Montoursville Area School District

Value Engineering Study Analysis

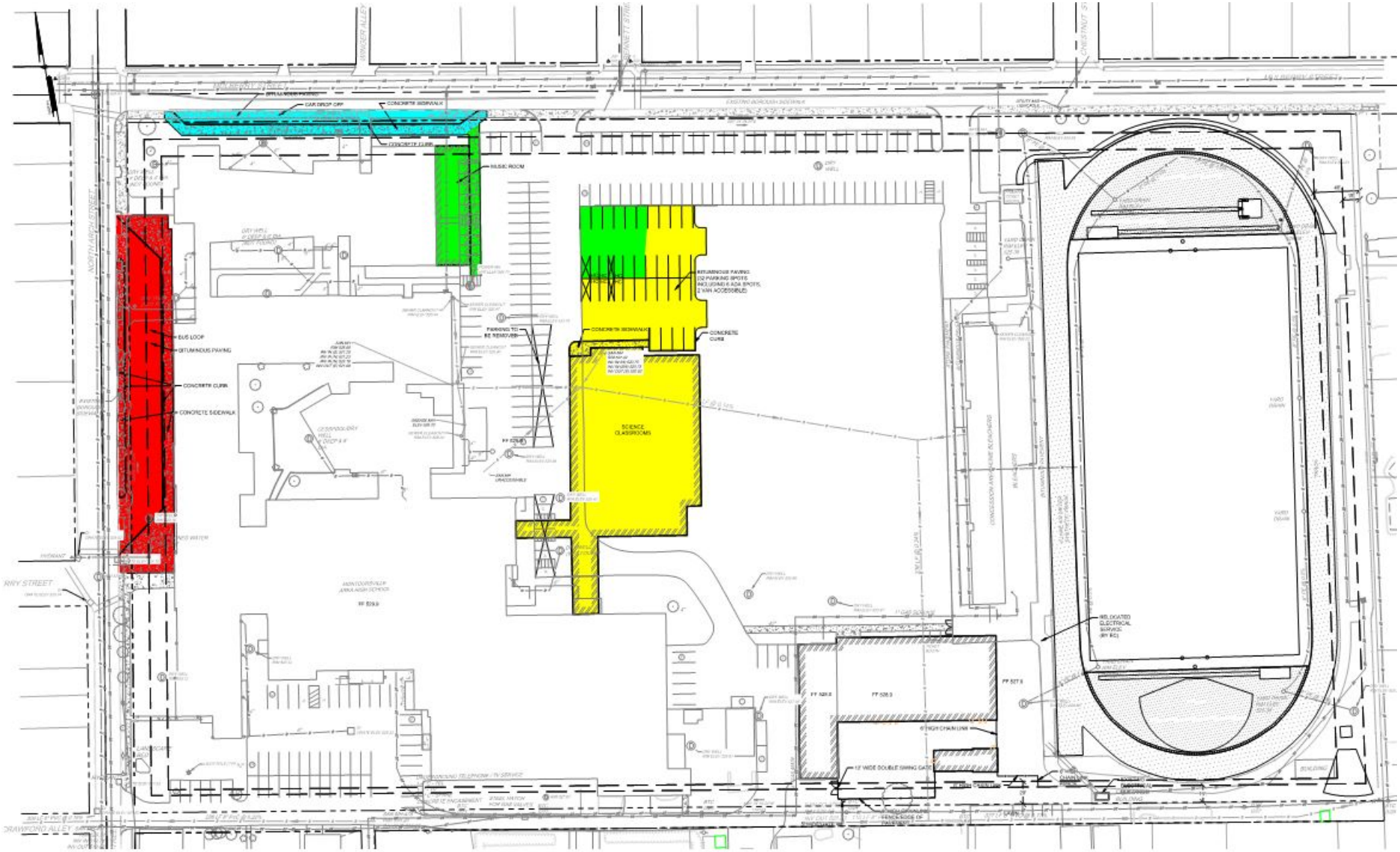
February 23, 2016

Crabtree, Rohrbaugh & Associates, Architects

Goals of VE Study Analysis

Determine:

