Select Board/School Committee Joint Hearings on Warrant Articles 2, 3, and 4

November 27, 2018

Three-Part, Townwide Solution

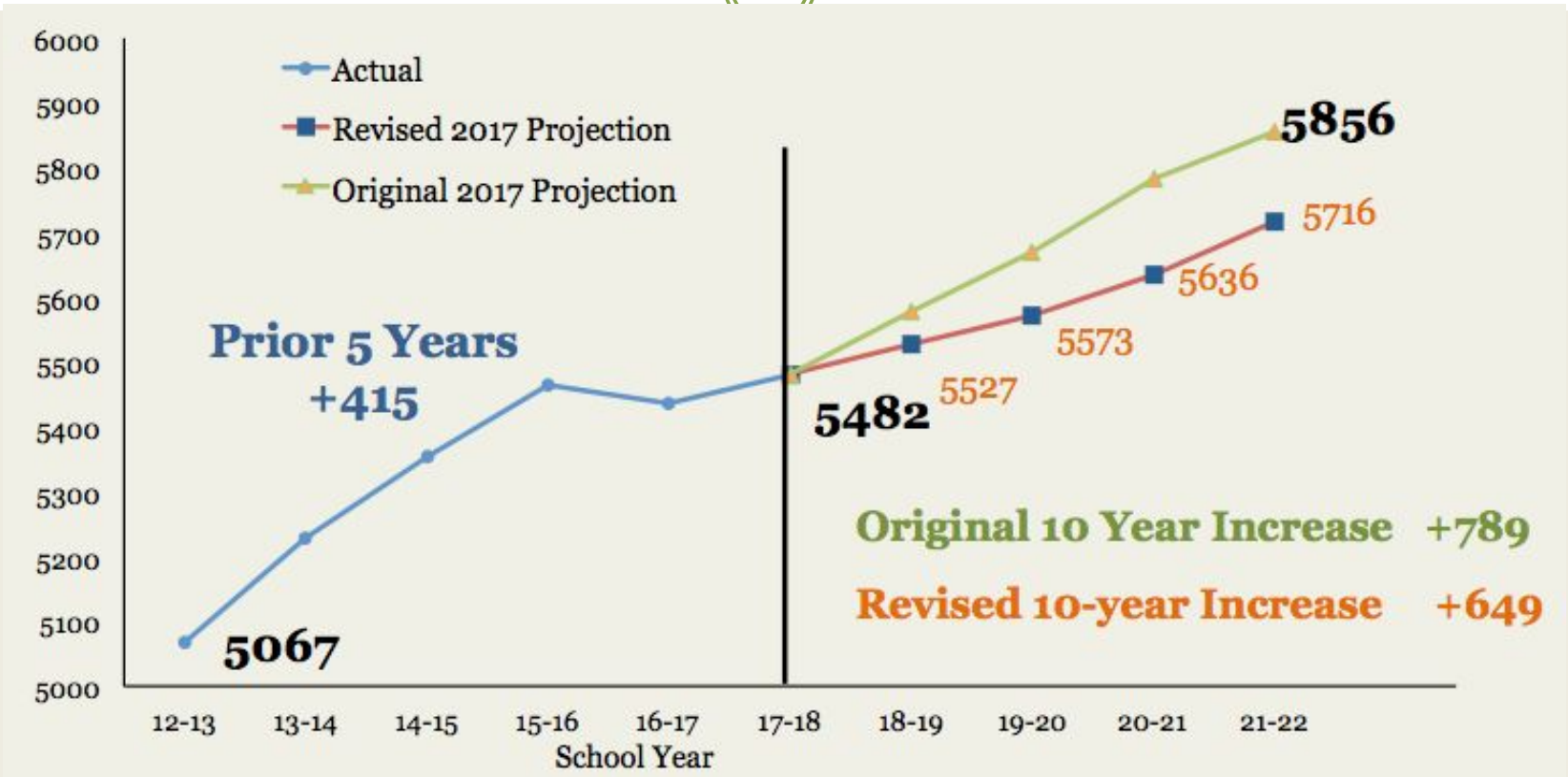
PUBLIC SCHOOLS of BROOKLINE

On June 13, 2018, after the 6-month Alternative Site Study, which included more than 20 public meetings, the consideration of 20 initial options and 14 final options, six public listening sessions, public hearings, and the work of five town departments and HMFH Architects, the Select Board, School Committee, and Ad Hoc Subcommittee of the Advisory Committee voted to:

1. **Driscoll** – move renovation and expansion into a 4-section school into the Feasibility Design Phase
   - ❖ Prioritizes maintaining the existing amount of per student play space
2. **Baldwin School** – move a "2-section" school into the Feasibility Design Phase
   - ❖ Includes early education, RISE, and native language support classrooms
3. **Pierce** – reaffirmed School Committee decision to request partnership with Massachusetts School Building Authority to renovate Pierce

Revised 2017 Elementary Enrollment Projection with New Housing

Actual Enrollment through October 1 2017
Projected: through FY22



- **140 Students** -- Revised 2017 Enrollment Projections result in a total of 140 student difference in FY 2022 across all elementary schools
- **18 Students per School** - 140 students equals 18 students per elementary schools or 2 students per grade per school

The Magnitude of Brookline's Enrollment Growth

PUBLIC SCHOOLS of BROOKLINE

K-8 Enrollment: FY2006 - FY2029

- FY2006 through FY2019: Actual enrollment
- FY2020 - FY2024: Projections based on known births
- FY2025 - FY2029: Births not known. Projections based on average projected births of 581

FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
3,904	4,062	4,098	4,299	4,473	4,643	4,825	5,067	5,227	5,353	5,465	5,437

FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
5,482	5,503	5,499	5,474	5,356	5,452	5,310	5,214	5,171	5,097	5,032	4,984

Actual Enrollment	Projections based on known births	Births not known. Projections based on projection of average births

2018 Projections - Total Growth since FY2005

PUBLIC SCHOOLS of BROOKLINE

FY 2006: Actual K-8 Enrollment was **3,904** students

2018 K-8 Enrollment Projections *(including new housing developments)*

FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
5,503	5,499	5,474	5,356	5,452	5,310	5,214	5,171	5,097	5,032	4,984

According to 2018-19 K-8 Enrollment Projections:

- In FY24, enrollment will still be 1,400 students more than it was in FY2006
- In FY29, enrollment will still be 1,080 students more than it was in FY2006

Impact of Enrollment Growth

PUBLIC SCHOOLS of BROOKLINE

Between 2005 and 2018 the Town of Brookline has added 1,599 K-8 students into our existing eight elementary schools.

The result:

- Degradation of existing facilities
- Carving learning spaces out of locker rooms, hallways, and windowless storage spaces
- Overburdened teaching and learning spaces, as well as cafeterias, gyms, and guidance, nursing, and administrative spaces
- Our schools lack proper spaces for special education, English language instruction, guidance, nursing, and math and literacy support
- School facilities falling behind peer communities

Townwide Challenges

PUBLIC SCHOOLS of BROOKLINE

- **Historic and Ongoing Enrollment Growth -** Since 2005, we have absorbed the equivalent of three K-8 schools into our existing schools through expand in place. Every school is overcrowded and needs relief in some way.
- **Overdue Renovation and Updating of Facilities –** Driscoll and Pierce School need renovation to update facilities and address overcrowding. Driscoll has never completed a full renovation.
- **Core Facilities are Inadequate–** Core facilities in 7 of 8 K-8 schools (gyms, libraries, cafeterias, hallways) no longer have the capacity to handle the current student population.
- **Substandard Spaces –** at each school, we have substandard classrooms because they have been created out of offices, hallways, locker rooms, etc.
- **Temporary Rentals used for K-8 Classrooms –** Pierce and Baker Schools have a total of 6 classrooms that are in rented space
- **Early Education Programs** – currently 11 BEEP classrooms in rental space. With a new BEEP building 5 BEEP classrooms will remain in rental space. 5 more remain at Lynch Center.

Enrollment Growth since 2005 – By School

PUBLIC SCHOOLS of BROOKLINE

	2005-2006	2018-2019	# Growth since 2005	% Growth since 2005
Baker	647	762	115	18%
Coolidge Corner	670	873	203	30%
Driscoll	366	614	248	68%
Heath	360	522	162	45%
Lawrence	478	705	227	47%
Lincoln	410	581	171	42%
Pierce	546	865	319	58%
Runkle	427	581	154	36%
	3,904	**5,503**	**1,599**	**41%**

2005 - 2018 growth is equivalent to combined 2005 enrollment of Driscoll, Heath, Lincoln, and Runkle

Substandard Spaces at Driscoll

PUBLIC SCHOOLS of BROOKLINE

Hallway outside nurse's office - can't accomodate necessary medical equipment

Students with disabilities classroom, multiple groups taught simultaneously

Small group breakout space - in hallways

Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

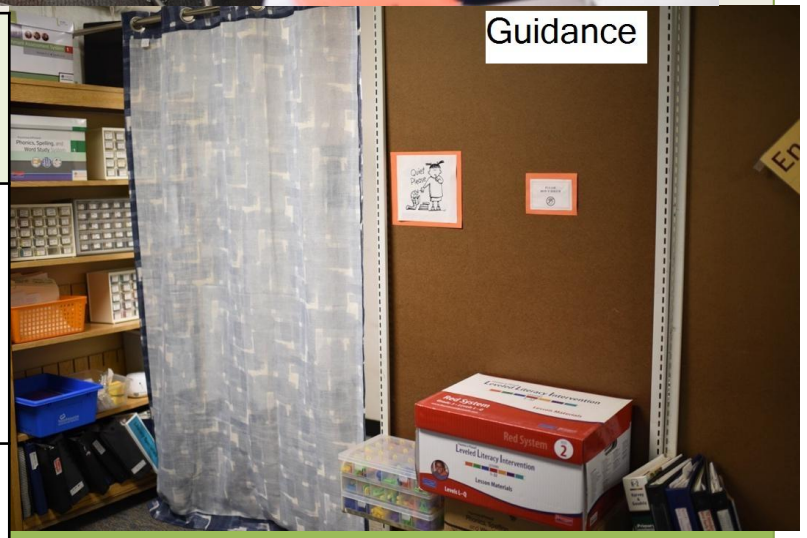
	2005 Enrollment	2008 Enrollment	2012 Enrollment	2018 Enrollment	Capacity*	Number of Students Over + or (Under) Capacity
Driscoll	366	403	530	614	574	+40

**Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report*

Substandard Spaces at Heath


Converted storage space - 4 educators, 4 different programs, no windows


World language classroom converted from locker room


Guidance

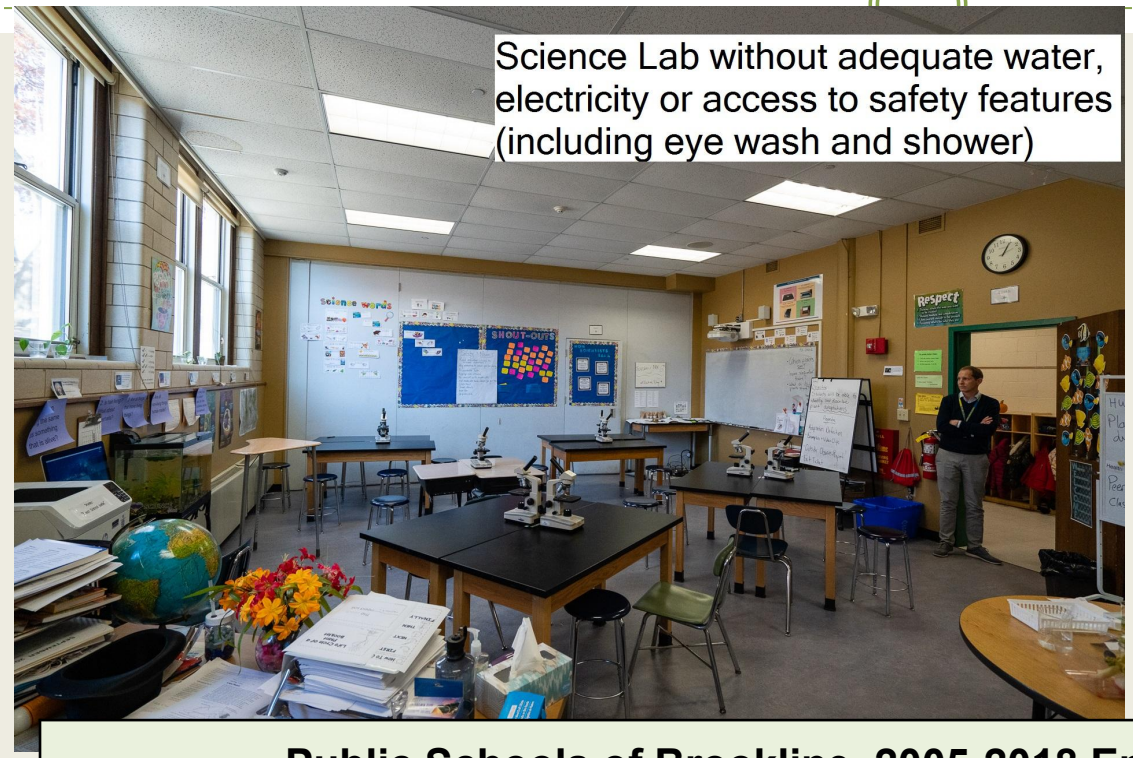
Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

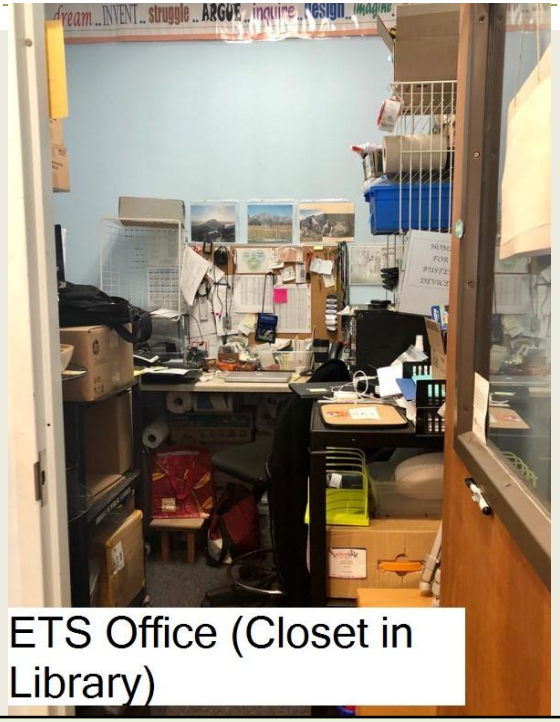
	2005 Enrollment	2008 Enrollment	2012 Enrollment	2018 Enrollment	Capacity*	Number of Students Over + or (Under) Capacity
Heath	360	402	494	522	553	(31)

**Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report*

Substandard Spaces at Baker

PUBLIC SCHOOLS of BROOKLINE





Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

	2005 Enrollment	2008 Enrollment	2012 Enrollment	2018 Enrollment	Capacity*	Number of Students Over + or (Under) Capacity
Baker	647	672	678	762	679	+83

**Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report*

Substandard Spaces at Lawrence and Lincoln

PUBLIC SCHOOLS of BROOKLINE

Public Schools of Brookline, 2005-2018 Enrollment v. Capacity

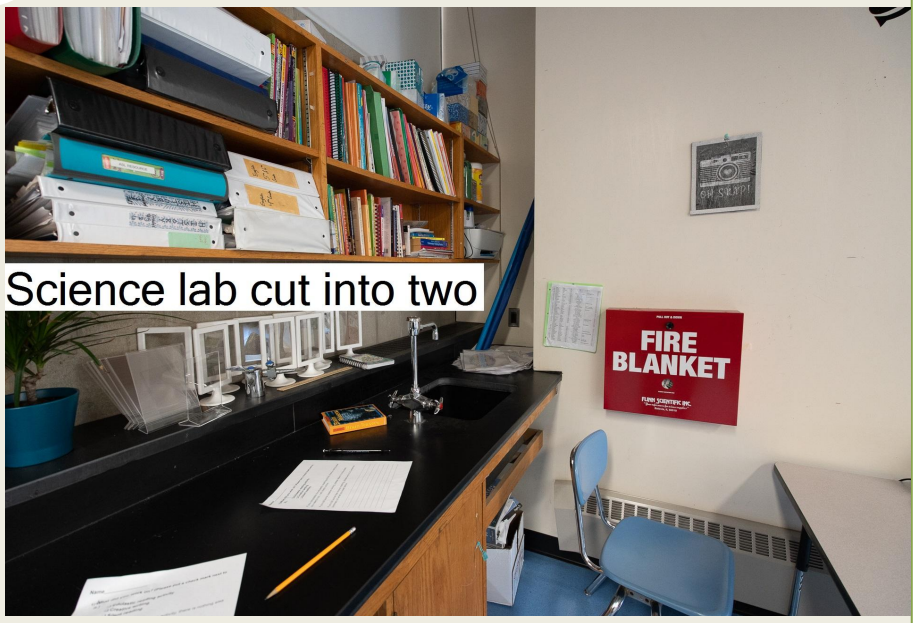
	2005 Enrollment	2008 Enrollment	2012 Enrollment	2018 Enrollment	Capacity*	# of Students Over + or (Under) Capacity
Lawrence	478	557	623	705	572**	+133
Lincoln	410	469	545	581	437	+144

**Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report*

***Four additional classrooms were added at Lawrence in 2015, but there was no addition of common core spaces or small instructional spaces*

Substandard Spaces at Pierce

PUBLIC SCHOOLS of BROOKLINE



Public Schools of Brookline, 2005-2018 Enrollment v. Capacity						
	2005 Enrollment	2008 Enrollment	2012 Enrollment	2018 Enrollment	Capacity*	Number of Students Over + or (Under) Capacity
Pierce	546	630	699	865	634	+231

**Capacity information based on March 29, 2012 MGT Enrollment Capacity and Utilization Report*

Driscoll-Specific Challenges

- Overcrowded classrooms and learning spaces
- Undersized auditorium/theater, gymnasium, and cafeteria - *(lunch starts before 10:30)*
- Science classrooms are inadequate
- Outdoor play space inadequate and poorly organized
- Field regularly not usable because of wet or muddy conditions
- Overdue HVAC replacement postponed
- Inadequate operational and custodial space (No Loading Dock)
- Nursing area too small
- Lack of Community Space
- Parking and drop-off challenges

Driscoll - Deficient Spaces

Comparison with MSBA classroom guidelines

Expanding Baldwin

- Rebuild Baldwin into an intimate PK - 8 Elementary School for Chestnut Hill
- Addresses known and expected enrollment due to new development in South Brookline
- 2 classrooms per grades
- 3 classrooms for a district-wide Special Education program (RISE)
- 3 classrooms for a district-wide English Learner Education (ELE) program
- Adds community meeting and performing arts space
- Provides community access to gymnasium
- Refurbished school playground with improved accessibility

Community Benefits

As part of the town-wide solution, both projects will help alleviate overcrowding in the Public Schools of Brookline, provide a school that will educate the town's children into the next century, and will serve as a community space for the Brookline and Chestnut Hill neighborhood:

- **Innovative Facilities:** Modern and flexible classrooms and environments designed for collaborative, project-based learning environments between students, staff, and families. Revitalized designs will allow for greater accessibility around the neighborhood.

- **Safe and Manageable:** Developed to minimize traffic around the surrounding neighborhood and promote family walkability, including multiple locations for drop-off and pick-up, on-site parking areas, and other improvements to sidewalks and pedestrian structures.

- **Cohesive and Community-Driven:** Revitalized gymnasiums, multipurpose rooms, performance art centers, and outdoor play-space that encourages communal use.

