Lincoln Public Schools

Study of the Lincoln School



… establishing a credible pathway forward

Final Report

5 February 2015

Dore & Whittier Architects, Inc.

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Executive Summary B

EXECUTIVE SUMMARY

Project History

Prior to selecting Dore & Whittier Architects for this study, the Town of Lincoln and the School Committee commissioned several previous studies. In 2009, the Massachusetts School Building Authority (MSBA) invited the Lincoln School Committee to collaborate on a Feasibility Study and a Schematic Design under the MSBA process. That process concluded when the Town vote fell short of the 2/3rds majority necessary to secure funding. Subsequent public outreach clarified some aspects of the preferred option that resulted in the unsuccessful vote and raised questions concerning the costs, design strategies, and the necessity of specific features. The School Committee appointed a School Building Advisory Committee (SBAC) in May 2013 to propose potential "pathways" towards addressing the needs of the School. The SBAC report, issued in November 2013, identified two L-shaped "pathways." The first assumed MSBA funding and recommended that specific needs of the School be addressed. The second pathway assumed no MSBA funding. At the time, the SBAC did not have the capacity to hire a cost estimator or other consultants to help define this second pathway. The SBAC, therefore, was unable to bring forward specific recommendations for what should be done in the absence of MSBA funding.

Study Overview

The annual Town Meeting in March, 2014 approved reconstituting the School Building Advisory Committee and appropriated funds for an additional study. As a result of this process, the Lincoln School Committee reappointed the SBAC in April 2014. In June of 2014, the Town of Lincoln, through the School Committee, sought services of a qualified designer to study possible approaches to the renovation of and/or additions to the Lincoln School. In July 2014, the Lincoln School Committee hired Dore & Whittier Architects to conduct this study.

The study was designed to accomplish the following:

- Compile repair recommendations from multiple previous studies, develop multiple design solutions for selected items, and prepare cost estimates for all recommendations as stand-alone projects.
- Develop an incremental[1] range of conceptual options and associated cost estimates so that the Town could be presented with choices – some of which could be selected with MSBA participation and others that could be selected without MSBA.

[1] Incremental refers to cost increments. For purposes of this study, these increments were based on prioritizing facility needs and assembling them into actionable projects, and exploring educational enhancements both one-at-a-time and in groups of enhancements. For more information, refer to Task Three.

- Employ a process that fully engages a wide variety of stakeholders and the general public to ensure that their input and feedback is incorporated into design efforts and to grow support from the community throughout the process,[2]
- Position the Town of Lincoln with the confidence and credibility to reengage the MSBA or to secure local funding for further design services and the construction of a selected pathway.

The study was structured around five tasks to help the Design Team and the SBAC achieve these goals.

1. Synthesize the work of others completed to date,
2. Create component cost estimates,
3. Model several options,
4. Evaluate the options, and
5. Compile a report and present the findings to the town and the School Committee.

In general, this report follows the task structure of the study. The body of the report details the processes and outcomes from each of these major tasks. What follows in this Executive Summary are brief narrative and graphic summaries of each of the major tasks undertaken. It concludes with a series of general findings and recommendations.

Task One – Synthesize the Work of Others Completed to Date

Task one focused on synthesizing all of the work of others completed to date – reviewing all existing documentation and developing a scope of actionable repairs and enhancements for cost estimation. Dore & Whittier created two documents – one which identified facility needs and one which identified educational enhancements – based on careful review of past reports, MSBA correspondence, and existing construction documents. The Design Team synthesized 143 individual repair projects that addressed facility needs and 28 educational enhancements. The SBAC, working with Dore & Whittier, categorized each of the facility needs scopes as either an immediate need, near term need, deferrable need, or as a design alternate. Dr. McFall, Superintendent of Lincoln Public Schools categorized the educational enhancements as high, moderate, or modest educational improvement or as a design alternate.

[2] By intention, this study's process was designed to engage the Lincoln Community to the greatest extent possible. The process included four public forums and the State of the Town meeting. On average, approximately 100 community members attended each of the public forums. Estimates suggest that approximately 250 community members attended the State of the Town meeting. It should be noted, however, that this report only documents the input and feedback of those in attendance. Those in attendance may or may not be representative of the entire Lincoln community.

Although Dore & Whittier was not hired to perform a facility assessment, a review of these existing study documents, and several building visits, revealed that the existing facility is in need of significant investment if it is to continue its service into the long-term future. Some elements, such as the existing roof, may need continued repair and/or replacement even before any major project can be undertaken. The cost of any such work would likely be borne fully by the Town of Lincoln.

In addition and as noted in previous studies, the Lincoln School was built in compliance with relevant building codes in place at the time of construction but is not in compliance with a number of current building codes. Non-compliance of current codes does not affect the ability to keep the school in operation; however, the scale of certain capital improvement projects could trigger upgrades to portions of the building to comply with current building codes. These triggers were considered during the pricing exercise in Task Two.

Task Two – Component Cost Estimates

Dore & Whittier's cost estimator, PM&C, prepared conceptual cost estimates based on the facility needs and educational enhancement documents developed in Task One. Scope line items were priced as individual projects. Cost estimates included hard costs and soft costs to determine overall project costs. When organized by the categorizations developed by the SBAC in Task One, the costs were as follows:

Facilities Needs

TOTAL PROJECT COSTS for IMMEDIATE FACILITIES NEEDS =	$ 8.39 M[3]
TOTAL PROJECT COSTS for NEAR TERM FACILITIES NEEDS =	$19.13 M
TOTAL PROJECT COSTS for DEFERRABLE FACILITIES NEEDS =	$ 7.70 M
SUB-PROJECT COST for FACILITIES NEEDS =	$35.22 M

Educational Enhancements

TOTAL PROJECT COSTS for HIGH IMPROVEMENT EDUCATIONAL ENHANCEMENTS =	$ 19.8 M
TOTAL PROJECT COSTS for MODERATE IMPROVEMENT EDUCATIONAL ENHANCEMENTS =	$1.8 M
TOTAL PROJECT COSTS for MODEST IMPROVEMENT EDUCATIONAL ENHANCEMENTS =	$ 1.2 M
SUB-PROJECT COST for EDUCATIONAL ENHANCEMENTS =	$22.8 M

GRAND PROJECT COST TOTAL = $58.02 M[4]

[3] Once identified, the Design Team determined that the Immediate Facilities Needs would trigger several additional code upgrades. These code upgrades were incorporated into the cost estimates for Option 1A. Please refer to the tables in Task Two and the options information in Task Three in the body of the report for additional information.

Public Forum #1 – September 16th, 2014

This study's first public forum occurred during Task Two. During the public presentation, Dore & Whittier reviewed progress to date, introduced educational possibilities, and presented preliminary cost figures. During the exercises that followed the presentations, community members expressed a desire to further explore the alignment of facilities with education, the cost impacts of potential projects to the Town, site sensitivity, safety and security, and long-term solutions to the current building issues.

Task Three – Model Several Plan Options

With the tools gathered from Tasks One and Two, Dore & Whittier developed options in incremental steps. It is important to note that not all facility needs were included in all the options developed, but rather, grouped together to represent actionable projects. Similarly, not all 28 educational enhancements were included in every option. Specifically, the options in the second family included single educational enhancements and selected combinations of educational enhancements, but never all 28. Only the third family of options included all 28 educational enhancements. Over the course of the study and in several iterations, Dore & Whittier revised options based on feedback from the public. At the end of the study, options were organized into three families - one family that addressed only facility needs, one family that provided à la carte educational enhancements in incremental steps, and one that addressed all the facility needs and provided all the educational enhancements. The methodology used to prepare these estimates is explained in detail in the body of the report.[5] [6] Please refer to Task Three for additional information. In short, all costs are communicated in total projects costs and without consideration of MSBA participation. The summary that follows represents the study's final iteration of options.

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[4] A sum of the project sub-total is approximately $58 M. It is evidence that cost saving may be available by pursuing full options rather that piecemeal projects priced individually as in Task One.

[5] All costs are in total project costs. Total project costs include materials, labor, overhead and profit for the contractors, professional design fees, permitting costs, insurance, phasing and swing space, escalation, and several contingencies given the conceptual nature of this study. Total project costs represent the entire cost of the project. These costs assume a project is fully funded by the Town of Lincoln without the support of the MSBA. All costs are conceptual. While every effort has been made to be as precise as possible, actual costs of a selected project may vary from these estimates. Dore & Whittier calculated total project costs for Options 1A & 1B based on the detailed scoping documents in Task One. Dore & Whittier calculated total project costs for Options 2A, 2B, 2C, 2D, 2E, 2F, 2G, 3A, 3B, and 3C using conceptual floor plans, scaled floor area take-offs, and cost per square foot estimates for four levels of construction: Light Renovation, Medium Renovation, Heavy Renovation, and New Construction.

[6] An estimated escalation was included in the total project cost calculation for each option based on the assumption that a feasibility study would be started in early 2016. The estimated escalation was determined by estimating when bidding for projects would occur and assumed to be 4% per year.

