

**Nashoba Regional School  
Building Committee  
Website**



*Use your smartphone camera to read this code and  
access the site.*

<https://sites.google.com/nrsd.net/nrhs-building-project/home>

# NASHOBA

## REGIONAL HIGH SCHOOL

### Public Forum #8

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Understanding the **Need**  
Understanding the **Building**  
Understanding the **Budget**  
Understanding the **Schedule**

# Introductions & Project Team

## School Building Committee

### School Administration

Kirk Downing, Superintendent of Schools

Laura Friend, Assistant Superintendent of Schools Chairperson

Ross Mulkerin Director of Business and Operations

Robert Frieswick, Director of Facilities

Kathleen Boynton, High School Principal

Joseph McCarthy, Educator

### Bolton

Amy Cohen, School Committee Member

Bob Czekanski, Town of Bolton Selectmen

Stacey Dupuis, Resident

Don Lowe, Town Administrator

David Yesue, Resident

### Lancaster

Joseph Gleason, School Committee Member, Committee

Kim Earley, Educator/Resident

Ken Frommer, Resident

Tania Rich, Athletic Director/Resident

### Stow

Christopher Buck, Finance Committee

Richard Eckel, Resident

Kristen Kendall, Resident

Dan Nicholson, Resident

Leah Vivirito, School Committee Member



## Owner's Project Manager

# SKANSKA

## Architect/Designer

# KAESTLE BOOS

associates, inc

## Funding Partner



Massachusetts School Building Authority  
Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities

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**Project Cost**

\$241,714,926



**MSBA Reimbursement**

\$64,793,451



**Total Taxpayer Contribution**

\$176,921,475

# Space Study Task Force

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**The Space Study Task Force was formed by the NRSD School Committee. It aimed to determine space issues and their potential impacts on students' quality of learning.**

## Findings:

- ❑ Science laboratories outdated and not conducive to modern curriculum;
- ❑ Lack of specialized spaces for various courses (science, technology, arts, journalism, wellness);
- ❑ Limited resources and privacy in student support areas (Guidance Department and Academic Support Center);
- ❑ Inadequate facilities for weight training and physical therapy;
- ❑ Ventilation issues causing high humidity in locker rooms;
- ❑ Insufficient space for private meetings and interviews, and;
- ❑ Heating and ventilation problems in various areas of the school, affecting the learning environment.

## **In 2015, the New England Association of Schools and Colleges completed their decennial report and noted several features about the physical plant of the high school:**

- ❑ The NRHS facility is adequate and is sufficiently maintained in order to support the delivery of school programs and services; however, the facility requires updating in order to meet the needs of 21st century curriculum.
- ❑ The school does not have enough science labs to safely provide the effective delivery of science curriculum and instruction, nor are the science labs updated to reflect the needs of a 21st century classroom.
- ❑ In 2013, the Massachusetts School Building Authority designated the NRHS science labs as deficient and eligible for inclusion in the Science Lab Initiative. The deficiencies include inadequate ventilation and configuring space safely for labs and the number of students in a classroom.
- ❑ The lack of needed science labs has reduced the number of science courses offered with an accompanying additional lab period.
- ❑ (The school needs to) Ensure privacy for students using health services.

# Space Study Task Recommendations

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**In December, 2015, the Task Force voted to recommend to the NRSD School Committee that it authorize the Superintendent to submit a Statement of Interest to the Massachusetts School Building Authority for remediation of conditions at the high school.**

# Additional Issues Identified by NRSD Facilities Department

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## Life & Safety

- The building's life and safety systems have exceeded their life expectancy.
- Smoke and heat detectors are obsolete and are costly to replace through third party vendors for reconditioned units.
- All the sprinkler heads are over 20 years old and are due for replacement, or UL testing to determine functionality.
- The fire pump in the pump house is at the end of useful life and needs replacement.
- Many areas of the building are starting to see corroded sprinkler piping that could lead to leaking or flooding if they break.



