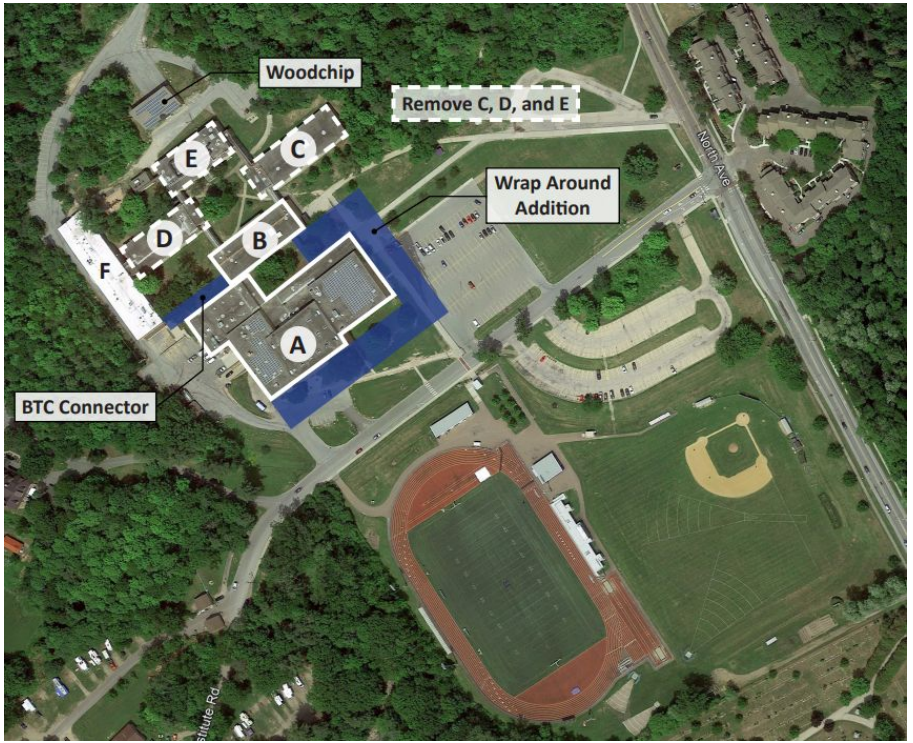
BHS Renovation Plan

March 10, 2020

BURLINGTON SCHOOL DISTRICT

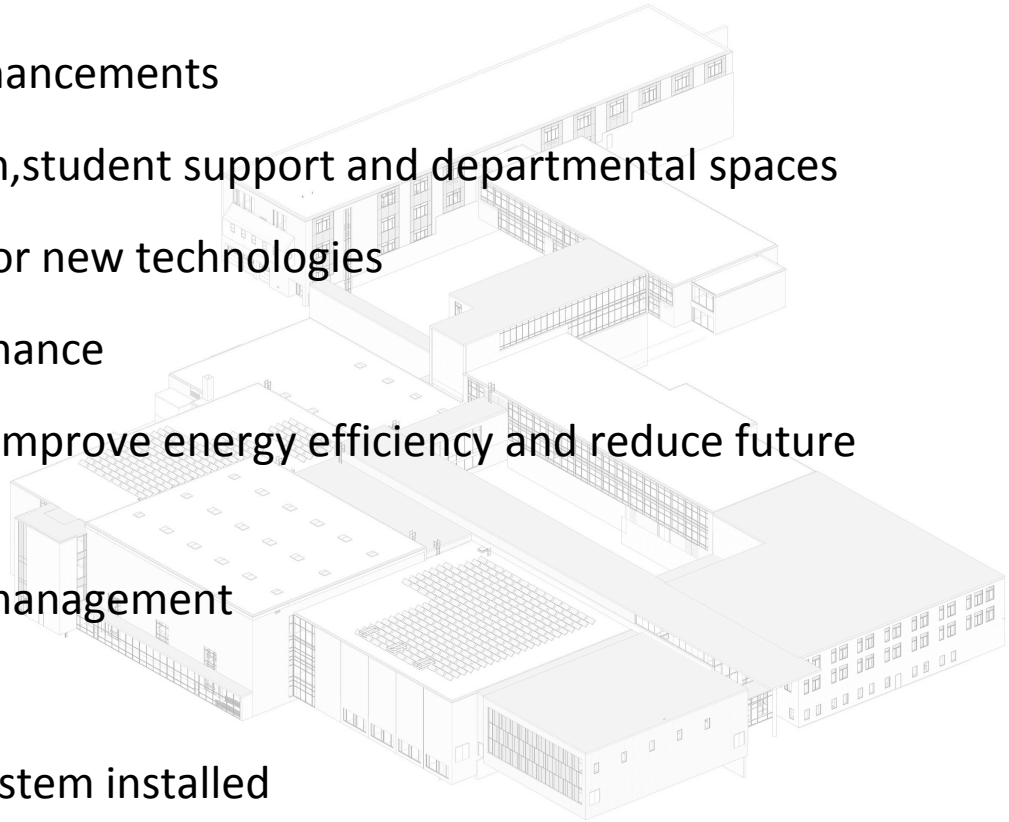
SD #1 Design


Woodchip
Remove C, D, and E
Wrap Around Addition
BTC Connector
E
C
D
B
F
A
North Ave