- **State Reimbursement eligibility** ($3.3 million)
- **Cost to achieve LEED Gold** ($2 million grant)
- **Re-Design and Regulatory Agency Schedule**
- **Educational & Infrastructure Adequacy**
- **Cost of proposed VE Option**

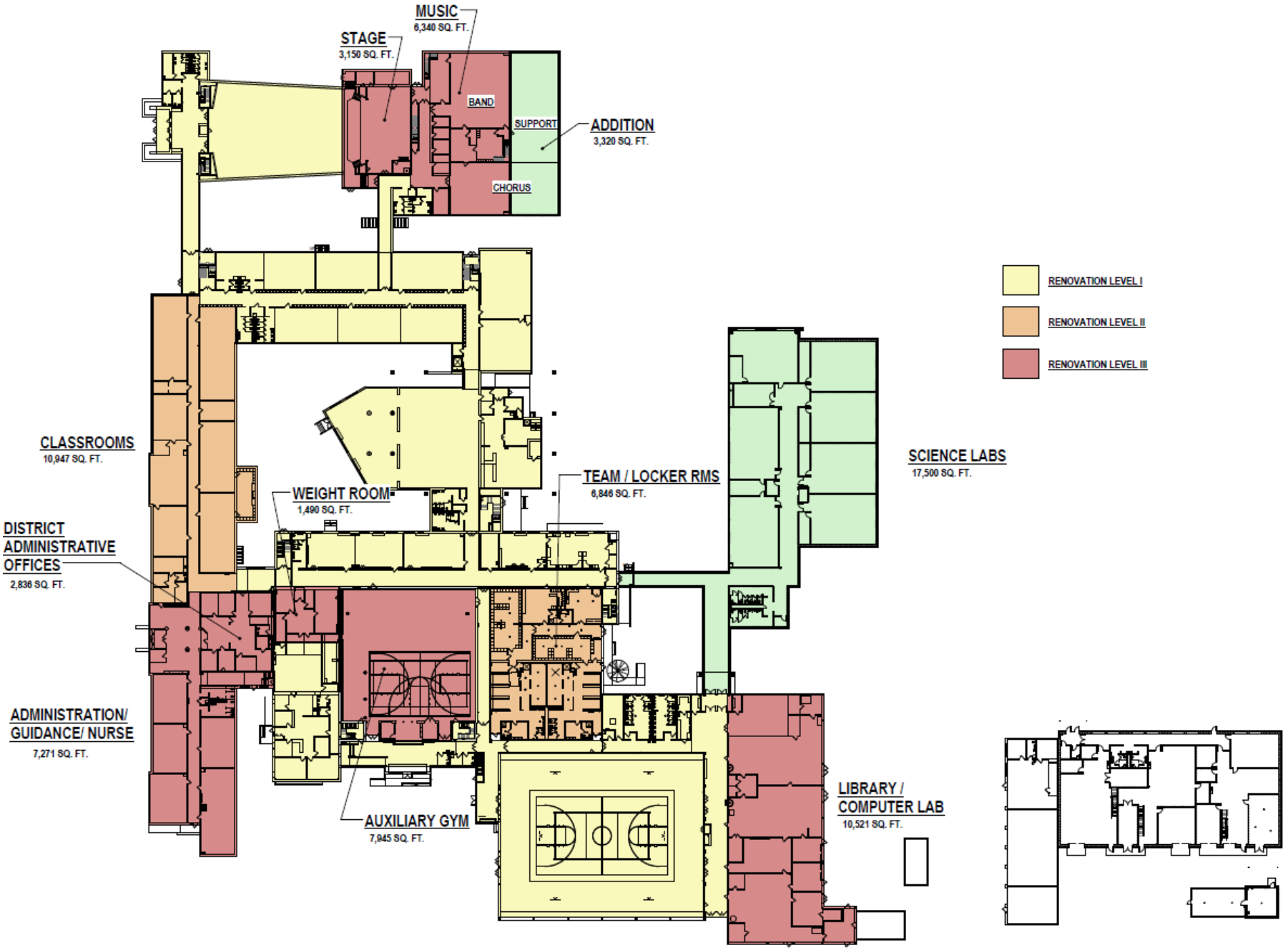


PARKING SUMMARY

PREDEVELOPMENT PARKING SPACES:	223
MUSIC ROOM (DISPLACES SPACES):	(10)
SCIENCE CLASSROOMS (DISPLACED SPACES):	(19)
NEW PARKING LOT:	32
POST DEVELOPMENT PARKING SPACES:	226

