



**ARROWHEAD  
ELEMENTARY  
SCHOOL FACILITIES  
STUDY**

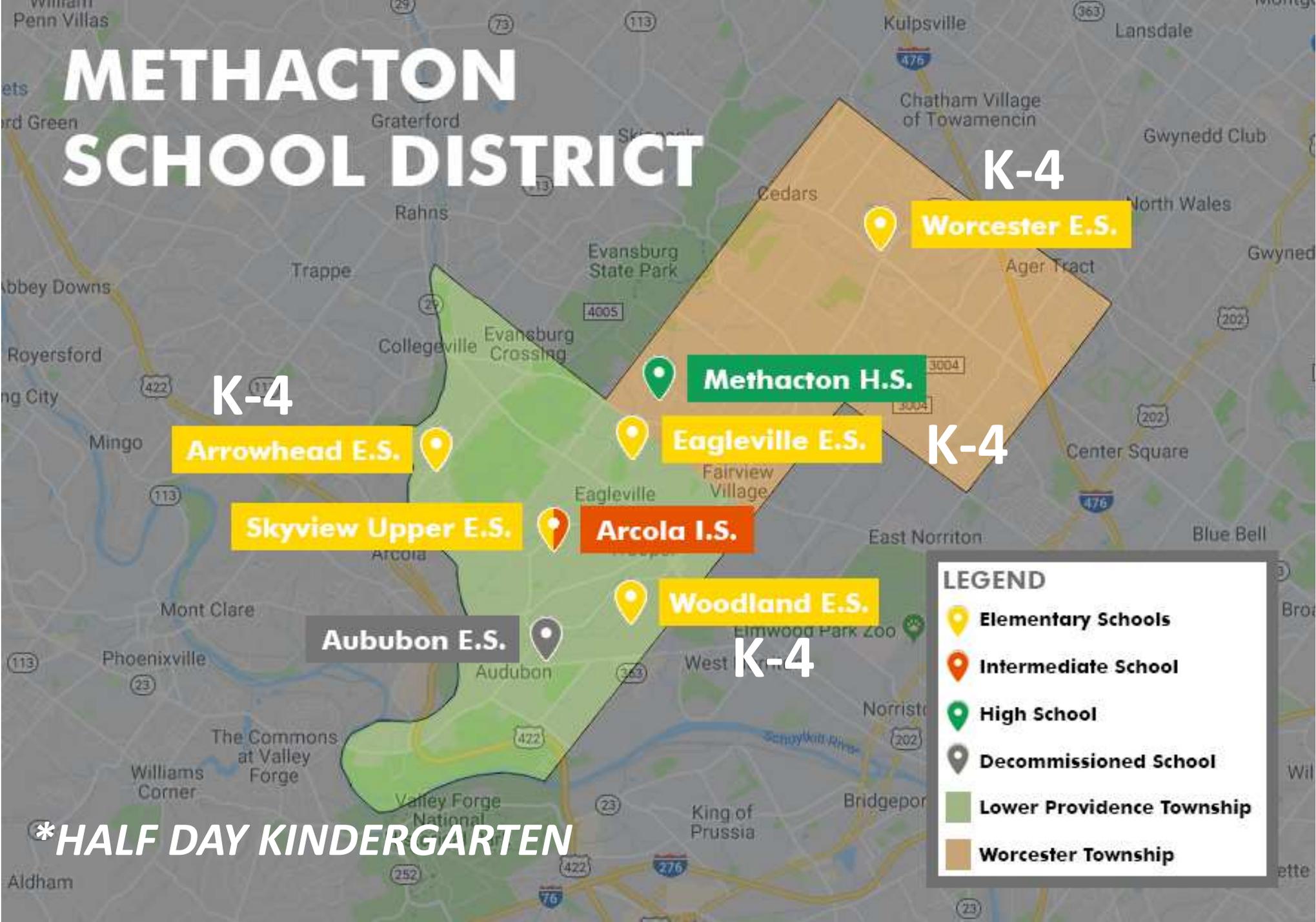
**July 16<sup>th</sup>, 2019**



## Tonight's Agenda:

- **Review June 4<sup>th</sup> presentation and answer questions**
- **Discuss the public survey**
- **Consider next steps for Arrowhead Elementary School**

# METHACTON SCHOOL DISTRICT



K-4

K-4

Arrowhead E.S.

K-4

Skyview Upper E.S.

Arcola I.S.

Aububon E.S.

Woodland E.S.