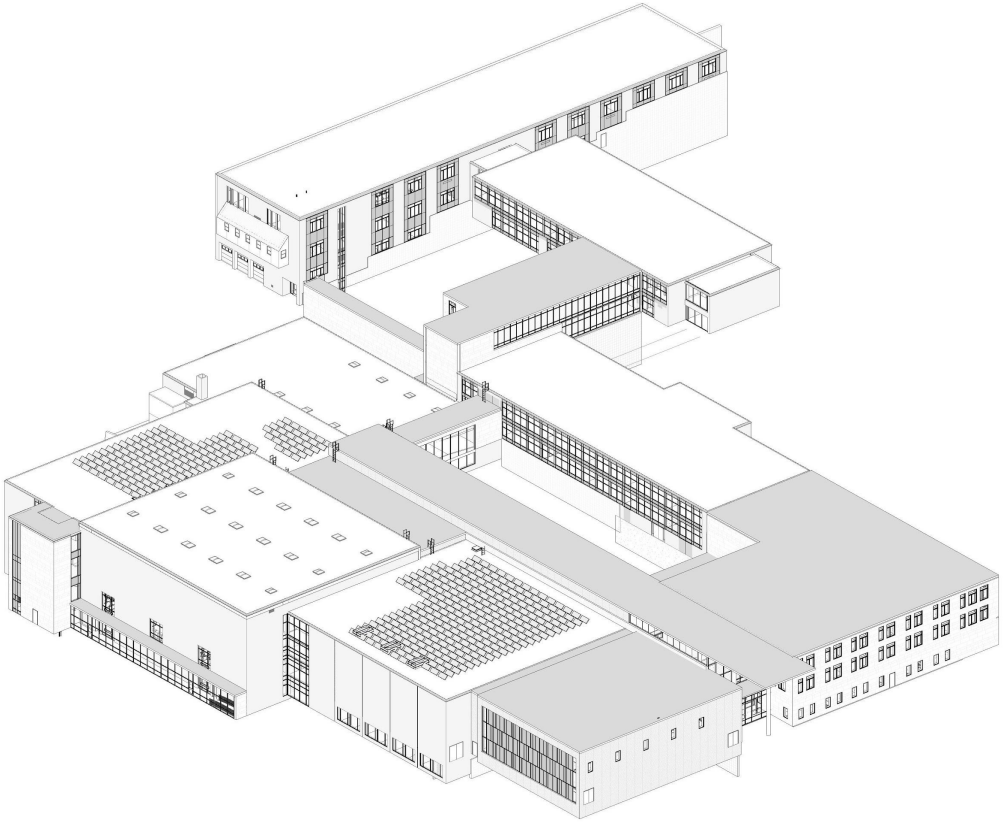

WOOD BOILER
EXISTING WOODS
EXPOSED LEDGE EMBANKMENT AT 2:1 SLOPE
PLAYGROUND
MEADOW
TECH CENTER
164 PARKING SPACES
32 GUEST PARKING SPACES
PROPOSED TREE, TYP.
EXISTING BUS LOOP
COURTYARD
BICYCLE PARKING
COVERED BICYCLE PARKING
SEATWALL
MAIN ENTRY COURTYARD
DROPOFF
BURLINGTON HIGH SCHOOL
SOUTH-FACING SEATING TERRACE
ASSEMBLY SPACE
SPECIAL PAVING
PROPOSED SHADE TREE, TYP.
FLAGPOLES
RETAINING WALL, TYP.
ELEVATED BOARDWALK
CONCRETE WALKWAYS
SEATWALL
MEADOW
NEW SIGN
CITY BUS STOP
TO NORTH BEACH
EXISTING STORMWATER TREATMENT AREA, TYP.
SOUTH-FACING SEATING TERRACE
STORMWATER TREATMENT AREA, TYP.
INSTITUTE ROAD
NORTH AVENUE
ATHLETIC FIELD
STUDENT PARKING
BURLINGTON HIGH SCHOOL | SITE PLAN
08/10/2018
scale
0 25 50 100

Project Highlights

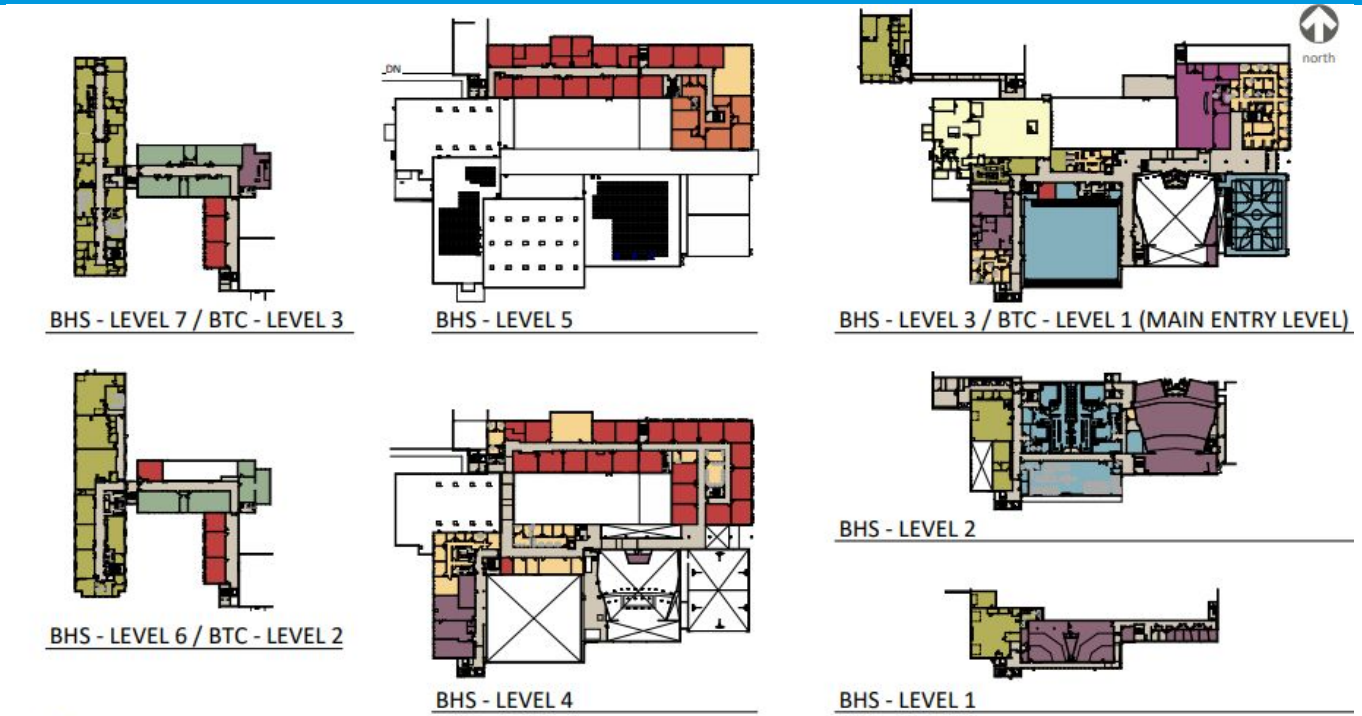
- Accessibility and ADA compliance/enhancements
- Consolidation of classroom instruction,student support and departmental spaces
- Creation of maker spaces conducive for new technologies
- Addresses identified deferred maintenance
- New windows, roof and insulation to improve energy efficiency and reduce future costs
- New HVAC, lighting and stormwater management
- Enhanced building safety and security
- New fire safety automatic sprinkler system installed