Option One – Facility Needs Only

The Option One family provided selective renovation to address facility needs only. Variations within this family were based upon the priority of needs addressed (Immediate or Near Term).

- Option 1A addressed only immediate facility needs identified in Task One as well as upgrades required due to code triggers.
    - Total Project Cost : $12.2 Million

- Option 1B addressed both immediate and near term facility needs as well as upgrades required due to code triggers.
    - Total Project Cost : $29.2 Million

Option Two – À La Carte Educational Enhancements

The Option Two Family addressed the immediate and near term facility needs from Option 1B as well as an à la carte approach to incorporating educational enhancements. Options 2A through 2D explored individual educational enhancements, while options 2E, 2F, and 2G explored combinations of educational enhancements. None of the options in this family explored providing all 28 educational enhancements identified. Only Option 2F included the deferrable facility needs.

- Option 2A addressed immediate and near term facility needs and provided acoustical treatment to classrooms but no other educational enhancements.
    - Total Project Cost : $29.5 Million

- Option 2B addressed immediate and near term facility needs and provided small group rooms but no other educational enhancements.
    - Total Project Cost $29.8 Million

- Option 2C addressed immediate and near term facility needs and provided improvements to the second grade classroom wing via new construction but no other educational enhancements.
    - Total Project Cost : $32.0 Million

- Option 2D addressed immediate and near term facility needs and provided a main kitchen, a warming kitchen, and new cafeterias for the Smith and Brooks Schools but no other educational enhancements. In this option, the cafeteria for the Brooks school connected the Brooks School to the Reed Gym helping to address a safety at security concern at that location.
    - Total Project Cost : $36.6 Million

- Option 2E addressed immediate and near term facility needs and provided a main kitchen, a warming kitchen, and new cafeterias for the Smith and Brooks Schools as well as acoustical treatment in classrooms. In this option, the cafeteria for the Brooks school connected the Brooks School to the Reed Gym helping to address a safety at security concern at that location.
    - Total Project Cost : $36.9 Million

- Option 2F addressed immediate and near term facility needs and provided a main kitchen, a warming kitchen, and new cafeterias for the Smith and Brooks Schools, acoustical treatment in classrooms, improvements to the second grade classrooms via new construction, and addressed all of the deferrable needs not addressed in previous options. In this option, the cafeteria for the Brooks school connected the Brooks School to the Reed Gym helping to address a safety at security concern at that location.
    - Total Project Cost : $47.6 Million

- Option 2G provides a main kitchen, a warming kitchen, and new cafeterias for the Smith and Brooks Schools, acoustical treatment in classrooms, and resizes the second grade classrooms via new construction, but does not include the deferrable facility needs. In this option, the cafeteria for the Brooks school connected the Brooks School to the Reed Gym helping to address a safety at security concern at that location.
    - Total Project Cost : $39.9 Million

Option Three - Comprehensive Renovations and Additions

The Option Three family addressed all of the facility needs and educational enhancements provided in the second family of options, as well as additional enhancements associated with 21st Century learning environments (the remaining of the 28 educational enhancements except the design alternates). The different options in this family varied based upon their balance of renovation and new construction.

- Option 3A renovates as much of the existing building as possible to provide educational enhancements with strategic additions. (88% renovation, 12% new construction)
    - Total Project Cost : $54.7 Million

- Option 3B renovates approximately 77% of the existing building, demolishes strategic portions of the Smith school, and places major additions at the Smith and Brooks Schools. (77% renovation, 23% new construction)
    - Total Project Cost : $55.8 Million

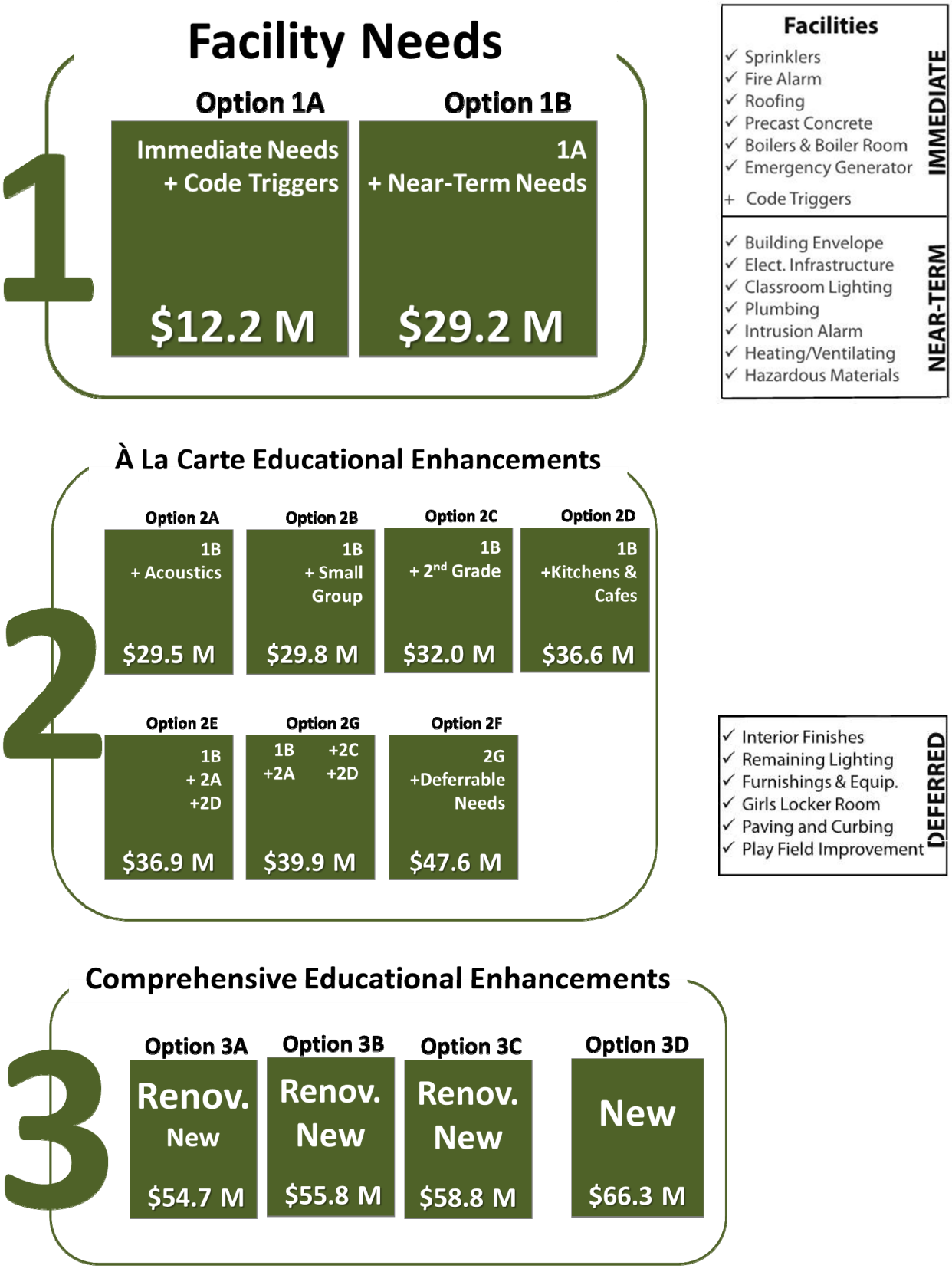
- Option 3C renovates the major anchors of the existing school: the 1994 construction, the Smith Gymnasium, the Brooks Auditorium, and the Reed Gym. All other portions of the existing buildings were demolished and replaced with all new construction. (52% renovation, 48% new)
    - Total Project Cost : $58.8 Million

- Option 3D provides an all new facility on the existing site (for cost comparative purposes only). No illustration was developed for this option. The cost estimate was based on typical per square foot costs for eastern Massachusetts. (100% new construction)
    - Total Project Cost : $66.3 Million

The illustrations on the following page summarize the options. All costs are total project costs. Should the Town of Lincoln pursue MSBA participation[7], eligible[8] costs to the Town may be reduced by approximately 40%. Final options are available in Task Three.

[7] MSBA participation will require that both facilities needs and educational needs comply with their guidelines. Although Dore & Whittier does not want to speculate about which options the MSBA may or may not participate in, those options which only address facility needs, are not likely to garner MSBA participation.

[8] MSBA grants are subject to several provisions that deem certain costs ineligible for reimbursement.