# Current Conditions: Roof



**GYPSUM ROOF DECK  
WATER DAMAGE**



**ASPHALT  
SHINGLES**

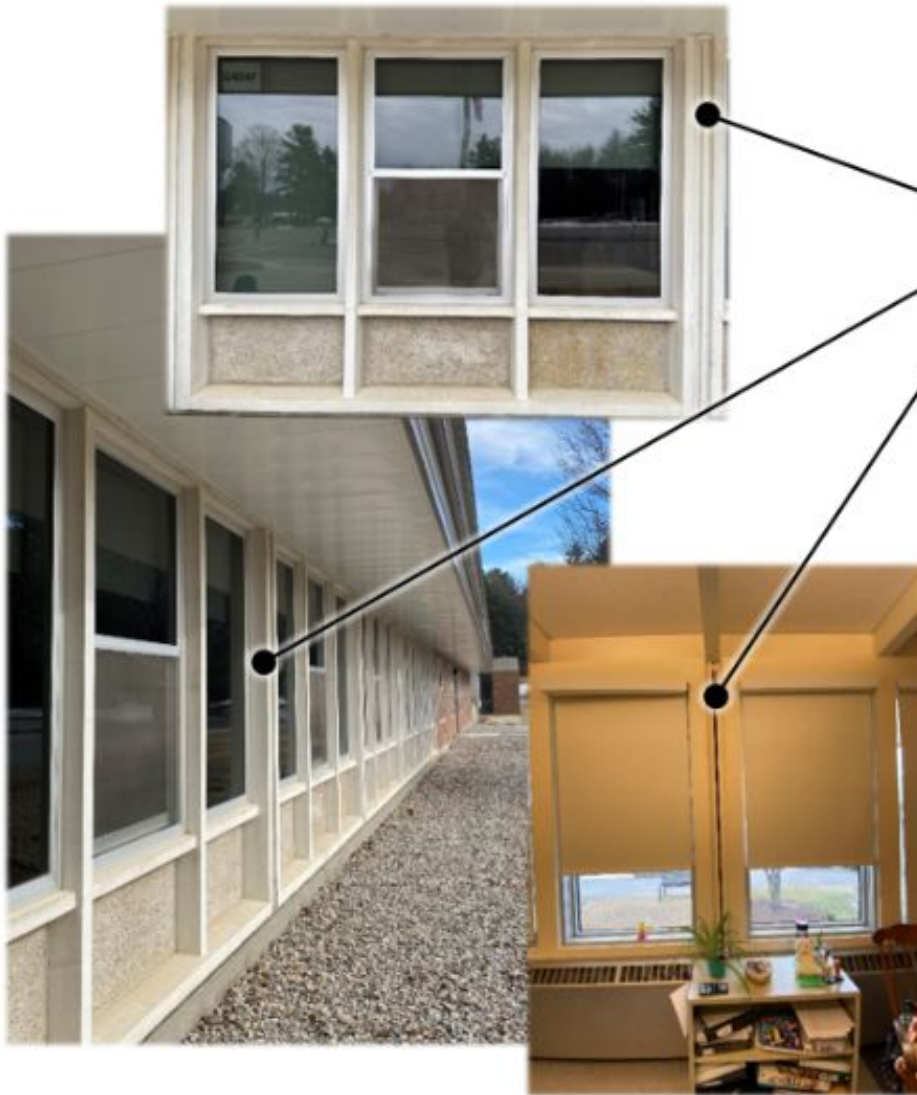


**ROOF PONDING**

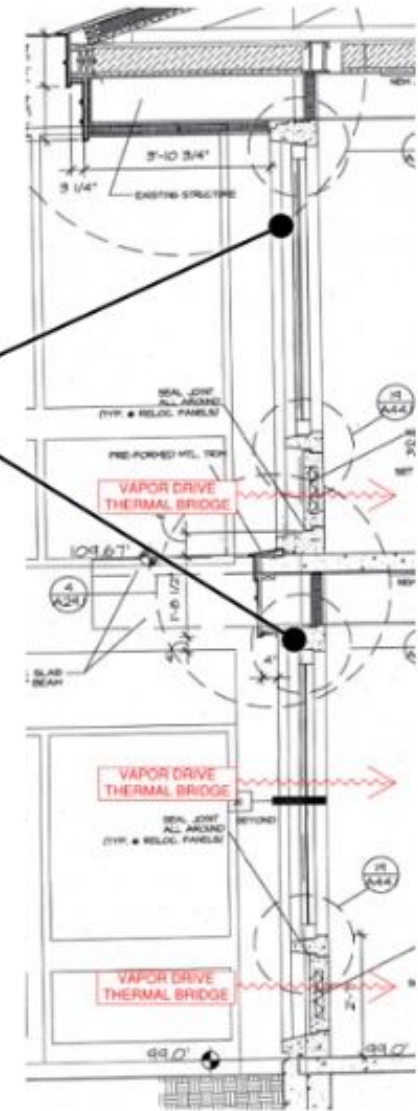




## Current Conditions: Exterior Walls – Precast Concrete



**SOLID PRECAST  
CONCRETE WALL  
MODULES WITH THERMAL  
BRIDGING AND NO VAPOR  
BARRIER**



# Current Conditions: Exterior Walls – Cast-in-Place Concrete



**CRACKING AT EXTERIOR  
CONCRETE**



**SPALLED CONCRETE FROM  
WATER PENETRATION AND  
RUSTING REBAR**





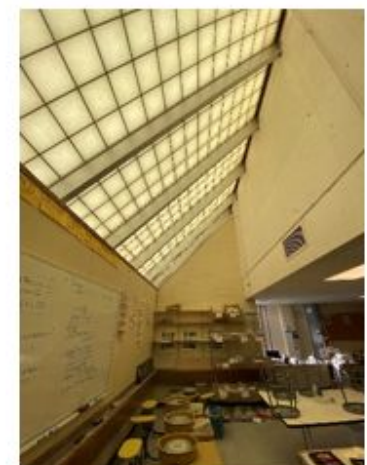
# Current Conditions: Exterior Doors & Windows



**STEEL FRAME  
WITH SINGLE  
GLAZING**



**ALUM FRAME WITH  
INSULATING  
GLAZING**

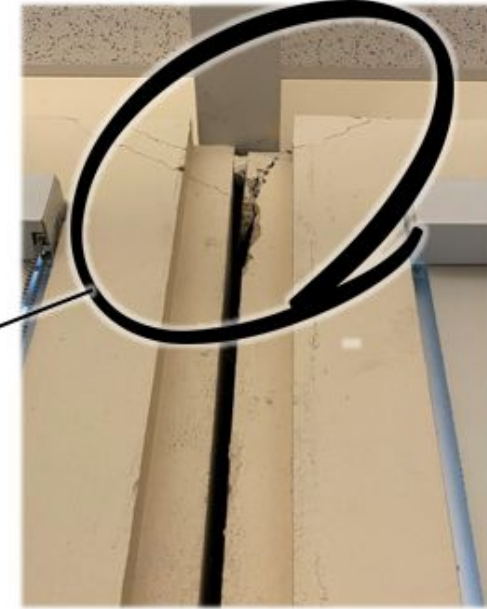


**TRANSLUCENT  
PLASTIC  
SANDWICH PANEL**

# Current Conditions: Structural



**WELDED STEEL TO STEEL  
CONNECTIONS**



**STEEL TO PRECAST PANEL  
CONNECTIONS**



**UPDATE LATERAL BRACING  
CONNECTIONS**



**SHINGLE ROOF TRUSS  
CONNECTIONS**



# Current Conditions: Domestic Water



- Nashoba Regional High School is located in a town without a public water supply. The source of all water used by NRHS for drinking, showering, fire safety, laboratory work, cleaning, etc., is a single well located in the basement of the building within 20 feet of the 8,000 gallon heating fuel storage tank.
- Due to the location of the well Massachusetts Department of Environmental Protection deems the well a **non-conforming well**.
- The Booster pump station that pressurizes the water going to the building is failing and in need of constant repairs.



# Current Conditions: Universal Accessibility



**SIGNAGE**

**EXTERIOR LIFT TO PRESS  
BOX NOT FUNCTIONAL**

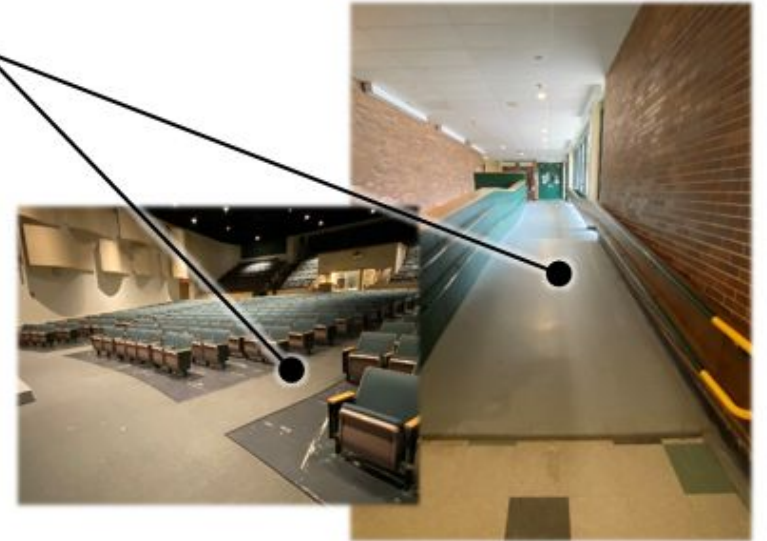


**CHORAL RISERS WITHOUT  
RAMP ACCESS**

**RAMPS AND AISLES  
EXCEED ALLOWABLE  
SLOPE**



**SOME CASEWORK  
WITHOUT ACCESSIBLE  
STATIONS**



## **In 2015, the New England Association of Schools and Colleges completed their decennial report and noted several features about the physical plant of the high school:**

- ❑ The NRHS facility is adequate and is sufficiently maintained in order to support the delivery of school programs and services; however, the facility requires updating in order to meet the needs of 21st century curriculum.
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- ❑ (The school needs to) Ensure privacy for students using health services.