Feasibility Design Phase

Overview of Both Projects

Jonathan Levi Architects

At-a-Glance

PUBLIC SCHOOLS of BROOKLINE

	Driscoll	**Baldwin**
School Type	4 Section; K to 8th Grade	2 Section; K to 8th Grade
Expanded Services	Pre-K and Early Education (BEEP), Special Education (LAHB - Language & Academic Home Base), English Learner Education (ELE), Native Language Support Program (Russian)	Pre-K and Early Education (BEEP), Special Education (RISE - Reaching for Independence Through Structured Education), English Learner Education (ELE), Native Language Support Program
Projected Total Number of Students, including Pre-K	800 (+169 from SY 2018-19)	450
Total Number of Core (K-8) Classrooms	36 (+8 from SY 2018-19)	18
Preliminary Staffing (including Kitchen and Custodial)	125 (+18 from SY 2018-19)	86
Preliminary Size of School	155,140 Sq. Ft. (Gross Square Feet)	108,250 Sq. Ft. (Gross Square Feet)

Feasibility Design Phase Overview

PUBLIC SCHOOLS of BROOKLINE

Driscoll

10/4

- Existing Conditions Progress Report
- Program Diagram
- Range of Pre-Schematic Alternative Design Strategies
- Traffic Report Update

10/18

- Refined Space Summary

11/1

- Revised Alternative Design Strategies
- Traffic Report Preliminary Findings
- Cost Estimates

11/15

- Recommend Preferred Design Alternative

11/26 and 12/6

- Refined referred Design Alternative
- Updated Cost Estimate
- Approve Preferred Alternative
- Final Traffic Report

Baldwin

9/27

- Existing Conditions Progress Report
- Building Program, Space Summary Status Report

10/11

- Legal Update on use of Baldwin School Playground
- Refined Building Program Update
- Alternative Design Strategies

10/25 and 11/8

- Traffic Report Preliminary Findings
- Cost Estimates
- Revised Alternative Design Strategies

11/19

- Recommend Preferred Design Alternative

11/29

- Refined Preferred Design Alternative
- Updated Cost Estimate
- Approve Preferred Alternative
- Final Traffic Report

Schematic Design Phase
(December 2018 - February 2019)

PUBLIC SCHOOLS of BROOKLINE

Primary Goals: Complete all materials required for a debt exclusion vote

Program Verification

a. Verify detailed space needs for each program space
b. Verify adjacencies
c. Confirm how each component supports brookline's educational program

2. Existing Conditions

a. Provide complete geotechnical, hazmat and geo-environmental report
b. Continue traffic analysis and town traffic/parking approvals process
c. Building and accessibility code analyses

3. Design Refinement

a. Develop concept diagram into schematic architectural plans
b. Develop building massing, elevations and views
c. Technical system narratives for structural, mep, fire protection, it and security
d. Sustainability and lifecycle cost narratives and analyses

4. Cost and Process Management

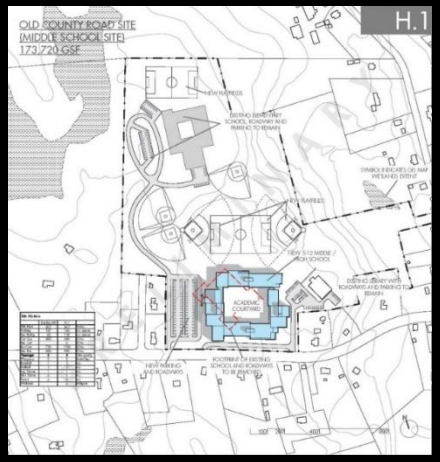
a. Separate architect and OPM detailed line item construction cost estimates
b. Construction cost estimate reconciliation and value management
c. Detailed project cost budget based on msba format with all hard and soft costs
d. Selection of project delivery method

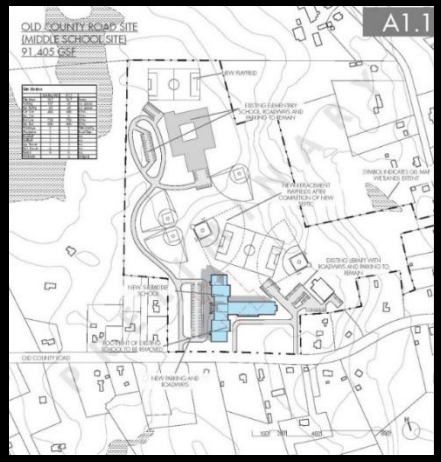
Feasibility vs. Schematic

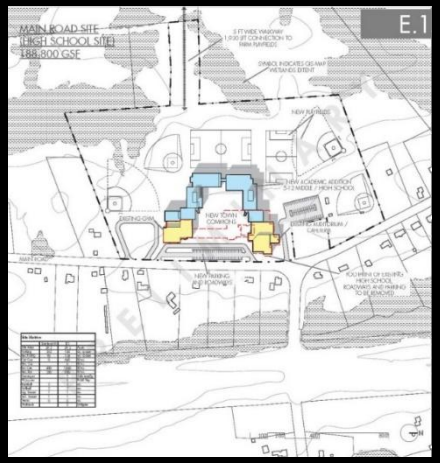
	Feasibility Design (Sept. 2018 - Dec. 2018)	Schematic Design* (Dec. 2018 - Mar. 2019)
Classrooms, Learning Spaces, and Offices	Types of classrooms needed and how many should be constructed	Defining location of spaces relative to building and other structural supports for educational programming
Building Exteriors	Basic footprint and height	Facade and detailed elevations
Floor Plans	Size, location, and envelope of the building	Detailed sketches of floor plans, including 3D models
Outdoor Play-Spaces	Basic drawings and preliminary locations	Exact layout including specific structures and other features
Traffic and Parking	Analysis and comparables to other schools and neighborhoods; initial recommendations	Specific alterations to roads, including traffic calming, sidewalk adjustments and safety measures
What happens to students during construction?	Community input for ideas and concerns regarding transition process	Development of safety plan with construction personnel to be approved by town

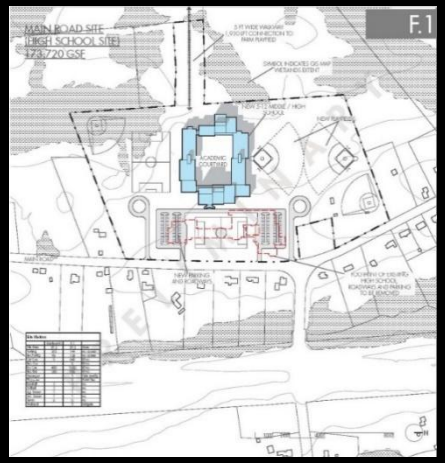
***Funding for Schematic Design is contingent upon Town Meeting Vote on 12/13**

Design Iteration and Development Process







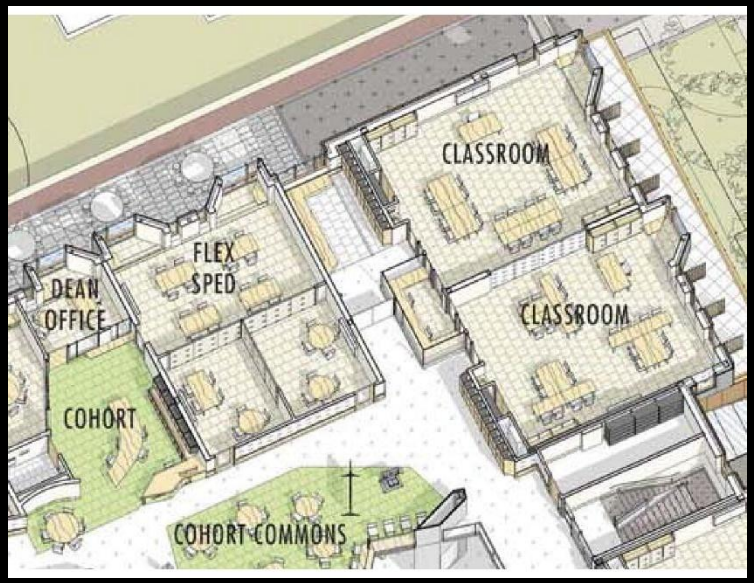


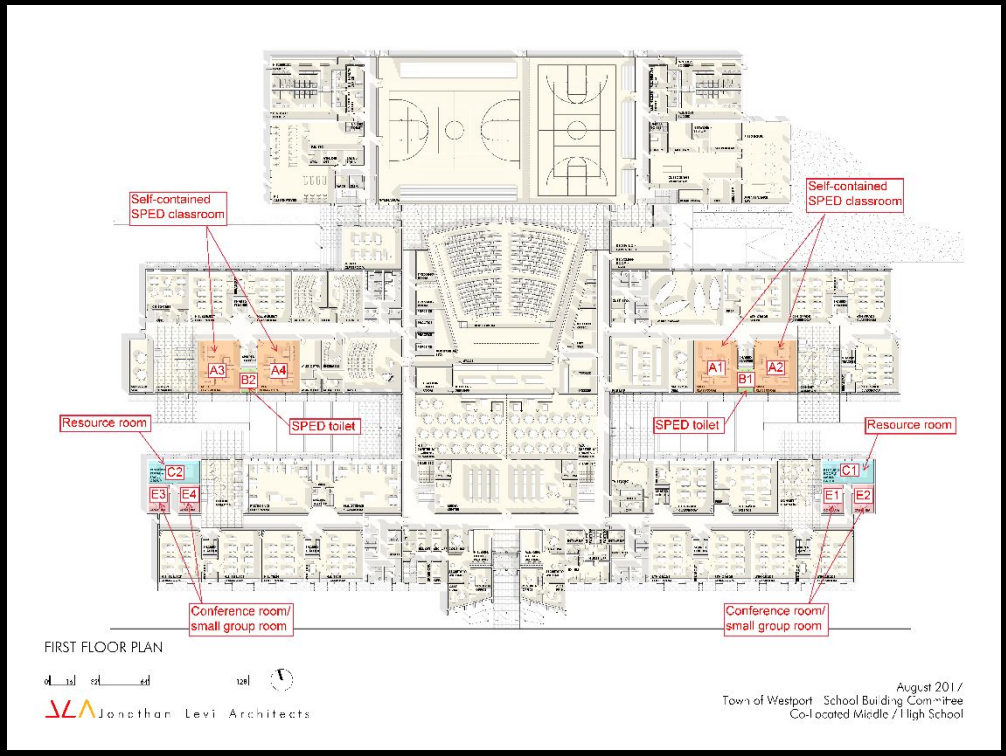
Sample –
Preferred Schematic Report Design

Design Iteration and Development Process

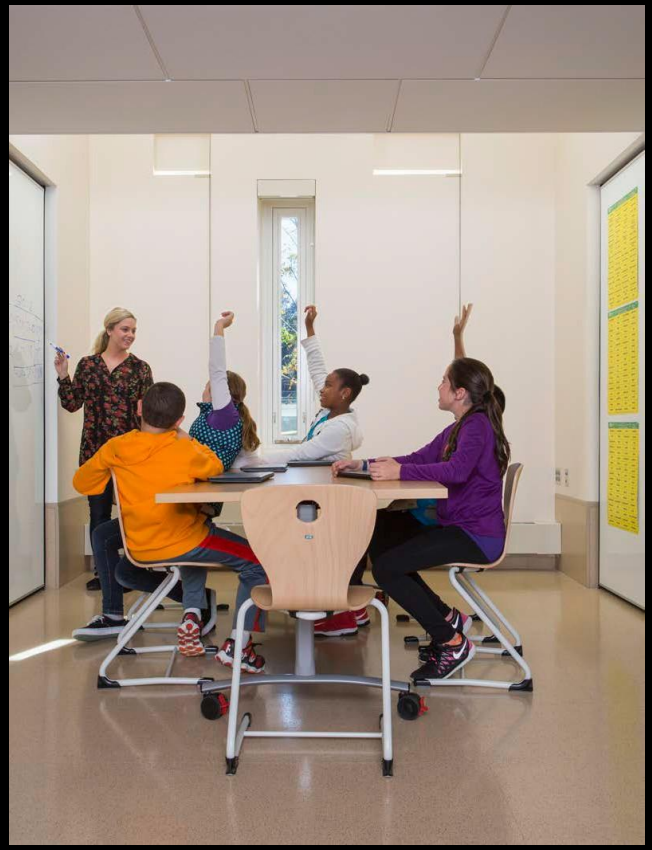
Sample – Schematic Design

Specialized Learning Spaces

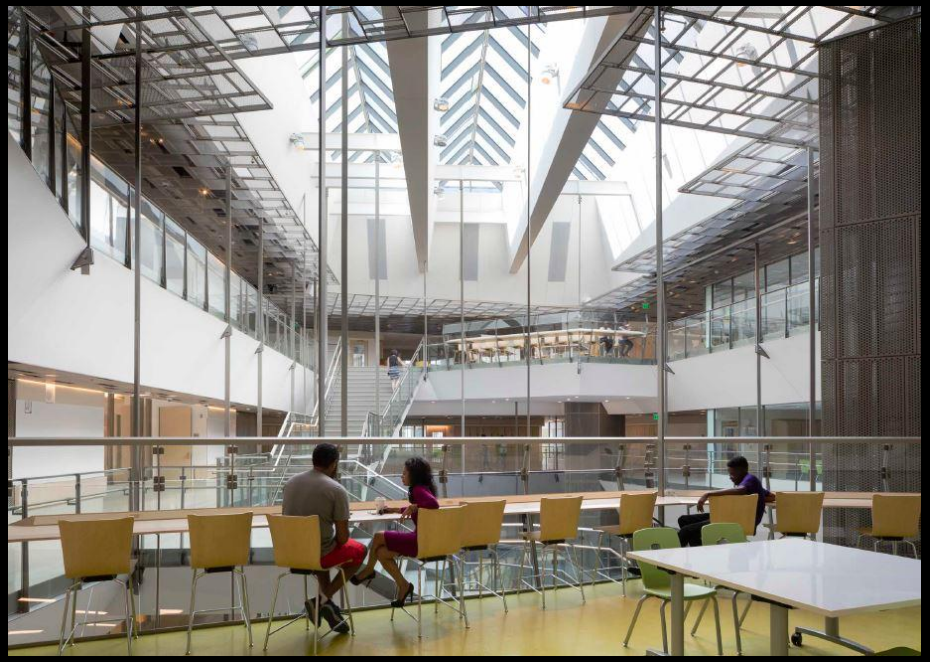




Small Group Collaboration Space



Community Collaboration Space



BROOKLINE

DRISCOLL SCHOOL EXPANSION

Select Board and School Committee
November 27, 2018

Jonathan Levi Architects

DRISCOLL SCHOOL, BROOKLINE

Driscoll Existing Conditions Checklist

1. Legal	Pre-final*
2. Site Survey	Complete
3. Geotechnical	Complete
4. Geo-environmental	Pre-final*
5. Building Hazmat	Pre-final*
6. Historic	Complete
7. Zoning	Complete
8. Traffic	Pre-final*

*Final Report due 11/30

Traffic Agenda Items

- Area of Study
- Existing Conditions
- Traffic Generation
- Preliminary Recommendations
- Next Steps

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35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066

Site Location and Study Area Map

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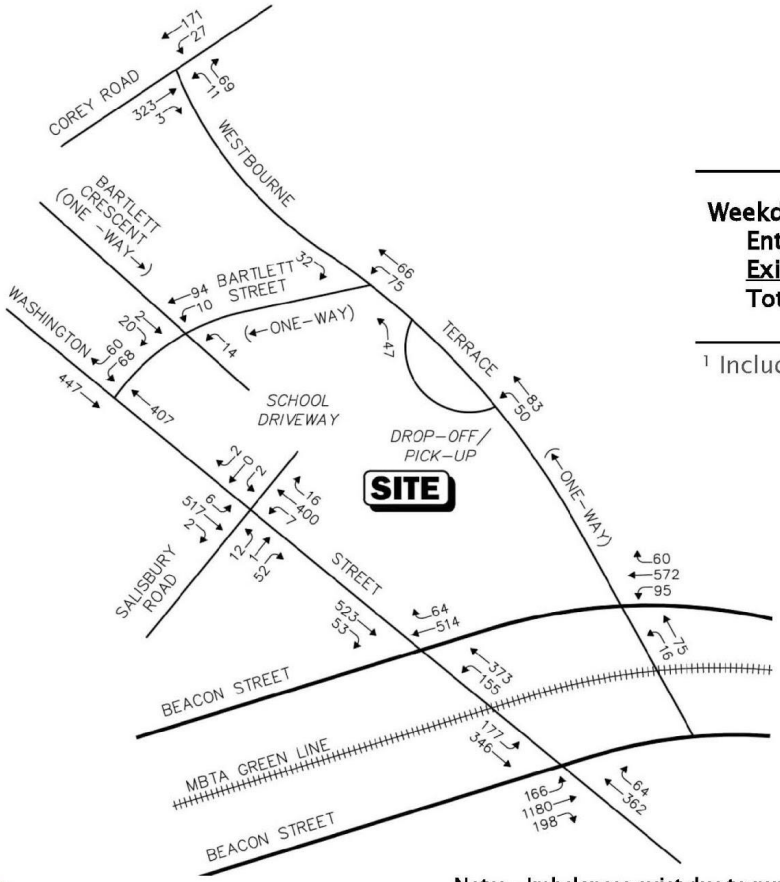
Andover, MA 01810-1066

2018 Existing Conditions – Weekday Morning School Peak Hour Traffic Volumes (7:30-8:30 AM)



Time Period	School Driveways: Westbourne Terrace Driveway	School Driveways: Bartlett Street Driveway and Washington Street Driveway[1]
Weekday Morning Peak Hour:		
Entering	50	35
Exiting	47	18
Total	97	53

[1] Includes some residential traffic.

Note: – Imbalances exist due to numerous curb cuts and side street that are not shown.
– Numbers indicate vehicles at intersections during a one hour period.

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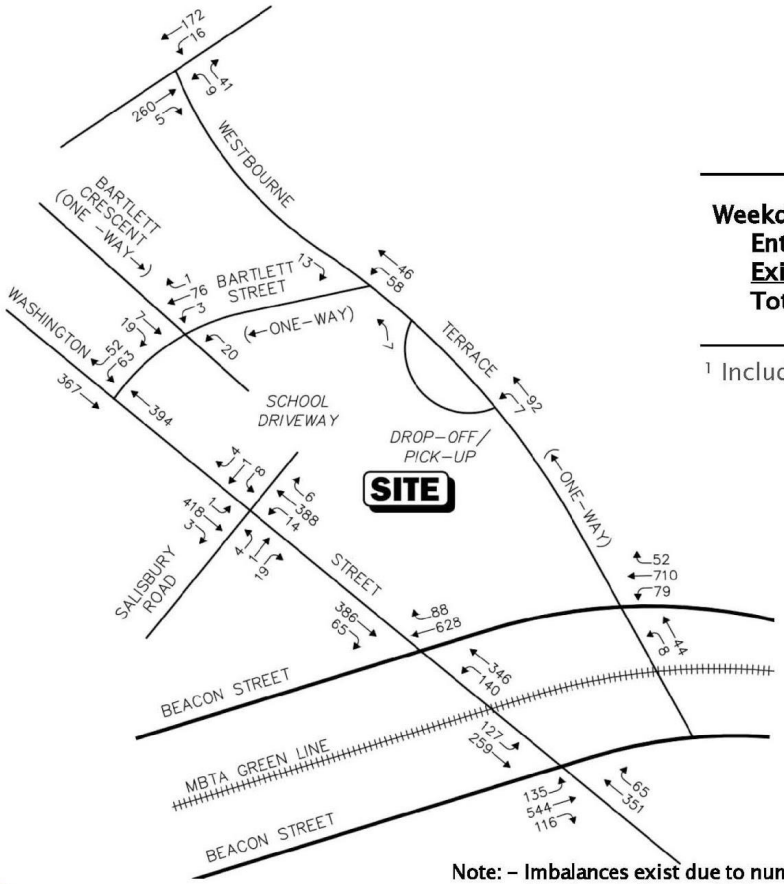
2018 Existing Conditions – Weekday Afternoon School Peak Hour Traffic Volumes (2:00-3:00 PM)



Time Period	School Driveways: Westbourne Terrace Driveway	School Driveways: Bartlett Street Driveway and Washington Street Driveway[1]
Weekday Afternoon Peak Hour:		
Entering	7	18
Exiting	7	33
Total	14	51

[1] Includes some residential traffic.

Note: – Imbalances exist due to numerous curb cuts and side street that are not shown.
– Numbers indicate vehicles at intersections during a one hour period.

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Trip Generation Summary

Time Period	Existing Condition: School Driveways: Westbourne Terrace Driveway	Existing Condition: School Driveways: Bartlett Street Driveway and Washington Street Driveway	Existing Condition: On-Street Parking Drop-Off/ Pick-Up: Washington Street	Existing Condition: On-Street Parking Drop-Off/ Pick-Up: Bartlett Street	Existing Condition: On-Street Parking Drop-Off/ Pick-Up: Westbourne Terrace	Existing Condition: Staff	**Total Trips (632 Students)** [1]	**New Trips 800 Students** [2]	Increase [3]
Weekday Morning Peak Hour:									
Entering	50	35	25	21	15	45	**191**	248	57
Exiting	47	18	25	21	15	0	**126**	164	38
Total	97	53	50	42	30	45	**317**	412	95
Weekday Afternoon Peak Hour:									
Entering	7	18	11	13	26	0	**75**	98	23
Exiting	7	33	11	13	26	10	**100**	130	30
Total	14	51	22	26	52	10	**175**	228	53

[1] Numbers Represent – Staff, Buses and Parent Vehicles.
[2] Note: 26% increase in Students. Assume 30% increase in Traffic.
[3] Increase includes staff and student drop-off/pick up.

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Teachers On-Street Parking - Existing

Driscoll School

7/19/2018 - Parking

Approve by
Transportation Board

52 Parking Lot Spaces

53 Approved TBoard Parking Spaces

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Preliminary Recommendations

Site Plan

- Washington Street Bus Drop-Off Area.
- Designated Student Drop-Off/ Pick-Up Area between Westbourne Terrace and Washington Street.
- Westbourne Terrace Parent Drop-Off / Pick-Up Area.

