



Arlington Public Schools

New Elementary School at Reed-Westover
CONCEPT DESIGN PHASE REPORT 04.05.2018

VMDO believes that our best projects are the result of deep collaborations with all project stakeholders. We wish to thank the APS School Board, the Building Level Planning Committee, Public Facilities Review Committee, and the school based and central office staff that participated in this process.

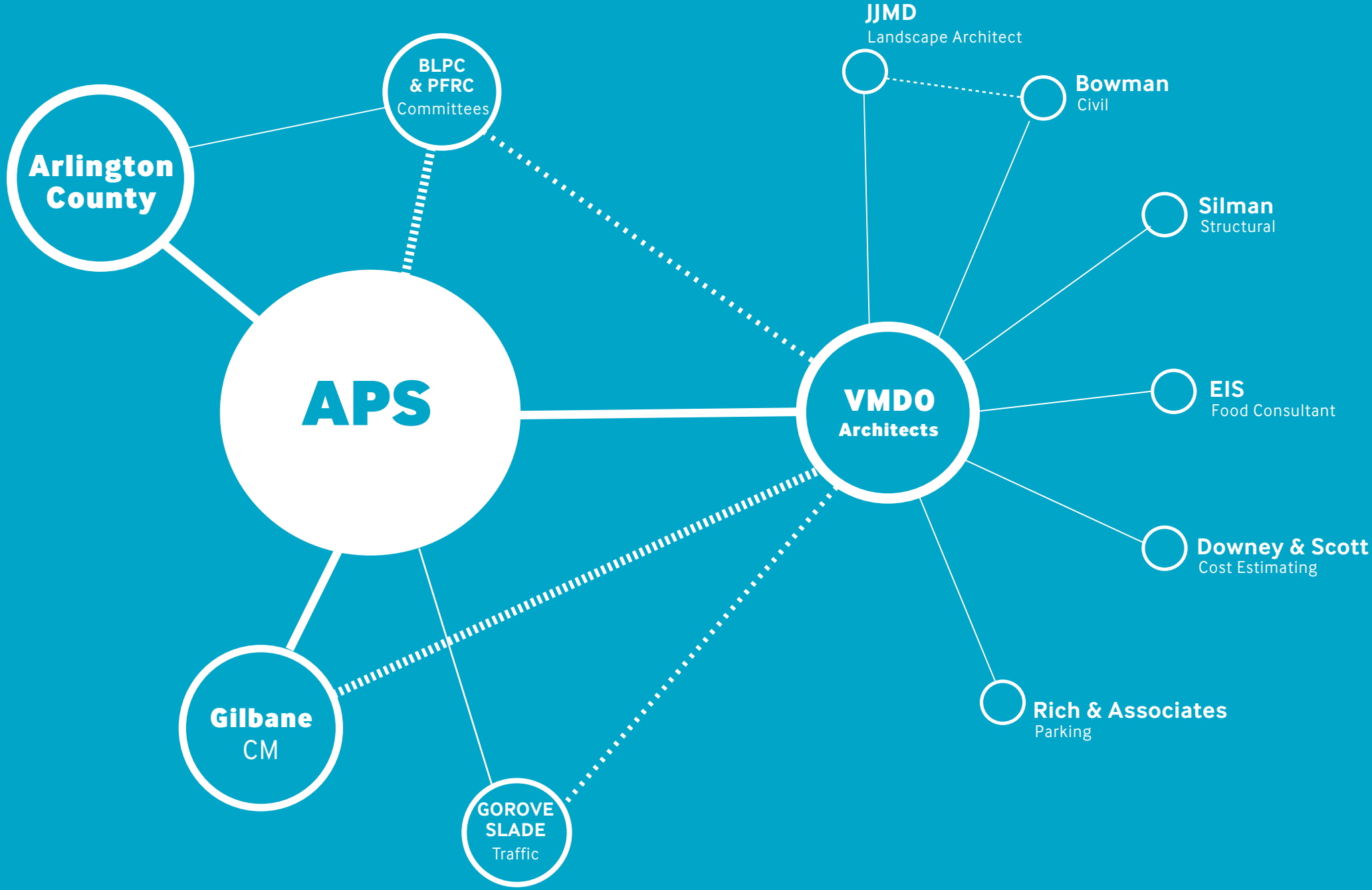
We appreciate their collective vision and the trust that they have placed in us as designers.

We also recognize that countless hours of time have been invested in our shared goal of creating a better school and we thank each of them for their contributions. We believe they will pay great dividends for the children of Arlington for many years to come.

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Project Team Relationships



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Introduction

Executive Summary

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Community Roles & Project Chronology

Site Photos & Overview

Previous Studies at Reed-Westover Site

Executive Summary

Overview

This report documents the Conceptual Design process for the proposed new elementary school at the Reed site. The site is located at the intersection of Washington Boulevard and McKinley Road and shares a border with three civic associations: Highland Park/Overlee Knolls, Westover Village, and Tara-Leeway Heights. After a well-attended public engagement process that included the School Board appointed Building Level Planning Committee (BLPC), County Board appointed Public Facilities Review Committee (PFRC), and community members, which lasted almost five months, the Arlington Public Schools (APS) staff recommendation is to demolish the one-story portion of the existing building, and replace it with a four-story addition – resulting in at least 725 new elementary seats serving Pre-Kindergarten through Fifth Grade. In the existing building to remain, space that is currently occupied by APS will be renovated to accommodate the new elementary program. No changes to the library are anticipated as part of the project. This design scheme is referred to as the “Integrated” option. The school will be constructed using the Construction Manager At-Risk (CMR) method, with a Guaranteed Maximum Price (GMP) that will assure the project will be completed at, or under, the approved maximum amount of \$55 million. As directed in the School Board motion approving the Concept Design (see Appendix School Board Approval), the architect, CMR, and APS staff will be closely working together in the schematic design phase to explore all options to reduce cost without compromising the number of seats or quality of the learning spaces. The following is an executive summary of the highlights of this Concept Design Report and the major issues surrounding the project.

What previous studies have been done for this site?

In many ways, the Reed site exemplifies one of the most difficult issues facing APS during this time of rapidly growing enrollment: APS already owns property that can accommodate a new school, but that property is cherished by local neighborhoods as precious open space for both passive and active recreation. Because APS owns this land, it has been the subject of numerous feasibility and Capital-Improvement-Plan (CIP) studies. One study looked at building a 420 capacity elementary school on North Lexington Street; another proposed renovating and adding to the current facility to achieve a capacity of 600; and the most recent one looked at a major construction project to create a 1,300 student middle school on the site. In strenuous opposition to the middle school project, the surrounding neighborhoods acknowledged that the site had to be considered for additional capacity, but the new project should be a neighborhood elementary school.

Didn't we strengthen the existing school to expand vertically?

Yes, the School Board did approve funds to “harden” a portion of the existing building to accommodate a second floor. Footings, beams and columns were upsized to allow for one additional floor to be added over only the curved portion of the building. A new structural assessment was conducted using existing drawings and visual inspections. While it was generally confirmed that, with some reinforcement, the building’s foundations, columns and beams could accommodate one more floor, this task would be much more complex and expensive than most people anticipated. A concrete floor deck wasn’t poured during the 2009 construction, only a roof deck. This means the existing roofing and portions of the deck would need to be replaced, exposing portions of the interior to the elements during construction. We don’t know why this decision was made ten years ago, but there are many logical possibilities: perhaps it was uncertainty as to where future floor penetrations would be located, particularly for the new stairs and elevator; perhaps it was a reasonable value engineering compromise to keep first construction costs lower. Not only would the sequencing of events make it difficult and costly to keep any of the interior finishes on the first level, but all that extra expense would only result in one additional floor when about twice as much new space is needed to accommodate 725 students.

How were options at or below the \$49 million dollar approved funding explored?

Six different schemes were explored in order to meet the BLPC charge of three price options. All of them had to deal with a 20 foot wide easement for a very large stormwater pipe that essentially cuts the site into two halves. One concept was significantly under the approved funding, but the solution involved a small, separate school building for grades 3-5 only with a separate administration, a solution not acceptable to APS. Two schemes looked at adding a second floor and connecting to an addition. Adding behind and uphill of the school proved to be significantly over the approved funding with major constructability issues. Putting an addition in the current parking lot and making a bridge connection over the stormwater pipe proved to be just slightly over the approved funding (although it was still unclear if Arlington County would accept the bridge over a large sewer line easement). Building a structure for grades 2-5 next to the existing school (without adding a second floor to the existing building or bridging over the easement) proved to be at the approved funding. Grades PK-1 would be accommodated in the existing facility and they would share an administration in an upper/lower school configuration. Thinking about the problem in a different manner, two other options were

considered. The first was a “standalone” new school for 725 students built entirely on the other side of the large utility easement. It was the most expensive option, but provided 1,003 total additional seats to the site, at the lowest cost per seat of all options. This option had loud opposition by neighbors and both the BLPC and PFRC, due to the major loss of open space and the additional capacity. The final option was to build everything on the school side of the easement, which required demolition of the one-story portion of the existing school and building 4 stories in its place. In contrast to the “Standalone” scheme, this scheme was tightly “Integrated” into the existing building, therefore its name. This scheme has broad support from both committees and the public, so much so that it is the only acceptable option to the BLPC and PFRC, despite having an estimated cost of \$55 million.

Has a traffic study been conducted?

Yes. The majority of the data was collected and analyzed during the Concept Design phase. The only remaining information to be collected is supplemental data collected in warmer weather, and it is not expected to significantly alter the preliminary recommendations. The traffic consultant used this data, combined with in-person observations, to assist the architect in creating various options for parking, parent drop-off and bus queuing. The final traffic study will be complete and submitted with the Schematic Design. The anticipated solution is an expansion of both existing surface lots, with parent drop-off in the 18th Street lot and bus queuing at the curbside. This solution was presented at the final joint BLPC/PFRC meeting of concept design and seemed to have broad support.

ARLINGTON PUBLIC SCHOOL BOARD

Patrick K. **Murphy**, Superintendent
 Barbara **Kanninen**, Chair
 Reid **Goldstein**, Vice Chair
 Monique **O’Grady**, Member
 Tannia **Talento**, Member
 Nancy **Van Doren**, Member

BUILDING LEVEL PLANNING COMMITTEE (BLPC)

Chair
 Hans **Bauman**, Chair

PTA/Parents
 Lauren **Reardon**, Discovery ES
 David **Goodman**, Glebe ES
 Fraser **Kadera**, McKinley ES
 Stacy **Rosenthal**, Nottingham ES
 Julie **Pandya**, Tuckahoe ES

Civic Associations
 Michael **O’Malley**, Highland Park Overlee Knolls
 Dianne **Hasselman**, Highland Park Overlee Knolls
 Molly **Ketcham**, Westover Village
 Michelle **Hejl**, Tara - Leeway Heights
 Vanessa **Guest**, Leeway Overlee Civic Association
 Stephanie **Talton**, Dominion Hills
 Sheila **Leonard**, Madison Manor

Other
 Miles **Mason**, Facility Advisory Council (FAC)
 Hamna **Shariq**, Student Advisory Board (SAB)
 James **Schroll**, Public Facilities Review Committee (PFRC)
 Bill **Braswell**, Immediate Neighbor / Previous BLPC
 Monique **O’Grady**, School Board Liaison
 Susan **McCarthy**, Branch Services, Westover Library

APS Instruction
 Eileen **Wentzel**, Assistant Principal, McKinley
 Tani **Vaughn**, Teacher, McKinley
 Kristen **Bartholomew**, Teacher, McKinley
 Allison **Andrews**, Teacher, Barcroft
 Wendy **Pilch**, Director of Elementary Education
 Heather **Hurley**, Supervisor of Personalized Learning

ARLINGTON PUBLIC SCHOOLS FACILITIES

John **Chadwick**, Assistant Superintendent for Facilities and Operations
 Jeff **Chambers**, Director of Design and Construction
 Benjamin **Burgin**, Assistant Director of Design & Construction
 Ajibola **Robinson**, Project Manager
 James **Meikle**, Director of Maintenance Services

PUBLIC FACILITIES REVIEW COMMITTEE (PFRC)

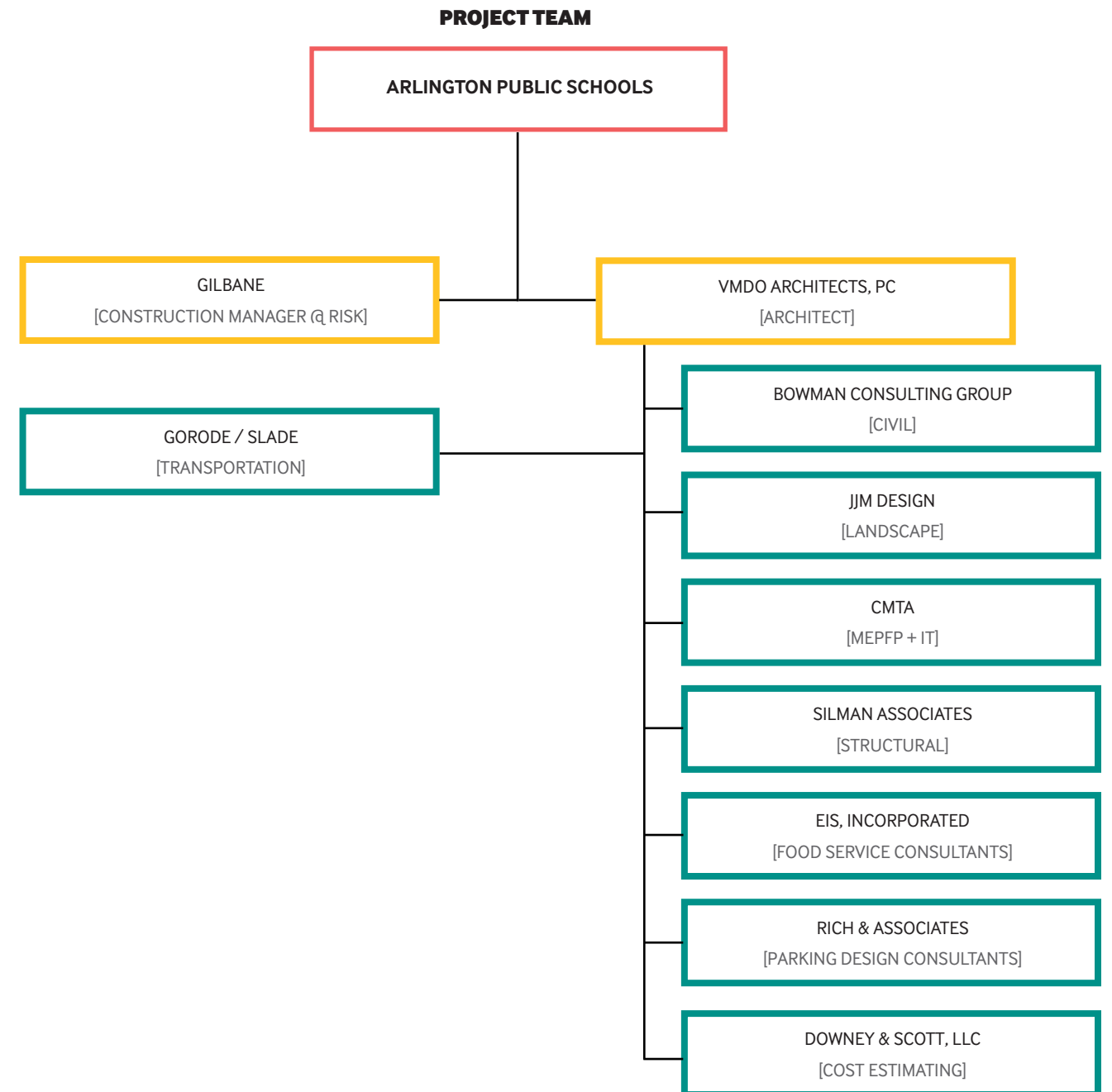
Core Members
 Hans **Bauman***, Seat 10 - APS Rep (BLPC Chair)
 James **Schroll***, Chair, PC Rep
 Doris **Ray**, Seat 2 - DAC Rep
 Stephen **Hughes**, Seat 3 - PC Rep
 Jessica **Skerritt**, Seat 4 - E2C2 Rep
 Jim **Lantelme**, Seat 5 - PC Rep
 Stephen **Baker**, Seat 6 - FAAC Rep
 Todd **McCracken**, Seat 7 - APS Rep
 Jeffrey **Certosimo**, Seat 8 - Housing Commission Rep
 Chris **Forinash**, Seat 9 - At Large
 Terri Hume **Prell**, Seat 11 - At Large
 Michael J. **Grace**, Seat 12 - PRC Rep
 Kevin **Rachlin**, Seat 12 Alternate - PRC Rep
 Michael **Perkins**, Chair, Seat 13 - TC Rep
 Nora **Palmatier**, Seat 14 - At Large

Reed Project Specific Members
 Mike **O’Malley***, Highland Park - Overlee Knolls
 Michelle **Hejl***, Tara-Leeway Heights
 Molly **Ketcham***, Westover Village

Other
 Rob **Swennes**, Highland Park, Westover Farmers Market
 Kristy **Peterkin**, Westover Retail

VMDO ARCHITECTS PROJECT TEAM

Wyck A. **Knox**, AIA, LEED AP, Principal in Charge, Project Manager
 Robert **Winstead**, AIA, LEED AP BD+C, Project Architect
 Joey **Laughlin**, Job Captain
 Tyler **Jenkins**, Staff Designer
 Rebecca **Shealey**, LEED AP BD+C
 Mallory **White**, Staff Designer



Community Roles & Charges

Building Level Planning Committee (BLPC)

1. Primary Role:

The primary role of the BLPC is to serve as the principal communication liaison with community stakeholders. The BLPC is expected to assure effective community input during the design and construction of the project, and to collaborate with various community stakeholders to create plans that are broadly supported. Facilities and Operations Department staff shall facilitate the work of the BLPC in carrying out this critical communication function. BLPC members shall establish regular lines of communication, including email lists, web sites and attendance at community meetings, to assure appropriate community engagement in the process.

2. Communications:

Communication with stakeholders interested in school construction projects is critical. The following key roles have been identified to assure effective communication and community engagement in the BLPC process.

- PTA members of the BLPC shall keep parents informed of Concept Design, Schematic Design and other progress of the project.
- Civic association members of the BLPC and the Chair of the BLPC shall ensure notification and provide information to neighbors of the school regarding the Concept Design, Schematic Design and other progress of the project. Comments should be solicited by and shared with the BLPC for consideration.
- The BLPC, in conjunction with its civic association members, or through direct contact with the civic associations, shall ensure notification and coordination of the Concept Design and Schematic Design and progress of the project through outreach to the broader community through the civic associations. Comments should be solicited by and shared with the BLPC for consideration.
- The BLPC shall provide information on the Concept Design, Schematic Design and other progress of the project to the greater Arlington community. Comments, and/or directions, received from the School Board, or comments received directly from community members, shall be considered by the BLPC.
- The BLPC shall assist the staff of the Department of Facilities and Operations and the project architect with a public meeting prior to completion of Schematic Design. The BLPC shall receive comments from the public, the School Board, the County Board, PFRC, and relevant County Commissions.
- Facilities and Operations staff shall inform BLPC members of any School Board meeting agenda items concerning the project.

3. School Board Direction:

The BLPC will assist the School Board to achieve Goal 4 of the APS 2011-17 Strategic Plan 4 to Provide Optimal Learning Environments that are adaptable to future changes of use, energy efficient, environmentally sustainable, and provide adequate outdoor space for physical education, recess and community use.

The BLPC shall remain mindful throughout its participation that the project must be completed on time and within or for less than \$49 million, and that it must accommodate the minimum number of students approved by the School Board.

Link to BLPC Charge:

<https://www.apsva.us/wp-content/uploads/2017/09/NES-at-Reed-BLPC-charge-SB-approved.pdf>

Public Facilities Review Committee (PFRC)

1. Mission:

The Public Facilities Review Committee's (PFRC) mission is to ensure that the highest quality of land use planning, design, transportation planning, and other important community aspects are incorporated into civic projects as assigned to the Committee by the Arlington County Board.

2. Scope of Duty:

PFRC is being formed as a mechanism for advisory commissions and committees to have timely input on the development of significant County and School projects prior to the formal submittal of the project for public hearings held by the Planning Commission and County Board. The major responsibilities of the PFRC are the following:

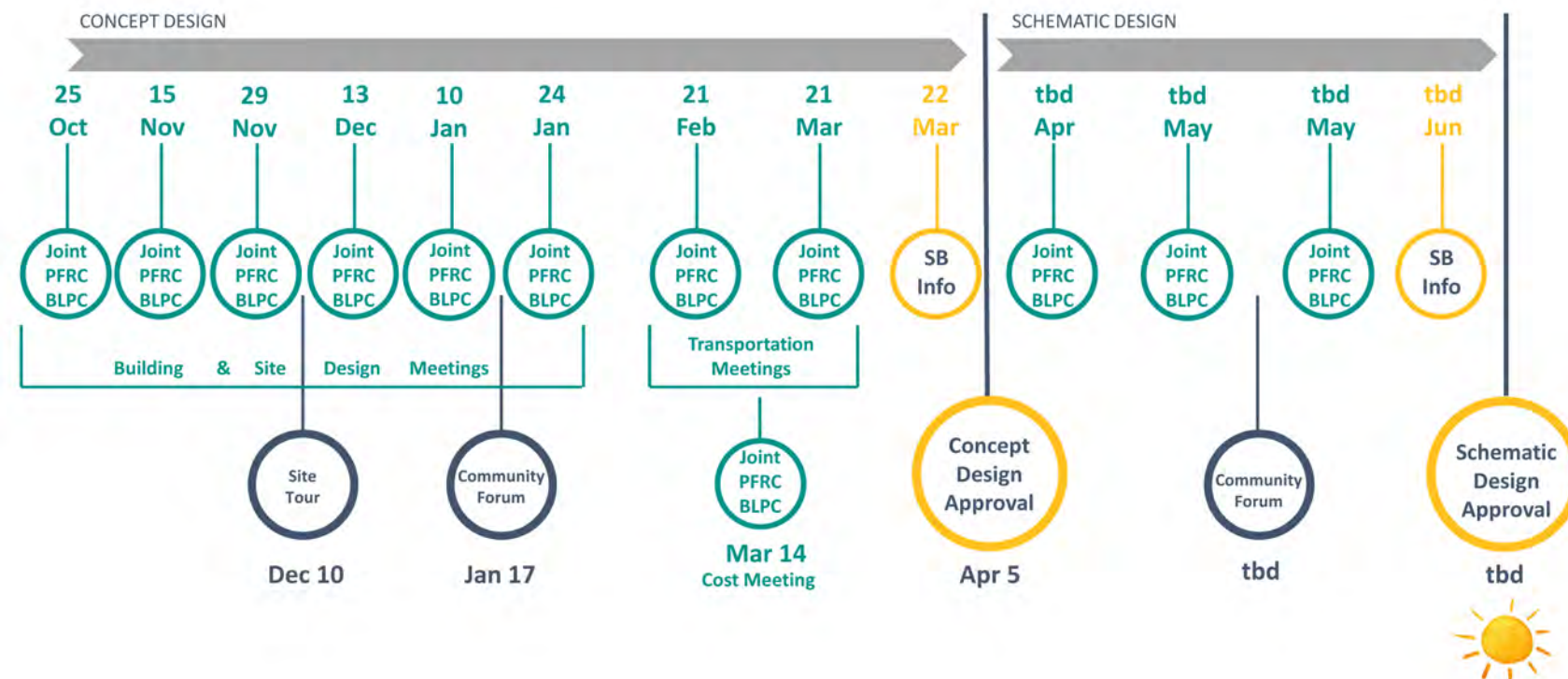
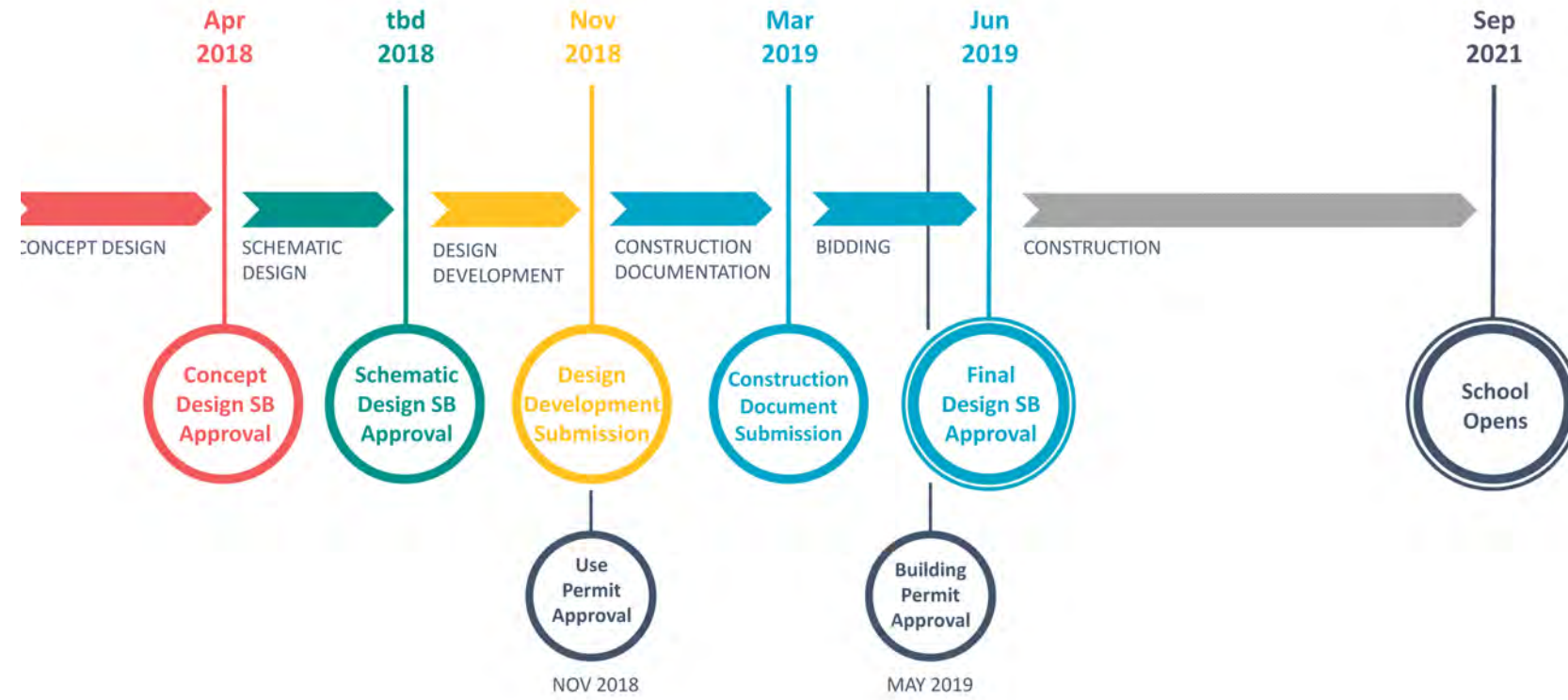
- Provide a forum in which the Planning Commission, citizens' community groups, advisory commissions and committees can have a dialogue with the project lead and other staff to review, discuss, and comment on any important public facility project.
- Ensure that the highest quality of land use planning and design is incorporated into development projects; Promote compliance with the County's Comprehensive Plan, other planning documents and County policies; Address community concerns and goals.
- Help inform commissions and the County Board on the outstanding issues with regard to a specific plan and any conditions which it might determine to be necessary or appropriate to address those issues.
- Provide an efficient means for broad-based public participation, precluding the necessity of multiple presentations to and reviews by each individual commission during the development phase. The PFRC provides the forum for everyone to be heard during the development of the public facility.
- Provide advice to the County Board and County Manager in the development of the Capital Improvement Program.

It is not the purpose of the PFRC to address programmatic needs and interior design; however it may be necessary to discuss the interior/layout as it may impact the exterior, placement, or massing of the building.

Link to PFRC Charge:

https://arlingtonva.s3.amazonaws.com/wp-content/uploads/sites/5/2014/06/PFRC_Charge_June2014.pdf

Project Chronology



Site Photos

- 1 Westover Library at Washington Blvd & N McKinley Rd
- 2 Westover Library & Children's School along N McKinley Rd
- 3 Children's School Entry at N McKinley Rd
- 4 Children's School along N McKinley Rd
- 5 Children's School at N McKinley Rd and 18th St N
- 6 North West Facade of Westover Library and Reed School
- 7 Baseball Diamond along 18th St N
- 8 Sledding Hill looking toward Reed School
- 9 N McKinley Rd at Washington Blvd looking North East
- 10 North West Wooded Playground

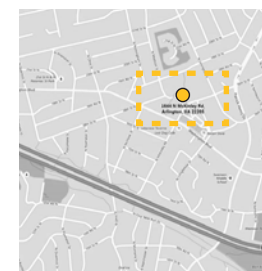
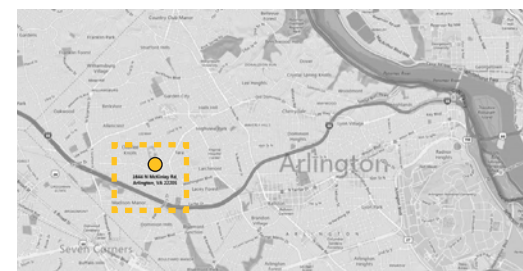
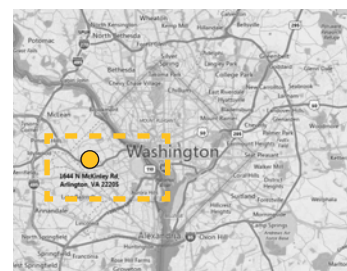


Site Overview



The Reed site is located within the Overlee Knolls' Civic Association, and is adjacent to the Westover precinct. It is bounded by N Lexington St to the North, 18th St N to the East, Washington Blvd to the South, 18th St N / 19th St N to the West. Existing uses at the Reed site include the Westover Branch Library, The Children's School and Integration Station, a community park located at the intersection of N Lexington St and 18th St N, a "pee-wee" size softball field used primarily by youth baseball, playfields, sledding hill, paved basketball courts and two playgrounds. The site also includes passive open spaces and two surface parking lots.

The Walter Reed Elementary School was originally built in 1938 and underwent expansions and renovations in 1950, 1966, and 2009. It currently serves as the Westover Branch of the Arlington Public Library and The Children's School and Intergration Center for Arilington Public Schools.

