



Town of Concord

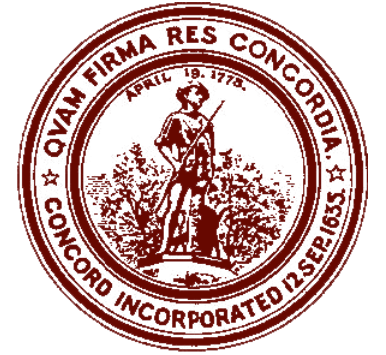
Concord Middle School

Middle School Building Committee

10.07.2021

**EWING
COLE** | **SMMA**

Project Goals Recap



Total Project Cost Range per RFS **\$80-\$100 M**
Total Project Cost maximum currently estimated **<\$102 M**



Replace two middle schools with **one combined middle school**, grades 6-8



Design enrollment **700 Students**



Team Teaching Model, meet **Ed Plan**



Design for **Net Zero Energy**

Primary Goal:
Consolidate two middle school populations **into a single, 21st century learning facility** that will serve the community for generations.

A schematic map background with light green areas representing parks or open spaces, and light beige areas representing developed land. White lines represent roads and paths. Two orange symbols are placed on the map: a large 'F' in the upper right and a large 'X' in the lower left.

Schematic Design

Schematic Design Estimating Submission

Three Major Components

Drawings

- Site (Civil, Landscape Architecture)
- Architecture incl. roof plan with conceptual mechanical equipment locations
- Electrical One-Line Diagram
- NO structural, mechanical, electrical or plumbing drawings

Unifomat Specifications

- Every discipline provides information
- Contains summary with phasing requirements, information on materials, fixtures and equipment information

Report

- Narratives from all design team members
- Sustainability narrative
- Education Plan *with design response narratives* added
- Additional project imagery
- Site Investigations Reports (if new or updated since Feasibility Study)

Updated Site Plan

- Current building footprint
- No changes to circulation or parking assumptions
- Developed outdoor learning areas at academic wing
- Locates transformer, generator battery storage equipment with pads
- Develops ramps and sloped walks for access/egress



Updated Floor Plans

- Colored plans represent educational use and programming
- Drawing set includes technical drawings with annotations

Note: The Auditorium has been rotated after a preliminary acoustical review was performed by our consultant. More detailed work on auditorium design will be performed at the start of Design Development.



	Classroom
	Team Commons
	Special Education
	Vocation/Tech Classroom
	Administration
	Guidance
	Nurse
	Media Center
	Auditorium
	Music
	Art
	Physical Education
	Cafeteria



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UPPER-LEVEL PLAN



LOWER-LEVEL PLAN







TEAM COMMONS

7 OCTOBER 2021

CONCORD MIDDLE SCHOOL

Building Engineering Systems

Mechanical

Heating and Cooling

- VRF fan coil units for classrooms, media center, administration and related support spaces and common areas.
- AHUs dedicated to each of the large volume spaces, including the Gym, Cafeteria and Auditorium.
- AHUs to be supported by VRF ACCUs for improved efficiency.
- Auditorium to be served by displacement ventilation.

Ventilation

- DOAS heat pump units to provide conditioned ventilation to classrooms, media center, administration and related support spaces and common areas.
- Ventilation distribution to spaces controlled by VAV boxes based on space CO2 levels.
- Ventilation sized according to 800 ppm CO2 target level in occupied spaces, based on ambient CO2 level up to 400 ppm.

Building Engineering Systems

Electrical *includes*

- 75% Plug Load Control
- Natural Gas Back-up Generator
- Fully Addressable Lighting System

Sustainability *includes*

All aspects of the proposed design were tested in the preliminary energy model that was presented at prior meetings, achieving a pEUI of 25.

Plumbing & Fire Protection *includes*

- Typical fixture types provided in schools, reviewed by and coordinated with Facilities
- Fire Pump (until Flow Test complete)
- Chip tanks in Science rooms



Estimating Process, Schedule, and Cash Flow Updates



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Final Feasibility Study Cost Estimate