Facility Needs
1
Option 1A
Immediate Needs + Code Triggers
$12.2 M
Option 1B
1A + Near-Term Needs
$29.2 M
Facilities
IMMEDIATE
✓ Sprinklers
✓ Fire Alarm
✓ Roofing
✓ Precast Concrete
✓ Boilers & Boiler Room
✓ Emergency Generator
+ Code Triggers
NEAR-TERM
✓ Building Envelope
✓ Elect. Infrastructure
✓ Classroom Lighting
✓ Plumbing
✓ Intrusion Alarm
✓ Heating/Ventilating
✓ Hazardous Materials
À La Carte Educational Enhancements
2
Option 2A
1B + Acoustics
$29.5 M
Option 2B
1B + Small Group
$29.8 M
Option 2C
1B + 2nd Grade
$32.0 M
Option 2D
1B +Kitchens & Cafes
$36.6 M
Option 2E
1B + 2A +2D
$36.9 M
Option 2G
1B +2C +2A +2D
$39.9 M
Option 2F
2G +Deferrable Needs
$47.6 M
DEFERRED
✓ Interior Finishes
✓ Remaining Lighting
✓ Furnishings & Equip.
✓ Girls Locker Room
✓ Paving and Curbing
✓ Play Field Improvement
Comprehensive Educational Enhancements
3
Option 3A
Renov. New
$54.7 M
Option 3B
Renov. New
$55.8 M
Option 3C
Renov. New
$58.8 M
Option 3D
New
$66.3 M

Public Forum #2 – October 16th, 2014

This study's second public forum occurred during Task Three and focused on sharing the first iterations of options and further development on cost estimates. During the public presentation, Dore & Whittier reviewed progress to date and presented preliminary cost figures. Superintendent Dr. McFall presented the Districts educational vision. During the exercises that followed the presentations, community members expressed a desire to further explore the alignment of facilities with education, challenged the cost of facility needs items, and requested that Dore & Whittier explore organizing options differently to emphasize clear cost increments.

State of the Town – November 15th, 2014

Lincoln's State of the Town meeting represented an opportunity to share the study's progress to a wider audience than had attended the first two public forums. Dore & Whittier prepared a thirty minute presentation, supplemental hand-outs, and facilitated an exercise intended to invite comments and feedback from those in attendance. The key outcome from this important public engagement was a sentiment expressed by those in attendance to support a significant school project even if the Town should choose not to pursue MSBA participation. The data below summarizes the exercise where this sentiment was expressed. Included in this data is a summary of hand-written responses to the prompts "I like…", "I wish…", "I wonder…". Fully transcribed results are available in Appendix IV. These sentiments were later corroborated in Public Forum #3.

EXERCISE #1 – Participants placed a dot on the option they would support assuming Lincoln chose to fully fund a project without the participation of the MSBA.
Total Participants = 188

6 Facility Needs Only – Options 1A & 1B
$12.2M - $29.2M – Fully Funded by Lincoln

38 A La Cart Educational Enhancements – Options 2A, 2B, 2C, 2D, 2E, and 2F
$29.5M - $47.6M – Fully Funded by Lincoln

144 Comprehensive Educational Enhancements – Options 3A, 3B, 3C, and 3D
$54.7M - $66.3M – Fully Funded by Lincoln

EXERCISE #2 – Participants commented on the three families of options by responding to three prompts, "I like…", I wish…", and "I wonder…". This open ended exercise documented a wide range of individuals' thoughts.

It would be disingenuous to suggest that participants' responses neatly gelled into a community-wide consensus. This summary only strives to capture some of the overarching themes of these comments.

- The third family of options received the highest volume of hand-written responses followed by the second family of options. The first family options received the fewest number of hand-written responses.
- In general, the responses suggested a community-wide desire to pursue school and community center projects concurrently, if not as a single investment.[9]
- **Education**. Responses suggested that maximizing the educational impact of any facility investment is perceived as a key desired outcome.
- **Energy efficiency**. Responses suggested that energy efficiency is also a key desired outcome of any facility investment.
- **Cost**. Responses suggested that, while there may be support for a significant school project, the cost impact to individual households must be clearly understood and communicated to the broad community.
- While the exercise, specifically asked participants to respond assuming no MSBA participation, responses suggested a general agreement to pursue MSBA participation.[10]

[9] A single investment implies a single Town warrant article. While such a strategy is not prohibited under the MSBA process, combining school functions and community center functions as a single project, and funded through the same Town warrant article, would significantly complicate MSBA's process. Pursuing a school project and a community center project concurrently, but with two separate warrant articles, where the community center project is completely outside the MSBA process, would greatly simplify the MSBA process, but would require the Town to take two votes.

[10] At the time of the State of the Town meeting, Dore & Whittier had not yet prepared estimated design and construction timelines for WITH and WITHOUT MSBA participation. Those in attendance were not yet aware that the MSBA process would likely delay completion of a project by approximately 18 months.

Task Four – Evaluate the Models

Task Four focused on the evaluation of the options. Members of the SBAC chose not to evaluate the options in a committee setting but, rather, to rely on direct feedback from members of the Lincoln community.

Public Forum #3 – December 2nd, 2014

Dore & Whittier presented a revised set of options and cost estimates in detail that included revisions based on feedback gathered from previous public meetings. After a brief question and answer period, Dore & Whittier facilitated a series of small group exercises intended to confirm which key variables possessed the highest priority, to identify the pros and cons of each option, and to develop an understanding of which options seemed to be the most appealing to the community. The evaluation did not result in a short list of options, but, rather, a clarified understanding of the town's threshold for spending and a preference for a project that addresses both facility needs and educational enhancements.

Key Variables Exercise (Numbers indicate individual priorities of variables)

1. Maximize educational enhancements (**120 points**)
2. Minimize cost to town/ return on money spent (**27/19[11] = 46 points**)
3. Meet 2030 Energy By-Law (**18 points**)
4. Maximize Community Use (**16 points**)
5. Maximize Preservation of Existing Building (**10 points**)
6. Minimize Time to Occupancy (**5 points**)

Evaluation of Options Exercise (Numbers indicate individual preferences for options)

Options 1A & 1B:	With MSBA Participation – N/A
	Without MSBA Participation – 1
Option 2A:	With MSBA Participation – N/A
	Without MSBA Participation – 0
Option 2B:	With MSBA Participation – N/A
	Without MSBA Participation – 2
Option 2C:	With MSBA Participation – N/A
	Without MSBA Participation – 2
Option 2D &2E:	With MSBA Participation – N/A
	Without MSBA Participation – 17
Option 2F:	With MSBA Participation – 7
	Without MSBA Participation – 17

[11] "Return on money spent" was a participant-added variable. Due to its similarity with "minimize cost to Town", its results were included in this variable. Forty-six points represents the sum of the two together.

Option 2G:	New Concept at Meeting, not evaluated
Option 3A:	With MSBA Participation – 4
	Without MSBA Participation – 4
Option 3B:	With MSBA Participation – 10
	Without MSBA Participation – 19
Option 3C:	With MSBA Participation – 44
	Without MSBA Participation – 11
Option 3D:	With MSBA Participation – 7
	Without MSBA Participation – 2

The outcomes of Public Forum #3 corroborate results of previous public engagement opportunities in the following ways:

- Appears to be support (from at least those in attendance) for a significant project that not only addresses all the immediate and near term facility needs, but also provides most if not all of the educational enhancements.
- Any further development of options should respect the central green, retain existing trees, restrict interventions to the existing building's footprint, and reflect Lincoln's aesthetic values all to the greatest extent possible.
- Based on the estimated Town shares, there appears to be support (from at least those in attendance) for a school project where the Town contribution is approximately $29M - $40M.

Task Five – Prepare Report & Make Presentations

Dore & Whittier made a final presentation of this Executive Summary at Public Forum #4 held January 13th, 2015. Dore & Whittier also made a formal presentation of the entire study to the School Committee on February 5th.

General Findings & Recommendations

- Dore & Whittier confirms that the existing building requires a significant financial investment (from a strictly facility point-of-view) to continue to serve as an educational facility for the long-term future. We cannot recommend a piecemeal approach to these items as doing so may result in emergency work, may result in an inability to occupy portions of the building until repairs are complete, may have unexpected code implications, and would be more expensive over a long time horizon than other approaches.
- Dore & Whittier confirms that classroom spaces can benefit from acoustical treatments to improve speech intelligibility.

- Dore & Whittier confirms that the existing building lacks several critical program spaces including dedicated kitchen and cafeterias, spaces to serve special education with appropriate access to natural daylight and ventilation, small group rooms, and 2nd grade classrooms that lack parity with other classrooms in the building and are below MSBA guidelines for area.
- Dore & Whittier recommends the School Committee consider other educational enhancements to improve the educational experience of all students, to support the educational vision of the District, in general, and to better align the Lincoln School facility with best practices in 21st century school design.
- Dore & Whittier recommends exploring opportunities to improve energy efficiency in any facility investment.
- There appears to be viable addition/renovation options that respect the central green, respect the existing trees, conform to the area of the site occupied by the existing building, and align well with the principles of 21st century educational practices.
- There appears to be support (by at least those who participated in this process) for a significant school construction project that both addresses facility needs and provides educational enhancements regardless of MSBA participation assuming the Town's financial contribution is approximately $29M – $40M.
- Due to submission deadlines associated with the MSBA process, Dore & Whittier recommends that the School Committee prepare a Statement of Interest in the event the Town expresses a desire to pursue MSBA participation.
- Dore & Whittier recommends further studies and processes related to the Lincoln School project be designed to continue the thoughtful engagement of the Lincoln community.

