



# SMS

SOMERSET MIDDLE SCHOOL



## SMS Joint Building Committee, School Committee, and Board of Selectmen Meeting

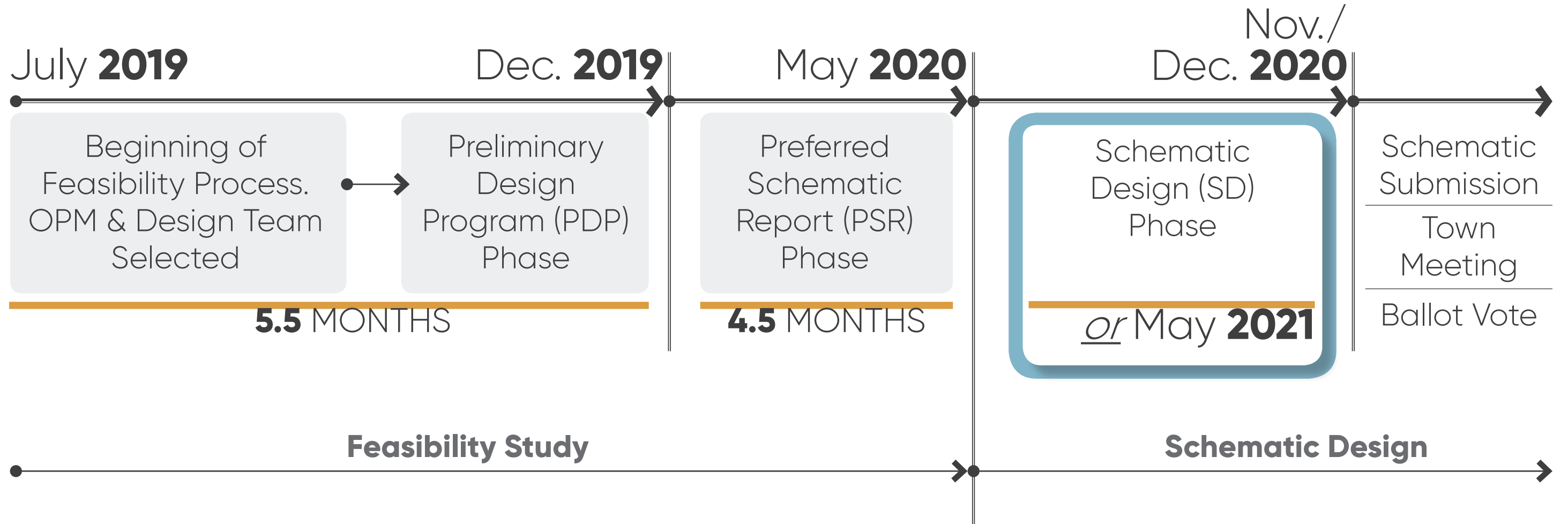
**Ai3 Architects, LLC**  
**CGA Project Management**

April 27, 2020

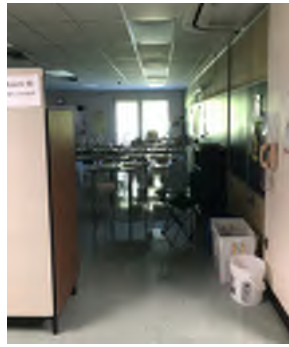


# Feasibility Study & Schematic Design Timeline

Somerset Middle School





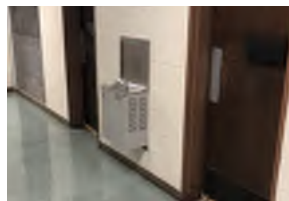
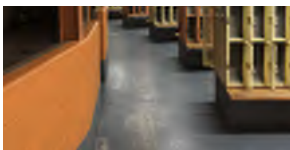


## Educational Deficiencies

- **Lack of educational space for team teaching and collaboration**
- Science classrooms do not meet the state guidelines; most of the 7/8th grade instruction & laboratory experiments are limited to teacher demo and are not student-centered
- Undersized student dining area
- Undersized Library Media Center
- **Lack of special education space for remedial and tutorial programs**
- **Poor and/or ineffective acoustics within the instructional classrooms and team teaching spaces**
- SPED sub-separate classroom for autistic children does not have separate therapy rooms
- **Lack of small group work, study, and testing areas**
- Lack of adequate administration and support space
- Lack of integrated project labs
- Lack of collaborative learning spaces
- **Existing Somerset Middle School does not support modern middle school educational programming**
- **"Open concept" general classrooms and educational spaces**

## Exterior Envelope Deficiencies

- "Post-war boom" resulted in **lightweight, less expensive school construction** practices that did not have the physical longevity as their predecessors.
- **No insulation** in the existing exterior wall assembly
- Thermal resistance (R-Value) of the existing exterior wall assembly does not meet current energy code requirements.
- Lack of control joints at critical locations is resulting in **exterior masonry cracking**.
- **Original, single-pane exterior window systems** are non-compliant with the state energy code.
- Water infiltration behind masonry walls has caused cracking in numerous locations resulting from freeze-thaw.
- **Rusting of exterior doors and frames** exists throughout the building.
- Rusting and movement of steel lintels above doors and windows requires removal and replacement.
- **Water infiltration** resulting from continuous deterioration of wall/roof flashing, roof membrane seams, failed sealant, and standing water