LEGEND

- BUS LOOP
- SCIENCE CLASSROOMS
- MUSIC ROOM
- CAR DROP OFF AREA


MUSIC
6,340 SQ. FT.
STAGE
3,150 SQ. FT.
BAND
SUPPORT
CHORUS
ADDITION
3,320 SQ. FT.
RENOVATION LEVEL I
RENOVATION LEVEL II
RENOVATION LEVEL III
CLASSROOMS
10,947 SQ. FT.
WEIGHT ROOM
1,490 SQ. FT.
TEAM / LOCKER RMS
6,846 SQ. FT.
SCIENCE LABS
17,500 SQ. FT.
DISTRICT ADMINISTRATIVE OFFICES
2,836 SQ. FT.
ADMINISTRATION/ GUIDANCE/ NURSE
7,271 SQ. FT.
AUXILIARY GYM
7,945 SQ. FT.
LIBRARY / COMPUTER LAB
10,521 SQ. FT.


RENOVATION LEVEL I
RENOVATION LEVEL II
RENOVATION LEVEL III
ART
8,400 SQ. FT.
LOCKER RMS
2,890 SQ. FT.

VE Study Analysis

State Reimbursement eligibility ($3.3 million)

Project remains eligible
with resubmittal and PDE approval of :

- **Plancon Part F** - Revised Construction Documents
- **Regulatory Agency approvals**
- **Plancon Part I** - Change Order Cost Documentation

VE Study Analysis

Cost to achieve LEED Gold ($2 million grant)

Considering the proposed VE project improvements:

Cost to achieve Energy Grant criteria (LEED Gold) will cost more than the $2 million grant.

VE Study Analysis

Design and Regulatory Agency Schedule

Project reviews and approvals include:

- **Zoning Board**
- **Borough Engineer**
- **Montoursville Borough**
- **Lycoming County Planning Commission**
- **Lycoming County Conservation District**
- **Central Keystone Council of Governments**
- **PA Department of Education**
- **Environmental Protection Agency**

Preliminary Schedule

Schedule: Revised Project Scope		2016								
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	**Board Review Project Options/Estimates**	■								
2	**Board approves Project Option**	■								
3	**Board decides to use change-order or re-bid**	■								
4	**Board approves Design Contract amendments**	■								
5	**Board appoints Project Committee**	■								
	Educational Program recommendations		■							
	Project detail recommendations		■	■	■	■				
6	**Detailed Survey: exist. bldg. to remain**	■	■							
7	**District/Architect develops Final Schematic Scope**		■	■						
8	**Land Development Plan**									
	Schematic plan prep and approval	■								
	Agency Plan Preparation		■	■						
	Agency reviews				■	■				
	Respond to Comments						■			
	Agency Approvals							■		
	Escrow and Plan Recording							■		
9	**Architect develops Design Development Details**			■	■	■				
10	**Board approves Final Scope and Estimate**					■				
11	**Architect develops Construction Documents**					■	■	■		
12	**CKCOG Review/Approval**						■	■		
13	**Architect revises PlanCon Part F, submits to PDE**							■		
14	**PDE reviews/approves PlanCon Part F**							■		
15	**Project Bid or Change Order Period**								■	
16	**Architect develops PlanCon Part I - Change Order**								■	
17	**PDE Review Approval of Part I**									■
18	**Start of Construction**									■

Ideas / Goals *From original 2014 Facility Study*

Improvement Ideas and Goals
Upgrade Facilities to improve/facilitate Educational Program implementation
Improve School Image, Safety and Environment
Reduce Operating Costs
Identify lowest overall cost to meet goals