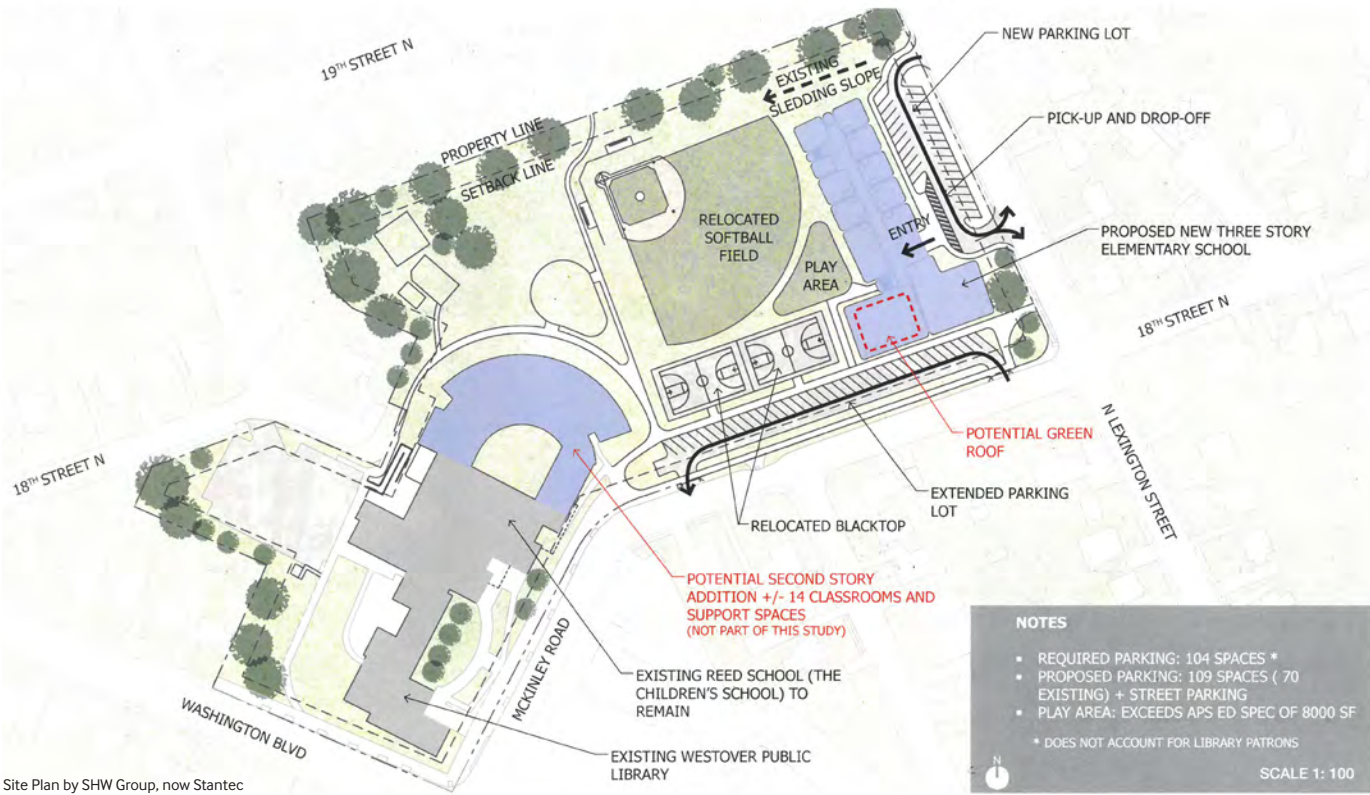
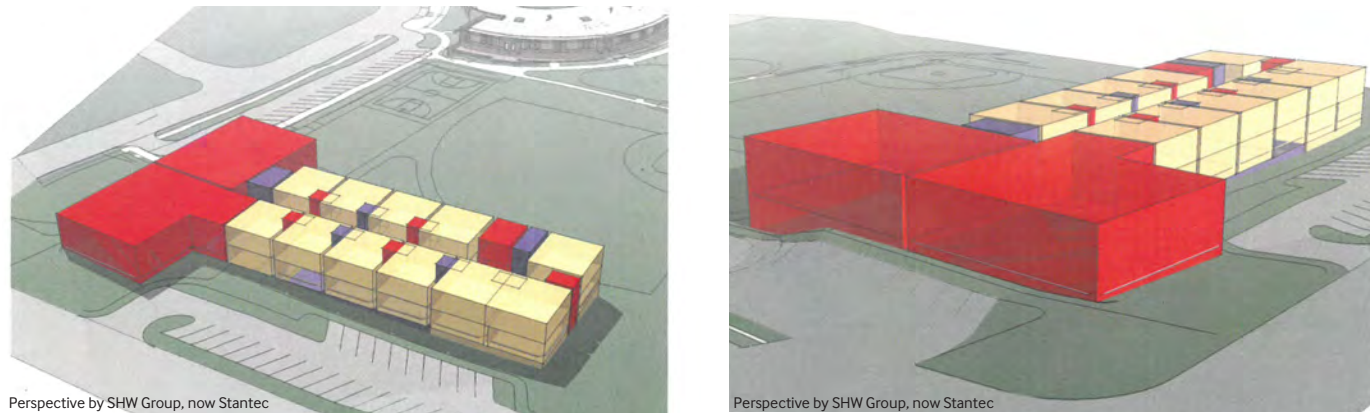


- A. ARLINGTON PUBLIC LIBRARY - WESTOVER BRANCH
- B. THE CHILDREN'S SCHOOL & INTEGRATION CENTER
- C. SOFTBALL FIELD
- D. PLAY FIELD
- E. BASKETBALL COURT
- F. EXISTING NORTH WEST PARKING LOT
- G. EXISTING 18TH ST PARKING LOT
- H. SLEDDING HILL
- I. WESTOVER VILLAGE

Previous Site Studies at Reed-Westover

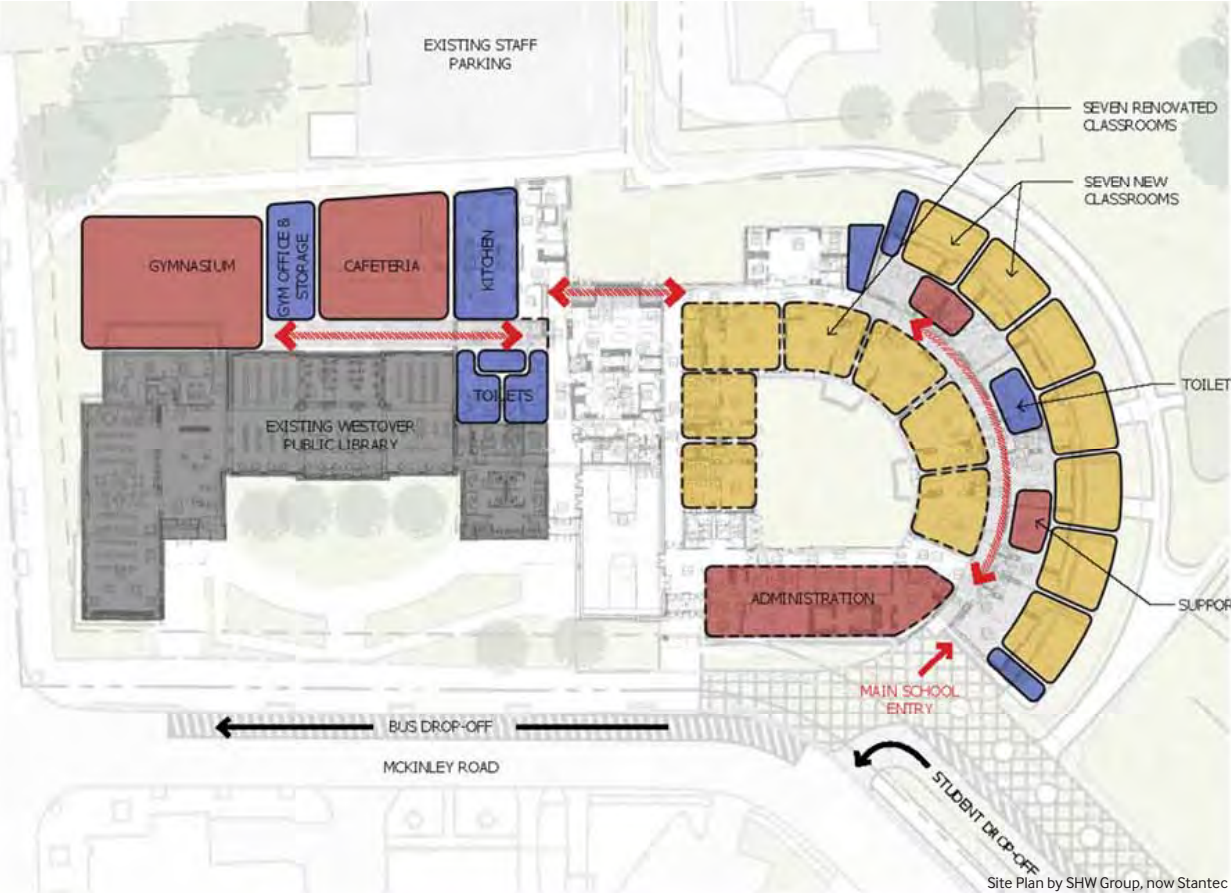
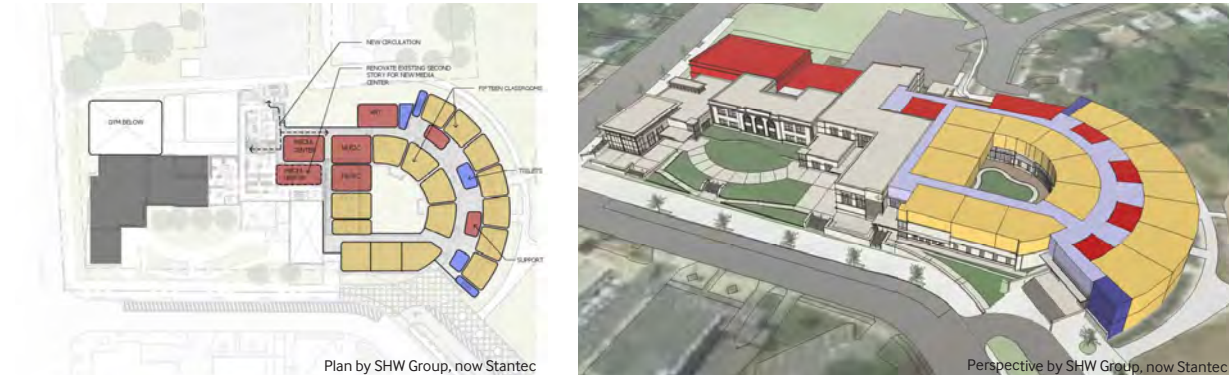
Expansion Feasibility Study

420 Maximum Capacity in New Elementary



2014 CDP/CIP Feasibility Study

600 Maximum Capacity in New Elementary

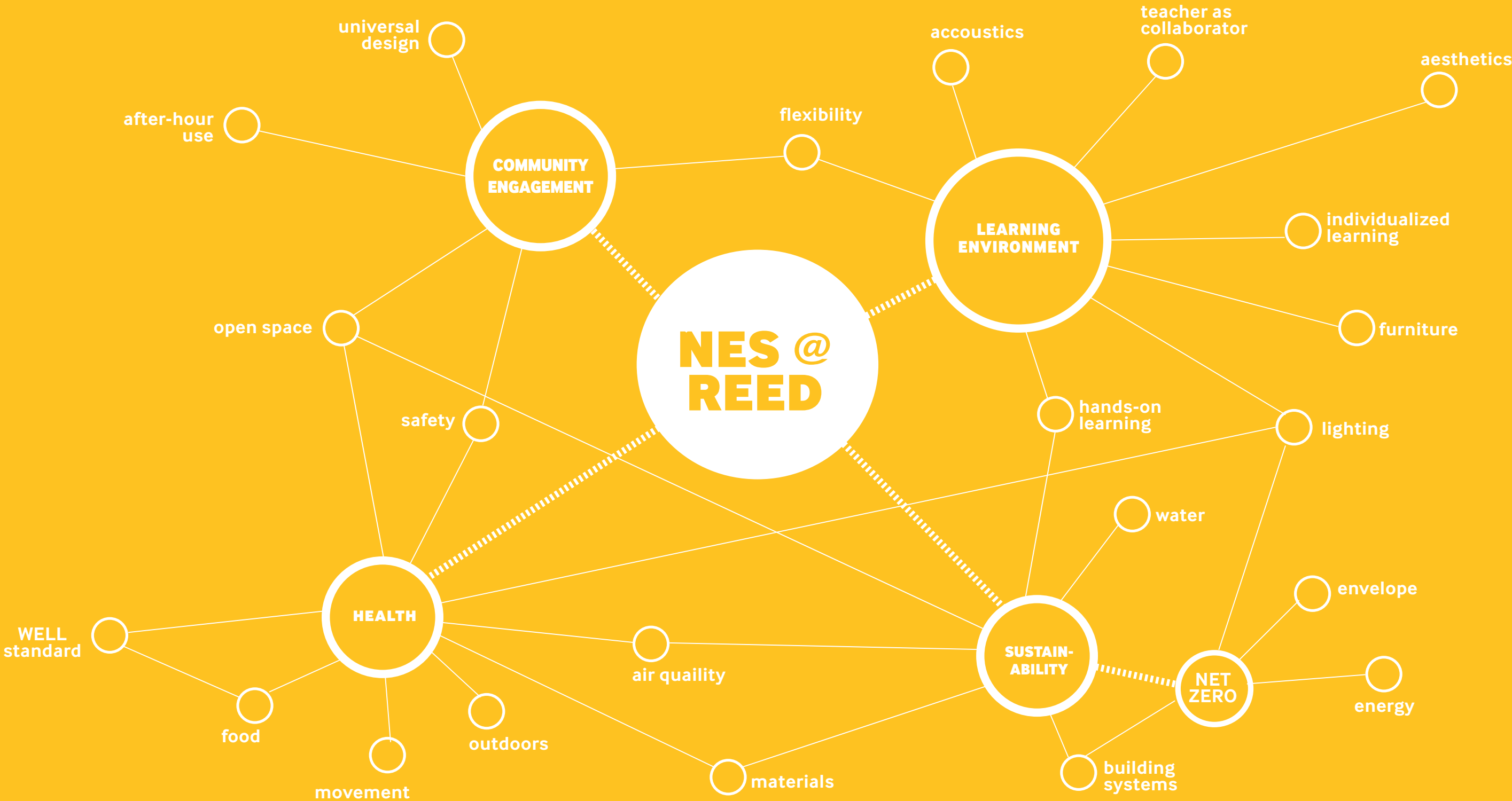


2014 CDP/CIP Feasibility Study

1,300 Maximum Capacity in New Middle School



Project Goal Relationships



02

Project Goals + Parameters

Goals & Organization

Flexible Learning Environments

Educational Opportunities

Space Program Summary

List of Spaces

Goals & Organization

Lens for Learning

The space program on the following pages seeks to provide a diverse menu of spaces for optimal learning to serve a minimum of 725 students.

The program is sub-divided into core program areas – grade levels, teaching and learning support, administration and teacher support, arts, music, library, food service, physical education, and extended day.

The educational specifications/schedule of functional spaces will be based on those of functional spaces approved by the School Board for Alice West Fleet Elementary, modified as necessary to reflect any specific requirements of the Department of Instruction. The final design shall be as adaptable as possible in order to accommodate future increases in enrollment and changes of instructional program. The School Board will approve the educational specifications/program of functional spaces when it approves the Schematic Design for the project.

The connection between spaces inside, and outside, the building will occur in a variety of ways to involve and activate sensory responses. Universal design and sustainability will be hallmarks of the new school. Taken as a whole, the goal is to create a school that students can't wait to get to in the morning and don't want to leave in the afternoon.

A properly designed new elementary school and grounds, one that truly engages the imagination, will be one of the strongest tools available to help APS reach all five of its strategic goals:

- Ensure that every student is challenged and engaged
- Eliminate achievement gaps
- Recruit, retain and develop high quality staff
- Provide optimal learning environments
- Meet the needs of the whole child



Flexible Learning Environments



Anytime, Anywhere Learning

The design will include a variety of furniture & learning spaces, both in characteristic and in size, to articulate the positive relationships between new pedagogic methods, community engagement, modern architecture and educational landscape strategies that promote health, well-being and collaboration. Specialized learning classrooms and extended learning areas are interwoven throughout the academic core to promote long-term programmatic flexibility, a sense of community and belonging amongst learners, and to ease transition-related sensitivities.

Every Space is a Learning Place

The layout will accommodate the need for flexibility as teaching and learning methods and practices evolve - while also strengthening, through design, the belief that every child learns in unique ways and teachers value opportunities to provide personalized, meaningful curriculum experiences for individuals and groups of all sizes.

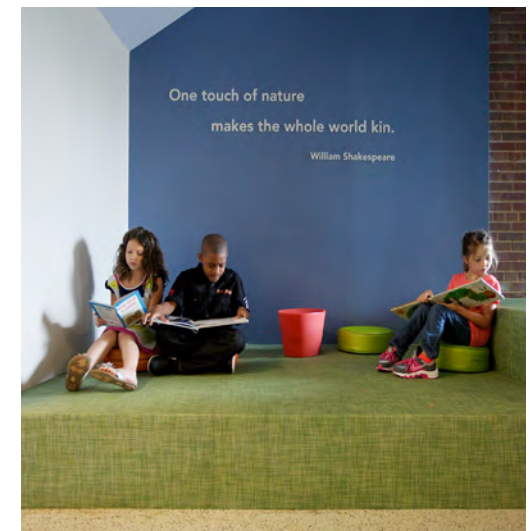
A variety of space types; classrooms, hubs, innovation commons, team rooms, conference rooms, nooks and crannies, and outdoor classrooms will foster collaboration, interaction, innovation and invention in both formal and informal settings. The project will also be designed as a living lab for sustainable practices. An overarching goal for the design is the encouragement of creativity, curiosity and joy within an actively engaged community.



Educational Opportunities










Child-Focused Spatial Synergies

Planning and designing a new elementary school for the next generation and beyond brings architecture and landscape design into direct discourse with contemporary educational practice and inspires conversations about how architecture can serve to meet the needs of the whole child. Designs that promote collaboration (spaces that inspire), community (spaces that encourage a sense of belonging and safety), and connection (spaces that foster sharing and empathy) are next generation learning environments. A holistic, whole child approach to design emphasizes health and well being as a precursor for better learning. Learning in and from nature, access to the outdoors, human-centered lighting strategies, indoor air quality, ergonomic and flexible settings, energy conscious systems, transparency, acoustics, and comfortable, beautiful places that translate a sense of calm and well being are hallmark qualities of child-centric, teacher optimized designs for the 21st century.

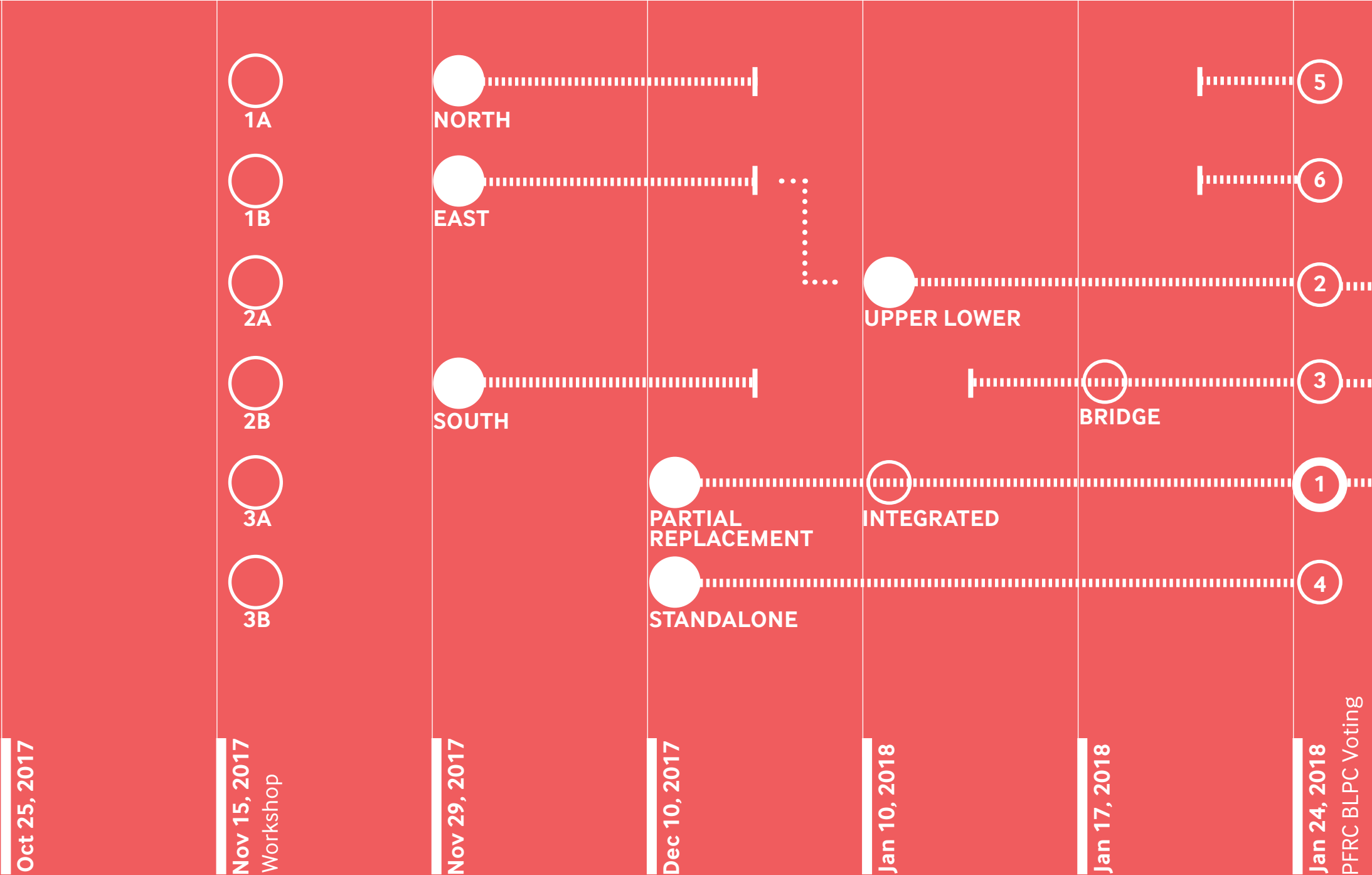


Space Program Summary

NOTE : A FINAL LIST OF SPACES WILL BE DEVELOPED DURING THE SCHEMATIC DESIGN PHASE.

Program	Sqft	Capacity Generating Classrooms
 Pre K & Kindergarten (Early Childhood) :	8,120 nsf	7 classrooms = 148.65
 First & Second Grades:	10,325 nsf	10 classrooms = 233.3
 Third, Fourth & Fifth Grades:	13,575 nsf	15 classrooms = 349.95
 Specialty Programs:	7,160 nsf	
 Guidance + Administration + Teacher Support:	5,815 nsf	
 Art + Music:	6,305 nsf	
 Library:	4,340 nsf	
 Food Services:	5,290 nsf	
 Physical Education + Extended Day:	9,510 nsf	
Net Square Footage:	70,440 nsf	
Support, Structure & Circulation:	35,924 sf	
Gross Square Footage:	106,364 gsf	Total Capacity = 732
Gross SF per student:	145.3 gsf	

Concept Design Timeline



03

Design Process

Site Analysis

Existing Building Analysis

Committee Workshop Exercise

Must Do, Should Do, Would Do

Existing Building Test Fit

Parking Analysis

Community Forum Results

Site Analysis

Context, Land Use, Traffic, Permeability

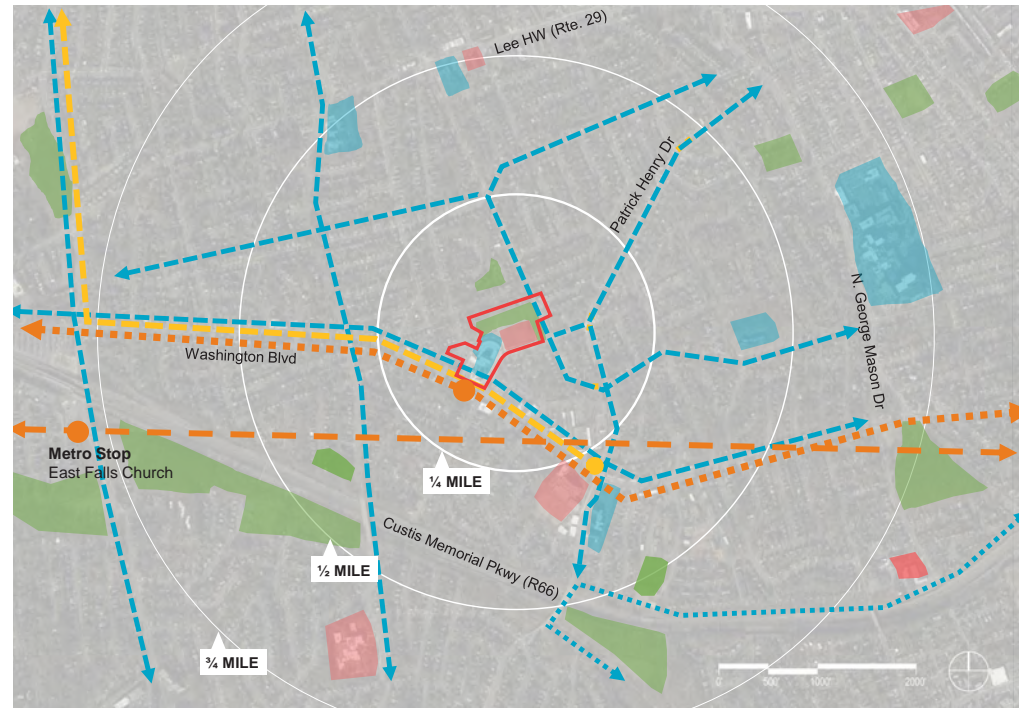
In order to properly design a renovation, addition, or new building at the Reed-Westover site, the first step is to understand the place and context in which the building will inhabit. Below are the primary takeaways from these site analysis exercises.

Expanded Context - Reed-Westover is not particularly well connected to the surrounding neighborhoods with the exception of Metro Bus Route 2A along Washington Boulevard. The library, school, and small commercial shops at Westover are also accessible by bicycle and have some pedestrian traffic. The site is located approximately 3/4 of a mile from East Falls Church metro.

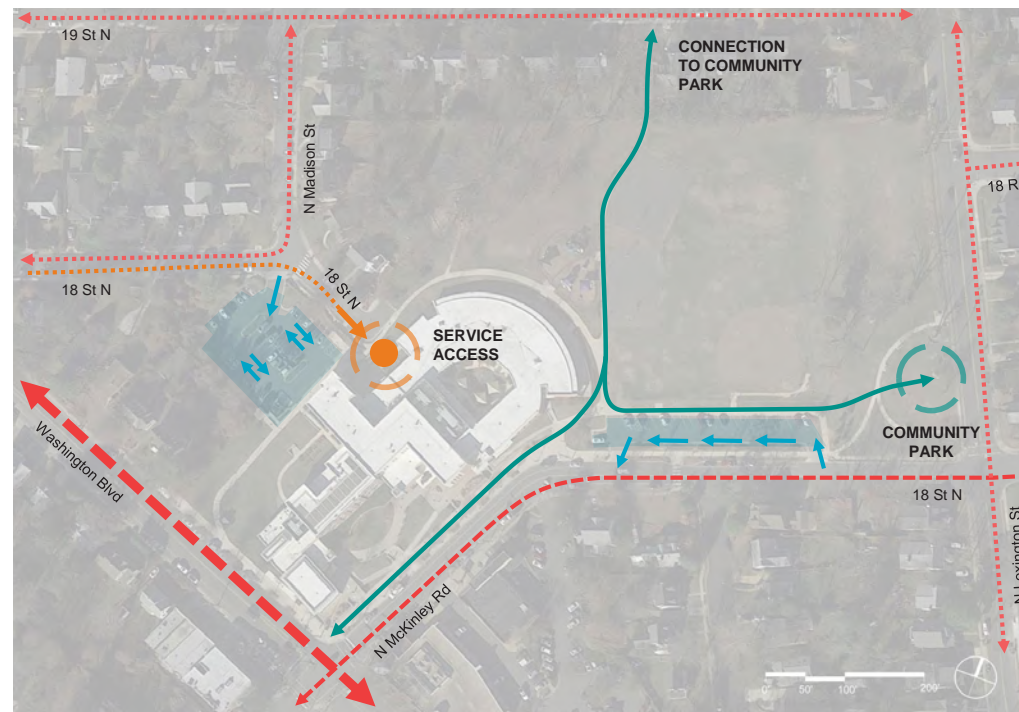
Land Use - The site is located in a residential area. The south part of the property is used for civic purposes which include the existing Pre-K school, the library, and a post office across the street. The small-scale commercial district, which is also to the south of the site, is unique to the area. The Shops at Westover are cherished by the community members, and provide space for a farmers market on the weekends. In terms of uses, the North part of the site is open green space including a pocket park. This space is used by both neighbors and the school.

Traffic + Site Access - The primary artery for vehicular traffic is Washington Blvd, while the secondary route which is used is N McKinley / 18th St N. Currently, the service access to the building is provided from 18th St N located on the North side of the school. In terms of pedestrian connections on and off-site, an important path exists which bisects the site, connecting the park with another pocket-park just to the north.