## Code Compliance Deficiencies

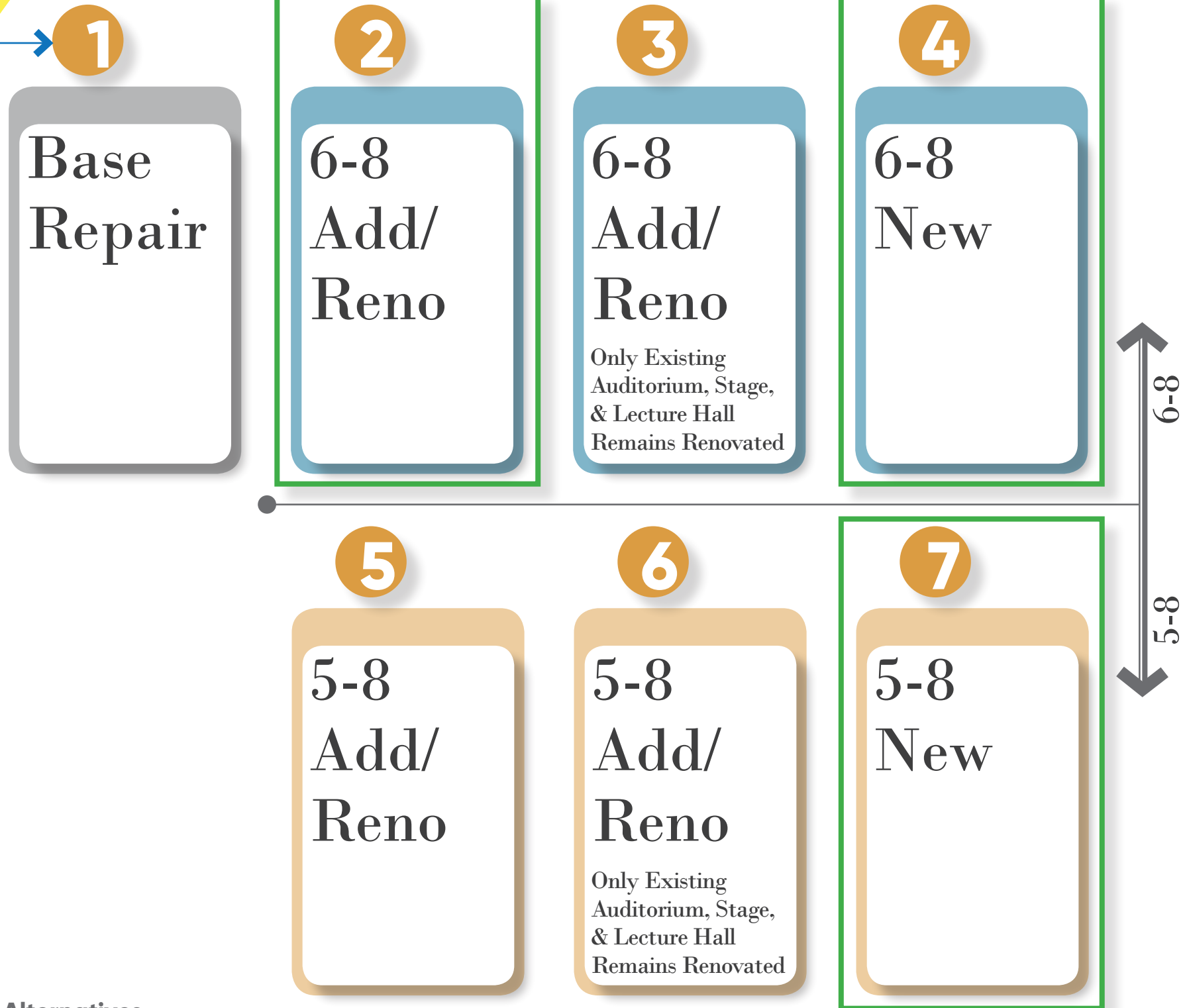
- **Requirements for handicap accessibility were non-existent in 1965** when the Somerset Middle School was originally designed and constructed.
- **All bathrooms need re-construction** due to non-compliant conditions (entry doors too narrow – 24 inches wide, NO HC toilet stalls, NO HC urinals, NO HC sinks or accessories)
- Total plumbing fixture counts do not meet state plumbing regulations
- Existing **ramps are non-compliant for accessibility** (slope, landing size, handrails, projections, doors off ramps) – requires complete reconstruction of ramp AND entry door to adjacent rooms.
- **NO accessible seating in assembly spaces** (gymnasium, auditorium, lecture hall, etc.)
- Drinking fountains are non-compliant
- Door hardware and classroom entries are non-compliant
- Gymnasium locker room lockers and showers are non-compliant

## Building Systems Deficiencies

- **Boilers have outlived their service life**, are very inefficient to operate, and are in poor condition.
- The unit ventilators have outlived their useful service life.
- **Exhaust fans appear to be old** and beyond their serviceable life expectancy.
- Gymnasium air handling units are original to the construction of the school and have outlived their useful service life.
- In 1969 addition, air is supplied by ceiling diffusers and returned at low wall return grilles, making maintenance difficult due to its confined location and limited access.
- The **water service appears original** and has exceeded its life expectancy.
- The sanitary, waste, and vent piping has served its useful life and should be replaced.
- The storm drainage piping has served its lifetime and should be replaced.
- **Plumbing fixtures have exceeded their life expectancy**, and although not required, high-efficiency fixtures are recommended.
- Per the State Building Code, the facility is required to be fully sprinklered and is **currently not in compliance with the existing Building Code**.
- Emergency power system does not meet current codes.



# Somerset Middle School Preliminary Options



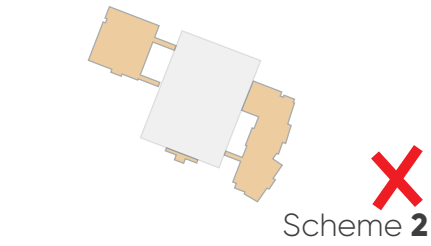
Preliminary Evaluation of Alternatives

Options

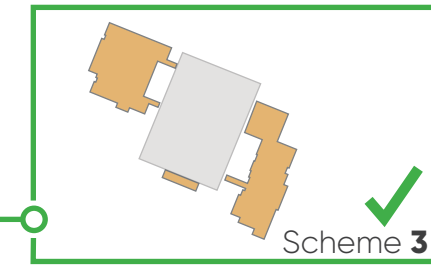


## Option 2

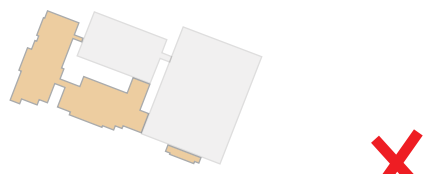
Conceptual Add/Reno Building Plan (6-8)



Scheme 2



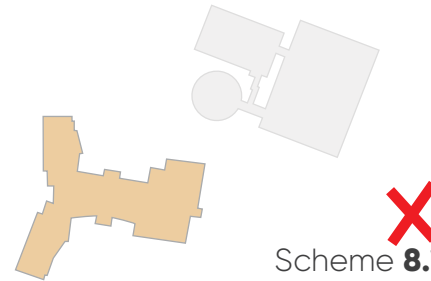
Scheme 3



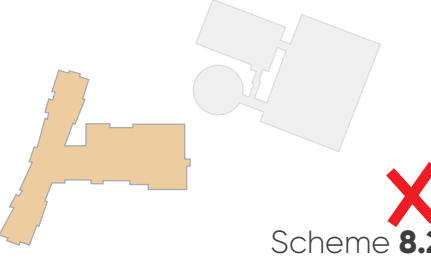
Scheme 4

## Option 4 | 7

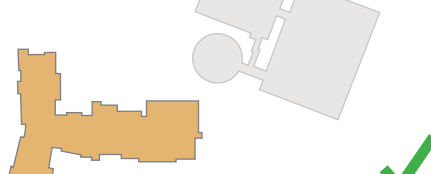
Conceptual New Building Plan (5-8)



Scheme 8.1



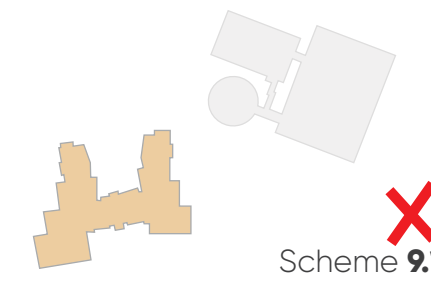
Scheme 8.2



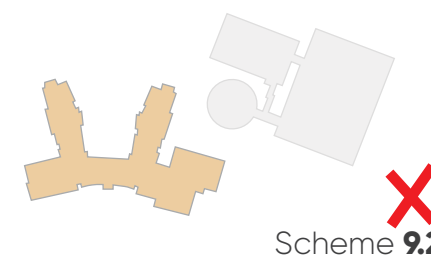
Scheme 8.3

## Option 4 | 7

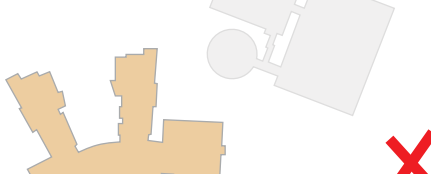
Conceptual New Building Plan (5-8)



