



Tuxedo UFSD

Analysis Report
October 19, 2022



Analysis Report

Background and Purpose

MBB is a women-owned firm recognized for our leadership in the profession with the 2022 AIA NY State Firm of the Year Award. For over twenty years, MBB has been designing forward-thinking learning environments that are empathetic, flexible, sustainable, and responsive to each school’s unique mission and culture. We are passionate about providing students with dynamic, child-centered environments that foster creativity, well-being, social and academic development, and equitable opportunities for all. We have expertise in school planning and design including expertise as an Accredited Learning Environment Planner. Our award-winning portfolio contains over fifty educational projects for top tier independent schools, public schools, charter schools, and international schools.

MBB has been retained by Related Companies to explore options for the anticipated future growth of the Tuxedo Union Free School District (TUFSD). Our work includes looking at the existing facilities and the future enrollment of TUFSD and putting forward potential options for consideration based upon our experience working with many schools planning for future growth. The following pages include our analysis of the existing facilities, our analysis of the future space needs as well as multiple potential options for meeting those needs. The options are not meant to be architectural design proposals, but rather to illustrate that there is a range of potential approaches to accommodating the projected growth in enrollment that are possible.



Analysis Report

Executive Summary

It is projected that there will be 560 students at the completion of the Tuxedo Farms development, which is 95 students fewer than the TUFSD 2016 enrollment. Thus, there are many available options that would meet the objective of accommodating these students. The most cost effective option could be to modify and re-use the existing facilities, and there is sufficient building capacity to do so. Alternately, if more building area was desired, an extension or a new elementary building that replaces the existing could be built within school campus to maintain the existing campus environment. Finally, as another option, there is sufficient developable land on the new 40 acre parcel adjacent to the existing athletic fields to accommodate a new elementary school, in addition to new sports fields.

Note that an additional 10 acres of usable land including 16 parking spots are required to meet the NYSED site requirements. This can be accommodated by using the 2.8 acres of undeveloped land owned by the school around the existing athletic fields plus at least 7.2 acres of the 40 acre parcel being donated from the Tuxedo Farms development. Based on preliminary site and grading plans, approximately 10 acres of the 40 acres can be made usable without extraordinary site preparation costs to meet and exceed the needs and stated desires of the school. Additionally, its close proximity to the existing school makes it preferable to other off campus locations that were put forth.

Analysis

Our methodology for developing projected space needs starts with an assessment of the projected enrollment, the pedagogy of the school and the relevant space standards. We use this information to develop a projected program for future space needs. We then assess these projected space needs against the existing facilities and potential sites for growth. As part of our research for TUFSD, MBB has referenced the following materials:

- School Site Standards, Selection, Development – NYSED 1976
- Manual of Planning Standards – NYSED 2022
- State Building Aid for Public School Districts and BOCES – NYSED 7.2004
- AKRF’s Technical Memorandum and Response Letter to Supervisor Ken English – 10.11.22
- Tuxedo UFSD Tuxedo Farms PowerPoint Presentation – 09.06.2022
- MBB’s visit on 9.22.20 to the TUFSD school, the surrounding athletic fields as well as the other sites put forth for consideration by the school.
- Drawings of the existing Elementary and High School provided by CSArch

MBB visited the school on 9.22.22 to observe the condition of the school and to better understand how the current school building is used. Superintendent Jeff White led the tour and shared with us the pedagogy, achievements, and goals of the school. The school is centrally located within the town of Tuxedo, with good transportation access. The existing high school,

situated at the top of the site, is a prominent historic structure. The elementary school is situated just to the south of the high school and is on the side of a steep slope. The overall square footage of the elementary school is approximately 38,700 sf excluding the gym and associated program. Using the state standard of 85 sf per student, the current building is oversized for its current population, equaling about 355 sf per student. The inefficiency of the school layout is one of the reasons why the sf per student ratio is so high. The gym that is attached to the school is undersized per the state standards for a high school. While deferred maintenance is an issue for both the high school and elementary school, especially the gym, the high school is a noteworthy historic structure and all future modifications to that building should be done in a historically sensitive way.



