

BELMONT ICE RINK SITE STUDY

05.12.2021

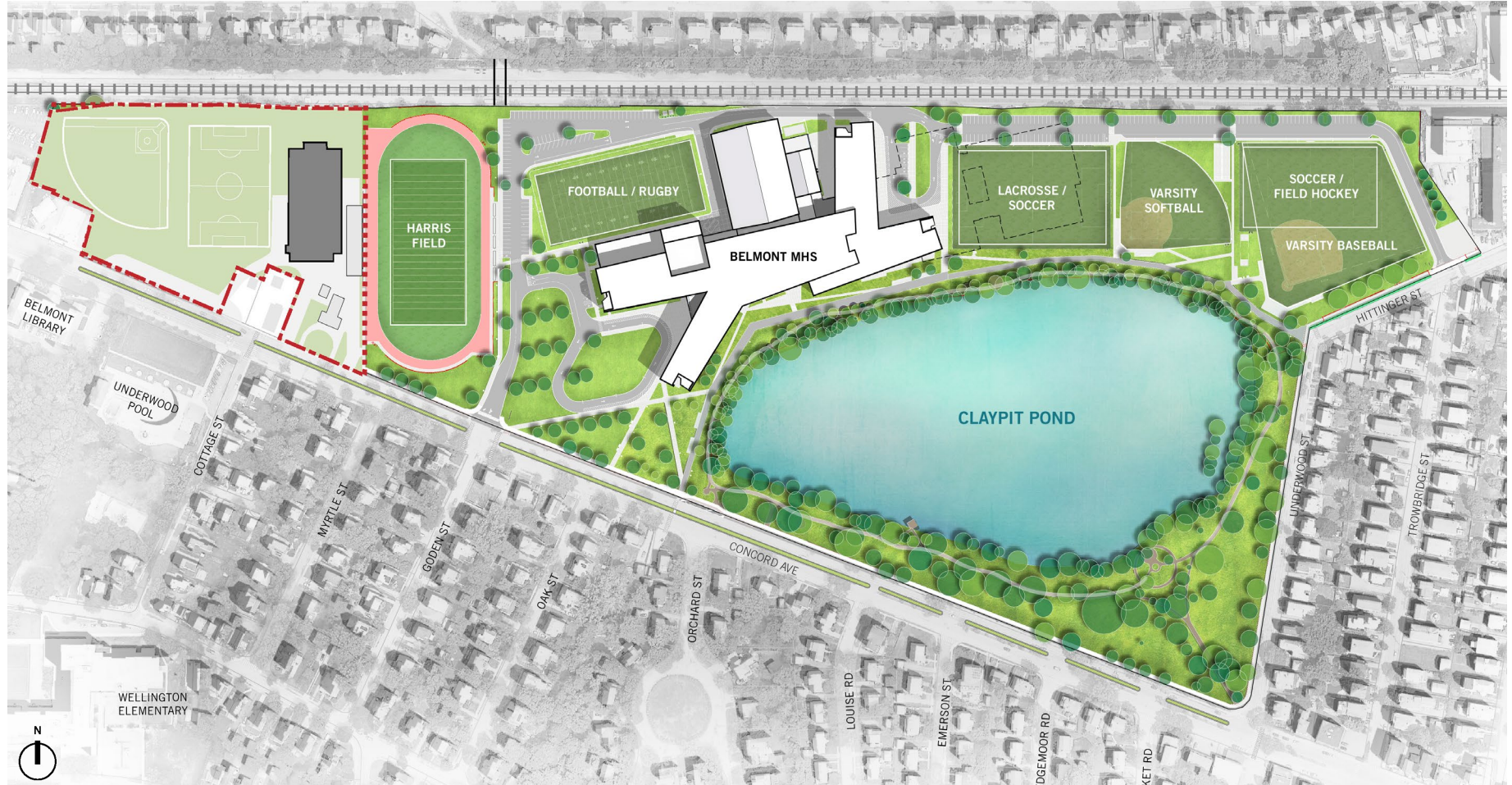
Perkins&Will



SITE PLAN : SATELLITE



SITE PLAN : CURRENT



STUDY BACKGROUND & GOALS

1. Site study for 5.5-acre parcel West of Harris Field HS property
2. Study undertaken due to extremely poor condition of existing rink
3. Two study scenarios:
 - A. New ice rink and reconfigured site (fields, parking, infrastructure, landscape and demolition of existing)
 - B. Renovate, if possible, existing rink with additions and reconfigured site as required
4. Develop site concept design that is responsive to the HS and Town's program and requirements
5. Create a report with conceptual estimates for design and construction costs