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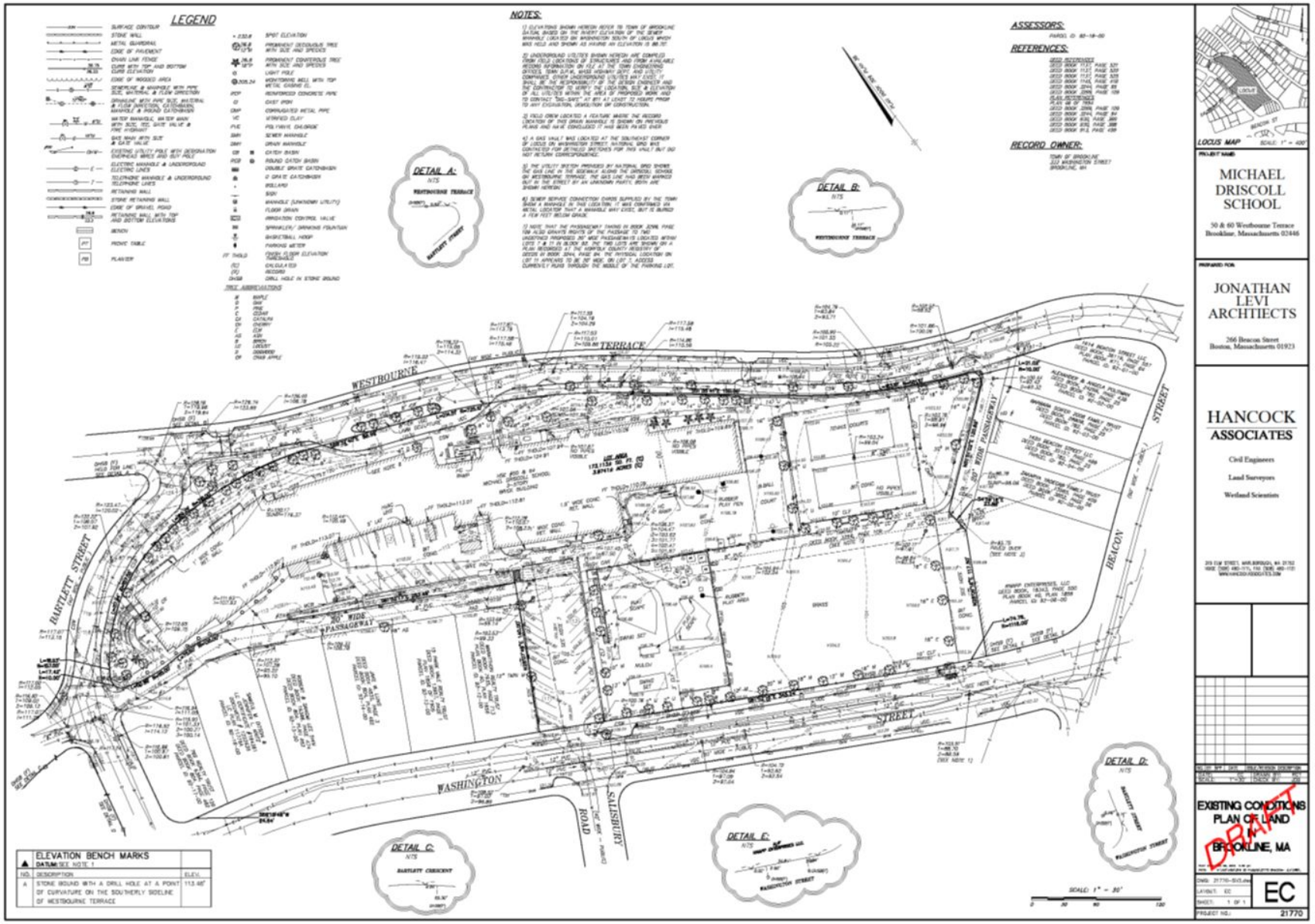
Facility and Site Needs

Survey


LEGEND
NOTES:
ASSESSORS:
REFERENCES:
RECORD OWNER:
DETAIL A:
DETAIL B:
DETAIL C:
DETAIL D:
DETAIL E:
TERRACE
WESTBOURNE
BARTLETT STREET
BEACON STREET
WASHINGTON STREET
SALISBURY ROAD
30' WIDE PASSAGEWAY
ELEVATION BENCH MARKS
DATUM SEE NOTE 1
STONE BOUND WITH A DRILL HOLE AT A POINT OF CURVATURE ON THE SOUTHERLY SIDELINE OF WESTBOURNE TERRACE
113.46'
LOCUS MAP
SCALE: 1" = 400'
MICHAEL DRISCOLL SCHOOL
50 & 60 Westbourne Terrace
Brookline, Massachusetts 02446
JONATHAN LEVI ARCHTIECTS
266 Beacon Street
Boston, Massachusetts 01923
HANCOCK ASSOCIATES
Civil Engineers
Land Surveyors
Wetland Scientists
EXISTING CONDITIONS PLAN OF LAND IN BROOKLINE, MA
DRAFT
EC
21770
SCALE: 1" = 30'

Preliminary Concept Design Options

Option 0
"Minimum Code Renovation/Addition"

Option A.1
"Renovation with East Addition "

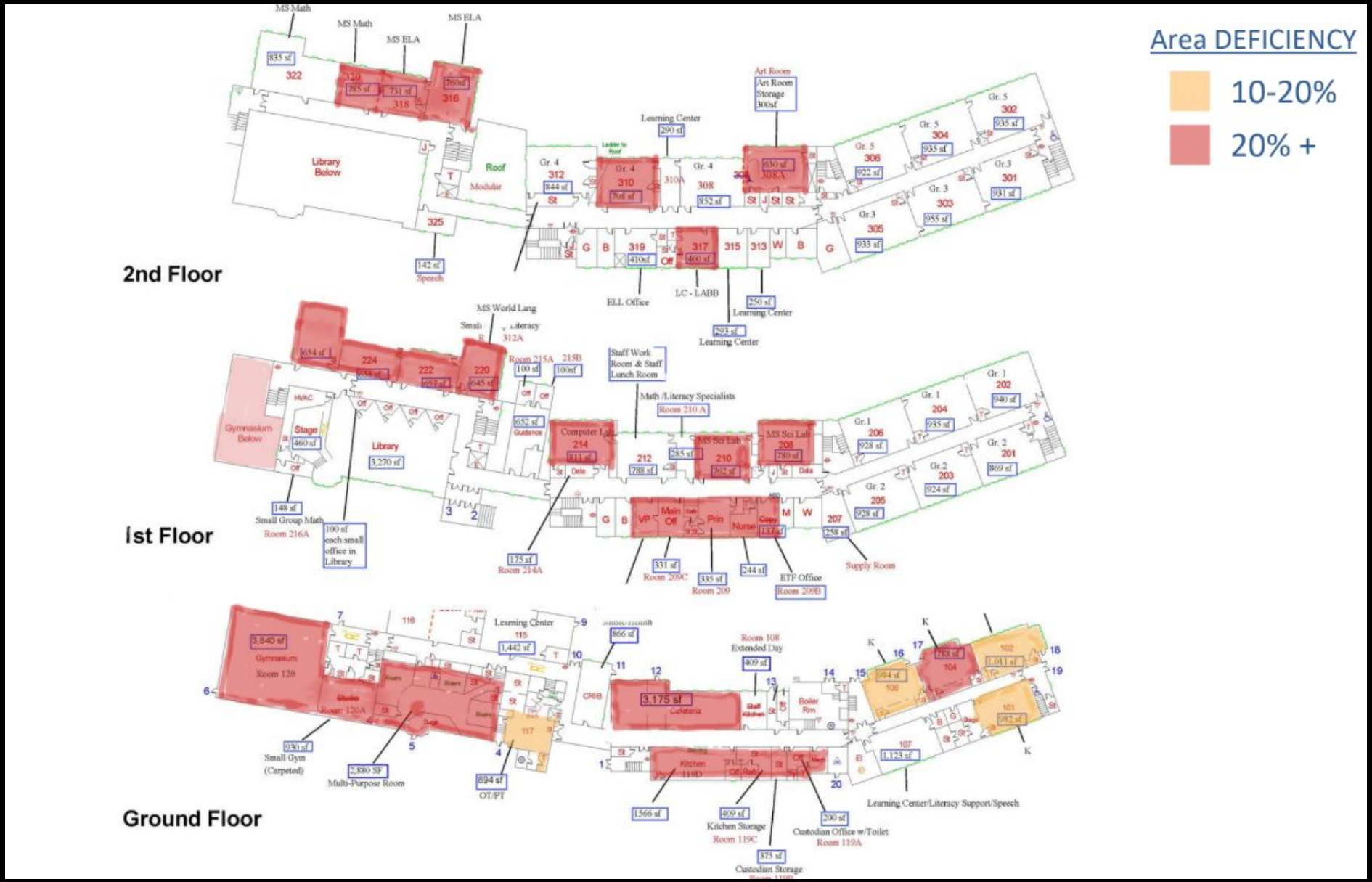
Option F.1
"Modified Magnet - New Construction"

Option H
"Modified Star - New Construction"

Preliminary Concept Design Options

Option 0

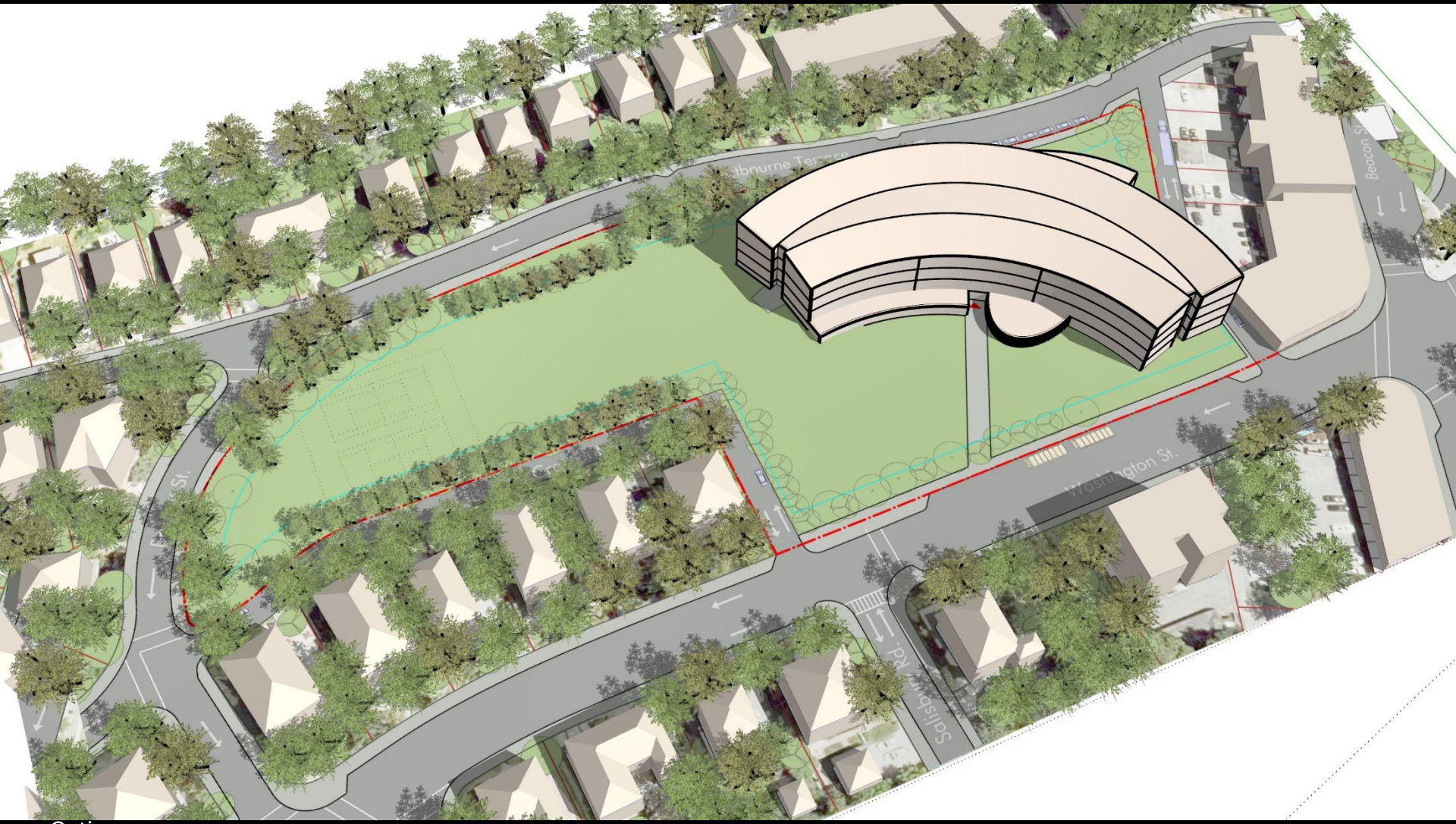
Preliminary Concept Design Options



Preliminary Concept Design Options

Option A.1

Preliminary Concept Design Options



Option

F.1

Preliminary Concept Design Options

Option H

Project Cost Comparison

DRISCOLL SCHOOL

Concept Options Evaluation Matrix

RATINGS: ○ Very Disadvantageous ◔ Disadvantageous ◑ Neutral ● Advantageous

	PROJECT EVALUATION CRITERIA	Option 0 Minimum Code Addition/ Renovation	Option A.1 Renovation with East Addition	Option F.1 'Modified Magnet' - New Construction	Option H 'Modified Star' - New Const.	Comments
Project Cost						
1	Order of Magnitude Project Cost ($Million) without parking	$76-80	$96-101	$93-97	$93-97	
	Order of Magnitude Project Cost ($Million) with parking	$85-89	$105-110	$101-105	$101-105	50 structured spaces: 0 and A.1 above grade parking structure at approx. $180,000/space, F.1 and H below building parking at approx. $160,000/space
	Swing Space Cost	$4	$4	$0	$0	
Teaching and Learning						
2	Educational Program Accommodation	○	◔	●	●	Reno. does not fit program sizes or adjacencies.
3	Flexibility-Fixed Classroom Count per Cohort	○	◔	◑	●	
4	STEM Enhancement-Visible Learning	○	◔	●	●	New affords planned connectivity.
Project Viability Issues						
5	Schedule	○	○	◑	●	Multi proj. areas/phasing=add. construction time. Swing space req. additional time
6	Traffic	◔	◔	●	●	New allows untangling of drop off/bus/service. Reno. may need use of Bartlett Cresc.
7	Risk	○	○	◑	◑	Unforeseen conditions. Phasing conflicts
Site						
8	Construction Impact to Education	○	○	◑	●	Swing space will be disruptive. Loss of gym, cafeteria, library. Reno. constr. near kids
9	Construction Impact to Neighbors	○	○	◑	◑	New construction separated from residences.
10	Open Space /Building Massing / Footprint	◔	○	●	●	Greater open space quant. and adjacencies for H
11	Community Use	○	◔	●	●	Clearer zoning of public use portions of building for new.
Building Environment						
12	Flexibility-Building Systems	○	◔	●	●	
13	Security	○	◑	●	●	Long travel distances and sight lines for reno.
14	Natural Light and Views	◑	◑	●	●	
15	LEED / Sustainability	○	◔	●	●	New construction configured for sustainability. Existing roof incompatible with PV
Long-Term Costs						
16	Long Term Maintenance and Repair Costs	○	◔	●	●	Unforeseen future issues with remaining 90 year old construction
17	Energy Costs	○	◔	●	●	Reno. building envelope inherently underperforming.
Other						
18	Pedestrian and Vehicular circulation	○	○	●	●	Safety improved with newly separated circulation systems.
19	Disruption to Families	◔	◔	◑	◑	Phasing and limited access potential for reno. with impacted site.
Total GSF		155,140	155,140	155,140	155,140	

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Preliminary Concept Design Options

Preliminary Concept Design Options

Preferred Concept Site Plan

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OPTION H

SITE PLAN
DRISCOLL SCHOOL, BROOKLINE

Open Space Evaluation

OPTION H

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Total Lot Area	Building Footprint	Usable Play Area (with Tennis)	Vehicle / Pedestrian	Unutilized Area	Total Open Area
173,000 sf	40,000 sf	109,500 sf	19,000 sf	4,500 sf	133,000 sf

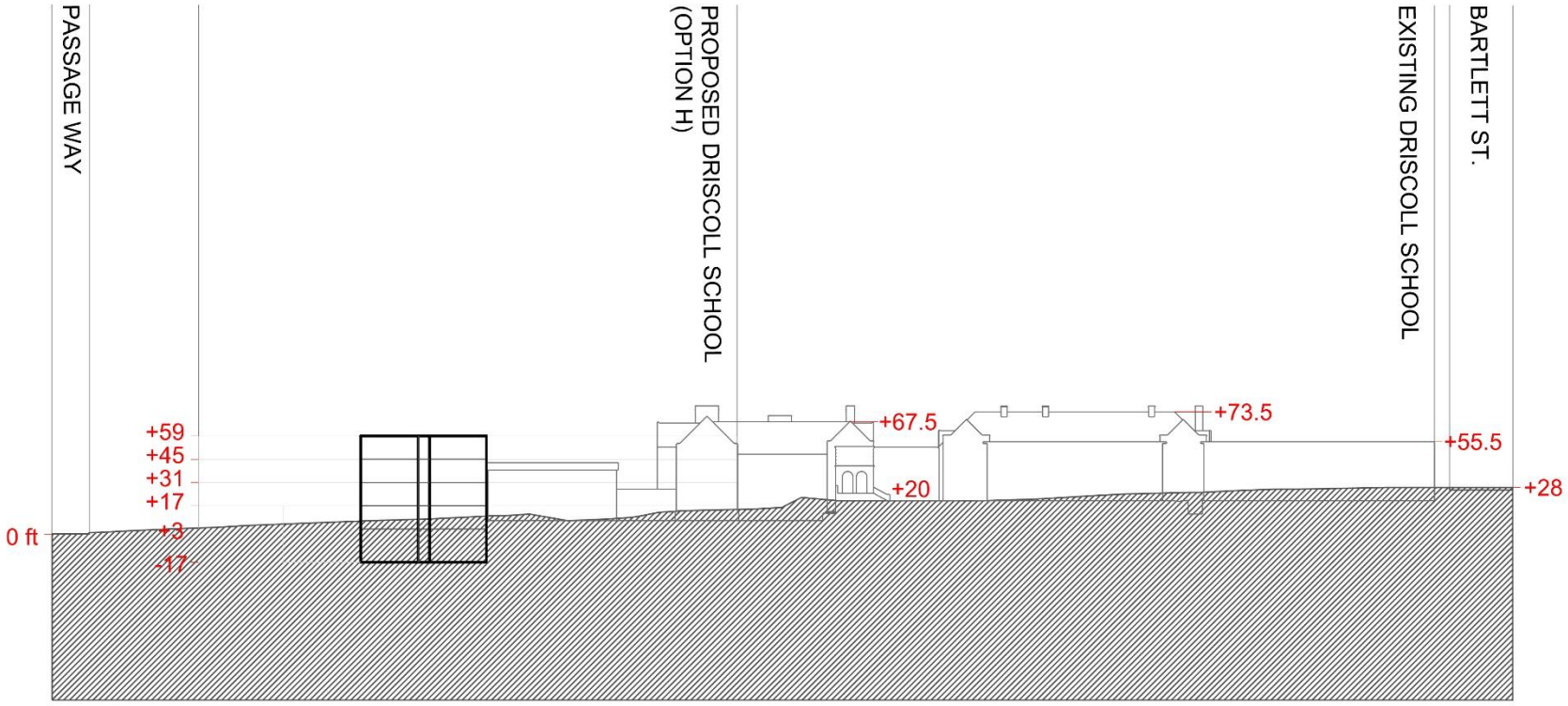
8' 32' 64' 128'

OPEN SPACE DIAGRAM
DRISCOLL SCHOOL, BROOKLINE

Open Space Comparison

	LOT	BUILDING		OPEN SPACE			
Concept Alternative	**Total Lot Area**	Building GSF	**Building Footprint**	**Usable Play Area (with tennis)**	**Vehicle / Pedestrian**	**Unutilized Area**	**Total Open Area**
Existing	**173,000 SF**	97,000 SF	**39,500 SF**	**72,500 SF**	32,000 SF	29,000 SF	**133,500 SF**
A.1 Reno/Add-East	**173,000 SF**	155,500 SF	**50,000 SF**	**77,000 SF**	26,500 SF	19,500 SF	**123,000 SF**
F.1 Modified Magnet	**173,000 SF**	155,500 SF	**40,000 SF**	**100,000 SF**	15,500 SF	17,500 SF	**133,000 SF**
H Modified Star	**173,000 SF**	155,500 SF	**40,000 SF**	**109,500 SF**	19,000 SF	4,500 SF	**133,000 SF**
Lincoln	**187,308 SF**	87,500 SF	**44,369 SF**	**61,851 SF**	13,633 SF	67,455 SF	**142,939 SF**
Runkle	**132,858 SF**	104,800 SF	**52,609 SF**	**40,446 SF**	0 SF	39,802 SF	**80,248 SF**
Coolidge Corner	**292,723 SF**	200,000+ SF	**88,880 SF**	**143,211 SF**	6,982 SF	53,650 SF	**203,843 SF**

Site Evaluation



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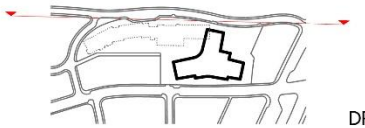
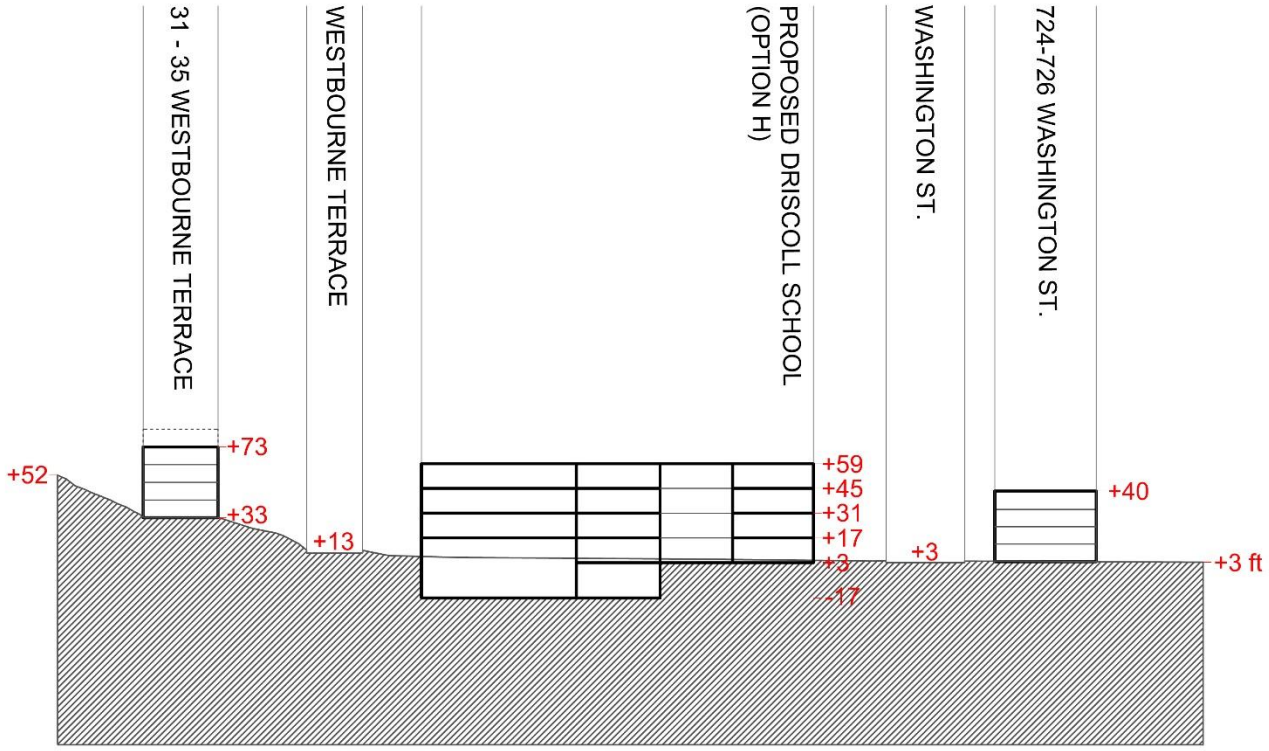
8 32 64 128



OPTION H

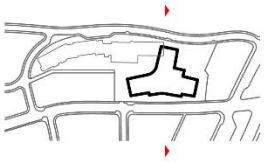
SITE ELEVATION
DRISCOLL SCHOOL, BROOKLINE