Schematic Design



Schematic Design



Schematic Design Estimate
Construction Cost of Work

COST OF CONSTRUCTION WORK		
Existing Conditions	$	2,164,553
Concrete	$	1,527,538
Masonry	$	1,693,472
Metals	$	3,554,542
Wood, Plastics, and Composites	$	112,470
Thermal & Moisture Protection	$	5,452,994
Openings	$	4,190,620
Finishes	$	5,059,207
Specialties	$	898,652
Equipment	$	833,835
Furnishings	$	1,166,628
Conveying Systems	$	540,000
Fire Suppression	$	1,078,198
Plumbing	$	2,560,308
HVAC	$	14,471,591
Electrical	$	9,156,321
Earthwork	$	1,352,339
Exterior Improvements	$	1,840,661
Site Utilities	$	1,615,303
SUBTOTAL - COST OF CONSTRUCTION WORK	**$**	**59,269,232**

Schematic Design Estimate
General Conditions

GENERAL CONDITIONS			
WT General Requirements	4.00%	$	2,370,769
Subcontractor P&P Bonds	1.10%	$	651,962
CM Construction Contingency	fixed	$	200,000
WT General Conditions & General Liability Insurance	fixed	$	2,014,000
WT P&P Bond (based on COW plus GCs)	0.75%	$	483,795
WT Fee (based on COW plus GCs)	2.75%	$	1,787,218
	Total General Conditions	$	*7,507,744*
SD Estimating Contingency (based on COW only)	1.25%	$	740,865
Labor & Material Escalation Contingency (based on COW only)	2.75%	$	1,629,904
Owner Contingency (based on COW only)	5.70%	$	3,379,231
	Total Contingency	$	*5,750,000*
Building Permits (based on COW plus GCs)	0.85%	$	567,604
	TOTAL GENERAL CONDITIONS	$	**13,825,348**
	SUBTOTAL - COST OF CONSTRUCTION	$	**73,094,580**

Schematic Design Estimate
Owners Cost & Total Project Cost

OWNER COSTS		
Consultant Fees (not including abatement consultant)	$	5,487,301
Abatement Costs (including consulting fees)	$	1,604,700
Zoning Permit	$	390,000
Equipment	$	688,000
Furniture	$	720,000
Other	$	512,500
TOTAL OWNER COSTS	**$**	**9,402,501**
SUBTOTAL - TOTAL PROJECT COST	**$**	**82,497,081**

TOTAL PROJECT COST	**$**	**82,497,081**

Major Cost Drivers Not Anticipated Prior to Bond

- Façade renovations and structural upgrades due to PCB abatement and abatement costs
- Premiums associated with the recently adopted 3-Acre Rule Site requirements
- Urban Soil Management: Unforseen contaminated soils were found on-site
- Increases in Owner-side expenses
- Program scope creep
- Additional structural upgrades for unforeseen seismic loading requirements
- Escalations/Market Conditions