		24-Jun-21	20-Jul-21	16-Sep-21
District	Concord	Concord	Concord	Concord
School Name	Concord MS	Concord MS	Concord MS	Concord MS
Construction Type	New	New	New	New
Enrollment	700	700	700	700
GSF	142,995	145,647	143,660	143,510
Assumed Start of Construction	March 2023	March 2023	March 2023	May 2023
OPM	Hill International	Hill International	Hill International	Hill International
Designer	SMMA	SMMA	SMMA	SMMA
Cost Estimator	Based on AM Fogerty	Based on AM Fogerty	Based on AM Fogerty	Based on AM Fogerty
Gross SF		142,995	145,647	143,660
Cost / SF	\$	348.00	\$ 348.00	\$ 348.00
Construction	\$	49,762,260.00	\$ 50,685,156.00	\$ 49,993,680.00
Demolition / Hazmat	\$	1,500,000.00	\$ 1,500,000.00	\$ 1,500,000.00
Site Cost	\$	7,500,000.00	\$ 7,500,000.00	\$ 7,500,000.00
TOTAL DIRECT	\$	58,762,260.00	\$ 59,685,156.00	\$ 58,993,680.00
Total Mark-ups	\$	21,217,016	\$ 21,550,242	\$ 21,300,574
Design Contingency	12.00% \$	7,051,471.20	\$ 7,162,218.72	\$ 7,079,241.60
Escalation	8% or 9% \$	5,265,098.50	\$ 5,347,789.98	\$ 5,285,833.73
GC	5.00% \$	3,553,941.48	\$ 3,609,758.23	\$ 3,567,937.77
GR	2.50% \$	1,865,819.28	\$ 1,895,123.07	\$ 1,873,167.33
Permits (waived)	0.00%			
P&P Bond	2.00% \$	1,529,971.81	\$ 1,554,000.92	\$ 1,535,997.21
Profit	2.50% \$	1,950,714.06	\$ 1,981,351.17	\$ 1,958,396.44
TOTAL CONSTRUCTION	\$	79,979,276.33	\$ 81,235,398.10	\$ 80,294,254.07
CONSTRUCTION COST PER STUDENT		\$114,256.11	\$116,050.57	\$114,706.08
CONSTRUCTION COST PER SF		\$559.32	\$557.76	\$558.92
PROJECT COST		\$99,974,095.41	\$101,544,247.62	\$100,367,817.59
		Education Plan	Gym & Auditorium Upsize	GSF Refinement
				Cost Escalation Update

Factors

- Building Gross Square Footage (GSF)
- Time
- Committee charge to maintain \$100M Total Project Budget

Next Steps

- Schematic Design Estimate and Value Management (Typ.)

Schematic Design Estimating Process

Schematic Design Package – Friday, October 8th

- SMMA delivers plans, specs, and narratives that define the current CMS Project Scope

Estimating & Reconciliation Process – 4 weeks (October 11th – Nov 4th)

- Two Professional Estimators – PM&C and A M Fogarty (no subcontractors)
- Plan/spec review and Value Management (VM) Log finalization
- Estimates due Wednesday, October 27th
- OPM and Design Team review – Oct 27-28
- Reconciliation Meeting – Monday, November 1st

CMSBC – Friday, November 5th

- Review Reconciled Estimates / Project Cost
- Discuss Value Management (VM) Recommendation
- Vote VM Recommendation

CMSBC – Friday, November 12th

- Vote to approve Schematic Design Scope and Budget

Schematic Design Estimate Reconciliation Process

SAMPLE Snapshot

SCHEMATIC DESIGN COST ESTIMATE - RECONCILED

6/11/2021



		86,130. sf			86,130. sf		86,130. sf		
		RECONCILED VALUE			PM & C, dated 6/11/2021		Ellana, dated 6/11/2021		DELTA
	Program Area		Cost/SF			Cost/SF		Cost/SF	PM&C - Ellana
NEW BUILDING		\$86,130 SF			86,130 SF		86,130 SF		
A	Substructure								\$271,326
A10	Foundations								
	A1010 Standard Foundations	\$1,310,012	\$15.21 /sf		\$1,310,012	\$15.21 /sf	\$1,142,373	\$13.26 /sf	\$167,639
	A1020 Special Foundations	\$1,117,000	\$12.97 /sf		\$1,117,000	\$12.97 /sf	\$1,112,050	\$12.91 /sf	\$4,950
	A1030 Lowest Floor Construction	\$1,607,353	\$18.66 /sf		\$1,607,353	\$18.66 /sf	\$1,508,616	\$17.52 /sf	\$98,737
B	Shell								\$628,253
B10	Superstructure								
	B1010 Floor Construction	\$2,936,269	\$34.09 /sf		\$2,936,269	\$34.09 /sf	\$2,479,134	\$28.78 /sf	\$457,135
	B1020 Roof Construction	\$2,772,672	\$32.19 /sf		\$2,772,672	\$32.19 /sf	\$3,084,272	\$35.81 /sf	(\$311,600)
B20	Exterior Enclosure								
	B2010 Exterior Walls	\$7,640,691	\$88.71 /sf		\$7,640,691	\$88.71 /sf	\$6,944,733	\$80.63 /sf	\$695,958
	B2020 Exterior Windows	\$2,127,555	\$24.70 /sf		\$2,127,555	\$24.70 /sf	\$2,382,845	\$27.67 /sf	(\$255,290)
	B2030 Exterior Doors	\$237,076	\$2.75 /sf		\$237,076	\$2.75 /sf	\$268,250	\$3.11 /sf	(\$31,174)
B30	Roofing								
	B3010 Roof Coverings	\$3,107,200	\$36.08 /sf		\$3,107,200	\$36.08 /sf	\$3,044,976	\$35.35 /sf	\$62,224
	B3020 Roof Openings	\$11,000	\$0.13 /sf		\$11,000	\$0.13 /sf	\$0	\$0.00 /sf	\$11,000