Site Evaluation



Jonathan Levi Architects

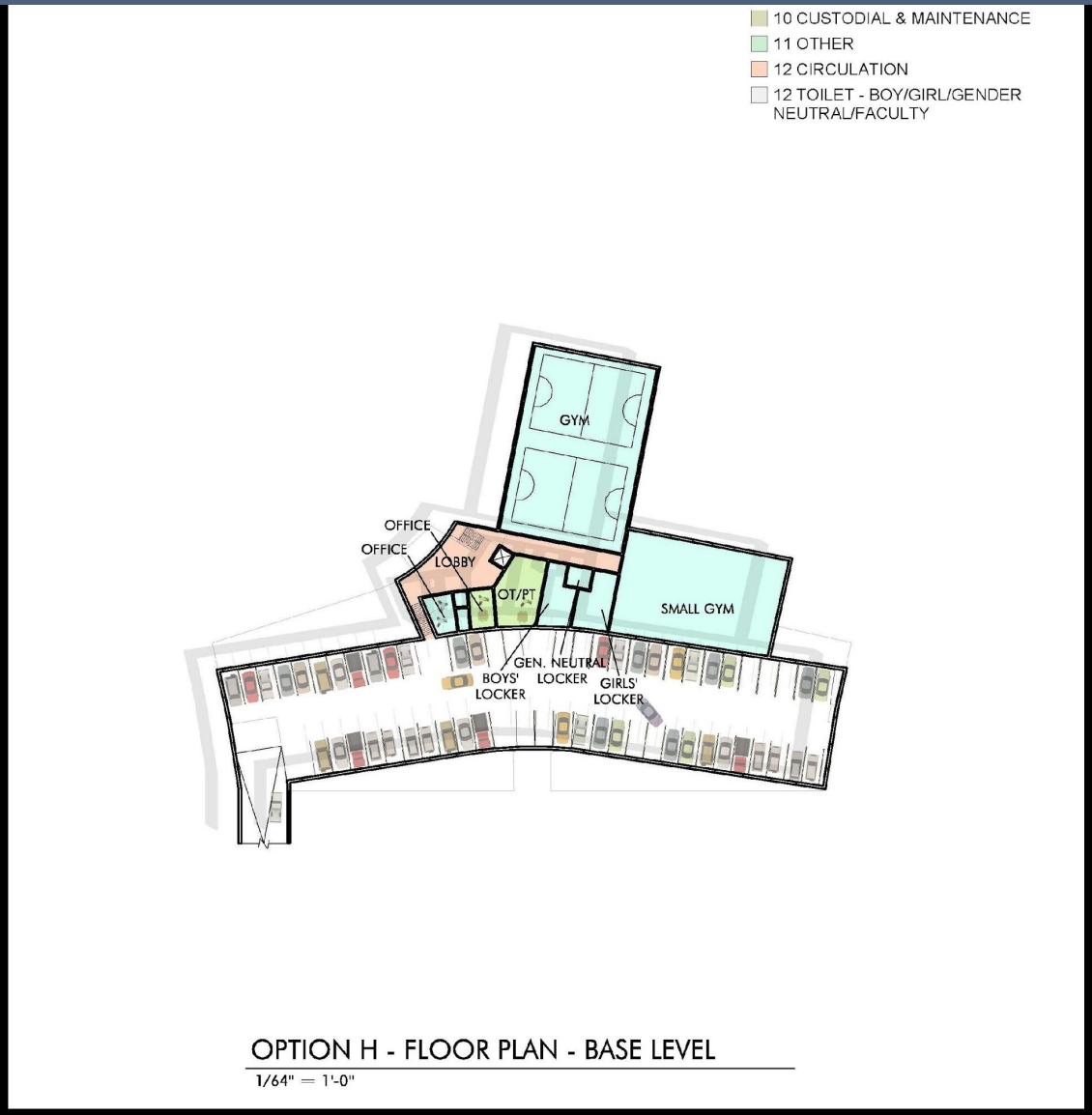
8 32 64 128



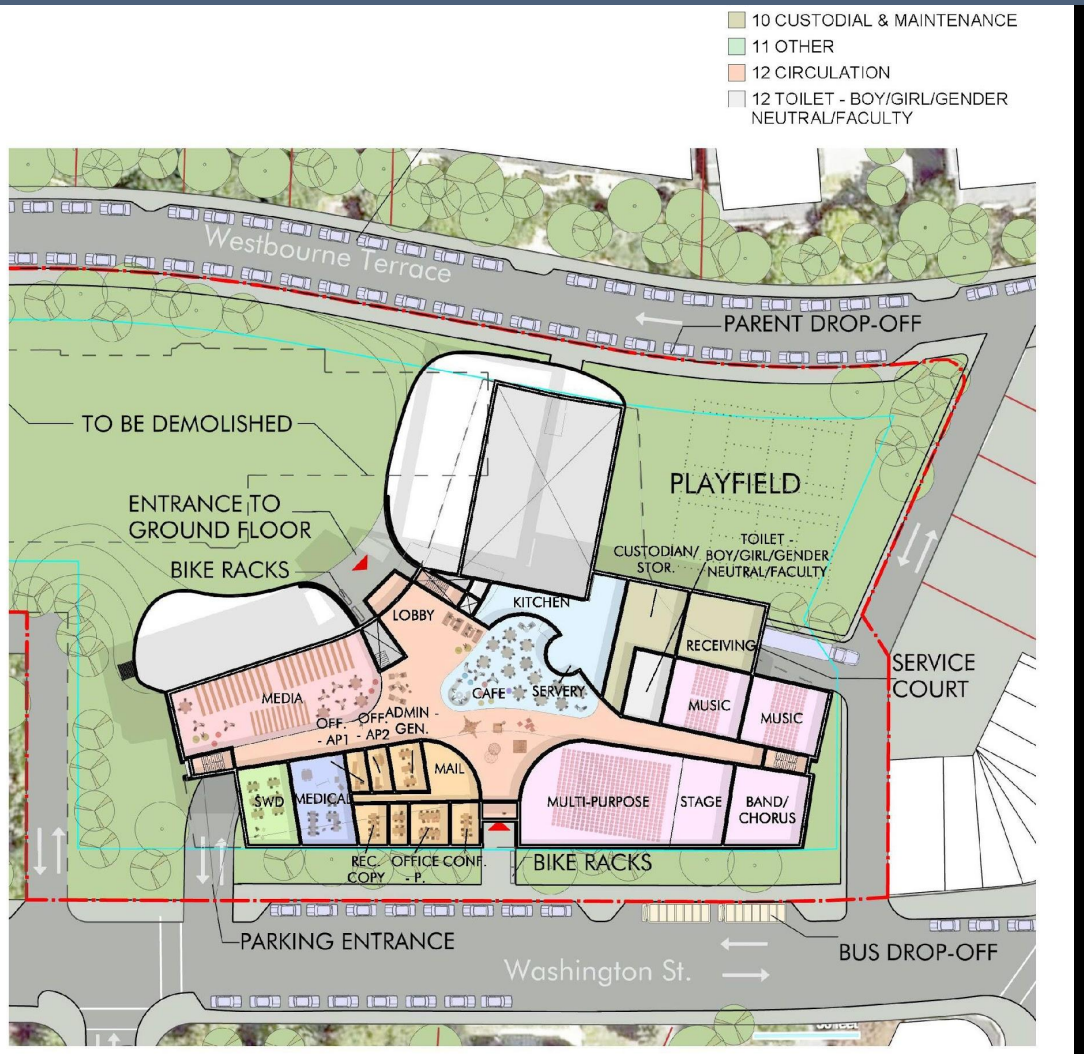
OPTION H

SITE ELEVATION
DRISCOLL SCHOOL, BROOKLINE

Revised Preferred Option Floor Plans



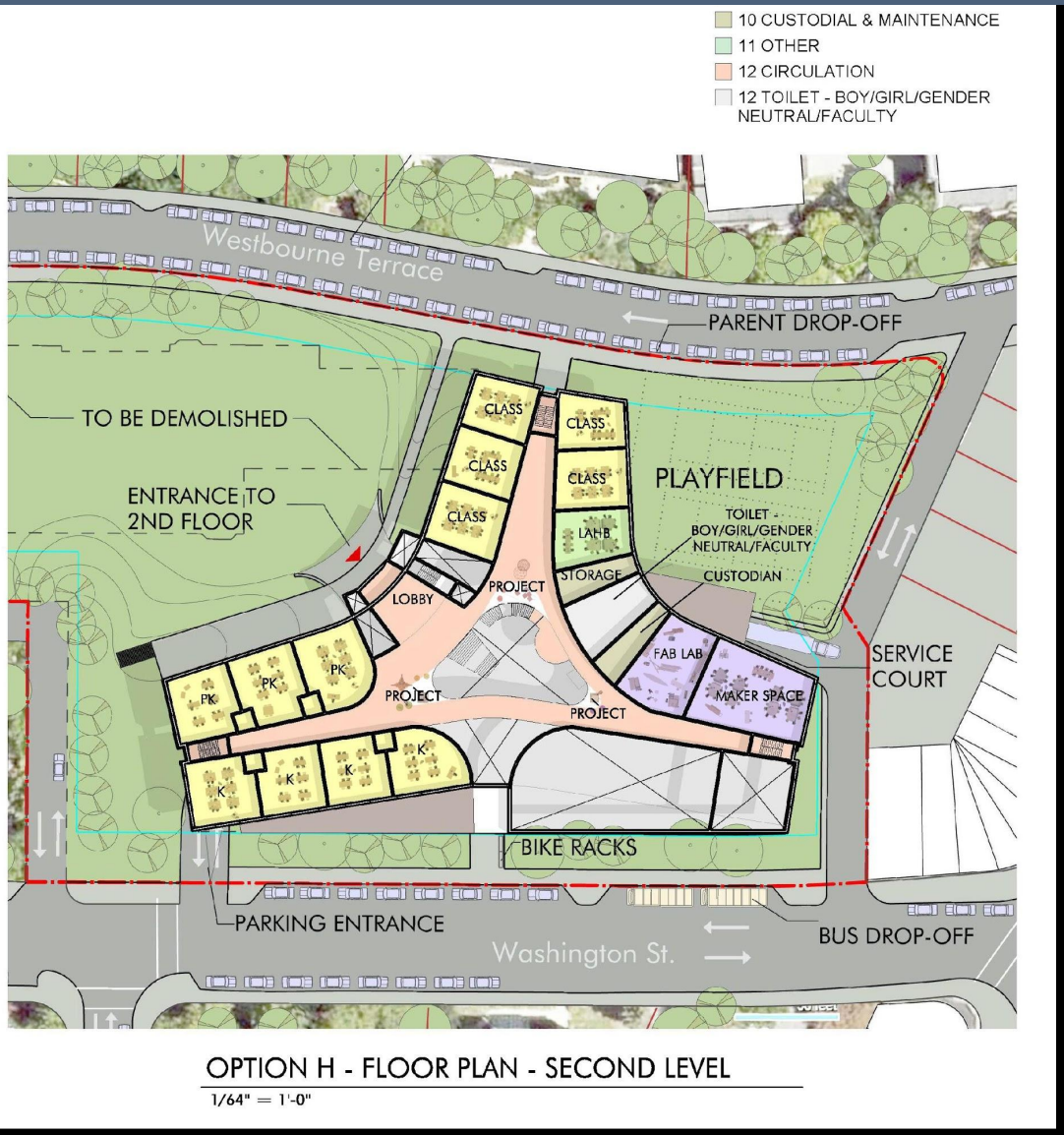
Revised Preferred Option Floor Plans



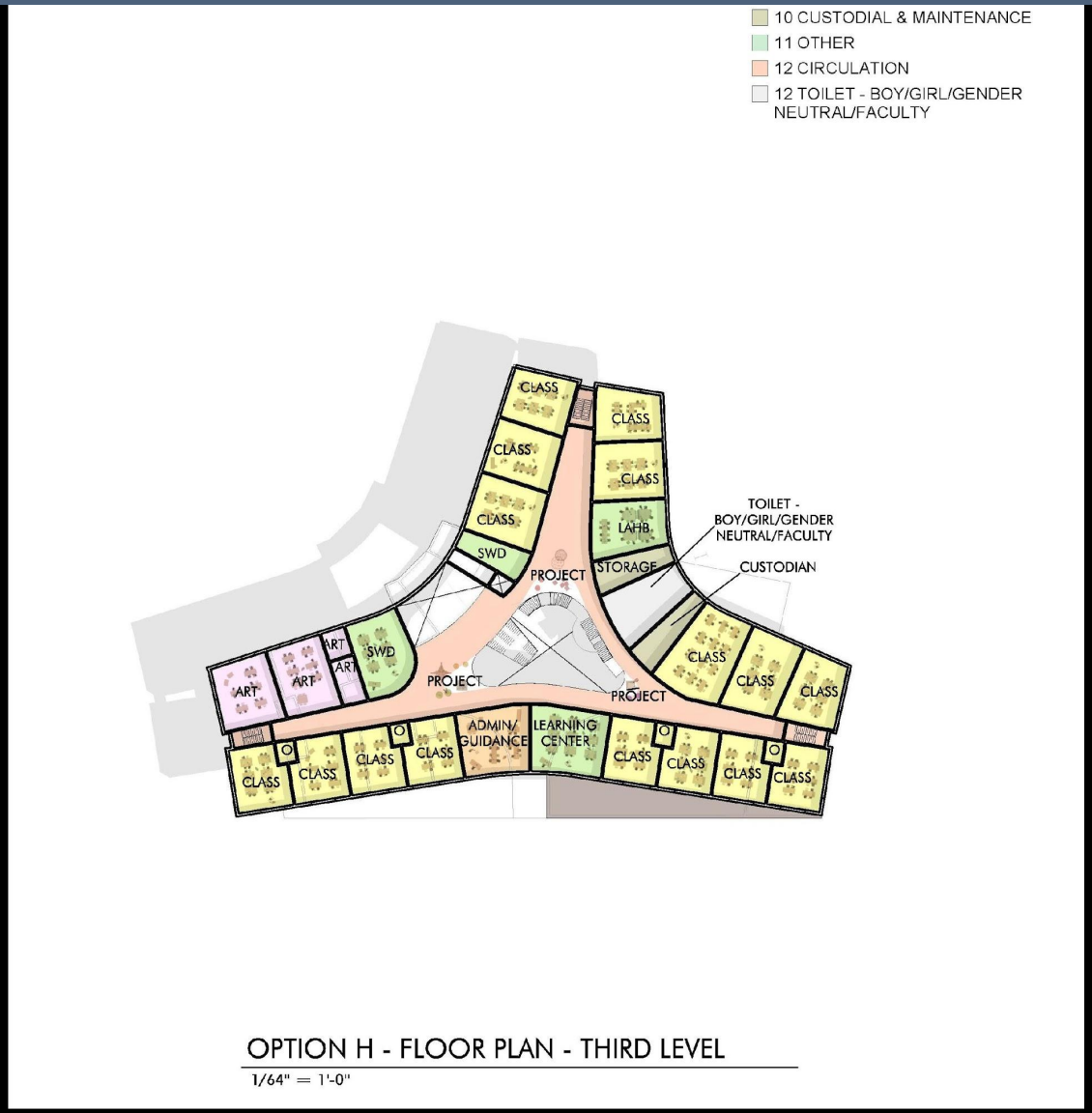
OPTION H - FLOOR PLAN - FISRT LEVEL

1/64" = 1'-0"

Revised Preferred Option Floor Plans



Revised Preferred Option Floor Plans



Revised Preferred Option Floor Plans

Proposed School Security Features

- Centralized Plan with Open Sight Lines
- Secured Vestibule Entrances
- Extensive Interior Glazing with Shades
- Building Exterior Easily Surveilled from Streets
- Multiple Egress Routes From Each Floor to Exterior

Net Zero Carbon

Option 1:

All Electric 'VRF' HVAC Heating and Cooling

- Assumes purchase of Green Energy
- Order of Magnitude Cost = $1.55M

Option 2:

All Electric 'VRF' HVAC Heating and Cooling with

Roof –Mounted Photovoltaics

- Assumes PV's provide 50% Heating and Cooling Energy Needs with Balance from Green Energy
- Order of Magnitude Cost = $2.75M

Community Benefits

Community/Neighborhood Improvements:

- Relief of Town-wide School Overcrowding
- Net Increase of Public Recreational Space
- Reduced Building Density in Residential Neighborhood
- Reduced Traffic Congestion
- Increase Pedestrian Safety
- Improved and Better Accessed Gym, Multi-Purpose Room, Media Library
- Reduced Long Term Operating Costs to Taxpayer

Preferred Options Costs

Option 0- Minimum Code Addition/ Renovation

with Structured Parking	$85M – 89M
without Structured Parking	$76M – 80M

Option A.1 - Code Renovation with East Addition

with Structured Parking	$105M – 110M
without Structured Parking	$96M – 101M

Option F.1 – Modified Magnet – new construction

with Structured Parking	$101M – 105M
without Structured Parking	$93M-97M

Option H– Modified Star – new construction

with Structured Parking	$101M – 105M
without Structured Parking	$93M - 97M

Cost References

HMFH Site Selection Pre-Concept	Estimate	$60 - 83M
Feasibility Preferred Option H	Estimate	$101 - 105M

Differences between Pre-concept and Feasibility Assumptions:

- Sub-grade vs. at grade parking structure
- 60 vs. 50 parking spaces
- Additional Pre-K classrooms
- Renovation of existing building (option A.1) to meet required program
- Swing space costs (option A.1) for more extensive renovation
- Multiple additions to existing building to meet required program
- Additional year of escalation
- HMFH Option reduces Current Open Space by 6,400 GSF

Cost References

<u>Currently Proposed School Projects</u>		
Baldwin Feasibility Preferred Option B	$82M, +450 seats	$182k/seat
Driscoll Feasibility Preferred Option H	**$105M, +172 seats**	**$610k/seat**
Pierce K5/678 *	$173M, +299 seats	$579k/seat
Pierce 5 Opt.1 *	$142M, +110 seats	$1.3M/seat
<u>Previously Studied School Projects</u>		
Baker 5 *	$138M, +213 seats	$648k/seat
Baker 3/3 Opt.1 *	$163M, +402 seats	$405k/seat
Heath *	$75M, +234 seats	$321k/seat

*For previously studied and Pierce, based on HMFH 6/18 cost data and does not include full escalation, swing space or land acquisition.

Note: Seat estimates based on 21 students per classroom and includes BEEP enrollment.

BROOKLINE

BALDWIN SCHOOL BUILDING PROJECT

Select Board and School Committee
November 27, 2018

Jonathan Levi Architects

At-a-Glance

PUBLIC SCHOOLS of BROOKLINE

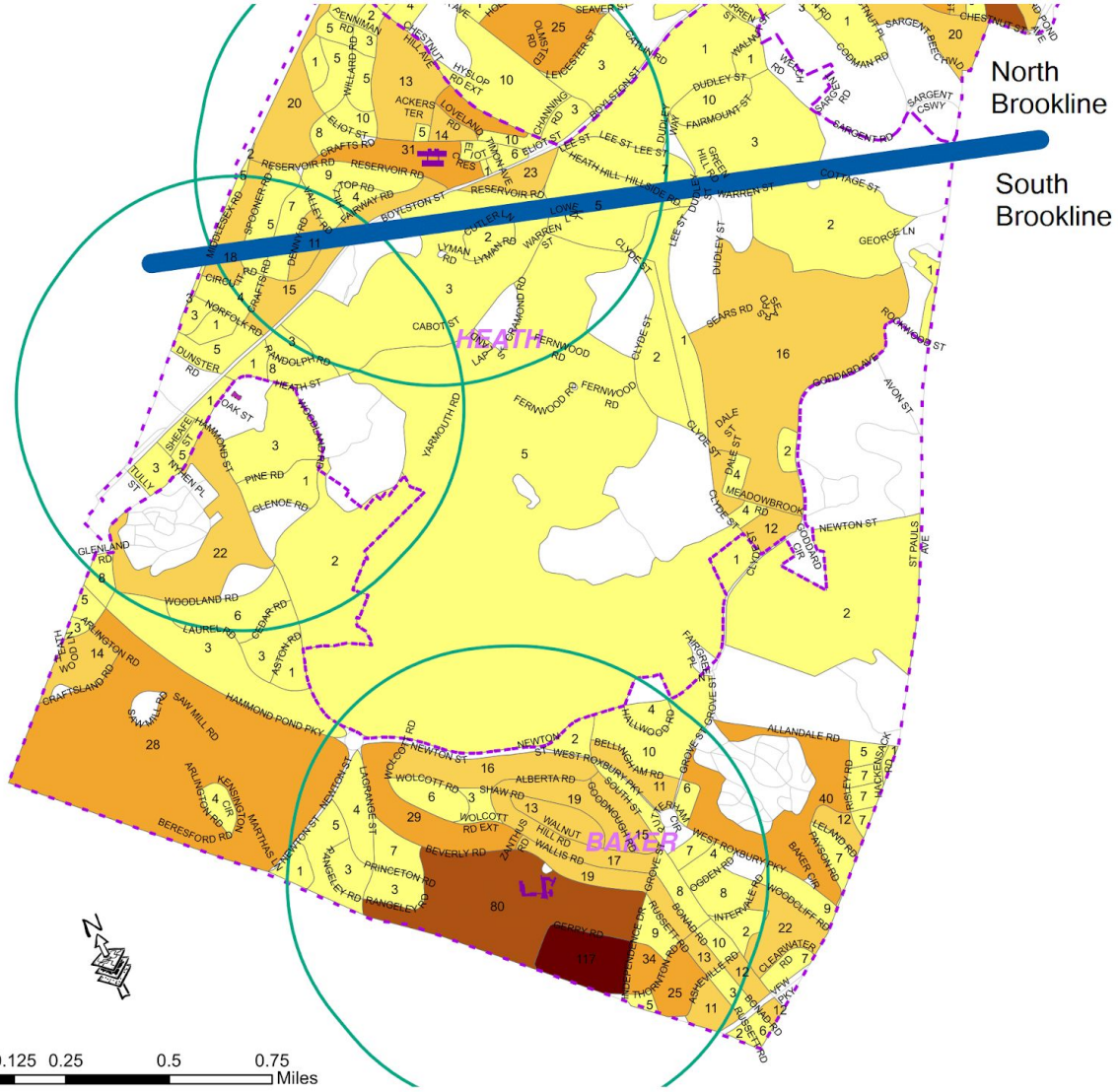
	Driscoll	Baldwin
School Type	4 Section; K to 8th Grade	2 Section; K to 8th Grade
Expanded Services	Pre-K and Early Education (BEEP), Special Education (LAHB - Language & Academic Home Base), English Learner Education (ELE), Native Language Support Program (Russian)	Pre-K and Early Education (BEEP), Special Education (RISE - Reaching for Independence Through Structured Education), English Learner Education (ELE), Native Language Support Program
Projected Total Number of Students, including Pre-K	800 (+169 from SY 2018-19)	450
Total Number of Core (K-8) Classrooms	36 (+8 from SY 2018-19)	18
Preliminary Staffing (including Kitchen and Custodial)	125 (+18 from SY 2018-19)	86
Preliminary Size of School	155,140 Sq. Ft. (Gross Square Feet)	108,250 Sq. Ft. (Gross Square Feet)