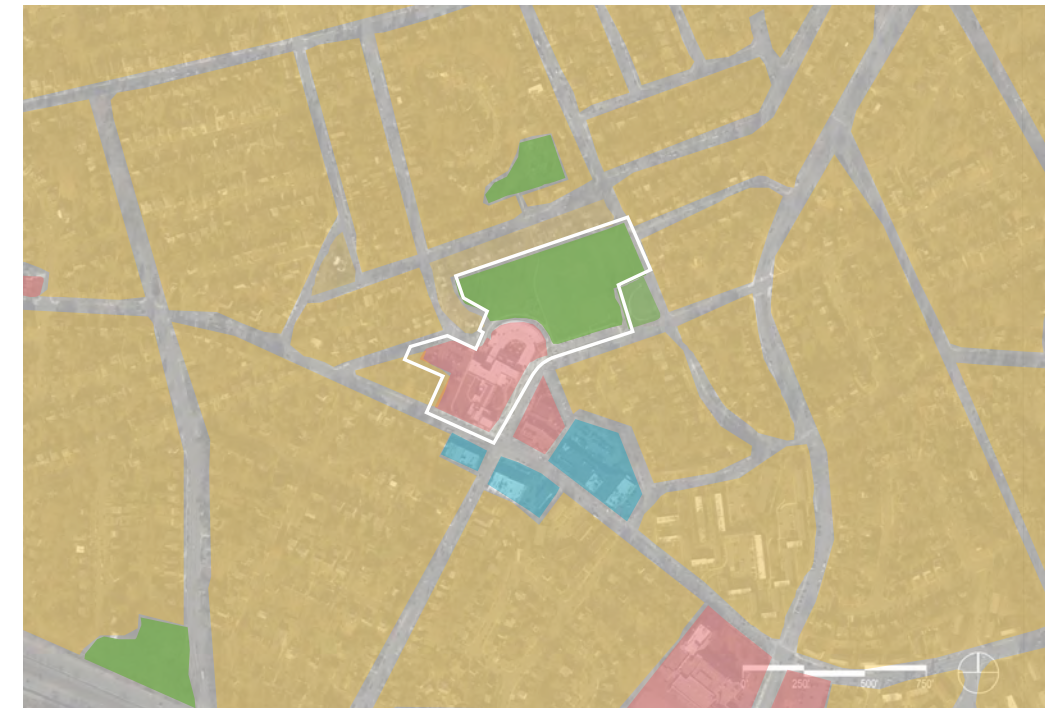
Site Permeability - Approximately 35% of the site is impermeable, (20% pavement and 15% roofing), while the remaining 65% is permeable surfaces (grass, mulch, etc).



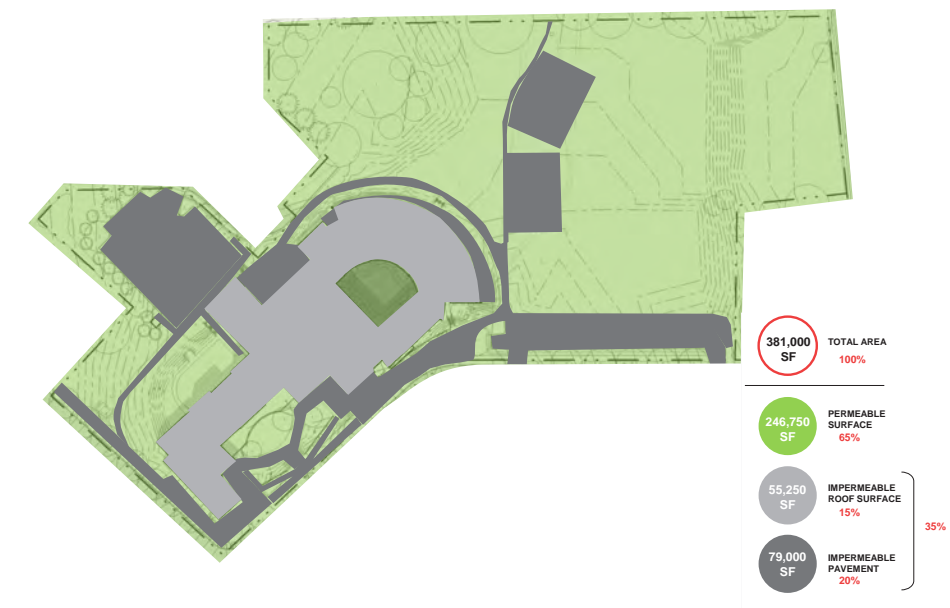
EXPANDED CONTEXT



TRAFFIC + SITE ACCESS

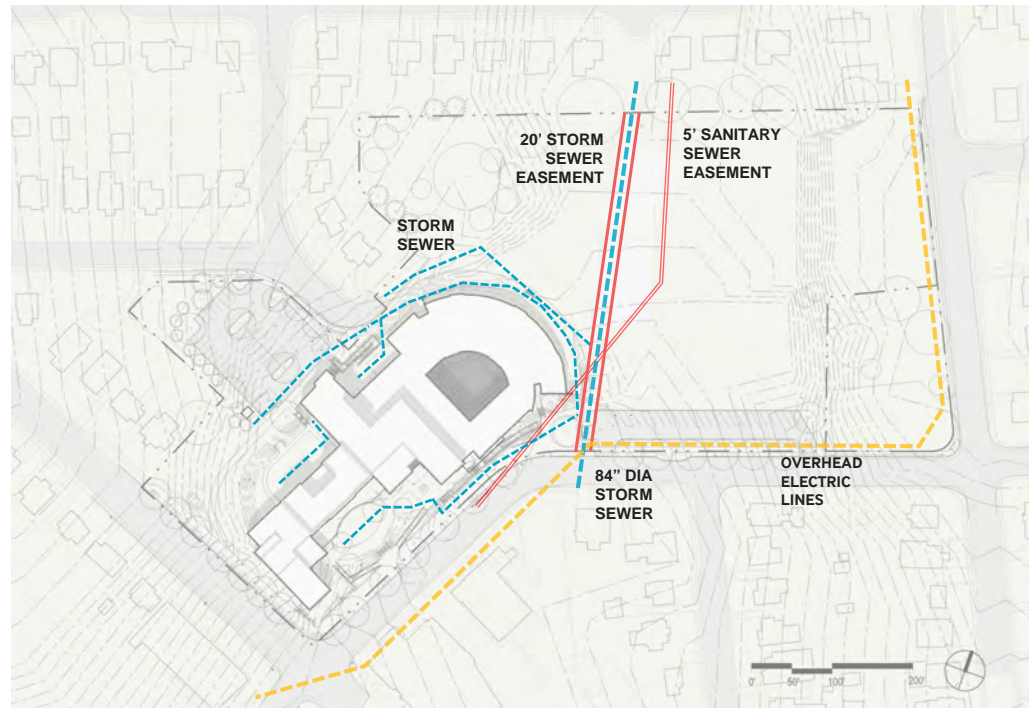


LAND USE

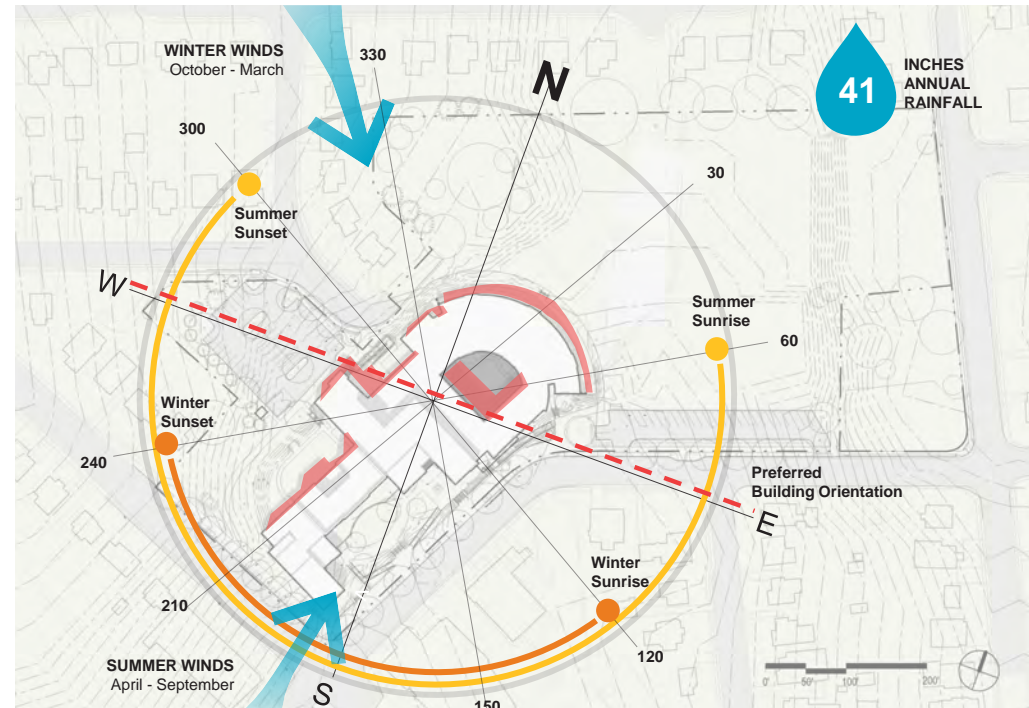


SITE PERMEABILITY

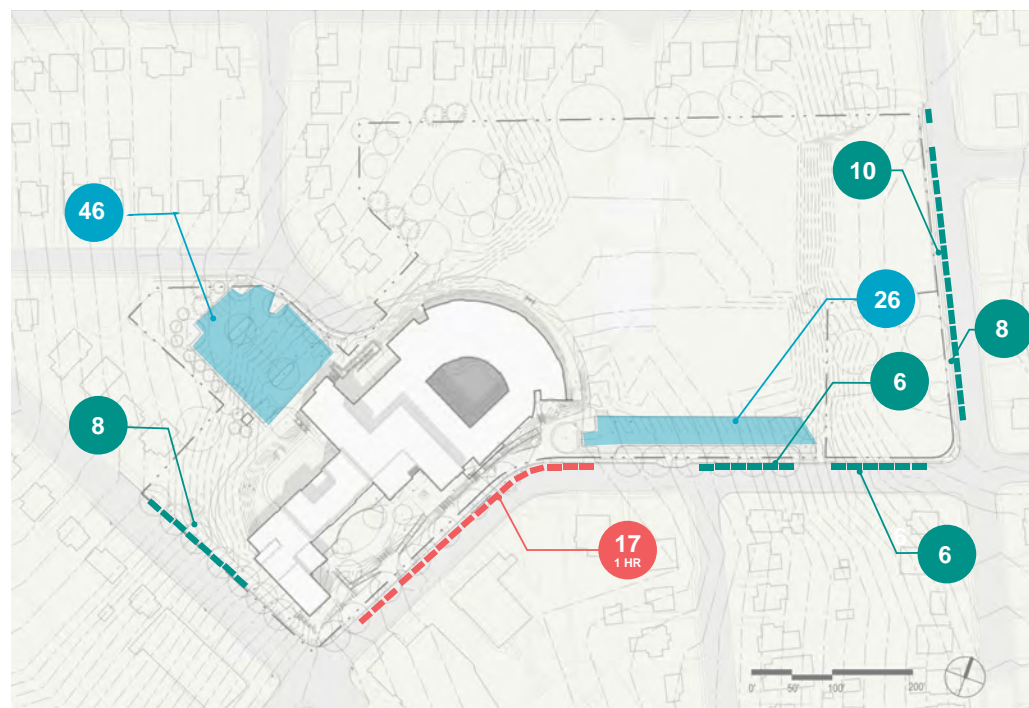
Utilities, Solar & Wind, Parking, Topography



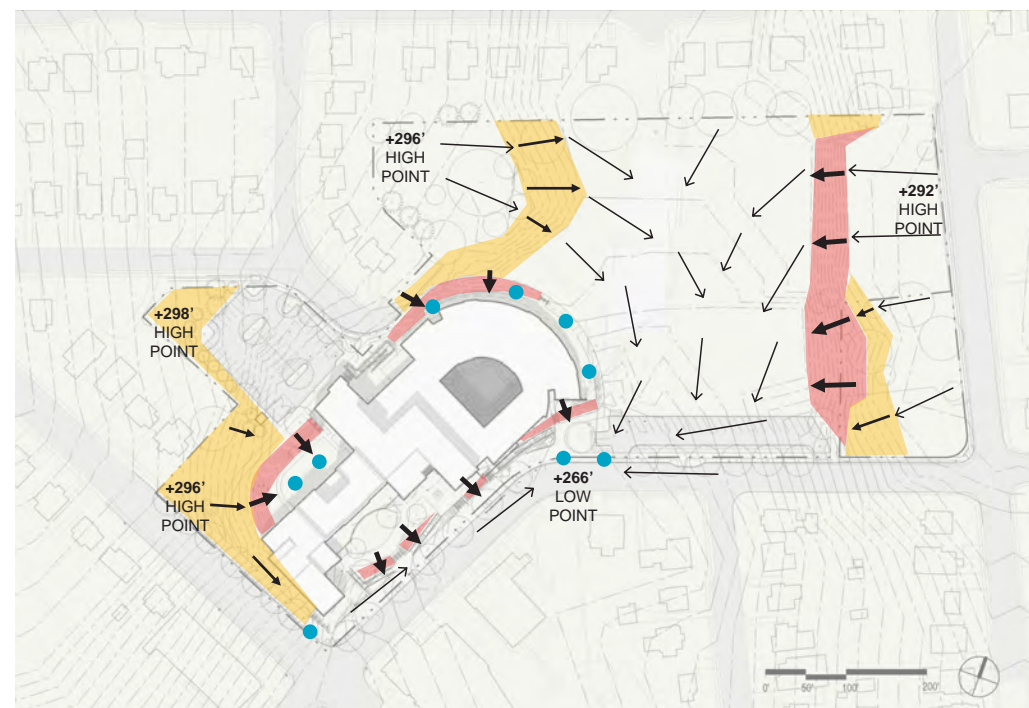
EXISTING UTILITIES



SOLAR + WIND STUDY



EXISTING PARKING



TOPOGRAPHY + WATERFLOW

Existing Utilities - The Reed-Westover site has several existing utility lines that severely impact a potential addition. An 84" public sewer bifurcates the 2009 addition, running below the pedestrian path from south to North. This sewer has a 20'-0" easement associated with it, which can not be built over with any sort of built structure with a foundation. The easement may be bridged across, provided the bridge follows county rules. In addition to the easement, private and public storm sewers that wrap around the North side of the existing school may need to be relocated depending on where an addition is located. On the West and Southern edges of the property, overhead power lines may need to be buried, which would also be of significant cost.

Solar + Wind Study - The preferred orientation for school classrooms is for the windows of the learning spaces to be located on the North and South of the site, for daylight control. As such, the preferred orientation for a learning bar is parallel the East-West axis. The current Pre-K facility has classrooms on the North, which is a preferred orientation. When looking at adding an addition or new building, other considerations are stepping back from South to North to provide optimal orientation for solar panel production as well as where the building mass shadow falls. Adding a second story on top of the existing structure may shade the courtyard from any sun, which would be detrimental. Prevailing summer winds come from the South, so locating operable windows on that side is beneficial.

Existing Parking - A total of 127 existing spaces exist at the Reed Westover location including 72 permanent spaces on-site, 38 spaces on-street, and 17 one-hour spaces on street. Adding program to the property will require additional spaces.

Topography & Water Flow - The low point on the site exists in the middle, and the site slopes up on both the East and West ends. There is about about between a 25'-30' or 2-3 level change in topographic height between these areas.

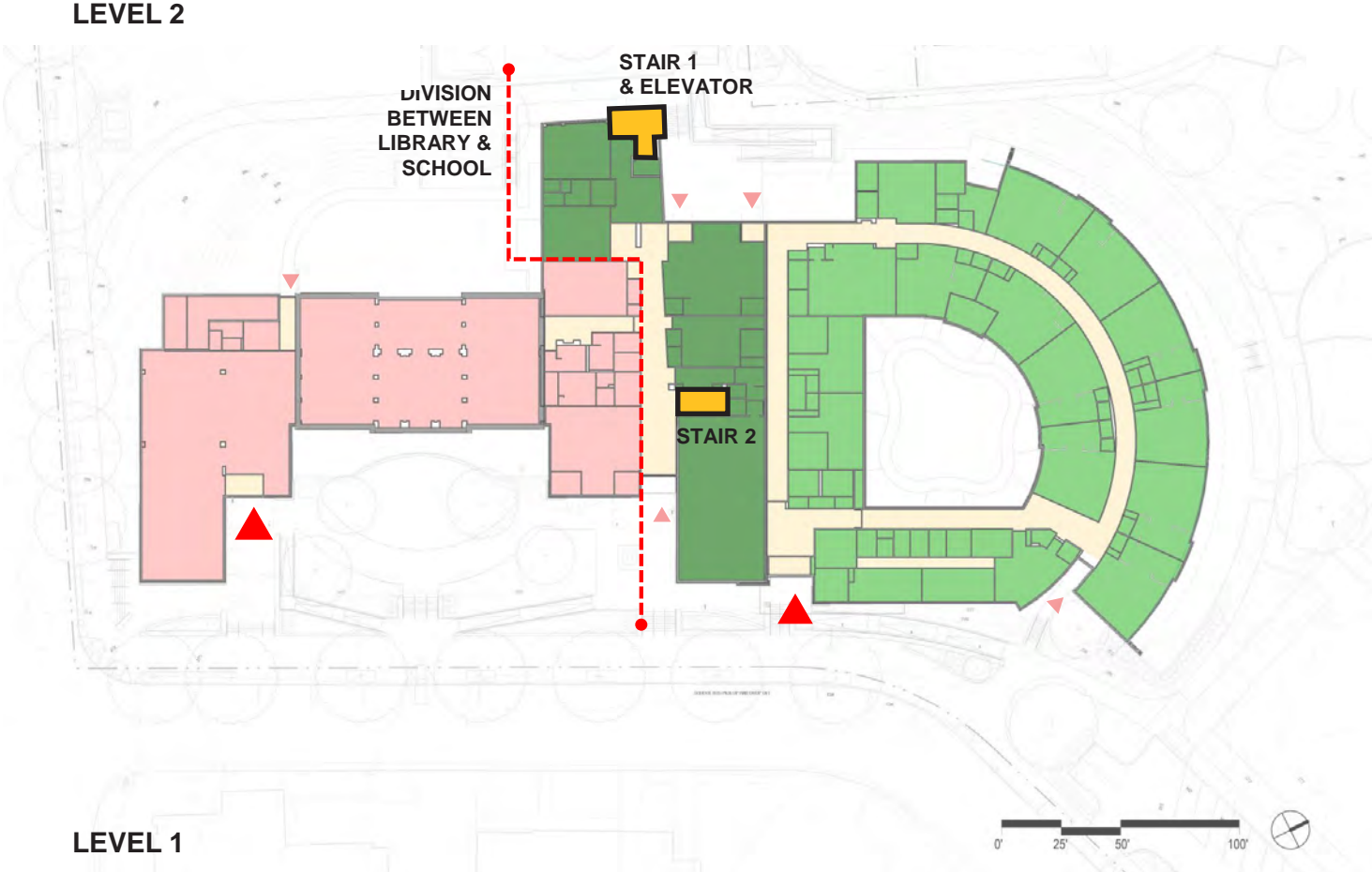
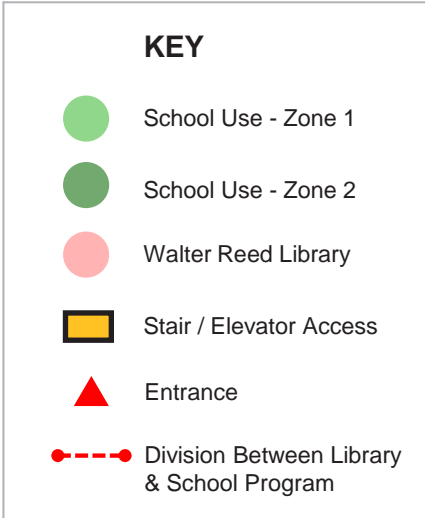
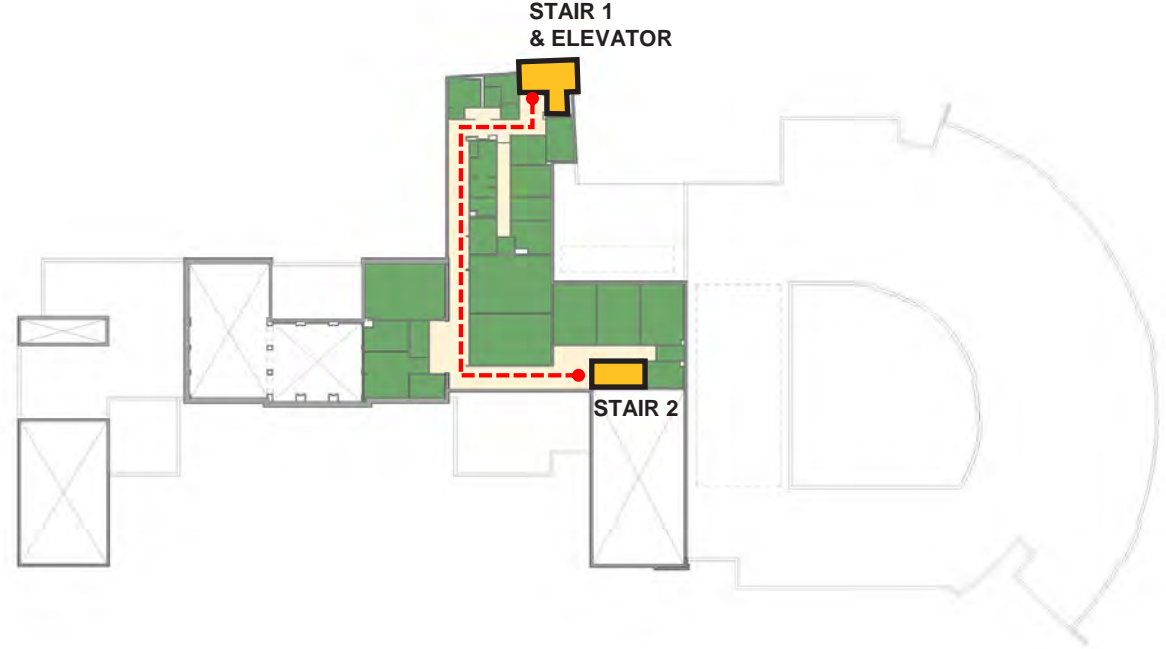
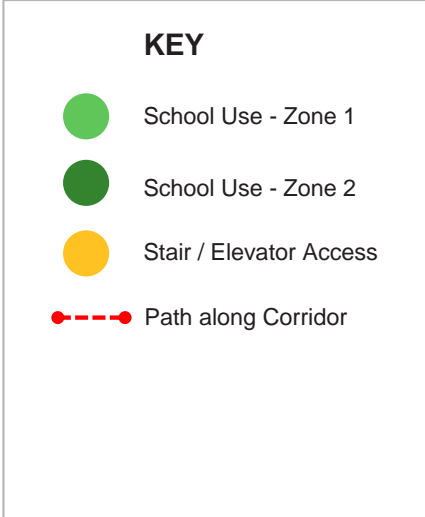
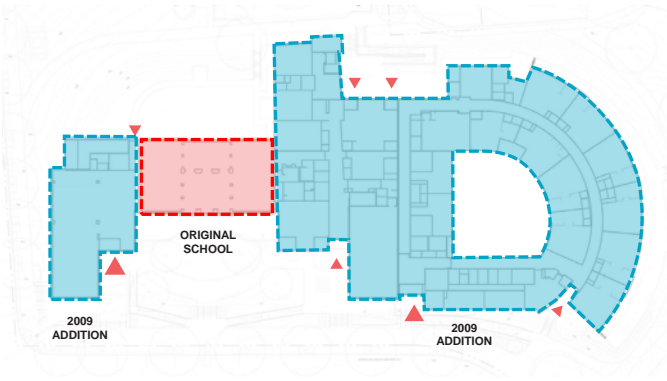
Existing Building Analysis

Program Analysis

The existing building at Reed-Westover was built and added to at different points in time. The oldest part was a school, built in 1938, was originally used as a school. After various other modifications were added and removed, the latest addition was built in 2009.

Altogether, the building has two primary uses: as a public library and as a pre-kindergarten school. On the first floor, the public library occupies space in the western half of the building, and sits at the corner of Washington Boulevard. It serves as a gathering space for the public, and occupies the 1938 historic building as well as portions of the 2009 addition.

The pre-kindergarten facility occupies the eastern portion of the building. It boasts two somewhat segregated pieces: a cafeteria, kitchen and gym in the middle of the building; and classrooms and administration space in the one story curved portion of the building. These two school functions are non-ideally separated by a public corridor. A courtyard provides daylight to classrooms. A small second floor exists, although stair access to this space is only from the public corridor, while access to the elevator requires passing through an office suite.





Existing Building - Potential Second Story Expansion

Existing Building Structural Analysis

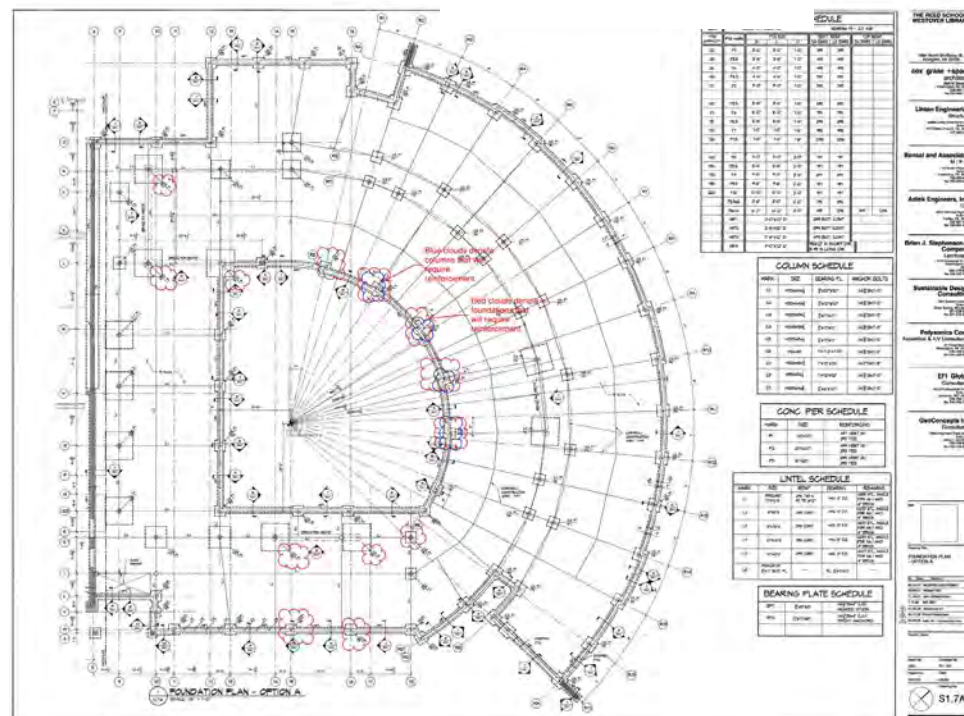
Procedure to Build on Top:

1. Reinforce existing footings.
2. Remove roofing to expose steel deck.
3. Locally remove steel deck over columns.
4. Level and weld new cap plates to top of columns that will accept bolted column base plate for new column above.
5. Place new columns, reinforce select existing ones.
6. Place concrete floor slab.
7. Erect roof framing.
8. Complete braced frames.

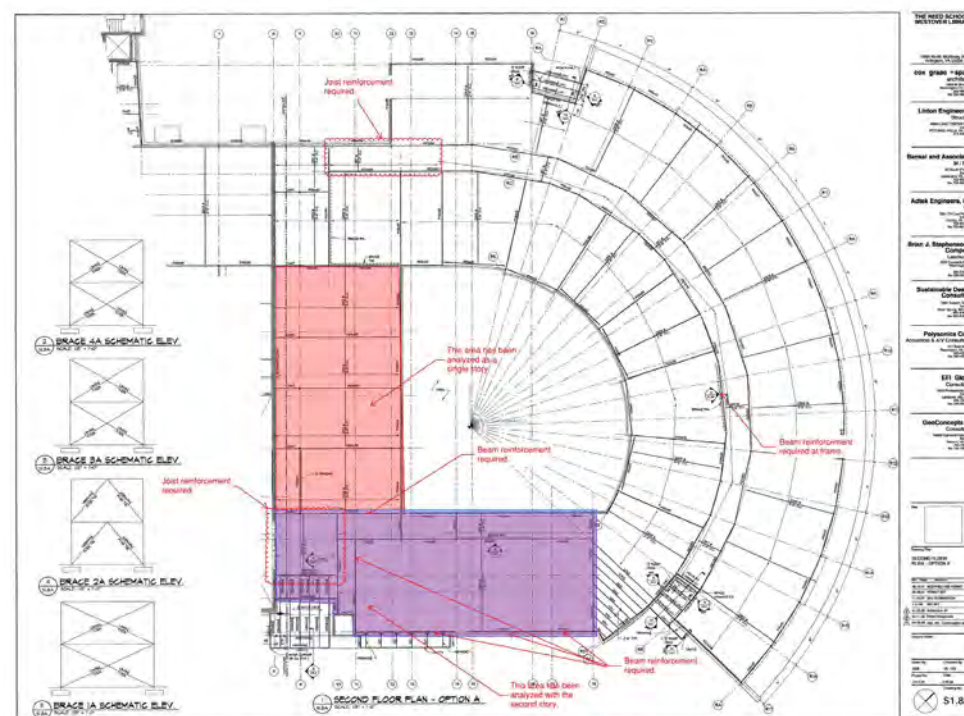
Structural Challenges: Why Not Build Up?

A majority of the one-story portion of the building was structurally designed in 2009 to carry another level of program. Footings, beams and columns were upsized to allow for one additional floor to be added over only the curved portion of the building. A new structural assessment was conducted using existing drawings and visual inspections. While it was generally confirmed that the building's columns and beams could accommodate one more floor, this task would much more complex and difficult than originally anticipated.

A new floor would put more lateral pressure on the middle portion of the curve than engineers are comfortable with, thus requiring reinforcement to select columns and beams. In addition, a concrete floor deck wasn't poured during the 2009 construction, only a roof deck. This means the existing roofing and portions of the deck would need to be replaced, exposing portions of the interior to the elements during construction. We don't know why this decision was made ten years ago, but there are many logical possibilities: perhaps it was uncertainty as to where future floor penetrations would be located, particularly for the new stairs and elevator; perhaps it was a reasonable value engineering compromise to keep first construction costs lower. Not only would the sequencing of events make difficult and costly to keep any of the interior finishes on the first level, but all that extra expense would only result in one additional floor when much more space is needed.



Existing Building - Circulation



Existing Structure Assessment

- 13 Foundations Require Reinforcement
- 4 Columns Require Reinforcement.
- 7 Joists Require Reinforcement
- 6 Beams Require Reinforcement

Committee Workshop

Workshop

A workshop was conducted to explain many of the issues of the project and complexities of the site. Individuals in the committees were divided into six groups, each with a different site. Groups were given 30 minutes to design a school with roughly the same amount of program intended for the new APS elementary school. Groups were given a specific area on the site. 'A' groups were not allowed to build on-top of the existing building while 'B' groups had to build on-top of the existing school. Schemes were then voted on at the end of the meeting.

Group 1A

- Build directly to the North of the existing building to maintain existing field. Locate cafeteria and gym on first floor and stack the grade levels above them.

Group 1B

- Most popular scheme. Build to the North of the existing building and locate gym and cafeteria off of curved portion. Step grade levels with grade among the trees.

Group 2A

- Locate program on East side of property on current sledding hill. Scheme uses an upper and lower school, split by the common green space between.