K-4

**LEGEND**

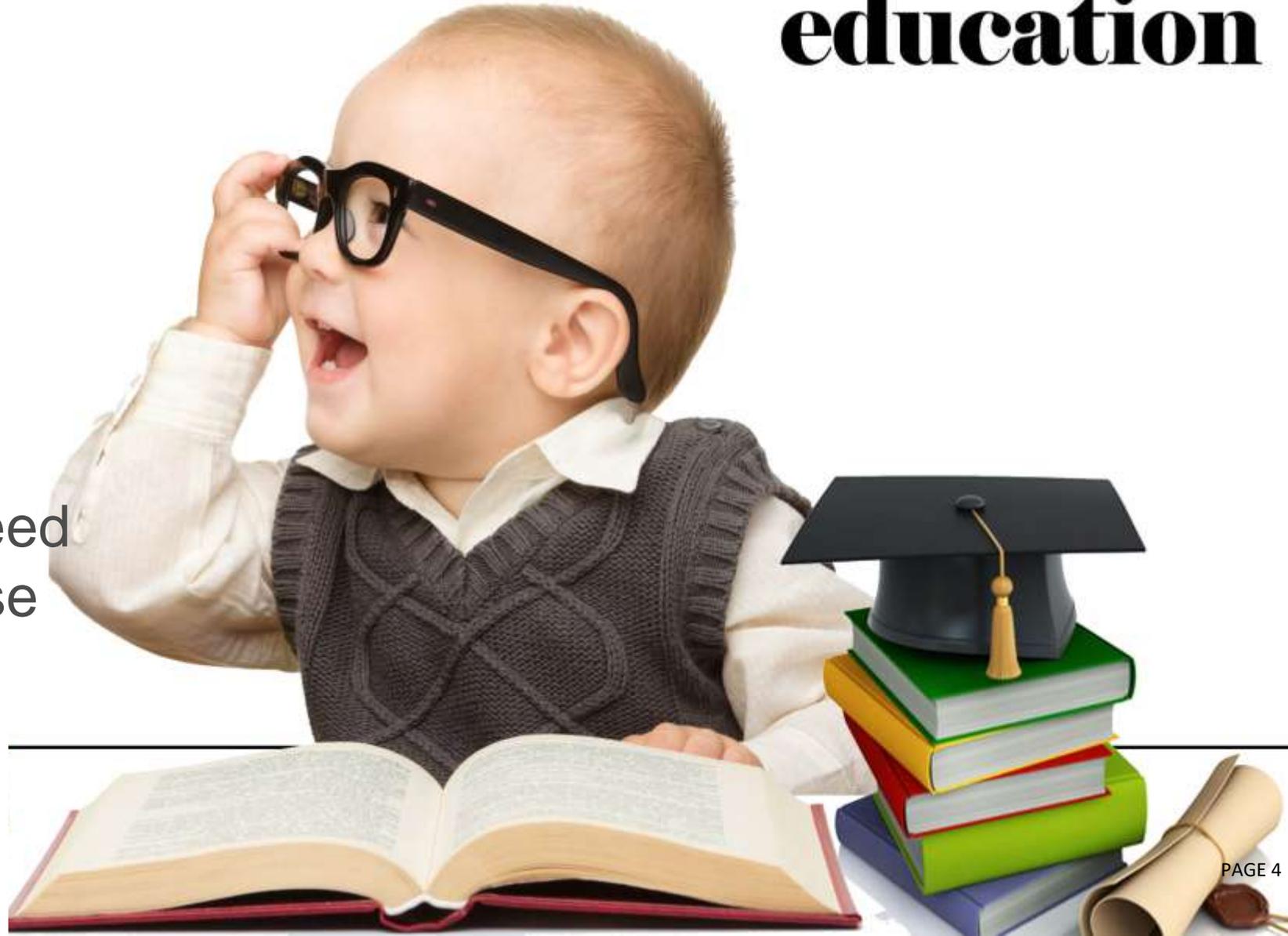
- Elementary Schools
- Intermediate School
- High School
- Decommissioned School
- Lower Providence Township
- Worcester Township

**\*HALF DAY KINDERGARTEN**

## What's Changed?

- The workforce has changed
- The way we teach has changed
- Our school buildings need to be adaptable to these educational changes

# education



# EFFECTS OF FULL DAY KINDERGARTEN





## Building Capacity and Student Enrollment

- Functional capacity is impacted by educational use and programming
- Moving from Half Day-K to Full Day-K reduces the functional capacity of an existing school
- District wide housing projects impact future growth within the district

# EXISTING CONDITIONS



# PROCESS

An architectural/engineering analysis of the existing school and campus was conducted that evaluated the following:

- Overall functionality
- General condition
- Building systems
- Code compliance
- Energy efficiency
- Security protocols



# PROCESS

Design team met with district administrators and EVERY teacher from Arrowhead Elementary School to survey their thoughts on the existing building.

Toured three new elementary schools in area school districts:

- Caley Elementary School (Upper Merion Area School District)
- Phoenixville Early Learning Center (Phoenixville Area School District)
- East Coventry Elementary School (Owen J Roberts School District)



# ARROWHEAD ELEMENTARY SCHOOL



## Summary:

1. Numerous exterior repairs to roofing, bricks, and flashing needed.
2. Numerous interior repairs to building are needed.
3. All building systems need replacement and upgrade.
4. Educational environments and security protocol improvements needed throughout.

