



February 21, 2019

Mark Wheeler
Director of Facilities
Provo City School District
280 West 940 North
Provo, Utah 84604

Re: Timpview High School Major Renovation Feasibility Study

Dear Mark,

We appreciate the opportunity to provide this Study regarding a possible major renovation to Timpview High School located at 3570 North 650 East, Provo, Utah. We have prepared the following information for your review.

KMA Architects Building Evaluation

In December 2018, you provided to our office a copy of the Timpview High School Evaluation report completed by KMA Architects in November 2012; and updated in November 2018. Upon review of this report, and visiting the school facilities this past December, we respect and are in general agreement with the evaluation and findings found in KMA's report.

Per Page A29 of KMA's report, it is indicated that the existing facilities and site improvements scored a 1.87 on a scale of 1 to 5 for Architectural; 2.84 for Structural; 1.49 for Mechanical; and 2.34 for Electrical. It appears that each category as calculated on this page was given equal weight resulting in an overall score of 2.13. This score indicates poor condition with a replacement needed within the near future.

However, per Attachment No. 1 to this major renovation feasibility study, we recommend that the each category be weighted based on the importance of life safety, the condition of the existing site improvements, and other considerations. By weighting the scores developed by KMA, this results in an overall score of 1.85. This shifts the focus from indicating a poor condition with a replacement needed within the near future to indicating an immediate need for a major renovation or replacement.

Purpose of this Study

Based on our visit of the school facilities in December 2018, and our review of the KMA's report, we were asked to develop key concepts related to the potential scope, costs, and scheduling for a major renovation of Timpview High School. It is our understanding that this is to serve as a comparative versus findings by others that recommend keeping Timpview High School as it is with only minor renovations; or versus findings recommending a complete rebuild project.

Structural Engineering Principles

Based on our calculations, approximately 80% of the existing structure was constructed in 1975. It is our understanding that the existing 1975 masonry structure has steel reinforcement. However at that time the code did not require, and the structure was not constructed with many masonry details developed since then that improve a building's ability to withstand a seismic event of moderate to high strength.

Following is a structural comparison between the existing Timpview High School that has undergone a major renovation versus a new building constructed based on today's seismic code requirements. Serviceability is defined as the ability to continue to use the building for its intended uses following a seismic event. Seismic events of extreme strength are not considered under this report.

Major Renovation of Timpview High School

Life Safety Protection During a Seismic Event

Seismic Event of Low Strength = High Probability of Excellent Performance

Seismic Event of Moderate Strength = Good Probability of Good Performance

Seismic Event of High Strength = Good Probability of Fair Performance

Serviceability After a Seismic Event

Seismic Event of Low Strength = Low Probability of Repair and Replacement

Seismic Event of Moderate Strength = Medium Probability of Repair and Replacement

Seismic Event of High Strength = High Probability of Significant Repair and Replacement

Complete Rebuild of Timpview High School

Life Safety Protection During a Seismic Event

Seismic Event of Low Strength = High Probability of Excellent Performance

Seismic Event of Moderate Strength = High Probability of Excellent Performance

Seismic Event of High Strength = Good Probability of Good Performance

Serviceability After a Seismic Event

Seismic Event of Low Strength = Low Probability of Repair and Replacement

Seismic Event of Moderate Strength = Low Probability of Repair and Replacement

Seismic Event of High Strength = Medium Probability of Repair and Replacement

Any new construction on the existing site should be located downhill or to the west side of the site where possible. It is believed that the existing soils are relatively more stable downhill or to the west side of the site; and that the existing soils are relatively less stable uphill or to the east side of the site.

Items to be Addressed by a Major Renovation (listed by priority):

If Timpview High School undergoes a major renovation, the work required is significantly more than simply retrofitting the building foundation system by way of helical piers or another similar structural support system. To do this retrofit to the building foundation system will require the removal and replacement of: concrete floor slabs; earthwork; furnishings and equipment including cabinetry and lockers; adjacent wall, floor, and ceiling finishes; roof systems; plumbing fixtures; HVAC distribution; and landscaping. Additionally there are other structural, non-structural, and site issues that all interrelate to improving significantly the performance of the existing building during and serviceability after a seismic event.