Analysis Report

Elementary School

The existing population of the Elementary school is (109) students (per our 9/22 meeting with Jeff White) for Pre-K through 5th grade. The school currently has (14) classrooms: (8) classrooms plus an additional (6) specialty classrooms within the school. Per AKRF’s document, all the classrooms are under capacity at 15-26 students per class compared to the state standard of 27 a maximum of students per classroom.

Referencing AKRF’s document, there is a projected increase of approximately (150) elementary school aged students anticipated from the Tuxedo Farms development potentially increasing the population of the elementary school to (259) students. To stay under the maximum student capacity of (27) students per classroom, each grade would require (2) classrooms bringing the total number of required classrooms up to (14) plus an additional (5) specialty classrooms for a total of (19) classrooms. Therefore a total of (5) new classrooms would be needed. The new classrooms could be repurposed spaces within the High school, or built as an addition on the existing school, or they could be part of an all new Elementary School. It is important to note that with an enrollment of (259) students, the (19) classrooms are projected to be well under maximum capacity with less than 20 students per classroom. With (14) dedicated homeroom classrooms, the school could support additional growth up to approximately (370) total students.

If a new Elementary school was built, considering the (19) classrooms and support spaces for a projected enrollment of 259 students, we are recommending a total square footage of approximately 34,000 sf (approximately

130 sf per student) to accommodate the future student body of the elementary school. This total square footage incorporates NYSED Standards for classrooms, enrichment, and support spaces. It also draws upon our educational planning experience with comparable facilities and square footage data from many public and private schools to determine our overall recommended size for the future of the school. Should the enrollment increase beyond 259, further increases in enrollment would bring the projected sf per pupil closer to the state Building Aid figure of 85 sf per student.



Options

AKRF’s report dated 10-11-22 states: “With the Proposed Project at full build-out, the total TUFSD enrollment would be approximately 560 students—which was roughly the enrollment during the 2012-13 school year and substantially less than the peak enrollment of 655 in the 2006-07 school year. Based on the current enrollment projections, there is physical capacity within the TUFSD to accommodate the Tuxedo Farms Project as there would be approximately 95 fewer students at full build-out than were enrolled in the district in 2006.” Thus, there are many options that would accommodate the increased enrollment including 1) using existing facilities, 2) additions and reconfiguration, and 3) building new facilities. The following are some of the options we explored.

Option 1: Utilizing Existing Facilities

The first option to consider is housing the projected growth within the existing facilities. Given that both the elementary and high school buildings are currently well under capacity at approximately 355 sf per student and 575 sf per student respectively, it is prudent to begin by looking at opportunities to utilize the existing space available differently. This could include exploring different divisional structures such as having the 9th through 12th grade students primarily use one zone of the high school building, while the 5th through 8th grade students use another zone of the high school building, freeing up classroom space within the elementary school building.

Given that the existing square footage of the elementary school building (38,700 sf) is in excess of the projected square footage required (34,000 sf), a related approach

to explore contemplates renovations to the existing elementary school building to create more classroom space within the existing envelope. Given that the elementary school previously accommodated many more students than it does today, this may include reclaiming some of the space that has been used as teaching space in the past.

Option 2: Build an Extension to the Elementary School

A second option to consider could involve an addition to the elementary school building to accommodate additional classroom space. This could involve a 10,000 sf classroom addition as well as a new regulation size gymnasium building to the north of the high school near the basketball courts. This option would have the advantages of freeing up additional space for an elementary school addition and replacing the gym building which has significant deferred maintenance. Alternate locations for the classroom extension are feasible should TUFSD elect to rebuild the high school gym in its current location.

Option 3: Replace Elementary School and Gymnasium

Locate a new elementary school building on the same site including a gym sized for the elementary school. A new high school gymnasium that meets current standards would be located next to the new elementary school. This new school would continue to share some of its resources with the high school, like the kitchen and

ground maintenance facilities. Although the layout of new school is limited because of the site, there are community benefits in keeping the elementary and high school near each other. The new buildings are contemplated to have a more efficient layout and smaller footprint on the site than the existing building. There are multiple options for siting the new elementary school and new gymnasium should TUFSD wish to pursue replacement on the currently developed land.