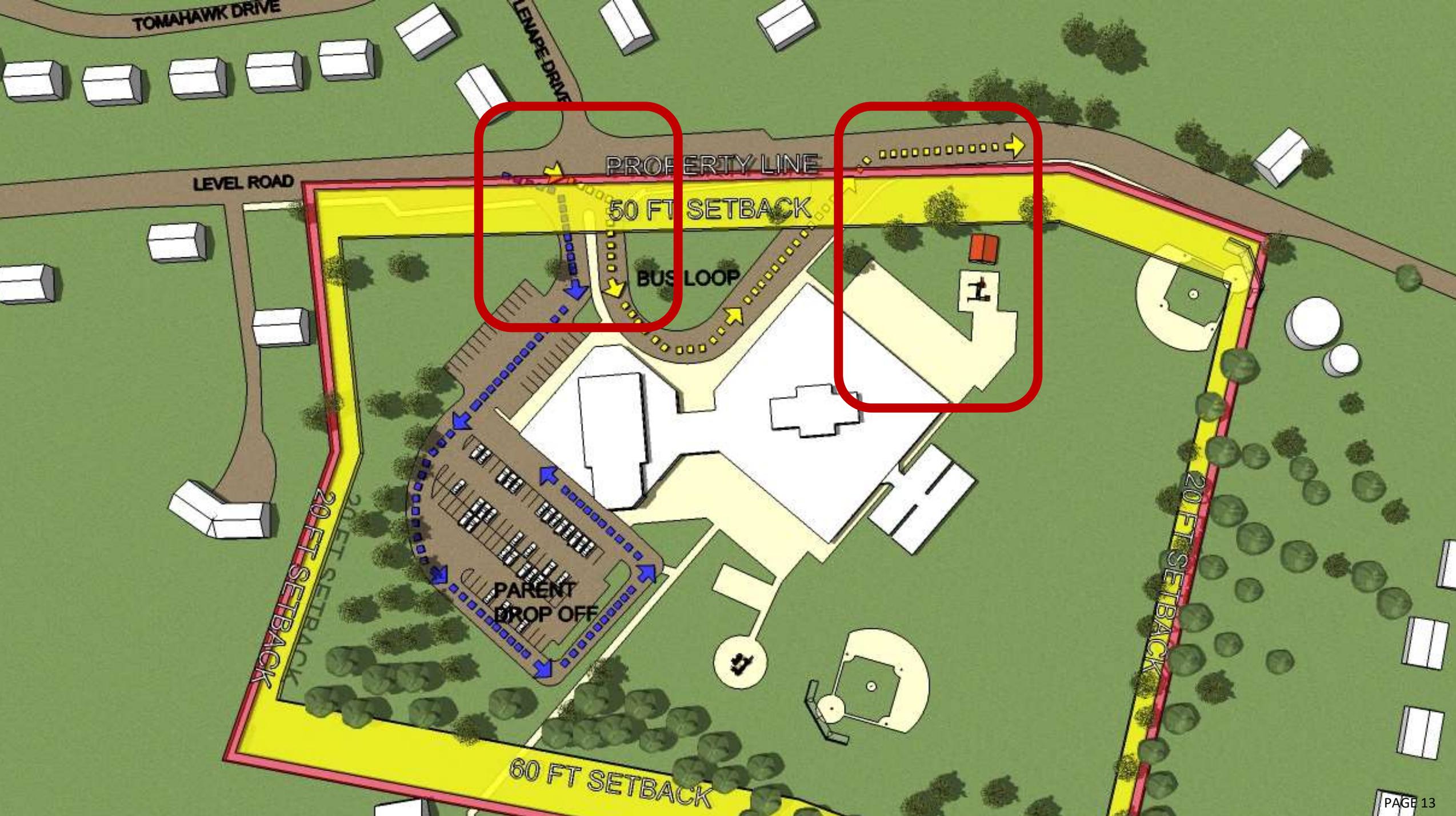


## Items needed for proper renovation:

1. **New roof**
2. **New windows**
3. **New interior partitions to create rectangular classrooms**
4. **Doors into classrooms**
5. **New technology in classrooms**
6. **New secure entry vestibule**
7. **New HVAC system**
8. **ADA compliant plumbing fixtures**
9. **New energy efficient lighting**
10. **Building expansion to meet needs**
11. **Include 2016 FAS items**



# **SITE AND TRAFFIC ANALYSIS**





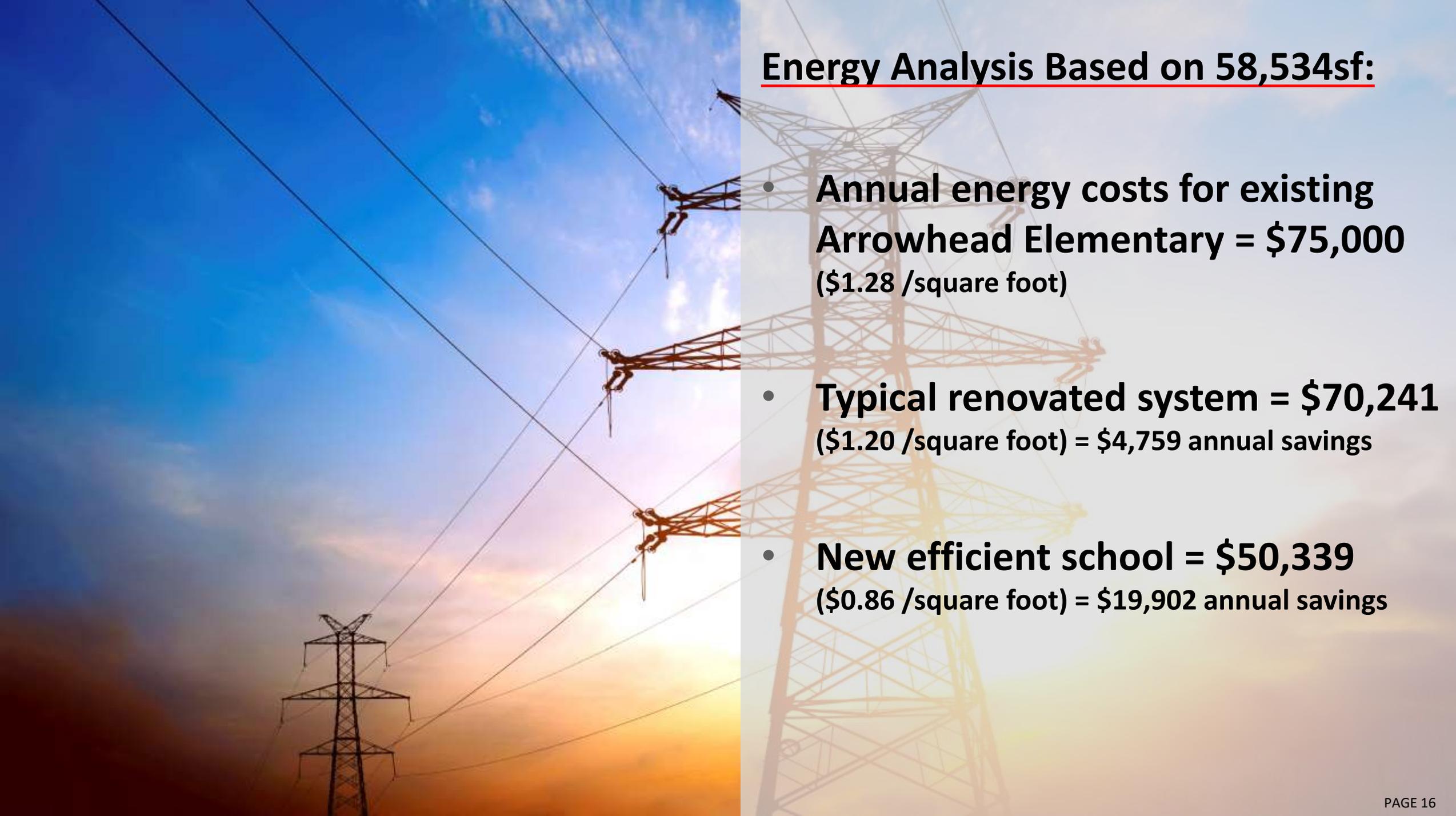
# HOW DO WE MAKE THE CHANGE?