VE Study Analysis
Original Goals / Educational Adequacy

Design Characteristics/Goals

This information include key design issues that represent the goals of the previous board and compares the same to the improvements represented in the VE Study

	Goals	Original Design	VE Proposal
1	**Minimize disruption to students during construction**	Original Design phased new construction so large numbers of students could move into new classrooms while renovations were completed on existing classrooms.	VE proposal has less areas of unoccupied areas to move students to during construction.
2	**Locate School Administrative Offices to maximize safety and control.** **Locate public spaces on one lobby**	Original Design allowed administration offices to view bus drop-off, parking lots, stadium entrance, main building entrance, auditorium, gymnasium, cafeteria, and community meeting room.	VE proposal maintains auditorium, gymnasium and cafeteria that are separate areas of the building. There is no opportunity to monitor these activities from one location.
3	**Improve space organization to facilitate Educational Program**	Original Design grouped regular classrooms, small group rooms and flexible learning spaces to improve collaboration and teaming between subject areas.	VE proposal maintains most of existing classroom organization that does not improve educational space adjacencies or flexibility. Proposed Science location inhibits collaboration by virtue of its isolated location.

VE Study Analysis
Original Goals / Educational Adequacy

4	**Locate functions in a compact, operationally efficient and energy efficient organization.**	Original design locates most classrooms and academic spaces in one 3 story arrangement to maximize interaction and minimize travel distance.	VE proposal maintains most of the existing inefficient organization. Proposed Science and Library locations increases distance from classrooms.
5	**Larger Auditorium/Stage with flexible seating that allows variable presentation venues.**	Original project provides adequate, flexible and dividable space that allows for large and small auditorium audiences, theatre-in-the-round, gallery/exhibition space, guest lectures, large group instruction, and multiple activities at same time.	VE proposal expands stage opening but does not provide adequate production space adjacent to stage opening. Extending stage into seating reduces the seating capacity. Seating area provides no flexibility for multiple uses.
6	**Upgrade/provide Educational technology and equipment**	Original Design provided adequate network capabilities throughout school and classroom projection equipment	VE proposal does not mention classroom technology equipment
7	**Efficient and safe use of site: parking, bus and pedestrian**	Original Design provided adequate space for separation of bus, auto and pedestrian sidewalks.	VE proposal maintains existing parking areas that have minimal separation of pedestrian and auto.
8	**Maximize on site parking to reduce parking stress on adjacent neighborhood**	Original Design provided 307 parking spaces, 84 more spaces than existing.	VE proposal can maintain the Borough minimum of 223 spaces.
9	**Reduce Operating Costs**	Original project included high level energy efficiency (LEED Gold) that qualified for a	VE proposal can achieve LEED gold but at a cost that exceeds the $2million grant

VE Study Analysis

Recommended Infrastructure Improvements

1931 STONE BUILDING FLOOR STRUCTURE (NORTH SIDE)
KITCHEN EQUIPMENT (DOES NOT INCLUDE MEP REWORK)
TICKET BOOTH
REPLACE CABINET UNIT HEATERS
REPLACE EXHAUST FANS
LED LIGHTING THROUGHOUT REMAINDER OF BUILDING
REPLACE ALL TELECOM SYSTEM CABLING
REPLACE INTERCOM SYSTEM
AUDIO / VISUAL SYSTEM UPGRADES (INFRASTRUCTURE)
UPGRADE STANDBY EMERGENCY POWER SYSTEM
VARIOUS PLUMBING FIXTURE REPLACEMENTS
REPLACE DOMESTIC WATER PIPING
REPLACE WATER HEATERS
MOVEABLE FIXTURES AND FURNISHINGS THROUGHOUT

Cost of proposed VE Option

- **Construction Costs to complete currently approved work**
- **Construction Cost for infrastructure upgrades**
- **Construction Cost for reconfiguration renovations**
- **Construction Cost for additions**
- **Soft Costs**