Group 2B

- Similar to Group 2A, but trying to maintain part of sledding hill. Would require upper and lower school.

Group 3A

- Locate majority of school to the South off of 18th St with the potential to extend into the community park. Maintain gap between old and new school for utility line.

Group 3B

- Stack as much program on top of building as possible: 3 stories. This scheme retains all of the existing green space



Workshop Photos

Schemes



GROUP 1A



GROUP 2A



GROUP 3A



GROUP 1B



GROUP 2B



GROUP 3B



Project Priorities

Must Do, Should Do, Would Do Exercise

The Must Do, Should Do, Would Do exercise was done to identify more explicitly what the critical parts of the project were from the committee's perspective. As the title of the exercise hints at, three categories exist for project scope to be categorized into. Must Do consists of scope that is fundamental to the core mission of the project or required by code. An example would be an accessible neighborhood school for 725 students. The Should Do category consists of scope that benefits the project and should be accomplished, but may be limited by budget or schedule. The "Would Do" category consists of scope that is not fundamental to the core mission, but would benefit the project and/or community if the budget allows.

In terms of process, the exercise consisted of two periods. First, a brainstorming session was conducted, where committee members identified potential parts of project scope. These ideas were then discussed and assigned to one of the three categories. Second, a vote was taken to determine which topics were most important within each of the categories. All members of the committees were given four dots to place next to the items. Members were given a dot for the Must, Should, and Would categories, respectively, as well as a floating "bonus" dot, which could be added next to any item.

MUST DO

NEIGHBORHOOD SCHOOL FOR 725	•
STAY IN BUDGET	••••
STAY ON SCHEDULE	••
SUFFICIENT PARKING	••••••••
LEARNER FOCUSED	••••••••
EFFECTIVE SITE CIRCULATION	••••
PEDESTRIAN FRIENDLY	••••

SHOULD DO

MAINTAIN GREEN SPACE	••••••••
MULTI-USE FACILITY	••••••••
UNIVERSAL DESIGN	•
LEED GOLD (PLATINUM?)	•
AESTHETICALLY PLEASING	••••
ADEQUATE CLASSROOM STORAGE	
OPTIMAL INTERIOR CIRCULATION	••••
BUILD IN FLEXIBILITY	••••••••

WOULD DO

IMPROVE CIVIC COMMUNITY	••••
BATHROOMS FOR OUTSIDE PROGRAMS	••••••
COVERED BIKE PARKING	••••
NET-ZERO ENERGY	••••
"BEST" PLAYGROUND	••••••
ENHANCE COUNTY LIBRARY	•
ACCESS TO WATER	
THOUGHTFUL PLACEMENT OF FLEXIBLE LEARNING AREAS	••••

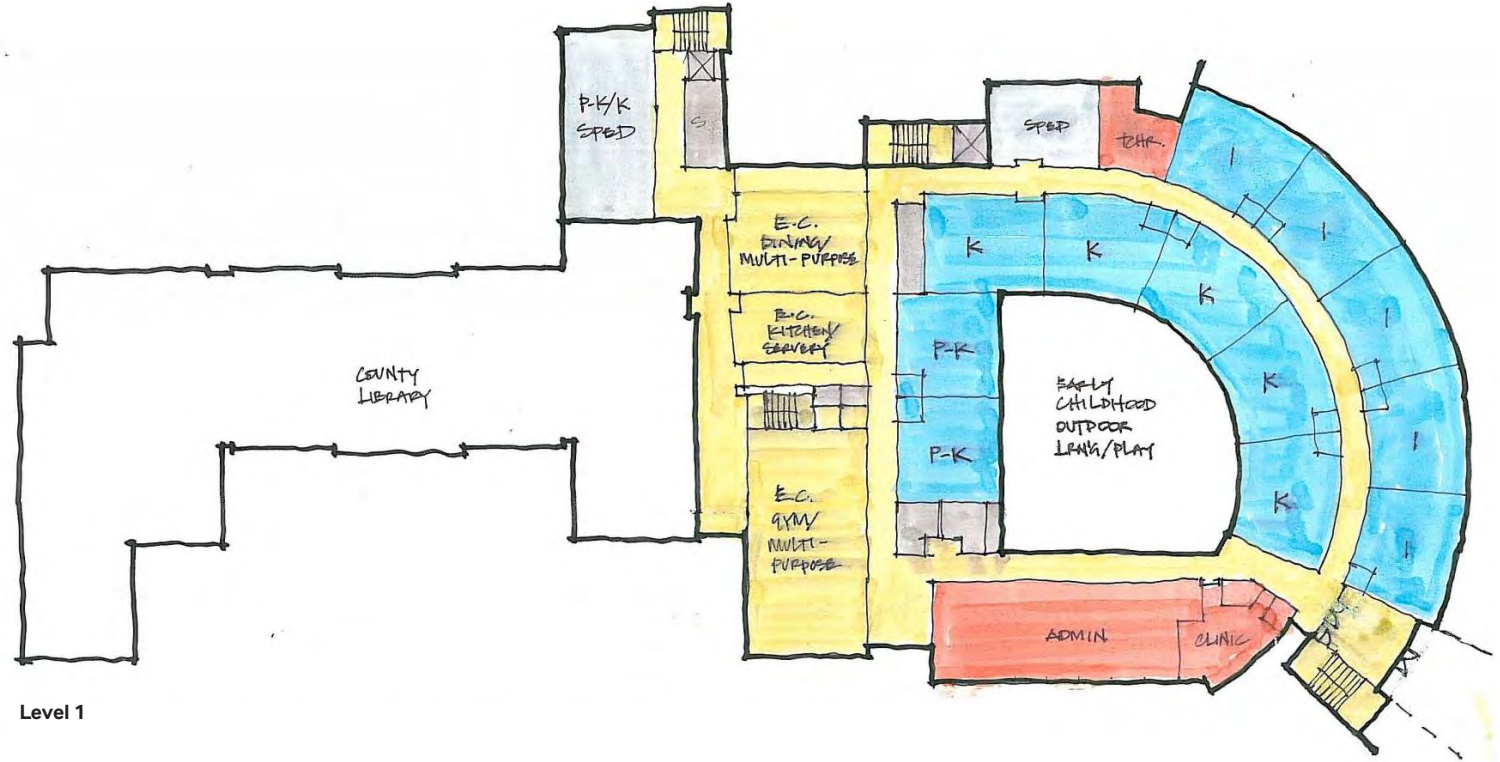
MUST DO (CONT.)

FULL COMPLIANCE W/ ADA BLDG & SITE	••
TREE CANOPY PRESERVATION/REPLACEMENT	••••
MAINTAIN LIBRARY OPERATIONS	
PRESERVE THE FARMER MARKETS	••••
ACCESSIBLE FURN. & EQUIP. & TECHNOLOGY	••
TEACHER FRIENDLY	••••••

Program Test Fits

What Fits in Existing Building?

Prior to beginning to design a new school, it was important to figure out what program would fit into the existing building as it currently exists. As such, an exercise was conducted to determine various test fits would work such that minimal renovation would be done to maximize the budget and existing space.



Level 1

Level 1

- Pre-K
- Kindergarten
- 1st Grade
- Dining / Multipurpose (Might require slight expansion)
- Activity Space / Multipurpose
- Admin

Level 2 - Test Fit A

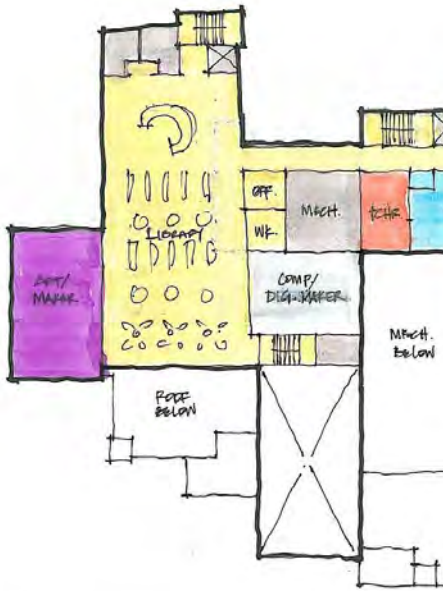
- Library as one open space
- (1) Art / Maker Space
- Computer Lab

Level 2 - Test Fit B

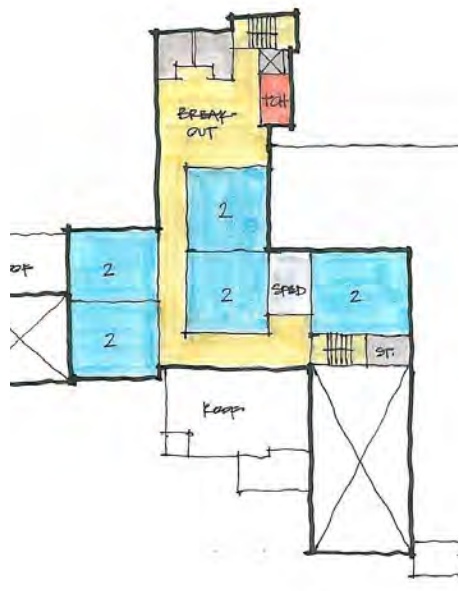
- Single grade level (Second Grade?)
- Break-Out Space

Level 2 - Test Fit C

- Art (2 Rooms)
- Music (3 Rooms)
- Associated Storage



Level 2 - Library



Level 2 - Grade Level



Level 2 - Music and Arts

Site Parking Options

A variety of on-site parking options have been explored, each with a varying degree of impact on the site. Depending on the desired building scheme, such options can be mixed and matched to achieve the number of spaces required by zoning. As it currently exists, the Reed-Westover Site has 72 parking spaces located on-site: 26 of which exist in a lot to the south along 18th St N, and 46 of which exist in a lot to the north of the school, which is accessed off of the intersection between 18th St N and N Madison St.

In the proposed parking expansion options, a variety of spaces are added to the existing 72, ranging from a total of 78 to 159 spaces. Ideally, the number of space added will provide adequate parking: not too many stalls which would take away valuable green space, and not too few which would hurt school and local businesses. In a general sense, many of the proposed options add surface parking, which is generally the least expensive. On the other end of the spectrum, one of the options explores structured parking, which is the most expensive.



Existing Condition

72 On-Site Spaces



Slight Expansion at 18th Street

78 On-Site Spaces

- Existing Spaces + 6
- 32 spots @ \$3K = +/- \$90K



Larger Expansion at 18th Street

102 On-Site Spaces

- Existing Spaces + 30
- 56 spots @ \$3K = +/- \$168K



New Lot at Lexington

102 On-Site Spaces

- Existing Spaces + 30
- 56 spots @ \$3K = +/- \$168K



Back-in Parking at Lexington

102 On-Site Spaces

- Existing Spaces + 30
- 30 spots @ \$3.5K = +/- \$105K



Expanded NW Lot (No Curb Cut)

91 On-Site Spaces

- Existing Spaces + 19
- 65 spots @ \$4.5K = +/- \$293K



Parking Structure at NW Lot (Curb Cut)

159 On-Site Spaces

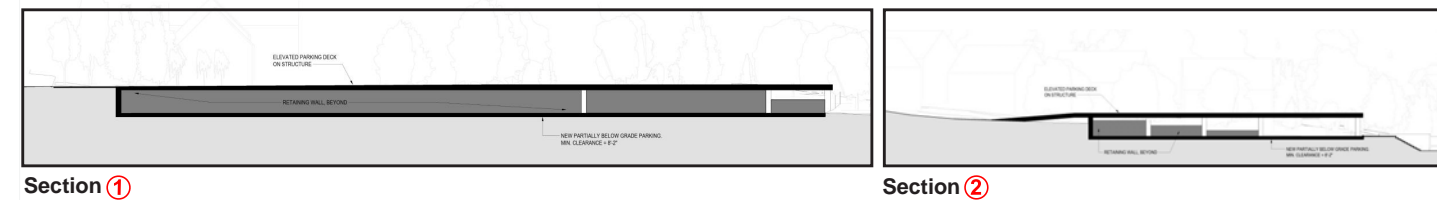
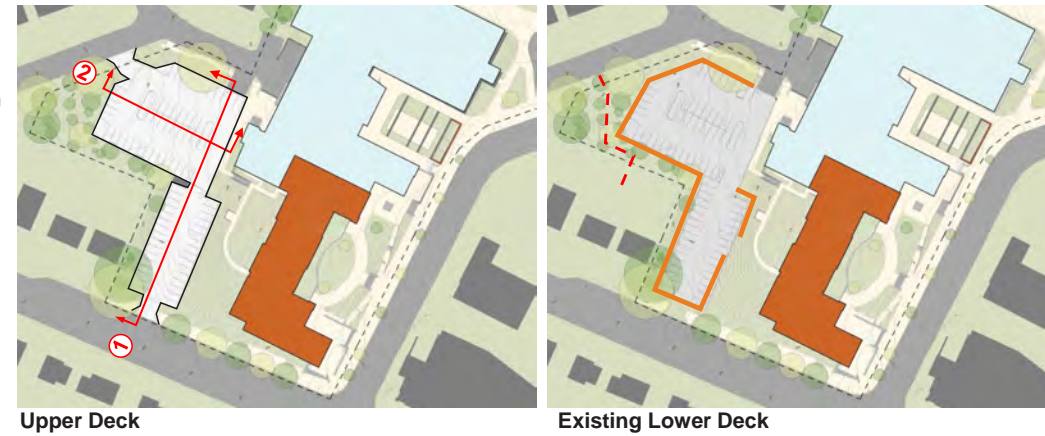
- Existing Spaces + 87
- Existing lot demolished and new lot built at lower elevation w/ one tray of parking added above

Structured Parking

Option A - New Upper and Lower Decks

- Upper Deck**
- 77 New Parking Spaces
 - Partially Elevated Deck, +0' at 18th
- Lower Deck**
- 71 New Parking Spaces
 - All New Paving
 - Retaining Required ———
 - Relocate Utilities - - - - -

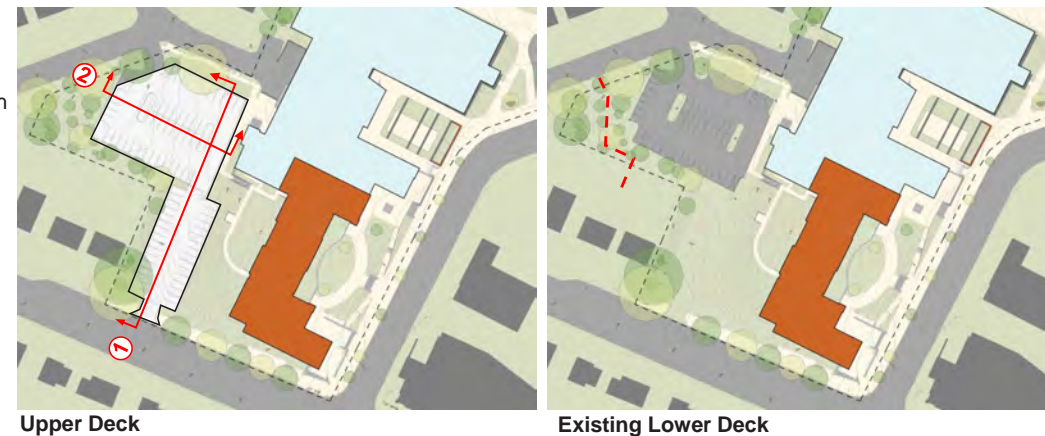
148 spots @ \$45K - \$65K each
\$6.5 Million to \$9 Million



Option B - New Upper Deck

- Upper Deck**
- 77 New Parking Spaces
 - Partially Elevated Deck, +10' at 18th
- Lower Deck**
- 48 New Parking Spaces
 - Patch & Repair Existing Paving
 - Relocate Utilities - - - - -

125 spots @ \$35K - \$60K each
\$4.5 Million to \$7.5 Million



Two options of structured parking were explored which look at options to provide valuable spots on-site. While these options minimize the footprint of parking on-site, they are the most expensive in dollars per spot.

Parking structure A provides a total of 148 spots at a total cost of \$6.5 - 9 million. This option provides two level decks of parking to maximize the number of spots in this location. This option would require the demolition of the existing lot and require all new paving on the upper and lower decks. In addition to the raised structure, the lower floor would require retaining of soil along many of the sides, as well as the relocation of a utility line. Of the two, this option provides the most spaces, but comes at a higher price in cost per space.

Option B - Upper Deck

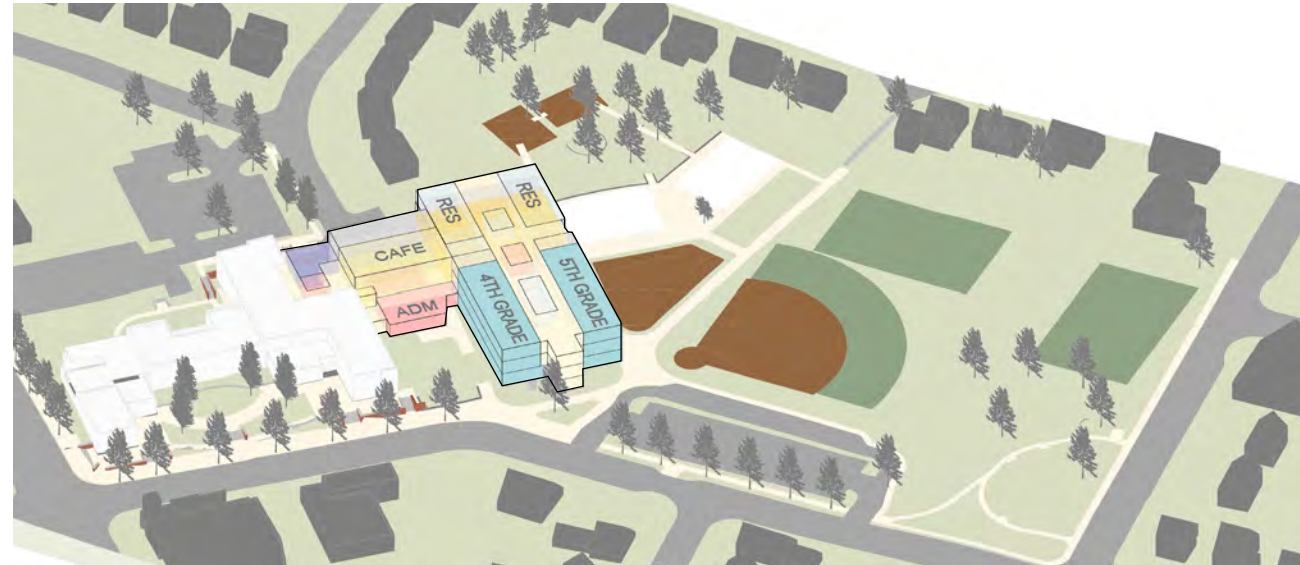
Structured Parking Option B provides a total of 125 spots at a cost of \$4.5 to 7.5 million. This option provides a new upper level elevated deck while maintaining the lower deck with patch and repair work. This option provides fewer spaces but at a less expensive cost per space.

Community Forum Results

Jan 17, 2018

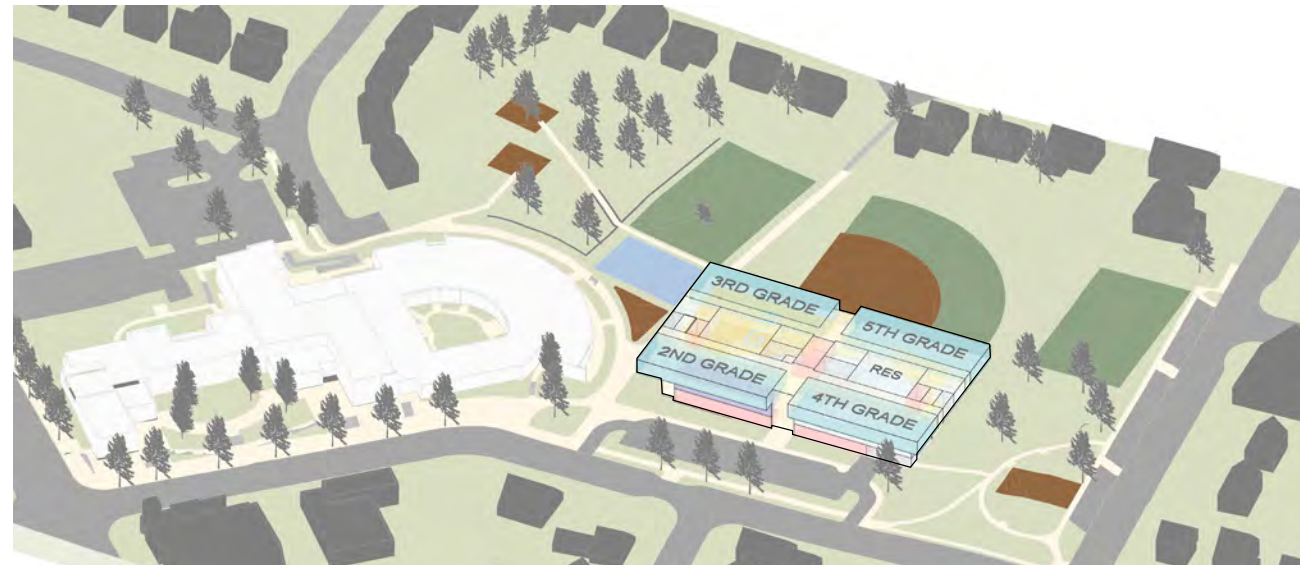
Integrated

- Best option by far
- Great solution for students
- Good idea to preserve park
- Does not maximize seats for Arlington
- This scheme has a good community feel
- Like the option of building up
- Would be good with a parking garage behind it
- Please consider underground parking option
- 3 story height a concern
- This is the only acceptable option
- Maintains sledding hill
- Smaller footprint best for students

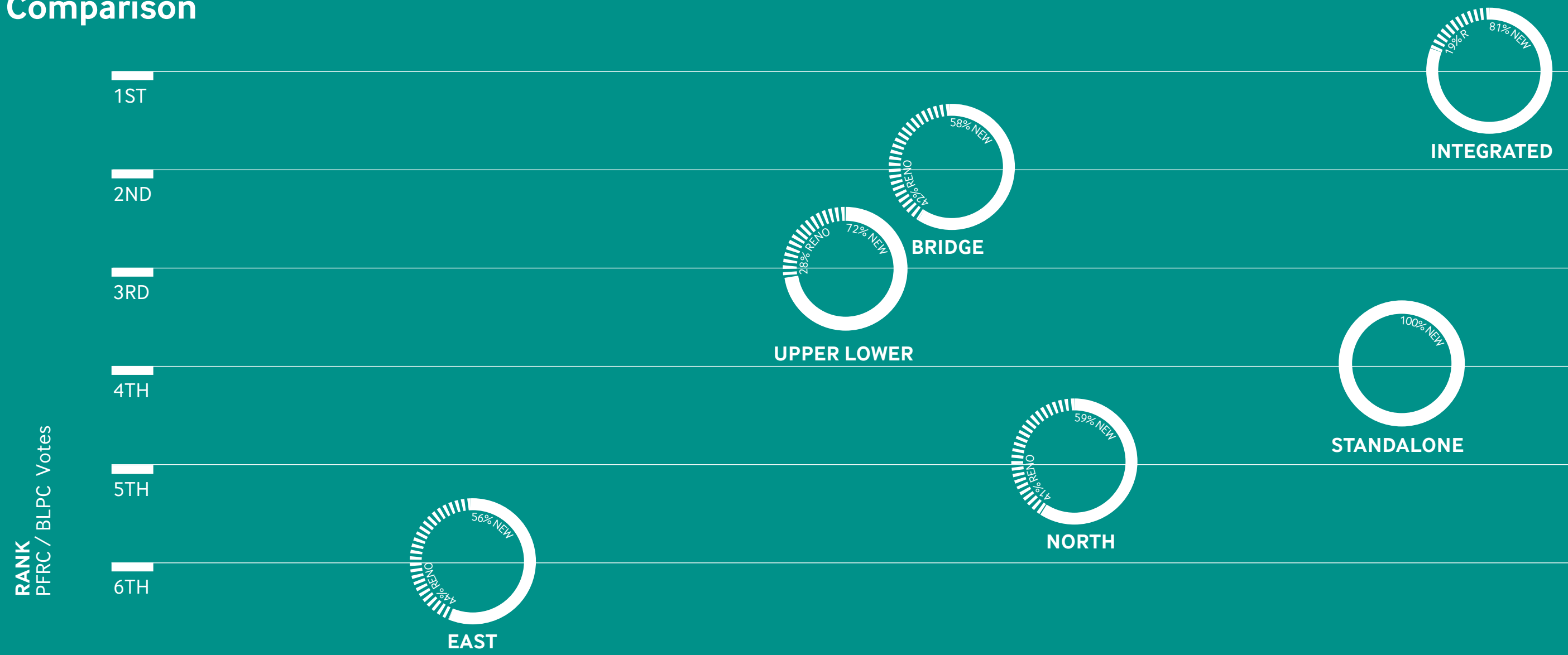


Upper Lower

- Takes up too much green space
- Separate structure adds costs for APS not desirable
- Not a good option relative to integrated scheme
- Blocks fields from 18th street
- Large Building on 18th street which ruins sight-lines
- Modify with library to provide integrated solution
- Better use adjacent library
- Too many compromises without enough benefit
- Separate buildings not ideal for staff and students: loss of instructional time



Scheme Comparison



04

Concept Design Options

Concept Design Options

Scheme Overview

Concept Designs & Floor Plans

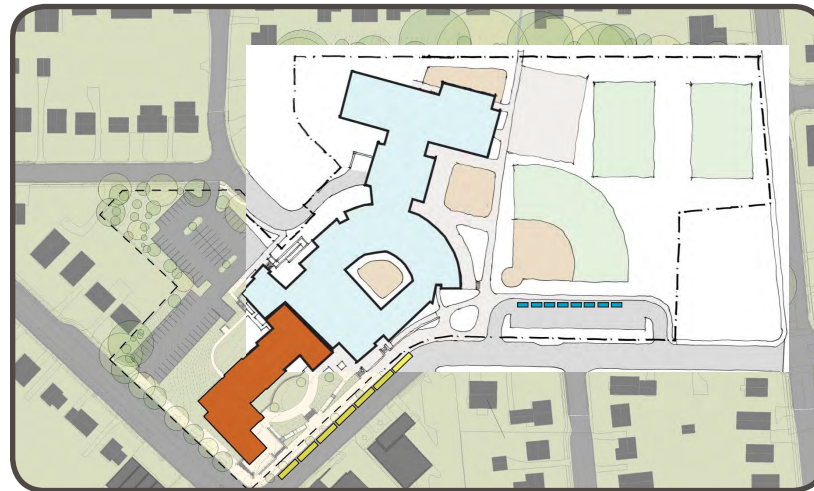
Scheme Results

Cost

Jan 24, 2018 Final BLPC - PFRC Meeting

Scheme Overview

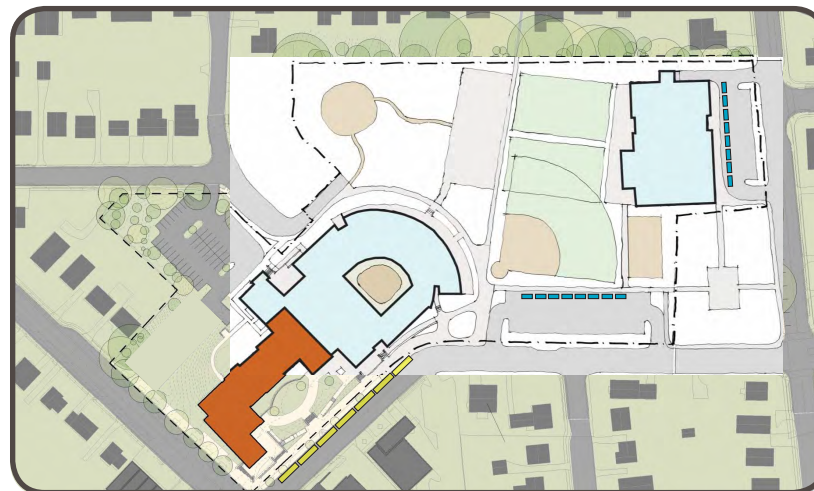
At the final BLPC - PFRC meeting, six schemes were shown, of which, three were to be recommended to forward to the APS School Board for selection. These schemes include the North, East, Bridge (formerly South B), Integrated, Standalone, and Upper Lower.