# Renovation vs New Construction

## *Factors to Consider:*

- Educational disruptions during construction
- Educational compromises
- Return on investment/long term value of either option
- Cost of new vs renovation





## Energy Analysis Based on 58,534sf:

- **Annual energy costs for existing Arrowhead Elementary = \$75,000**  
(\$1.28 /square foot)
- **Typical renovated system = \$70,241**  
(\$1.20 /square foot) = \$4,759 annual savings
- **New efficient school = \$50,339**  
(\$0.86 /square foot) = \$19,902 annual savings

# Educational Program Analysis



**Existing Building = 52,534sf** without modular classrooms  
**= 58,534sf** with modular classrooms

**Net Area Needed:**

**(2) Additional Classrooms = 1825sf**

**(3) Additional Small Group Instruction = 951sf**

*\*some spaces reduced in size*

**(4) Additional Common Edu. Spaces = 7867sf**

*\*includes new gymnasium*

**Additional Administration Spaces = 2194sf**

**Total = 12,837sf** addition req'd to meet needs

**\*81,664sf total gross area programmed for 464 students**

***Right Sizing the Box...***



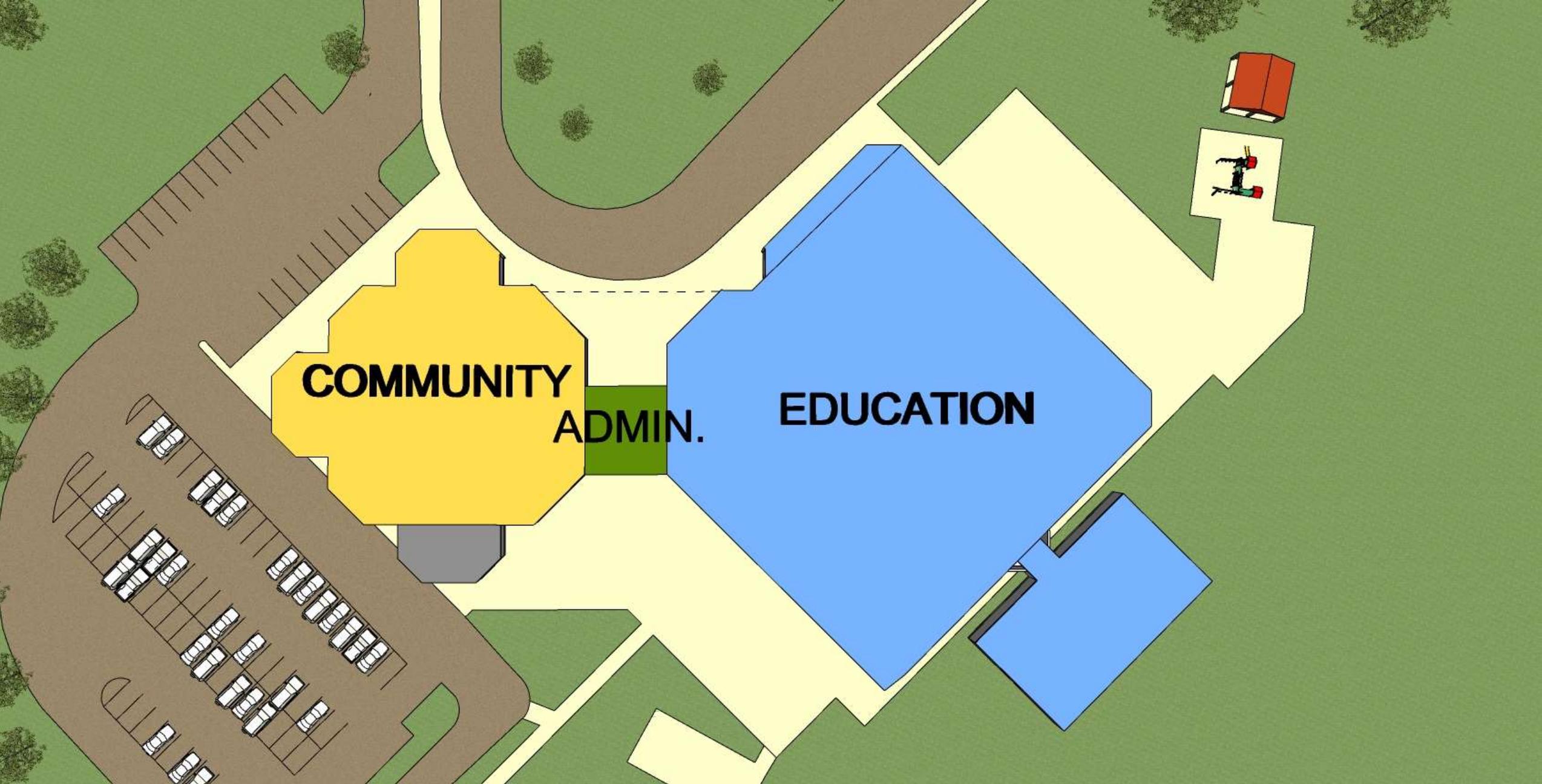