At this stage, the town of Lincoln has three potential pathways forward. First, the Town of Lincoln and Lincoln Public Schools can continue the current practice of addressing facility needs through annual capital expenditures. Should the Town and Lincoln Public Schools pursue this action, the individual scope items identified in Task One would likely be accomplished one-at-a-time over the course of many years.

Second, the Lincoln School Committee can prepare a revised Statement of Interest and seek MSBA participation. If invited to conduct a second Feasibility Study under the MSBA process[12], this

[12] The MSBA process is assumed to require the completion of a full feasibility study. The sequence of steps and deliverables for an MSBA feasibility study are clearly outlined in MSBA's Module 3. Such a feasibility study may be shortened slightly by shortening the portion of the process associated with facilities assessments with MSBA's approval. MSBA's process, however, would likely require the full definition of an educational program and the full exploration of preliminary alternatives. A full exploration of preliminary alternatives means that renovation only, renovation/addition, and all new construction alternatives must be explored. While the options developed for Dore & Whittier's study will have some value in this process, these preliminary alternatives explored as part of the MSBA process will, necessarily, look slightly different.

pathway would require the appropriation of funds to secure the professional services of an Owner's Project Manager and a Designer, which would not be reimbursable by the MSBA. Should the Town of Lincoln pursue this pathway, a selected preferred option would likely resemble Option 2F or any of the third family of Options.

Finally, The Town of Lincoln can pursue a process to develop a school building project independently without participation by the MSBA. This pathway would also require the appropriation of funds to secure an Owner's Project Manager and Designer. These funds, however, might best be used for an abbreviated feasibility study which would refine a short list of options, allow the Town to select a single preferred option, and would include the preparation of a full schematic design. Selecting this pathway gives the Town of Lincoln and the Lincoln School Committee the greatest flexibility. Any option could be pursued on this pathway depending on the financial appetite of the Lincoln community and the financial capacity of the Town of Lincoln.

TASK ONE – ANALYZE WORK COMPLETED TO DATE

Overview

At a Special Town Meeting in November 2012, the majority of those present approved the project identified as the preferred alternative from the MSBA Feasibility Study but failed to reach the 2/3 majority required for funding approval. Subsequent public outreach clarified some aspects of the preferred option that resulted in the unsuccessful vote and raised questions concerning the costs, design strategies, and the necessity of specific features. The School Committee appointed a School Building Advisory Committee (SBAC) in May 2013 to propose potential "pathways" towards addressing the needs of the School. The SBAC report, issued in November 2013, identified two L-shaped "pathways." At the time, the SBAC did not have the capacity to hire a cost estimator or other consultants to assist with defining this second pathway. The SBAC, therefore, was unable to bring forward specific recommendations for what should be done in the absence of MSBA funding.

On December 8, 2013, the MSBA informed the Lincoln Public Schools that it would not be invited into its funding pipeline for a renovation project during its upcoming application cycle. This resulted in a town process to determine the next steps for the School project. The annual Town Meeting in March, 2014 approved reconstituting the School Building Advisory Committee and appropriated funds for an additional study. As a result of this process, the Lincoln School Committee reappointed the SBAC in April 2014. In June of 2014, the Town of Lincoln, through the School Committee, sought services of a qualified designer to study possible approaches to the renovation of and/or additions to the Lincoln School. In July 2014, the Lincoln School Committee hired Dore & Whittier Architects to conduct this study.

Task One focused on developing the necessary understanding of previous studies, reports, existing facility conditions, and educational goals to compile two preliminary sets of capital improvement scopes – one which addressed facility needs and one which provided desired educational enhancements. As such, this major first task was composed three sub-tasks:

1.1 Review of Existing Information
1.2 Development of Preliminary Cost Estimation Scope
1.3 Development of Scoping Documents

1.1 Review of Existing Information[1]

Dore & Whittier reviewed the following previous studies, letters of correspondence, reports, and drawings:

- Existing Conditions Drawings prepared by HMFH for 1994 renovation
- Construction Drawings prepared by HMFH, 1994
- Preliminary Design Submission to the MSBA prepared by OMR, 2011
- Preferred Schematic Report Submission to the MSBA prepared by OMR, 2011
- Schematic Design Submission to the MSBA prepared by OMR, 2012
- Lincoln School Repair Analysis Report commissioned by Lincoln Finance Committee and prepared by CDR|Maguire, 2012
- Letter to MSBA, 11.16.12
- MSBA Letter to Lincoln, 12.14.2012
- Letter to MSBA, 2.15.2013
- MSBA Letter to Lincoln, 3.12.13
- Report of the School Building Advisory Committee prepared by the School Building Advisory Committee, November 2013

Dore & Whittier's review of these documents revealed that, in general, there was agreement among the various reports related to the condition of the existing facility. The building is assumed to be in compliance with relevant building codes in place at the time of construction. It is not, however, in compliance with current building codes for structural loading or bracing, accessibility, energy efficiency, egress, fire suppression, emergency lighting, or ventilation. In addition and with the exception of the Reed Gym's roof, the existing roofing system has exceeded its useful life and is in need of complete replacement. Finally, the existing Smith boiler room continues to experience flooding which poses a risk to the operation of the Smith boiler. The detailed scopes identified in Task 1.2 compiles the work necessary to address these facility needs.

Several of these reports also indicated that multiple educational enhancements would improve the District's ability to deliver its educational programs and services. First, the majority of the classrooms possess little or no acoustical treatment. No dedicated cafeteria spaces exist. Gymnasiums serve as both physical education space and cafeterias. Kitchens exist in former gymnasium storage spaces. Many spaces for the delivery of special education services exist in former storage closets and are without access to appropriate ventilation or natural daylight. A safety and security condition exists between the Brooks Auditorium and the Reed Gym. Doors to the Brooks School and the Reed Gym must be left unlocked during the school day where there is

[1] Digital copies of these documents are available through the Lincoln Public Schools website, http://www.lincnet.org/. Hard copies are available at the Lincoln Public Library.

little administrative presence. The existing building also lacks break out and collaboration spaces associated with 21st century learning environments. Task 1.2 also compiles a set of scopes associated with providing these educational enhancements.

1.2 Development of Preliminary Cost Estimation Scope

Although Dore & Whittier was not tasked with performing a facilities assessment, our Project Team compiled two sets of scopes for preliminary cost estimates based on our review of existing documents and multiple site visits. Together with our consultants, we compiled a first set of scopes necessary to address the facility's needs. We also compiled a second set of scopes associated with providing the identified educational enhancements. For each scope item, Dore & Whittier developed a strategy (and in some cases, multiple strategies) that served as the basis for these preliminary cost estimates. The SBAC directed Dore & Whittier to approach these scope items as individual projects, as an à la carte menu, so that actionable options could be built from these lists. Such an approach also responded to challenges from the Lincoln community about the credibility of cost estimates from previous studies for similar scope.

Once compiled, Dore & Whittier worked with the SBAC to categorize each facility needs scope item as an Immediate Need, a Near Term Need, a Deferrable Need, or a design Alternate. For clarity, the SBAC developed definitions for each of these categories of need.

Immediate Needs

- Existing buildings are not required to be brought into compliance with current codes except when new work is performed and under certain conditions based on code triggers. Therefore, none of the facility needs items are required in order to continue to occupy the facility. Facility needs items in this category are not required by code, but have been identified as critical to the occupation of the school. Most items in this category are related to building systems that are expected to fail in the near future and whose failure would result in further damage to the building, would require emergency repairs, and/or result in an inability to occupy a portion of the facility until the issue is resolved. Other items in this category are related to life safety.

Near Term Needs

Φ

Members of the SBAC and the Design Team believe these items are necessary to continue to occupy the facility for the long-term future (approximately 25-30 years), but addressing these items could be delayed until a later date compared with the immediate needs items.

It should be noted that several items in this category were triggered in the building codes by items in the immediate needs category. In order to avoid these triggers (a strategy **not recommended** by Dore & Whittier), the Town would need to reduce the scope undertaken in the immediate needs category.

Deferrable Needs

O

Members of the SBAC and the Design Team believe these items are also necessary to continue to occupy the facility for the long-term future. These items, however, could be deferred even further into the future than the near term needs.

Alternates

A

Several items represent design alternates for specific issues. They represent different design strategies to address the same issue and have been developed to give the Town of Lincoln choices. In developing a total cost for any actionable options, the calculation would include only one of the variants for each issue.

Dr. McFall categorized the educational enhancements based on their qualitative impact on the delivery of education. Educational enhancements were categorized as High Improvement, Moderate Improvement, Modest Improvement, and design Alternates. In total, Dore & Whittier compiled 143 facilities scope items and 28 educational enhancements. For clarity, the two sets of scopes, the categories identified, and their cost estimates are included in the Task Two section of this report.

1.3 Development of Scoping Documents

In order to estimate these items as accurately as possible, Dore & Whittier developed quantities for scope items. Some quantities were based on area and length take-offs from scaled construction drawings. Other quantities were based on field survey counts of actual conditions conducted during multiple site visits. Every effort was made to be as precise as possible without destructive testing and with the information available. It is important to note, however, that limits on precision exist for studies of this kind. Without detailed design drawings sent out for bid, quantities and cost estimates are conceptual. Area and length take-offs, as well as field notes are included for reference in Appendix I of this report.