- New Elementary School - 34,000 sf (131 sf per pupil)
- New High School Gym and Locker Rooms - 9,725 sf
- Total Buildings - 43,725 sf



Options

Option 4: Build a New Elementary School at a New Location

In the options outlined above, any new land acquired by TUFSD could be used for expanding athletic fields. Another option to consider includes utilizing part of any new lands for a new elementary school building. This would be slightly larger than the buildings outlined above because a separate kitchen would be needed if the elementary school is to move to a new site. In this option, the new elementary school building and the athletic fields would share grounds and maintenance facilities. There are some additional operational expenses that would typically be required from operating multiple sites as well as the loss of a campus community. In this option though, the current elementary school site could be used for a new high school gym building.

- New Elementary School - 36,000 sf (140 sf per pupil)
- New High School Gym and Locker Rooms - 11,000 sf
- Total Buildings - 45,000 gross sf

Potential Phasing

Any of the above options could be phased to allow for the continued operation of the elementary school while the contemplated construction work is completed. The existing high school has many classrooms that are currently underutilized providing the opportunity to consolidate the high school program within portions of the building temporarily. The elementary school could then use portions of the high school building as swing space.



Parking and Athletic Field Analysis

The existing grounds for TUFSD include the high school and elementary school buildings as well as all the surrounding green space, the neighboring park, athletic fields, and courts totaling approximately (11.3 acres). Part of the total grounds includes the 5.9 acre athletic field located southwest of the high school. Note the acreage given is the total lot area, not currently usable area. In referencing the School Site Standards from the NYSED, the projected student population would require the following acreage for each school.

- Elementary School (259 students) - 5.5 acres (includes a 5,000 sf play yard for Pre-K and Kindergarten classes)
- High School (297 Students) - 13 acres

MBB also looked at the current provided parking and compared it to what would be required to support the projected student population. Currently the Elementary school has (35) dedicated spots and the High School has (91) dedicated spots. With the increase in students, each school would need the following:

- Elementary School (259 students) - 31 parking spots required (4 less than existing)
- High School (297) - 111 parking spots required (20 additional spots are required)

It is important to note that for both the playing fields and the parking, opportunities exist for sharing between the elementary school and high school. The required spots for the high school include spots for the community for after-hours events held at the school. Some parking spots could be shared with the elementary school and some additional parking spots could also be created closer to the athletic fields.

To accompany the building options outlined above, it is recommended that additional land for playing fields and parking of approximately 7.2 acres be considered for the future of the school. This additional acreage could be accommodated within the (40) acre SW Parcel. Please refer to “Option 4” later in this presentation.