Scheme 9.1



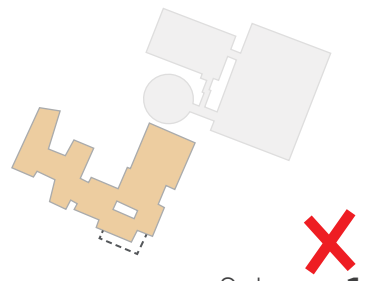
Scheme 9.2



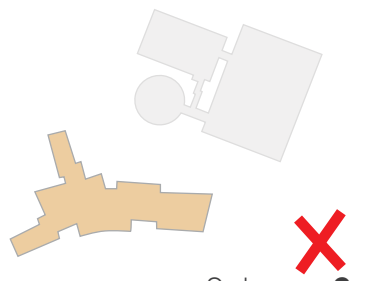
Scheme 9.3

## Option 4 | 7

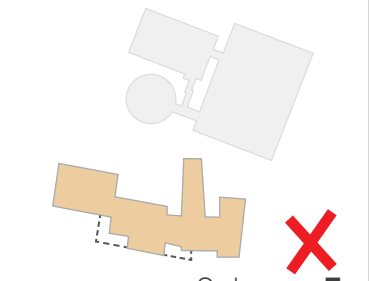
Conceptual New Building Plan (5-8)



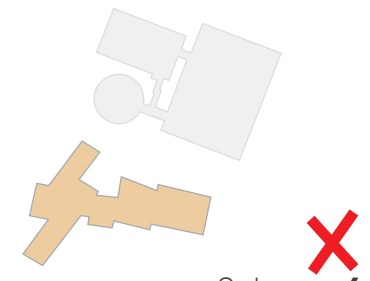
Scheme 1



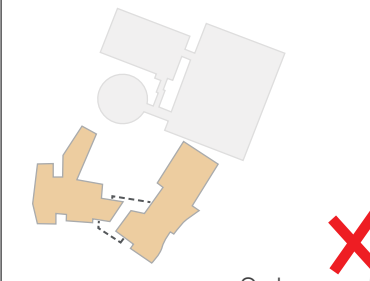
Scheme 2



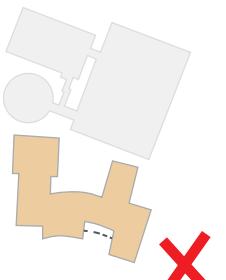
Scheme 3



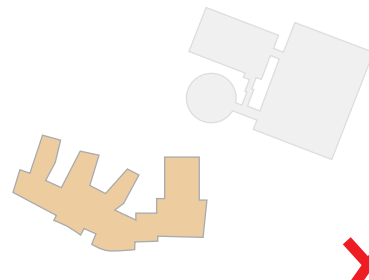
Scheme 4



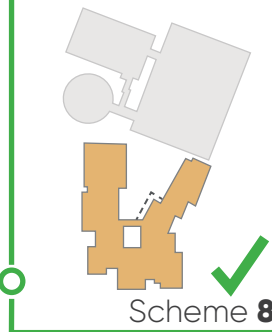
Scheme 5



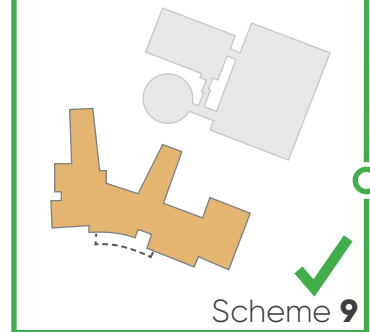
Scheme 6



Scheme 7



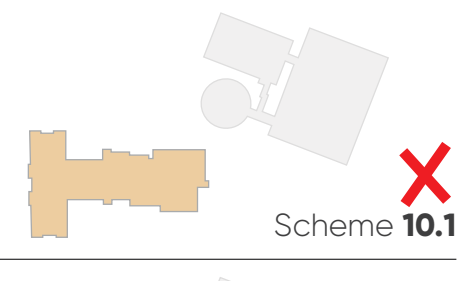
Scheme 8



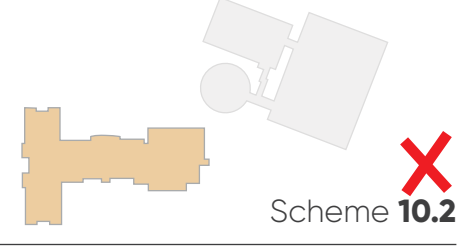
Scheme 9

## Option 4

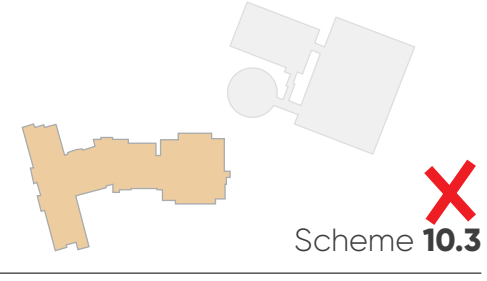
Conceptual New Building Plan (6-8)