**RENOVATION/  
ADDITION  
OPTION**



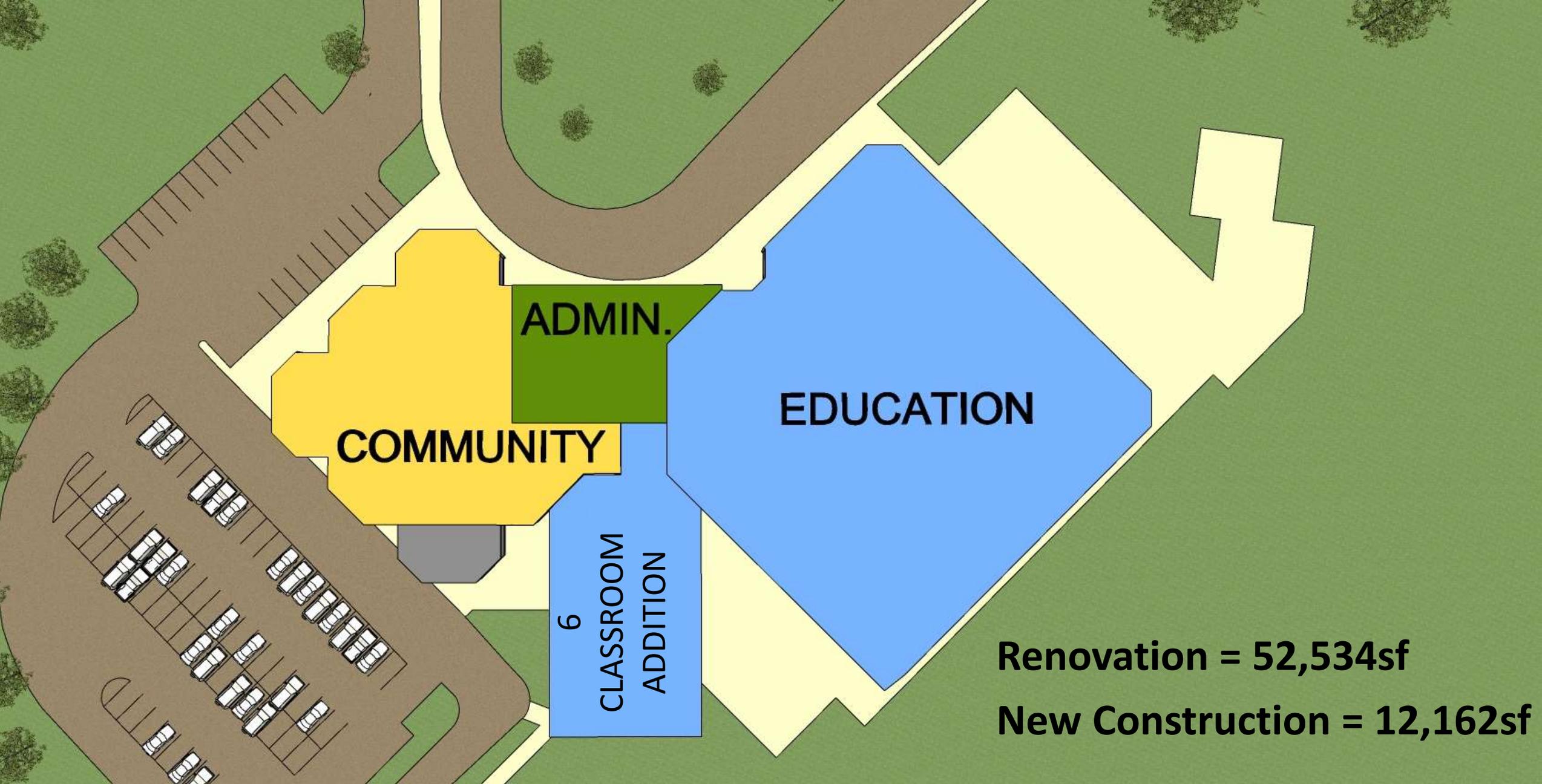
## Concerns with existing layout:

- Classroom sizes too small
- Teachers struggle with room shape
- Lack of Small Group Instruction
- Lack of exterior access for windows
- Modulars past their anticipated life
- Administration area disconnected from secure entry vestibule
- Gym/Cafeteria combo too small
- Instrumental Music in storage room

EXISTING FLOOR PLAN (58,534sf school with modulars)



**EXISTING FLOOR PLAN (58,534sf School with modulars)**



**Renovation = 52,534sf**

**New Construction = 12,162sf**

**RENO+ADD OPT. #1 FLOOR PLAN – 525 Students (64,696sf School)**



**Renovation = 52,534sf**

**New Construction = 25,221sf**

**RENO+ADD OPT. #2A FLOOR PLAN – 525 Students (77,755sf School)**



Renovation = 52,534sf

New Construction = 32,970sf

RENO+ADD OPT. #2B FLOOR PLAN – 625 Students (85,504sf School)