Link to FAQ

Target Cost Reduction to Meet $70m Budget

$82,497,081	SD Estimate
$70,000,000	Bond Amount
$12,497,081	Target Reduction

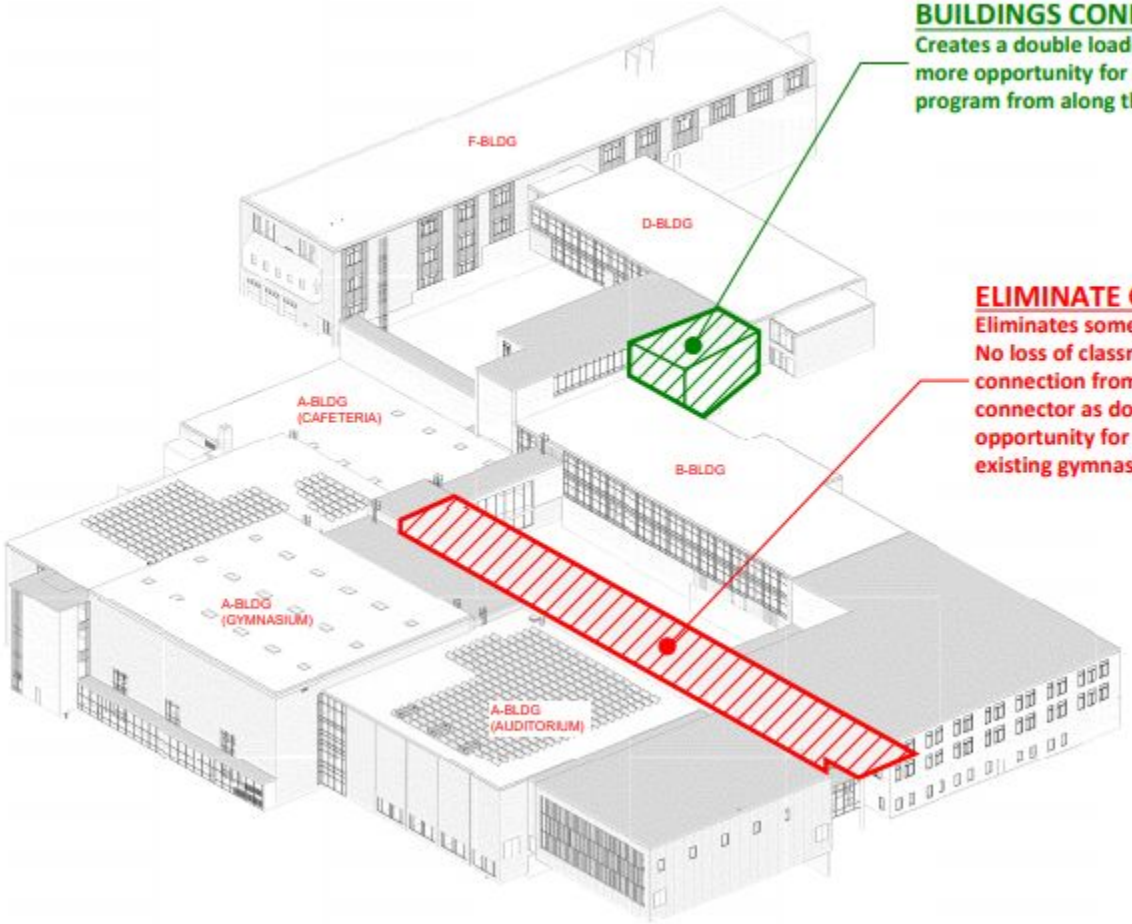
Cost Savings Options

Canopy Bike Parking	-$136,175
Student Parking Lot Scope	-$400,000
Gym Floor Replacement	-$175,526
Bleacher Replacement	-$269,000
Reduce Interior Finishes - CMU to GWB at Corridor/Classrooms	-$329,426
Reduce Interior Finishes - Quartz to VCT Flooring	-$266,200
Reduce Interior Finishes - Reduce Carpet Scope	-$93,400
Galleria/Enlarge B-D Connector	-$1,131,627
Reduce F Building Renovations	-$5,404,135
Alternate HVAC System without Air Conditioning	-$2,650,000
Auxiliary Gym	-$1,975,969

Target Scope Reduction Options to Reach $70m

Galleria/Enlarge B-D Connector	
Pros	**Cons**
*Eliminates some of the most expensive new and renovated area, including 3,800sf of circulation	*Less prominent new entry
*NO loss of classroom space or programmatic SF	*Removes the double-height space from new entry to existing cafeteria
*Maintains connection from A Level 4 to B Level 1 over cafeteria	*Increases the travel distances between existing A Level 4 to the proposed addition
*Utilizing the proposed B/D connector as double loaded corridor (most efficient layout)	*Increases the distance to elevator access to Level 4 from the entrance.
*More opportunity for windows in program spaces that were located along existing gymnasium wall	

Estimated Cost of Work Savings $1,131,000



ADDITION TO THE EAST SIDE OF THE NEW B/D BUILDINGS CONNECTOR

Creates a double loaded corridor(most efficient layout). Allows for more opportunity for windows in program spaces by relocating program from along the existing gymnasium wall inside the galleria.

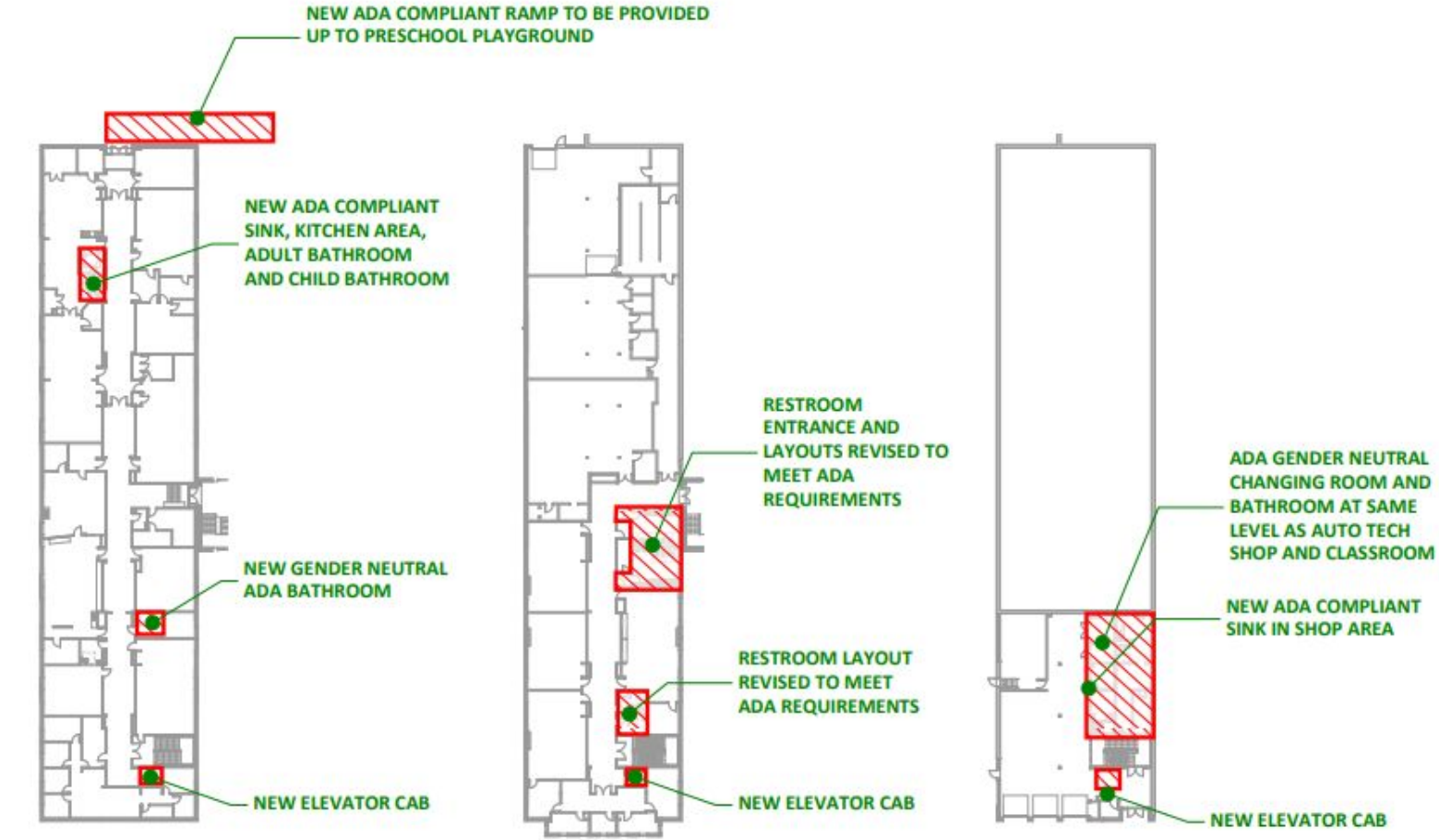
ELIMINATE GALLERIA SPACE AT LEVEL 4 HEIGHT

Eliminates some of the most expensive new and renovated area. No loss of classroom space or programmtic SF, maintaining connection from A Level 4 to B Level 1 over cafeteria, utilizing B/D connector as double loaded corridor (most efficient layout), more opportunity for windows in program spaces that were going along existing gymnasium wall

Target Scope Reduction Options to Reach $70m

Reduce F Building Renovations	
Pros	Cons
*Maintains full ADA compliance upgrades	*No new sprinkler system
*New and remodeled existing bathrooms	*Roof replacement
*Elevator cab modernization	*HVAC upgrades
*Fire alarm	*Lighting replacement
	*Window replacement
	*Program/Admin. Relocations
	*Flooring replacement
	*HAZMAT remediation in F-bldg.