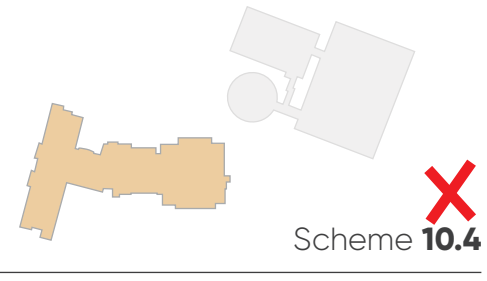
Scheme 10.1



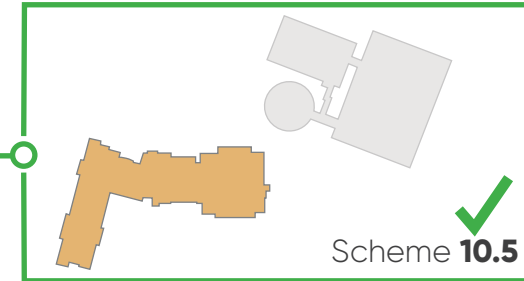
Scheme 10.2



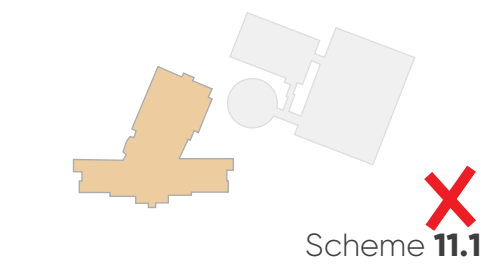
Scheme 10.3



Scheme 10.4



Scheme 10.5



Scheme 11.1



## Summary of Final Evaluation of Alternatives



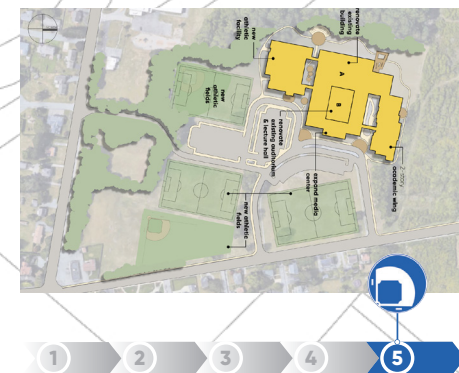
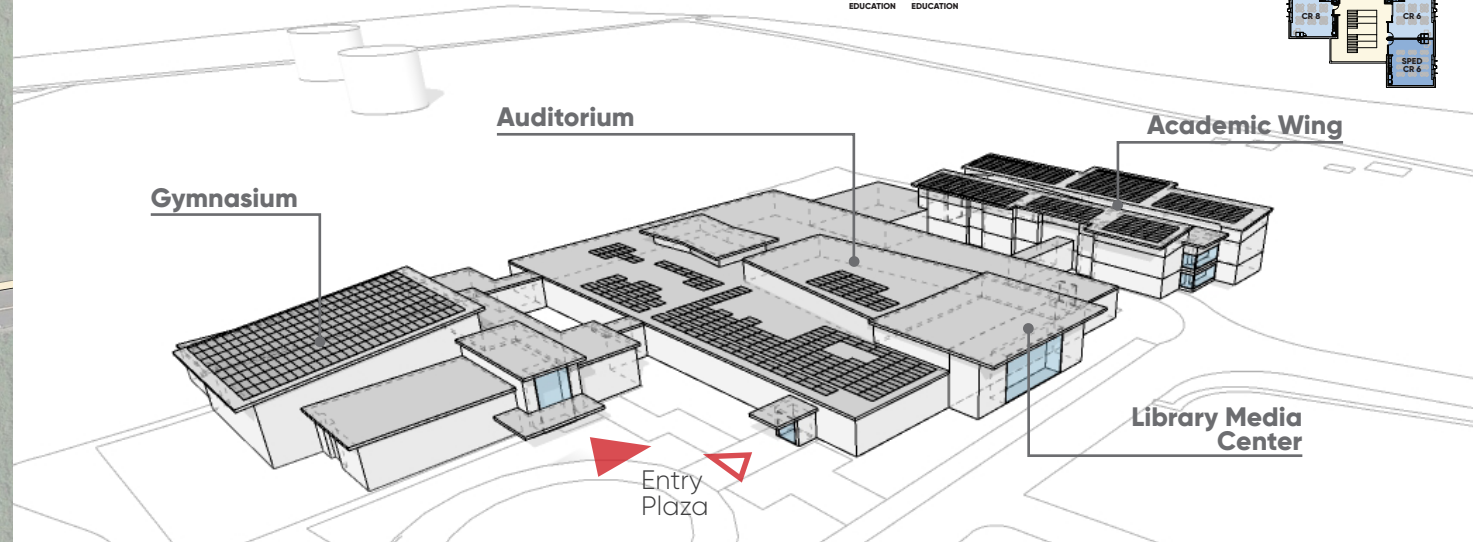
# Option 2 | Scheme 3

Conceptual Add/Reno Site, Building, & Phasing Plans (Grades 6-8)

139,000 GSF



- New two-story academic wing
- New athletic facility
- Re-use & Renovate existing 1965 building
- Newly expanded Media Center
- Re-use & Renovate existing Auditorium & Lecture Hall
- Demo existing 1969 open classroom building & Existing Gymnasium



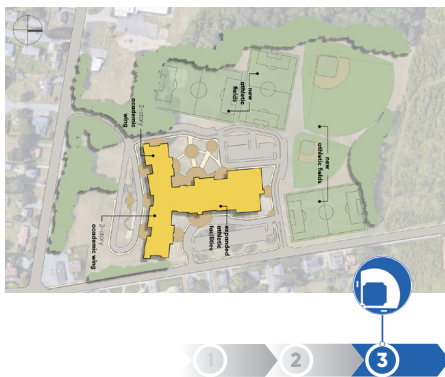
**Construction Phasing:**  
**Total Duration**  
**+/- 42 Months**



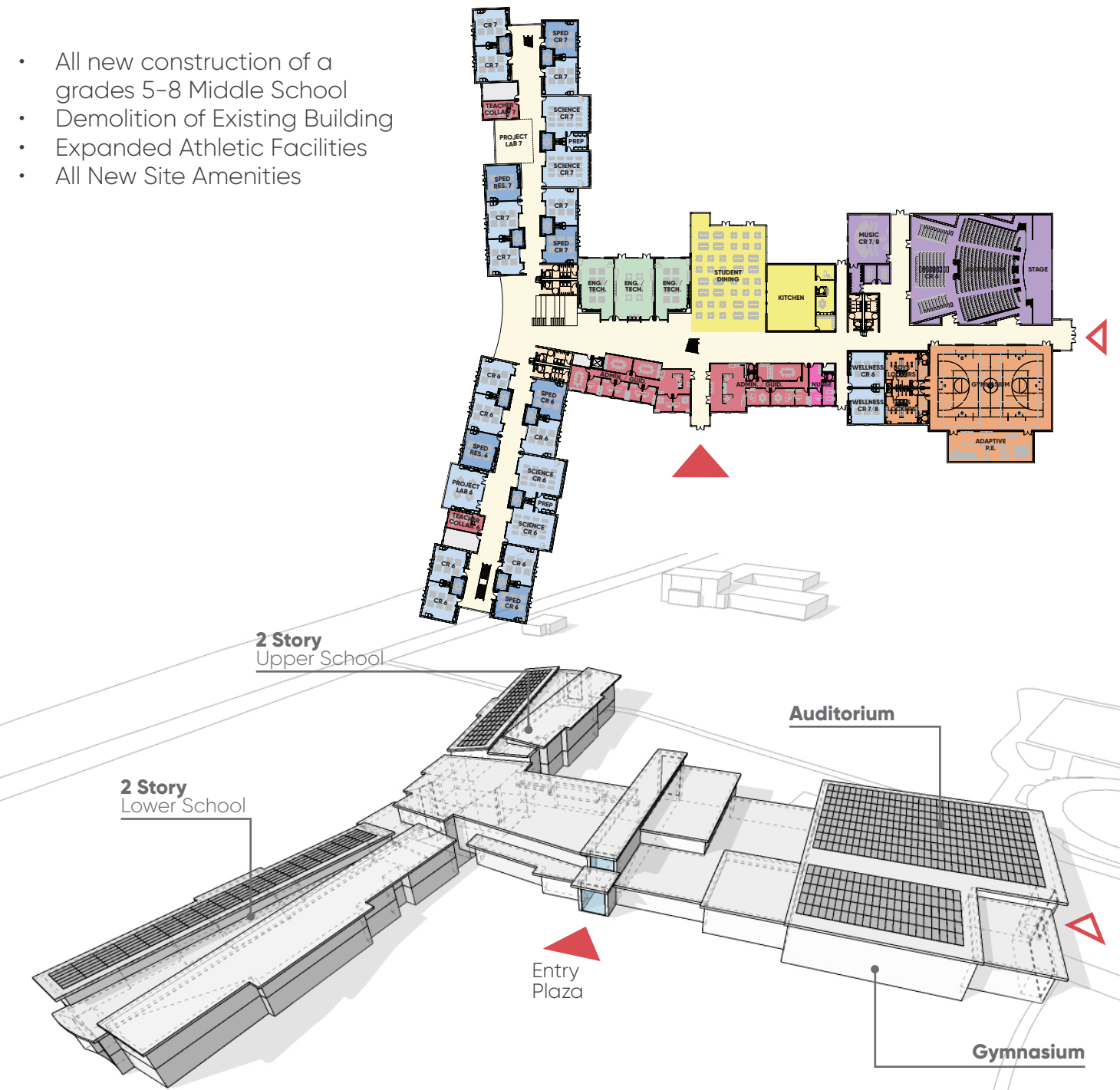
# Option 7 | Scheme 8.3

## Conceptual New Site, Building, & Phasing Plans (Grades 5-8)

154,800 GSF



- All new construction of a grades 5-8 Middle School
- Demolition of Existing Building
- Expanded Athletic Facilities
- All New Site Amenities