Baldwin Catchment Area

PUBLIC SCHOOLS of BROOKLINE

Total Number of resident students projected to live in South Brookline	1141
Total Students at Proposed Baldwin	450
# of K-8 resident students living in South Brookline anticipated to be assigned to Baldwin*	310*
# of K-8 resident students living in South Brookline anticipated to be assigned to Baker*	716*
Total number of K-8 resident students living in South Brookline projected to be assigned to Baker and Baldwin	1026
Number of K-8 resident students living in South Brookline that would have to go to a school other than Baker and Baldwin	115

*Does not include BEEP, METCO, RISE, and Materials Fee Students



Feasibility Design Phase Overview

PUBLIC SCHOOLS of BROOKLINE

Driscoll

10/4

- Existing Conditions Progress Report
- Program Diagram
- Range of Pre-Schematic Alternative Design Strategies
- Traffic Report Update

10/18

- Refined Space Summary

11/1

- Revised Alternative Design Strategies
- Traffic Report Preliminary Findings
- Cost Estimates

11/15

- Recommend Preferred Design Alternative

11/26 and 12/6

- Refined referred Design Alternative
- Updated Cost Estimate
- Approve Preferred Alternative
- Final Traffic Report

Baldwin

9/27

- Existing Conditions Progress Report
- Building Program, Space Summary Status Report

10/11

- Legal Update on use of Baldwin School Playground
- Refined Building Program Update
- Alternative Design Strategies

10/25 and 11/8

- Traffic Report Preliminary Findings
- Cost Estimates
- Revised Alternative Design Strategies

11/19

- Recommend Preferred Design Alternative

11/29

- Refined Preferred Design Alternative
- Updated Cost Estimate
- Approve Preferred Alternative
- Final Traffic Report

Schematic Design Phase
(December 2018 - February 2019)

PUBLIC SCHOOLS of BROOKLINE

Primary Goals: Complete all materials required for a debt exclusion vote

Program Verification

a. Verify detailed space needs for each program space
b. Verify adjacencies
c. Confirm how each component supports brookline's educational program

2. Existing Conditions

a. Provide complete geotechnical, hazmat and geo-environmental report
b. Continue traffic analysis and town traffic/parking approvals process
c. Building and accessibility code analyses

3. Design Refinement

a. Develop concept diagram into schematic architectural plans
b. Develop building massing, elevations and views
c. Technical system narratives for structural, mep, fire protection, it and security
d. Sustainability and lifecycle cost narratives and analyses

4. Cost and Process Management

a. Separate architect and OPM detailed line item construction cost estimates
b. Construction cost estimate reconciliation and value management
c. Detailed project cost budget based on msba format with all hard and soft costs
d. Selection of project delivery method

Feasibility vs. Schematic

	Feasibility Design (Sept. 2018 - Dec. 2018)	Schematic Design* (Dec. 2018 - Mar. 2019)
Classrooms, Learning Spaces, and Offices	Types of classrooms needed and how many should be constructed	Defining location of spaces relative to building and other structural supports for educational programming
Building Exteriors	Basic footprint and height	Facade and detailed elevations
Floor Plans	Size, location, and envelope of the building	Detailed sketches of site plan, including 3D models
Outdoor Play-Spaces	Basic drawings and preliminary locations	Exact layout including specific structures and other features
Traffic and Parking	Analysis and comparables to other schools and neighborhoods; initial recommendations	Specific alterations to roads, including traffic calming, sidewalk adjustments and safety measures
What happens to students during construction?	Community input for ideas and concerns regarding transition process	Development of safety plan with construction personnel to be approved by town

***Funding for Schematic Design is contingent upon Town Meeting Vote on 12/13**

Baldwin Existing Conditions Checklist

1. Legal	Complete
2. Site Survey	Complete
3. Geotechnical	Complete
4. Geo-environmental	Complete
5. Building Hazmat	Complete
6. Historic	Complete
7. Zoning	Complete
8. Traffic	Pre-final*

*Final Report BY 12/04

Site Location and Study Area Map

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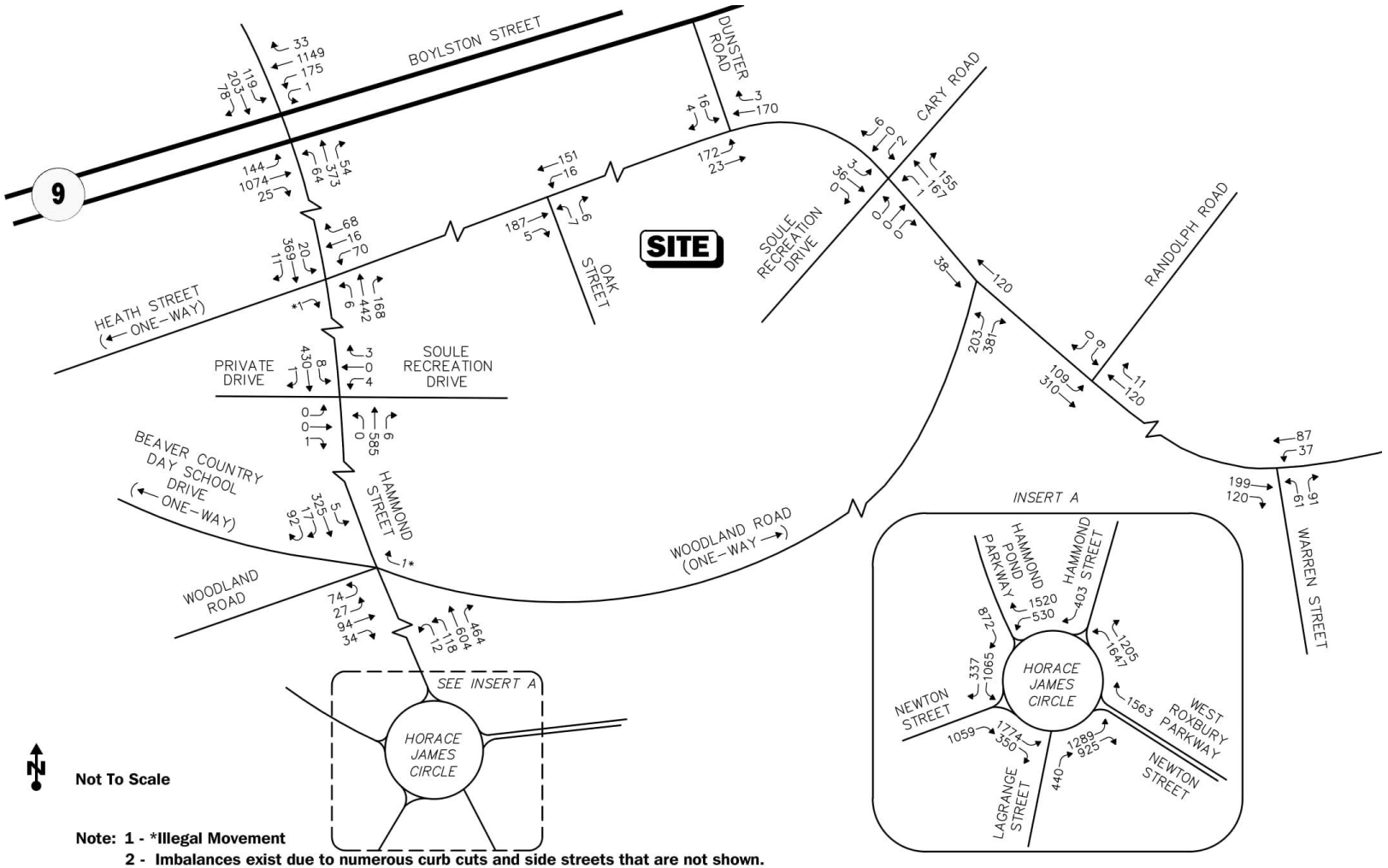
Vanasse & Associates, Inc.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066

2018 Existing Conditions – Weekday Morning
School Peak Hour Traffic Volumes (7:00-8:00 AM)



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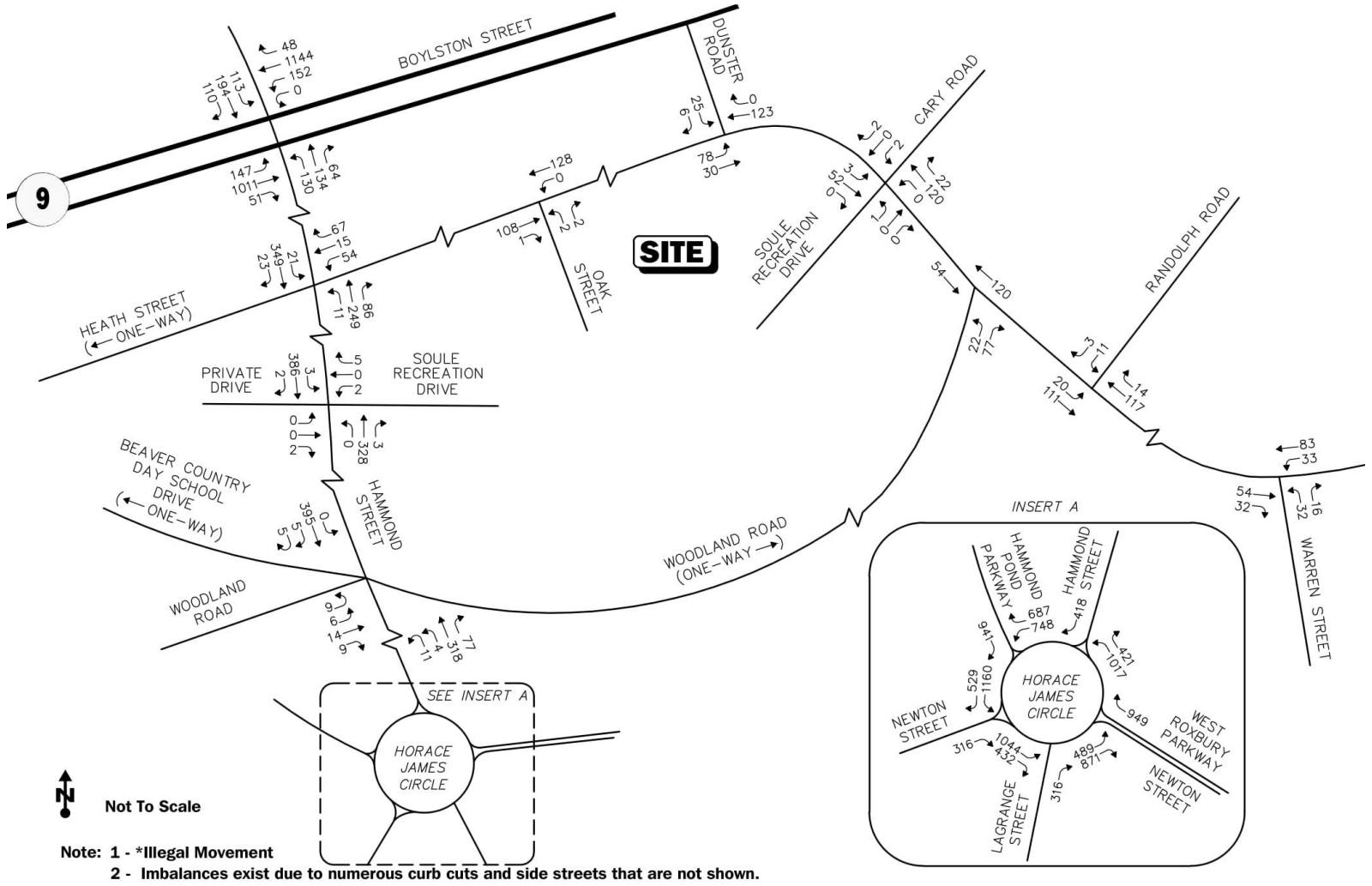
2018 Existing Conditions – Weekday Evening
School Peak Hour Traffic Volumes (1:30-2:30 PM)



Note: 1 - *Illegal Movement
2 - Imbalances exist due to numerous curb cuts and side streets that are not shown.

JLA Jonathan Levi Architects

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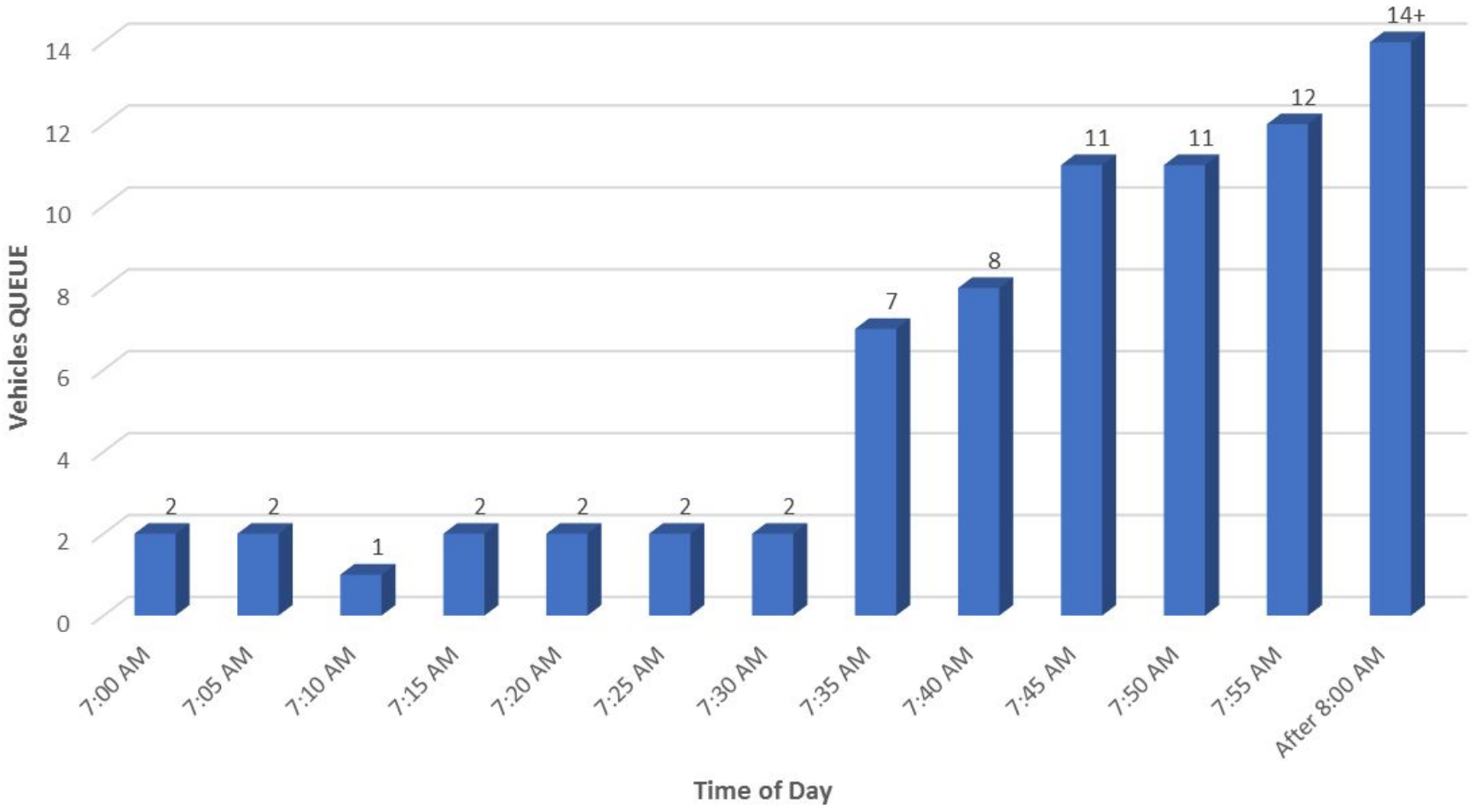
Vehicle Queues on Heath Street
Weekday Morning, October 16 , 2018



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Trip Generation Summary

ASSUMPTIONS

- 453 Students
- 86 Staff (74 arrive in peak hour 1.0 staff per car)
- 4% Daily absenteeism
- 25 students bus with METCO (Arriving by Bus)
- 30 RISE students (9 Vans)
- 45 Brookline Early Education Program students (Arrive after 8:00 AM)
- 120 students bus (2 Buses)
- 50 students walk[1]
- Student car occupancy of 1.45 student/car

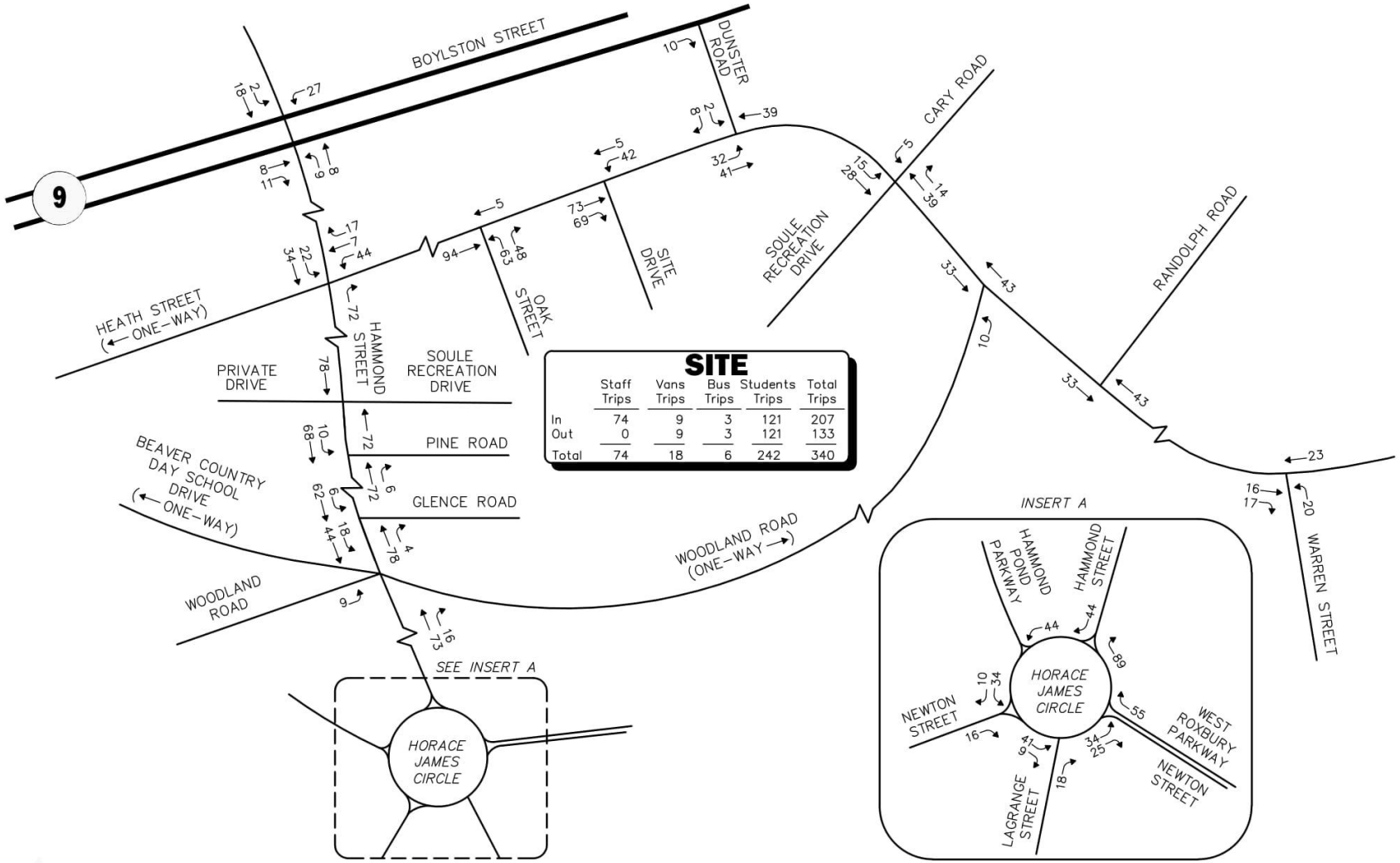
[1] This is a conservative estimate. 195 K-8 children live within 0.5 miles of the site, so the number of children who walk to school when it opens will be higher.