Task One General Findings & Recommendations

Several previous studies identified significant facility needs and several desired educational enhancements. Dore & Whittier did not perform an existing conditions analysis, but confirmed both the facilities needs and the rationale for the educational enhancements. After compiling comprehensive sets of scopes for both the facilities needs and the educational enhancements, members of the SBAC, with assistance from Dore & Whittier, categorized individual scope items as Immediate Need, Near Term Need, Deferrable Need, or Alternates. The following table communicates this categorization.

Number of Scope Items in Each Category	Immediate Need	Near Term Need	Deferrable Need	Alternate
Facilities Needs	11	70	37	25

Number of Scope Items in Each Category	High Improvement	Moderate Improvement	Modest Improvement	Alternate
Educational Enhancements	15	3	2	8

Based on the scopes identified as Immediate Needs, Dore & Whittier recommended further exploration of code triggers based on completed preliminary cost estimates.

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TASK TWO – COMPONENT COST ESTIMATES

Overview

Dore & Whittier's cost estimator, PM&C[1], prepared conceptual cost estimates based on the two sets of scopes defined in Task One – one set that addressed facility needs and one set that provided the desired educational enhancements. PM&C prepared these estimates based on the following assumptions and methodology:

- Individual scope line items were estimated as stand-alone projects. This methodology was selected by the SBAC in an effort to understand the cost of each item, but such a methodology may not be actionable as a real construction project for each item. Typical construction techniques (particularly for work done above ceilings) often impact other building elements. In such cases, it is often prudent and more cost effective to group certain scope items to be completed at the same time. Similarly, building codes require that any new work performed must comply with current building codes. However, portions of the building codes also contain triggers that effect building elements not intended to be part of the scope of work. When a code trigger is tripped, the building code requires that additional work be performed to bring other existing building elements into compliance with current codes even if they were not intended to be part of the original work.
- Each line item estimate is based on a quantity determined either from scaled construction documents or a field-verified measurement. Dore & Whittier attempted to limit the number of lump sum[2] quantities. However, some lump sum quantities were necessary in the cost estimate worksheets.
- Each estimate represents a total project cost calculated using the following typical methodology:

  Hard Costs (Materials, Labor, Contractor Overhead and Profit, Contingencies)

  A: Direct Construction Cost = Cost Quantity x Unit Cost

  B: General Conditions Cost = A x 17%

  General conditions consist of a construction contingency, permitting fees, bonds, insurance, and contractor overhead and profit.

  C: Design Contingency = A x 10%

[1] PM&C, Project Management & Cost, served as Dore & Whittier's cost estimation consultant for this study. Peter Bradley, Principal, prepared the estimates and specializes in cost estimation services for public K-12 school projects in Massachusetts.

[2] Lump sum refers to a method of estimating where actual quantities cannot be determined.

Given the conceptual nature of this study, the design contingency represents the level of uncertainty of specific design choices (i.e. product/system selection, design layout)

D: Owner's Contingency = A x 10%

An owner's contingency is typical in most construction projects and represents the owner's choice and ability to change their mind about design and construction decisions.

E: Total Construction Cost = A + B + C + D

Soft Costs (Designer Fees, Consultant Fees, Testing Services, Commissioning)

F: Soft Costs = E x 25%

G: Escalation = (E + F) x .04

Total Project Cost

H: Total Project Cost = E + F + G

- Each estimate assumes no work could begin prior to November 2015. Therefore, each estimate includes one year of escalation at 4%. For any work begun beyond November of 2015, additional escalation must be added at a rate of 3%-5% per year.
- Costs associated with phasing and swing space were excluded from these preliminary cost estimates.

Copies of scoping documents and field notes are provided in Appendix I for reference. What follows are the sets of scopes and cost estimate details for both the facilities needs and the educational enhancements. Also included in this information is the categorization of scope by the SBAC.

Preliminary Facilities Scope

revised: 1.28.15

Lincoln Public Schools - K-8 Study

Indicates a code compliance item triggered by Immediate Needs Scope.

● Immediate Needs | Φ Near Term Needs | ○ Deferred Needs | **A** Alternates | + Included in CIP

Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost [2]	Comments	Take-off Document
1	F-2	Remove existing roofing and trim components at Brooks School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to meet current Energy Code). Base roof material white EPDM. Replace all trim components.	Brooks	Arch - Building Exterior	●	+	CDR | Maguire	47,800	SF	$17	$824,550	$140,174	$82,455	$82,455	$1,129,634	$282,408	$1,468,524		Roof Plan
55	F-50	Provide and connect new life safety power generator equipment. Existing generator as back-up only.	Brooks/ Smith	Electrical/ Life Safety	●	+	CDR | Maguire	1	Lump Sum	$480,000	$480,000	$81,600	$48,000	$48,000	$657,600	$164,400	$854,880	Need KW number	N/A
58	F-52	Upgrade existing fire alarm system to fully comply with current codes. Existing system is fully addressable, but needs additional and compliant devices.	Brooks/ Smith/ Link & Reed	Code Compliance	●	+	CDR | Maguire	137,500	SF	$2	$275,000	$46,750	$27,500	$27,500	$376,750	$94,188	$489,775		N/A
59	F-53	Install mutli-zone automatic fire suppression system throughout Brooks and Smith Schools.	Brooks/ Smith/ Link & Reed	Code Compliance	●	+	CDR | Maguire	137,500	SF	$7	$962,500	$163,625	$96,250	$96,250	$1,318,625	$329,656	$1,714,213	Includes $50K for new water service; no new ceilings included	Floor Plan
73	F-63	Remove existing flat roofing and trim components at Link Building down to existing deck. Replace with new insulation and single-ply, light-colored EPDM roofing system (to comply with current Energy codes). Replace all trim components.	Link	Arch - Building Exterior	●	+	CDR | Maguire	24,300	SF	$17	$419,175	$71,260	$41,918	$41,918	$574,270	$143,567	$746,551		Roof Plan
76	F-64	Remove existing sloped roofing, gutters, and downsports at Link Building down to existing subtrate. Replace with new asphalt singles. Remove and replace all rotten wood fascia (to comply with current Energy Codes). Replace all trim components.	Link	Arch - Building Exterior	●	+	CDR | Maguire	6,100	SF	$21	$126,270	$21,466	$12,627	$12,627	$172,990	$43,247	$224,887		Roof Plan
78	F-66	Remove existing precast concrete exterior wall panels at Reed Gym and replace with insulated metal panel system.	Reed Gym	Arch - Building Exterior	●	+	CDR | Maguire	7,200	SF	$60	$432,000	$73,440	$43,200	$43,200	$591,840	$147,960	$769,392		
89	F-79	Remove existing roofing and trim components at Smith School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to comply with current Energy Codes). Base roof material white EPDM. Replace all trim components.	Smith	Arch - Building Exterior	●	+	CDR | Maguire	42,900	SF	$17	$740,025	$125,804	$74,003	$74,003	$1,013,834	$253,459	$1,317,985		Roof Plan
92	F-80	Remove existing sloped roofing, gutters, and downsports at Link Building down to existing subtrate. Replace with new asphalt singles (to comply with current Energy Codes). Remove and replace all rotten wood fascia. Replace all trim components.	Smith	Arch - Building Exterior	●	+	CDR | Maguire	4,100	SF	$21	$84,870	$14,428	$8,487	$8,487	$116,272	$29,068	$151,153		Roof Plan
124	F-110	Remove and replace existing boilers and air handling units in Smith Boiler Room with high-efficiency condensing boilers. (includes construction of a new space above grade)	Smith	Mechanical	●	+	CDR | Maguire	1	LS	$343,100	$343,100	$58,327	$34,310	$34,310	$470,047	$117,512	$611,061	Includes additional SF for unknown conditions	Floor Plan

Preliminary Facilities Scope

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Lincoln Public Schools - K-8 Study