Existing Condition

TOTAL ELEMENTARY SCHOOL

- 35 PARKING SPACES
- GROUNDS 1.0 acres

TOTAL HIGH SCHOOL

- 91 PARKING SPACES
- GROUNDS 2.7 acres

TOTAL BUILDING AREA
123,223 gsf

TOTAL GROUNDS
11.3 acres

PARK AND COURTS
1.7 acres

HIGH SCHOOL
ATHLETIC FIELD
5.9 acres

- EXISTING FIELD 3.1 acres
- UNDEVELOPED 2.8 acres

HIGH SCHOOL
128 PUPILS
73,555 gross sq ft

TUXEDO UFSD GROUNDS
3.7 acres

54 PARKING SPACES

14 PARKING SPACES

23 PARKING SPACES

35 PARKING SPACES

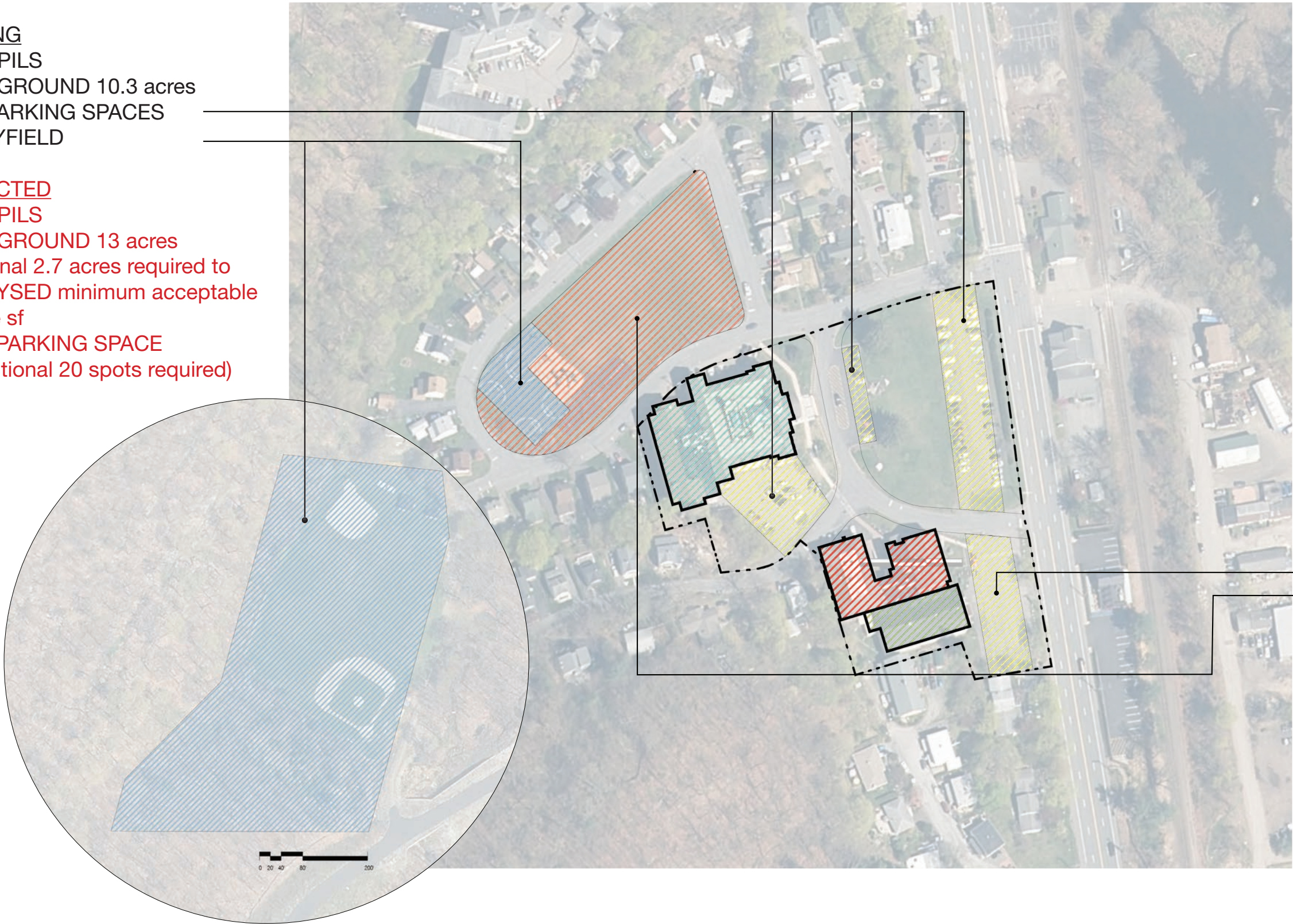
GYM
10,971 gross sq ft

ELEMENTARY SCHOOL
109 PUPILS
38,697 gross sq ft

Existing Condition / Parking & Field Needs

HIGH SCHOOL

- EXISTING
128 PUPILS
TOTAL GROUND 10.3 acres
- 91 PARKING SPACES
 - PLAYFIELD
- PROJECTED
257 PUPILS
TOTAL GROUND 13 acres
*additional 2.7 acres required to meet NYSED minimum acceptable useable sf
- 111 PARKING SPACE
(additional 20 spots required)



- POTENTIAL TOTAL REQUIRED LAND: 18.5 acres**
TOTAL EXISTING DEVELOPED GROUNDS: 8.5 acres
UNDEVELOPED LAND AT EUVRARD FIELD SITE: 2.8 acres
ADDITIONAL USABLE LAND NEEDED: 7.2 acres
POTENTIAL TOTAL LAND TO BE DEVELOPED: 10 acres
POTENTIAL REQUIRED ADDITIONAL PARKING: 16 spots