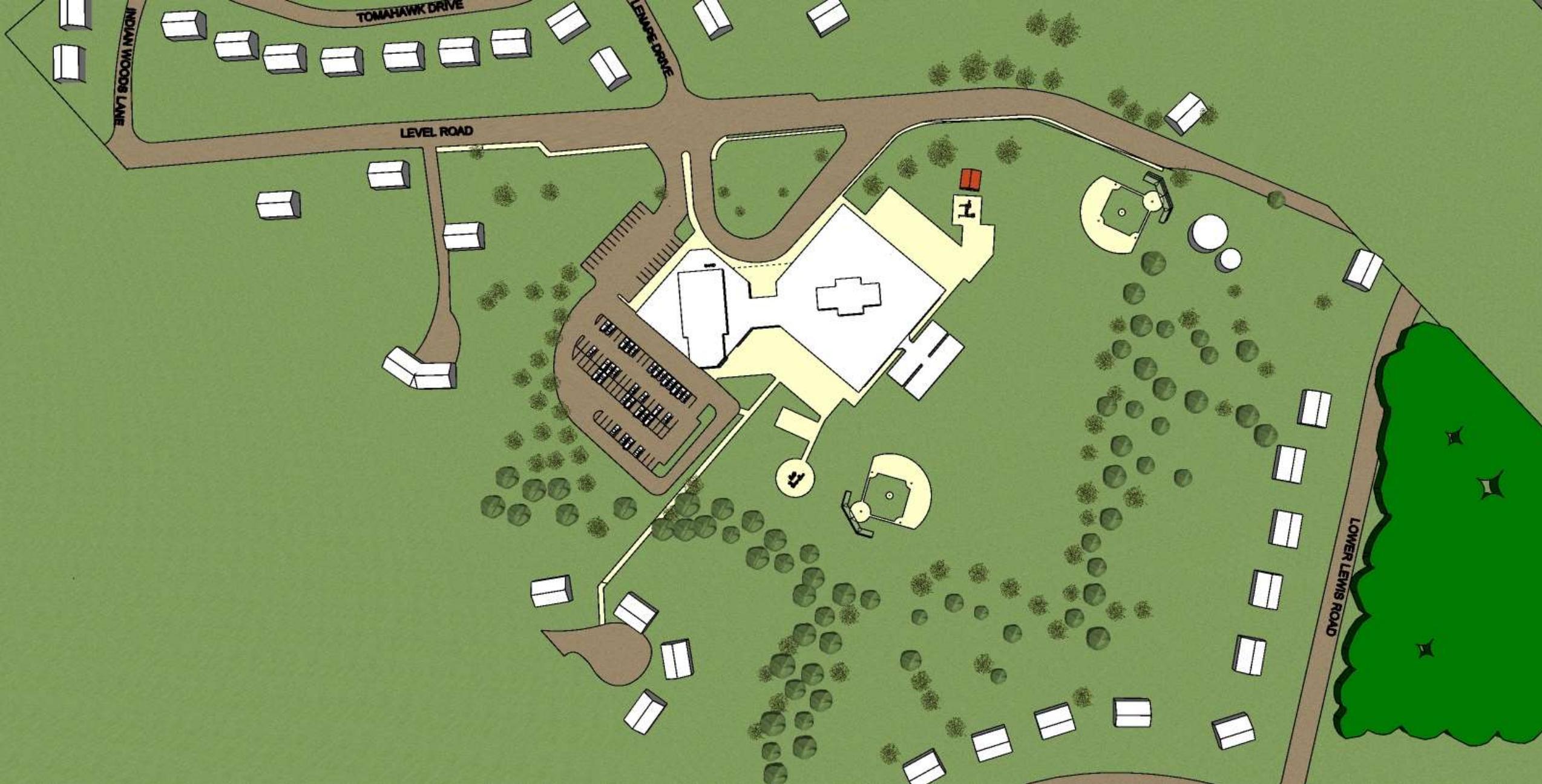


## Renovation Summary:

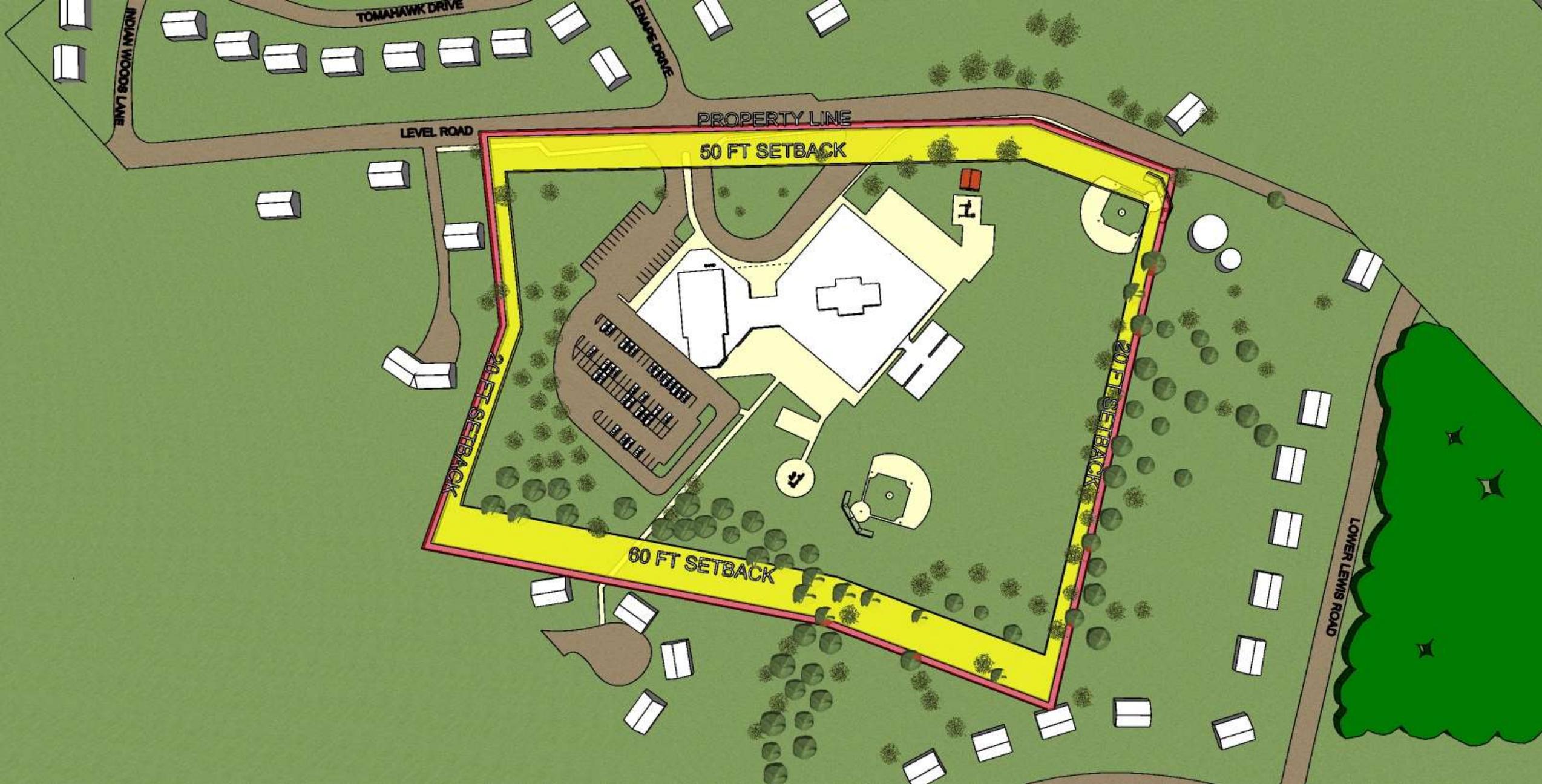
- Improved entry security
- New classrooms created
- 2A/2B Options - opportunity for community gym
- Existing classrooms still not ideal shape/proportion
- New classroom wing located away from core of school
- Not all spaces located or sized as desired
- Limited site improvements