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												17%	10%	10%		25%			
Line #	**Item #**	**Scope Description**	**Location**	**System Category**	**SBAC Priority**	**In CIP Calculation**	**Scope Source**	**QTY**	**Units**	**$/UNIT**	**Direct Cost**	**General Conditions Cost [1]**	**Design Contingency**	**Owner's Contingency**	**Total Construction Cost**	**Soft Costs**	**Total Project Cost[2]**	**Comments**	**Take-off Document**
125	F-111	Remove and replace existing mechanical equipment pumps with energy efficient VFD pumping equipment at Smith Boiler Room.	Smith	Mechanical	●	+	CDR | Maguire	1	Lump Sum	$25,000	$25,000	$4,250	$2,500	$2,500	$34,250	$8,563	$44,525		N/A
10	F-10	**Upgrade classroom and toilet sinks to be ADA and MAAB compliant.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	27	Sinks	$2,700	$72,900	$12,393	$7,290	$7,290	$99,873	$24,968	$129,835		Floor Plan
11	F-10a	**Upgrade toilet fixtures to be ADA and MAAB compliant.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	6	Toilets	$4,800	$28,800	$4,896	$2,880	$2,880	$39,456	$9,864	$51,293	Assume reduction in count to accommodate wider stall. Assume some floor work to access piping. Assume patch and repair finishes	Floor Plan
12	F-11	**Provide vaccuum breakers and back-flow preventers at cross connections.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	1	Lump Sum	$7,500	$7,500	$1,275	$750	$750	$10,275	$2,569	$13,358		N/A
13	F-12	**Remove and replace natural gas piping to science classrooms. Equip with individual safety shut-offs in each science room.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	3	Classrooms	$19,250	$57,750	$9,818	$5,775	$5,775	$79,118	$19,779	$102,853		Floor Plan
14	F-13	**Provide dedicated non-potable hot and cold water distribution to existing science classrooms. Provide backflow devices at lab sinks.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	3	Classrooms	$15,000	$45,000	$7,650	$4,500	$4,500	$61,650	$15,413	$80,145		N/A
15	F-14	**Install an emergency mixing valve and tepid water system to supply emergency eyewash**	Brooks	Code Compliance	Φ	+	OMR Feasibility	3	Classrooms	$10,000	$30,000	$5,100	$3,000	$3,000	$41,100	$10,275	$53,430		N/A
16	F-15	**Upgrade interior door widths and clear floor space to comply with accessibility requirements throughout facility.**	Brooks	Code Compliance	Φ	+	SBAC Components	7	Locations	$2,500	$17,500	$2,975	$1,750	$1,750	$23,975	$5,994	$31,168		Floor Plan
17	F-17	**Upgrade points of egress to comply with accessibility requirements.**	Brooks	Code Compliance	Φ	+	SBAC Components	2	Locations	$5,000	$10,000	$1,700	$1,000	$1,000	$13,700	$3,425	$17,810		Floor Plan
22	F-22	**Remove existing exit signs and emergency lighting. Replace with code compliant components connected to emergency power systems and not reliant on battery units.**	Brooks	Electrical	Φ	+	OMR Feasibility	47,800	SF	$1	$59,750	$10,158	$5,975	$5,975	$81,858	$20,464	$106,415		Floor Plan
49	F-44	**Provide structural upgrades to comply with current codes. Scope to include bracing of unreinforced masonry walls to support code-required lateral loads, reinforcing of roof structures to support code-required snow and drift loads. Other scope details to be determined once preferred alternatives selected.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	47,800	SF	$12	$573,600	$97,512	$57,360	$57,360	$785,832	$196,458	$1,021,582		EDG to provide narrative and sketches as necessary
50	F-45	**Install chemical waste and venting systems at existing science classrooms. Provide treatment tank.**	Brooks	Code Compliance	Φ	+	CDR | Maguire	3	Locations	$11,700	$35,100	$5,967	$3,510	$3,510	$48,087	$12,022	$62,513		N/A

Preliminary Facilities Scope

revised: 1.28.15

Lincoln Public Schools - K-8 Study

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Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost [2]	Comments	Take-off Document
81	F-69	**Upgrade door widths and clear floor space to comply with accessibility requirements. Convert to uneven leaves within existing frame.**	Reed Gym	Code Compliance	Φ	+	SBAC Components	12	Locations	$2,400	$28,800	$4,896	$2,880	$2,880	$39,456	$9,864	$51,293		Floor Plan
82	F-71	**Upgrade points of egress to comply with accessibility requirements.**	Reed Gym	Code Compliance	Φ	+	SBAC Components	2	Locations	$5,000	$10,000	$1,700	$1,000	$1,000	$13,700	$3,425	$17,810		Floor Plan
101	F-87	**Upgrade classroom and toilet sinks to be ADA and MAAB compliant.**	Smith	Code Compliance	Φ	+	CDR | Maguire	39	Locations	$650	$25,350	$4,310	$2,535	$2,535	$34,730	$8,682	$45,148	Verify in Field	Floor Plan
102	F-87a	**Upgrade toilet fixtures to be ADA and MAAB compliant.**	Smith	Code Compliance	Φ	+	CDR | Maguire	8	Toilets	$800	$6,400	$1,088	$640	$640	$8,768	$2,192	$11,398	Verify in Field	Floor Plan
103	F-88	**Provide vaccuum breakers and back-flow preventers at cross connections.**	Smith	Code Compliance	Φ	+	CDR | Maguire	3	Locations	$3,000	$9,000	$1,530	$900	$900	$12,330	$3,083	$16,029		N/A
104	F-89	**Upgrade interior door widths and clear floor space for occupied spaces to comply with accessibility requirements.**	Smith	Code Compliance	Φ	+	SBAC Components	21	Locations	$2,500	$52,500	$8,925	$5,250	$5,250	$71,925	$17,981	$93,503		Floor Plan
105	F-91	**Upgrade points of egress to comply with accessibility requirements.**	Smith	Code Compliance	Φ	+	SBAC Components	23	Locations	$2,000	$46,000	$7,820	$4,600	$4,600	$63,020	$15,755	$81,926	Requires field visit	Floor Plan
106	F-91a	**Upgrade interior door widths and clear floor space to comply with accessibility requirements in Smith Classrooms only.**	Smith	Code Compliance	Φ	+	SBAC Meeting	13	Locations	$2,500	$32,500	$5,525	$3,250	$3,250	$44,525	$11,131	$57,883		Floor Plan
107	F-92	**Provide accesible lift for Stage in Smith Gymnasium.**	Smith	Code Compliance	Φ	+	D&W	1	Locations	$30,000	$30,000	$5,100	$3,000	$3,000	$41,100	$10,275	$53,430		
110	F-95	**Remove existing exit signs and emergency lighting. Replace with code compliant components connected to emergency power systems and not reliant on battery units.**	Smith	Electrical	Φ	+	OMR Feasibility	49,600	SF	$1	$62,000	$10,540	$6,200	$6,200	$84,940	$21,235	$110,422	Requires field visit	Floor Plan
141	F-124	**Provide structural upgrades to comply with current codes. Scope to include bracing of unreinforced masonry walls to support code-required lateral loads, reinforcing of roof structures to support code-required snow and drift loads. Other scope details to be determined once preferred alternatives selected.**	Smith	Code Compliance	Φ	+	CDR | Maguire	49,600	SF	$12	$595,200	$101,184	$59,520	$59,520	$815,424	$203,856	$1,060,051		EDG to provide narrative and sketches as necessary
5	F-3a	Remove and replace existing uninsulated windows, curtain wall systems, and associated transite panels (ACMs) in the Brooks School and replace with double glazed insulated and thermally broken, R2.5 aluminum systems.	Brooks	Arch - Building Exterior	Φ	+	CDR | Maguire, D&W	6,800	SF	$133	$904,400	$153,748	$90,440	$90,440	$1,239,028	$309,757	$1,610,736		Ext. Elev.
6	F-4	Fur out interior and install 4" closed cell spray foam. Painted gypsum finish interior surface.	Brooks	Arch - Building Exterior	Φ	+	D&W	11,200	SF	$11	$128,576	$21,858	$12,858	$12,858	$176,149	$44,037	$228,994	Wall area - window opening	Floor Plan

Preliminary Facilities Scope

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Lincoln Public Schools - K-8 Study