ELEMENTARY SCHOOL

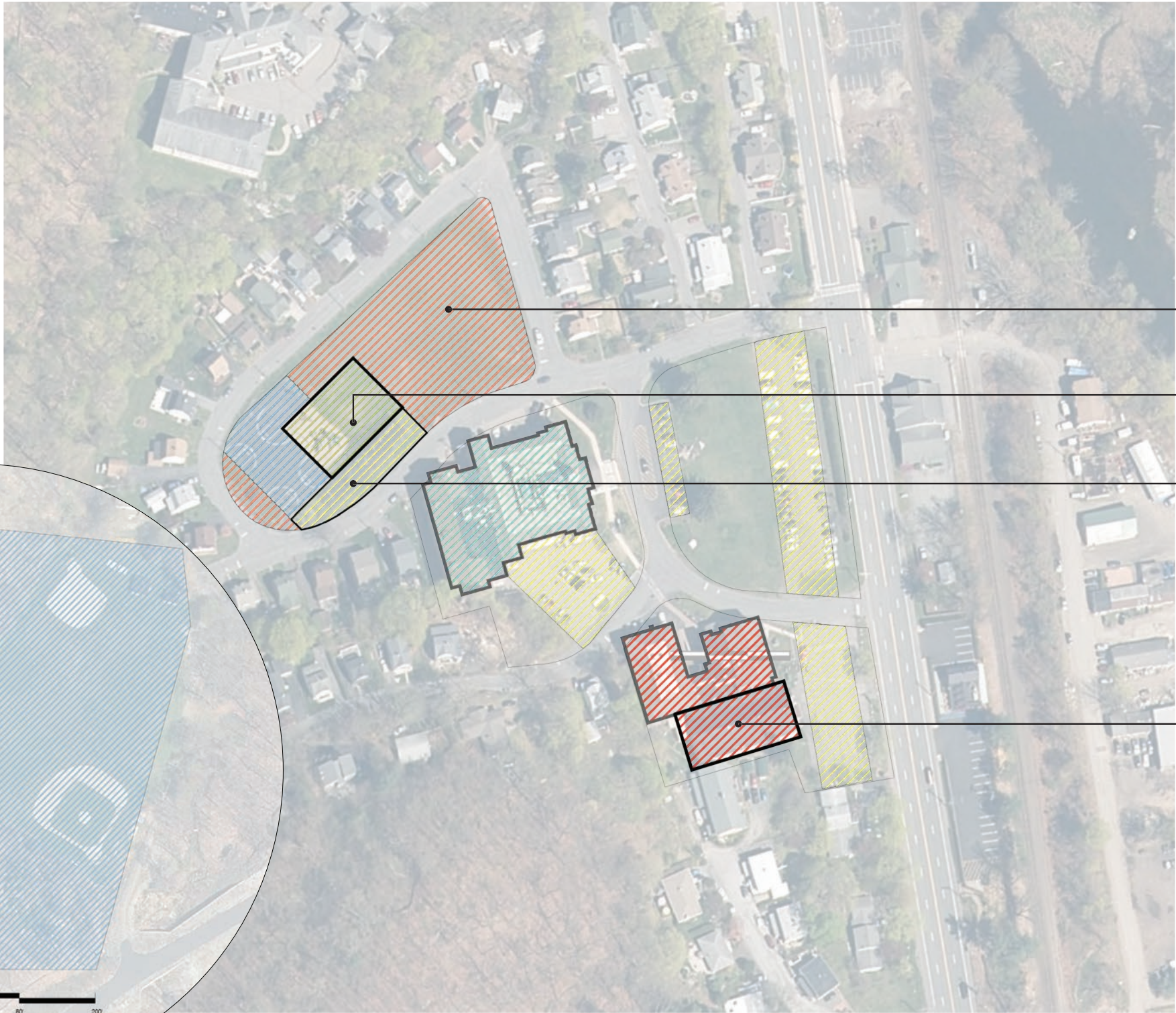
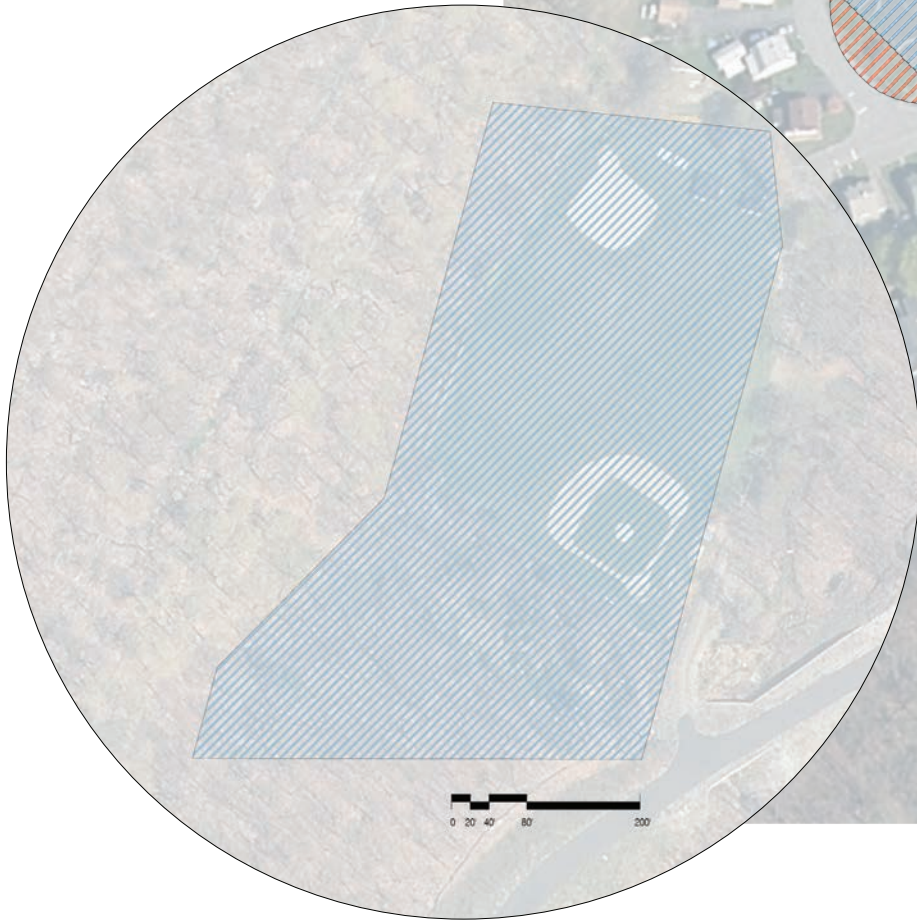
- EXISTING
109 PUPILS
TOTAL GROUND 1.0 acres
- 35 PARKING SPACES
 - PLAYFIELD
- PROJECTED
259 PUPILS
TOTAL GROUND 5.5 acres
*additional 4.5 acres required to meet NYSED minimum acceptable useable sf
- 31 PARKING SPACES
(4 spots extra)
 - PLAYFIELD



