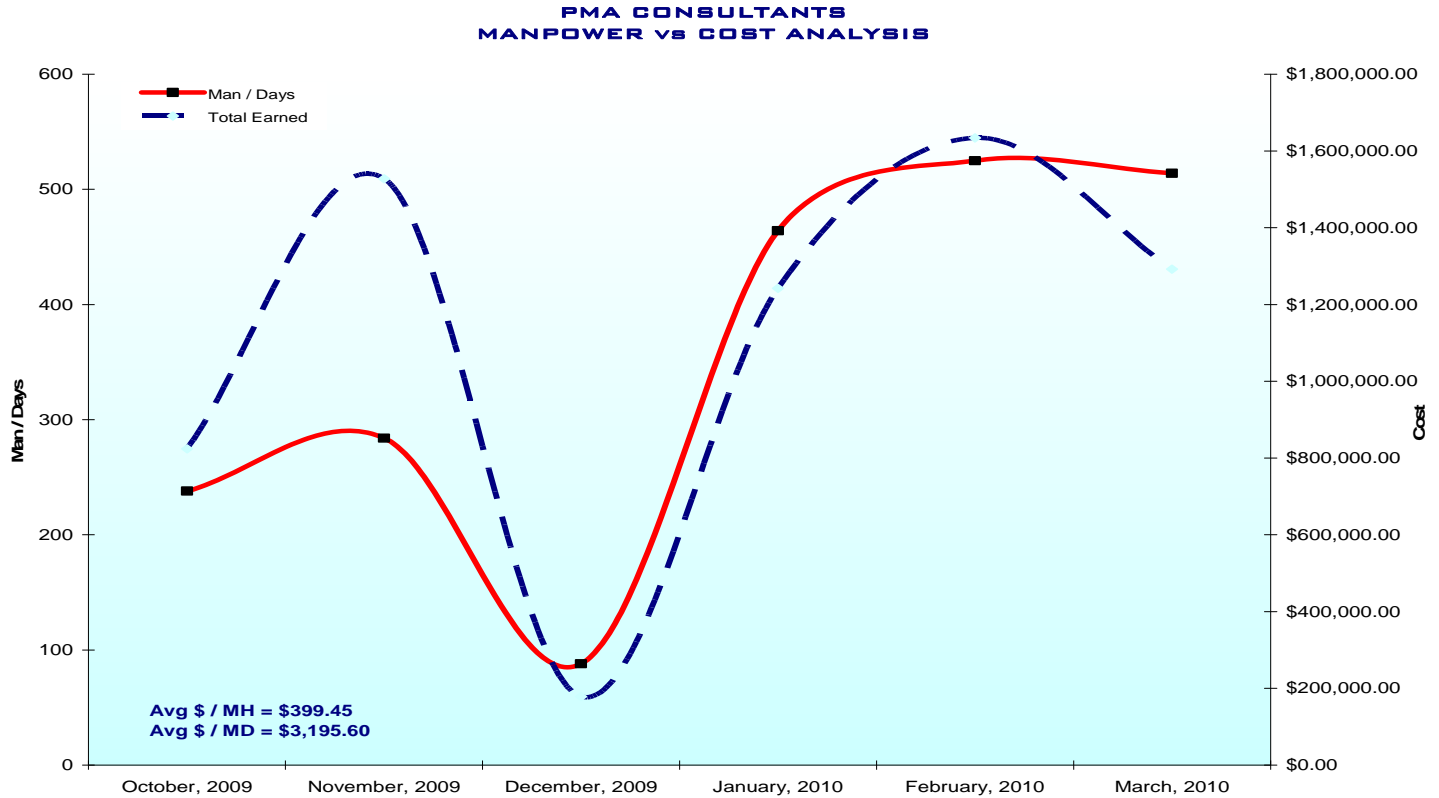


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### Manpower vs Cost Analysis