STUDY BACKGROUND & GOALS

6. Program assumptions for study:
 - A. Single sheet ice rink with locker rooms, spectator and support spaces, including DPW storage.
 - B. Soccer, baseball and softball JV fields (NFHS minimum requirements)
 - C. Two throwing areas (shot put and discus)
 - D. Site parking for 110 vehicles (90 for HS and 20 for rink use)
 - E. Tennis courts for HS to be accommodated at Winn Brook School but evaluate including courts if all other site program are maintained
 - F. Adequate pedestrian site circulation, drop-off area for passengers and access from Concord Ave.

EXISTING CONDITIONS

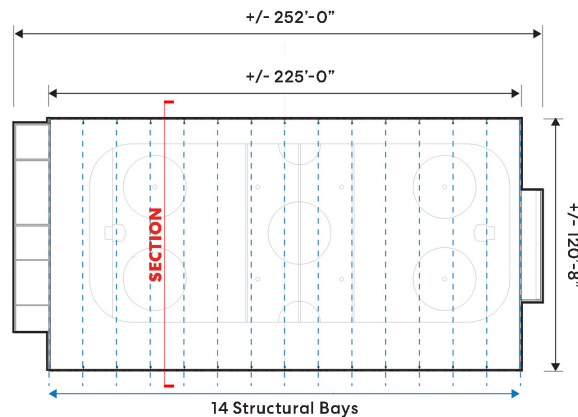
INTERIOR PHOTOS



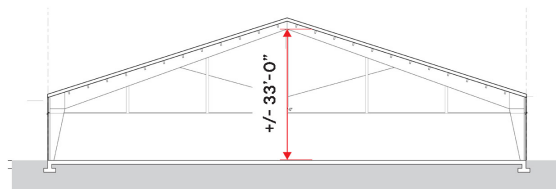
EXISTING CONDITIONS – BEYOND USEFUL LIFE

Building Footprint – 29,500 SF

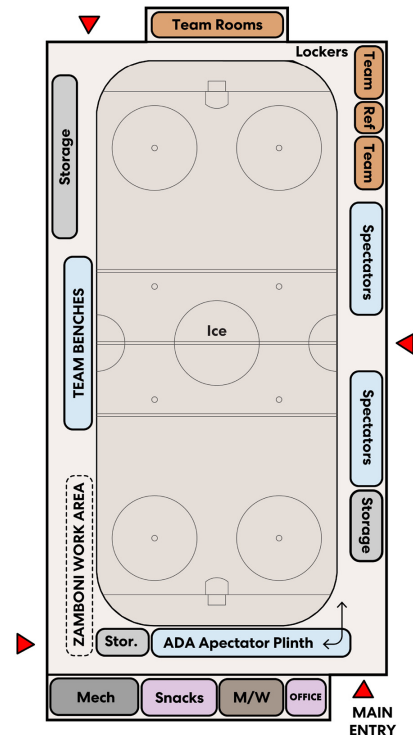
- Does not meet current building codes, fire & life safety requirements or accessibility regulations
- Not climate controlled
- No mechanical ventilation
- Exterior enclosure failing and needs to be replaced
- Lacks sufficient space to accommodate uses
- Moisture/water issues throughout
- Structural steel corroded and rusting
- Secondary roof/wall structure failing
- Fire-alarm systems need to be updated
- Beyond expected life-span
- Cost of renovation will exceed replacement value