# Educational Program

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Nashoba, 1961



# Educational Program



Nashoba, 1961



Nashoba, 2023

# 21st-Century Learning

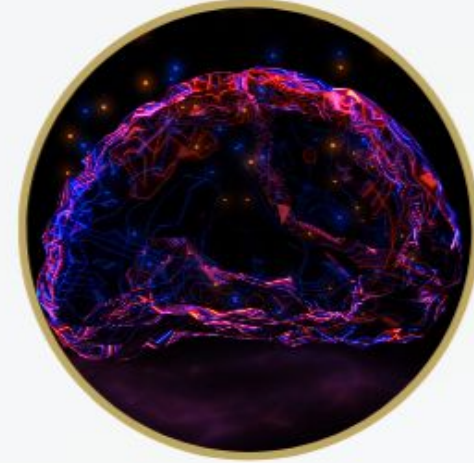
**Technology**



**Sustainability**



**A.I.**



**Innovation**



**Creativity**



**Collaboration**



# MSBA Partnership with Nashoba Regional School District

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## Massachusetts School Building Authority

*Funding Affordable, Sustainable, and Efficient Schools in Partnership with Local Communities*

The Massachusetts School Building Authority ("MSBA") is a quasi-independent government authority created to reform the process of funding capital improvement projects in the Commonwealth's public schools. The MSBA strives to work with local communities to create affordable, sustainable, and energy efficient schools across Massachusetts.

**March 28<sup>th</sup>, 2018 – NRSD School Committee  
voted to authorize the Superintendent to submit  
a statement of interest to the MSBA.**

# Submission to the MSBA Grant Program

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December 11<sup>th</sup>, 2019 – The MSBA notified NRSD that it was accepted into the 270 day eligibility period for feasibility consideration.

The advancement of the district's interest by the MSBA in only our second submission indicated that the statement of interest advanced on the priority list due to the severity of the issues of our building.

**In December of 2019, there were 144 total statements of interest, 11 were accepted. Nashoba Regional School District was 1 of the 11.**

# MSBA Building Grant Program

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The Massachusetts School Building Authority offered Nashoba Regional a grant opportunity for the following reasons:

## Building Facility

- Condition of Existing Building Infrastructure
- Lack of Building Code Compliance
- Lack of Energy Conservation Code Compliance
- Lack of Seismic Structural Code Compliance
- Lack of Universal Accessibility (Building and Site)
- Inadequate / Inefficient / Poorly Distributed Building Systems (Electrical, Plumbing, HVAC)
- Failing building envelope including, windows, walls and roof.
- Lack of natural ventilation and outdated mechanical systems
- Lack of Modern Technology Infrastructure
- Lack of Sufficient Parking

## Educational Inadequacy

- Poorly planned building organization
- Overcrowded and undersized cafeteria, media center and academic spaces
- Building limitations result in struggle to meet District Improvement Goals
- Academic classrooms are antiquated to deliver 21st century education
- Undersized and lack of appropriate science lab space
- Insufficient facilities to deliver modern Applied Arts Programs such as Video Production, Robotics and Theater Arts.
- Lack of small group and independent support spaces for collaboration and social emotional learning opportunities
- Poor and/or ineffective acoustics within the academic spaces
- Lack of student exhibit space
- Lack of collaborative learning spaces

**MSBA selection is based on need and community readiness.**

# Nashoba’s Reimbursement Info

Nashoba’s Base Reimbursement Rate is:

Base Points	31.00
Income Factor	3.79
Property Wealth Factor	14.74
Poverty Factor	0.00

49.53%

Additional 5.56% in Incentive Points is Anticipated

- 1.56% Maintenance
- 4.00% Energy Efficiency – “Green Schools”

Nashoba’s Anticipated Total Reimbursement Rate for Eligible Costs is

55.09%

Nashoba’s Anticipated Effective Reimbursement Rate for Project is

26.80%

Apply Construction Cost Funding Limits

Sitework Cost Limit

MSBA: \$39/sf

Average: \$78/sf is Typical Site Cost

Building Cost Limit per Square Foot

MSBA: \$393/sf

Average: HS Construction Cost is Approx. \$790/sf in today’s dollars

Fixtures, Furniture, Equipment & Technology Cap

MSBA: \$2,400/Student

Average: \$4,000 +/- Typical Cost

Other Misc. Smaller Caps Create Additional Ineligibility

Designer and OPM Fee Cap

Construction and Owner’s Contingencies

Square Footage in Excess of MSBA Guidelines:

- Auditorium Space
- Gymnasium Space
- Administration Space

# MSBA Green Schools Policy

## Current

### Minimum Requirements

Using LEED-S, for no additional reimbursement, achieve a minimum of **“Certified,”** including a minimum total of three points (from seven points available) from the following three categories:

- MR Building Product Disclosure and Optimization - Material Ingredients
- IEQ - Low Emitting Materials
- IEQ – Indoor Air Quality Assessment

**Exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 10%, using the LEED-S EA “Optimize Energy Performance” credit submittal to demonstrate that performance.**

### Additional Reimbursement

For an additional reimbursement of 2% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 20%, using the LEED-S EA “Optimize Energy Performance” credit submittal to demonstrate that performance.

## 2% Reimbursement

## Proposed

### Minimum Requirements

Using LEED-S, for no additional reimbursement, achieve a minimum of **“Silver,”** including a minimum total of three points (from seven points available) from the following three categories:

- MR Building Product Disclosure and Optimization - Material Ingredients
- IEQ - Low Emitting Materials
- IEQ – Indoor Air Quality Assessment

**Meet the minimum energy efficiency requirements described in the MA DOER “Stretch Code Green Community” standards.**

### Additional Reimbursement

For an additional reimbursement of 3% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must meet the minimum energy efficiency requirements described in the MA DOER “Opt-in Specialized Code” standards.

For an additional reimbursement of 1% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must achieve a minimum total of five points (from seven points available) in the LEED indoor air quality points noted above.

## 4% Reimbursement



# MSBA Green Schools Policy

## Proposed

### Minimum Requirements

Using LEED-S, for no additional reimbursement, achieve a minimum of **“Silver,”** including a minimum total of three points (from seven points available) from the following three categories:

- MR Building Product Disclosure and Optimization - Material Ingredients
- IEQ - Low Emitting Materials
- IEQ – Indoor Air Quality Assessment

**Meet the minimum energy efficiency requirements described in the MA DOER “Stretch Code Green Community” standards.**

### Additional Reimbursement

For an additional reimbursement of 3% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must meet the minimum energy efficiency requirements described in the MA DOER “Opt-in Specialized Code” standards.