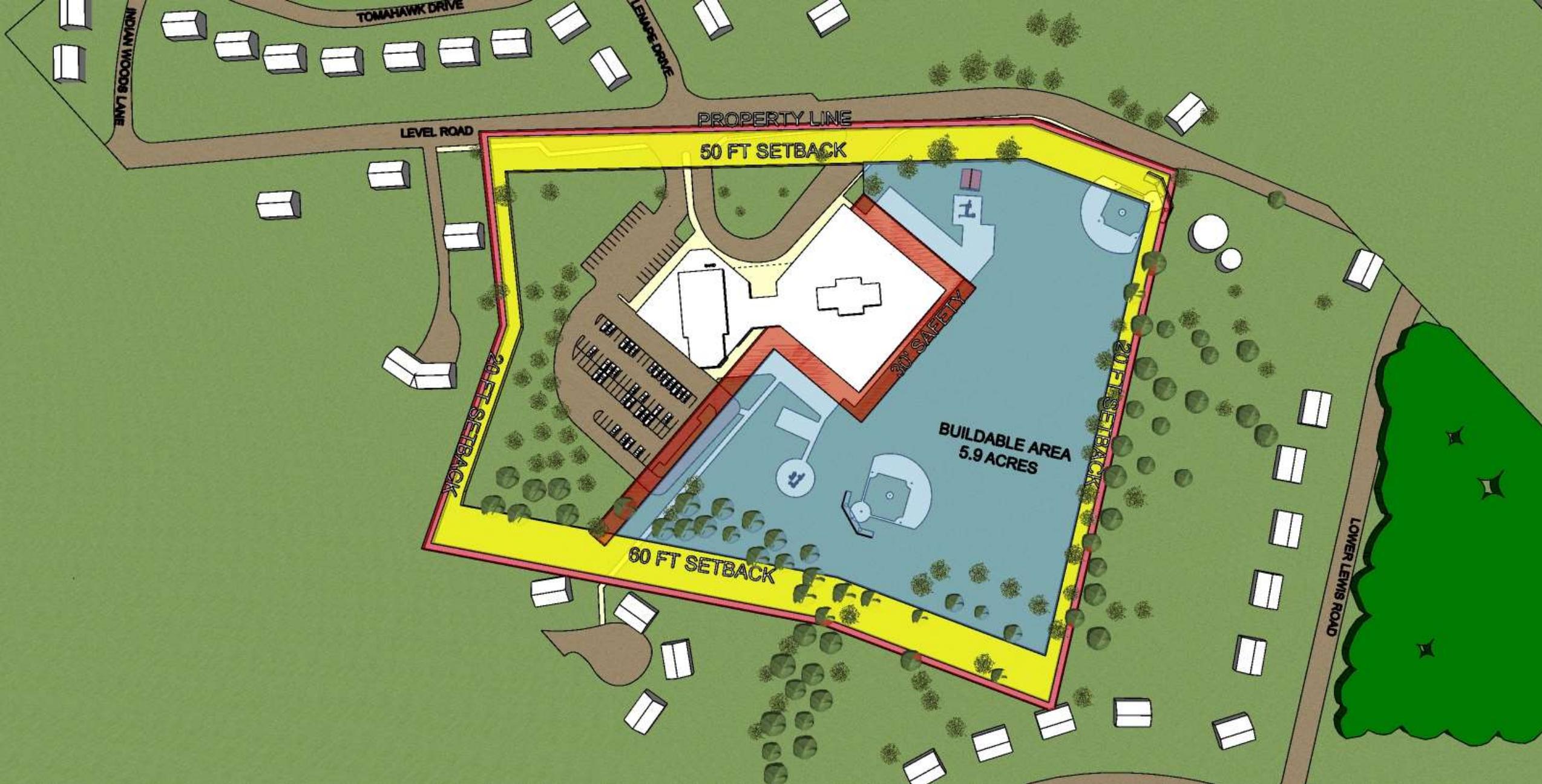
# NEW BUILDING OPTION



# EXISTING SITE PLAN



# EXISTING SITE - SETBACKS



**SITE BUILDABLE AREA**



PROPERTY LINE

LEVEL ROAD

50 FT SETBACK

20 FT SETBACK

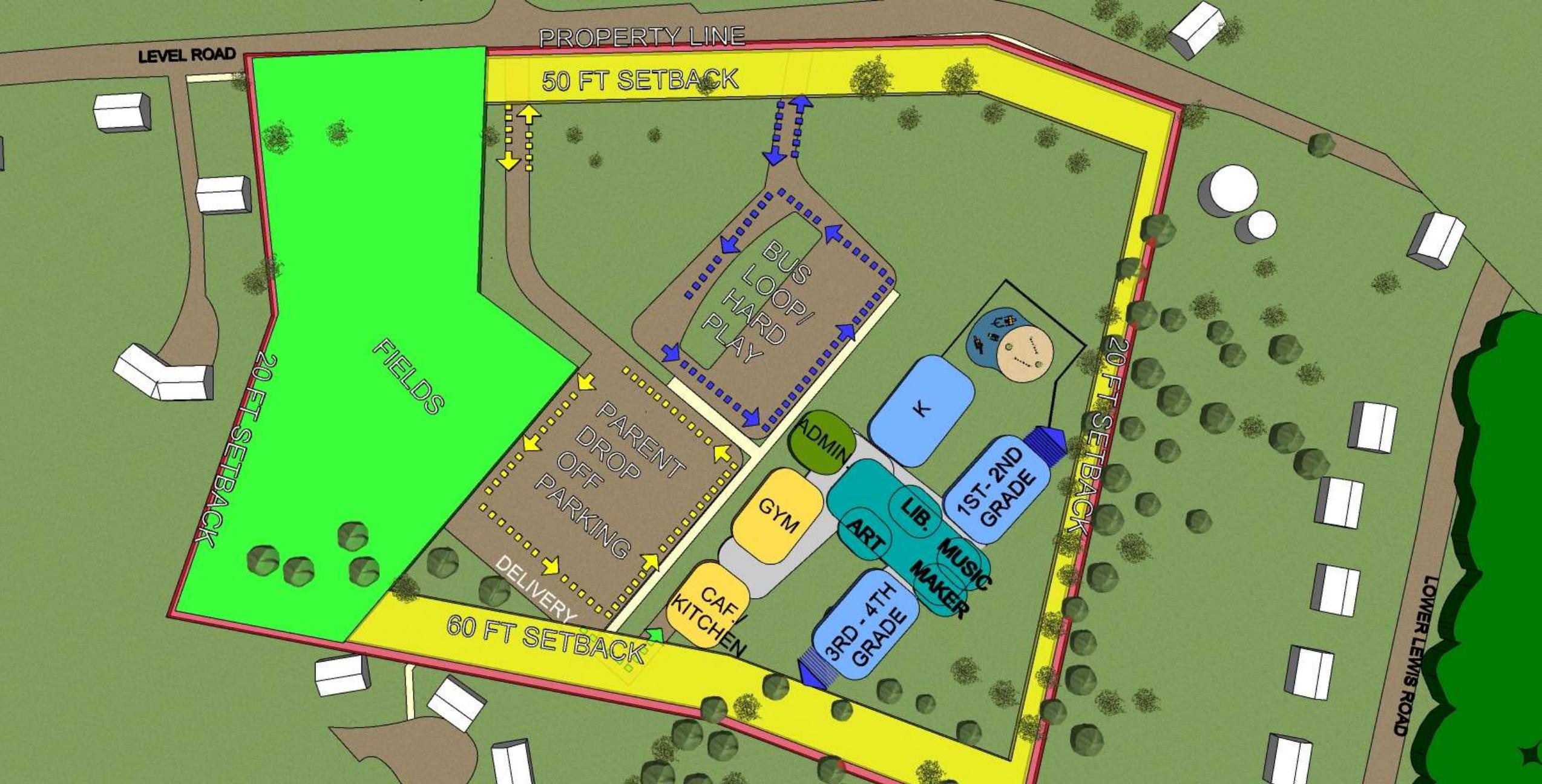
60 FT SETBACK

20 FT SETBACK

LOWER LEWIS ROAD

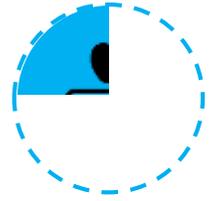
ADMIN  
GYM  
CAF./ KITCHEN  
K  
1ST-2ND GRADE  
3RD-4TH GRADE  
ART  
LIB.  
MUSIC  
MAKER