STRUCTURAL PLAN



EAST-WEST SECTION



PLAN DIAGRAM : EXISTING ICE RINK

EXISTING CONDITIONS

EXTERIOR PHOTOS



RINK PROGRAM DETAIL

Proposed Ice Rink - 45,208 SF

Division / Space Type		SPACE PROGRAM						
		Occ ea	Qty	Net Area/Unit (sq.ft)	Net Area (sq.ft)	Efficiency Factor	Net Assignable Area (sq.ft)	Comments
Arena								
	Recommended NFHS rink		1	17,000	17,000	1.00	17,000	200' x 85'
	Benches Boxes & Apron		1	6,135	6,135	1.00	6,135	team benches, penalty box, timekeeper, circulation
	Home Locker Rooms	40	4	1,000	4,000	1.11	4,440	30" wide bench & shelf, includes 1 WC, 1 sink, 2 showers per room
	Field Sport Locker Rooms	75	2	1,800	3,600	1.11	3,996	24" wide lockers, includes 3 WC, 2 sink, 4 showers per room
	Visitor Locker Rooms	40	2	680	1,360	1.11	1,510	benches and hooks, includes 1 WC, 1 sink, 1 shower per room
	Referee/Coaches Locker Room	4	2	280	560	1.11	622	lockers and 2 inclusive change rooms, 1 WC, 1 sink, 1 shower per room
	Family Locker Room	4	1	280	280	1.11	311	lockers and 2 inclusive change rooms, 1 WC, 1 sink, 1 shower per room
	Spectator Seating Area	175	1	1,400	1,400	1.00	1,400	rink or second level, 150-200 bench seats anticipated
	Arena Skate Rental/Sharpening		1	120	120	1.11	133	
	First Aid Room		1	120	120	1.11	133	
	Ice Resurfacing Room		1	300	300	1.11	333	ice melt pit, zamboni
	Video/Sound Booth/AV Space	2	1	75	75	1.11	83	back of seating
	Arena Storage		1	500	500	1.00	500	dasher boards, nets, goals, maintenance equipment
	Area Totals				35,450		36,596	
	Ice Plant and Mechanical		1	1,200	1,200	1.00	1,200	
	Electrical/Comm. Room		1	400	400	1.00	400	
	Support Area Totals				1,600		1,600	
	Assigned Area Sub-Total				37,050		38,196	

RINK PROGRAM DETAIL

Proposed Ice Rink - 45,208 SF

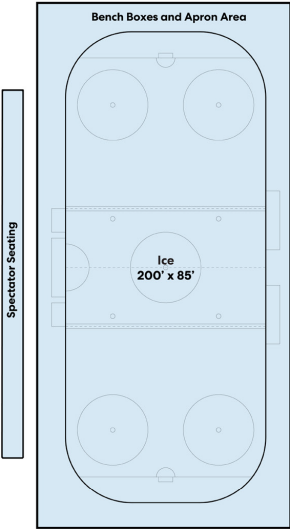
Division / Space Type		SPACE PROGRAM						
		OCC ea	No.	Net Area/Unit (sq.ft)	Net Area (sq.ft)	Efficiency Factor	Net Assignable Area (sq.ft)	Comments
Public and Support Spaces								
	Main Lobby		1	300	300	1.00	300	
	Reception Counter and Support		1	80	80	1.11	89	information and entry control
	Warm Room	24	1	600	600	1.11	666	multipurpose room, behind seating or off lobby
	Arena Management Office		1	120	120	1.11	133	off main lobby, security, lost & found
	Retail Space/Ticketing		1	100	100	1.11	111	team and/or booster club use, field access
	Concession/snack bar		1	150	150	1.11	167	no cooking, warm and prepare, sinks and refridgerator, field access
	Public Spcae Area Totals				1,350		1,466	
	Facility General Storage		1	100	100	1.00	100	
	Jantiorial Supply Closet		2	50	100	1.00	100	
	Recycling/Garbage		1	80	80	1.00	80	LEED requirement
	Inclusive WC		1	64	64	1.11	71	family/gender neutral rest-room, 1 WC and 1 sink
	Public Restrooms		2	300	600	1.11	666	spectator use, field access, 3 WC and 2 sinks per room
	IT Server Closet		1	50	50	1.00	50	
	Support Area Totals				994		1,067	
	Assigned Area Sub-Total				2,344		2,533	
	Arena				37,050		38,196	
	Public and Support Spaces				2,344		2,533	
	Subtotal				39,394		40,728	
	Total Building Gross Floor Area					1.11	45,208	90% building efficiency

PROJECT PROGRAM

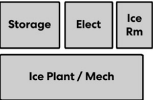
Proposed Ice Rink - 45,208 SF (Two Levels)