Estimated Cost of Work Savings $5,404,000


NEW ADA COMPLIANT RAMP TO BE PROVIDED UP TO PRESCHOOL PLAYGROUND
NEW ADA COMPLIANT SINK, KITCHEN AREA, ADULT BATHROOM AND CHILD BATHROOM
NEW GENDER NEUTRAL ADA BATHROOM
NEW ELEVATOR CAB
RESTROOM ENTRANCE AND LAYOUTS REVISED TO MEET ADA REQUIREMENTS
RESTROOM LAYOUT REVISED TO MEET ADA REQUIREMENTS
NEW ELEVATOR CAB
ADA GENDER NEUTRAL CHANGING ROOM AND BATHROOM AT SAME LEVEL AS AUTO TECH SHOP AND CLASSROOM
NEW ADA COMPLIANT SINK IN SHOP AREA
NEW ELEVATOR CAB
3 BUILDING F - LEVEL 3
2 BUILDING F - LEVEL 2
1 BUILDING F - LEVEL 1

Target Scope Reduction Options to Reach $70m

Alternate HVAC System with limited Air Conditioning	
Pros	**Cons**
*This system will be more efficient than existing system *Still provides cooling of the gymnasiums, cafeteria and science building (D-bldg.) *Cooling will still be provided for the admin areas via local air-source VRF heat pumps *Auditorium will keep existing cooling capabilities *Likely lower overall energy usage due to reducing areas to be cooled *Less maintenance due to less terminal units *Easier/less expensive to add zones	*NO AC for the classrooms and non-administrative areas *System does not have ability to recover and/or share energy between spaces throughout the facility *Facility is likely to consume more fossil fuels and/or wood chips than the WSHP system. *More exterior roof mounted terminal units

Estimated Cost of Work Savings $2,650,000

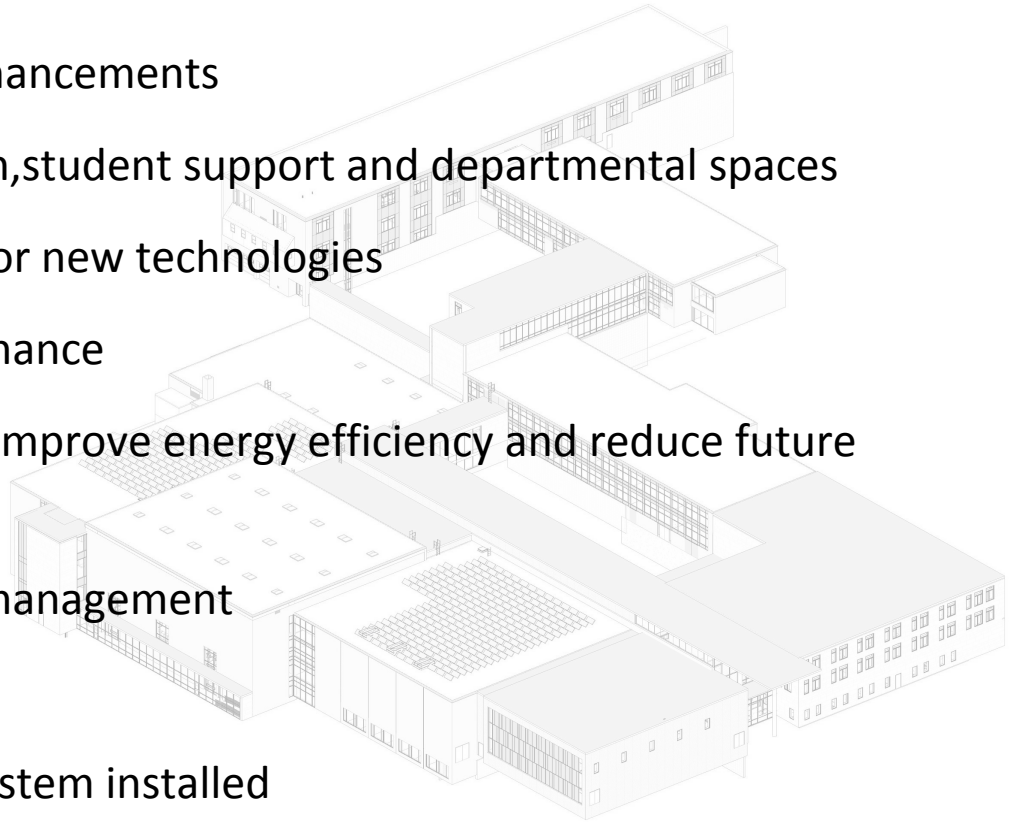
Target Scope Reduction Options to Reach $70m

Auxiliary Gym	
Pros	Cons
*Auxiliary Gym can be designed to be an alternate at bid time *Construction could happen at a future date.	*Loss of additional student program and community use space *Less new building prominence from Institute Road.

Estimated Cost of Work Savings $1,976,000

Project Highlights

- Accessibility and ADA compliance/enhancements
- Consolidation of classroom instruction,student support and departmental spaces
- Creation of maker spaces conducive for new technologies
- Addresses identified deferred maintenance
- New windows, roof and insulation to improve energy efficiency and reduce future costs
- New HVAC, lighting and stormwater management
- Enhanced building safety and security
- New fire safety automatic sprinkler system installed



Proposed vs. Existing Square Footage

Overall Project Gross Area:

- Existing – 240,400 sf
- Proposed – 270,650 sf
  - Renovation - 191,800 sf
  - New Addition - 78,850 sf

Proposed vs. Existing Program

Number and Size of General Classrooms:

General classrooms are classrooms scheduled for “non-lab” classes including, but not limited to: Math, History, Social Studies, English, English Language, Special Ed. General classrooms sizes are sized to allow for a capacity of approximately 30 sf / student and include casework within each classroom.