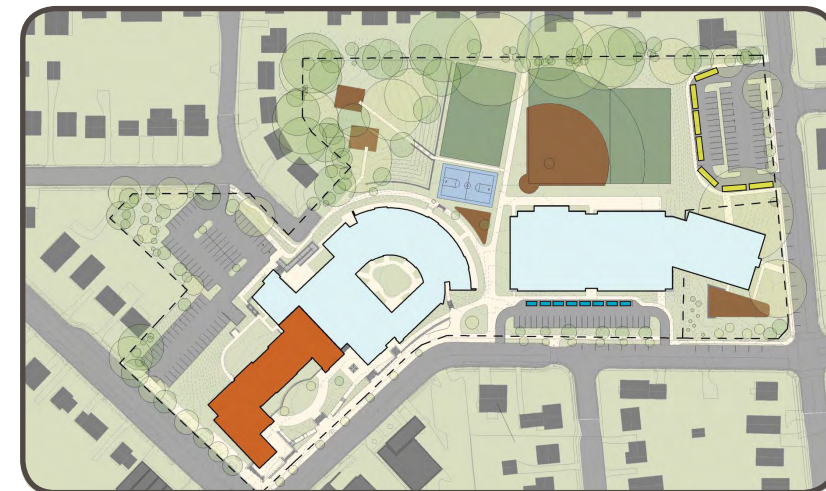
North Scheme



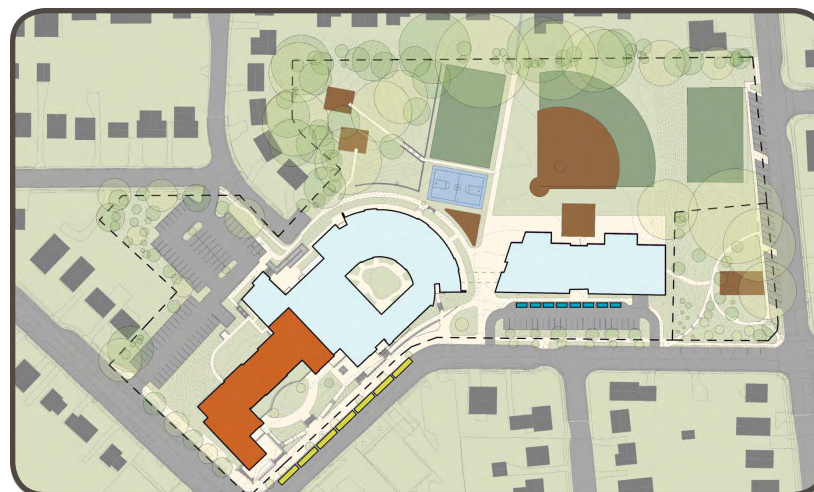
Integrated Scheme



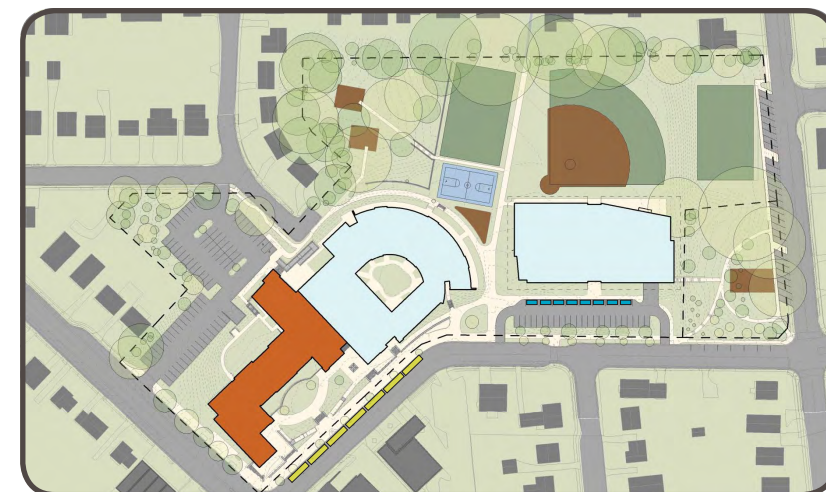
East Scheme



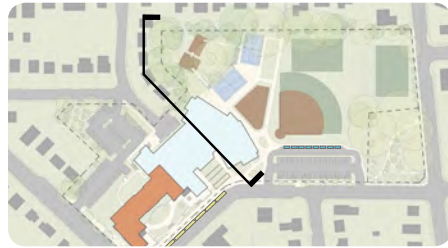
Standalone Scheme



Bridge Scheme



Upper Lower Scheme

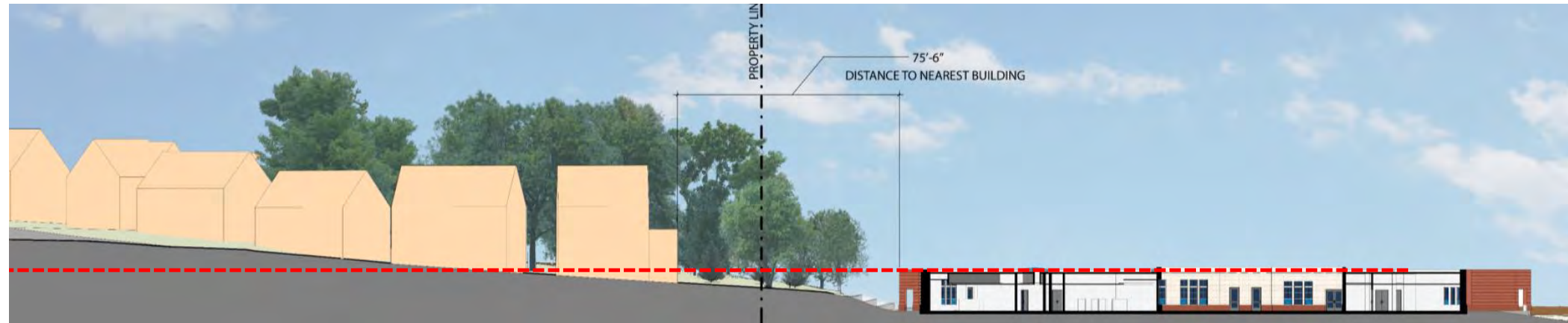


Context Sections

The height of a potential new building or addition at the Westover-Reed site was an important consideration in evaluating each of the schemes. One of the primary areas of concern is the relationship of the houses on 18th Street N to the north side of the school.

Existing Condition

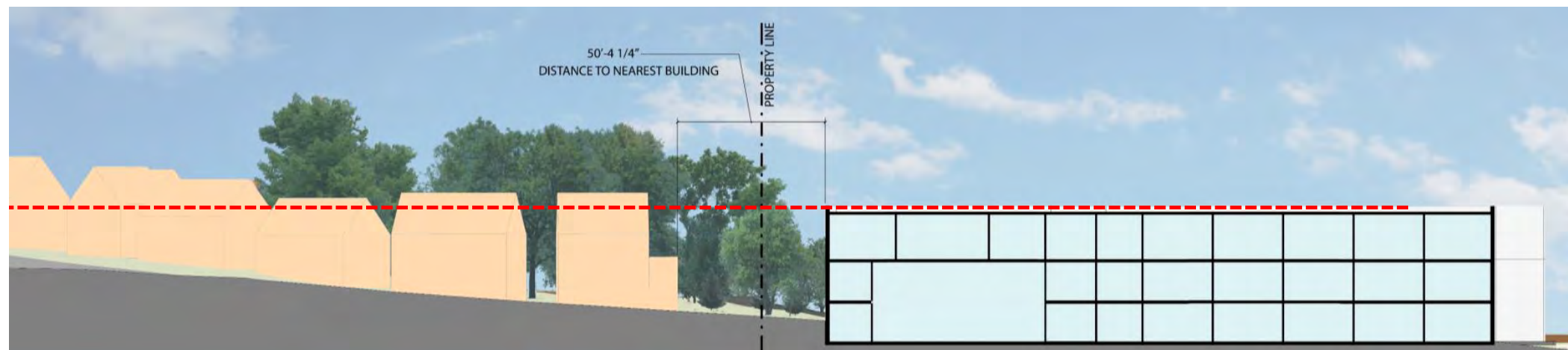
The existing condition is a one-story building which sits almost entirely below the houses. This condition means that neighbors look out over the roof of the school, which may be seen as less-than desirable due to the dirty nature of roofs. In this condition, there is an approximate 75'-0" gap between the nearest house and the school. The house is 3 stories on the south side, and has a large hedge of bushes and/or trees that largely protect the property visually from the school.



Existing Condition

3 Story Proposal

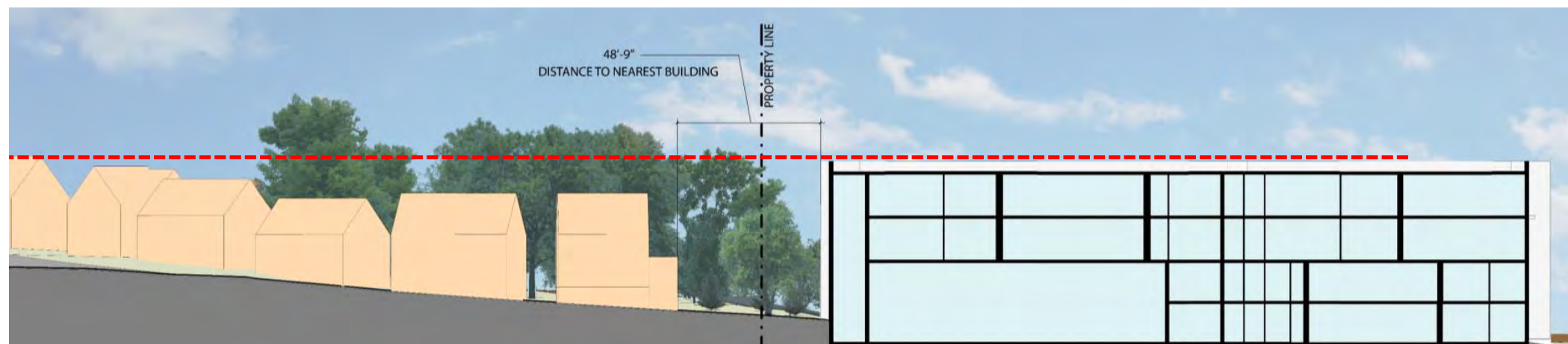
The previous Integrated Scheme, as proposed, was a three-story building, almost level to the roofline of the adjacent house. In this condition, there is an approximate 50'-0" gap between school and house, which is significantly less than the distance between adjacent houses.



Previous Integrated Scheme (3 Stories)

4 Story Proposal

The current, revised Integrated Scheme reduced its footprint in order to maintain as much open green-space as possible. As such, the building is now a 4 story structure, due to the desire to reduce the footprint. As a result, a portion of the building was added as a 4th floor to there is an approximate 48'-0" gap between school and the closest house. In relation to the majority of the houses to the North, the top of the school roof-line is in line with many of the houses up the street. Compared to the adjacent-most house, it is half to a full story taller at its peak, but not out-of scale for the neighborhood.



Current Integrated Scheme (4 Stories)

North Scheme

Pros

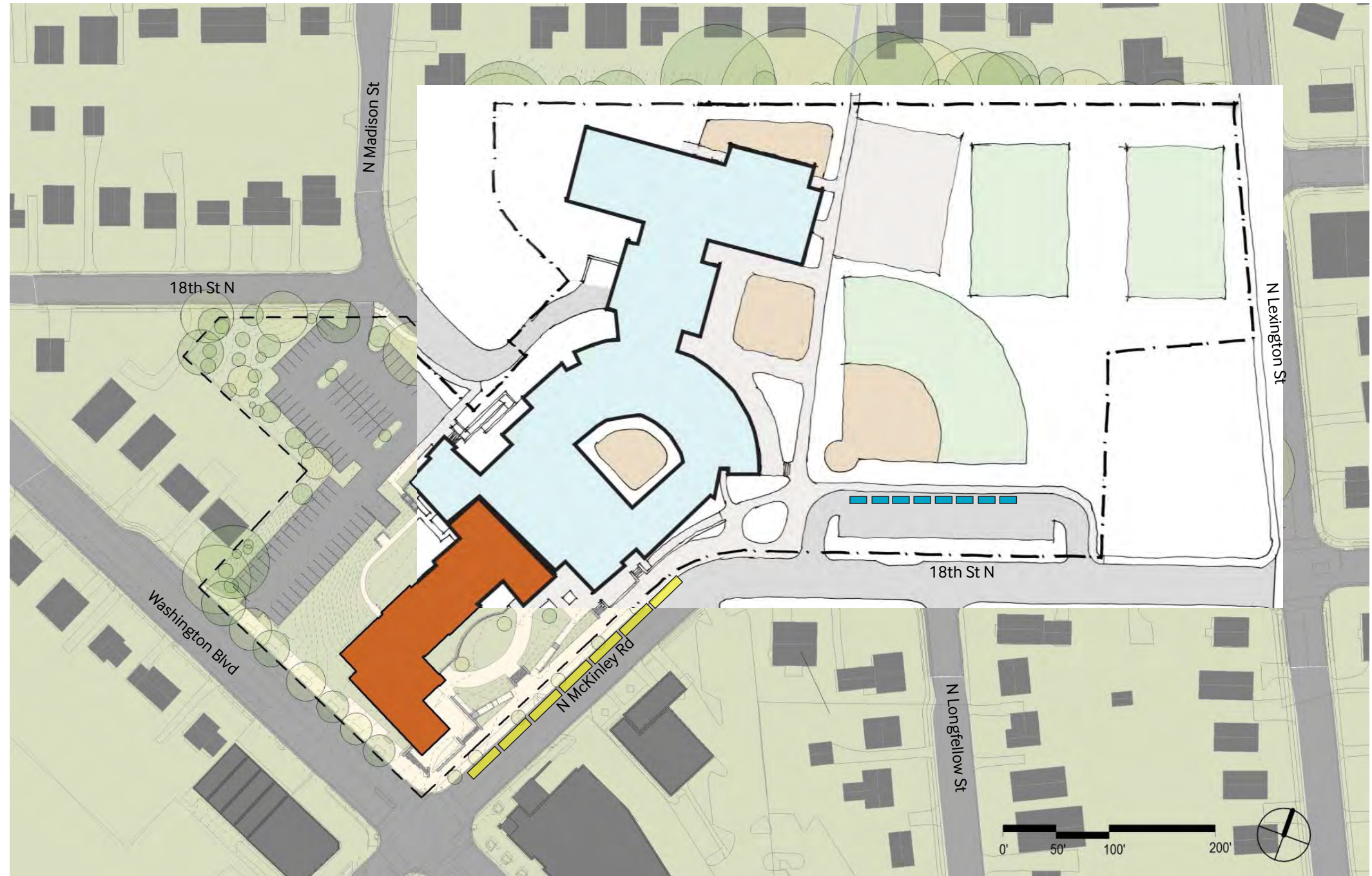
- "Out of Sight" from public
- Site amenities east of 84" storm line remain untouched
- Retains existing investment in building and expands vertically one floor
- Two story building

Cons

- Very spread out & less than ideal instructionally, high transition time
- Fire access is very tricky
- Would take down most, if not all trees around footprint
- Significant utility relocation
- Not "civic": doesn't address street and entry is less than desirable
- Complicated renovation

Statistics

Total Student Capacity:	732 Students
Increased Impervious Area:	+37,300 SF
Required Parking (Zoning):	150 Spaces



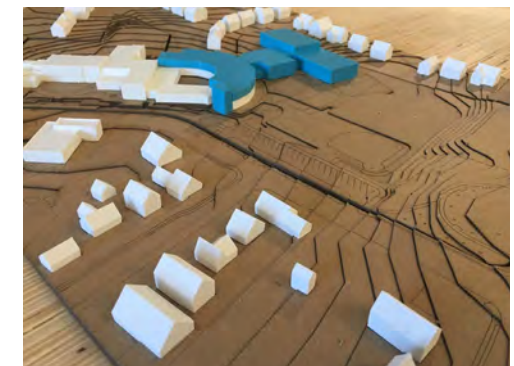
Site Plan



Axon View

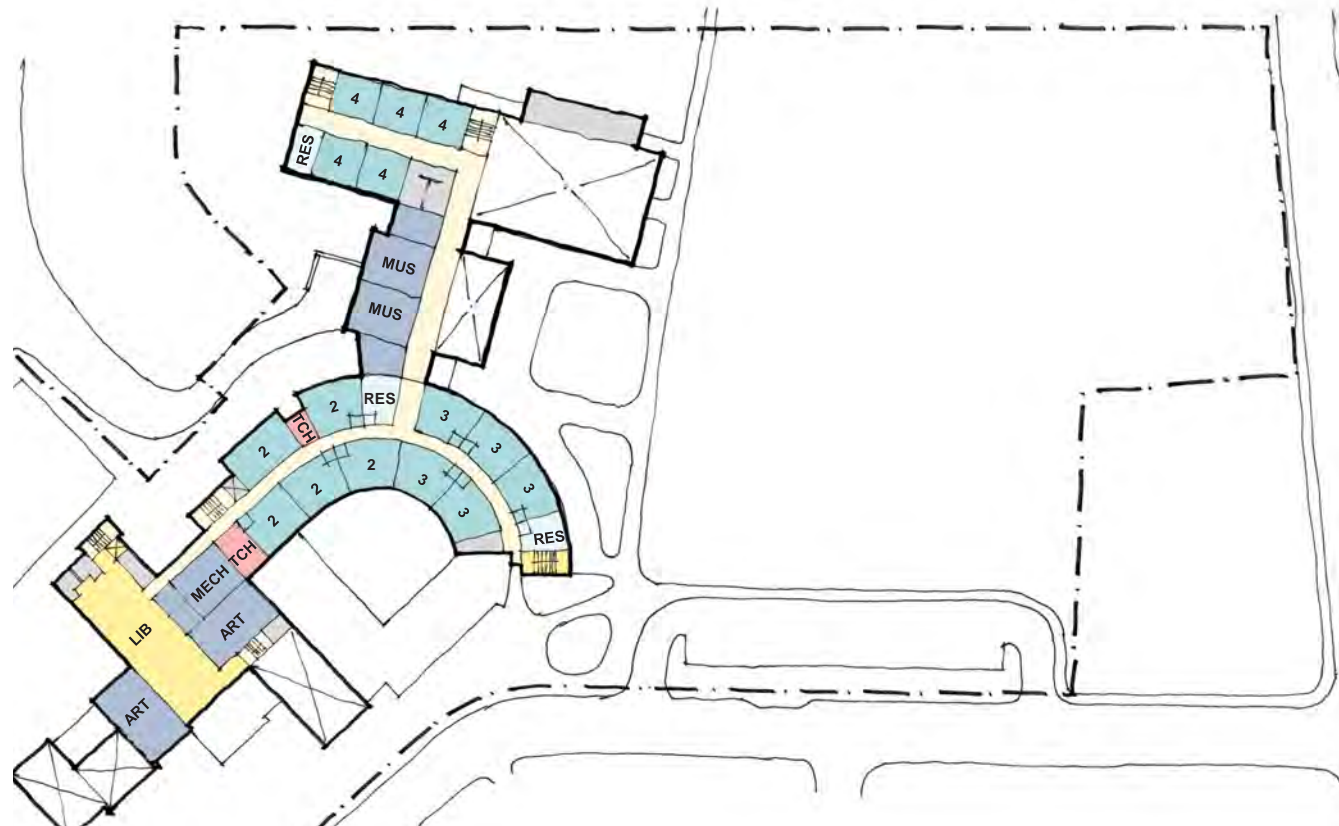


Level 1

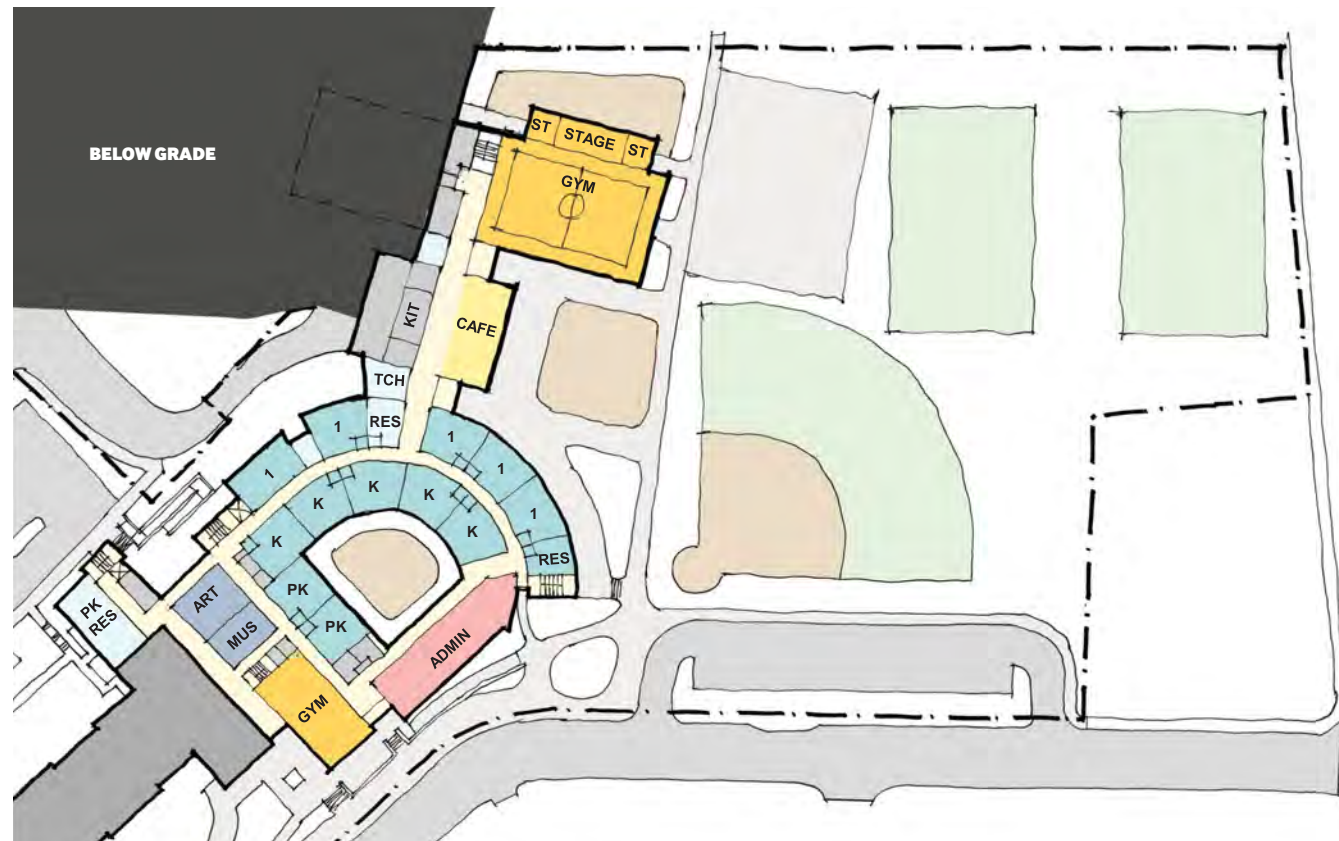


Legend

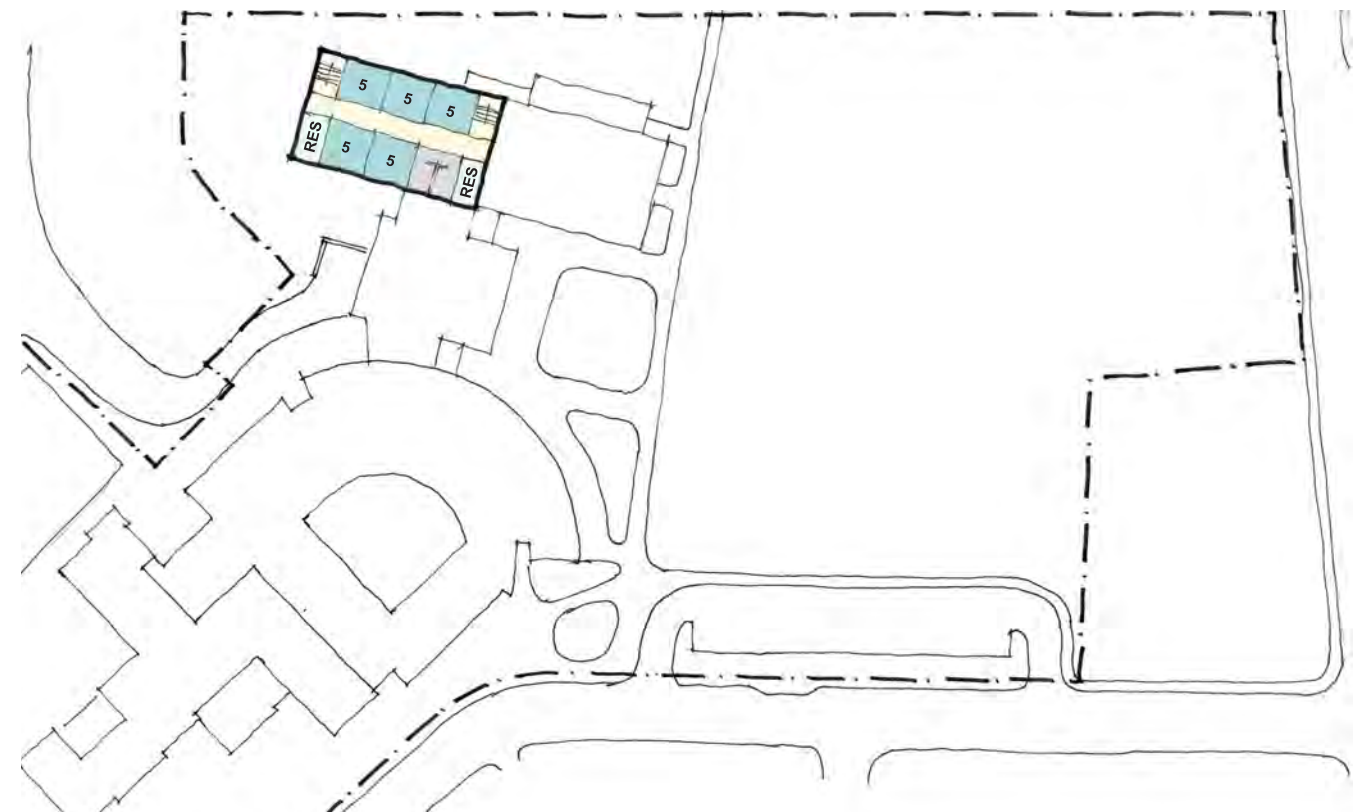
- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



Level 2



Level 1



Level 3

East Scheme

Pros

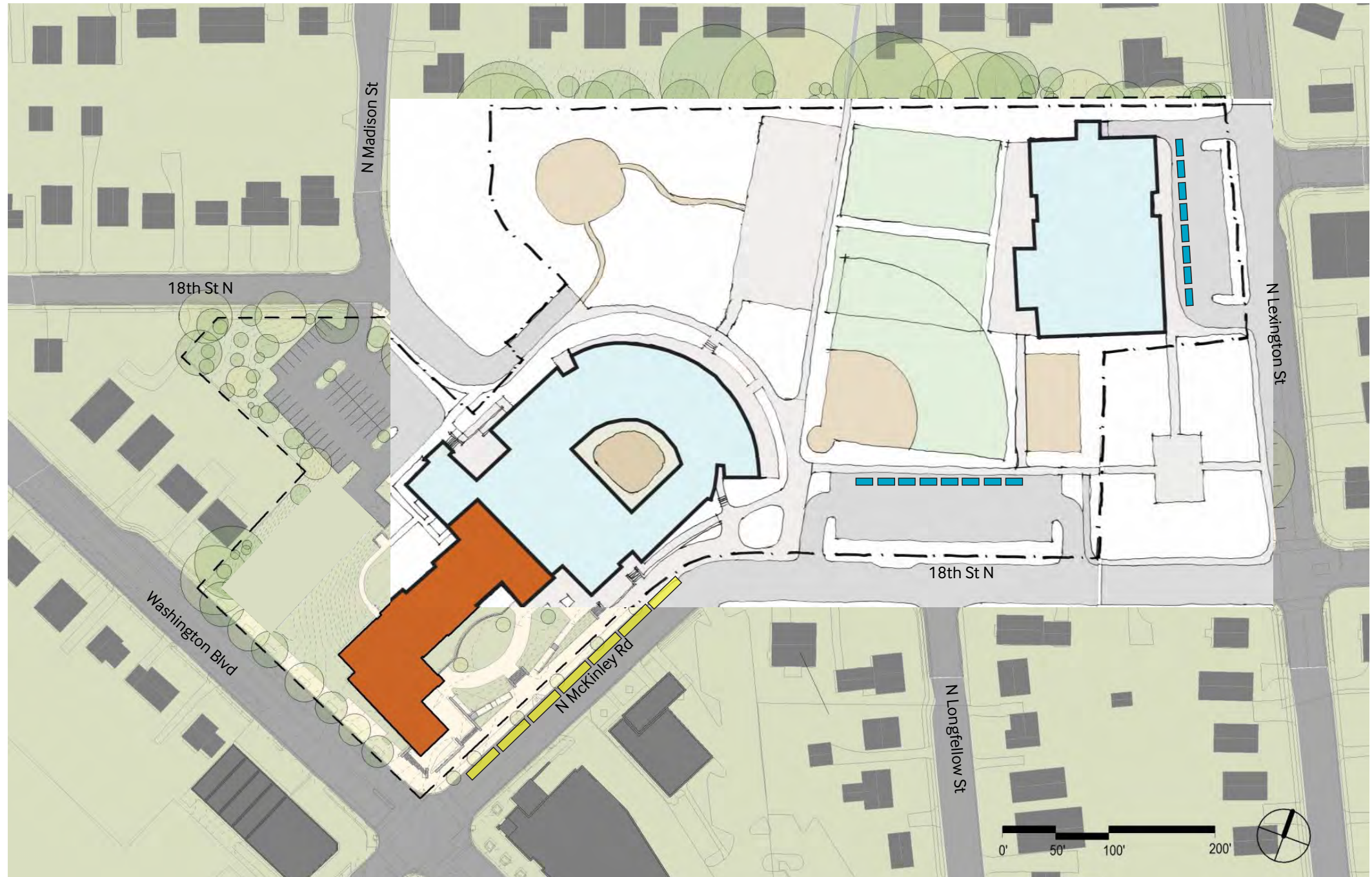
- Builds into hill, with less impact to flat or wooded open space
- Two story building from Lexington
- Distributes traffic and parking the best
- No utility relocation at all
- Least impact to parking for business

Cons

- Two schools: not desirable instructionally
- Loss of sledding hill and upper field (although field could be relocated)
- Increased staffing, operating costs
- Lack of flexibility as cohort size changes
- No popular support throughout process

Statistics

Total Student Capacity:	732 Students
Increased Impervious Area:	+47,800 SF
Required Parking (Zoning):	150 Spaces