Result: 121 Cars in the morning, 70 Cars in the Afternoon

Car Drop-Off Trip Generation Comparison

Time Period	Car Drop-off (800 Students)	Car Drop-off (600 Students)	Car Drop-off (453 Students)
Weekday Morning Peak Hour:			
Entering	330	232	121
Exiting	330	232	121
Total	660	464	242

Projected Trip Generation – Weekday Morning



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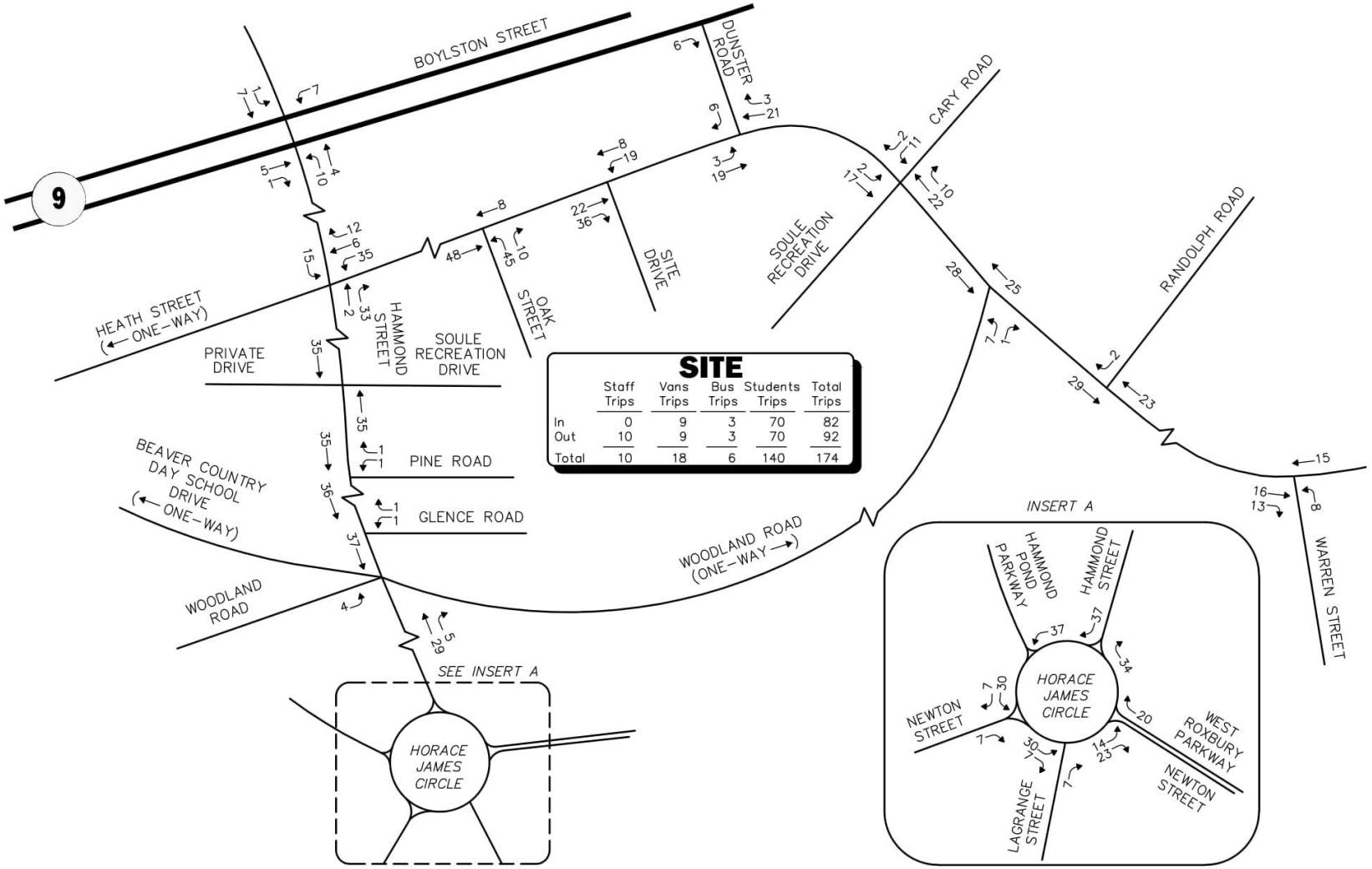
Projected Trip Generation – Weekday Evening



SITE

	Staff Trips	Vans Trips	Bus Trips	Students Trips	Total Trips
In	0	9	3	70	82
Out	10	9	3	70	92
Total	10	18	6	140	174

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Baldwin School

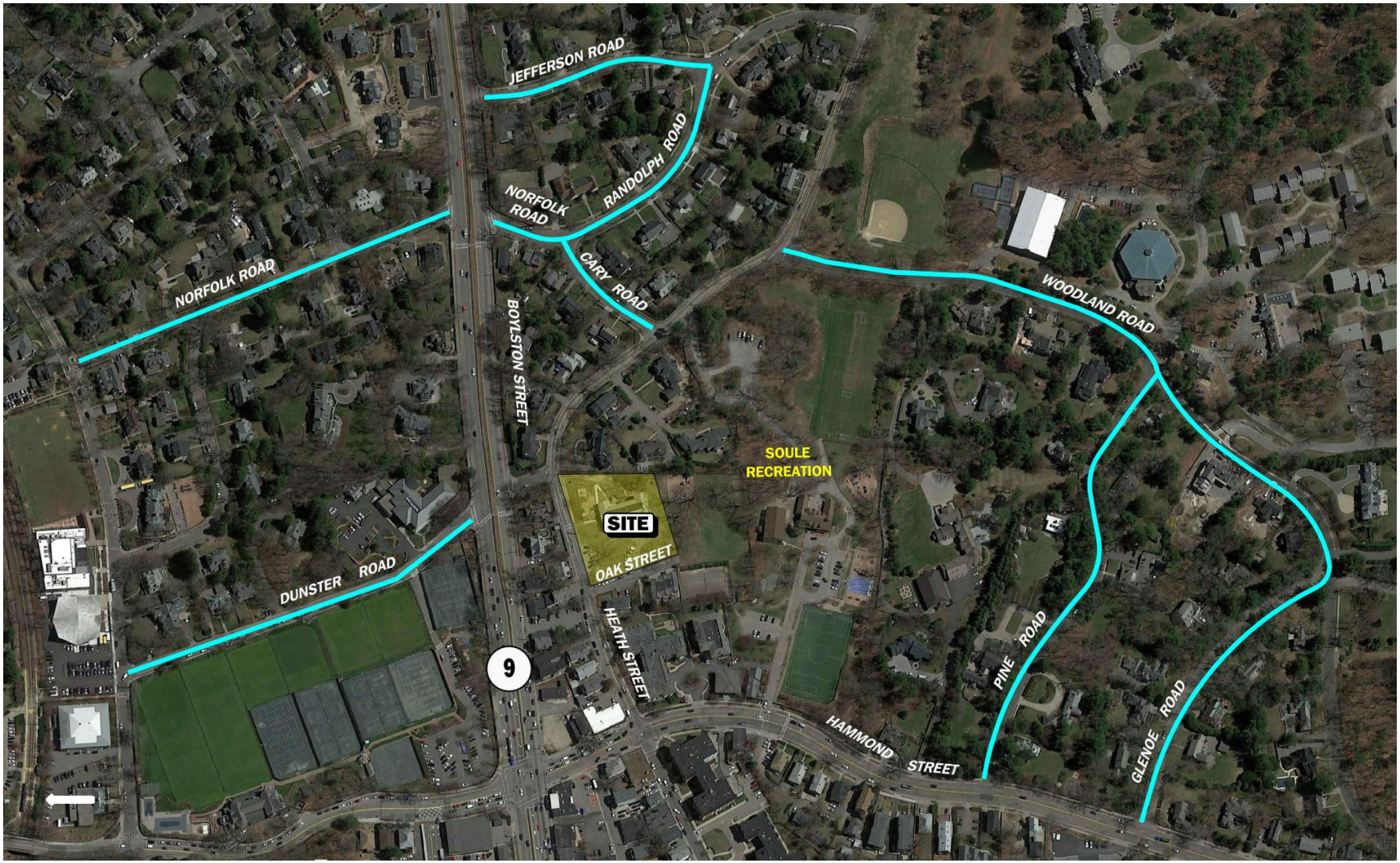
10/02/2018 – Parking

Proposed for School Committee and Transportation Board

xx Parking Lots Spaces

86 Requested TBoard Parking Spaces

Teachers On-Street Parking



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Parent On-Street Parking

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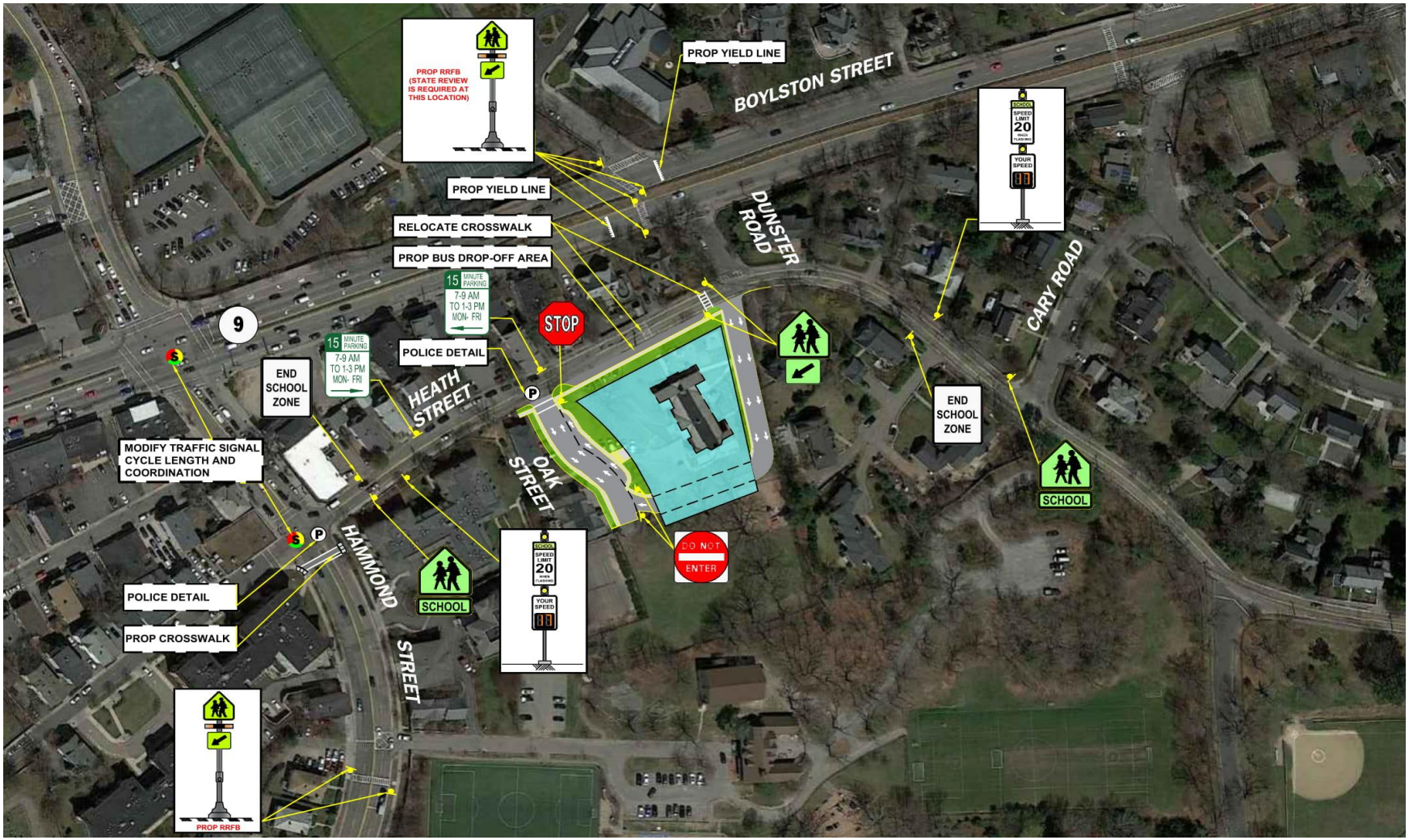
Recommendations
Pedestrian Access and School Signage Plan



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Recommendations

Transit Usage

- Promote staff usage

Traffic Monitoring

Within three months after school opening and annually

- Pedestrian safety
- Crossing guards
- Police detail
- Level of student busing

Construction Management Plan

A detailed Construction Management Plan should be prepared and reviewed by the Town

Option B – Solar Harvest

Summary

SUMMARY

- Safe Environment Can Be Maintained
- Delays and Queues - Limited to Short Periods (15-20 Minutes)
- School Traffic Before Existing Peak
- Traffic Conditions Will Be Manageable

Qualitative Assessment: Good Site for New School

Neighborhood Impact: Comparable to Existing Schools

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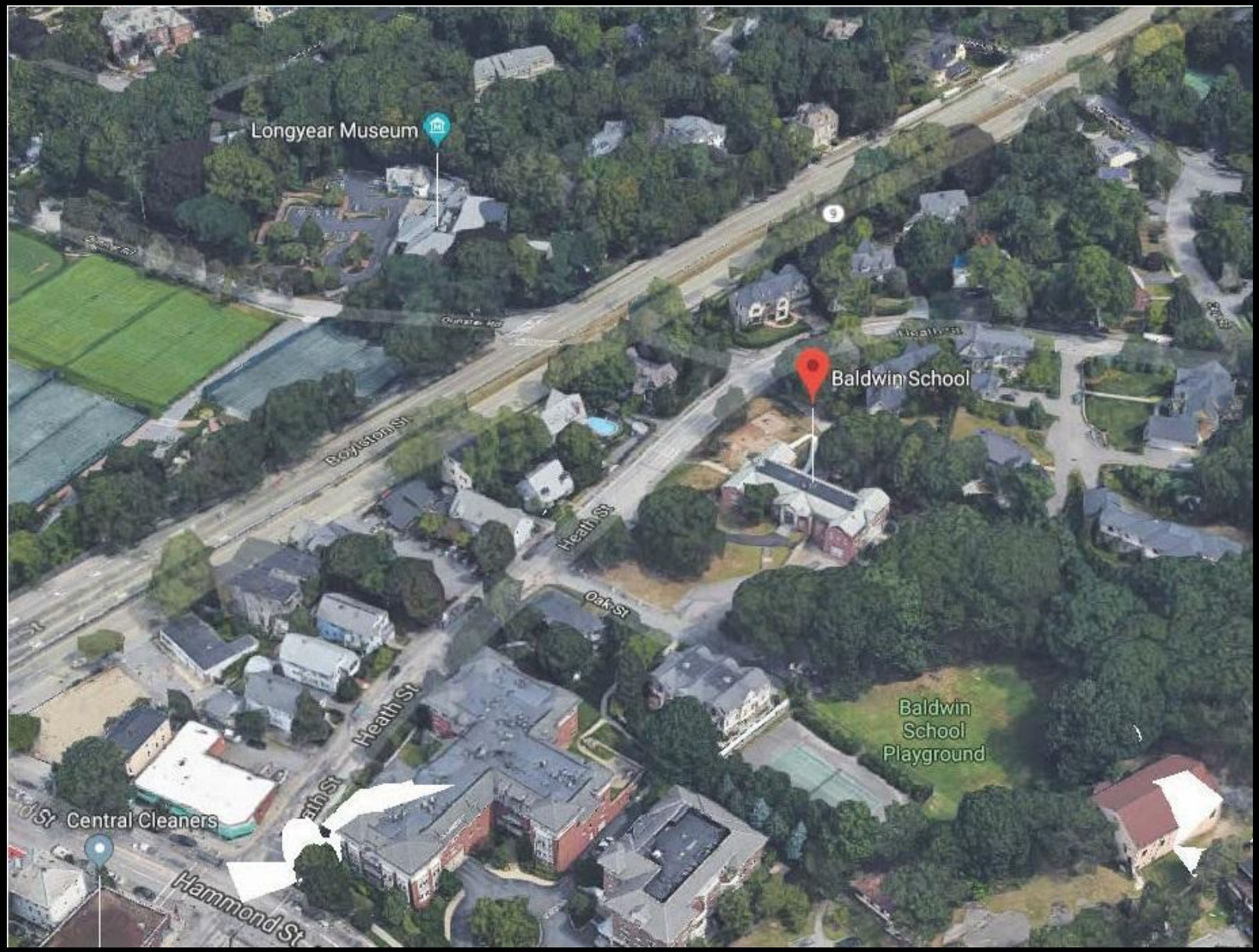
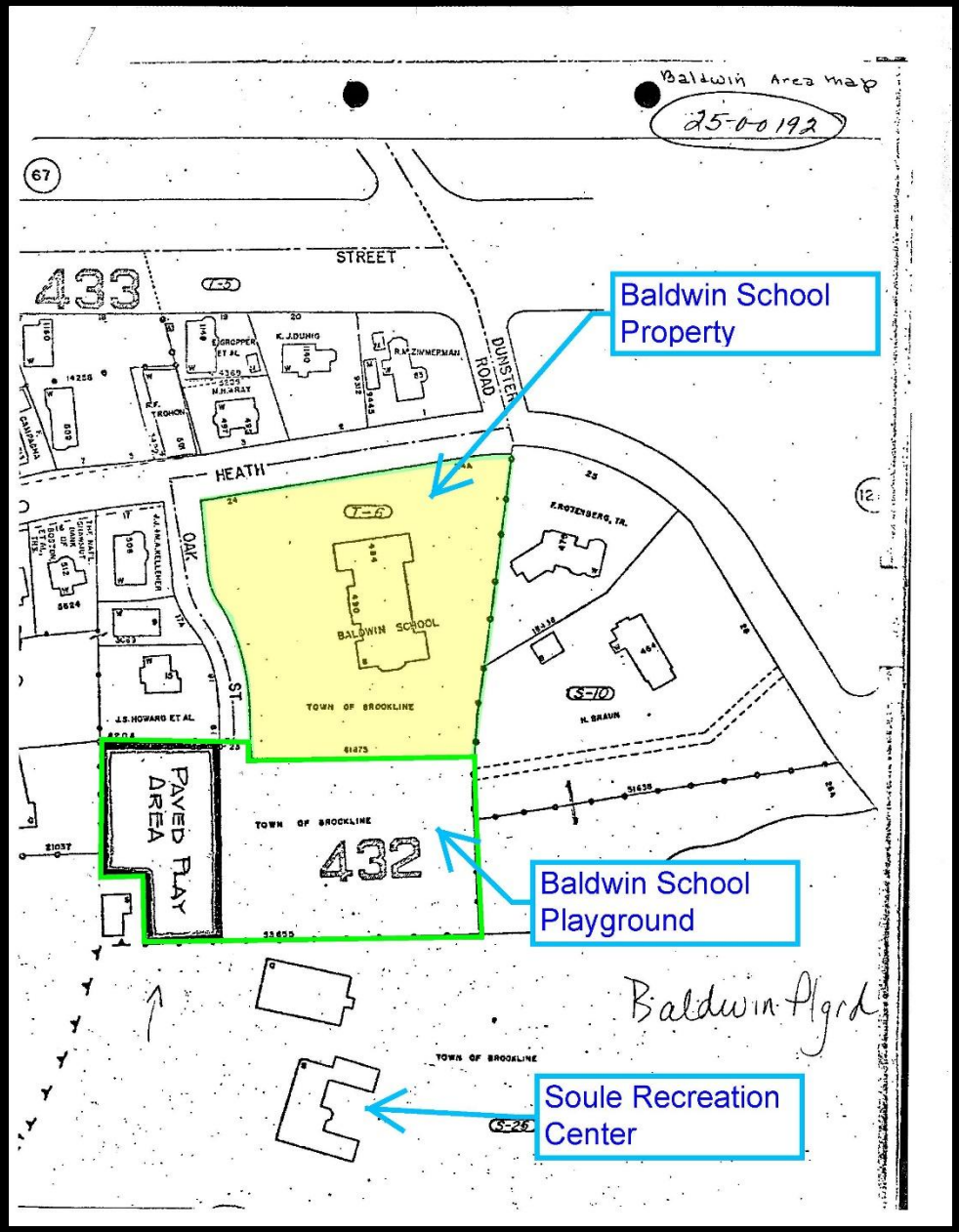
Existing Baldwin School