- Existing – 39 (Average Size - 695 sf)
- Proposed – 42 (Average Size – 730 sf)

Proposed vs. Existing Program

Number of Small Group Classrooms:

Small Group Classrooms are classrooms sized for seminars, conferences, or small group work (not included in classroom count above).

- Existing – 0
- Proposed - 4

Proposed vs. Existing Program

Number of Conference Rooms:

Conference rooms are spaces available to faculty and staff for meetings and other working groups. These spaces are within larger support suites and include conference rooms within administration and guidance, library breakout rooms, student support group room, and professional development conference room.

- Existing: 1
- Proposed: 6

Proposed vs. Existing Program

Administration and Support Spaces:

Support spaces include: Administration and Guidance Suite, Health Services, MLL, Special Education, Para Lounge, Intensive Special Needs Suite, Student Support, Professional Development Suite, Faculty Lounge and Storage, I.T. Offices.

- Existing – 14,600 sf
- Proposed – 21,200 sf

Proposed vs. Existing Program

Extracurricular and Lab Spaces:

Extracurricular and lab spaces include: Science labs, Fine Arts, Design / Technology, Library, Athletics / PE, Music, Food Lab, District on Top, Cafeteria / Kitchen, and Theater.

- Existing: 78,000 sf
- Proposed: 90,150 sf

Proposed vs. Existing Program

BTC Spaces:

Program spaces associated with BTC.

- Existing: 35,000 sf
- Proposed: 35,900 sf

Cost Savings Options

SUBTOTAL - COST OF CONSTRUCTION WORK		**$**	**59,269,232**
COST SAVINGS OPTIONS		***PROPOSED VALUE***	
CHPS Certification			INCLUDED IN OWNER
Canopy at Bike Parking		$	(136,175)
Student Parking Lot Scope		$	(400,000)
Existing Gym Floor Replacement		$	(175,526)
Existing Bleacher Replacement		$	(269,000)
Reduce Owner Furniture Budget			INCLUDED IN OWNER
Reduce Interior Finishes	CMU to GWB at corridors/classrooms	$	(329,426)
	Quartz Tile to VCT Flooring Throughout	$	(266,200)
	Reduce Carpet scope	$	(93,400)
Galleria / Enlarge B-D Connector		$	(1,131,627)
Reduce F Building Renovations		$	(5,404,135)
Alternate HVAC System without Air Conditioning		$	(2,650,000)
Auxilliary Gym		$	(1,975,969)
TOTAL COST SAVINGS OPTIONS		**$**	**(12,831,458)**
SUBTOTAL - COST OF CONSTRUCTION WORK (AFTER COST SAVINGS)		**$**	**46,437,774**

TOTAL GENERAL CONDITIONS	**$**	**12,577,492**
SUBTOTAL - COST OF CONSTRUCTION	**$**	**59,015,266**

TOTAL OWNER COSTS	**$**	**9,402,501**
OWNER COST SAVINGS OPTIONS	***PROPOSED VALUE***	
Reduce Owner Furniture Budget	$	(360,000)
CHPS Certification	$	(185,000)
OWNER COST SAVINGS OPTIONS TOTAL	**$**	**(545,000)**
TOTAL OWNER COSTS (AFTER COST SAVINGS)	**$**	**8,857,501**

TOTAL PROJECT COST	**$**	**67,872,767**

Next Steps

Next Steps

- 3/10/2020 - Presentation to BSD Board
- 3/11/2020 - Reconciliation of Whiting-Turner and Third Party estimates
- 3/17/2020 - BSD Board, estimate update & recommendation to BOF
- 3/19/2020 - BCOC to finalize SD package for BOF
- 3/23/2020 - Presentation to BOF
- Upon approval of BOF, commence Design Development

Cultivating caring, creative, and courageous people. Join the journey!

More details to come at the March 17th BSD School Board Meeting.

BURLINGTON SCHOOL DISTRICT

Schematic Design Estimating Methodology

Estimating Approach

- Perform Internal take-offs with estimating team
  - verify quantities drawn
  - provide reasonable assumptions
  - include project specific elements
- Costing Methodology
  - unit costs using historical project cost databases
  - understand current industry trends – national & local
  - internally review costs with Neagley & Chase
  - validate & reconcile with local subcontractors

Inzero, Keith — Firetech Sprinkler

From: Debbie Winters <DWinters@firetechsprinkler.com>
Sent: Thursday, August 1, 2019 2:30 PM
To: Inzero, Keith
Cc: Lozier, Dylan
Subject: RE: Burlington High School 2020 Additions and Renovations - Fire Protection

I based this on 294,015 sq. ft.
This is based on wet systems throughout with unheated areas being covered by dry heads.
I carried 2 system risers – one for east and one for west
I carried 3 combined sprinkler/standpipe risers to feed zone controls on each floor of East A, West A, B
I assumed 7 standpipes/7 stairs
I spotted heads in certain areas and extrapolated the number of heads. Based on past experience and past estimates, I assumed 95 sq. ft. per head or 3094 heads.
I carried current VT prevailing wage rates without fringes. I think the wage rate at time of contract holds for the project, but you should double check that.
I carried a 10% allowance for material increases.
I came up with $970,000 including Burlington permit fee, but not including a P&P Bond. That would add about $15,000.
This equates to abou $3.30 per ft

Subcontractor Unit Price

Sprinkler Cost Estimating Example

WT Unit Price

AREA 002: NEW - NEW ADDITION											
Section 001: 100 - FIRE PROTECTION											
Assembly 000: (None)											
	115010001	Unsized	WET PIPE SYSTEM	122725	$ 3.52	1.00	$ 431,992.00	Skip	1	0
	115020001	Unsized	DRY PIPE SYSTEM	275	$ 4.65	1.00	$ 1,278.75	Skip	1	0
	115040001	4"	DOUBLE FIRE DEPT. CONN. ROOF	2	$ 260.00	1.00	$ 520.00	3.333	1	6.666
	115060001	4"	TWO WAY FIRE DEPT. CONN. WALL	2	$ 488.00	1.00	$ 976.00	3.2	1	6.4
Subtotals for Assembly 000: (None)				***1.00***			***$ 434,766.75***			***13.066***
Subtotals for Section 001: 100 - FIRE PROTECTION							***$ 434,766.75***			***13.066***