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Schematic Design Value Management Process

Reconciled Estimate + VM = \$100M Total Project Budget

Example Scenario 1 – Under Budget

- \$95M + Add/Change Value Management Scope = \$100M
- \$95M + No Value Management Taken = \$95M

Example Scenario 2 – Over Budget

- \$105M + Deduct/Change Value Management Scope = \$100M
- \$105M + No Value Management Taken = \$105M



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Furniture, Fixtures, Equip. & Technology Budgets

Furniture, Fixtures, and Equipment

Design team uses Ed Plan and information gathered in Programming Meetings to develop first pass with Furniture Consultant.

List of furniture items and types reviewed with the School Department to confirm what they like and dislike (ie casters), experience with different furniture types, what have they recently ordered and plan on retaining if anything.

Budget and list are updated to be included in Project Budget (NOT in construction cost).

Current Budget Estimate: \$1,307,320.00

Technology

Design team uses Ed Plan and information gathered in Programming Meetings to develop first pass with Technology Consultant.

List of typical technology items is developed and reviewed with the School Department (including IT department) for input.

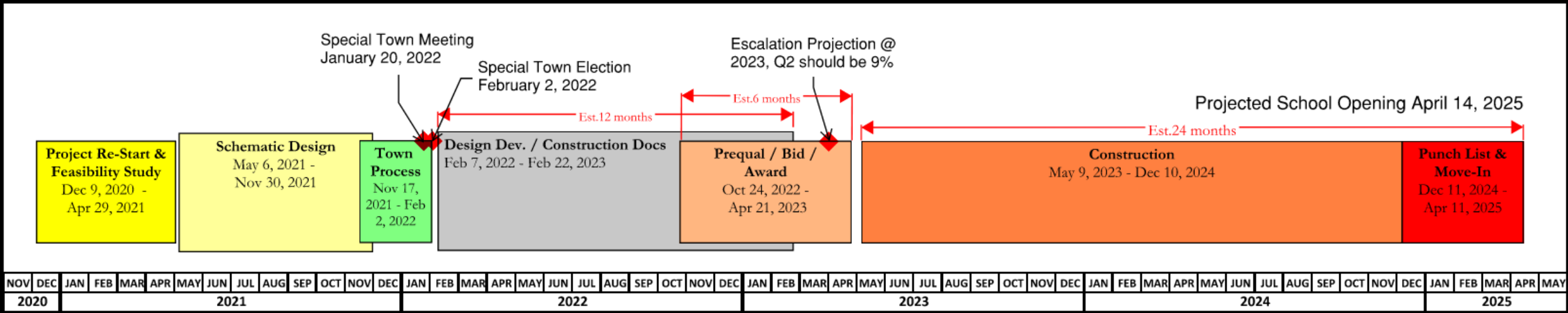
Budget and list are updated to be included in Project Budget (NOT in construction cost).