Site Plan



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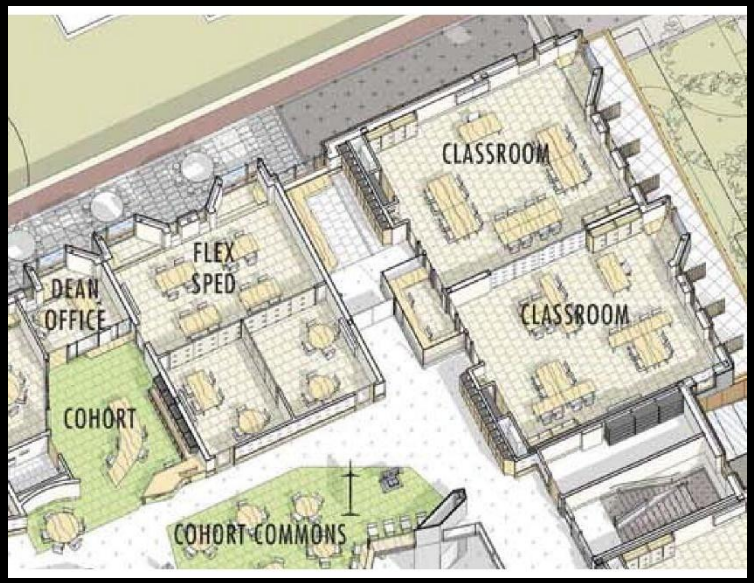
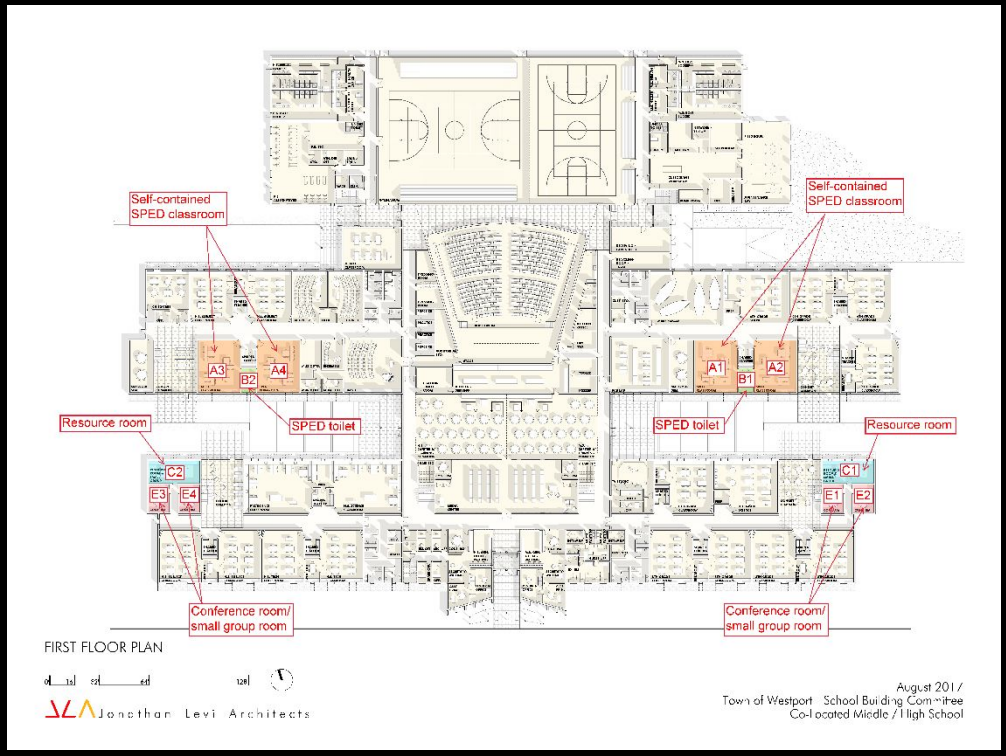
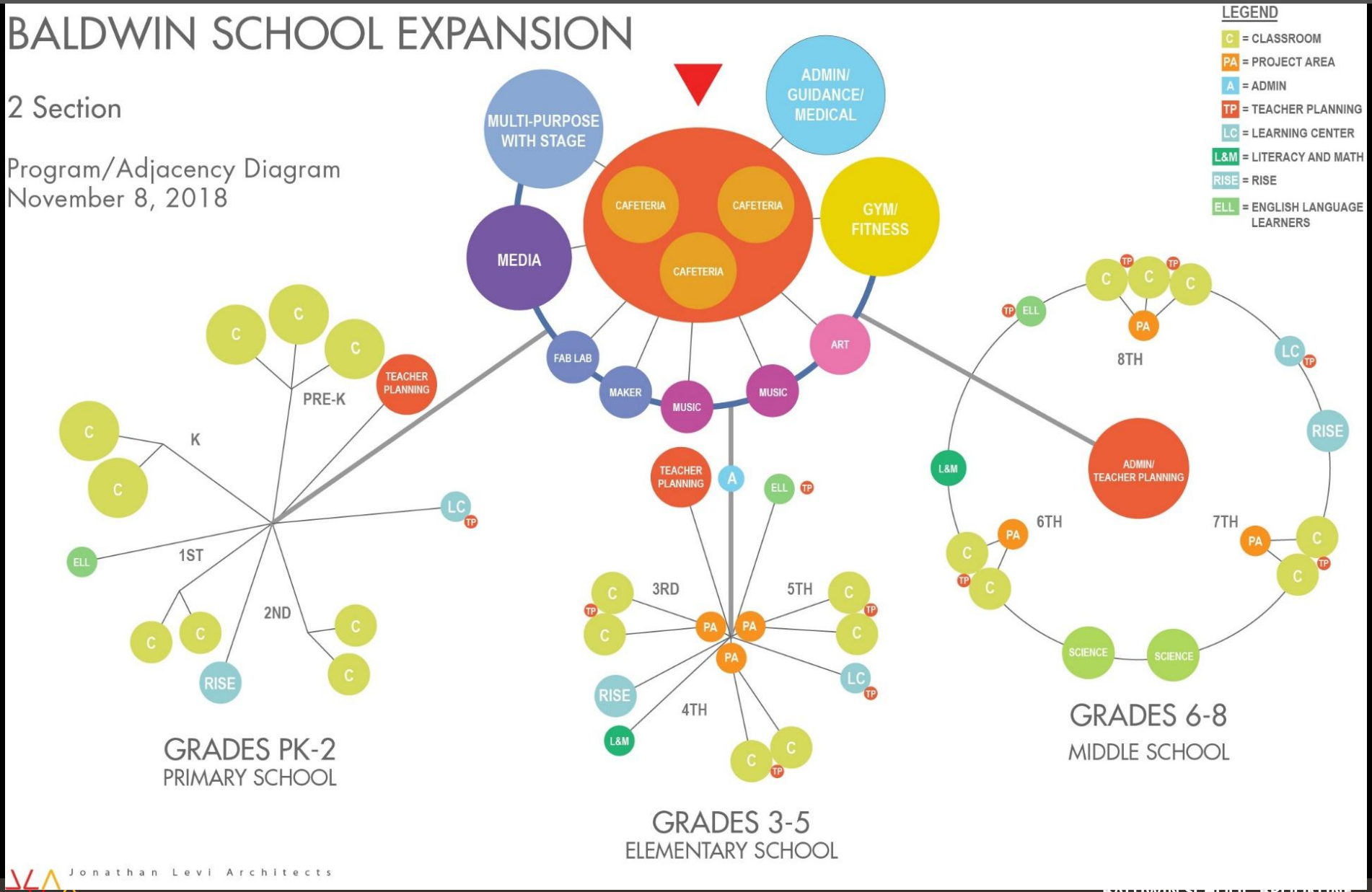
Specialized Learning Spaces





Educational Program Diagram



Preliminary Concept Design Alternatives

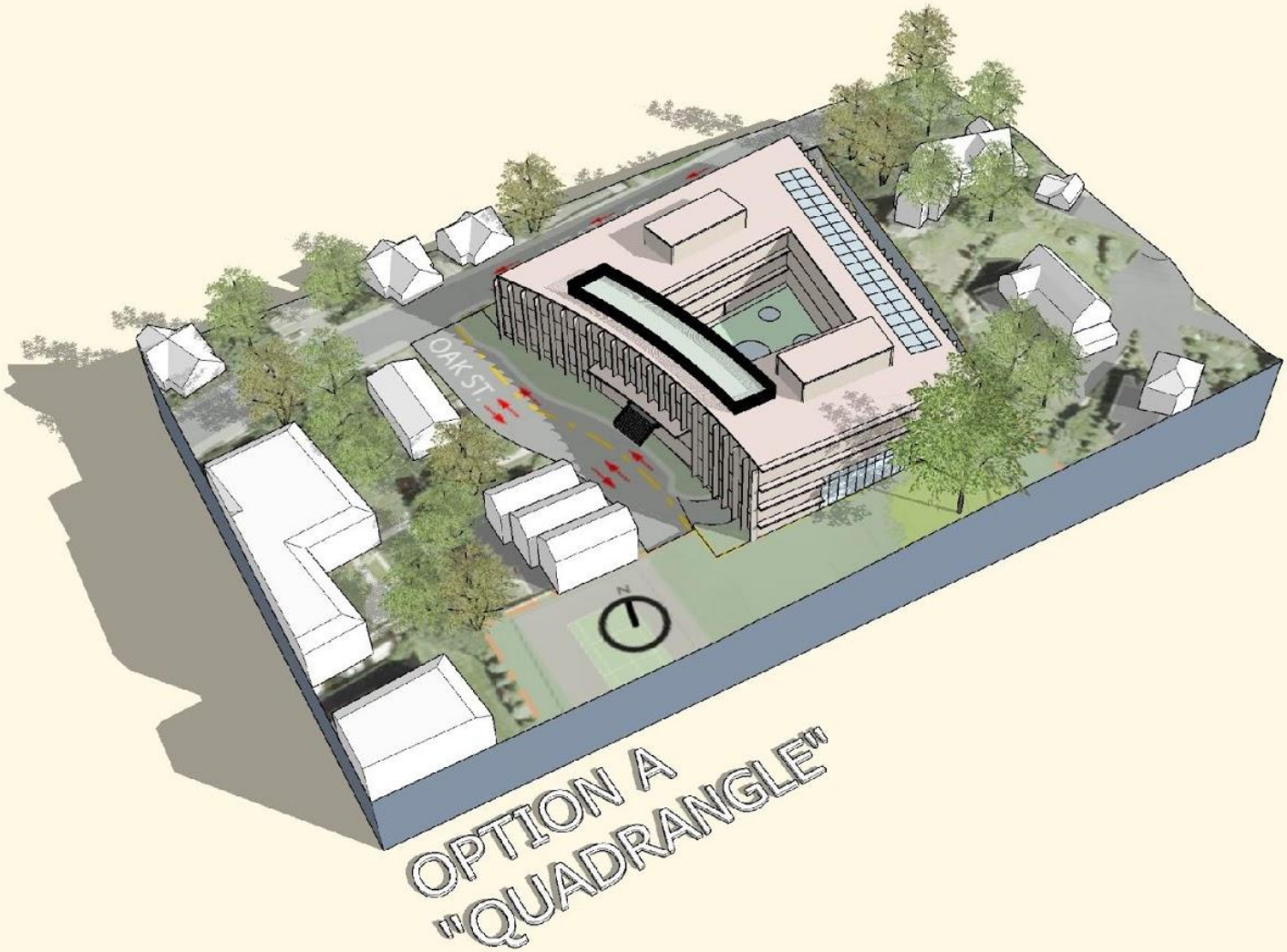
Option A
"Quadrangle"

Option B
"Solar Harvest"

Option C
"Twin Court"

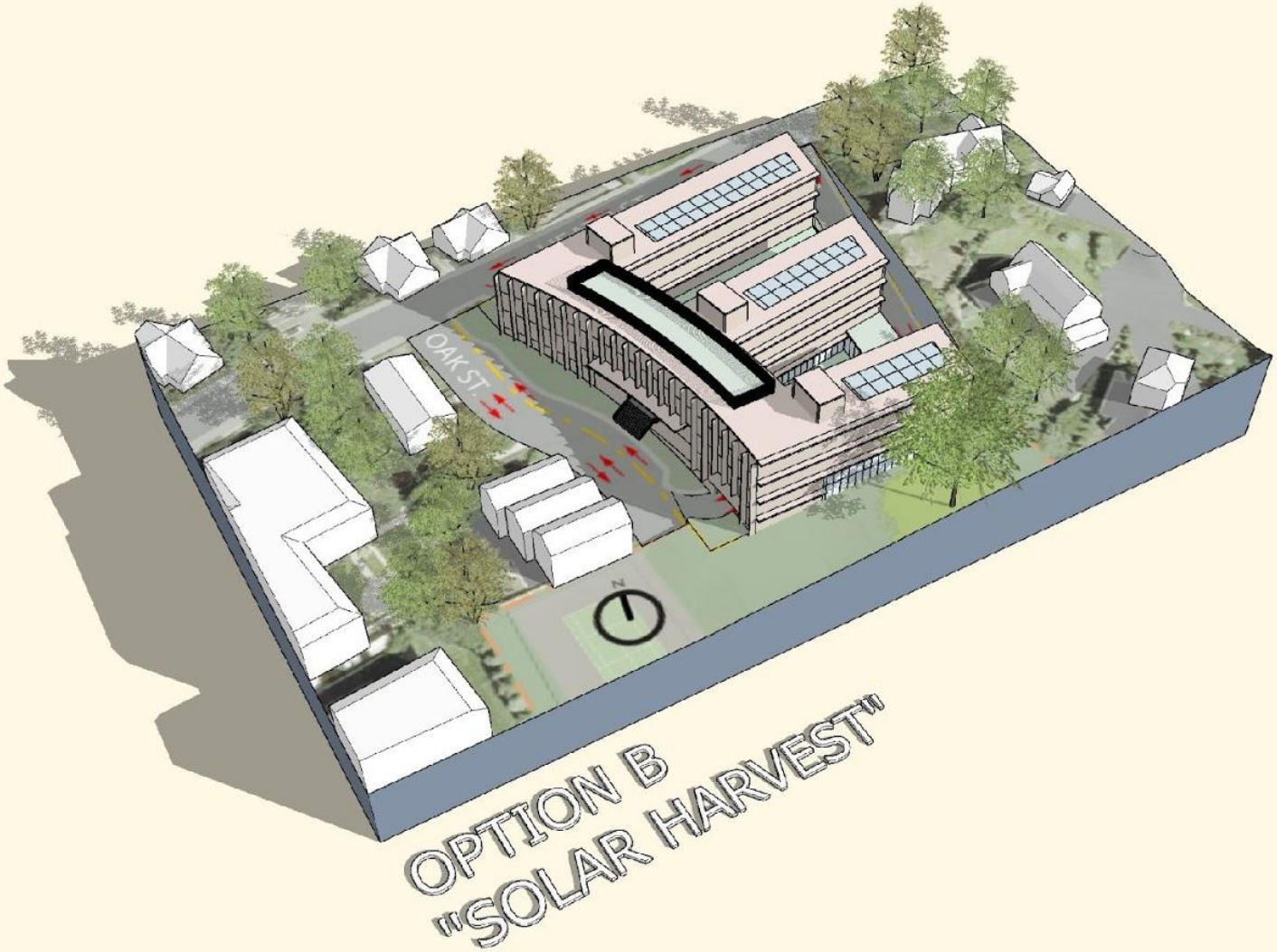
CONCEPT DESIGN THUMBNAIL SITE PLAN

Preliminary Concept Design Alternatives

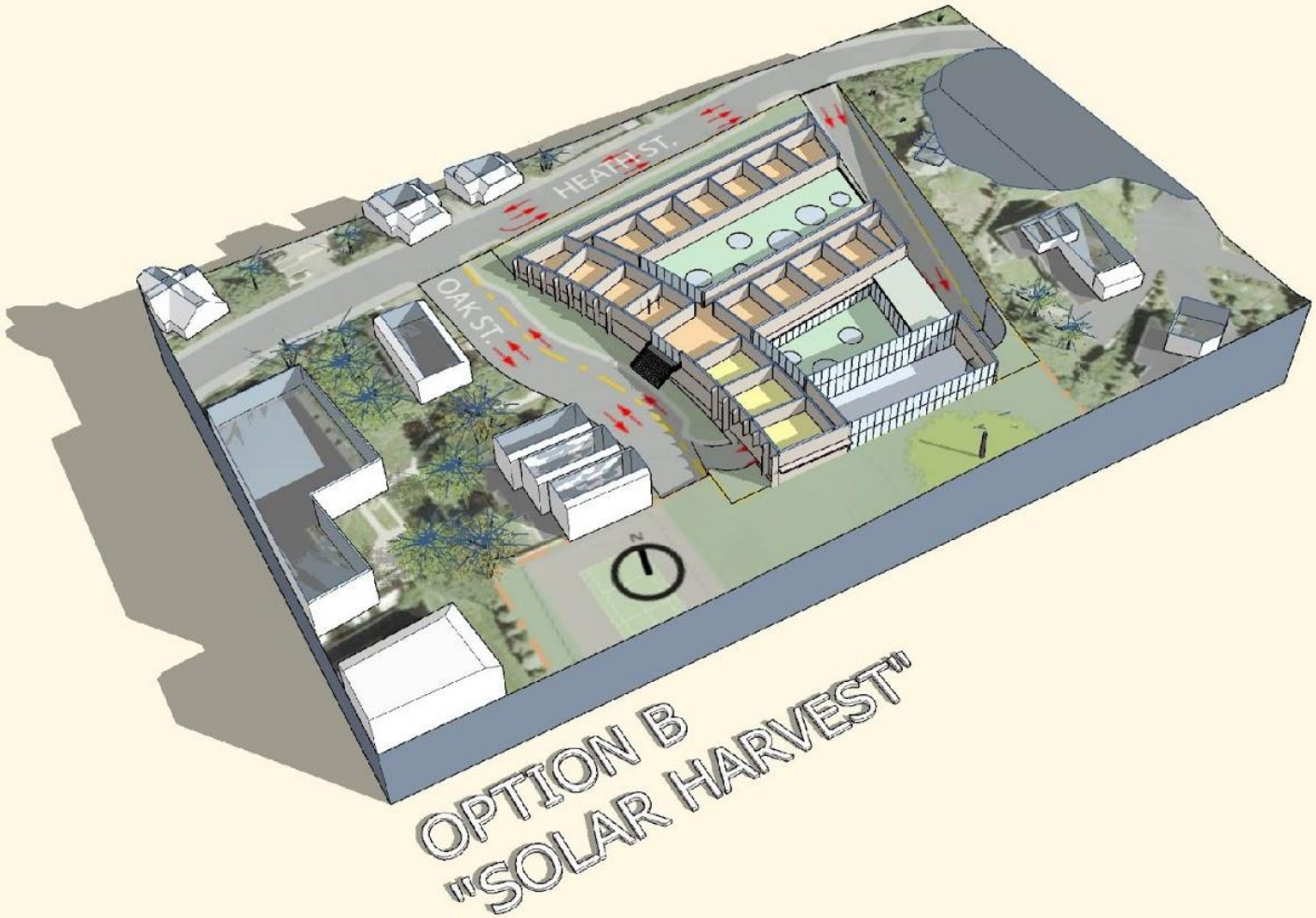


Preliminary Concept Design Alternatives

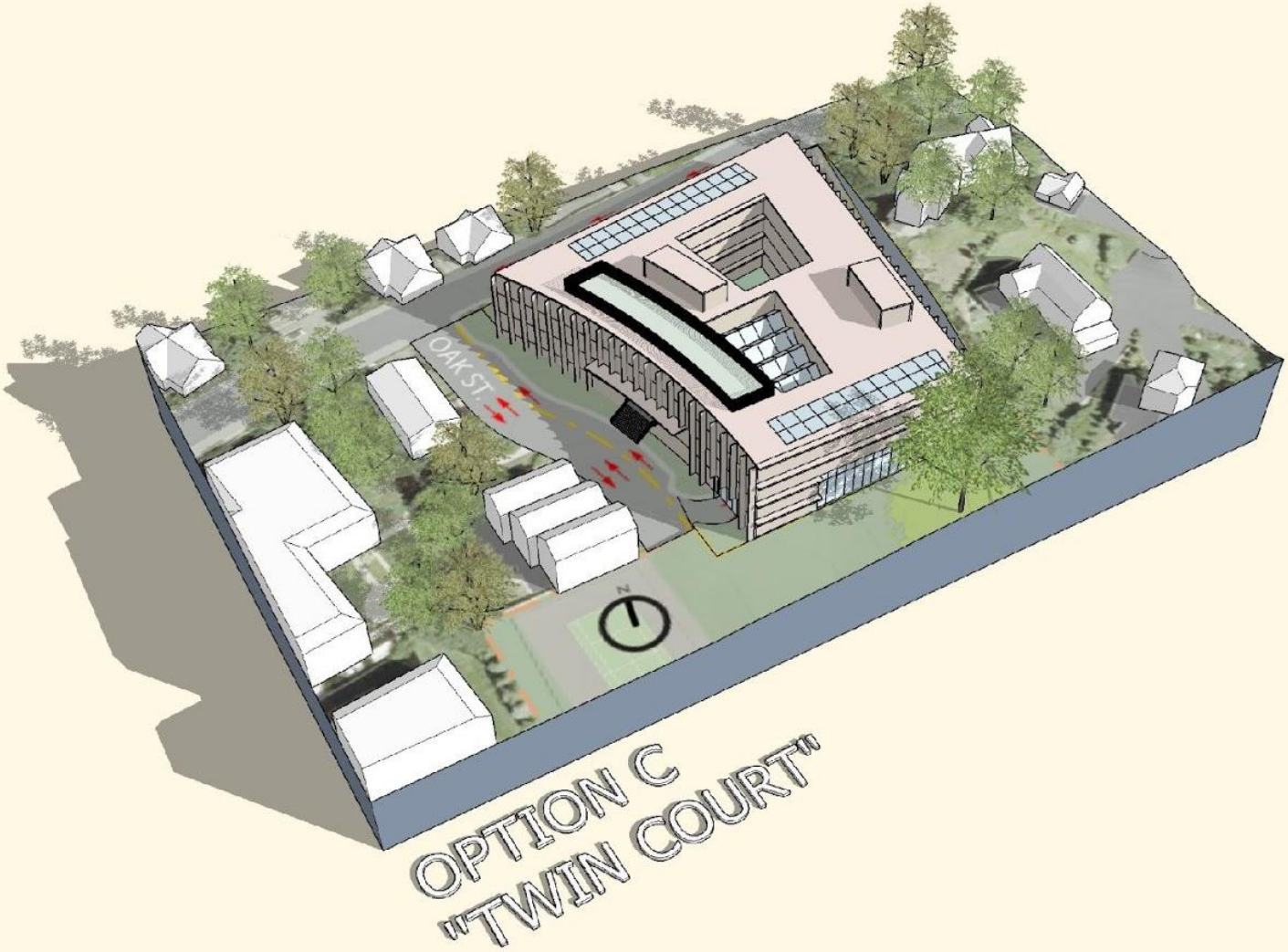
Preliminary Concept Design Alternatives



Preliminary Concept Design Alternatives



Preliminary Concept Design Alternatives



Preliminary Concept Design Alternatives

Preliminary Concept Design Alternatives

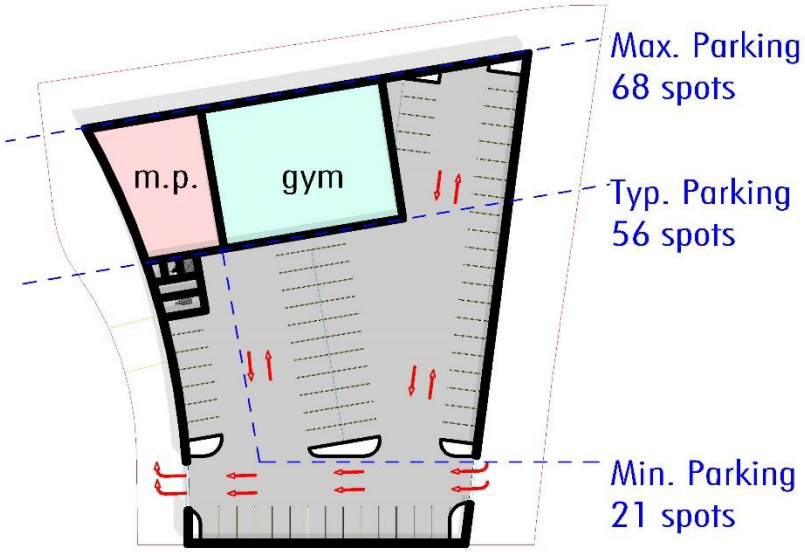
BALDWIN SCHOOL EXPANSION

Concept Options Evaluation Matrix

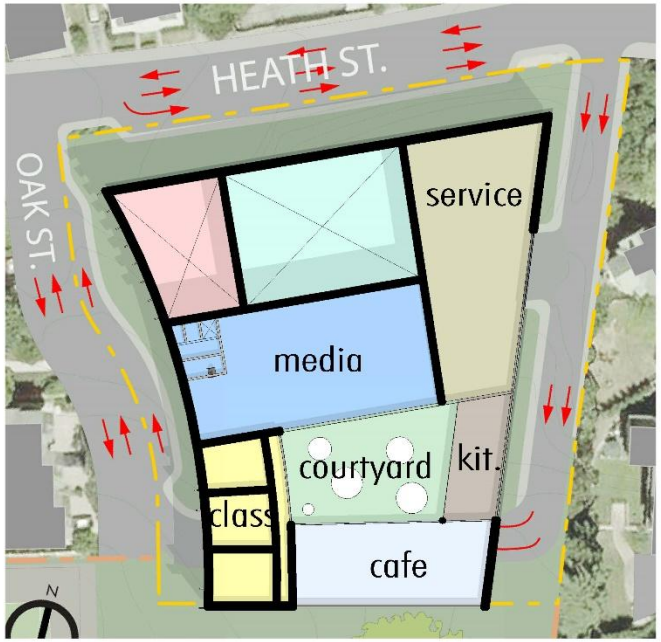
RATINGS: ● Advantageous ◒ Neutral ○ Disadvantageous