COST TO COMPLETE CURRENT APPROVED WORK			
RETAINAGE DUE ON IN PLACE CONSTRUCTION			
	GENERAL CONSTRUCTION	$ 459,055	
	HVAC CONSTRUCTION	$ 82,426	
	PLUMBING CONSTRUCTION	$ 52,936	
	ELECTRICAL CONSTRUCTION	$ 81,151	
	ROOFING CONSTRUCTION	$ 17,815	
SUBTOTAL RETAINAGE DUE ON IN PLACE CONSTRUCTION			**$ 693,383**
BALANCE TO FINISH APPROVED WORK (TECH ED & MAINTENANCE BUILDINGS)			
	GENERAL CONSTRUCTION	$ 327,947	
	HVAC CONSTRUCTION	$ 148,565	
	PLUMBING CONSTRUCTION	$ 47,450	
	ELECTRICAL CONSTRUCTION	$ 93,250	
	ROOFING CONSTRUCTION	$ 44,249	
	HVAC CONTROLS	$ -	
	TECH ED BUILDING UTILITY SERVICES	$ 10,500	**$ 671,962**
SUBTOTAL BALANCE TO FINISH APPROVED WORK			
TOTAL COST TO COMPLETE TECH ED BUILDING			**$ 1,365,345**

EXISTING BUILDING INFRASTRUCTURE UPGRADES & REPAIRS

GENERAL CONSTRUCTION	UNIT	COST	QTY.	TOTAL	
BOYS LOCKER ROOM STRUCTURAL REPAIR	LS	$ 10,000	1	$ 10,000	
1931 BUILDING FLOOR STRUCTURE - LOBBY	LS	$ 5,000	1	$ 5,000	
1931 STONE BUILDING ROOF STRUCTURE	LS	$ 8,000	1	$ 8,000	
WINDOW REPLACEMENT	EA	$ 5,620	43	$ 241,660	
STAIR TOWERS GUARDRAILS & HANDRAILS	EA	$ 8,500	7	$ 59,500	
ACCESSIBLE ROUTES (VARIOUS)~	LS	$ 250,000	1	$ 250,000	
ACCESSIBLE TOILET ROOMS	SF	$ 125	150	$ 18,750	
EIFS REPAIR~	LS	$ 12,000	1	$ 12,000	
BASEMENT REPAIRS (LEAKS & WINDOWS)~	LS	$ 110,000	1	$ 110,000	
SECOND FLOOR LOCKER ROOM*	LS	$ 83,025	1	$ 83,025	
FIRST FLOOR LOCKER ROOMS*	LS	$ 290,521	1	$ 290,521	
REPOINTING OF EXTERIOR BRICK & STONE	LS	$ 28,000	1	$ 28,000	
CAFETERIA STAIR FIRE DOOR	LS	$ 10,500	1	$ 10,500	
AUDITORIUM SEATING REPLACEMENT**	EA	$ 227	658	$ 149,648	
B-WING ROOF (PONDING WATER)	LS	$ 18,500	1	$ 18,500	
1931 BUILDING ATTIC FIRE/SMOKE BARRIERS	LS	$ 12,000	1	$ 12,000	
REPLACE EXTERIOR DOORS & HARDWARE	LS	$ 46,800	1	$ 46,800	
ACCESS CONTROL (DOORS)	LS	$ 65,000	1	$ 65,000	
REPLACE CORRIDOR CEILINGS FOR HVAC & SPRINKLER REN.	SF	$ 5.74	21,131	$ 121,292	
UPGRADE FINISHES FLOORING***	SF	$ 3.72	110,430	$ 410,800	
UPGRADE FINISHES PAINTING	SF	$ 1.50	110,430	$ 165,645	
COCO CODE ITEMS NOT ADDRESSED IN VE REPORT	LS	$ 150,000	1	$ 150,000	
SUBTOTAL					**$ 2,266,640**

MECHANICAL, ELECTRICAL, AND PLUMBING CONSTRUCTION^	UNIT	COST	QTY.	TOTAL	
HVAC INFRASTRUCTURE UPGRADES & REPAIRS	LS	$3,343,401	1	$ 3,343,401	
ELECTRICAL INFRASTRUCTURE UPGRADES & REPAIRS	LS	$ 877,846	1	$ 877,846	
PLUMBING INFRASTRUCTURE UPGRADES & REPAIRS	LS	$ 142,960	1	$ 142,960	
SPRINKLER SYSTEM UPGRADES & REPAIRS	LS	$ 442,480	1	$ 442,480	
SUBTOTAL					**$ 4,806,687**