For an additional reimbursement of 1% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must achieve a minimum total of five points (from seven points available) in the LEED indoor air quality points noted above.

## Project Team Commentary

← *Evaluated Project Scorecard with our Sustainable Design Consultant and confirmed that a minimum of LEED Silver is achievable.*

← *Bolton is a Stretch Code Community. Project already meets this requirement.*

← *Project already meets Opt-in Specialized Code with Geothermal (All Electric) as HVAC System.*

← *Evaluated Project Scorecard with our Sustainable Design Consultant and confirmed that a minimum of 5 points is achievable.*

## Data from Preferred Schematic Report – October 27<sup>th</sup>, 2022



### Option 1 Base Repair

Construction Duration

**Total: 5 Years**

Estimated Project Cost

**\$110-120mil**

Estimated District's  
Share\*\*

**\$110-120mil**

### Option 3A Add/Reno

Construction Duration

**Building: 5-6 Years  
Site: 1-2 Years**

**Total: 8 Years**

Estimated Project Cost

**\$254-264mil**

Estimated District's  
Share\*\*

**\$202-212mil**

### Option 4A New Construction

Construction Duration

**Building: 2-3 Years  
Site: 1-2 Years**

**Total: 5 Years**

Estimated Project Cost

**\$225-235mil**

Estimated District's  
Share\*\*

**\$178-188mil**

### Option 4C New Construction

Construction Duration

**Building: 2-3 Years  
Site: 1-2 Years**

**Total: 5 Years**

Estimated Project Cost

**\$224-234mil**

Estimated District's  
Share\*\*

**\$176-186mil**

### Option 4D New Construction

Construction Duration

**Building: 2-3 Years  
Site: 1-2 Years**

**Total: 5 Years**

Estimated Project Cost

**\$223-233mil**

Estimated District's  
Share\*\*

**\$175-185mil**

### Option 4E New Construction

Construction Duration

**Building: 2-3 Years  
Site: 1-2 Years**

**Total: 5 Years**

Estimated Project Cost

**\$222-232mil**

Estimated District's  
Share\*\*

**\$174-184mil**

### Option 4F New Construction

Construction Duration

**Building: 2-4 Years  
Site: 1-2 Years**

**Total: 6 Years**

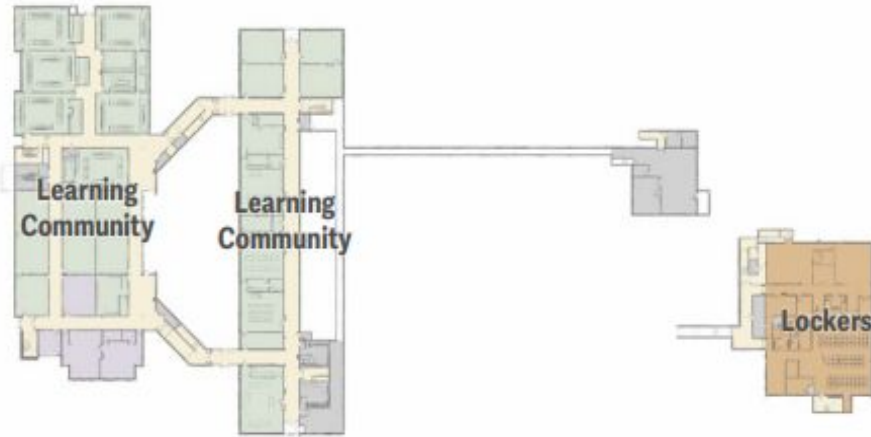
Estimated Project Cost

**\$240-250mil**

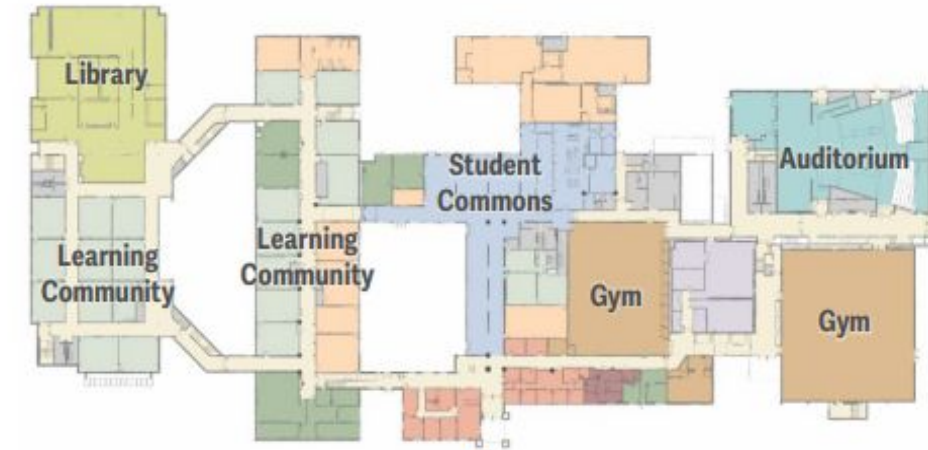
Estimated District's  
Share\*\*

**\$191-201mil**

# Option 1 – Base Repair



Lower Level Floor Plan



Main Level Floor Plan

Main Entry

## Auditorium Strengths

- Repair To Existing Facility Issues, Accessibility and Code-related Upgrades

## Weaknesses

- Does **NOT** Meet Educational Program
- Construction Activity Would be Limited to Schedule Around School
- Undersized Educational Spaces Remain the Same Size
- Phased Construction Would Require A Longer Construction Timeline 5-6 Years
- May Require Temporary Classrooms
- **NOT** MSBA Reimbursable

## Includes:

- Replacement of HVAC Systems
- Replacement of Windows
- Replacement of Roof
- Building Code Modifications (Fire Ratings)
- Energy Code Modifications (Building Insulation)
- ADA Accessibility Modifications
- Significant Structural Modifications
- Replacement of Damaged Interior Finishes



# Option 3 – Addition/Renovation

## 2 Story – Existing Stadium



### Strengths

- Generally meets requirements of the Educational Program
- Site Access, Primary Circulation and Graded Driveways Would Remain Mostly Intact Through Construction
- Relatively Flat Portion of Site
- Separate Entrance Lobby Available for the Gym and Auditorium for Secure Public Access

### Weaknesses

- Disruption to Existing Athletic Stadium
- Construction Activity Would be Disruptive To Existing School Programs
- Extensive Phasing Construction Will Require A Longer Construction Timeline - 6 Years – High
- Renovation / Addition Options May Have Unforeseen Costs With Concealed Conditions
- Less Efficient Design – Higher Building Costs