**Construction Phasing:**  
**Total Duration**  
**+/- 36 Months**



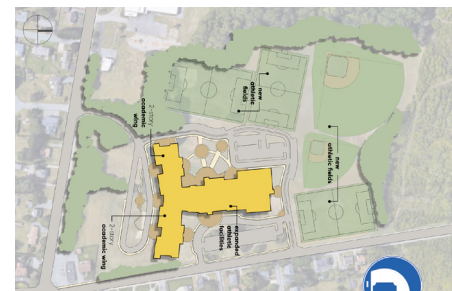
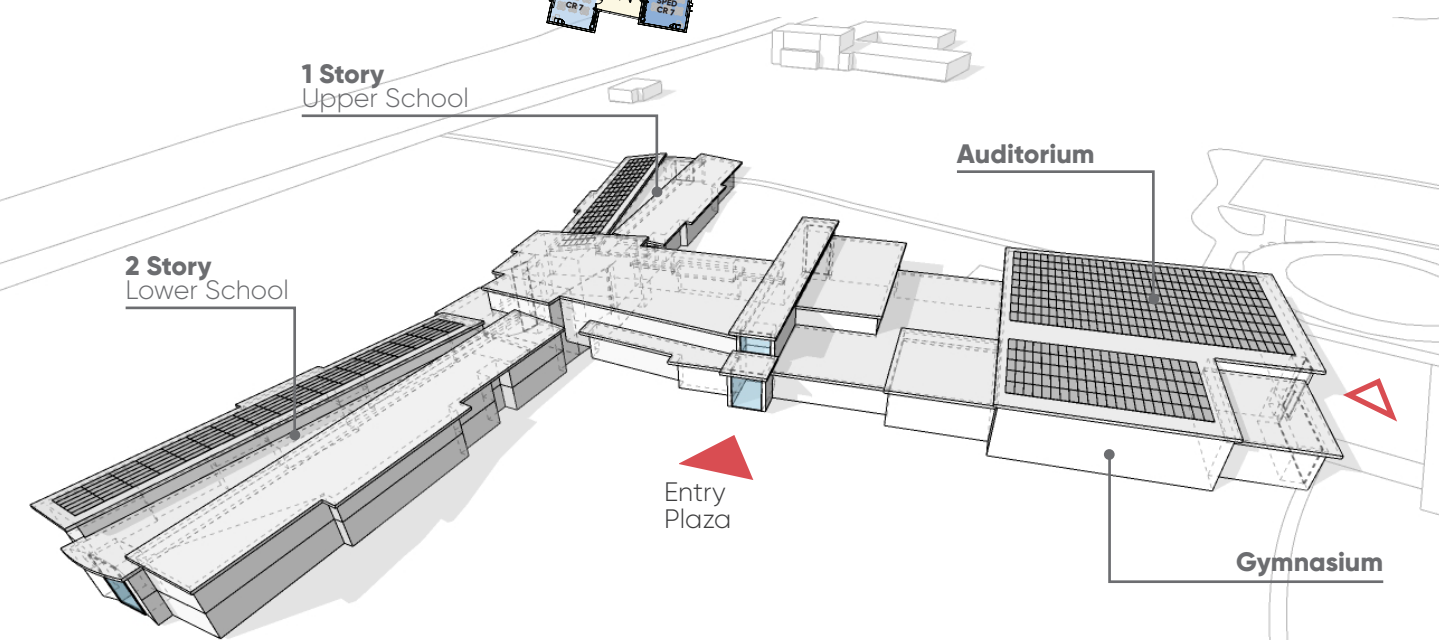
# Option 4 | Scheme 8.4

## Conceptual New Site, Building, & Phasing Plans (Grades 6-8)

131,900 GSF



- All new construction of a grades 6-8 Middle School
- Demolition of Existing Building
- Expanded Athletic Facilities
- All New Site Amenities



**Construction Phasing:**  
**Total Duration**  
**+/- 34 Months**



**Building Committees Preferred Solution**





## Evaluation Criteria Categories

Town-wide Master Plan Integration

Accommodate Educational Program

Disruption to Education during Construction

Schedule

Sustainability / Energy Efficiency

Cost / Budget

# Guiding Design Principles

Educational Innovation



- Transparency
- Display of student work
- Flexibility of space



Belonging and Ownership



- Warm, Safe, & Inviting
- Pride & Respect
- Student ownership



Safety and Security



- Passive & active security
- Natural admin. oversight
- Transparency



Indoor/Outdoor School and Community Connection



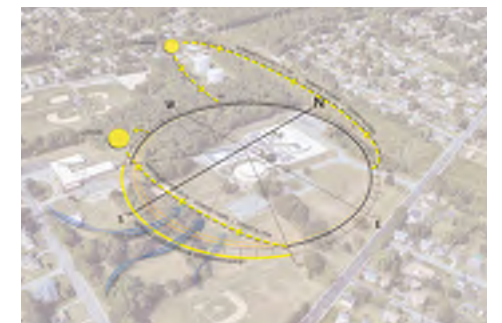
- Natural daylighting
- Educational courtyard
- Community access



Sustainability



- Maximize energy efficiency
- On-site renewable energy
- Teaching tool







READ STREET

BRAYTON AVENUE

6/7  
& 8

Tech./  
Eng.   Student  
Dining   Rec./  
Mech.   Gym  
Library   Admin.   Guid.   Fitness

Stage  
Music  
Aud.