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Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost [2]	Comments	Take-off Document
7	F-5	Use existing exterior wall as back up (at existing Auditorium only). Install air/vapor barrier, 4"of rigid insulation, 4" brick veneer on steel angles clipped to existing structure.	Brooks	Arch - Building Exterior	Φ	+	D&W	7,200	SF	$52	$371,520	$63,158	$37,152	$37,152	$508,982	$127,246	$661,677	Applies to existing Brooks Auditorium, Smith Gym and Reed Gym.	Ext. Elev.
18	F-20	Provide new electrical distribution panels to add electrial plug-load capacity to Brooks School.	Brooks	Electrical	Φ	+	CDR | Maguire	47,800	SF	$6	$286,800	$48,756	$28,680	$28,680	$392,916	$98,229	$510,791		N/A
20	F-21a	Remove and replace existing lighting with new LED fixtures and controls in classrooms only.	Brooks	Electrical	Φ	+	CDR | Maguire	20,300	SF	$10	$192,850	$32,785	$19,285	$19,285	$264,205	$66,051	$343,466		Floor Plan
36	F-34a	Remove existing unit ventilators in 17 classrooms. Replace with centralized air distribution system with induction units.	Brooks	Mechanical	Φ	+	CDR | Maguire	39,300	SF	$17	$648,450	$110,237	$64,845	$64,845	$888,377	$222,094	$1,154,889		Floor Plan
39	F-35	Remove and replace the heating and ventilating equipment at the existing auditorium with a dedicated packaged system using displacement air delivery and an associated packaged energy recovery unit.	Brooks	Mechanical	Φ	+	CDR | Maguire	8500	SF	$30	$250,750	$42,628	$25,075	$25,075	$343,528	$85,882	$446,586		
40	F-36	Remove and replace existing exhaust systems serving bathrooms.	Brooks	Mechanical	Φ	+	CDR | Maguire	753	SF	$27	$19,955	$3,392	$1,995	$1,995	$27,338	$6,834	$35,539	Floor Plan	
41	F-37	Remove and replace existing hot water distribution system.	Brooks	Mechanical	Φ	+	CDR | Maguire	47,800	SF	$4	$191,200	$32,504	$19,120	$19,120	$261,944	$65,486	$340,527	N/A	
42	F-38	Remove and replace existing pneumatic mechanical controls with new direct digital controls (non proprietary system)	Brooks	Mechanical	Φ	+	OMR Feasibility	47,800	SF	$5	$224,660	$38,192	$22,466	$22,466	$307,784	$76,946	$400,119		N/A
45	F-40	Remove and replace domestic water distribution system in its entirety.	Brooks	Plumbing	Φ	+	CDR | Maguire	47,800	SF	$3	$165,000	$28,050	$16,500	$16,500	$226,050	$56,513	$293,865		N/A
46	F-41	Remove and replace all water closets and urinals with new low flow (1.28 Gal/Flush) fixtures.	Brooks	Plumbing	Φ	+	OMR Feasibility	21	locations	$7,952	$167,000	$28,390	$16,700	$16,700	$228,790	$57,198	$297,427		Floor Plan
47	F-42	Remove and replace all lavatory faucets with low flow (.5 Gal/min) faucets with electronic metering.	Brooks	Plumbing	Φ	+	OMR Feasibility	16	locations	$1,800	$28,800	$4,896	$2,880	$2,880	$39,456	$9,864	$51,293		Floor Plan
48	F-43	Remove and replace domestic hot water heaters including thermostatic mixing valves.	Brooks	Plumbing	Φ	+	OMR Feasibility	1	Location	$25,000	$25,000	$4,250	$2,500	$2,500	$34,250	$8,563	$44,525		N/A
52	F-47	Complete intrusion alarm system. Partial system installed at Smith.	Brooks/ Smith	Electrical	Φ	+	OMR Feasibility	137,500	SF	$1	$137,500	$23,375	$13,750	$13,750	$188,375	$47,094	$244,888		N/A

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53	F-48	Provide a new central paging system integrated with IP-based telephone system.	Brooks/ Smith	Electrical	Φ	+	OMR Feasibility	137,500	SF	$1	$68,750	$11,688	$6,875	$6,875	$94,188	$23,547	$122,444		N/A
54	F-49a	Have video intercom system at entry doors and have upgraded PA system recently	Brooks/ Smith	Electrical	Φ	+		137,500	SF	$1	$103,125	$17,531	$10,313	$10,313	$141,281	$35,320	$183,666		N/A
60	F-54	Covert two existing accessible spaces to van accessible by removing and replacing existing signage.	Brooks/ Smith	Site/Landscape	Φ	+	OMR Feasibility	2	Locations	$900	$1,800	$306	$180	$180	$2,466	$617	$3,206		Site Plan
61	F-55	Upgrade existing sidewalk ramps throughout the site to be accessible.	Brooks/ Smith	Site/Landscape	Φ	+	OMR Feasibility	750	SF	$30	$22,500	$3,825	$2,250	$2,250	$30,825	$7,706	$40,073		Site Plan
62	F-56	Remove and replace existing paving and curbs througout site.	Brooks/ Smith	Site/Landscape	Φ	+	OMR Feasibility	1	LS	$402,490	$402,490	$68,423	$40,249	$40,249	$551,411	$137,853	$716,834	See site plan	Site Plan
63	F-57	Provide accessible route to playground apparatus.	Brooks/ Smith	Site/Landscape	Φ	+	OMR Feasibility	9,400	SF	$20	$188,000	$31,960	$18,800	$18,800	$257,560	$64,390	$334,828		Site Plan
64	F-58	Provide accessible route to playground from parking lot for north play ground.	Brooks/ Smith	Site/Landscape	Φ	+	OMR Feasibility	678	FT	$100	$67,800	$11,526	$6,780	$6,780	$92,886	$23,222	$120,752		Site Plan
72	F-62a	Remove existing carpet and replace with VCT in classrooms.	Link	Arch - Interior Finishes	Φ	+	CDR | Maguire	4,400	SF	$7	$28,600	$4,862	$2,860	$2,860	$39,182	$9,796	$50,937		Floor Plan
77	F-65	Remove and replace all airhandling units, condensing units, and refrigerant piping at the Link Building and multipurpose spaces.	Link	Mechanical	Φ	+	CDR | Maguire	26,500	SF	$30	$795,000	$135,150	$79,500	$79,500	$1,089,150	$272,288	$1,415,895		
80	F-68	Use existing exterior CMU wall as back up. Remove existing brick veneer. Install air/vapor barrier, 4"of rigid insulation, 4" brick veneer on steel angles clipped to existing foundation.	Reed Gym	Arch - Building Exterior	Φ	+	SBAC II	5,500	SF	$52	$283,800	$48,246	$28,380	$28,380	$388,806	$97,202	$505,448		Ext. Elev.
83	F-72	Remove and replace the existing electrical switch gear for the Reed Gym	Reed Gym	Electrical	Φ	+	OMR Feasibility	1	Lump Sum	$15,000	$15,000	$2,550	$1,500	$1,500	$20,550	$5,138	$26,715		N/A
85	F-74	Remove and replace existing Heating and Ventilating equipment in Fieldhouse with DX cooling coils and condensing unit.	Reed Gym	Mechanical	Φ	+	CDR | Maguire	14,200	SF	$8	$113,600	$19,312	$11,360	$11,360	$155,632	$38,908	$202,322		N/A
86	F-75	Remove and replace all shower valves and piping in the Locker Rooms.	Reed Gym	Plumbing	Φ	+	OMR Feasibility	2,200	SF	$12	$26,400	$4,488	$2,640	$2,640	$36,168	$9,042	$47,018		Floor Plan
88	F-76	Remove and replace domestic hot water heaters including thermostatic mixing valves.	Reed Gym	Plumbing	Φ	+	OMR Feasibility	1	Lump Sum	$40,000	$40,000	$6,800	$4,000	$4,000	$54,800	$13,700	$71,240		N/A
94	F-81a	Remove and replace existing insulated windows and curtain wall systems in 1963 portion of Smith School and replace with double glazed insulated and thermally broken, R2.5 aluminum systems. Remove and replace damaged and/or rotten wood trim.	Smith	Arch - Building Exterior	Φ	+	CDR | Maguire	748	SF	$133	$99,484	$16,912	$9,948	$9,948	$136,293	$34,073	$177,181		Ext. Elev.
95	F-82	Fur out interior and install 4" closed cell spray foam. Painted gypsum finish interior surface.	Smith	Arch - Building Exterior	Φ	+	D&W	14,332	SF	$11	$164,531	$27,970	$16,453	$16,453	$225,408	$56,352	$293,030		Floor Plan