- Structural.
 - Helical piers or another similar foundation support system to address existing building settlement.
 - North Gymnasium and South Gymnasium concrete roof tees and their connections.
 - Classroom wing concrete floor tees and their connections.
 - Slender columns in Media Center.
 - Masonry detailing.
 - Exterior masonry deterioration.
 - Loading dock retaining walls.
 - Retaining wall at north side of Vocational Building.
 - Deterioration of the interior courtyard south of the Media Center.
- Non-Structural Fall Hazard and Entrapment.
 - Suspended ceilings.
 - Overhead HVAC Ductwork.
 - Overhead light fixtures.
 - Overhead plumbing and fire sprinkler lines.
 - Equipment.
 - Bracing at top of non-bearing walls.
 - Cable tray.
- Redo of Site Improvements.
 - Site subgrade drainage.
 - Major canal easement along east and south sides of site.
 - City storm drain pipe located at the intersection of 3650 N and 650 E.

Site surface drainage.

Waterproofing at building foundation walls and site retaining walls.

Adjust grading to 5% maximum where feasible.

Concrete curb and gutter.

Sidewalks.

Pavement drives and parking lot areas.

- **Functionality.**

Accessibility from street and parking areas to the different areas of the building and performing arts and athletic events.

Improved elevators and access to them.

Accessibility at ramps and restrooms.

Rebranding of building entries.

Wayfinding, especially for athletic events.

Complex circulation vs. simplified circulation for improved security.

Location of main office vs. centralized main office locations for improved security with secured entry vestibule.

Number of entries vs. less entries for improved security.

Door access systems, door position switches, and security cameras.

Increased seating capacity at Cafeteria.

New softball field at park to the south.

Improve existing baseball diamond.

Add 2 more tennis courts for a total of 8 courts to allow the school to host UHSAA state tournaments.

- **Hazardous Materials.**

Asbestos-based floor tile and mastic.

Asbestos-based linoleum.

Asbestos-based sinks.

Miscellaneous asbestos-based insulation such as at pipes.

Transite tables and countertops.

Transite vent hood.

Fluorescent lamps with mercury.

- **Fire Sprinkler & Fire Riser Systems.**

40 years old. Beginning to fail. Past life expectancy.

Fire risers not code compliant.

- **Complete Reroof.**

Roof drainage issues at some areas.

Leaking skylights.

- Building Envelope.
 - Insulation at roof.
 - Insulation at walls.
 - Insulation at foundations.
 - Glazing systems with improved U-values and with thermal breaking.
- Auditorium.
 - Maintain total seating count.
 - Theater equipment.
 - Audio / visual systems.
 - Lighting LED and controls.
 - Sound diffusion.
 - Sound absorption.
 - Seating.
 - Proscenium drapery and carpeting.
 - Paint at stage areas.
 - Repair smoke vent hatches.
 - New black box theater.
- HVAC
 - Boilers.
 - Air handlers.
 - Improved air distribution systems including VAVs and ductwork.
 - Improved VFDs and controls throughout.
 - Exhaust systems.
 - Wood shop dust collection system.
 - Caught on fire on January 8, 2019.
- Plumbing.
 - Waste lines. Past life expectancy.
 - Roof drains and drain lines. Past life expectancy. Missing some secondary roof drains.
 - Vacuum breakers.
 - Restroom and kitchen plumbing fixtures.
 - Kitchen grease interceptor.
 - Hammer arrestors.
- Lighting.
 - Daylighting.
 - LED nLighting.
 - Daylight harvesting.

Tunable lighting.
Exterior emergency lighting.