Construction Phasing:  
Total Duration  
+/- 34 Months



# Option 4 Scheme 10.5

## Conceptual New Building Plan (6-8)

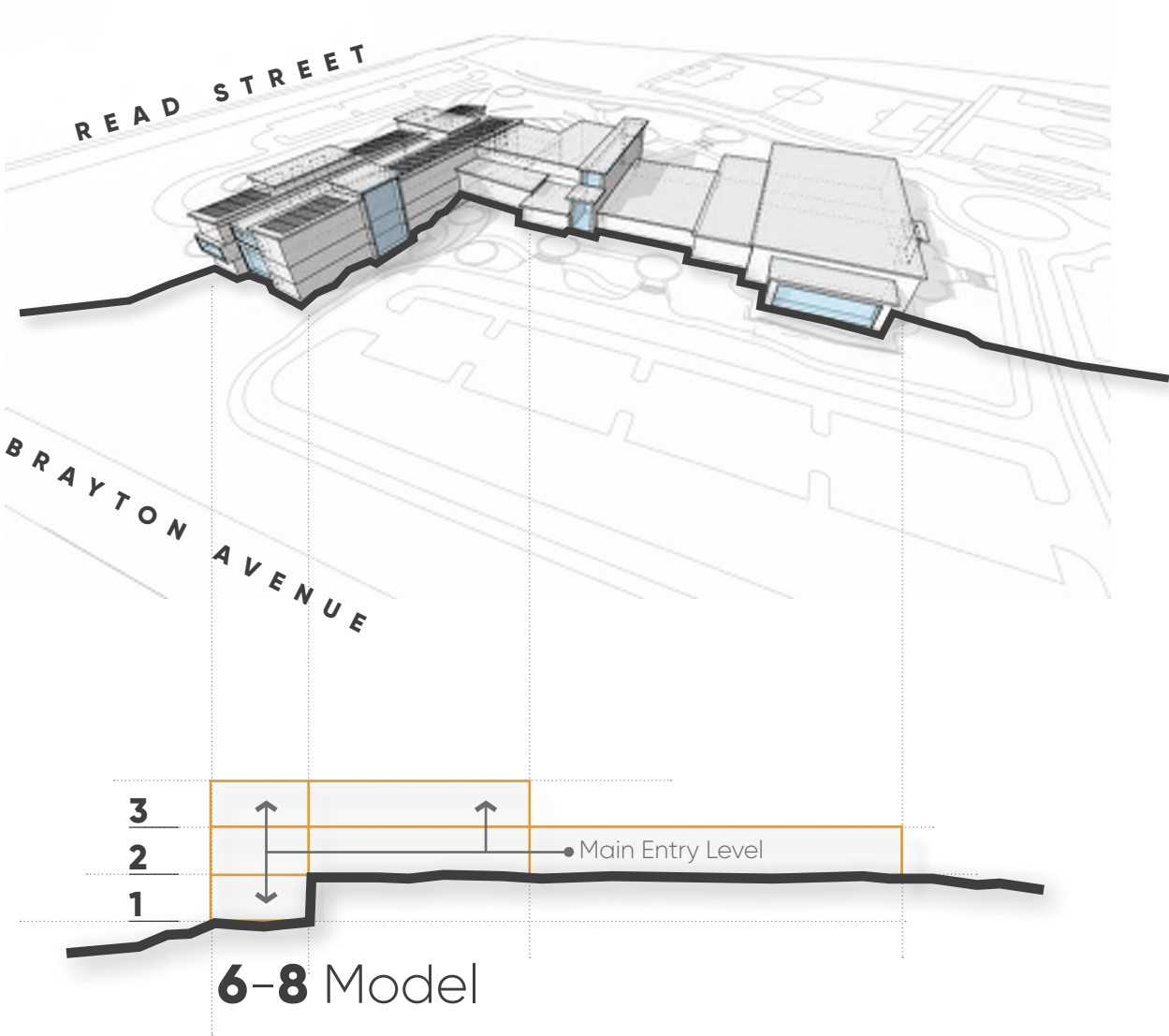
April 27, 2020

# SMS

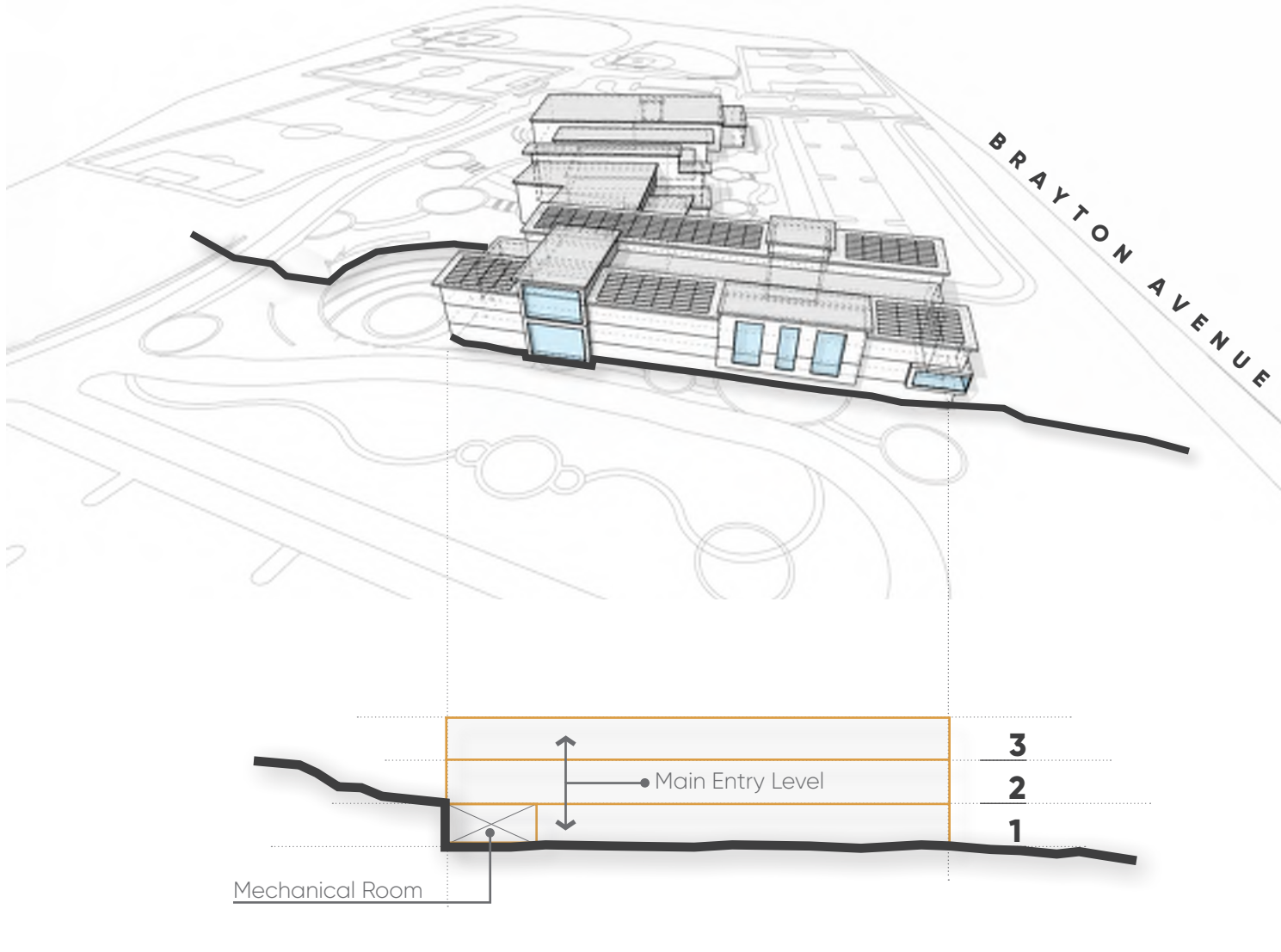
SOMERSET  
MIDDLE  
SCHOOL



# Option 4 | Conceptual New Building Plan (6-8)



Scheme 10.5  
Floor Level Distribution Diagram



Scheme 10.5  
Floor Level Distribution Diagram

# Option 4 | Conceptual New Building Plan (6-8)

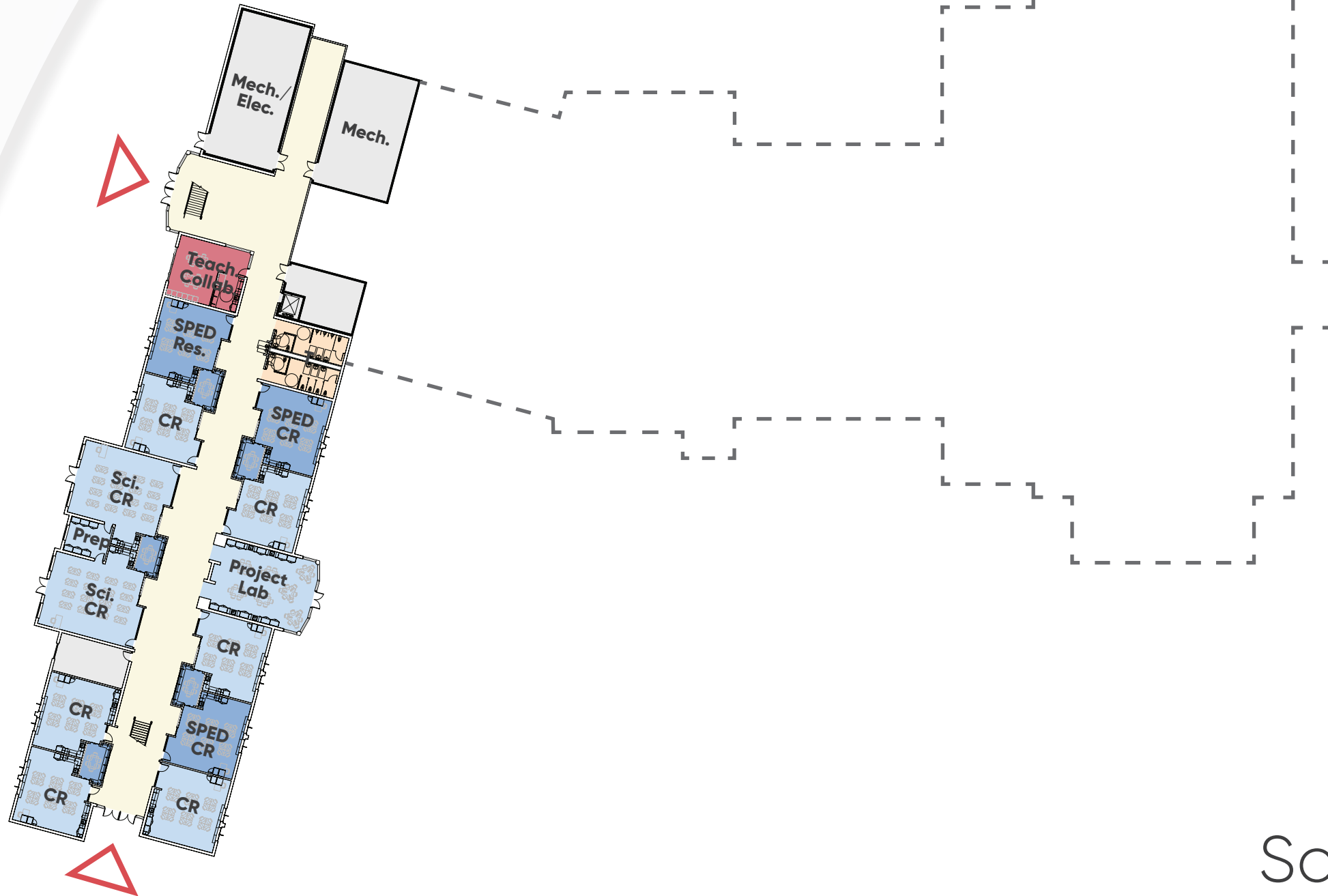
## MSBA Space Summary Legend

### Educational Category

- Core Academic Spaces
- SCEC