Existing Ice Rink - 29,500 SF

SINGLE ICE SHEET & SEATING



ICE SUPPORT



LOCKER ROOMS



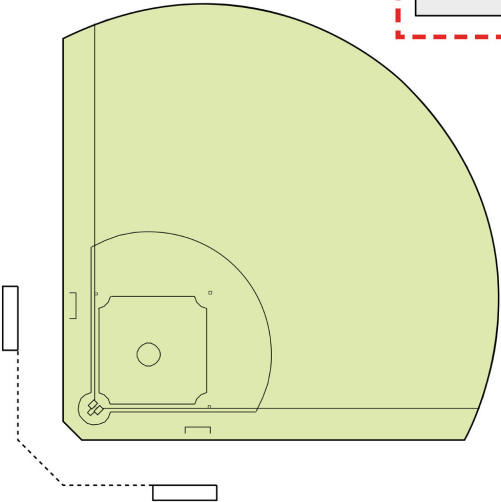
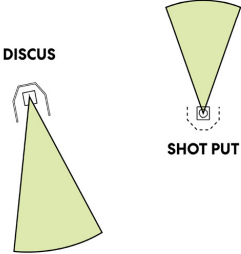
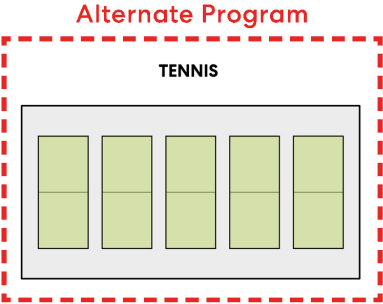
LOBBY AMENITIES



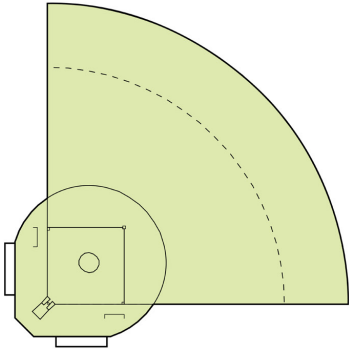
LOBBY SUPPORT



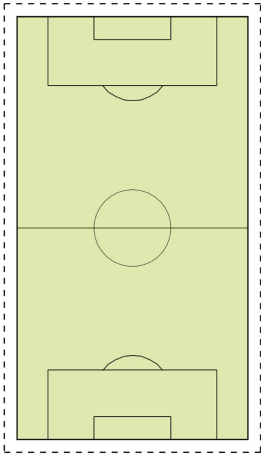
PROJECT PROGRAM
NFHS Standards



BASEBALL FIELD
300' (FOUL LINE) , 300' (CENTER FIELD)



SOFTBALL FIELD
(FAST PITCH): FOUL LINE (185'-235'), CENTER
FIELD (185'-350')



SOCCER FIELD
SOCCER : 180' X 300'

TEST FITS – THREE SCHEMES



SCHEME 01: Renovation



SCHEME 02: New Construction (East)
PREFERRED SCHEME



SCHEME 03: New Construction (West)



SITE CONCEPT EVALUATION

ATTRIBUTES	SCHEME 01: Renovation	SCHEME 02: New Construction (East)	SCHEME 03: New Construction (West)	
Carbon Footprint	+	○	○	
Efficient Parking Layout	-	+	○	
Field Configuration	○	○	-	
Construction Duration	-	○	○	
Construction Phasing	-	-	+	
Pedestrian Circulation	○	○	-	
Vehicular Circulation / Drop-Off	○	+	○	
Rink Optimization	-	+	+	
Building Orientation / Natural Lighting	-	+	+	
Lowest Cost / Value	-	+	○	
TOTAL	-5	4	1	