# CONCEPTUAL NEW SCHOOL LAYOUT

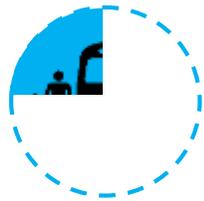


# CONCEPTUAL NEW SCHOOL LAYOUT

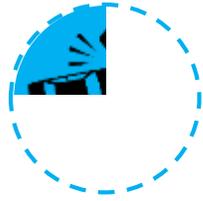
## Reno+Add Option #1 = \$22.2M



education



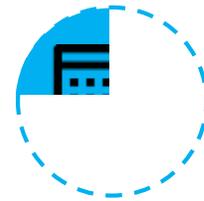
bus



parent loop



disruption



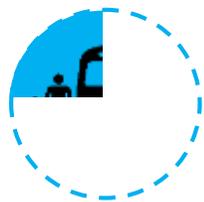
schedule

← 28 months

## Reno+Add Option #2A = \$28.6M (\$32M for 625 students)



education



bus



parent loop



disruption



schedule

← 33 months

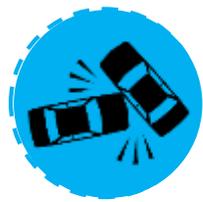
## New School Construction = \$32.7M (\$35.5M for 625 students)



education



bus



parent loop



disruption



schedule

← 21 months

Comparative Analysis – Renovation or New Construction: 525 Student Options

\* **Costs estimates are TOTAL project costs (construction, soft costs, + contingencies)**

# RENOVATION

# NEW CONSTRUCTION

insufficient ideal



Educational Environments

insufficient ideal



insufficient



ideal

Operational Priorities

insufficient



ideal

negligible



sizable

Impact During Construction

negligible



sizable

low



high

Project Cost

low



high

25 years



100 years

Long Term Value

25 years



100 years

# BALANCE



# BALANCE

**OUTCOME**

**INVESTMENT**

## Recommendations

- 1. Not recommended to renovate or expand the existing school building**
  - Far too many modifications needed to justify expenditures**
- 2. Build a new school building behind existing school**
- 3. Design the school for a capacity of 625 to accommodate future growth**
  - Bid the project with alternate to reduce 4 classrooms (525 capacity)**
- 4. Release presentation and solicit feedback from the public**
- 5. Continue with Preliminary Design of new school this summer for board review and approval in August 2019**

# Public Survey

## Survey Summary:

- **534 respondents**
- **400 from Lower Providence Township**
- **67% strongly agreed or agreed with new construction option**
- **26% strongly disagreed or disagreed**

# Public Survey

## Those who disagreed (26%):

- **Tax implications**
- **Cost of new construction**
- **Status of Audubon Elementary School**

# Public Survey

An illustration showing three hands holding survey forms. The top hand is orange, the middle is red, and the bottom is purple. The forms are white with grey lines representing text and checkboxes. Some checkboxes are marked with green checkmarks. The background is a light blue gradient.

## Those who agreed (67%):

- **Clear need for replacement of existing school building**
- **Safety, existing conditions, educational environments**
- **More fiscally responsible solution than cost of renovation**
- **Best for students, teachers, and community**



- **KCBA + MSD study preliminary design concepts for new 625 student elementary school behind existing Arrowhead**
- **Present concepts and updated estimates to the school board at August 20<sup>th</sup> meeting**
- **Consider moving forward with new school to open August 2022**

# Potential Schedule for Collaborative Design Process

## ARROWHEAD ELEMENTARY SCHOOL METHACTON SCHOOL DISTRICT

ACTION	2019				2020							
	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST
<b>SCHEMATIC DESIGN PHASE</b>	← weekly meetings →											
Site and building concepts Conceptual educational layouts Safety/security design review Building systems cost/performance analysis Sustainability workshops Schedule and budget analysis First community workshop/town hall meeting	 	 										
<b>DESIGN DEVELOPMENT PHASE</b>			← bi-weekly meetings →									
Detailed site and building layout Faculty and teacher end user meetings Coordinate with district administrative departments Interior fit-out classrooms/common spaces Safety/security design review Building systems selection Sustainability workshops Schedule and budget analysis Hold Act 34 hearing Second and third town hall meetings												
<b>CONSTRUCTION DOCUMENTS PHASE</b>							← bi-weekly meetings →					
Value engineering Constructability reviews BIM project documentation Review alternates and develop bidding strategy Safety/security design review Sustainability workshops Schedule and budget analysis Fourth and fifth town hall meetings												



**A/E TEAM**  
KCBA Architects  
Snyder Hoffman Associates  
Gilmore & Associates



**CONSTRUCTION CONSULTANTS**  
Fidevia Construction Management  
and Consulting  
District Solicitor



**DESIGN COMMITTEE**  
School Board  
Dr. David Zerbe, Superintendent  
Dr. Aaron Roberts, Arrowhead E.S. Principal  
Mr. Tim Bricker, Director of Business Services  
Mr. Mark Fretz, Director of Facilities  
Other individuals identified by district



**END USERS**  
Dr. Aaron Roberts, Arrowhead E.S. Principal  
Arrowhead E.S. Faculty and Teachers  
District Administrative Departments:  
Food Service, Transportation, IT,  
Security, Maintenance  
Arrowhead E.S. Students



**COMMUNITY**  
Arrowhead E.S.  
Community



# DISCUSSION