Site Plan



Axon View

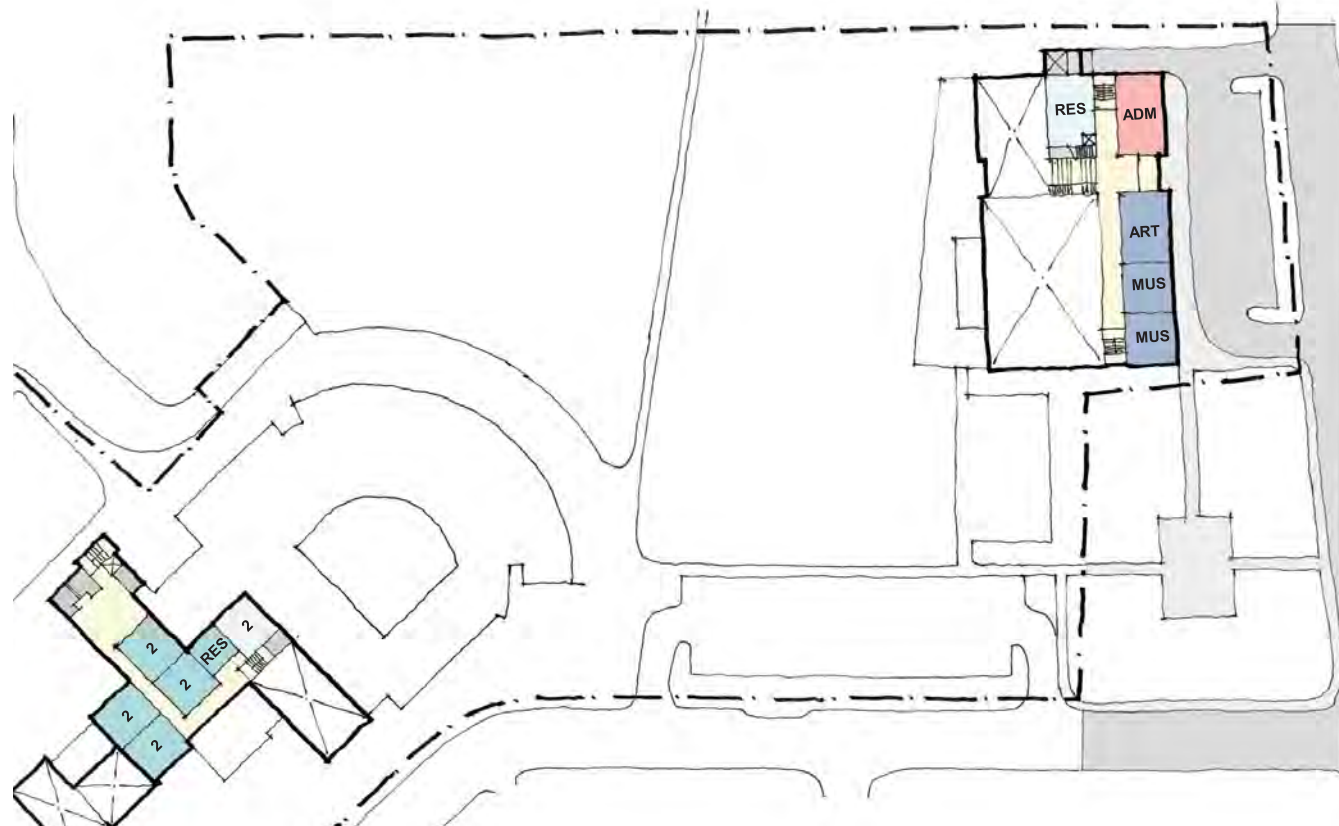


Level 1

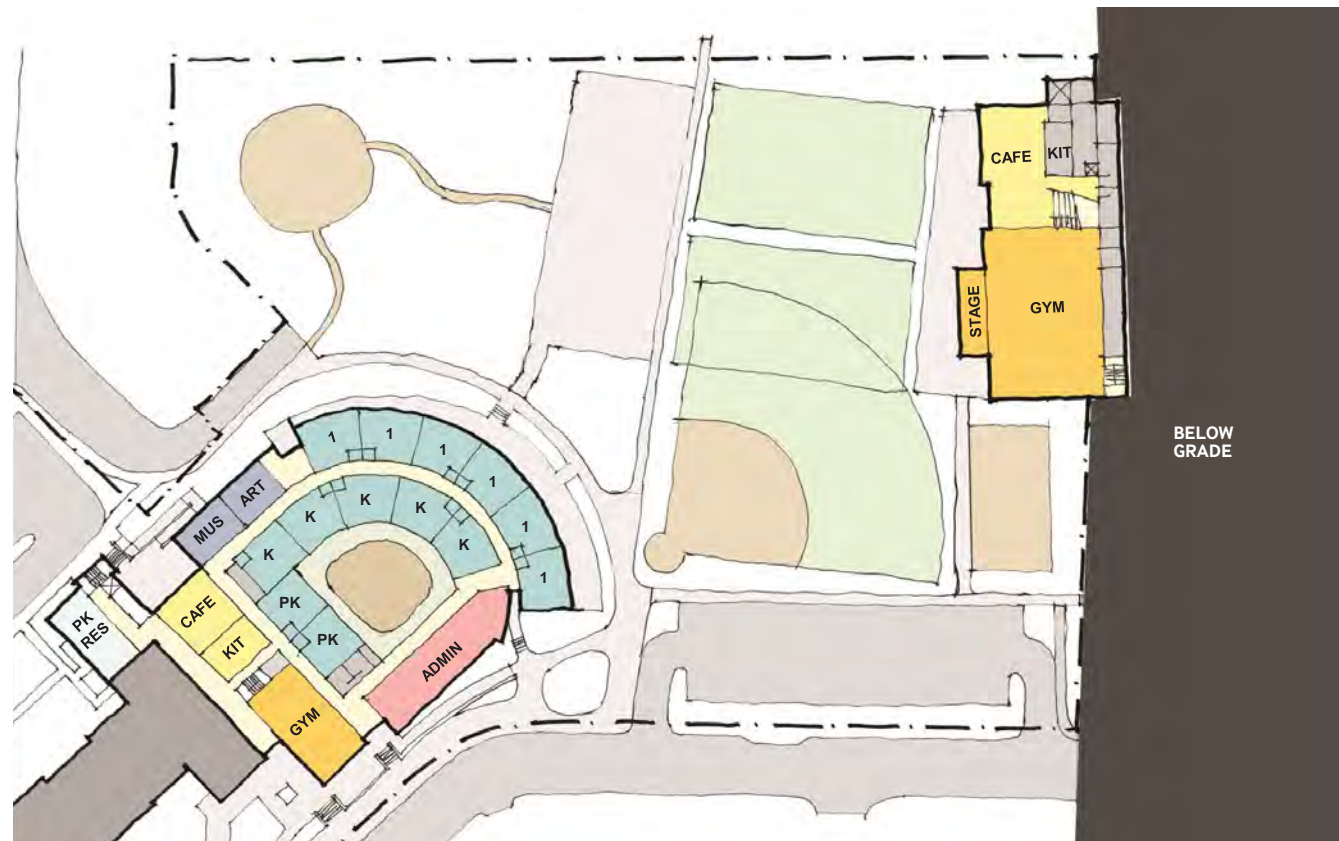


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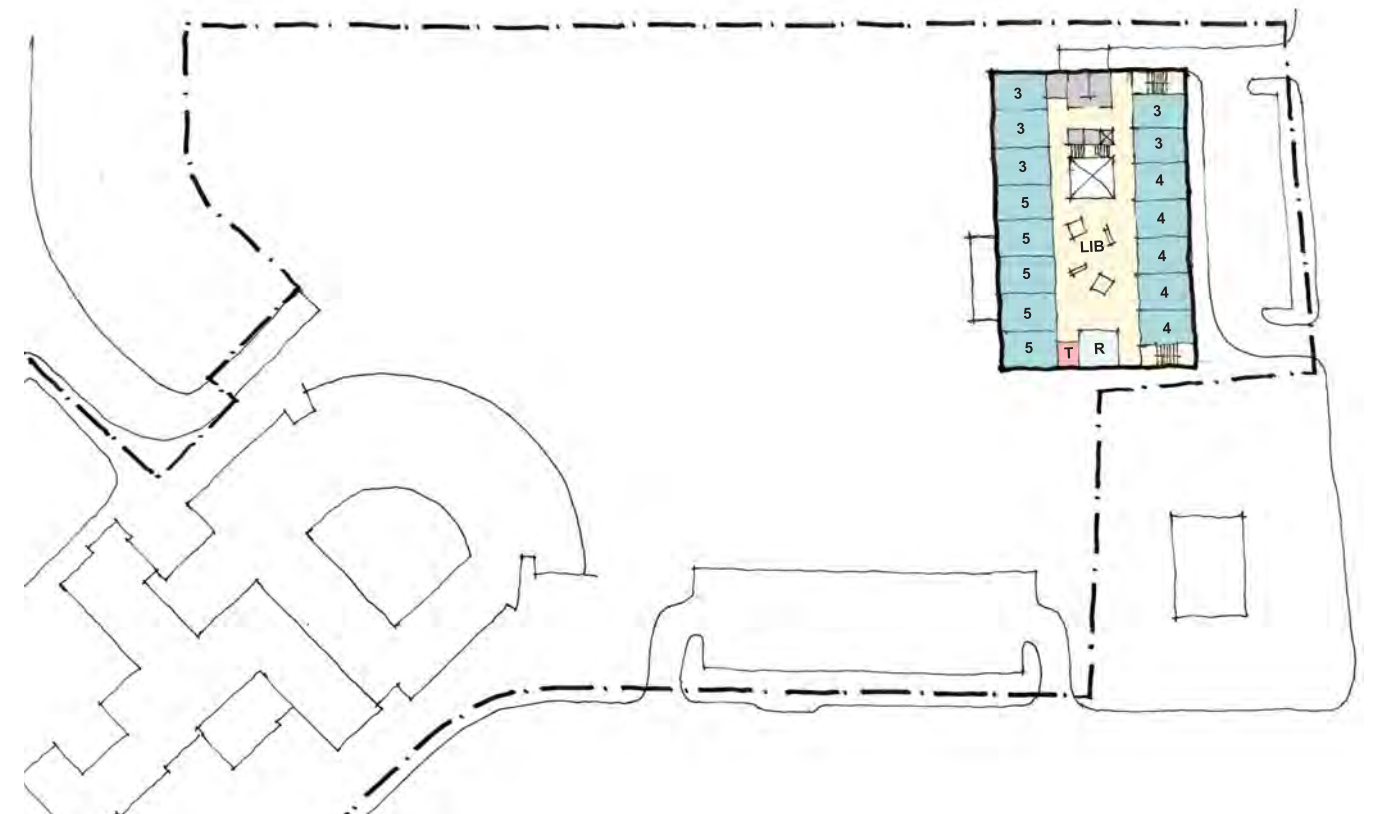
- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



Level 2



Level 1



Level 3

Standalone Scheme

Pros

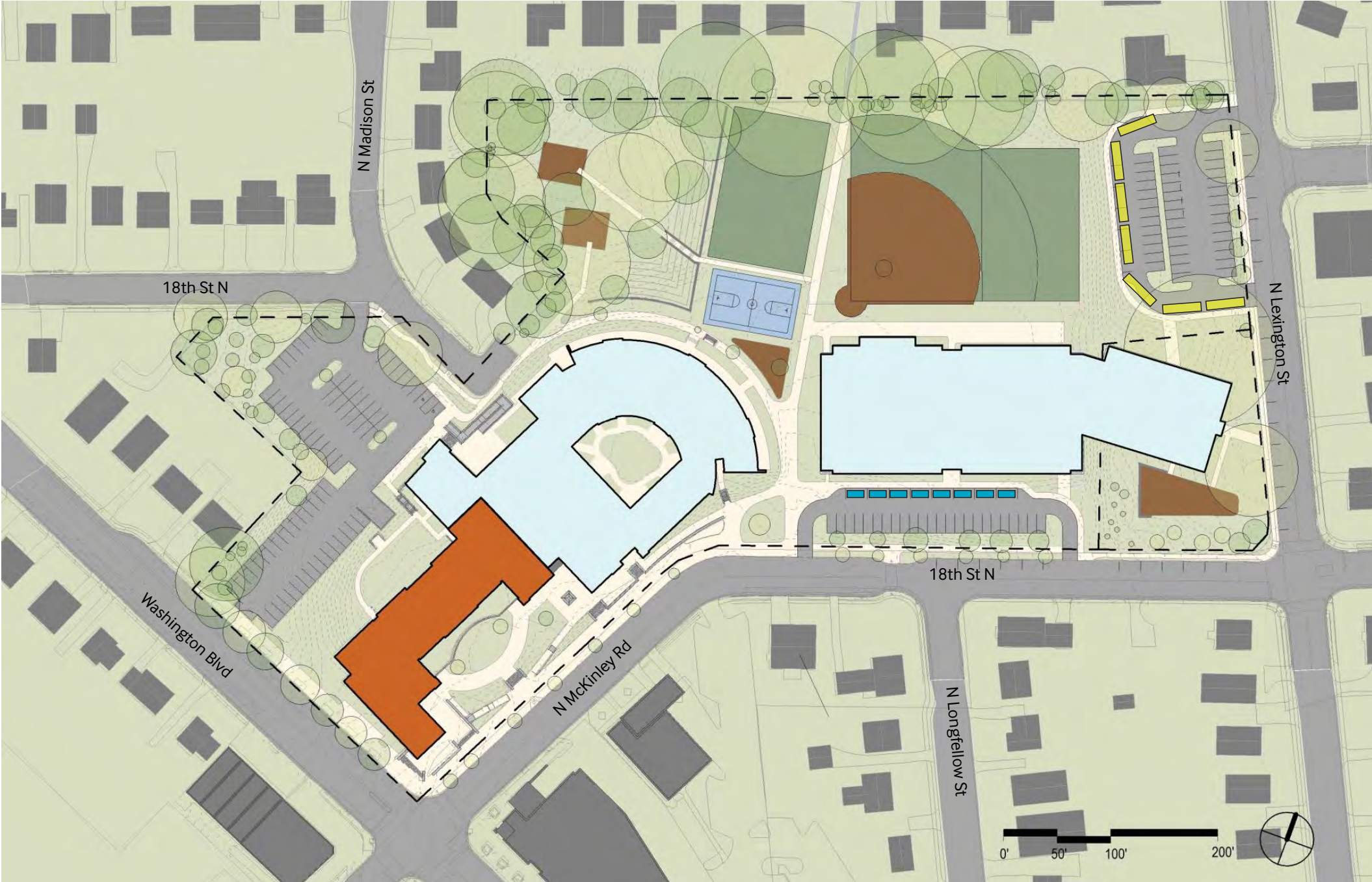
- 271 more seats than other schemes
- Two story building from Lexington
- Keeps existing asset with no renovation costs
- Low transition time b/w classes
- No major utility relocation
- Most on-site parking in this site plan

Cons

- 37% more people, cars, buses, etc. Largest parking requirement
- Largest loss of open / permeable space
- Parks on upper field
- Four story building next to one story building
- Builds in County parcel
- Highly unpopular

Statistics

Total Student Capacity:	1,003 Students
Increased Impervious Area:	+62,700 SF
Required Parking (Zoning):	204 Spaces



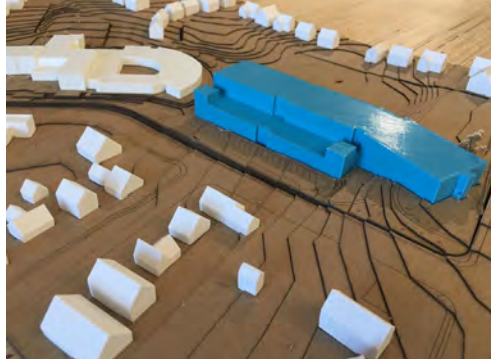
Site Plan



Axon View



Level 1

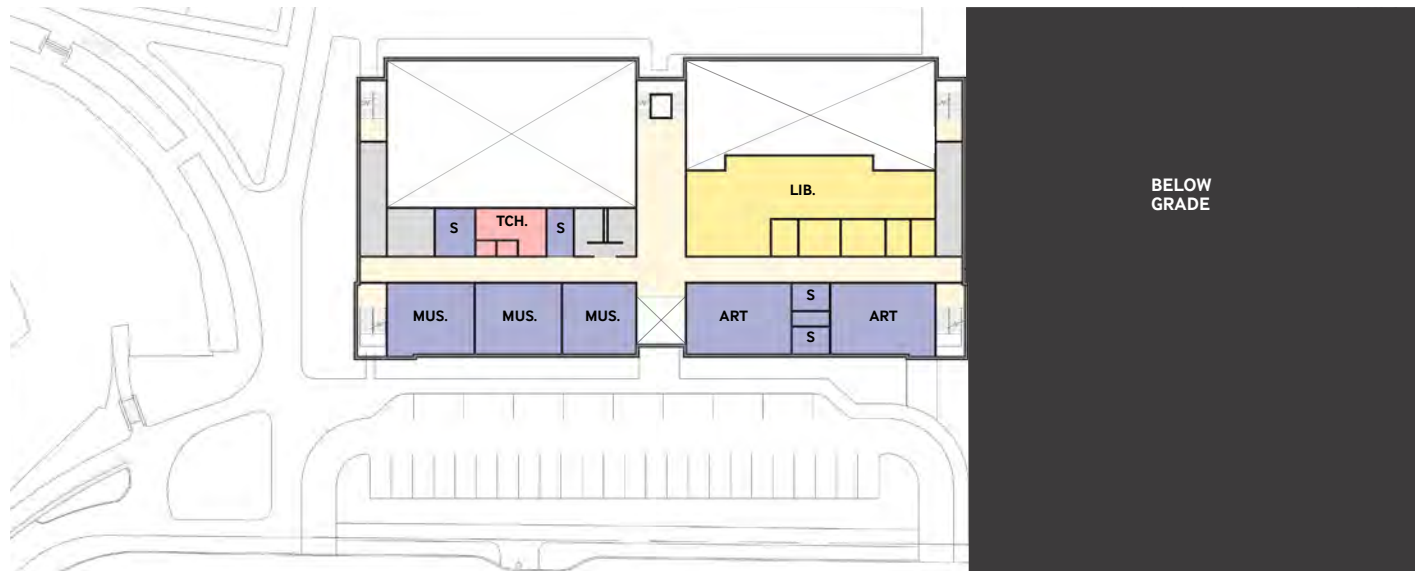


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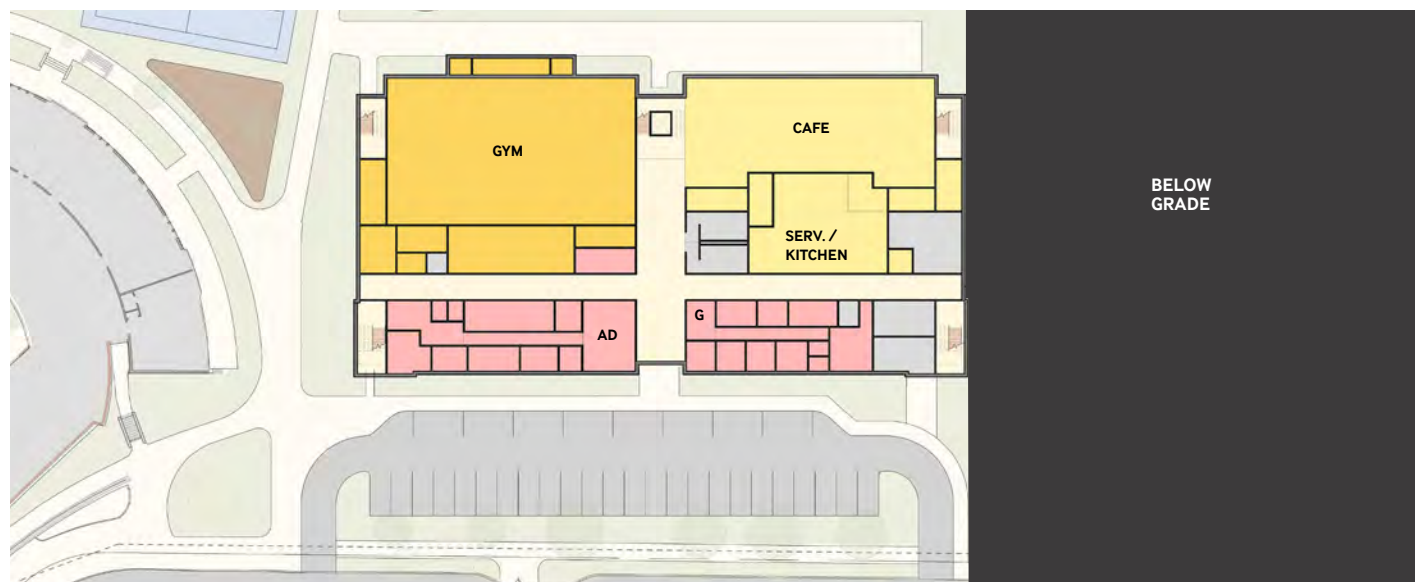
- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



Level 4



Level 2



Level 1



Level 4

Integrated Scheme (4 Story Scheme)

Pros

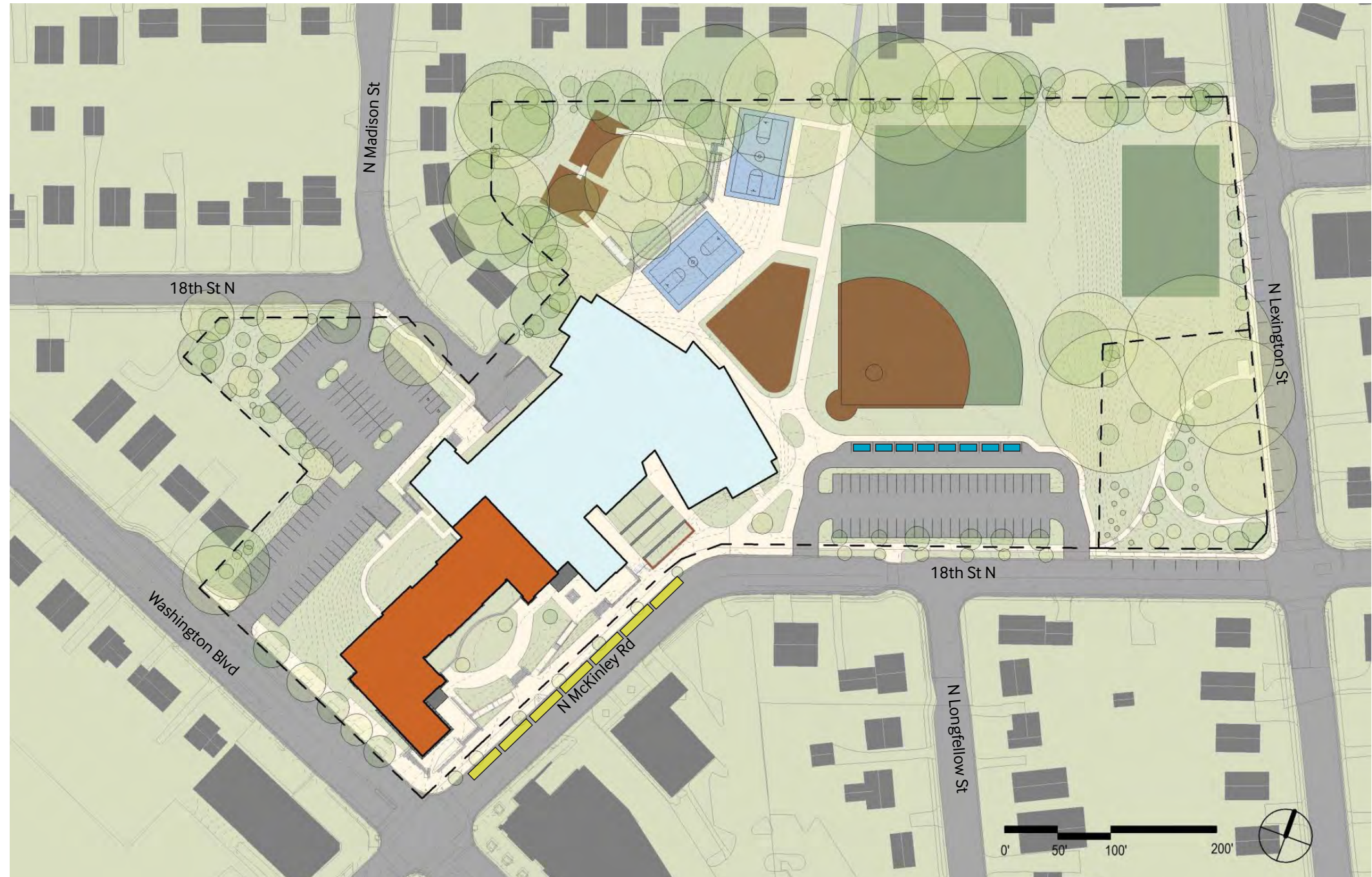
- Lowest loss of open / permeable space
- Low transition time b/w classes
- Lowest total energy use per SF
- Lowest required parking
- Builds up on small footprint
- Keeps the most site amenities
- Highly popular

Cons

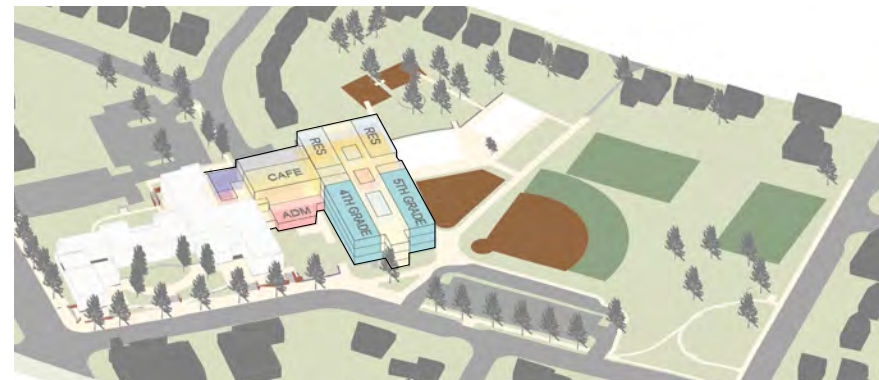
- Minor utility relocation
- Four story building next to two story building and homes
- Demolishes existing asset that is only 9 years old = least sustainable
- Might have biggest negative parking impact on business

Statistics

Total Student Capacity:	732 Students
Increased Impervious Area:	+16,800 SF
Required Parking (Zoning):	150 Spaces



Site Plan (4 Story Iteration)



Axon View (3 Story Iteration)

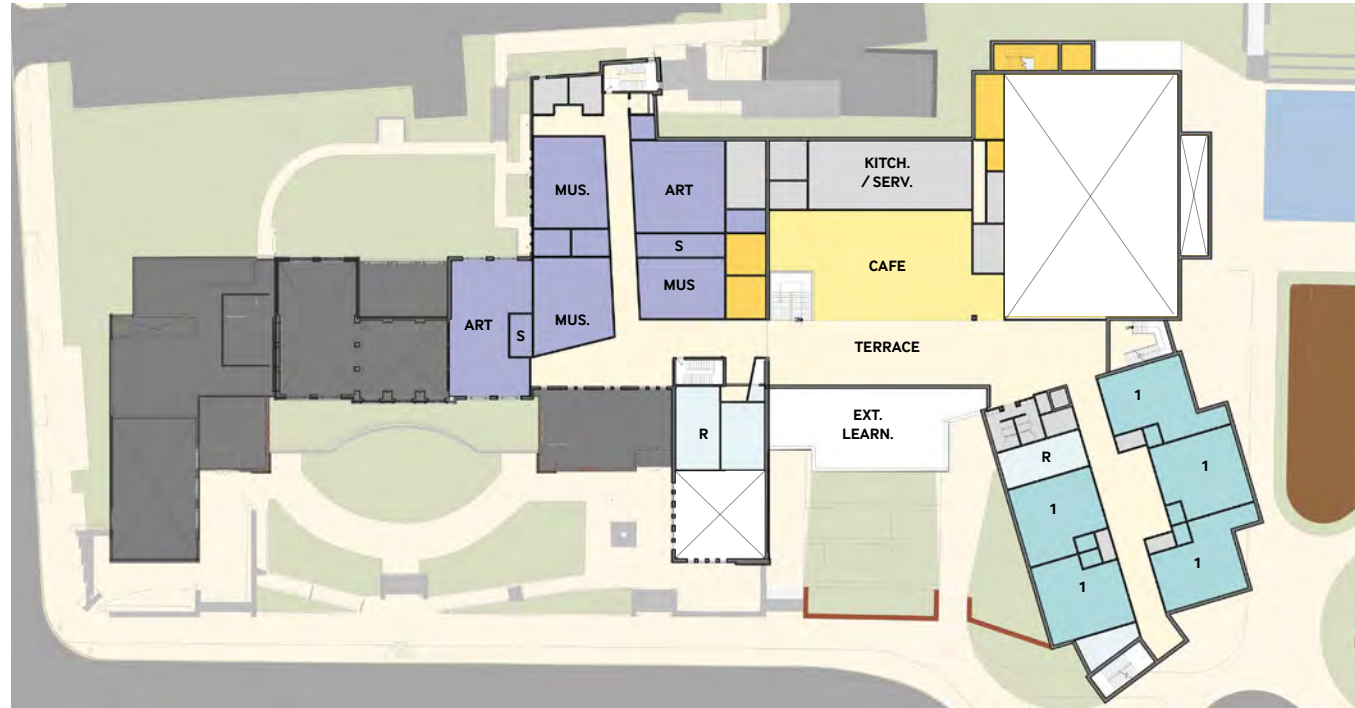


Physical Model (4 Story Iteration)



Legend

- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



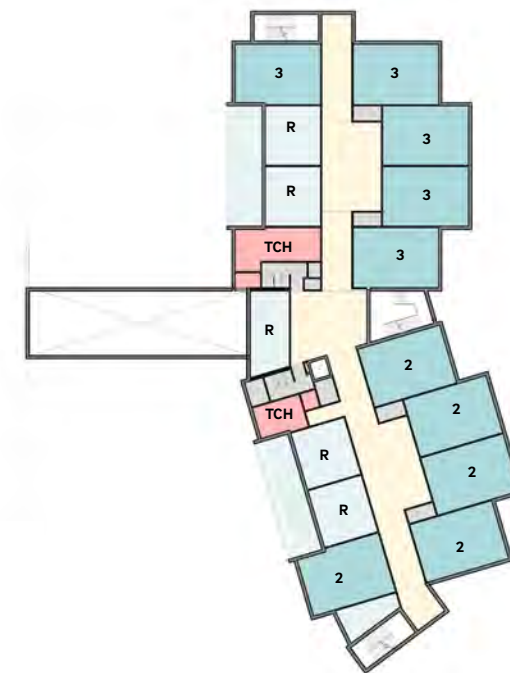
Level 2



Level 4



Level 1



Level 3

Bridge Scheme (Previous South Scheme)