- Special Education
- Art and Music
- Vocational and Technology
- Health and Physical Education
- Media Center
- Dining and Food Service
- Medical
- Administration and Guidance
- Custodial and Maintenance
- Circulation
- Toilet rooms

**131,900** GSF

- All new construction of a grades 6-8 Middle School
- Demolition of Existing Building
- Expanded Athletic Facilities
- All New Site Amenities



Scheme 10.5

**Floor 1**

April 27, 2020

# Option 4 | Conceptual New Building Plan (6-8)





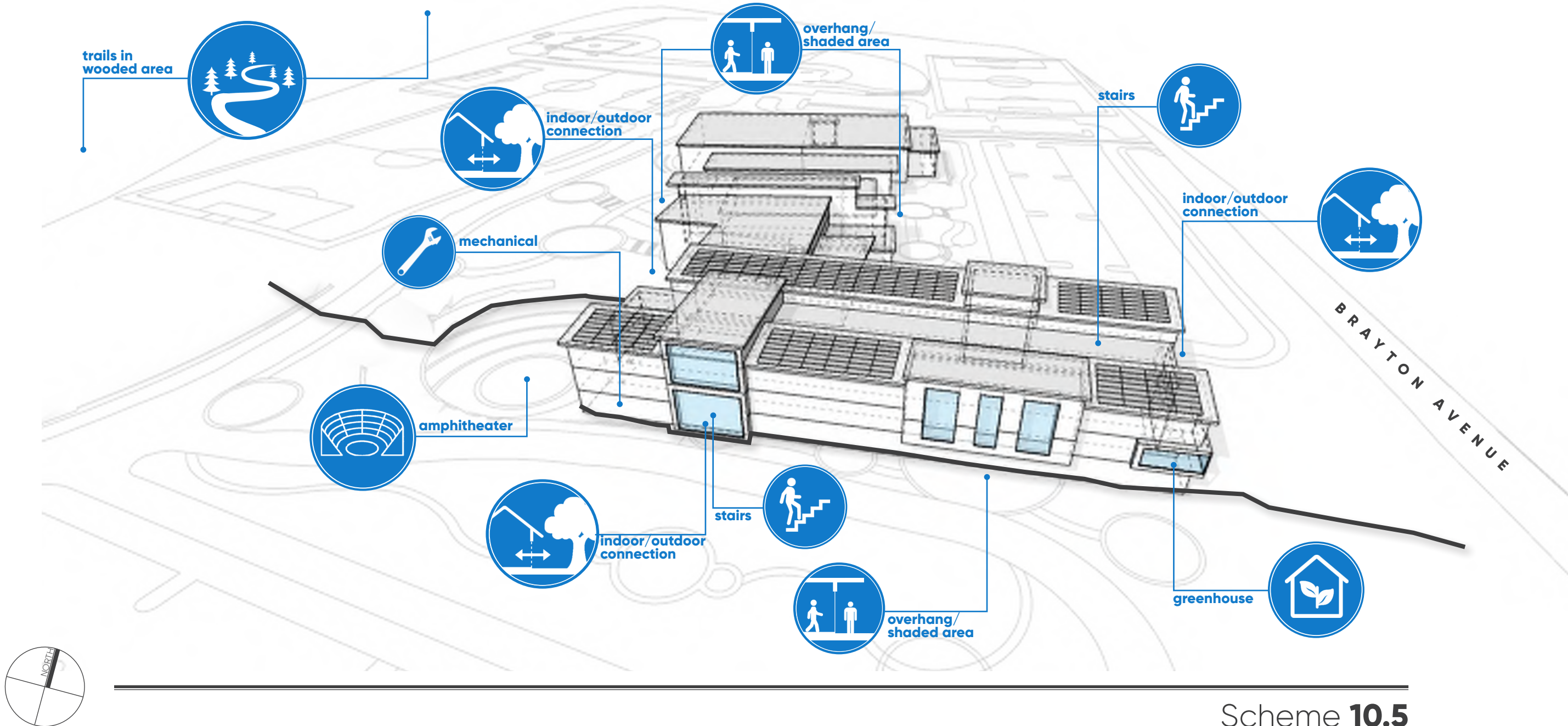
# Option 4 | Conceptual New Building Plan (6-8)