Whiting-Turner	
New Addition	$ 298,515.00
Renovation	$ 779,683.00
	$ 1,078,198.00
Fire Tech	
Base Estimate	$ 970,000.00
Sub Bond	$ 15,000.00
Temp coverage - A Building	$ 49,500.00
	$ 1,034,500.00
Reconciled Percentage	**4.05%**

Target Scope Reduction Options to Reach $70m

Involved Scope	Pros	Cons
CHPS Certification	Maintain use of CHPS criteria as design guidelines. Potential cost savings in construction verification, and administrative costs required for certification	Reduction of building performance and loss of public recognition that goes with the CHPS certification.
Canopy at Bike Parking	Bike parking will still be increased from existing quantities, located closer to the main entrance with better supervision, the canopy can be constructed as part of a future project.	New bike parking will not be protected from the elements
Student Parking Lot Scope	This work is proposed to be completed in the summer 2020 outside of project Bond making use of available BHS capital plan funds. New paving, subbase, curbing, striping & required storm water upgrades	
Existing Gym Floor Replacement	Flooring replacement can be completed at a later date as the floor is still fully functional.	The existing flooring is approximately 50 years old. The surface has limited refinishing life left
Existing Bleacher Replacement	This work is proposed to be completed in the summer 2020 outside of project Bond making use of available BHS capital plan funds	
Reduce Owner Furniture Budget	Budget remains at $360,000, 20% more than pre-bond budget	Requires re-use of more existing furniture and equipment and/or use of annual budgets to replace as necessary
Reduce Interior Finishes	Initial cost savings by using less expensive materials. New interior finishes and flooring in A, B, & D buildings is still part of the project.	Reduction of performance and aesthetics of interior finishes using less durable, less cleanable, higher maintenance materials. Increase in annual operating costs.
Galleria/Enlarge B-D Connector	Eliminates some of the most expensive new and renovated area, including 3,800 SF of circulation. No loss of classroom space or programmatic SF, maintaining connection from A Level 4 to B Level 1 over cafeteria, utilizing B/D connector as double loaded corridor (most efficient layout), more opportunity for windows in program spaces that were going along existing gymnasium wall.	Reduces the prominence of the new entry, eliminates double-height space w/"wow" factor from new front entry to existing cafeteria and increases travel distances between existing A Level 4 to proposed Addition. Increases the distance to elevator access to Level 4 from the entrance.
Reduce F Building Renovations	Maintains full ADA compliance upgrades, bathroom remodeling, elevator modernization, and fire alarm.	New Sprinkler system, roof replacement, HVAC upgrades, lighting replacement, windows, program/admin relocations, flooring and HAZMAT remediation in F-building.
Alternate HVAC System with limited Air Conditioning	More efficient system than existing and still provides cooling to the gymnasiums, cafeteria and science building. Cooling will still be provided for the admin areas. Auditorium will keep existing cooling capabilities. Likely lower overall energy usage and less maintenance with less terminal units.	Reduces comfort in shoulder seasons of the school year (May/June, September) and use of the building in the summer. Facility is likely to consume more fossil fuels and/or wood chips than the WSHP system. More exterior roof mounted terminal units
Auxiliary Gym	Auxiliary Gym can be designed such to be added if funds become available during bidding, construction or at a future date.	Loss of student program and community use space and less new building prominence from Institute Road.

Target Scope Reduction Options to Reach $70m

CHPS Certification	
Pros	Cons
*Maintain use of CHPS criteria as design guidelines. *Potential additional cost savings via reductions in construction verification for certification and administrative costs	*Reduction of building performance and loss of public recognition that goes with the CHPS certification.

Estimated Owners Cost Savings $185,000

COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS

Target Scope Reduction Options to Reach $70m

Canopy at Bike Parking

Pros	Cons
*Bike parking will still be increased from existing quantities *Bike parking to be located closer to the main entrance with better supervision *The canopy can be constructed as part of a future project.	*New bike parking will not be protected from the elements 

Estimated Cost of Work Savings $136,000

Target Scope Reduction Options to Reach $70m

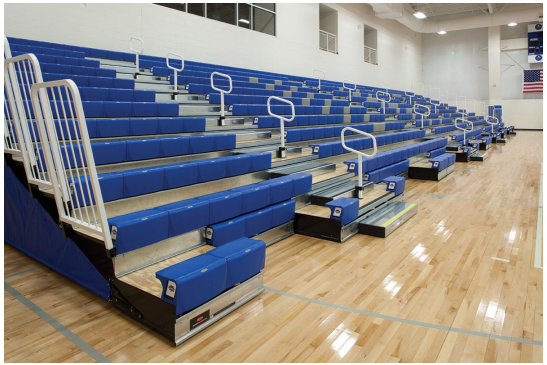
Student Parking Lot Scope	
Pros	Cons
*This work is proposed to be completed in the summer 2020 outside of project Bond making use of available BHS capital plan funds *Scope includes: New paving, New subbase, Curbing, Striping, Required storm water upgrades	

Estimated Cost of Work Savings $400,000

Target Scope Reduction Options to Reach $70m

Existing Gym Floor Replacement	
Pros	Cons
*Flooring replacement can be completed at a later date as the floor is still fully functional.	*The existing flooring is approximately 50 years old *The surface has limited refinishing life left

Target Scope Reduction Options to Reach $70m

Existing Bleacher Replacement	
Pros	Cons
*This work is proposed to be completed in the summer 2020 outside of project making use of available BHS capital plan funds.	