OTHER CONSTRUCTION	UNIT	COST	QTY.	TOTAL	
ASBESTOS & LEAD ABATEMENT	LS	$ 35,000	1	$ 35,000	**$ 35,000**

SUBTOTAL EXISTING BUILDING UPGRADES & REPAIRS	**$ 7,108,327**

BUILDING RECONFIGURATION RENOVATIONS

	UNIT	COST	QTY.	TOTAL	
CLASSROOMS RENOVATIONS (FORMER SCIENCE LABS)					
GENERAL CONSTRUCTION	SF	$ 50	10,947	$ 547,350	
HVAC CONSTRUCTION	SF	$ 12	10,947	$ 131,364	
PLUMBING CONSTRUCTION	SF	$ 2	10,947	$ 21,894	
ELECTRICAL CONSTRUCTION	SF	$ 15	10,947	$ 164,205	
SUBTOTAL*		**$ 79**			**$ 864,813**
MUSIC DEPARTMENT RENOVATIONS					
GENERAL CONSTRUCTION	SF	$ 65	6,340	$ 412,100	
HVAC CONSTRUCTION	SF	$ 13	6,340	$ 82,420	
PLUMBING CONSTRUCTION	SF	$ 2	6,340	$ 12,680	
ELECTRICAL CONSTRUCTION	SF	$ 14	6,340	$ 88,760	
SUBTOTAL*		**$ 94**			**$ 595,960**
STAGE RENOVATIONS					
GENERAL CONSTRUCTION	SF	$ 80	3,150	$ 252,000	
STAGE RIGGING, LIGHTING, & SOUND***	LS	$ 245,355	1	$ 245,355	
HVAC CONSTRUCTION	SF	$ 8	3,150	$ 25,200	
PLUMBING CONSTRUCTION	SF	$ -	3,150	$ -	
ELECTRICAL CONSTRUCTION	SF	$ 35	3,150	$ 110,250	
SUBTOTAL*		**$ 201**			**$ 632,805**
ADMINISTRATION/GUIDANCE/NURSE RENOVATIONS (SOUTH WING OF 1931 BUILDING)					
GENERAL CONSTRUCTION	SF	$ 65	7,271	$ 472,615	
HVAC CONSTRUCTION	SF	$ 17	7,271	$ 123,607	
PLUMBING CONSTRUCTION	SF	$ 8	7,271	$ 58,168	
ELECTRICAL CONSTRUCTION	SF	$ 16	7,271	$ 116,336	
SUBTOTAL*		**$ 106**			**$ 770,726**
DISTRICT ADMINISTRATIVE OFFICES RENOVATIONS (CURRENT ADMINISTRATION & GUIDANCE)					
GENERAL CONSTRUCTION	SF	$ 65	2,836	$ 184,340	
HVAC CONSTRUCTION	SF	$ 17	2,836	$ 48,212	
PLUMBING CONSTRUCTION	SF	$ 8	2,836	$ 22,688	
ELECTRICAL CONSTRUCTION	SF	$ 16	2,836	$ 45,376	
SUBTOTAL*		**$ 106**			**$ 300,616**
LIBRARY/COMPUTER LAB RENOVATIONS (CURRENT TECH ED)					
GENERAL CONSTRUCTION	SF	$ 75	10,521	$ 789,075	
HVAC CONSTRUCTION	SF	$ 22	10,521	$ 231,462	
PLUMBING CONSTRUCTION	SF	$ 2	10,521	$ 21,042	
ELECTRICAL CONSTRUCTION	SF	$ 22	10,521	$ 231,462	
SUBTOTAL*		**$ 121**			**$ 1,273,041**
AUX. GYM/FITNESS/WEIGHT ROOM RENOVATIONS (CURRENT LIBRARY)					
GENERAL CONSTRUCTION **	LS	$ 352,380	1	$ 352,380	
HVAC CONSTRUCTION	SF	$ 22	9,435	$ 207,570	
PLUMBING CONSTRUCTION	SF	$ 2	9,435	$ 18,870	
ELECTRICAL CONSTRUCTION	SF	$ 19	9,435	$ 179,265	
SUBTOTAL*		**$ 80**			**$ 758,085**
ART DEPARTMENT RENOVATIONS					
GENERAL CONSTRUCTION	SF	$ 30	8,400	$ 252,000	
HVAC CONSTRUCTION	SF	$ 16	8,400	$ 134,400	
PLUMBING CONSTRUCTION	SF	$ 5	8,400	$ 42,000	
ELECTRICAL CONSTRUCTION	SF	$ 15	8,400	$ 126,000	
SUBTOTAL*		**$ 66**			**$ 554,400**
SUBTOTAL EXISTING BUILDING RECONFIGURATION RENOVATIONS					**$ 5,750,446**