Scheme 10.5  
**Floor 3**

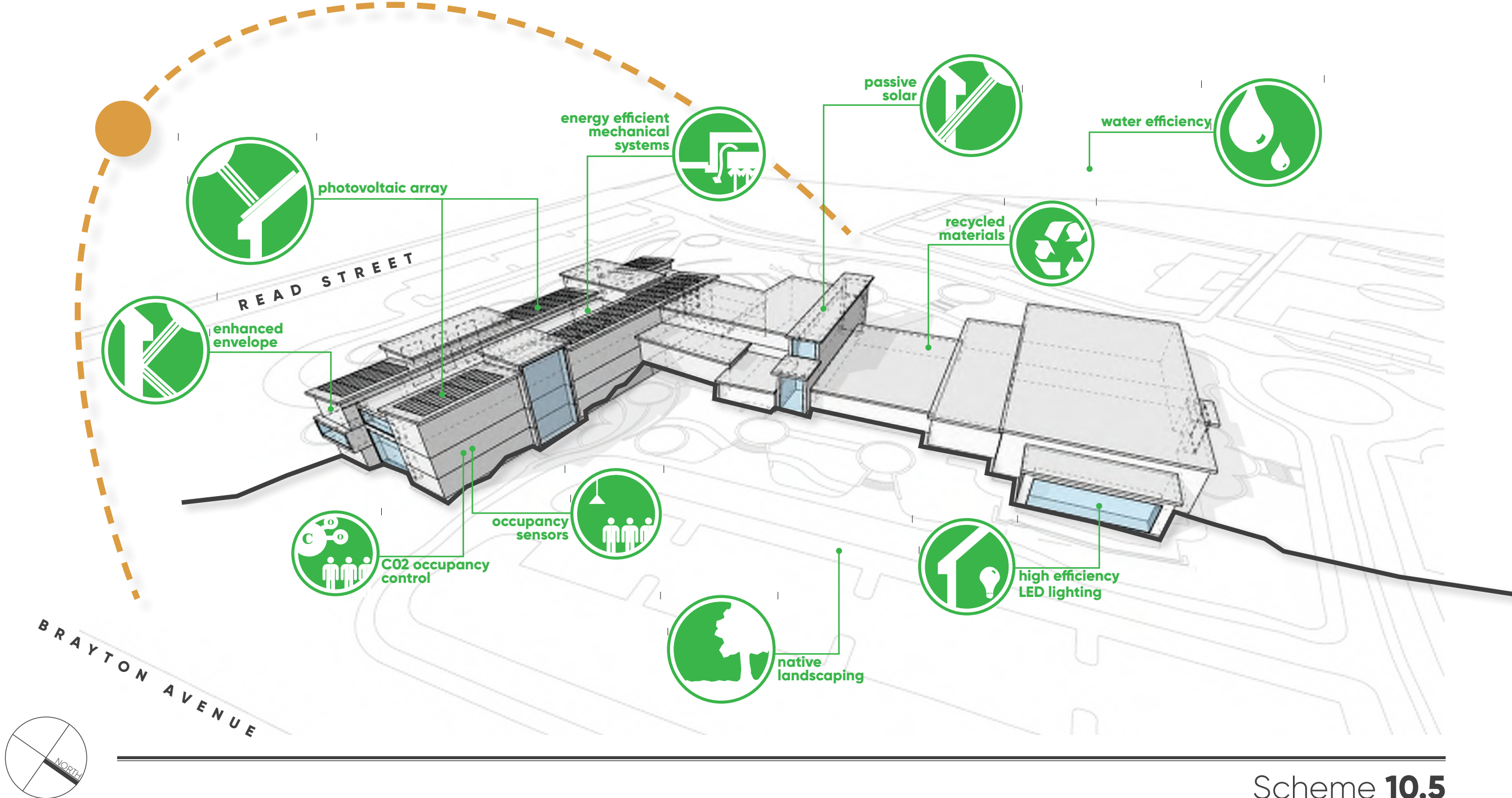
April 27, 2020

# Option 4 | Conceptual New Building Plan (6-8)



Scheme 10.5  
Indoor / Outdoor Connection Diagram

# Option 4 | Conceptual New Building Plan (6-8)



Scheme **10.5**  
Sustainability Diagram





## Conceptual Construction Cost Estimates



# Preferred Schematic Report Conceptual Cost Estimate Comparison

Somerset Middle School









Option	Type	Size	PM&C Cost Estimate	DAEDALUS Cost Estimate	Difference	Percentage
Option 2   Scheme 3	Add/ Reno (6/8)	139,000 SF	\$73,825,000	\$73,741,000	\$84,000	-0.2%
Option 4   Scheme 8.4	New (6-8)	131,900 SF	\$68,782,000	\$70,437,000	\$(1,655,000)	+2.4%
Option 4   Scheme 10.5	New (6-8)	131,900 SF	\$68,100,000	\$68,824,000	\$(724,000)	+1.1%
Option 7   Scheme 8.3	New (5-8)	154,800 SF	\$76,300,000	\$74,608,000	\$1,692,000	-2.2%

Add Alternates	PM&C Cost	DAEDALUS Cost	Difference
Cost to Reinstall Existing 300kW Photovoltaic (PV) System	\$1,008,000	\$1,042,000	+\$37,000
Cost to Increase Auditorium by Approx. 3,000 SF (200 Seats)	\$1,650,000	\$1,930,575	+\$280,575

1. The costs represented in the estimators reports are ONLY for the comparison between the various options. These costs should not be represented as the final construction costs as the information they are based on is extremely preliminary and final construction costs may vary significantly from the PSR costs one the final design has been completed.
2. Estimates assume a construction start of March 2022.
3. Estimates assume public bidding under Chapter 149 (Design - Bid - Build) of the MGL.

# Conceptual Preferred Schematic Report Cost Estimates

For comparative purposes only

	 PDP Preliminary Design Program	 PSR Preferred Schematic Report	 PDP Preliminary Design Program	 PSR Preferred Schematic Report	 PDP Preliminary Design Program	 PSR Preferred Schematic Report
	Option 2 6-8 Add/Reno	Option 2 Scheme 3	Option 4 6-8 New Construction	Option 4 Scheme 8.4	Option 4 Scheme 10.5	Option 7 5-8 New Construction
New Construction GSF	75,000 SF	59,500 SF	133,481 SF	131,900 SF	131,900 SF	158,205 SF
Renovation GSF	74,000 SF	79,500 SF	0 SF	0 SF	0 SF	0 SF
Total GSF	149,000 SF	139,000 SF	133,481 SF	131,900 SF	131,900 SF	158,205 SF
Hard Costs (Approx.)	\$71,000,000	\$73,800,000	\$66,500,000	\$68,500,000	\$68,000,000	\$79,500,000
Soft Costs (Approx.)	\$16,000,000	\$16,500,000	\$15,500,000	\$15,500,000	\$15,500,000	\$18,500,000
Occupied Phase Construction Premium	\$3,500,000	included above	\$0	\$0	\$0	\$0
<b>Subtotal Individual Project Cost (Range)</b>	<b>\$88 - \$93 million</b>	<b>\$88 - \$93 million</b>	<b>\$80 - \$85 million</b>	<b>\$82 - \$87 million</b>	<b>\$81.5 - \$86.5 million</b>	<b>\$95 - \$100 million</b>
Anticipated total <b>INELIGIBLE</b> costs	\$26,800,000		\$24,900,000			*\$36,000,000
Individual Project <b>ELIGIBLE COSTS</b>	\$64,000,000		\$57,000,000			\$62,000,000
MSBA Reimbursement on <b>ELIGIBLE</b> costs (56.89%)	\$36,500,000		\$32,500,000			\$35,200,000
Anticipated total <b>ADDITIONAL MSBA REIMBURSEMENT</b>	\$2,800,000		\$1,200,000			\$1,300,000
Adjusted anticipated <b>TOTAL MSBA REIMBURSEMENT</b>	\$39,000,000	\$37,000,000	\$33,700,000	\$34,000,000	\$34,000,000	\$36,500,000
<b>Estimated Cost to Town of Somerset (Middle School Project)</b>	<b>\$48.5 - \$54.5 million</b>	<b>\$50 - \$56 million</b>	<b>\$45.5 - \$51.5 million</b>	<b>\$48.5 - \$53.5 million</b>	<b>\$48 - \$53 million</b>	<b>\$58 - \$64 million</b>

**PSR**  
Option 2  
Scheme 3

**PSR**  
Option 4  
Scheme 8.4

**PSR**  
Option 4  
Scheme 10.5

**PSR**  
Option 7  
Scheme 8.3

**Conceptual Cost Projections: Somerset Middle School**  
Estimated Cost to Town of Somerset (Middle School)

\*Includes +/-30,000 GSF of 5th grade Program Space and associated Soft Costs - **Approx. \$11,500,000**





## Preferred Schematic Report Submission

# What is the School Building Committee, School Committee, and Board of Selectmen Being Asked to Approve?

Vote to recommend the selected Preferred Option for further development and evaluation, and approve and authorize the Owner's Project Manager to submit the Feasibility Study Preferred Schematic Report to the MSBA for its consideration.

### Building Committees Preferred Solution

## Option 4 | Scheme 10.5

6-8 New Construction

\*Due to COVID-19, the previously scheduled **Community Forum** has been postponed until further notice

# SOMS

SOMERSET MIDDLE SCHOOL