- + Positive Attribute
- Negative Attribute
- Neutral

PREFERRED SCHEME 2

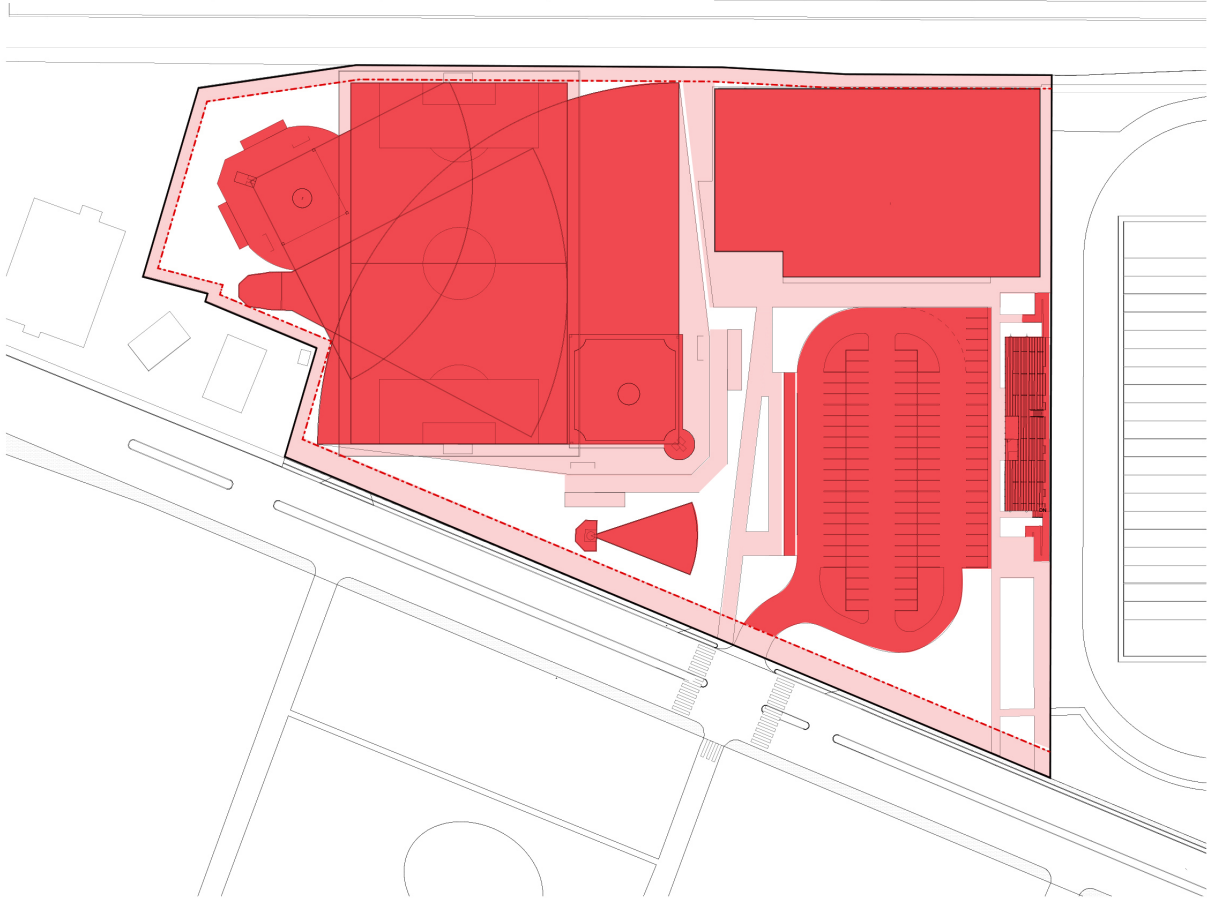
Aerial Rendering : New Construction (East) Scheme



SITE ANALYSIS & FIT

Existing Site Area

- PROGRAM
- SETBACK & MAJOR PEDESTRIAN PATHS

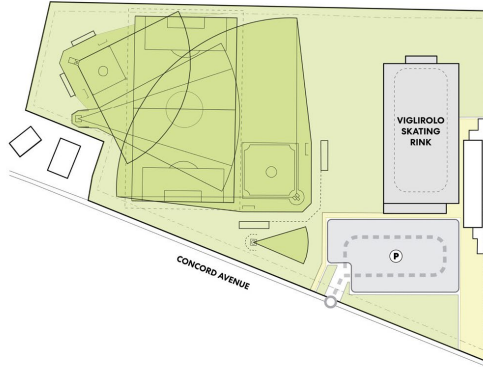


SCHEME 2 HIGHLIGHTS

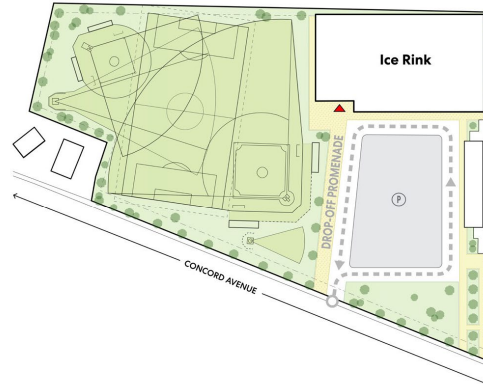
- Ideal layout for rink program
- Efficient vehicle circulation and drop-off
- Proximity to Harris Field (lockers, parking) and Underwood Pool (parking)
- Preferred driveway entry on Concord Avenue at Cottage St. (signalized)
- Energy sustainability for new rink opportunities:
 - Heat pump refrigeration system for ice making
 - Geo-exchange system to heat and cool building
 - Optimized solar orientation for photovoltaic array
- Most cost-effective solution that can be phased easily