Pros

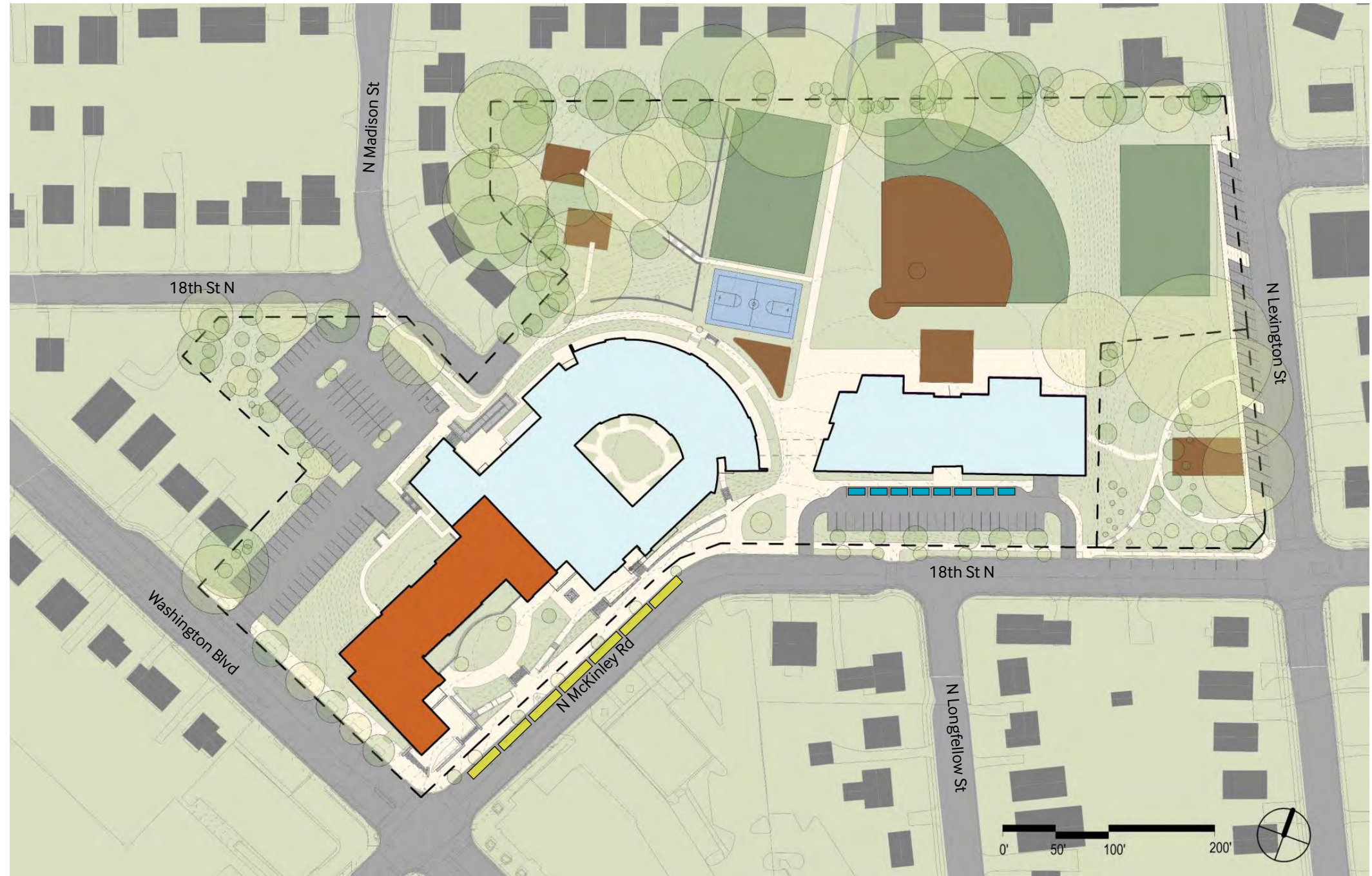
- Retains existing investment in building and expands vertically one floor
- Second smallest footprint
- No major utility relocation
- Buildings of similar scale
- 2 grades with easy access to corner park for play amenities

Cons

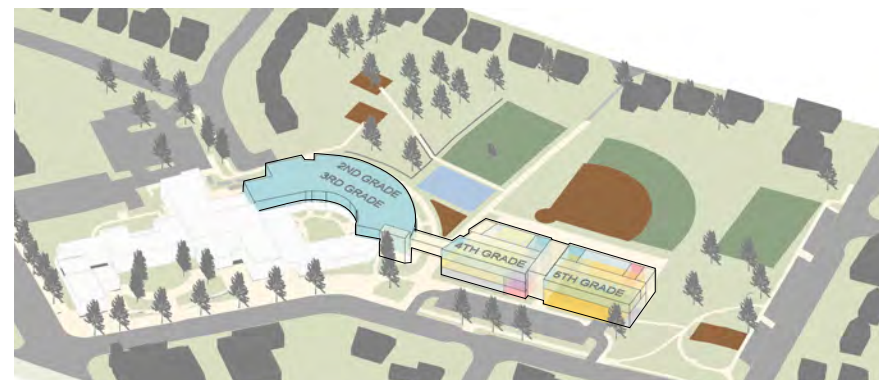
- Bridges over utilities & small bridge may be transition choke point
- Complicated renovation
- Very spread out & less than ideal instructionally
- Highest transition time, including having to go outside

Statistics

Total Student Capacity:	732 Students
Increased Impervious Area:	+35,500 SF
Required Parking (Zoning):	150 Spaces



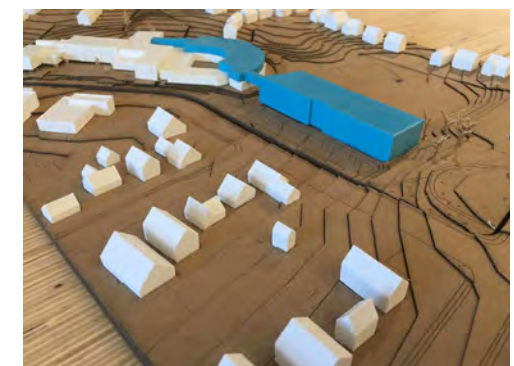
Site Plan



Axon View

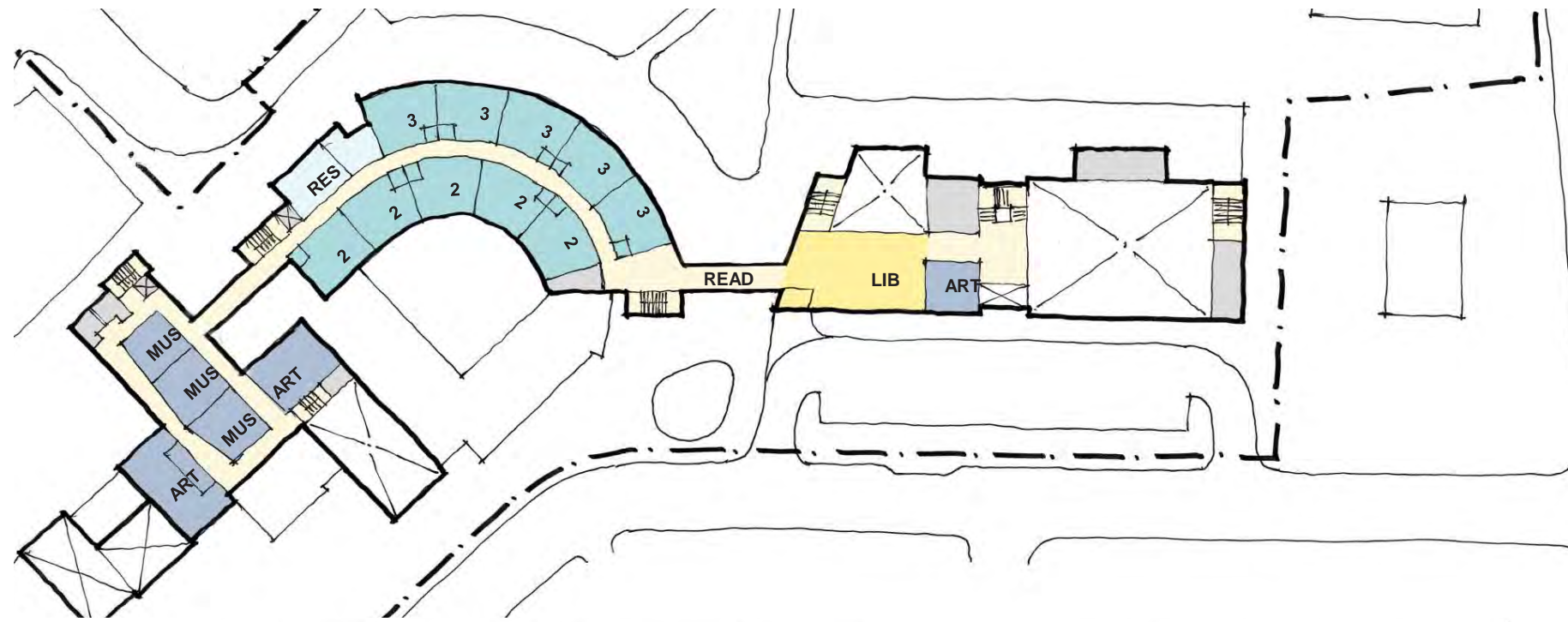


Level 1

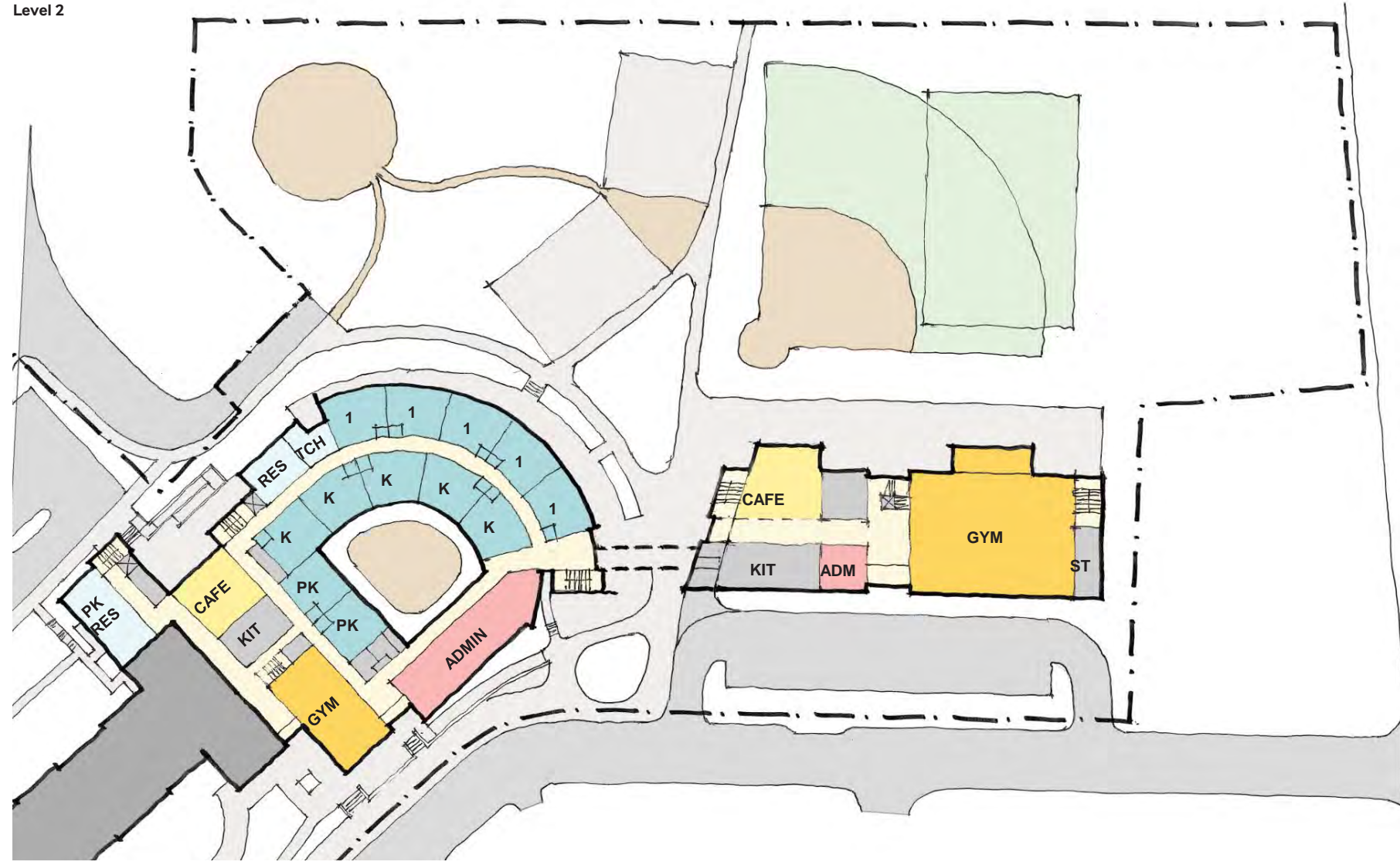


Legend

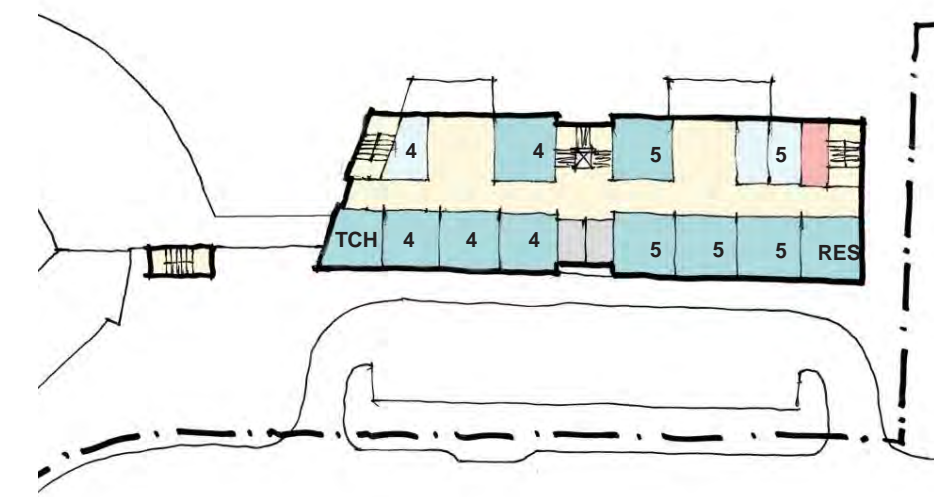
- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



Level 2



Level 1



Level 3

Upper Lower Scheme

Pros

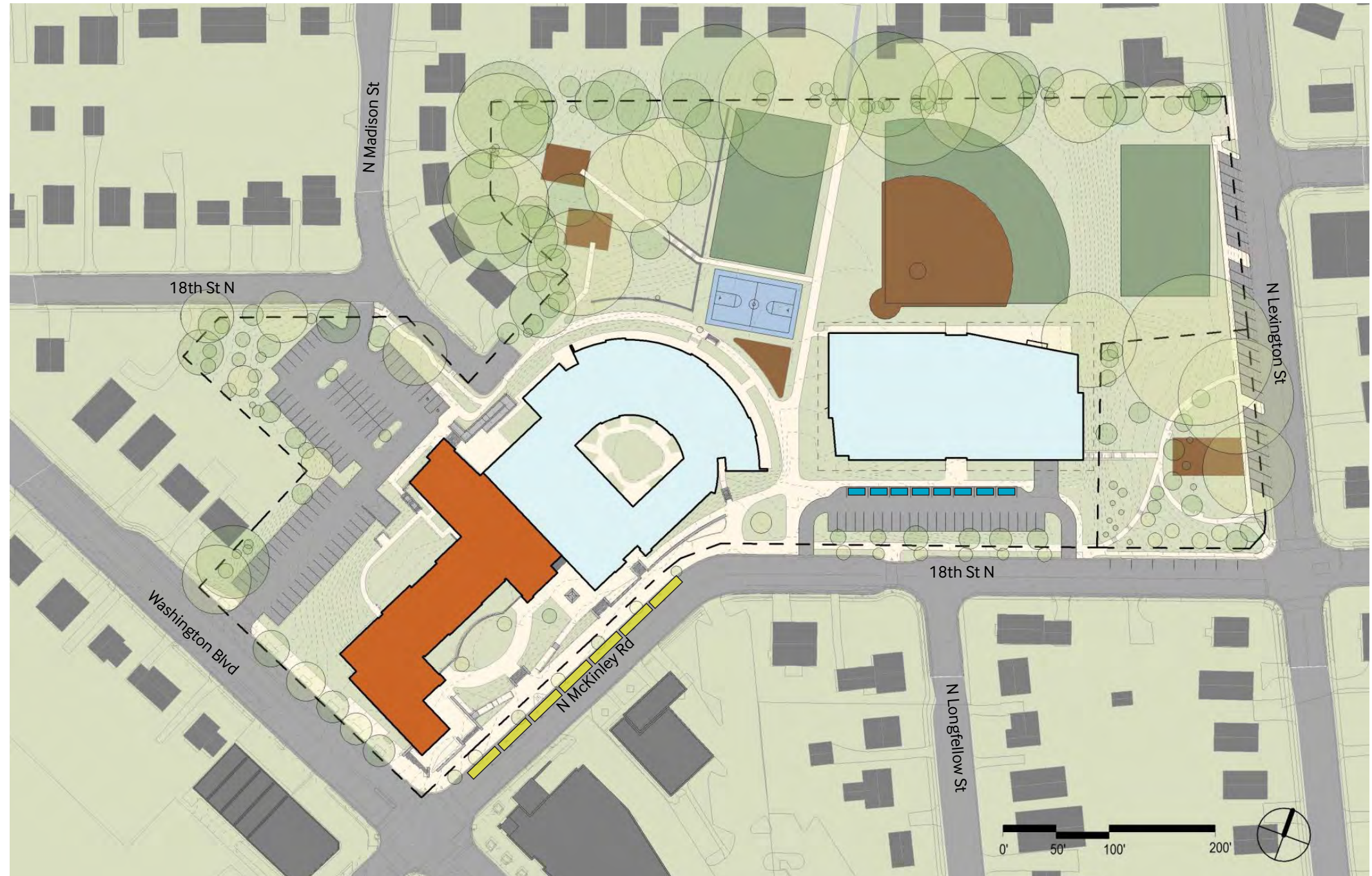
- Keeps existing asset with medium renovation expense
- Lowest transition time with smaller upper and lower school communities
- Operated as one school with one admin
- No major utility relocation
- Existing second floor swing space = built in expansion v/s trailers
- 4 grades with easy access to corner park for play amenities

Cons

- Medium loss of open space (less loss than North or Standalone)
- 15 more parking spots required by Zoning than lowest scheme
- 3 story building that pushes into site as far as Standalone

Statistics

Total Student Capacity:	732+ Students
Increased Impervious Area:	+36,800 SF
Required Parking (Zoning):	150-165 Spaces



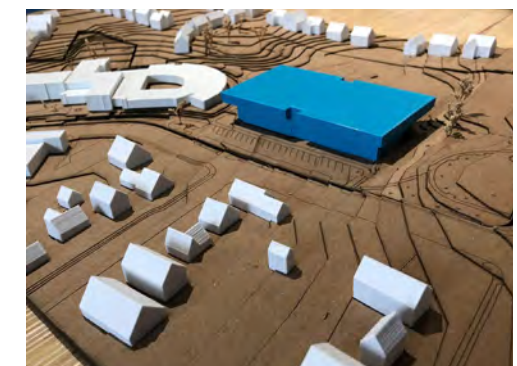
Site Plan



Axon View

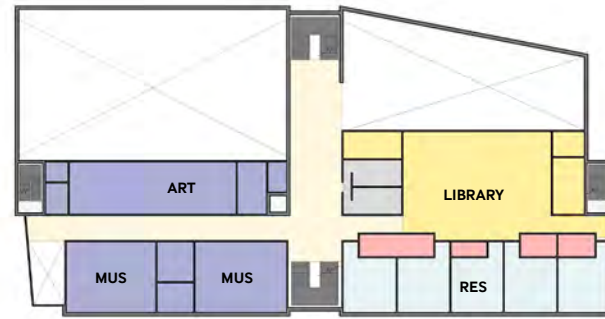
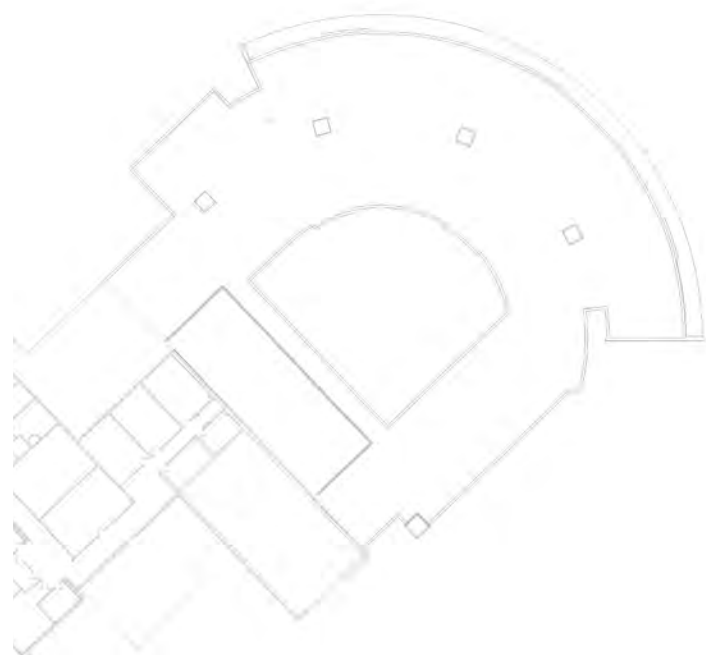


Level 1

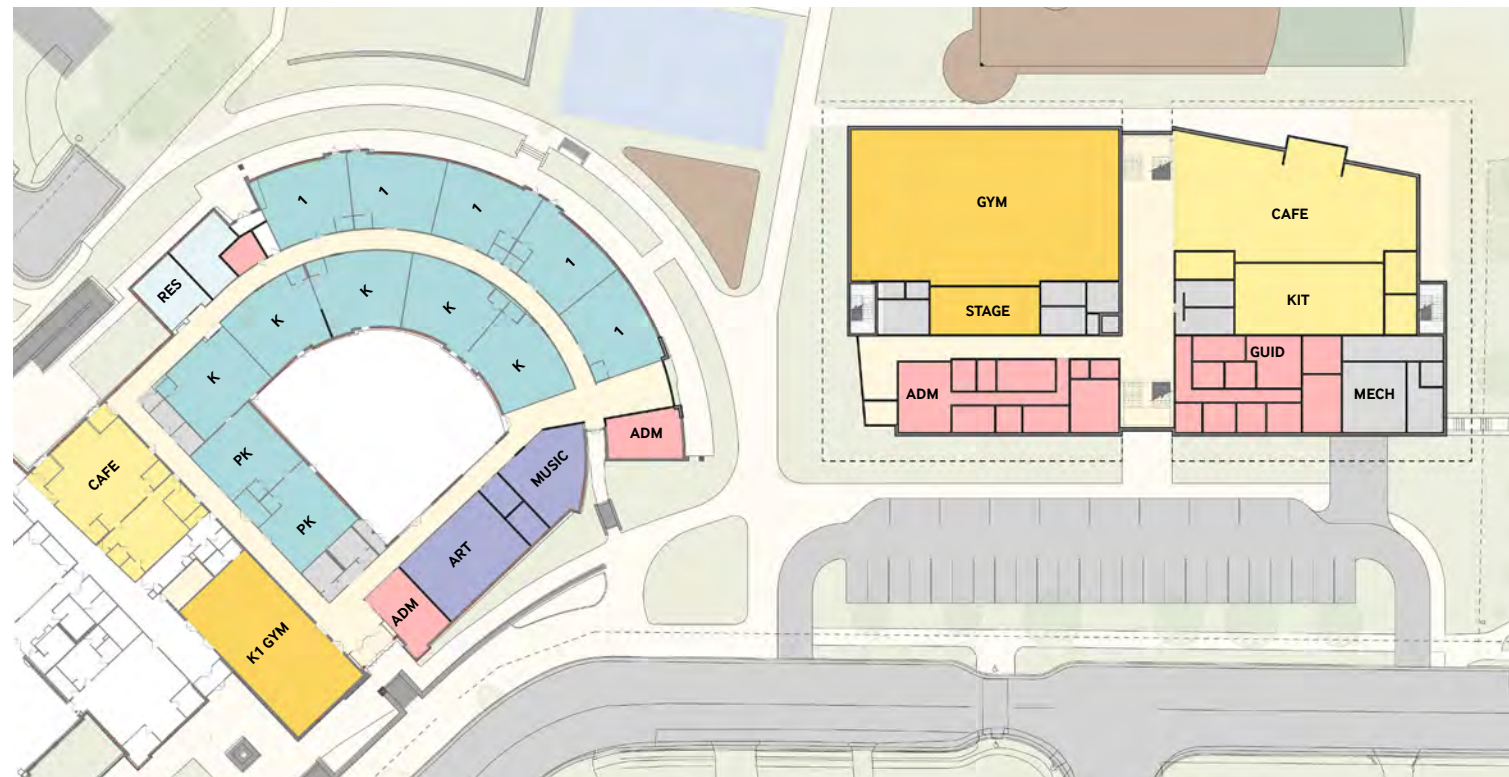


Legend

- Classroom
- Resource
- Cafeteria / Library
- Athletics
- Art / Music
- Admin / Teacher
- Circulation
- Mech / Support



Level 2



Level 1



Level 3

Committee Voting

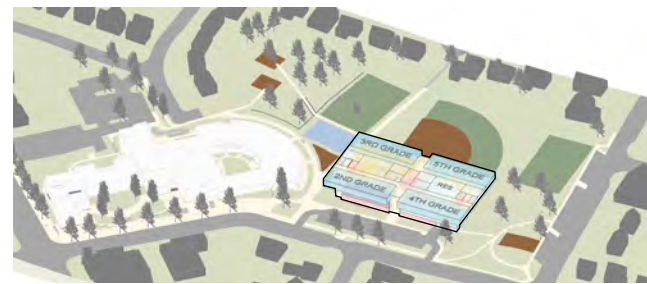
At the end of the committee meeting, a blind vote was conducted to provide committee recommendations for the school-board. Each of the six schemes were included on the scorecard along with five key statistics: cost compared to budget, total student capacity, cost per seat, increased impervious area, and required parking according to zoning. All costs comparisons were based on the AE estimate done prior to the Construction Manager at Risk being under contract. Committee members were each given a ballot with instructions to rank the schemes from 1 as most desirable to 6 as least desirable. Ballots were separated into BLPC and PFRC committees and then collected and counted. Votes were counted with a weighting system from 1 to six where first place votes received a six and sixth place votes received a 1. All weighted numbers were then added and the sum score for each scheme represented the total score.

Results

The results of the blind voting proved to be similar between committees. Both committees recommended Integrated as the top scheme, followed by Bridge and Upper Lower as a close second and third candidates. The fourth scheme was the Standalone for both committees, while fifth and sixth were mixed between the North and East Schemes.

Observations

The clear favorite was the Integrated Scheme. The Bridge and Upper and Lower schemes nearly tied for second place, though neither had many first place votes. As the fourth place finisher, the Standalone scheme was bipolar in its ranking. as it received either first/second votes, or fifth/sixth place votes.



Upper Lower Scheme

Cost Compared to Budget: **-\$3 to -1M**
 Total Student Capacity: **732+ Students**
 Cost per Seat: **\$63-66,000**
 Increased Impervious Area: **+36,800 SF**
 Required Parking (Zoning): **150-165 Spaces**

BLPC Score

3

PFRC Score

3



Standalone Scheme

Cost Compared to Budget: **+\$1 to +3M**
 Total Student Capacity: **1,003 Students**
 Cost per Seat: **\$50-52,000**
 Increased Impervious Area: **+62,700 SF**
 Required Parking (Zoning): **204 Spaces**

4

4

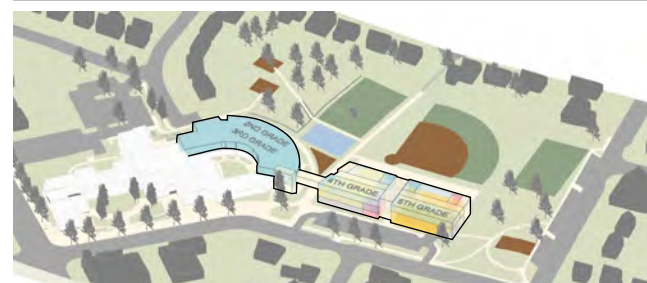


Integrated Scheme

Cost Compared to Budget: **-\$1 to +1M**
 Total Student Capacity: **732 Students**
 Cost per Seat: **\$66-68,000**
 Increased Impervious Area: **+16,800 SF**
 Required Parking (Zoning): **150 Spaces**

1

1



Bridge Scheme

Cost Compared to Budget: **-\$1.5 to +0.5M**
 Total Student Capacity: **732 Students**
 Cost per Seat: **\$65-67,000**
 Increased Impervious Area: **+35,500 SF**
 Required Parking (Zoning): **150 Spaces**

2

2



East Scheme

Cost Compared to Budget: **-\$7 to -5M**
 Total Student Capacity: **732 Students**
 Cost per Seat: **\$58-60,000**
 Increased Impervious Area: **+47,800 SF**
 Required Parking (Zoning): **150 Spaces**

6

5



North Scheme

Cost Compared to Budget: **-\$0.5 to +1.5M**
 Total Student Capacity: **732 Students**
 Cost per Seat: **\$66-68,000**
 Increased Impervious Area: **+37,300 SF**
 Required Parking (Zoning): **150 Spaces**

5

6

PFRC (with joint members)

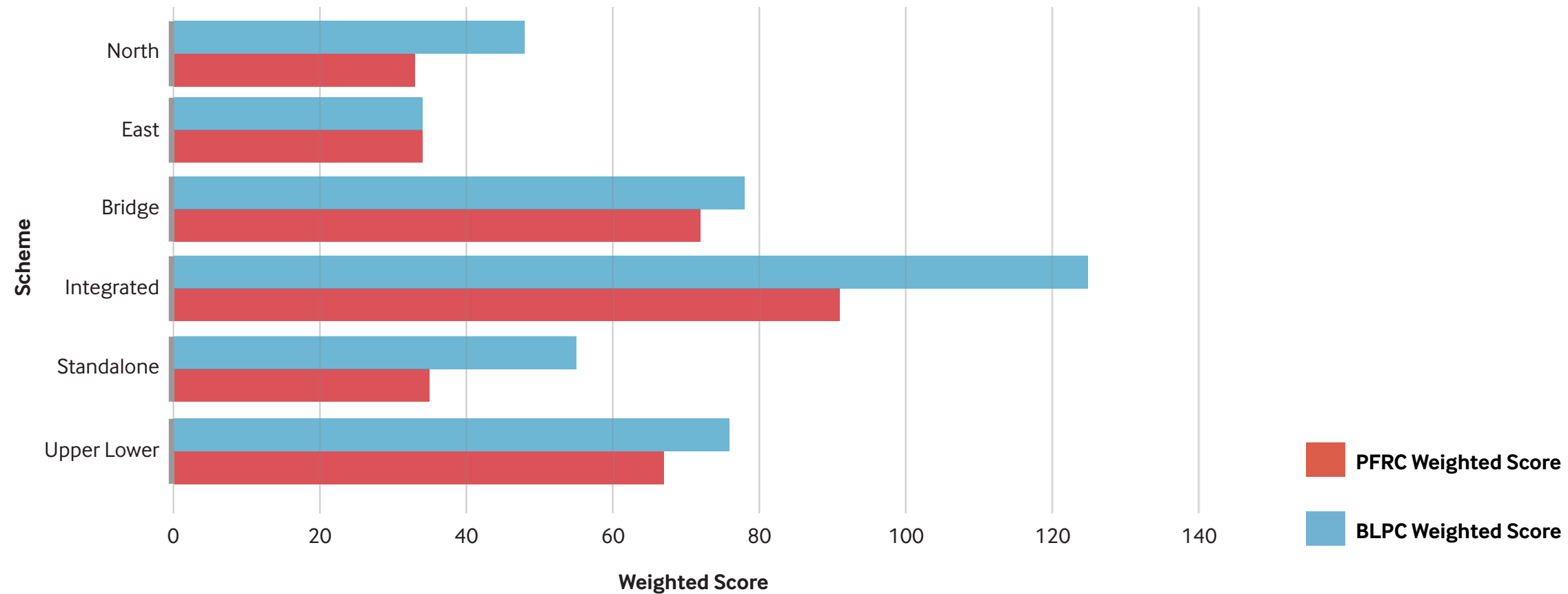
Scheme	Overall Rank	Total Weighted Score	Ranked #1		Ranked #2		Ranked #3		Ranked #4		Ranked #5		Ranked #6	
			Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score
Upper Lower	3	67		0	6	30	7	28	3	9		0		0
Standalone	4	35	1	6	2	10		0	2	6	3	6	7	7
Integrated	1	91	14	84	1	5		0		0	1	2		0
Bridge	2	72	1	6	7	35	7	28	1	3		0		0
East	5	34		0		0	1	4	3	9	9	18	3	3
North	6	33		0		0	1	4	6	18	3	6	5	5
Total ballots			16		16		16		15		16		15	

BLPC (with joint members)

Scheme	Overall Rank	Total Weighted Score	Ranked #1		Ranked #2		Ranked #3		Ranked #4		Ranked #5		Ranked #6	
			Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score	Quantity	Weighted Score
Upper Lower	3	76		0	6	30	8	32	2	6	4	8		0
Standalone	4	55		0	8	40	1	4		0	2	4	7	7
Integrated	1	125	20	120	1	5		0		0		0		0
Bridge	2	78	1	6	4	20	7	28	8	24		0		0
East	6	34		0	1	5	1	4	1	3	6	12	10	10
North	5	48		0		0	3	12	7	21	7	14	1	1
Total ballots			21		20		20		18		19		18	

Notes & Assumptions

- * A scheme ranked 1st equals a weighted score of 6. A scheme ranked 6th equals a weighted score of 1 et al.
- * Several ballots did not rank all six schemes. Only unique rankings were counted which is why the total ballots number varies.
- * Joint ballots were counted "twice" once for the BLPC and once for the PFRC.