Second Floor Plan



First Floor Plan

# Option 4 – New Construction



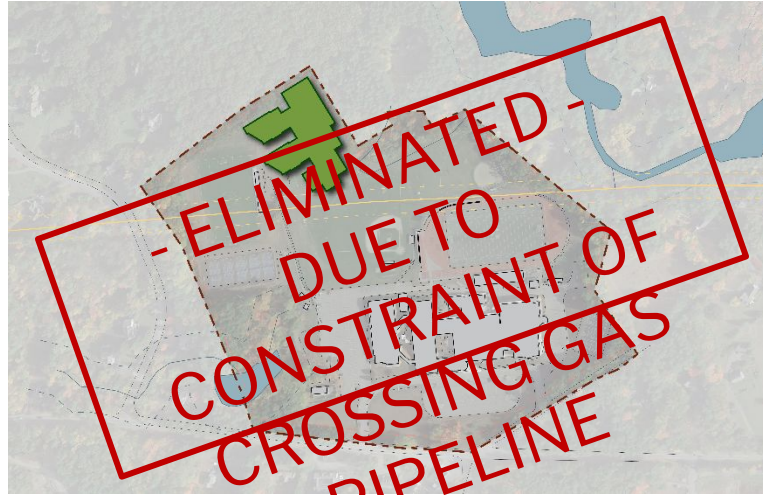
## Option 4A

### Pros

- Aligns with Educational Program
- Site Access, Primary Circulation and Graded Driveways Would Remain Mostly Intact Through Construction
- Relatively Flat Portion of Site

### Cons

- Disruption to Existing Athletic Fields
- Construction Occurs Adjacent to Existing School



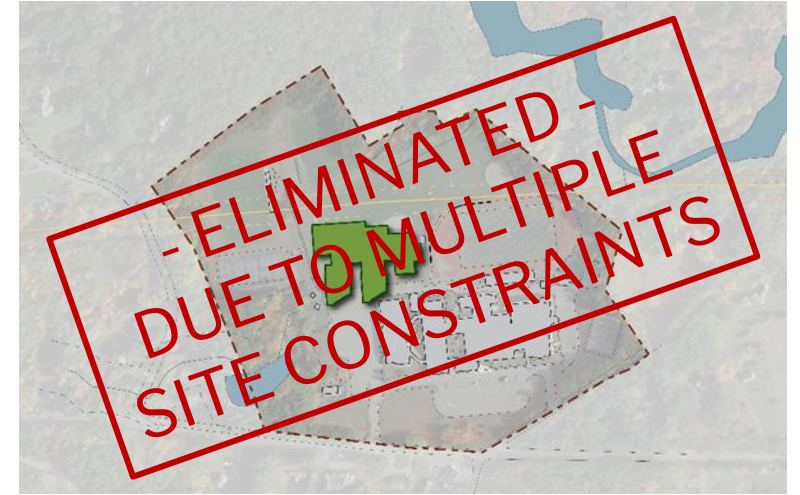
## Option 4B

### Pros

- Aligns with Educational Program
- Least Student Impact during Construction
- Site Access, Primary Circulation and Graded Driveways Would Remain Mostly Intact Through Construction

### Cons

- Disruption to Existing Athletic Fields
- Topographic Challenges
- Requires Re-building Leaching Fields



## Option 4C

### Pros

- Aligns with Educational Program
- Site Access, Primary Circulation and Graded Driveways Would Remain Mostly Intact Through Construction
- Relatively Flat Portion of Site

### Cons

- Disruption to Existing Athletic Fields
- Construction Occurs Adjacent to Existing School



# Option 4D – New Construction

2 Story – Existing Baseball Field/Parking



## Strengths

- Aligns with Educational Program
- Gym/Locker Rooms have Direct Access to Fields
- Maintains Existing Athletic Stadium
- Construction Will Not Displace On-site Well
- Estimated Duration of Construction is 2 Years for the Building and Additional 1 Year for Sitework
- Main Entry Faces Route 117 and Southeast Orientation for Morning Sun

## Weaknesses

- Disruption to Existing Baseball Field
- Construction Occurs Adjacent to Existing School
- Requires Relocation of the Existing Septic Pipeline
- Site is Graded with Steep Slopes to the West, Northwest, and Northeast Requiring Some Retaining Walls and Site Fill



Second Floor Plan



First Floor Plan

# Overall School Relationship Organizational Diagram

## SMALL LEARNING COMMUNITIES

Extended Learning Area (ELA)/  
Common Zone at the Heart of  
Community

Teacher Planning Center

Small Group Rooms

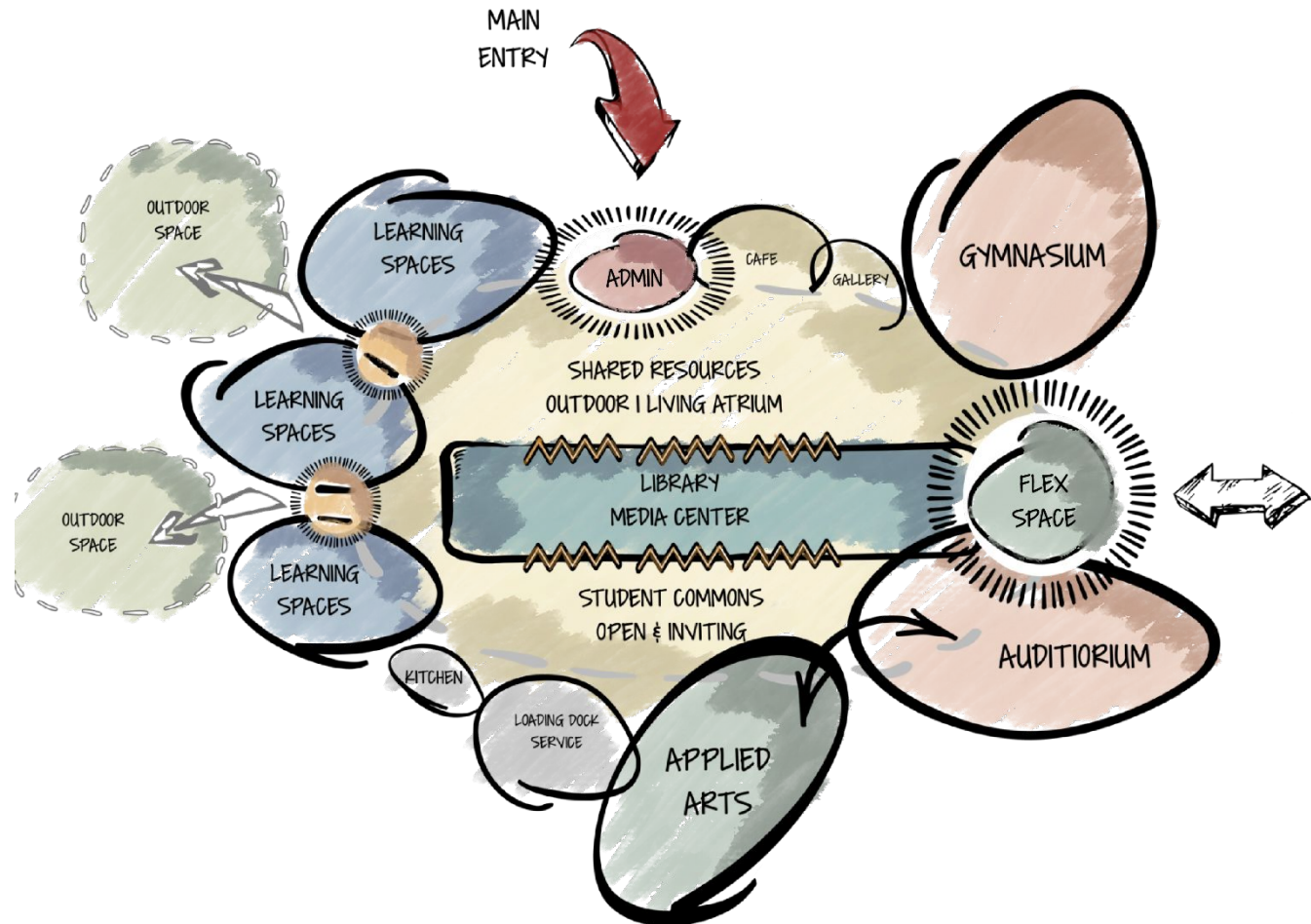
Special Education Breakout/Pull Out  
Spaces