Option 2

: EXTENSION TO ELEMENTARY SCHOOL BUILDING ON EXISTING GYM LOCATION

: NEW HIGH SCHOOL GYM IN GREEN SPACE NEXT TO HIGH SCHOOL



EXISTING PLAYFIELD

NEW HIGH SCHOOL GYM
11,000 gross sq ft

NEW PARKING

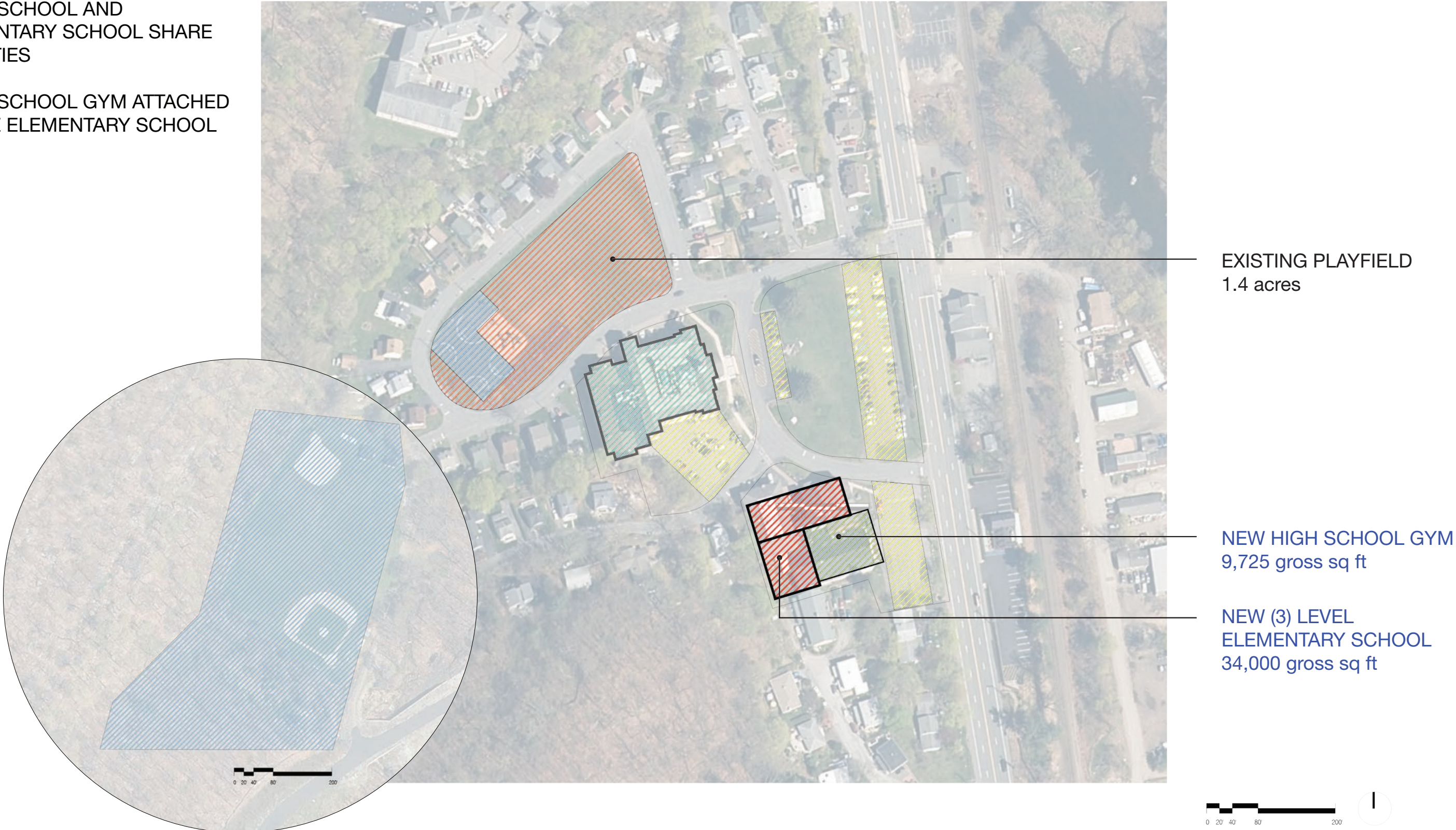
NEW (1) OR (2) LEVEL
ELEMENTARY SCHOOL
ADDITION
10,000 gross sq ft