Cost

Can costs for Integrated option be reduced?

- A/E and CMR reviewed Integrated option to see if costs could be reduced
 - \$55.9 to \$56.5 million - final A/E and CMR concept estimate range fro 4-story version
 - \$55.1 million - CMR estimate to reduce 4-story version square footage comparable to other options
 - \$54.5 million - CMR estimate for the 3-story version
- To get the Integrated option close to maximum funding available major square footage and student capacity reductions are required; for example, 500 seat capacity instead of 725

	11/29	01/24		Pre-reconciliation		Post-reconciliation	
		LOW	HIGH	A/E	CMR	A/E	CMR
North B	high	\$48.5	\$50.5				
East	low	\$50.5	\$44.0				
Bridge (South B)	mid	\$47.5	\$49.5	\$48.5	\$51.1	\$49.9	\$50.0
Standalone		\$50.0	\$53.0	\$52.6	\$56.1	\$54.8	\$55.6
Integrated		\$48.0	\$50.0	\$52.1	\$57.1	\$55.9	\$56.5
Upper Lower		\$46.0	\$48.0	\$48.8	\$50.5	\$49.2	\$49.4

Summary of Cost Estimates

05

Appendix

Committee Chair Letters

BLPC

PFRC

School Board Approval

BLPC Recommendation Letter

Hans Bauman, Chair

Hans Bauman
Chair, Reed Expansion Project BLPC

January 30, 2018

Arlington County School Board
Dr. Patrick Murphy, Superintendent

Dear School Board Members and Dr. Murphy,

The Reed Expansion Project Building Level Planning Committee (BLPC) is pleased to offer our response to the six concept designs developed in collaboration with APS, VMDO, and Arlington County. Though the Charge requests comments on three options, a total of six are being brought for your consideration. As detailed below, there is a clear consensus opinion for the **Integrated Scheme** and we hope the School Board approves moving forward with this concept.

The Process

The BLPC and Public Facilities Review Committee (PFRC) met six times between October 2017 and January 2018 to provide guidance to the staff and architects charged with developing the Reed site and to review and refine design concepts. There were also several site tours as well as an open Community Meeting in January.

The committee meetings were well attended and characterized by lively, active participation by all members. We were consistently impressed by staff's commitment to the public engagement process and by VMDO's expertise, not only in architecture and design but also in their strong support of Arlington's unique public processes. Early design exercises helped committee members experience the difficulty in balancing competing interests and paved the way for understanding design choices more deeply later in the Concept Phase.

Early on, the decision was made that during the Concept Phase all meetings would be joint PFRC-BLPC meetings. This choice has served the process well and we would recommend repeating this kind joint process for future schools projects to continue improved collaboration and coordination between APS and County entities.

During the course of this process, certain themes became apparent and drove the committee's convergence on a single concept that best balances these (sometimes competing) design drivers. There are also site realities which constrained potentially promising alternatives.

Design Themes

1) *Optimized learning environments*

Of primary importance to the committee was to create a student-centric learning environment. During the concept phase, this meant a bias toward more tightly integrated school campus designs, versus ones with expansive/disconnected buildings. It also favored concepts that enabled modern flexible school designs and site designs with reduced classroom/activity transit times.

2) *Community green space and amenities*

The play fields, shade trees, and sledding hill that sprawl across the eastern section of the site constitute critical resources for school users, the surrounding neighborhoods, and the County generally. Arlington has high demand for play fields and the committee pushed for designs which retained field space and preserved tree canopy. We consistently favored more compact designs over those with larger footprints.

3) *Proximity to the Westover commercial district*

The Westover commercial district is a unique community asset that the surrounding neighborhoods and our committee strongly support. The residential and business communities of Westover are highly concerned over the increased traffic congestion and parking challenges that will result from our development of the Reed site. Any site design will need to create traffic flows and parking solutions which help mitigate these impacts and support the vibrancy of this unique neighborhood.

Site Realities

1) *Underground utility lines*

There is a major storm sewer line which runs directly through the site, adjacent to the current single-story Children's School building. Given the prohibitive, multi-million-dollar cost of relocating this sewer line, all designs were forced to avoid this approximately 60' right-of-way through the site, either dividing designs across it or onto either side of this wide swath. On the positive side, this right-of-way essentially follows an existing residential pedestrian path; our inability to develop in this area effectively forced preservation of this vital community route through the middle of the site.

2) *Traffic and parking concerns*

The thriving Westover commercial district, the County library, and the major arterial Washington Boulevard are all within a stone's throw of the Reed site. Even with the current, more limited APS usage of the Reed site, the surrounding community struggles with traffic and parking impacts. The addition of 500+ seats to this busy area is quite distressing to many neighbors. Parent and staff access to and parking at the site – as well as school bus access points – still need to be fully developed. These issues continue

to be the major stumbling block for this project, will be the sole focus of an upcoming meeting, and will need to be further addressed in future design stages.

3) *The architecture of the Children's School*

The Children's School is just one portion of the expansive 2009 project that created one contiguous building that includes the new library, the historic Reed Elementary facade, the Children's School, and several smaller programs. The single-story Children's School was designed specifically for a pre-K program, incorporating smaller rooms, narrow labyrinthine hallways, and curved spaces. Though appropriate for early childhood, replicating this design upwards for older children would not be desirable.

Further, when the Children's School was built, promises were made that a second story could be built atop the existing one-story structure. Initially, the committee was biased towards designs that built atop and replicated the existing structure. However, it became clear that the costs of peeling off the roof to "build up" would be very high, thanks to late-phase, unexpected construction choices during that 2009 remodel. Certainly, the community has wrestled with concepts that propose partial demolition of a bond-funded building that was completed less than 10 years ago.

4) *Past commitments*

When the Westover County Library and Children's School were re-developed about ten years ago, expectations were set that only a limited number of APS students would be accommodated at Reed. Times have changed and Arlington needs more seats; nonetheless, neighbors worry about the additional impact of a full-sized elementary school. The neighboring communities have urged us to not exceed the 725 students specified by the Charge.

The Design Concepts

Six concepts were explored in some detail by the committee and the decision was made to present all six of these to the School Board. These options are: Upper Lower Scheme, Standalone Scheme, Integrated Scheme, Bridge Scheme, East Scheme, North Scheme.

On January 24, 2018, the BLPC and the PFRC performed a secret ballot ranking exercise of the six options. The meeting had very high attendance by both committees. The overwhelming preference for the Integrated Scheme by both committees was consistent with the subjective conversations the larger group has been having for months.

Table 1. January 24, 2018 BLPC ranking results

Weighted score: Schemes were given 6 points for a 1st place ranking, 5 for 2nd place, 4 for 3rd, etc.

Rank	Scheme	Score
1	Integrated	125
2	Bridge	78
3	Upper Lower	76
4	Standalone	55
5	North	48
6	East	34

Further, the ranking was simply a 1-6 listing exercise and does not capture the spirit of the discussion which for many members was “I know I want to rank Integrated first, but all the other options are so much less desirable that I don’t know how to order them.” In hindsight, a weighted ranking might have been useful. For instance: “Distribute 10 points among three or more options.” Such a modification would likely have differentiated the Integrated Scheme’s score even more clearly and should be considered for future ranking exercises.

Significantly, the PFRC’s scoring of the options is almost identical to the BLPC’s ranking, with the exception of the two lowest ranked Schemes, North and East, being switched.

1. **Integrated Scheme**

This scheme rose as the clear front-runner midway through the Concept Phase. If the BLPC had been charged with recommending only one option, clearly this would be it. Cost estimates place it approximately on budget, it has the least impact on green space, and it allows the architects to design an optimal learning environment for future students. It also requires the least number of parking spaces and can be designed to be the most energy efficient.

The Integrated Scheme best balances the competing themes above. By demolishing the current one-story building, it allows VMDO to design a new structure that incorporates best practices learning environments without being constrained by choices made specifically for a pre-K program. Though larger, the footprint of this Scheme is generally within the bounds of the current Children’s School wing and only encroaches minimally on the existing green space and field usages. Parking and traffic are concerns with this (and every other) concept, though by concentrating the building to the west of the right-of-way, it allows more options for addressing the parking concerns.

The estimated cost of this option is not the lowest and the per-seat cost is higher than some of the other concepts. Nonetheless, the committees strongly support this option despite those cost drivers, as the positives listed above make it clearly worth the additional investment.

From a design perspective, the only significant concern was around the required height of this building, especially relatively to current and adjacent constructions. As a trade-off for increased green space and idealized learning environments, a potentially four-story building continued to get strong support from the committees. Educators also commented that taller buildings are more efficient for transit times than wide schools, so the four-story building was actually seen as plus from an educational perspective.

The committee struggled with supporting a design that proposed demolition of a significant portion of a relatively recent, publicly bond-funded building. For weeks, the group avoided even considering this alternative. But once the required educational and green space trade-offs with the other designs became clear, almost every BLPC member ranked this concept as their first choice.

Near the end of the Concept Phase, a concern was raised around the legality of partial demolition of the existing building, especially if the bonds were still outstanding. APS staff has consulted with their legal teams and there is no legal concern with the proposed partial demolition. There is still a political issue, of course, which I believe can be partially mitigated by offering transparency to our process and the journey we took as a committee from being skeptical of this alternative to embracing it as our preferred concept design. We are trading partial demolition of a relatively new building for better learning environments and the preservation of green space. I believe thoughtful Arlingtonians would agree that this is an acceptable trade-off.

2. **Bridge Scheme**

This scheme was appreciated because it honors the promise to “build up” over The Children’s School and expands the learning environment in a “connected” way without too much increase in the height of the building façade.

However, it spreads the school across a very broad area, making for unacceptable transit times for certain student transitions and with significant impact to the fields and open space. It also duplicates the current sub-optimal pre-K classroom footprints onto a second floor. The “bridge” over the County right-of-way will require careful negotiation and engineering to be viable. For approximately the same construction cost, the BLPC supports the Integrated Scheme over this design.

Significantly, though the weighted score ranked this scheme second, a majority of its votes came from committee members ranking it 3rd or 4th.

3. **Upper Lower Scheme**

This scheme is probably our “mid-cost” option and received the most combined 2nd and 3rd place rankings by committee members. It avoids expanding/duplicating the existing school structure and creates a new upper school which can be optimally designed for those grade levels on a somewhat smaller footprint.

There are significant concerns over how a bifurcated school would effectively operate and build school community. Especially unclear is how such a divided campus would accommodate the inevitable changes in distribution of students at various grade levels. This scheme paves over an additional 20,000 SF of green space (vs the Integrated Scheme), eliminating green and open space while creating an expansive school campus that inefficiently sprawls across the site. As one member of the public commented: it requires “too many compromises without enough benefit.”

4. Standalone Scheme

Interestingly, 75% of the committee either ranked this scheme 2nd after Integrated or dead last at 6th. That outcome matches the discussions in the room: this scheme was either seen as a potentially compelling way of finding hundreds of more seats for only a marginally larger investment... or it was seen as a violation of charter and trust to even seriously consider this design, especially since its cost is higher than the Charge’s maximum. Its continued inclusion as part of this process has been quite controversial, as it brings almost 40% more users and usage to an area that was already bracing itself for more traffic and loss of public space with the original, more limited scope.

The Standalone delivers 270 more seats than the required 725 for only a few million dollars more, driving the per-seat costs down significantly and creating much needed seats for future use. It would also allow APS to build an entirely new school, freed from the design constraints associated with attaching it to the existing Reed structure.

However, this scheme would decimate the open space so highly valued by the larger community and bring a huge increase in site traffic and parking requirements over the other alternatives. Much of the open field space would effectively be eliminated and construction would likely extend into the County parcel at the southeast corner.

Some in the neighborhood remember a decade-old promise to only build a 400 seat school. If APS pursues not just doubling but almost tripling that figure, the School Board will need to steel itself for significant community push back. The 4th place ranking of this scheme does not properly capture the strong opposition by some to this scheme. The current process did not ameliorate those concerns.

5. North Scheme

This scheme was the early frontrunner, as it attempted to concentrate new development to the west of the troublesome right-of-way and minimized impacts on the fields. However, this design quickly lost supporters once it became clear how many hillside trees would need to be removed and the growing concerns over building up/duplicating the existing Children’s School layout. County fire officials stating that a building in this location would not allow sufficient fire access was the death knell for the North Scheme.

6. East Scheme

The East Scheme is our “low cost” option and alas also the lowest ranked by the committee. The cost savings simply weren’t worth the other tradeoffs. It divides the elementary school community across two distant buildings, eats up significant green space (including the highly valued “sledding hill), and has the second highest impervious area impact after the Standalone Scheme. It does move the school’s traffic and parking impacts furthest away from Westover core area.

Conclusion

The School Board’s Charge to the BLPC directed us to collaborate in the design of three alternative concept designs and to deliver our response to those designs at the end of the Concept Phase. I believe we had all hoped to find three concept designs that were each reasonably compelling at the three price points requested by the Charge. After many months of work, the group has collectively developed six alternatives. Despite our best efforts to remain impartial and keep everything on the table, the BLPC and the PFRC coalesced around one single scheme as clearly the most compelling: the Integrated Scheme.

The Integrated Scheme comes in at budget and enables us to build a highly energy efficient building with world-class teaching and learning environments, all while preserving as much green and open space as possible. While we understand that the School Board must make their own decision, the consensus of the BLPC committee was clear.

I’d like to recognize and thank all the members of the BLPC for their steadfast commitment to the process and their engaged participation in many hours of meetings. I’d also like to give a shout out to the many spouses, partners, and families who make the continued participation of so many Arlington activists and staff possible. We couldn’t do this work without them.

Thank you for your commitment to doing what’s best for all of Arlington students. I appreciate the difficult decisions you make on our behalf on a regular basis. Thank you for giving us the opportunity to help shape and comment on the Reed Expansion Project.

Sincerely,



Hans Bauman
Chair, Reed Expansion Project BLPC

PFRC Recommendation Letter

James Schroll, Chair

February 8, 2018

The Honorable Barbara Kanninen, Chair
The Arlington County School Board
1426 N. Quincy St.
Arlington, Virginia 22207

RE: Reed Elementary School –Concept Plan Design

The Public Facilities Review Committee (PFRC) held six (6) meetings during 2017 and 2018 to consider Arlington Public Schools' ("APS's") Concept Design Plan for a new elementary school at the Reed School site, all of which were held jointly with the Building Level Planning Committee (BLPC). The PFRC consists of representatives from County Commissions, as well as project specific representatives.

The PFRC's mission is to ensure that the highest quality of land use planning, design, transportation planning, and other important community aspects are incorporated into civic projects as assigned to the Committee by the Arlington County Board. The PFRC uses the Principles of Civic Design (attached) to inform the design of civic facilities in Arlington.

Reed Elementary Concept Design Review

During the most recent meeting on January 24, the PFRC was asked to rank six concept designs from most preferred (1) to least preferred (6). The PFRC overwhelmingly ranked the "Integrated" design as the most preferred design and the remaining five designs received scattered rankings overall. It was clear from the ranking exercise and the PFRC discussion that the "Integrated" design far outweighed all the other designs in terms of preference.

The following discussion is arranged in order of PFRC preferences and reviews the proposed concept designs in context of the Principles of Civic Design and County-wide perspective that PFRC brings the school review process.

Integrated Design

This design is the clear preference of the PFRC. The Integrated concept design proposes partial removal of the existing structure and replaces it with a four-story building with 732 seats. PFRC is mindful of the fact that the current school was constructed recently, but still believes that the Integrated concept design is the best choice.

PFRC members support this design because it builds up, not out, and pushes the density toward Washington Boulevard, where it exists currently. This results in the most contiguous open space, which saves trees on site, and does not require the use of County land. PFRC members noted that while the existing building is not old, it was built with much younger students in mind, and would not function well for older students.

Some PFRC members expressed concern about the removal of a building that is not ten years old yet. Others stated some concern that the Integrated concept design was the highest cost per seat.

Bridge

After the Integrated concept design, which is the overwhelming choice, PFRC members showed a slight preference for the Bridge concept over the Upper/Lower design. In the Bridge design, a new school would be constructed along 18th Street with a bridge to a new second story that would be constructed on the existing school. PFRC members appreciated that adding a second story on the existing school could limit the floor plate of the new structure. PFRC appreciated that this option did not extend as much into the open space as the Upper/Lower or Standalone concept designs and did not require County property. PFRC members did raise concerns about the functionality of a bridge and whether this could create choke points. County staff raised issues about the proposed bridge, noting that it is over an existing utility easement. While not strictly prohibited, PFRC members noted that bridging over an easement could create other limitations.

Upper/Lower

The Upper/Lower concept design would construct a new school for upper grades along 18th Street and would keep the existing school for lower grades. PFRC members noted that this choice retains the use of the existing building and does not use County land. While there is a medium loss of open space with this option, the Upper/Lower design does push into the open space as much as the Standalone design, which was a concern of several PFRC members.

The Standalone, East, and North concepts gathered the least support among the PFRC members. These concepts received about half the support of the Bridge and Upper/Lower concepts, and roughly a third of the support given to the Integrated concept. As discussed below, the majority of PFRC members do not believe that any of these three concepts would be practical options for the new elementary school.

Standalone

The Standalone concept design proposes a new building on the site and the existing Reed building would remain. The new structure would accommodate approximately 732 seats and the existing building could be used to accommodate additional preschool students bringing the total seats at the site up to 1,000 seats.

The joint committee has had much discussion on the topic of increasing the number of seats to 1,000. Some PFRC members pointed out that the County is struggling to provide seats for students and this proposal provides an opportunity to maximize use of the site, however others have suggested 1,000 is too many seats for this site.

The majority of PFRC members were concerned with this design concept and did not believe it was a practical option because it has the largest floor plate and uses County land. Members noted that the library used to be in this location, but has been removed, and expressed concern that a new structure would be placed in that area of the site. PFRC members also expressed concern about the preservation of a Champion tree on this end of the site, if this option were chosen.

A minority of PFRC members believed that the Standalone concept should be supported because it preserves the investment in the existing building, offers the most seats of any of the concepts, and provides the lowest cost per seat.

North

The North concept design proposes to build a second story on the existing school and construct an addition that extends north into the adjacent hill behind the school. PFRC members opposed this concept because the North concept design would require the removal of too many trees on the hill. In addition, neighbors noted that many area children play on the hill that would be used to develop the school under this design. Lastly, members noted that providing fire access for this concept would be pose a significant challenge, which makes the North concept design not desirable.

East

The East concept design would construct a new school into the hill on the northeastern portion of the site along N. Lexington Street. The school would provide classrooms for older elementary school students, while the existing school would provide space for lower grades. This option has been included because it is the cheapest design, but it is not supported by PFRC members.

PFRC is concerned that the East concept design would be constructed into the neighborhood's sledding hill. Members also raised issues about increased impervious surface for parking along N. Lexington Street, which is green space currently. While other design concepts propose separate schools (e.g. Upper/Lower), PFRC members expressed concern about the logistical challenges that might arise because of the distance between the proposed new East building and the existing school. Members also raised questions about whether certain functions (e.g. cafeterias) would need to be duplicated because of the distance in building separation, which could add unnecessarily to the building's floor plate.

Other Issues

Parking - Design

Several of the current design proposals call for additional parking lots either on the sledding hill, on the corner property owned by the County which contains a Champion status tree, or in front of the proposed new building which pushes the building further into the existing open space. PFRC encourages APS to continue to explore creative parking solutions that minimize use of open space for parking such as a parking deck

located above the existing rear surface parking lot, or underground parking beneath the proposed building.

Transportation

There are outstanding transportation questions related to on-site circulation, pick-up and drop-off, access to VDOT controlled Washington Boulevard for access to a proposed parking deck, and the effect to the surrounding transportation network. PFRC looks forward to taking part in these ongoing conversations and encourages APS and its traffic consultant to work collaboratively with all parties throughout the process.

Going Forward

PFRC looks forward to working with APS and BLPC in refining a schematic design for the site that maximizes use of the site while protecting green space, trees, and walkability while respecting parking and transportation needs of the project.

Respectfully submitted,



James Schroll, Chair
Public Facilities Review Committee

Cc: Mark Schwartz, County Manager
Samia Byrd, Deputy County Manager
Bob Duffy, Planning Director, CPHD
Arlington County Board Members
Arlington County School Board Members
Dr. Pat Murphy, Superintendent, APS
John Chadwick, APS
Jeff Chambers, APS
Benjamin Burgin, APS
Aji Robinson, APS
Michelle Stahlhut, CPHD
Nicole Boling, CPHD

Attached

[PFRC Charge](#)

[Principles of Civic Design](#)

April 5, 2018 - School Board Motion

Motion to Approve the New Elementary School at Reed Concept Design - School Board Action item for April 5, 2018 (revised)

The Arlington School Board's adopted FY 2017-2026 Capital Improvement Plan (CIP) addressed the continued increase in enrollment throughout Arlington County by including a project for a new elementary school at the Reed site. The project officially began with a joint County Board and School Board work session on October 17, 2017. Since the joint work session there have been ten (10) meetings with the Building Level Planning Committee (BLPC), Public Facilities Review Committee (PFRC), members of adjacent civic associations, and other project stakeholders. The proposed concept design was presented by APS staff to the School Board for information on March 22, 2018.

Having carefully reviewed the extensive input from the BLPC, PFRC, civic association leaders and other stakeholders, and the Superintendent's recommendation, I move that the School Board approve the concept design for the "Integrated" option as generally described in Exhibits A and B in the presentation made at the April 5, 2018 School Board meeting.

By approving Exhibits A and B the School Board approves the following aspects of the concept design:

- Reaffirm basic project criteria to create a new neighborhood elementary school with an attendance zone for a minimum capacity of 725 seats to be completed in time for start of school September 2021, contingent on the availability of full project funding, as detailed in the last bullet below;
- General location of building, massing of building with three and four levels, and extent of reuse/renovation of the existing building;
- Use of on-site surface parking to address parking needs;
- Concept site plan showing general location and quantity of parking, with the understanding that further development of the site plan development is expected during the schematic design phase, the Use Permit review/ approval process, and as the transportation study is finalized; and
- Maximum total project funding of \$55 million, with strong direction to find opportunities to reduce costs. It should be noted that the FY 2017-2026 CIP funding for the Reed Project totaled \$49 million of which \$38.25

million was projected to be funded by bonds scheduled to be approved by the voters in the November 2018 bond referendum. The School Board will determine the total amount of the final funding and the concomitant funding sources for the Reed Project as part of the FY 2019-28 CIP. Any funding for the Reed Project determined to be provided by bonds will be contingent on voter approval in the November 2018 bond referendum.

With this approval, the School Board directs staff to pursue various strategies to reduce cost as the project advances to the schematic design phase. These include:

- As the educational specifications are completed and floor plans are further refined, explore options for space efficiencies to reduce the total square foot area of the project without affecting required teaching and learning spaces;
- Engage Arlington County Government (ACG) staff to find efficiencies in the Use Permit and building permit review and approval processes such that the risk of additional construction cost escalation may be reduced by completing the construction documents more expeditiously;
- Engage ACG staff in discussions to find reasonable modifications to standard development conditions and fees that might result in cost savings;
- Limit site amenity improvements to those directly required to support the new elementary school; and
- Limit off-site improvements to those that would most improve safe access to the site.

With this approval, the School Board charges the BLPC as follows:

- As stated in the Reed BLPC charge, the prime role of BLPC members remains communication with community stakeholders;
- APS staff and its consultants remain responsible for completing the project at or under the maximum funding available; the BLPC must recognize that staff will explore various cost savings strategies and must be prepared to discuss trade-offs and compromises to achieve cost reductions;
- To assist APS staff to maintain the project schedule, the BLPC will conclude deliberations and comments on the schematic design by the end of June 2018, if not earlier.

RECOMMENDED SCHEME

Pros

- Lowest loss of open / permeable space
- Low transition time between classes
- Lowest total energy use per SF
- Lowest required parking
- Builds up on small footprint
- Keeps the most site amenities
- Preferred by BLPC, PFRC, and community members

Cons

- Minor utility relocation
- Four-story building next to two-story building and homes
- Demolishes a portion of an existing asset that is only 9 years old

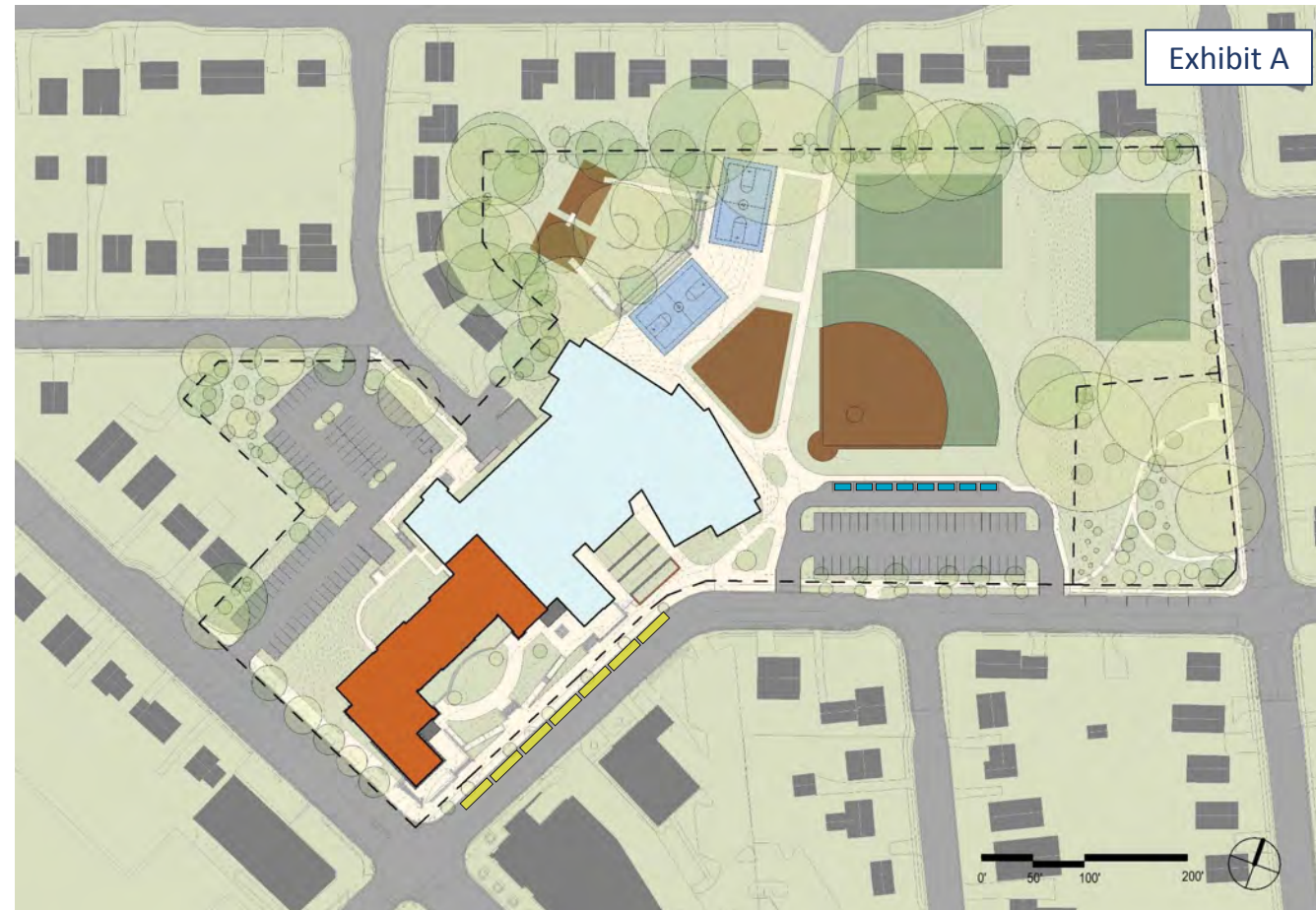


Exhibit A

PROJECT FUNDING

Exhibit B

	FY 2017-26 CIP ¹	Concept Design
Major Construction Bonds	\$ 38,250,000	\$ 38,250,000
Capital Reserve	\$ 4,000,000	\$ 4,000,000
Other (Operating) ²	\$ 1,250,000	\$ 1,250,000
ACG/APS Jointly Funded Items	\$ 5,500,000	\$ 5,500,000
TBD ³	\$ -	\$ 6,000,000
Total	\$ 49,000,000	\$ 55,000,000

Notes:

1. Approved by the School Board on June 16, 2016.
2. Furniture and equipment that cannot be bond funded.
3. Specific source of funding has not yet been determined.