Core Curriculum Spaces in Each

Labs and Classrooms

Storage of Supplies

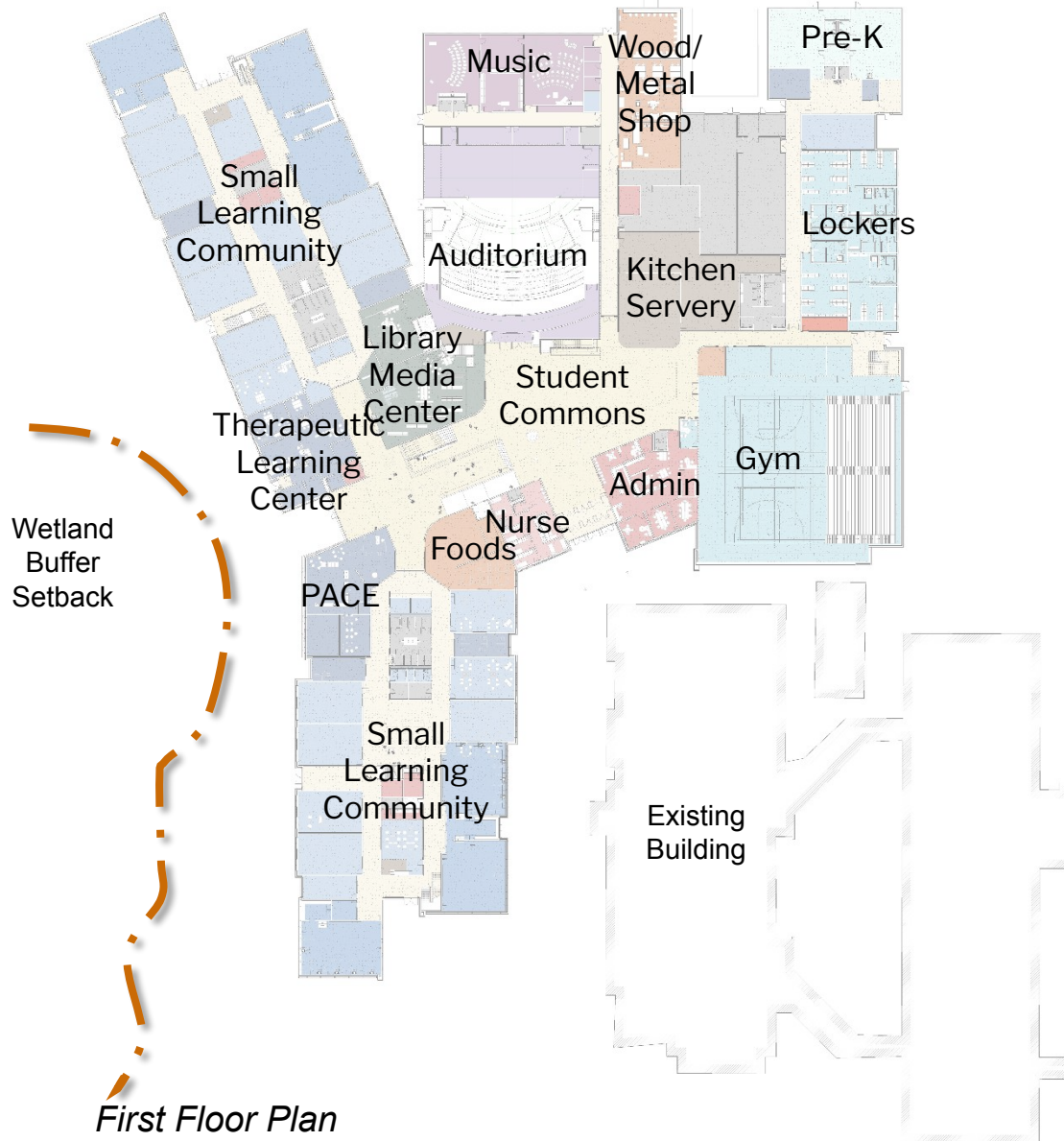
Toilets for Both Students and Teachers



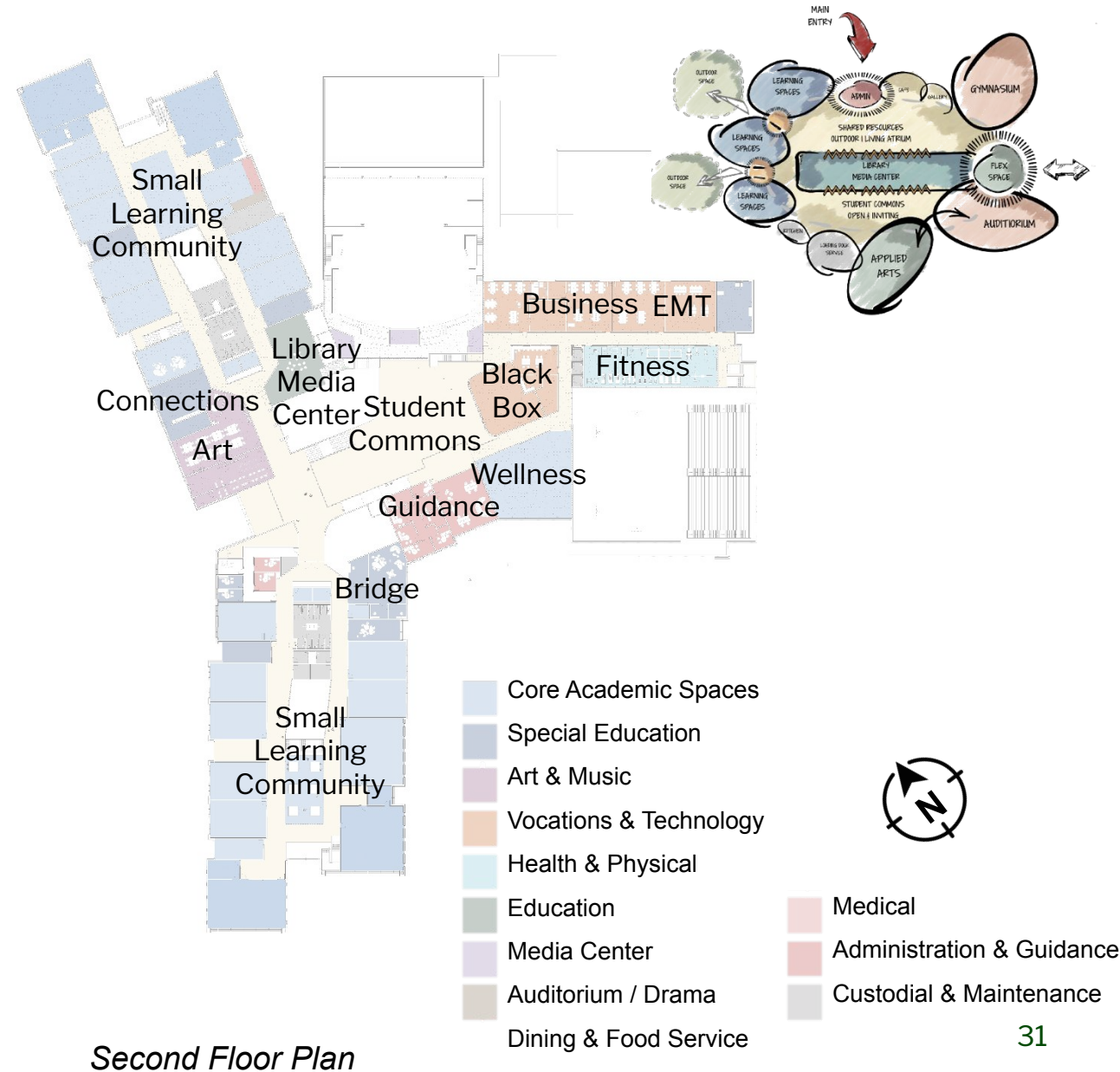


# Floor Plan Development

Gas Easement Setback



First Floor Plan

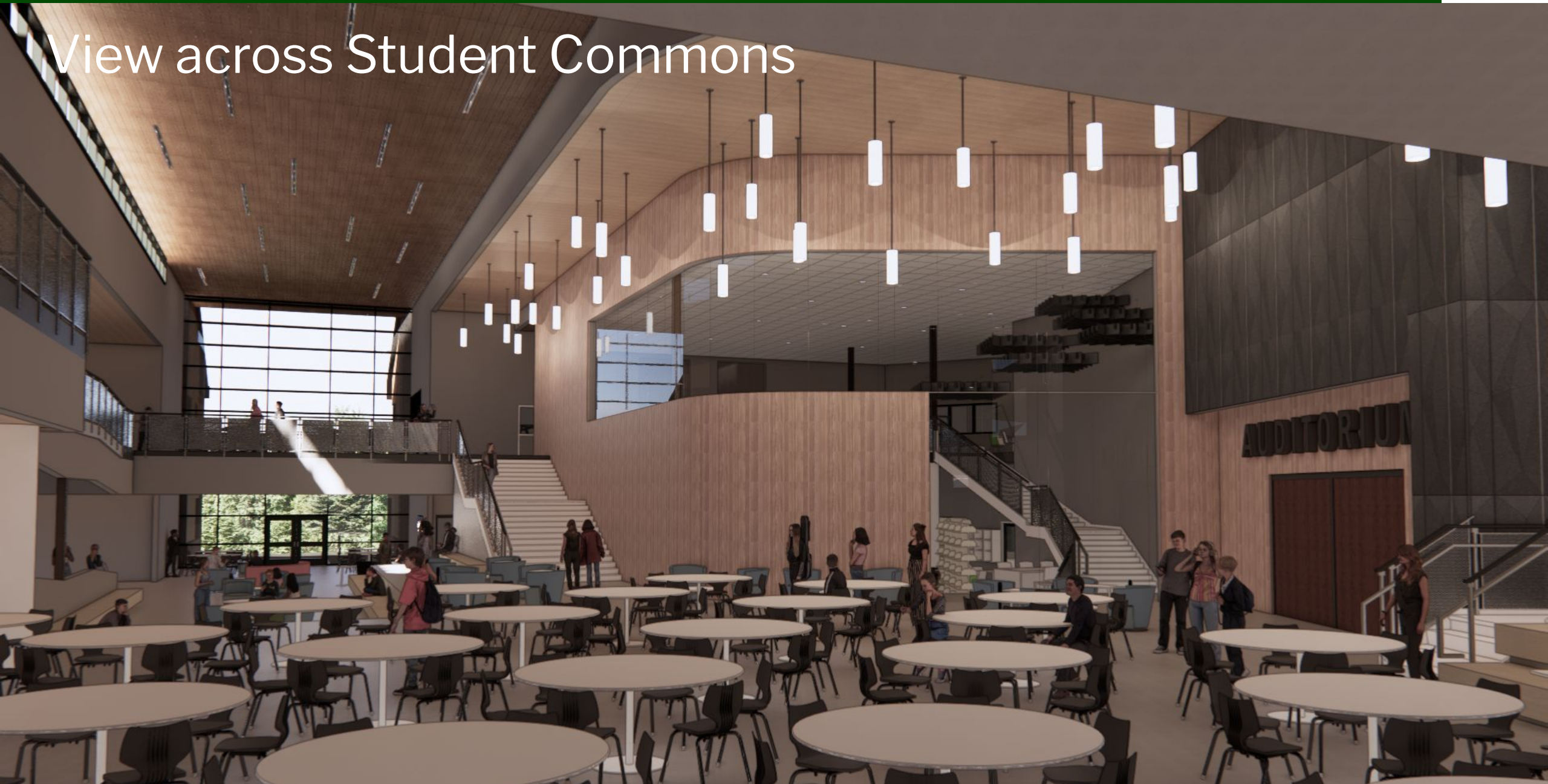


Second Floor Plan



# Interior Design – Conceptual Development

View across Student Commons





# Interior Design - Conceptual Development

View across Small Learning Community





# Spatial Character - Exterior

## Design Ideas



## Building Materials

### Historic



Stone



Siding



Timber

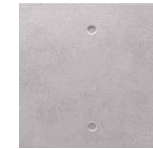


Shakes

### Modern



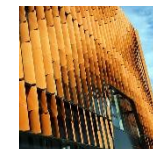
Glass



Concrete



Metal



Sunshades

# Exterior Design - Conceptual Development

## View from Route 117

### Building Materials

#### Historic



Stone



Siding



Timber



Shakes

#### Modern



Glass



Concrete



Metal



Sunshades





# Exterior Design - Conceptual Development

View from Entry Drive





## Project Cost

Estimated Total Project Cost	\$241,714,926***
MSBA Reimbursement	\$64,793,451**
Total Taxpayer Contribution	\$176,921,475**