PHASING & PROJECT BUDGET

New Site Work and Athletic Fields



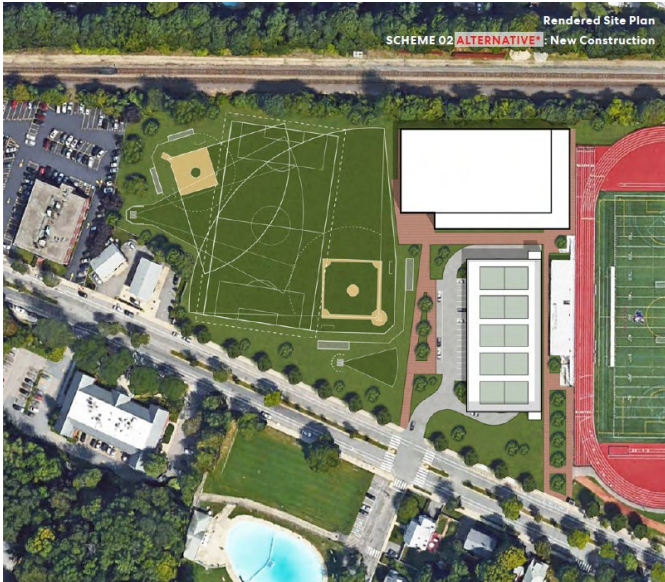
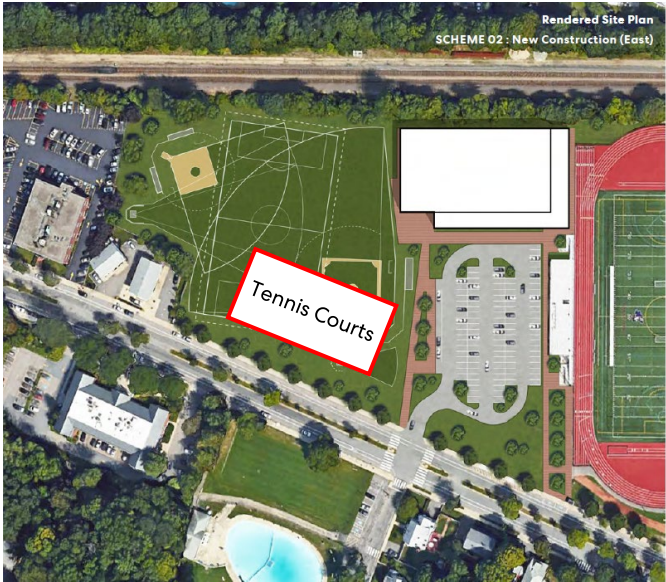
Extend New Parking, Complete Site Work



DESIGN SCHEME (Project Costs)	CONSTRUCTION SCHEDULE	TOTAL (POSSIBLE COST 20% HIGHER / LOWER)
SCHEME 01: Renovation		
Total Construction Cost	18 months	\$17,405,000
Project Cost (30%)		\$22,626,500
Site Work Funds		-\$2,250,000
Total Rink Project Cost		\$20,376,500
SCHEME 02: New Construction (East)		
Total Construction Cost	15 months	\$15,615,000
Project Cost (30%)		\$20,299,500
Site Work Funds		-\$2,250,000
Total Rink Project Cost		\$18,049,500
SCHEME 03: New Construction (West)		
Total Construction Cost	15 months	\$16,460,00
Project Cost (30%)		\$21,398,000
Site Work Funds		-\$2,250,000
Total Rink Project Cost		\$19,148,000

ALTERNATIVE TENNIS OPTION

DESIGN SCHEME (Construction Cost Only)	CONSTRUCTION SCHEDULE	AREA (SF)	COST	TOTAL (POSSIBLE COST 20% HIGHER / LOWER)
Alternates				
Elevated Tennis Courts (5)	8 months	30,720	\$3,120,000	\$4,517,500
Design & Construction Contingency (7.5%)			\$235,000	
Escalation (2023)			\$120,000	



BELMONT ICE RINK SITE STUDY