- Electrical Equipment.
 - Fire alarm and detection system.
 - Classroom sound reinforcement.
 - Intercom system.
 - Transformers. Close to past life expectancy if haven't been replaced.
 - Panel age, arc flash, K ratings.
 - Spare breaker spaces.
 - Grounding.

- Miscellaneous.
 - New paint.
 - Wood door leaf repairs.
 - New cabinetry.
 - Improved science labs.
 - Improved pottery and ceramics instructional areas.
 - New lockers.
 - New door hardware.
 - New lay-in ceiling tile.
 - New floor coverings.
 - New entry mats.
 - New Furniture.
 - New Equipment.
 - Better, more durable restroom and locker room finishes
 - Food Service equipment upgrades.

Existing Portions of the Building or Other Elements to be Kept as Part of a Major Renovation:

1975 structural shell; except rebuild South Gymnasium, Wrestling Room, and Vocational Building.

Most interior, non-structural walls.

Most hollow metal door and window frames.

Main Gymnasium Addition (improve AV, more storage, replace bleachers).

Weight Room Addition.

Stadium, field, track, and storage building.

Booster building (repair leaks).

Existing baseball diamond (make improvements).

Tennis courts (Add 2 more courts for a total of 8 courts. This will allow the school to host UHSAA state tournaments).

Overall rough site grading.
Some landscaping.
Perimeter fencing.

See Attachment No. 2.

Estimated Costs for a Major Renovation

1. \$80,000,000 to \$90,000,000 based on all of the scope listed above.
Plus approximately \$10,000,000 “throw away” costs.
Demolition and abatement of existing materials.
Logistics of relocated students, faculty, and staff during major renovation phases.
Installation and removal of portable classroom units to provide project flexibility.
2. The District could also consider focusing on a list of major renovation items valued at \$45,000,000 to \$60,000,000 as the first significant portion of the project. Then 3 to 5 years later complete the remaining major renovation items for \$20,000,000 to \$45,000,000. Costs listed above are at today’s prices. Based on the current construction economy in Utah, assume 8% annual inflation hereafter.

Estimated Schedule for a Major Renovation

5 Years for bond, design, bidding, permitting and construction for a phased major renovation.
Pre-Planning for Bond Election = 6 Months.
Bond Election.
Programming including Needs Assessment with Stakeholders = 6 months.
Schematic Design, Design Development, and Construction Documents = 6 Months.
Bidding and Permitting = 3 Months.
Phased Demolition, Abatement, and Construction = 36 Months.
Installation of Furniture and Occupancy = 3 Months.

Estimated Added Life to Timpview High School following a Major Renovation

40 or more years, similar to a new building.

As outlined previously, following a major renovation of the building there is a good probability that it will provide good to fair life safety protection during a seismic event, similar to a new building constructed in conformance with today’s codes.

However regarding building serviceability, there is a much higher probability that a building that has undergone a major renovation will be less serviceable than a new building following such a seismic event. There would be a higher probability that the renovated building would require

significant repairs and replacement of building systems and materials following the seismic event to make it safe and usable again. This could potentially cost many millions of dollars. On the other hand a new building would have a lower probability of requiring significant repairs and replacement following a seismic event.

See Attachment No. 3.

We appreciate the opportunity to submit this Study. If you have any questions or concerns, please contact us at our office.