	PROJECT EVALUATION CRITERIA	OPTION A QUADRANGLE	OPTION B SOLAR HARVEST	OPTION C TWIN COURT	COMMENTS
Project Cost					
1	Project Cost - Includes 10 On-Site Parking Spaces under building, $1M for Sidewalks	$70M - $74M	$72M - $76M	$73M - $77M	
	Project Cost - Includes 40 On-Site Parking Spaces under building, $1M for Sidewalks	$76M - $80M	$78M - $82M	$79M - $83M	
Teaching and Learning					
2	Educational Program Accommodation	●	●	●	All accommodate program
3	Flexibility-Fixed Classroom Count per Cohort	●	●	●	Option B slightly less flexible due to courtyards along east side
4	Collaborative / Project Based Learning	●	●	●	All accommodate collaborative learning
5	Cohort Configuration, With Student Support	◒	●	◒	Option B has most successful cohort configuration with more defined wings
6	Core Space Location (Library/Cafeteria/Gym)	●	●	○	All have successful core space location
7	RISE	●	●	●	All can successfully include RISE
Project Viability Issues					
8	Schedule	◒	●	◒	Option B open courtyards are best lay-down area for construction
9	Traffic	◒	◒	◒	All similar and conform with traffic recommendations
10	Risk	◒	◒	◒	All similar
Site					
11	Construction Impact to Neighbors	◒	◒	◒	All similar
12	Open Space /Building Massing	○	●	○	Option B has more contextual massing and accessible open space
13	Community Use	◒	◒	◒	All allow convenient community use
Building Environment					
14	Flexibility-Building Systems	◒	◒	◒	All similar
15	Provides Logical, Clear Interior Circulation	◒	●	○	Option B has clearest circulation, Option C would be least intuitive
16	Security	●	●	◒	Option C would be least open visually due to more convoluted circulation
17	Natural Light	○	●	○	Option B has best solar orientation for daylighting
18	Connects Interior with Natural Outdoors	◒	●	○	Option B has all classrooms relating to outdoor play areas, Option C has fewest
19	LEED / Sustainability	◒	●	◒	Option B most energy efficient due to solar orientation
Long Term Costs		○	●	○	
20	Annual Maintenance Costs	◒	◒	◒	All similar
21	Annual Energy Costs	◒	●	◒	Option B most energy efficient due to solar orientation
	Total GSF	108,250	108,250	108,250	

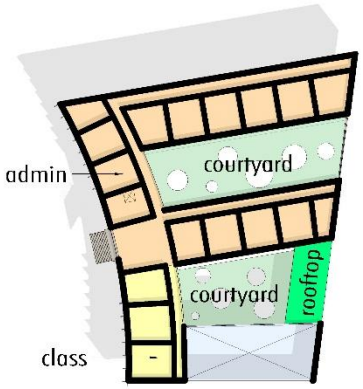
Option B – Solar Harvest



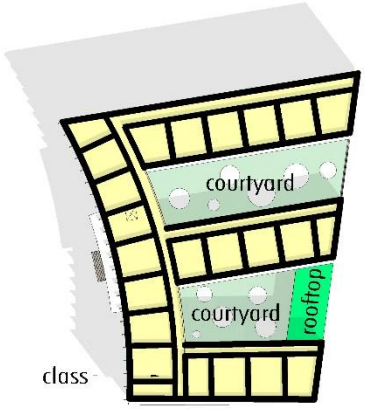
1 -1 GARAGE - OPTION B
1" = 50'-0"



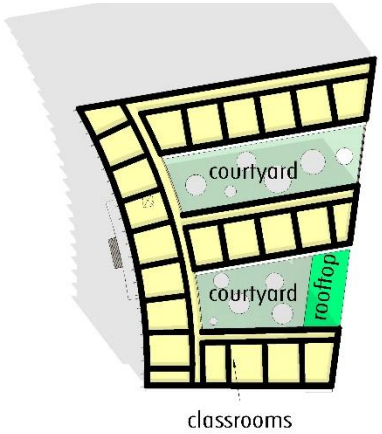
2 FIRST FLOOR PLAN - OPTION B
1" = 50'-0"



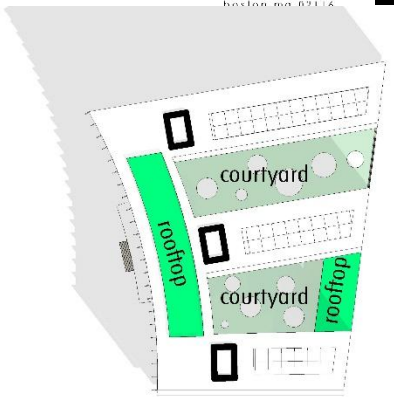
3 SECOND FLOOR PLAN - OPTION B



4 THIRD FLOOR PLAN - OPTION B



5 FOURTH FLOOR PLAN - OPTION B



6 ROOF PLAN - OPTION B

Preliminary Concept Design Alternatives

Options A, B, C from Oak Street

Preliminary Concept Design Alternatives

Option B Courtyard

Net Zero Carbon

Option 1:

All Electric 'VRF' HVAC Heating and Cooling

- Assumes purchase of Green Energy
- Order of Magnitude Cost = $1.55M

Option 2:

All Electric 'VRF' HVAC Heating and Cooling with

Roof –Mounted Photovoltaics

- Assumes PV's provide 50% Heating and Cooling Energy Needs with Balance from Green Energy
- Order of Magnitude Cost = $2.75M

Preliminary Project Cost Comparison
Includes 10 Parking Spaces under Building ($2M)

Includes $1M for sidewalk improvements

Option A
Quadrangle

$70M – 74M

Option B
Solar Harvest

$72M – 76M

Option C
Twin Court

$73M – 77M

Project Cost Estimate - Design Feasibility Phase

Feasibility Preferred Option B

- with 10 below grade parking spaces $72 - 76M
- with 40 below grade parking spaces $78 - 82M

HMFH Site Selection Pre-Concept Estimate $117M

Differences between Pre-concept and Feasibility Assumptions:

- Reduced school size (640 to 450 total students, 3+ section to 2 section)
- Queuing on site
- 4 vs. 5 occupied floors
- 10 structured parking spaces
- Additional design development savings
- Additional year of escalation

Cost References

Currently Proposed School Projects

Baldwin Feasibility Preferred Option B	**$82M, +450 seats**	**$182k/seat**
Driscoll Feasibility Preferred Option H	$105M, +172 seats	$610k/seat
Pierce K5/678 *	$173M, +299 seats	$579k/seat
Pierce 5 Opt.1 *	$142M, +110 seats	$1.3M/seat

Previously Studied School Projects

Baker 5 *	$138M, +213 seats	$648k/seat
Baker 3/3 Opt.1 *	$163M, +402 seats	$405k/seat
Heath *	$75M, +234 seats	$321k/seat

*For previously studied and Pierce, based on HMFH 6/18 cost data and does not include full escalation, swing space or land acquisition.

Note: Seat estimates based on 21 students per classroom and includes BEEP enrollment.

Brookline

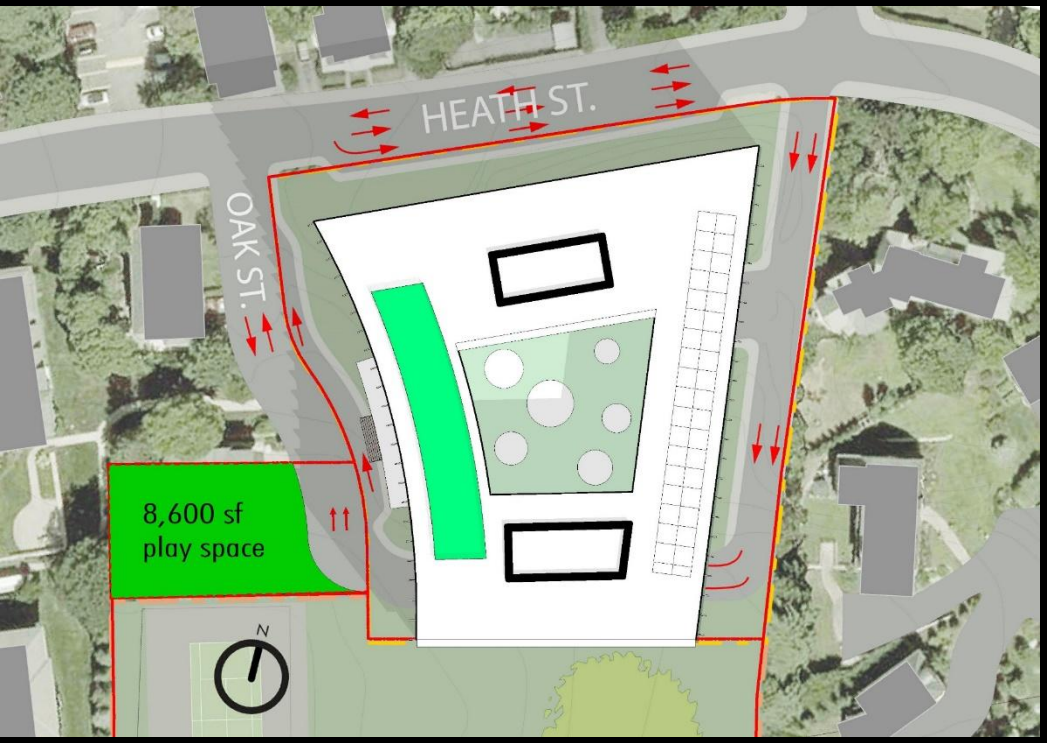
Baldwin Oak Street Parcel

Select Board and School Committee
November 27, 2018



Jonathan Levi Architects

Site Addition Options – Play Space



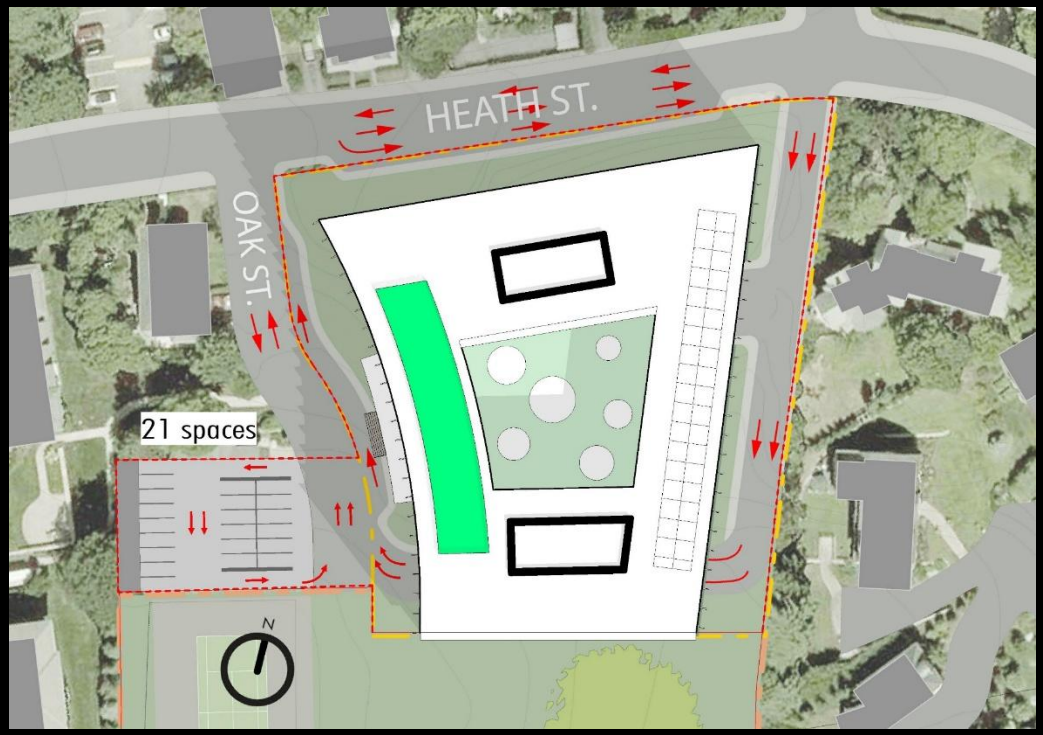
Project Benefits:

- Additional at grade play space

Jonathan Levi Architects

*Pre-Concept only - pending further study and zoning review

Site Addition Options – Surface Parking

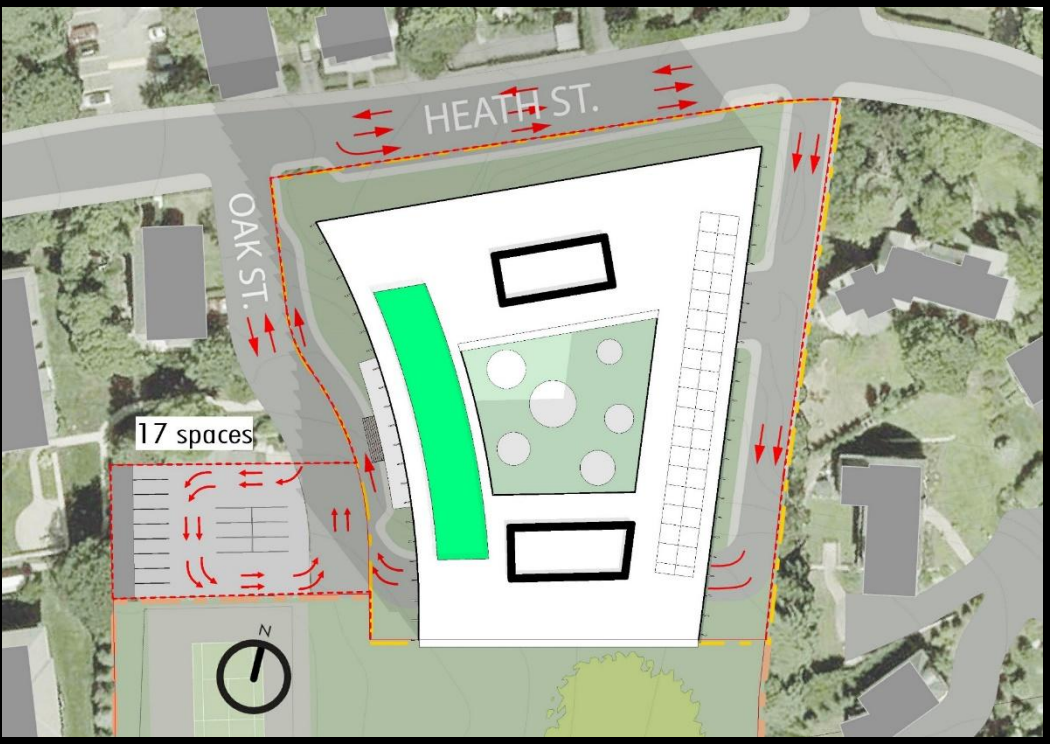


Project Benefits:

- Reduced structured parking.
- Reduced Ledge Excavation
- Enhanced Baldwin School Playground Access
- Enhanced School Access during Day

*Pre-Concept only - pending further study and zoning review

Site Addition Options – Surface Parking/Cul de Sac

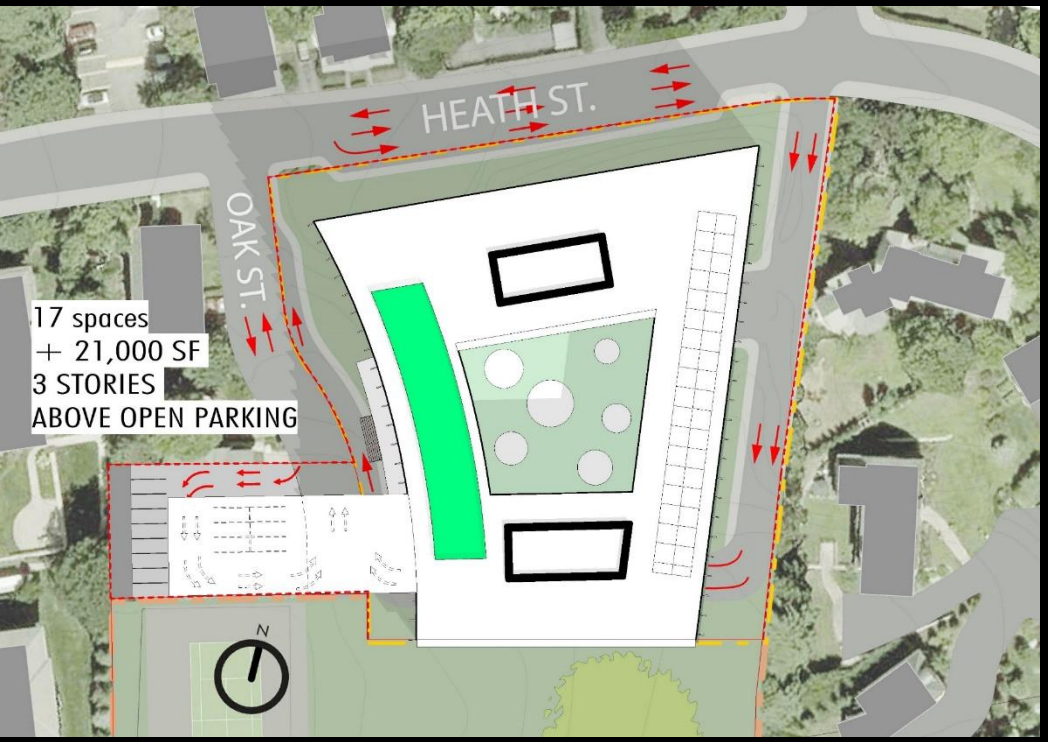


Project Benefits:

- Reduced structured parking.
- Reduced Ledge Excavation
- Enhanced Baldwin School Playground Access
- Enhanced School Access during Day
- Additional safety equipment turn around
- Additional Drop off
- Additional safety equipment turn around

*Pre-Concept only - pending further study and zoning review

Site Addition Options – Surface Parking with Building



Project Benefits:

- Reduced structured parking.
- Reduced Ledge Excavation
- Enhanced Baldwin School Playground Access
- Enhanced School Access during Day
- Additional safety equipment turn around
- Additional Drop off
- Greater building design flexibility
- Reduction of building height at Oak Street.

*Pre-Concept only - pending further study and zoning review

Site Addition Options – Oak Street View without Parcel

*Pre-Concept only - pending further study and zoning review

Site Addition Options – Oak Street View with Parcel

*Pre-Concept only - pending further study and zoning review

Appendix

Outreach to the Community

PUBLIC SCHOOLS of BROOKLINE

Baldwin

10/17 and 11/26

- Neighborhood Community Forum at Baker School

11/1

- Neighborhood Community Forum at Heath School

10/12

- Focus Group with RISE parents

Throughout October-November

- Meetings with Baldwin abutters and neighbors

Driscoll

6/21, 6/22, 9/25, 10/29, 11/26

- Neighborhood Community Forum at Driscoll School

9/12, 11/9

- Focus Groups with Driscoll Staff

9/22

- Educational Visioning Session

Throughout October-November

- Meetings with Driscoll abutters and neighbors

Baldwin School Design History

PUBLIC SCHOOLS of BROOKLINE

2016	9th School Site Selection Target	800 Students	157,553 Square Feet (Gross Floor Area)
2017	Baldwin 9th School Feasibility Study	660 Students	136,449 Square Feet (Gross Floor Area)
2018	**Current Baldwin School Expansion**	**420 - 450 Students**	**107,656 Square Feet (Gross Floor Area)**

On-site Parking at PSB Schools

	Staff	Families	Visitors
Baker	On Site + Street	None	Limited to Circle
Coolidge Corner	On Site + Street	None	Limited to Circle
Driscoll	**On Site + Street**	**None**	**None**
Heath	On Site + Street	None	Limited to small off street lot
Lawrence	Street	None	None
Lincoln	On Site + Street	None	Limited to Circle
Pierce	On Site + Street	None	None
Runkle	Street	None	None
Brookline High	On Site + Street	None	None
BEEP	On Site + Street	None	None
Baldwin (Proposed)	**Street**	**On-Site**	**On-Site**

Existing PSB Staff Parking Plans

PUBLIC SCHOOLS of BROOKLINE

	Total # of Staff Parking Spaces	# of Staff Parking Spaces on School Property	# of Staff Parking Spaces on Town Streets	Estimated Longest Walk for staff (mi)	% of Staff Parking On-Site	% of Staff Parking on Town Streets
Brookline High	225	25	200	0.6	11%	89%
Baker	132	64	68	0.5	48%	52%
Coolidge Corner	175	65	110	0.5	37%	63%
Driscoll	**105**	**52**	**53**	**0.3**	**50%**	**50%**
Heath	68	32	36	0.3	47%	53%
Lawrence	102	0	102	0.3	**0%**	**100%**
Lincoln	102	69	33	0.2	68%	32%
Pierce	135	85*	50	0.2	63%	37%
Runkle	120	0	120	0.3	**0%**	**100%**
BEEP @ Putterham	18	0	18	0.4	**0%**	**100%**
BEEP @ Beacon	18	0	18	0.4	**0%**	**100%**
BEEP @ Lynch	26	20	6	N/A	77%	23%
Baldwin (Proposed)	**86**	**0**	**86**	**0.5**	**0%**	**100%**