BUILDING ADDITIONS

		UNIT	COST	QTY.	TOTAL	
	SCIENCE CLASSROOM ADDITION	SF	$ 200	17500	$ 3,500,000	
	RELOCATED PRIMARY ELECTRICAL SERVICE	LS	$ 96,064	1	$ 96,064	
	MUSIC ADDITIONS	SF	$ 180	3320	$ 597,600	
SUBTOTAL BUILDING ADDITIONS						**$ 4,193,664**

CONSTRUCTION COSTS				
STRUCTURE COSTS				
EXISTING BUILDING INFRASTRUCTURE UPGRADES & REPAIRS		$	7,108,327	
EXISTING BUILDING RECONFIGURATION RENOVATIONS		$	5,750,446	
BUILDING ADDITIONS		$	4,193,664	
SITE WORK		$	546,969	
ASBESTOS & LEAD ABATEMENT		$	35,000	
SUBTOTAL STRUCTURE COSTS		**$**	**17,634,406**	
CONTINGENCIES (ESTIMATING & PHASING)	5%	$	881,720	
NON COMPETITIVE BIDDING FACTOR	8%	$	1,410,752	
TOTAL STRUCTURE COSTS				**$ 19,926,879**
CONSTRUCTION SOFT COSTS				
CONSTRUCTION CONTINGENCY (FROM CURRENT BUDGET)		$	788,115	
ASBESTOS MONITORING		$	10,000	
CONSTRUCTION TESTING & INSPECTIONS	1.3%	$	249,086	
ENHANCED COMMISSIONING		$	-	
DISTRICT CONSTRUCTION REPRESENTATIVE*		$	576,000	
REGULATORY AGENCY FEES		$	15,000	
SUBTOTAL CONSTRUCTION SOFT COSTS				**$ 1,638,201**
TOTAL CONSTRUCTION COSTS				**$ 21,565,080**

SOFT COSTS				
	DESIGN FEES			
	BASIC SERVICE DESIGN FEES	7%	$ 1,509,556	
	CIVIL ENGINEERING		$ 48,500	
	SUBTOTAL DESIGN FEES		**$ 1,558,056**	
	MOVEABLE FIXTURES / EQUIPMENT			
	MOVEABLE FIXTURES (ADDITIONS & RENOVATIONS ONLY)		$ 150,000	
	EQUIPMENT (INCLUDING TECHNOLOGY)		$ 327,132	
	TECH ED EQUIPMENT& MOVEABLE FIXTURES		$ 93,549	
	SUBTOTAL MOVEABLE FIXT./EQUIP.		**$ 570,681**	
TOTAL SOFT COSTS				**$ 2,128,737**
SUBTOTAL PROJECT COSTS TO IMPLEMENT VE STUDY				**$ 23,693,816**
MODIFICATION CONSTRUCTION CONTRACTS				
	ESTIMATED COST FOR UNBILLED MATERIALS PURCHASED TO DATE WHICH CANNOT BE USED IN VE PROJECT, RESTOCKING FEES, AND LOST OH&P ON ORIGINAL CONTRACT VALUE.			
TOTAL MODIFICATION CONSTRUCTION CONTRACTS				**$ 2,397,840**
COST TO COMPLETE CURRENT APPROVED WORK				**$ 1,365,345**
TOTAL PROJECT COSTS TO IMPLEMENT VE STUDY				**$ 27,457,001**