Current Budget Estimate: \$1,260,050.00

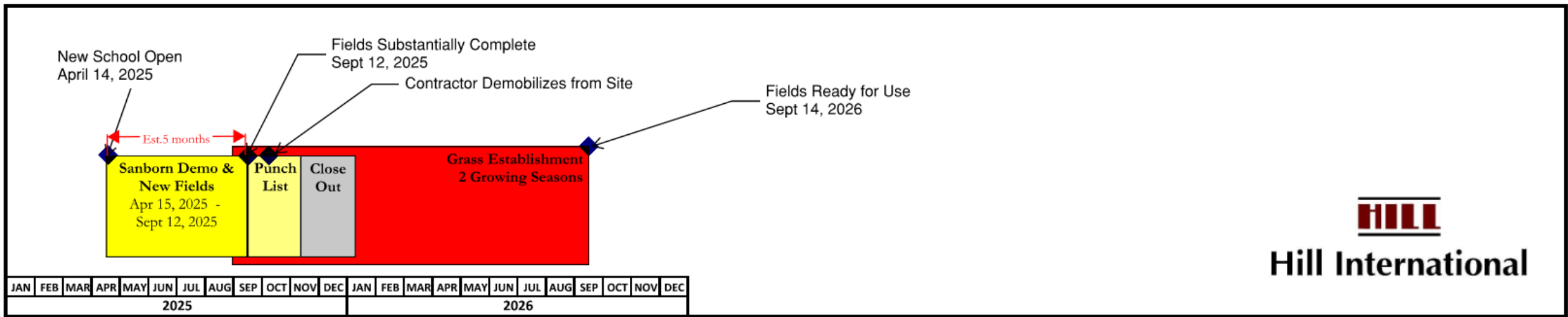
Approximately \$100,000 below Feasibility Study Budget!

Schedule

PHASE 1 - NEW SCHOOL DESIGN & CONSTRUCTION



PHASE 2 - SANBORN DEMO & NEW FIELDS



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Cash Flow Update

September 30, 2021

Concord Middle School Estimated Project Cash Flow Thru SD Phase

	Month	OPM	Designer & Consultants	Commissioning Agent, FF&E & Misc.	Construction	Contingency	Estimated Expenditures	Actual Expenditures	Estimated Cumulative Expenditures	Actual Cumulative Expenditures
Feasibility Study	1 Oct-19	\$38,290					\$38,290	\$25,110	\$38,290	\$25,110
	2 Nov-19	\$20,550					\$20,550	\$34,595	\$58,840	\$59,705
	3 Dec-19	\$18,790					\$18,790	\$20,660	\$77,630	\$80,365
	4 Jan-20	\$18,790	\$75,645				\$94,435	\$88,210	\$172,065	\$168,575
	5 Feb-20	\$18,790	\$151,290				\$170,080	\$167,735	\$342,145	\$336,310
	6 Mar-20	\$24,070	\$161,376				\$185,446	\$101,535	\$527,591	\$437,845
	7 Apr-20	\$22,670	\$105,903				\$128,573	\$110,125	\$656,164	\$547,970
	8 May-20	\$21,590	\$106,361				\$127,951	\$100,465	\$784,115	\$648,435
Pause	9 Jun-20	\$21,590	\$96,275				\$117,865	\$73,474	\$901,980	\$721,909
	10 Jul-20	\$22,290	\$96,275				\$118,565	\$15,520	\$1,020,545	\$737,429
	11 Aug-20	\$24,430	\$69,318				\$93,748	\$3,785	\$1,114,293	\$741,214
	12 Sep-20	\$53,450	\$26,957				\$80,407	\$720	\$1,194,700	\$741,934
	13 Oct-20						\$0	\$2,590	\$1,194,700	\$744,524
	14 Nov-20						\$0	\$0	\$1,194,700	\$744,524
Restart Feasibility Study	15 Dec-20						\$0	\$16,798	\$1,194,700	\$761,322
	16 Jan-21						\$0	\$0	\$1,194,700	\$761,322
	17 Feb-21						\$0	\$0	\$1,194,700	\$761,322
	18 Mar-21						\$0	\$0	\$1,194,700	\$761,322
	19 Apr-21						\$0	\$0	\$1,194,700	\$761,322
	20 May-21						\$0	\$0	\$1,194,700	\$761,322
Schematic Design	21 Jun-21						\$0	\$2,400	\$1,194,700	\$763,722
	22 Jul-21						\$0	\$69,318	\$1,194,700	\$833,040
	23 Aug-21						\$0	\$69,318	\$1,194,700	\$902,358
	24 Sep-21						\$0	\$69,318	\$1,194,700	\$971,676
	25 Oct-21						\$0	\$0	\$1,194,700	
	26 Nov-21						\$0	\$0	\$1,194,700	
	27 Dec-21						\$0	\$0	\$1,194,700	
	Subtotal for FS/ SD	\$305,300	\$889,400	\$0			\$1,194,700			