### PMA Change Management

Potential Change Orders											
	Issued By / For	Scope	Proposed Cost (A)	PMA Analysis (B)	Approved Cost (C)	DELTA (A - C)	Pending Costs	PMA Notes	Proposed Time Extension (Days)	Granted Time Extension (Days)	CO #
		<b>TOTALS:</b>	<b>\$235,060.42</b>	<b>\$178,450.90</b>	<b>(\$7,500.00)</b>	<b>\$56,609.52</b>	<b>\$235,060.42</b>				
PCO #1	Callahan / Elevator	Elevator Substitution	(\$7,500.00)	(\$7,500.00)	(\$7,500.00)	\$0.00	(\$7,500.00)		0	0	
PCO #2	Lopes / Sitework	Water Main - Add'l Valves	\$4,481.94	\$3,997.47		\$484.47	\$4,481.94	OH/Profit 30% Markup is too high	0	0	
PCO #3	Callahan / Winter Conditions	Unexpected Cold Weather Procedures	\$145,898.43	\$122,500.00		\$23,398.43	\$145,898.43				
PCO #4	Lopes / Sitework	R&R Unsuitables @ Drain w/ Stone	\$4,146.14	\$3,801.83		\$544.51	\$4,146.14	OH/Profit 30% Markup is too high	0	0	
PCO #5	Lopes / Sitework	R&R Existing DMH in Poor Condition	\$3,526.40	\$3,144.90		\$381.50	\$3,526.40	OH/Profit 30% Markup is too high	0	0	
PCO #6A	Lopes / Sitework	Waterline Replacement Option #1 (Lopes)	\$64,507.51	\$52,706.90		\$31,800.61	\$64,507.51	Option #1 Under Review - Lopes recommended route - Cost appears high and assumes 8 days to install. PMA believes installation can be done in ~4 days. PCO does not include Callahan costs to repair fence & other incidentals.	0	0	
PCO #6B	Lopes / Sitework	Waterline Replacement Option #2 (GGD)	\$0.00	\$0.00		\$0.00	\$0.00	Option #2 Under Review - Additional cost is due to obstacles encountered in GGD design. Cost appears high and assumes 10 days to install. PMA believes installation can be done in ~5 days. PCO does not include Callahan costs to repair fence & other incidentals.	0	0	
PCO #7	Lopes / Sitework	Force Main Repair	TBD	TBD		TBD	TBD	PCO not yet rec'd	0	0	
PCO #8	Lopes / Sitework	Add'l MH & Wider Ductbank for NGRID	TBD	TBD		TBD	TBD	PCO not yet rec'd	0	0	



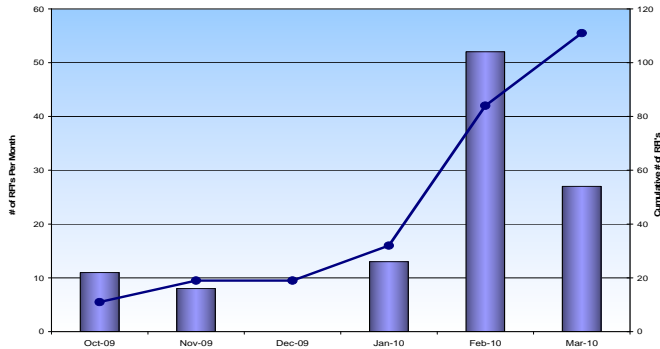
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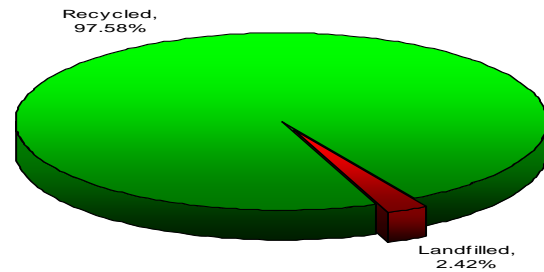
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## Graphs & Data