Sincerely,



Curtis L. Livingston, AIA, NCARB
Project Architect

DRAFT

BUILDING EVALUATION

PROVO SCHOOL DISTRICT - TIMPVIEV HIGH SCHOOL

KMA ARCHITECTS

EVALUATION SUMMARY CHART																					
CATEGORY	CMA WEIGHTED RATING	CMA WEIGHT	KMA RATING	SUB-CATEGORY	KMA NOTES	CATEGORY	CMA WEIGHTED RATING	CMA WEIGHT	KMA RATING	SUB-CATEGORY	KMA NOTES										
Architecture																					
Building Access and Circulation	1.5	1.0	2.00	1.50	ADA accessibility - building	A	Div. 11 Equipment	2.4	3.0	1.75	1.00	Stage curtains									
				2.00	Stairs, ramps, elevator, etc.	B					1.50	Projection screens									
				2.50	Corridor circulation	C					2.00	Food service equipment									
Life Safety and Security	1.0	1.0	1.00	2.00	Egress	D	Div. 12 Furnishings	3.1	4.0	2.13	2.50	Gymnasium equipment									
				0.50	Administration	E					2.50	Floor mats									
				1.50	General Security						2.00	Window blinds									
Div. 2 Site and Utilities	1.5	1.0	2.00	0.50	Classroom Security		Div. 13 Special Construction	0.9	1.0	0.75	2.00	Fixed audience seating									
				1.50	Circulation / Safety	F					1.50	Bleachers									
				3.00	Playgrounds / Playfields	G					0.50	Fire sprinkling system									
				2.00	Utilities		Asbestos	2.5	3.0	2.00	2.00	0.50	Fire alarm system	0.50	Fire riser						
				2.00	Asphalt / Concrete											Architectural Total:	2.22	1.87			
				2.50	Sprinkling System											Structure					
				Div. 3 Concrete	2.8	3.0	2.50	1.50	Fences and gates		Structure	1.3	1.0	1.68	2.5	1975 Walls	M				
								2.00	Parking	H					2.25	1975 Roof & Floor	M				
								2.00	Drop-offs						1	1975 Seismic Hazards	M				
								Div. 4 Masonry	1.5	1.0	2.00	1.00	ADA accessibility - site		Structural Initial (80% of total)	1.3	1.0	1.68	1	1975 Misc.	M
0.00	Drainage		4									1982 - 2011 Walls	M								
2.00	Compounds		4									1982 - 2011 Roof and Floor	M								
Div. 5 Metals	2.9	3.0	2.75									2.50	Utilities	I	Structural Additions (20% of total)	3.5	3.0	4.00	4	1982 - 2011 Seismic Hazards	M
												2.50	Cast-in-Place						4	1982 - 2011 Misc.	M
												-	Architectural precast						4	1982 - 2011 Misc.	M
												Div. 6 Wood and Plastics	2.8	4.0	1.60	2.00	Concrete Masonry Units	J	Structural Total:	1.42	2.84
				2.00	Brick	K	HVAC Systems														
				2.00	Mortar Cement		2									Heating	N				
				Div. 7 Thermal and Moisture Control	1.6	2.0	1.70									3.00	Structural Steel Framing		HVAC Systems	1.9	2.0
								2.75	Metal Stairs		1.5					Air distribution	N				
								2.50	Railings		0.5					Piping	N				