## Estimated Totals per Town \*

Bolton (31.87%)	\$56,384,874**
Lancaster (32.97%)	\$58,331,011**
Stow (35.16%)	\$62,205,590**

\*Based on Regional Agreement using FY24 enrollment data

\*\*Figures updated on 8/22/23 based on MSBA Project Scope and Budget Meeting

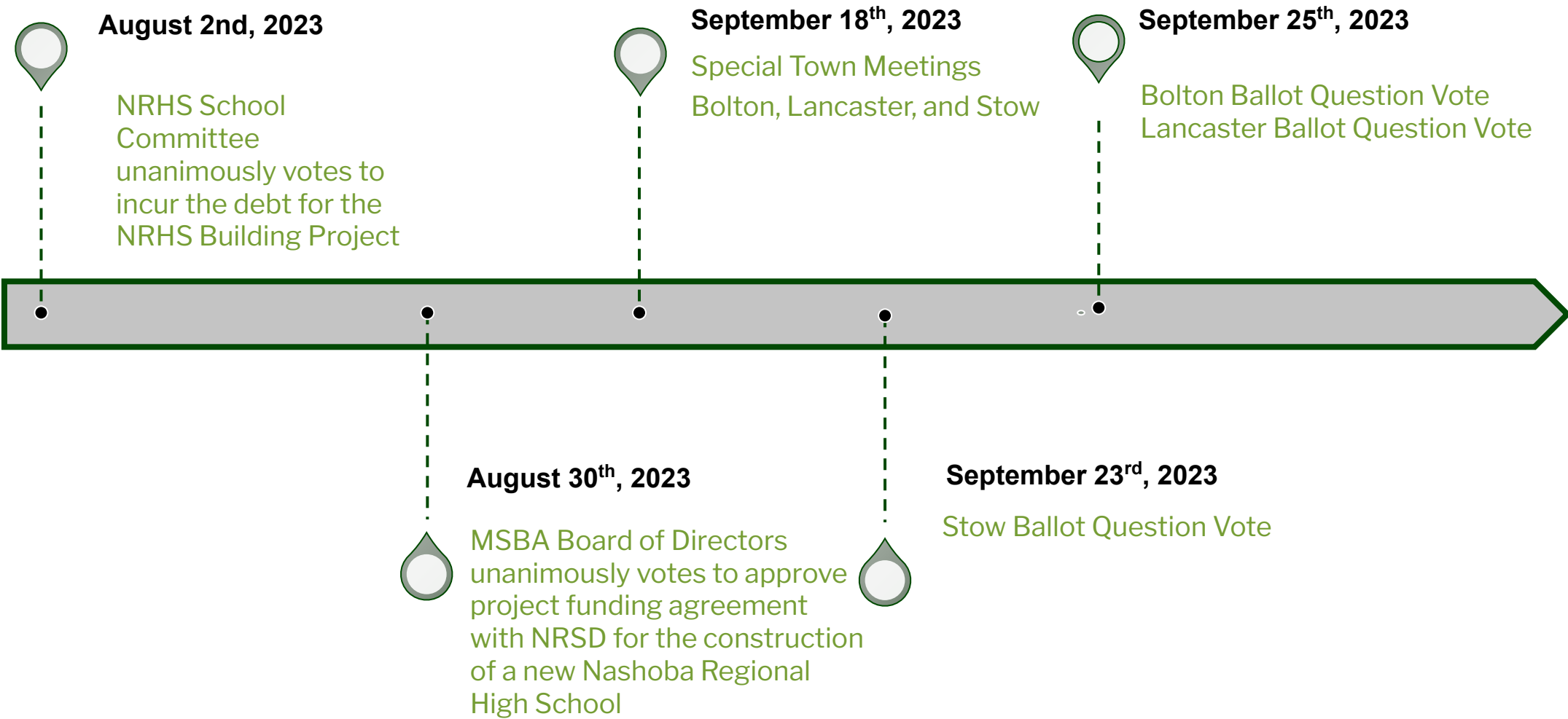
\*\*\*Project cost voted not to exceed by Nashoba Regional School Committee on August 2, 2023

# Estimated Tax Assessment per Household \*

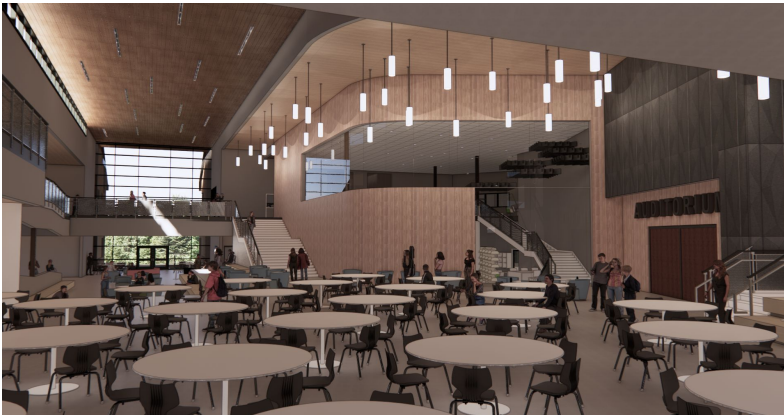
	<b>Median Residential Assessment**</b>	<b>Increase per Year</b>	<b>Increase per Month</b>	<b>Increase per Week</b>	<b>Increase per Day</b>
<b>Bolton</b>	<b>\$712,172</b>	<b>\$1,550-\$1,750</b>	<b>\$129.17-\$145.83</b>	<b>\$29.81-33.65</b>	<b>\$4.25-\$4.79</b>
<b>Lancaster</b>	<b>\$456,209</b>	<b>\$1,150-\$1,350</b>	<b>\$95.83-\$112.50</b>	<b>\$22.12-\$25.96</b>	<b>\$3.15-\$3.70</b>
<b>Stow</b>	<b>\$640,760</b>	<b>\$1,300-\$1,500</b>	<b>\$108.33-\$125.00</b>	<b>\$25.00-\$28.50</b>	<b>\$3.56-\$4.11</b>

\*Based on estimates provided by financial advisors

\*\*Based on FY24 town assessment data (7/31/23)



# What does a NO vote mean for our district and communities?





For more information, please go to:

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**Thank you!**  
Questions?