Summary

- Current Commitments @ \$1,194,700
- \$971,676 spent through Sept 30, 2021
- \$223,024 SD Phase billings projected to be spent through Dec 2021
- \$305,300 uncommitted funds remain (from \$1.5M initial approved funding)



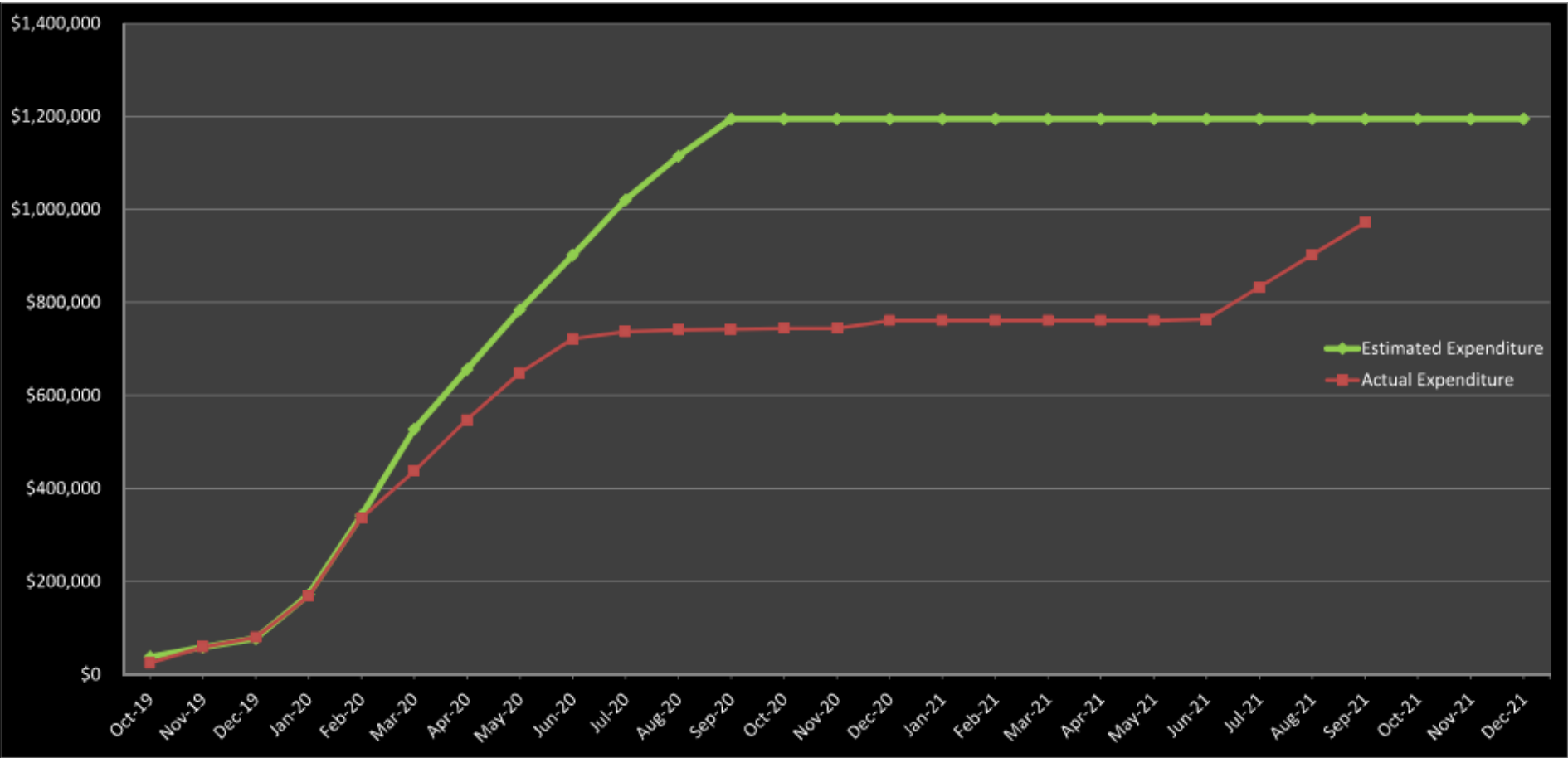
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Cash Flow Update



September 30, 2021

Town of Concord
Concord Middle School
Estimated Project Cash Flow Graph



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Thank you!

more information:

<https://www.cmsbuildingproject.org/>

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