								Div. 8 Doors and Frames	2.5	3.0	2.07					1.50	Cabinets		Plumbing Systems	1.8	2.0
1.50	Cabinet Hardware and locks		1.5													Fixtures	N				
1.50	Countertops		1													Domestic water heating	N				
Div. 9 Finishes	3.0	4.0	1.90													2.00	Window stools		Kitchen Systems	1.8	2.0
												1.50	Interior Architectural Woodwork		1.5	Kitchen systems	N				
												1.50	Waterproofing / repellants		1	Control system	N				
												Div. 10 Specialties	3.5	5.0	1.90	-	Building Insulation - wall		Control Systems	1.5	2.0
				-	Building Insulation - roof		Mechanical Total:									1.75	1.49				
				-	Metal Roofing		Electrical														
				Div. 11 Equipment	2.4	3.0	1.75									2.00	Membrane Roofing	L	Div. 26 - Electrical Systems	2.2	2.0
								2.00	Metal flashing and trim		a-2 b-3					Switchgear & panel boards	O				
								2.00	Roof penetrations		a-2 b-3					Interior lighting	O				
								Div. 12 Furnishings	3.1	4.0	2.13					1.00	Caulking / joint sealants	M	Div. 27 - Communications	2.3	2.0
2.50	Steel doors and frames		2.5													Emergency egress lighting	O				
2.00	Wood doors		2													Theatrical dimming system	O				
Div. 13 Special Construction	0.9	1.0	0.75													-	Access doors and frames		Div. 28 - Electronic Safety and Security	1.5	1.0
												2.50	Overhead colling doors	N	2	Intercom system	O				
												2.50	Entrances		2.5	Auditorium sound system	O				
												Div. 14 Asbestos	2.5	3.0	2.00	1.50	Windows		Electrical Total:	2.00	2.34
				2.00	Door hardware		2.5									Intrusion detection system	O				
				1.50	Glass / glazing		2.5									Video surveillance system	O				
				Div. 15 Asbestos	2.5	3.0	2.00									2.50	Gypsum Wall board		AVERAGE WEIGHTED CAMPUS RATING PER CMA INDICATES NEED FOR MAJOR RENOVATION OR REPLACEMENT: 1.85		
								-	Wall covering		:KMA AVERAGE CAMPUS RATING PER KMA (2018) 2.13										
								-	Wall carpet												
								2.50	Acoustical panel ceilings												
2.75	Acoustical tectum panels																				
2.50	Painting and joint sealants																				
-	Pre-finished int. panel (FRP)																				
2.00	Resilient floor tile (VCT)																				
2.00	Carpeting																				
2.00	Ceramic tile																				
2.75	Hardwood floor tile																				
4.00	Visual display surfaces																				
1.50	Toilet compartments																				
-	Louvers / vents																				
1.50	Signs																				
1.00	Lockers																				
-	Fire protection specialties																				
1.50	Toilet bath accessories																				