Option 3

: HIGH SCHOOL AND
ELEMENTARY SCHOOL SHARE
FACILITIES

: HIGH SCHOOL GYM ATTACHED
TO THE ELEMENTARY SCHOOL



Option 4

: NEW STANDALONE
ELEMENTARY SCHOOL ON NEW
SITE

: 50 NEW PARKING NEAR NEW
SCHOOL BUILDING

**TOTAL GROUNDS
(INCLUDING NEW ELEMENTARY
SCHOOL AND FIELD)
10 acres**

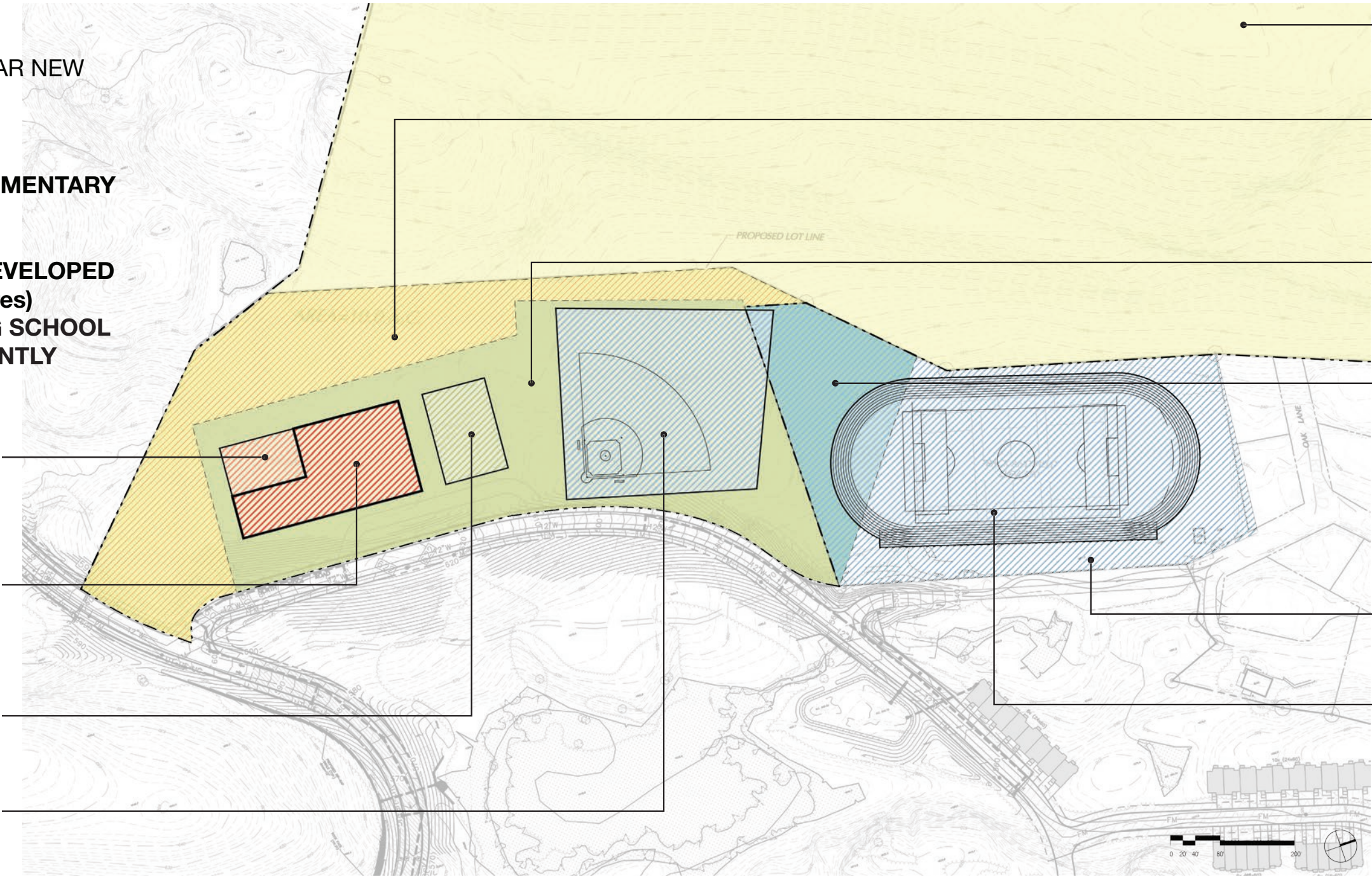
- 7.2 acres (TO BE DEVELOPED
PORTION OF 40 acres)
- 2.8 acres (EXISTING SCHOOL
PROPERTY CURRENTLY
UNDEVELOPED

NEW ELEMENTARY
PLAYFIELD

NEW ELEMENTARY
SCHOOL
36,000 gross sq ft

50 NEW PARKING
SPOTS

BASEBALL FIELD



SCHOOL SITE
40 acres

AREA THAT COULD BE
DEVELOPED IN THE
FUTURE
2.8 acres

SCHOOL SITE TO BE
DEVELOPED
7.2 acres

EXISTING SCHOOL
PROPERTY
CURRENTLY
UNDEVELOPED
2.8 acres

EXISTING ATHLETIC
FIELD
3.1 acres

NEW TRACK
& ATHLETIC FIELD