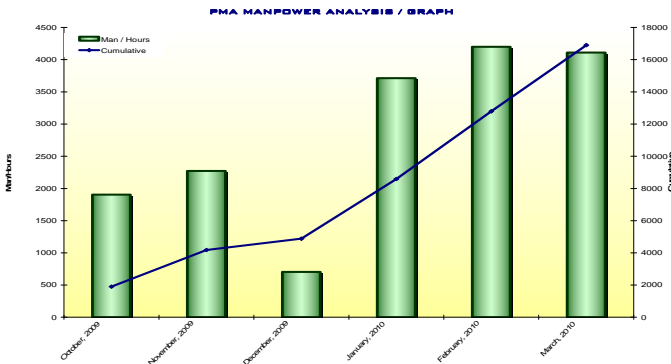
### Requests for Information (RFIs)



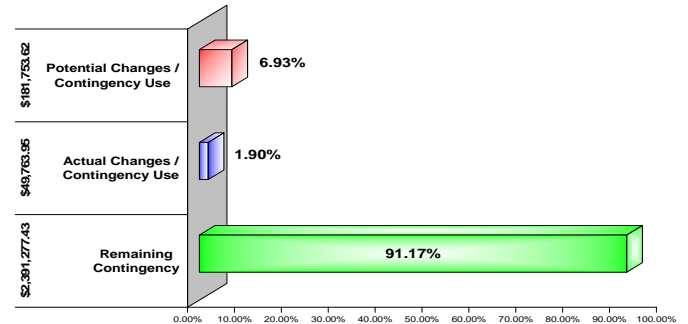
### MA-CHPS Waste Management (90% Target)



### Monthly Manpower



### Contingency Utilization



### Milestone Dates

Milestone Dates	Baseline	Forecast	Actual	Status	Schedule Notes
Construction Start - NTP	01Oct09		28Sep09	✓	On Schedule
Foundation Placement Start Milestone	09Nov09		30Oct09	✓	On Schedule
UG MEP Work	15Jan10		20Jan10	✓	Delayed due to injunction – mitigated by recovery schedule
Steel Erection Start Milestone	04Jan10		02Feb10	✓	Delayed due to injunction – mitigated by recovery schedule
OH MEP Work Start Milestone	20Apr10	03May10			Not critical (62 Days TF)
Building Envelope Start Milestone	28Apr10	27May10			Critical (-9 Days TF) – Held up by Callahan submittal process delays
Bldg Interior Start Milestone (Layout & Control)	31Mar10	13Apr10			Not critical (52 Days TF)
Ph1 Substantial Completion	01Jun11	14Jun11			Critical (-9 Days TF) – Currently driven by building weathertight activities

### HS04 Schedule Submission

#### Contract Milestone Analysis

Phase	Contract	HS03	HS04	Float
Ph1 Substantial	01Jun11	01Jun11	14Jun11	-9
Ph1A Substantial	01Jun11	11Oct10	07Dec10	125
Ph2 Substantial	01May12	01May12	14May12	-9

- Callahan's HS04 schedule submission neglects to maintain an anticipated on-time completion for all contract milestones. Please refer to PMA's monthly schedule report for a detailed critical path analysis.

- The primary critical path to Ph1 Substantial Completion currently runs through the exterior submittal & approval process and is showing -9 days of Total Float. This path continues to bldg enclosure, interior fit-out, equipment start-up, and testing/inspections. An expedited submittal review and/or shipping for the exterior light gauge metal framing could mitigate this critical path's impact on the Contract Milestones.
- The secondary critical path to Ph1 Substantial Completion currently flows through procurement of Hollow Metal Frames and uses Start-to-Start successor logic which drives interior metal stud installation. This logical relationship will likely be re-evaluated to mitigate the -2 days of Total Float in this critical path.





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**Progress Photos**

**Structural Steel @ Auditorium Seating**



**2<sup>nd</sup> Floor Steel Decking & Wire Mesh**



**2<sup>nd</sup> Floor Concrete Slab on Deck Placement**



**2<sup>nd</sup> Floor Concrete Slab on Deck**



**Subsurface Detention Bed #1 (Northwest)**



**Detention Pond #1 (East)**