EVALUATION SUMMARY

POSITIVE EVALUATIONS

1. Newer overall school (built in 1975+) with some very recent additions/remodels.
2. Fully Fire Sprinkled.
3. Newly installed surveillance cameras.
4. The shop areas are in good condition and very well maintained.
5. The auditorium is in fair condition and well maintained.

NEGATIVE EVALUATIONS

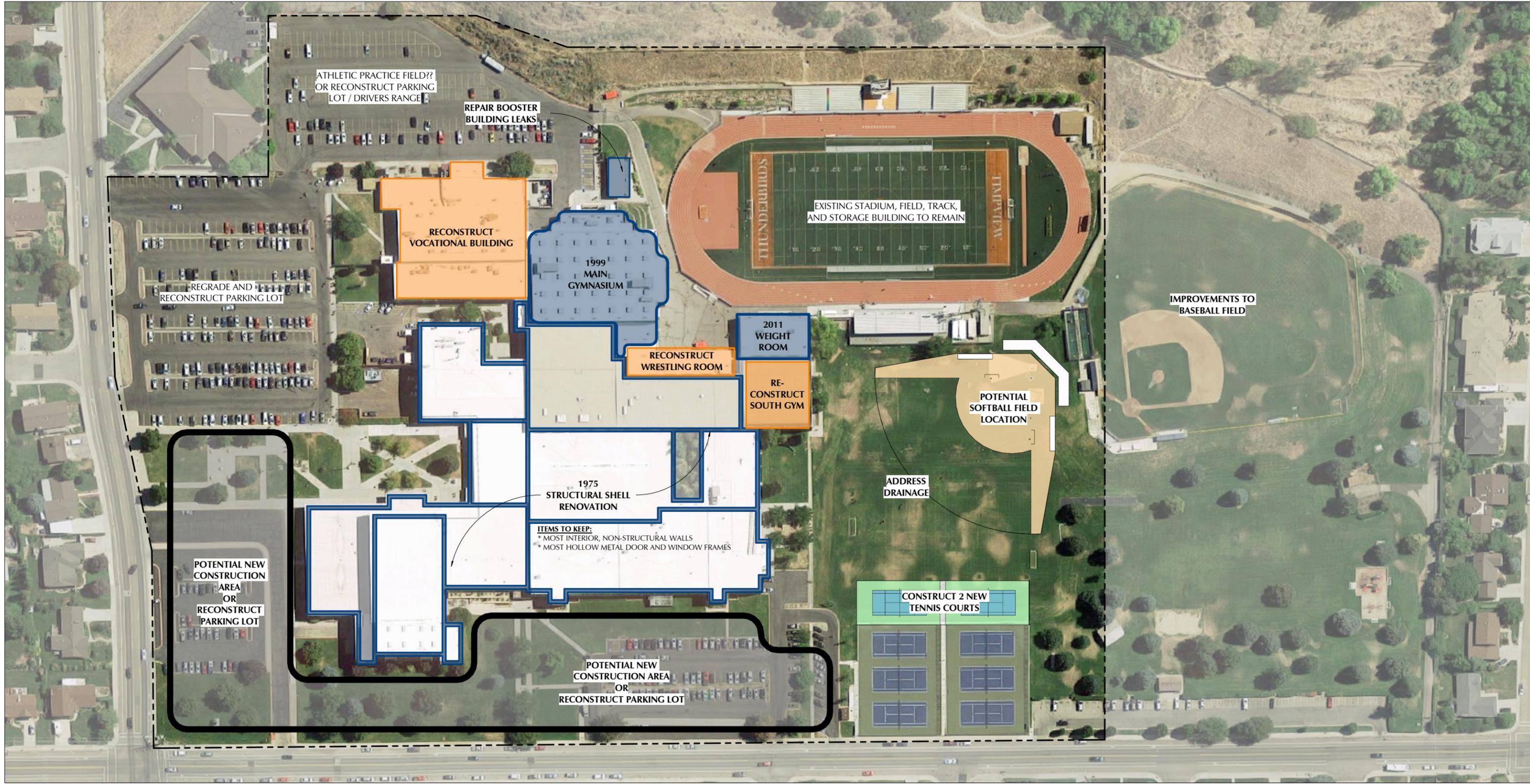
1. Some visual stress cracking on the exterior of original building.
2. The science labs and classrooms are in poor condition and very cluttered.
3. The ceramics and pottery classroom is in poor condition and is very dirty from use.
4. The overall grounds are not ADA friendly due to the terraced layout of the campus.
5. Student parking lot is very steep.