Cost of proposed Current Project

- **Construction Costs remaining**
- **Soft Costs Remaining**
- **Further cost reductions**

CONSTRUCTION COSTS			
STRUCTURE COSTS (FROM JAN 2016 PAY APP)**		BALANCE TO FINISH	
GENERAL CONSTRUCTION		$ 16,214,123	
HVAC CONSTRUCTION		$ 3,102,891	
ELECTRICAL CONSTRUCTION		$ 2,817,738	
PLUMBING CONSTRUCTION		$ 1,393,567	
ROOFING CONSTRUCTION		$ 1,377,908	
HVAC CONTROLS		$ 8,126	
ASBESTOS & LEAD ABATEMENT		$ 35,000	
SUBTOTAL STRUCTURE COSTS*		**$ 24,949,353**	
CONSTRUCTION SOFT COSTS		BALANCE TO FINISH	
CONSTRUCTION CONTINGENCY		$ 788,115	
ASBESTOS MONITORING		$ 10,000	
CONSTRUCTION TESTING & INSPECTIONS (1.3%)		$ 136,214	
ENHANCED COMMISSIONING		$ 321,794	
DISTRICT CONSTRUCTION REPRESENTATIVE		$ 333,000	
REGULATORY AGENCY FEES		$ -	
SUBTOTAL CONSTRUCTION SOFT COSTS		**$ 1,589,123**	
TOTAL CONSTRUCTION COSTS			**$ 26,538,476**

SOFT COSTS			
	DESIGN FEES	BALANCE TO FINISH	
	BASIC SERVICE DESIGN FEES	$ 151,363	
	LEED DESIGN FEES	$ 26,320	
	CIVIL ENGINEERING	$ 29,765	
	FOOD SERVICE CONSULTING	$ 2,064	
	SUBTOTAL DESIGN FEES	**$ 209,512**	
	MOVEABLE FIXTURES / EQUIPMENT		
	MOVEABLE FIXTURES	$ 315,367	
	EQUIPMENT (INCLUDING TECHNOLOGY)	$ 327,132	
	TECH ED EQUIPMENT& MOVEABLE FIXTURES	$ 93,549	
	SUBTOTAL MOVEABLE FIXT./EQUIP.	**$ 736,048**	
TOTAL SOFT COSTS			**$ 945,560**
SUBTOTAL PROJECT COSTS TO COMPLETE CURRENT PROJECT			**$ 27,484,036**
ADDITIONAL FUNDING			
	DCED LEED GOLD GRANT		**$ (2,000,000)**
TOTAL PROJECT COSTS TO COMPLETE CURRENT PROJECT			**$ 25,484,036**

SUMMARY OF OPTIONS	
TOTAL PROJECT COSTS TO IMPLEMENT VE STUDY	$ 27,457,001
PROJECT COSTS TO COMPLETE CURRENT PROJECT	$ 25,484,036
REDUCE CURRENT PROJECT COSTS	$ 24,284,236

PROJECT COSTS TO COMPLETE CURRENT PROJECT			**$ 25,484,036**
VALUE ENGINEERING OPPORTUNITIES			
	1931 STONE BUILDING ALTERNATE	$ (804,800)	
	TERRAZZO FLOOR ALTERNATE	$ (265,000)	
	ROOFING (NEEDS INVESTIGATED WITH ROOFING CONTRACTOR)	$ (130,000)	
TOTAL VALUE ENGINEERING OPPORTUNITIES			**$ (1,199,800)**
REDUCE CURRENT PROJECT COSTS			**$ 24,284,236**
ADDITIONAL COST SAVING ITEMS CAN BE EXPLORED AND REVIEWED WITH THE DISTRICT WHICH FURTHER REDUCE THE CURRENT PROJECT COSTS. THIS EFFORT WOULD BE AN ADDITIONAL SERVICE.			

Questions / Comments