Estimated Cost of Work Savings $269,000

Target Scope Reduction Options to Reach $70m

Reduce Owner Furniture Budget	
Pros	Cons
*Budget remains at $360,000, 20% more than pre-bond budget	*Requires re-use of more existing furniture and equipment and/or use of annual budgets to replace as necessary

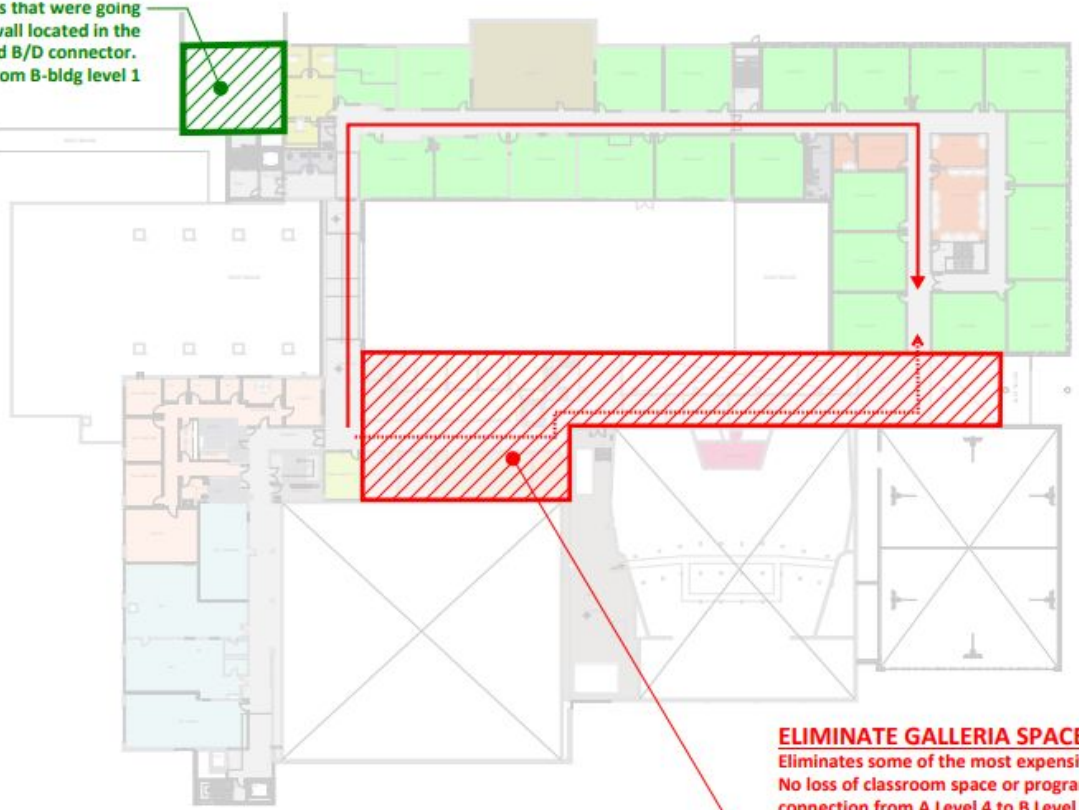
Estimated Owners Cost Savings $360,000

Target Scope Reduction Options to Reach $70m

Reduce Interior Finishes	
Pros	Cons
*New interior finishes and flooring in A, B, & D buildings is still part of the project. *Removal of asbestos flooring	*Increase in annual operating costs *Reduction of performance and aesthetics of interior finishes by using less durable, less cleanable, higher maintenance materials.

Estimated Cost of Work Savings $689,000

Add program space in this area utilizing B/D connector as double loaded corridor (most efficient layout), more opportunity for windows in program spaces that were going along existing gymnasium wall located in the lowest level of the proposed B/D connector. This would be accessed from B-bldg level 1

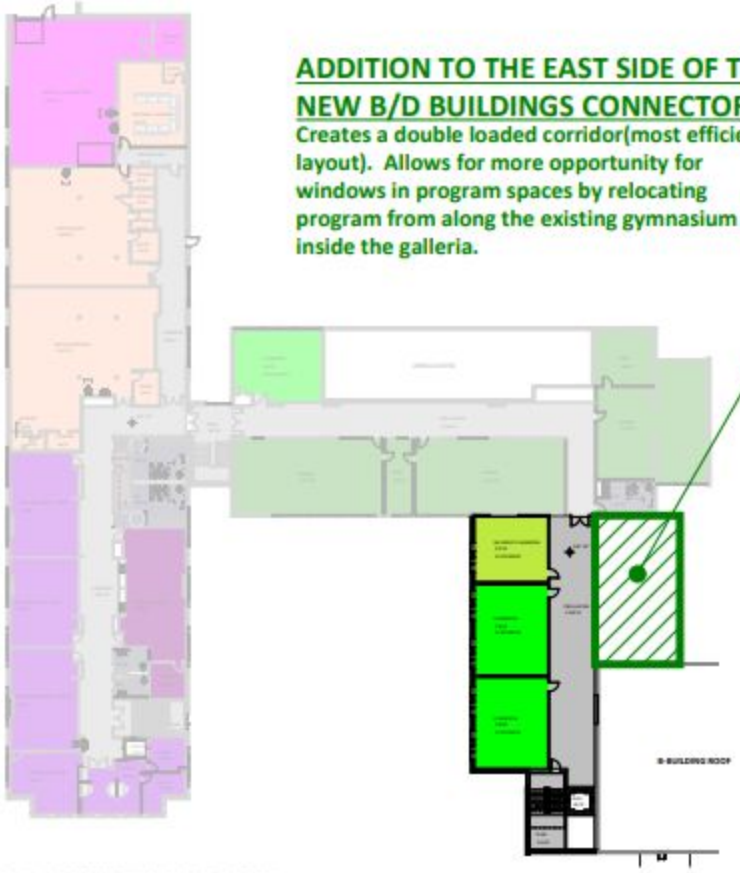


ELIMINATE GALLERIA SPACE AT LEVEL 4 HEIGHT

Eliminates some of the most expensive new and renovated area. No loss of classroom space or programmatic SF, maintaining connection from A Level 4 to B Level 1 over cafeteria, but this reduces the prominence of the new entry, eliminates double-height space w/"wow" factor from new front entry to existing cafeteria and increases travel distances between existing A Level 4 to proposed Addition. Increases the distance to elevator access to Level 4 from the entrance.

ADDITION TO THE EAST SIDE OF THE NEW B/D BUILDINGS CONNECTOR

Creates a double loaded corridor(most efficient layout). Allows for more opportunity for windows in program spaces by relocating program from along the existing gymnasium wall inside the galleria.



1 VM-OptionsPROPOSED BUILDING F - LEVEL 2 PLAN

2 VM-OptionsPROPOSED BUILDING F - LEVEL 3 PLAN