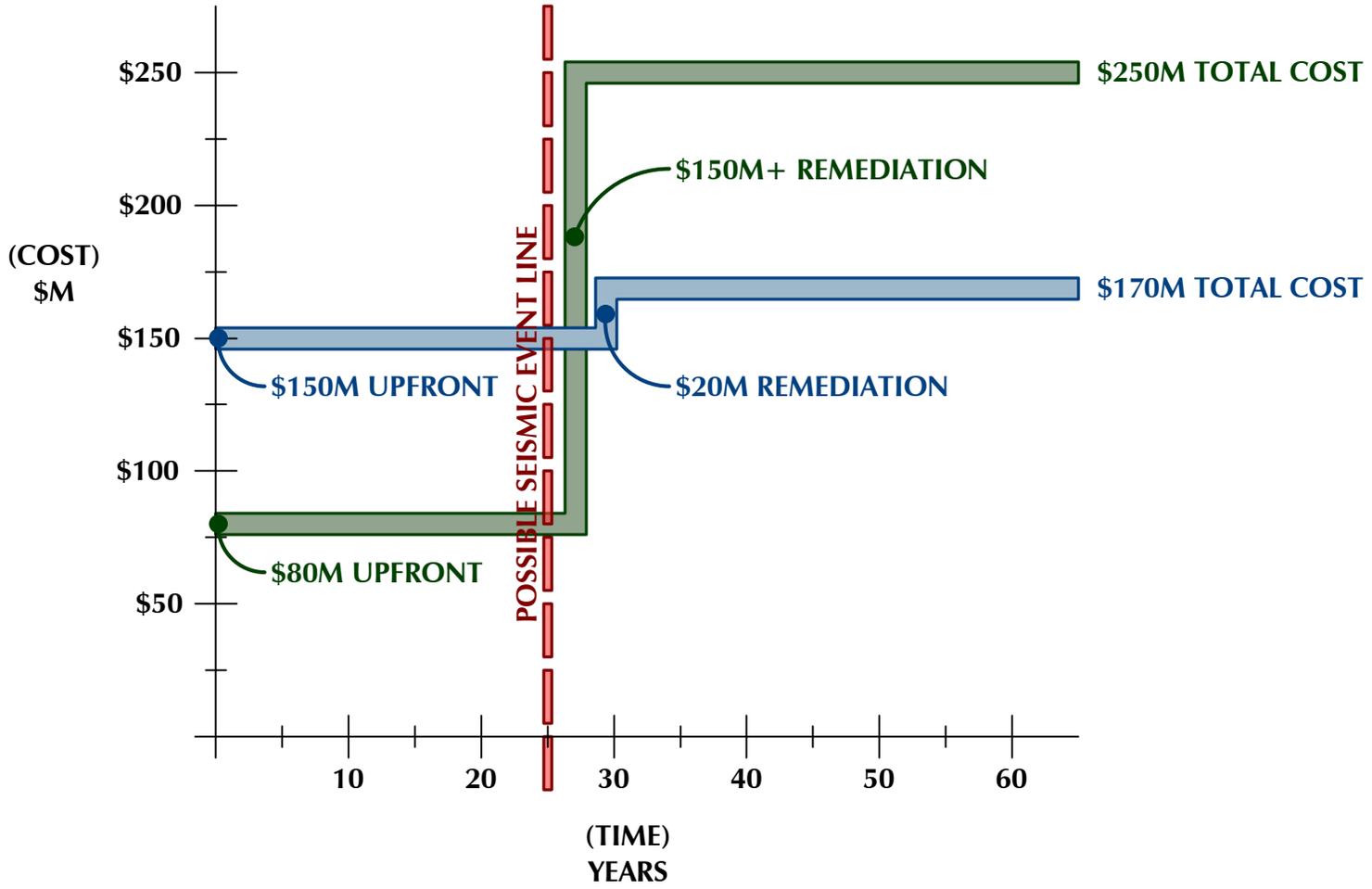
The school evaluation is complete with this report.

If there are any other questions or clarifications about this evaluation report, please call Kevin Madson at KMA Architects, Inc. (801) 377-5062.

CURTIS MINER ARCHITECTURE (CMA) WEIGHTED AVERAGE RATING SYSTEM BASED ON PRIORITY OF ITEMS UNDER A MAJOR RENOVATION	
WEIGHTED RATING	EXPLANATION
1	INDICATES AN IMMEDIATE NEED FOR MAJOR RENOVATION OR REPLACEMENT
2	INDICATES POOR CONDITION; A MAJOR RENOVATION OR REPLACEMENT IS NEEDED IN THE NEAR FUTURE
3	INDICATES GOOD OR AVERAGE CONDITION
4	INDICATES ABOVE AVERAGE CONDITION; HAS REACHED MIDLIFE WITHIN BUILDING'S LIFE CYCLE
5	INDICATES EXCELLENT CONDITION; USUALLY WITHIN FIVE YEARS OF INSTALLATION

KMA RATING SYSTEM	
Rating	Explanation
1	Indicates an immediate need for replacement
2	Indicates poor condition; a replacement is needed within the near future
3	Indicates good or average condition
4	Indicates above average condition; has reached midlife within building's life cycle
5	Indicates excellent condition; usually within five years of installation





- MAJOR RENOVATION
- NEW BUILD

NOTE:
* COST PROJECTIONS SHOWN DO NOT INCLUDE MAINTENANCE & UPKEEP. CONSTRUCTION COSTS ONLY.
* COST PROJECTIONS ARE BASED ON TODAY'S COSTS. ASSUME 8% ANNUAL INFLATION HEREAFTER.