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96	F-82b	At Smith Gymnasium only, remove exterior brick veneer. Install air/vapor barrier, 4"of rigid insulation, 4" brick veneer on steel angles clipped to existing structure…(punched window openings and curtain wall similar to existing acounted for above.)	Smith	Arch - Building Exterior	Φ	+	D&W	2,059	SF	$52	$106,244	$18,062	$10,624	$10,624	$145,555	$36,389	$189,221	Applies to existing Brooks Auditorium, Smith Gym and Reed Gym.	Ext. Elev.
97	F-83	Clean and prepare existing surfaces for repainting. Repaint all interior existing painted surfaces.	Smith	Arch - Interior Finishes	Φ	+	CDR | Maguire	49,600	SF	$2	$74,400	$12,648	$7,440	$7,440	$101,928	$25,482	$132,506		Floor Plan
99	F-85	Remove existing carpet and replace with VCT in classrooms.	Smith	Arch - Interior Finishes	Φ	+	CDR | Maguire	1,200	SF	$7	$7,800	$1,326	$780	$780	$10,686	$2,672	$13,892	Requires field visit	Floor Plan
100	F-86	Remove and replace 2700 SF of 12"x12" acoustical treaments. Replace with 2x2 ACP ceilings.	Smith	Arch - Interior Finishes	Φ	+	CDR | Maguire	15,300	SF	$7	$100,980	$17,167	$10,098	$10,098	$138,343	$34,586	$179,845	Requires field visit	Ceiling Plan
108	F-93	Provide new electrical distribution panels to add electrial plug-load capacity to Smith School.	Smith	Electrical	Φ	+	CDR | Maguire	49,600	SF	$4	$198,400	$33,728	$19,840	$19,840	$271,808	$67,952	$353,350		N/A
127	F-112a	Remove existing unit ventilators in 21 classrooms. Replace with centralized air distribution system with induction units.	Smith	Mechanical	Φ	+	CDR | Maguire	49,600	SF	$17	$843,200	$143,344	$84,320	$84,320	$1,155,184	$288,796	$1,501,739		Floor Plan
130	F-113	Remove and replace unit ventilators, condensing units, and refrigerant piping at Administrative Suite and replace with new.	Smith	Mechanical	Φ	+	CDR | Maguire	1	Locations	$20,000	$20,000	$3,400	$2,000	$2,000	$27,400	$6,850	$35,620	Consult with GGD on system selection	N/A
131	F-114	Remove and replace existing exhaust systems serving bathrooms.	Smith	Mechanical	Φ	+	CDR | Maguire	1,400	SF	$26	$36,400	$6,188	$3,640	$3,640	$49,868	$12,467	$64,828		Floor Plan
132	F-115	Remove and replace existing hot water distribution system.	Smith	Mechanical	Φ	+	CDR | Maguire	49,600	SF	$4	$198,400	$33,728	$19,840	$19,840	$271,808	$67,952	$353,350		N/A
133	F-116	Remove and replace existing pneumatic mechanical controls with new direct digital controls.	Smith	Mechanical	Φ	+	OMR Feasibility	1	Lump Sum	$358,000	$358,000	$60,860	$35,800	$35,800	$490,460	$122,615	$637,598		N/A
136	F-118	Remove and replace domestic water distribution system in its entirety.	Smith	Plumbing	Φ	+	CDR | Maguire	49,600	SF	$3	$172,000	$29,240	$17,200	$17,200	$235,640	$58,910	$306,332		Floor Plan
137	F-119	Remove and replace the duplex ejector cover serving the Smith boiler room.	Smith	Plumbing	Φ	+	CDR | Maguire	1	Lump Sum	$1,500	$1,500	$255	$150	$150	$2,055	$514	$2,672		N/A
138	F-121	Remove and replace all water closets with new low flow (1.28 Gal/Flush) fixtures.	Smith	Plumbing	Φ	+	OMR Feasibility	58	Locations	$1,100	$63,800	$10,846	$6,380	$6,380	$87,406	$21,852	$113,628		Floor Plan
139	F-122	Remove and replace all lavatory faucets with low flow (.5 Gal/min) faucets with electronic metering.	Smith	Plumbing	Φ	+	OMR Feasibility	52	Locations	$330	$17,160	$2,917	$1,716	$1,716	$23,509	$5,877	$30,562		Floor Plan
140	F-123	Remove and replace domestic hot water heaters including thermostatic mixing valves.	Smith	Plumbing	Φ	+	OMR Feasibility	49,600	SF	$1	$49,600	$8,432	$4,960	$4,960	$67,952	$16,988	$88,338		N/A
142	F-125	Abate Hazardous Materials	Smith/ Link/ Brooks/ Reed	Hazardous Materials	Φ	+	OMR Feasibility	137,500	SF	$2	$330,000	$56,100	$33,000	$33,000	$452,100	$113,025	$587,730		EDG to provide narrative and sketches as necessary

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143	F-126	Remove and replace existing boilers and air handling units in Brooks Boiler Room with high-efficiency condensing boilers.	Brooks	Mechanical	Φ	+	CDR | Maguire	1	LS	$165,000	$165,000	$28,050	$16,500	$16,500	$226,050	$56,513	$293,865	Includes additional SF for unknown conditions	Floor Plan
8	F-6	Clean and prepare existing surfaces for repainting. Repaint all interior existing painted surfaces.	Brooks/ Smith/ Link/ Reed Gym	Arch - Interior Finishes	○		CDR | Maguire	137,500	SF	$1	$171,875	$29,219	$17,188	$17,188	$235,469	$58,867	$306,109		Floor Plan
9	F-7	Remove existing carpet throughout facility	Brooks	Arch - Interior Finishes	○		CDR | Maguire	3,400	SF	$3	$8,500	$1,445	$850	$850	$11,645	$2,911	$15,139	Includes floor prep	Floor Plan
19	F-21	Remove and replace existing lighting with new LED fixtures and controls throughout facility.	Brooks	Electrical	○		CDR | Maguire	47,800	SF	$9	$430,200	$73,134	$43,020	$43,020	$589,374	$147,344	$766,186		Floor Plan
21	F-21b	Remove and replace existing lighting with new LED fixtures and controls in corridors only.	Brooks	Electrical	○		CDR | Maguire	8,400	SF	$10	$79,800	$13,566	$7,980	$7,980	$109,326	$27,332	$142,124		Floor Plan
23	F-23	Upgrade technology infrastructure and electronics conistent with Category 6AUTP cabling and gigabit connectivity.	Brooks	Electrical	○		OMR Feasibility	47,800	SF	$4	$167,300	$28,441	$16,730	$16,730	$229,201	$57,300	$297,961		N/A
24	F-25	Install a double convection oven at Kitchen.	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$15,000	$15,000	$2,550	$1,500	$1,500	$20,550	$5,138	$26,715		N/A
25	F-26	Install new exhaust hood that meets overhang requirements of NFPA 96 at Kitchen	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$50,000	$50,000	$8,500	$5,000	$5,000	$68,500	$17,125	$89,050	Includes new kitchen exhaust ductwork	N/A
26	F-27	Install a fire suppression system at Kitchen.	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$14,000	$14,000	$2,380	$1,400	$1,400	$19,180	$4,795	$24,934		N/A
27	F-28	Install a 3-compartment reach-in-freezer at Kitchen.	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$6,500	$6,500	$1,105	$650	$650	$8,905	$2,226	$11,577		N/A
28	F-29	Install one warming cabinet to hold food at a safe temperature between lunches.	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$2,500	$2,500	$425	$250	$250	$3,425	$856	$4,453		N/A
29	F-30	Install a new 3-door reach-in refrigerator at Kitchen.	Brooks	FFE	○		CDR | Maguire	1	Lump Sum	$5,500	$5,500	$935	$550	$550	$7,535	$1,884	$9,796		N/A
31	F-31a	Refurbish all science casework and countertops with new.	Brooks	FFE	○		SBAC II	128	LF	$110	$14,080	$2,394	$1,408	$1,408	$19,290	$4,822	$25,076	Assume wall mounted cabinets and base cabinets	Floor Plan
32	F-32	Remove existing televisions with VCRs from classrooms.	Brooks	FFE	○		OMR Feasibility	17	Locations	$75	$1,275	$217	$128	$128	$1,747	$437	$2,271		Floor Plan
33	F-33	Provide all classrooms with LCD projectors and interactive white boards.	Brooks	FFE	○		OMR Feasibility	13	Locations	$4,000	$52,000	$8,840	$5,200	$5,200	$71,240	$17,810	$92,612		Floor Plan
51	F-46	Remove and replace existing clock system with new digital system.	Brooks/ Smith	Electrical	○		OMR Feasibility	18	Classrooms	$750	$13,500	$2,295	$1,350	$1,350	$18,495	$4,624	$24,044		N/A
57	F-51	Reinforce existing structure to support solar panels (incremental cost if being replaced): Reed, Auditorium, flat portion of Brooks, South facing portion of Smith. Calculate solar power potential.	Brooks/ Smith	Energy Efficiency	○		CDR | Maguire	36,900	SF	$3	$92,250	$15,683	$9,225	$9,225	$126,383	$31,596	$164,297		EDG to provide narrative and sketches as necessary

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65	F-59	Remove and replace trash barrels throughout site.	Brooks/ Smith	Site/Landscape	○		OMR Feasibility	1	Lump Sum	$7,500	$7,500	$1,275	$750	$750	$10,275	$2,569	$13,358		Site Plan
66	F-60	Remove and replace bicycle racks throughout site.	Brooks/ Smith	Site/Landscape	○		OMR Feasibility	1	Lump Sum	$10,000	$10,000	$1,700	$1,000	$1,000	$13,700	$3,425	$17,810		Site Plan
67	F-61	Remove and replace benches throughout site.	Brooks/ Smith	Site/Landscape	○		OMR Feasibility	1	Lump Sum	$12,500	$12,500	$2,125	$1,250	$1,250	$17,125	$4,281	$22,263		Site Plan
68	F-61a	Addressing grading, irrigation, drainage at central field..field replacement subgrade, new seed, better drainage	Brooks/ Smith	Site/Landscape	○			1	Lump Sum	$427,308	$427,308	$72,642	$42,731	$42,731	$585,412	$146,353	$761,036	See site plan	Site Plan
69	F-61b	Addressing grading, irrigation, drainage at T-Ball fields..field replacement subgrade, new seed, better drainage	Brooks/ Smith	Site/Landscape	○			1	Lump Sum	$350,000	$350,000	$59,500	$35,000	$35,000	$479,500	$119,875	$623,350	See site plan	Site Plan
70	F-61c	Addressing grading, irrigation, drainage at baseball fields..field replacement subgrade, new seed, better drainage	Brooks/ Smith	Site/Landscape	○			1	Lump Sum	$420,000	$420,000	$71,400	$42,000	$42,000	$575,400	$143,850	$748,020	See site plan	Site Plan
84	F-73	Remove and replace existing Heating and Ventilating equipment in Fieldhouse without DX cooling coils.	Reed Gym	Mechanical	○		CDR | Maguire	14,200	SF	$6	$85,200	$14,484	$8,520	$8,520	$116,724	$29,181	$151,741		N/A
87	F-75a	Gut renovation of girls locker rooms for improved organization and performance.	Reed Gym	Plumbing	○		OMR Feasibility	1,200	SF	$200	$240,000	$40,800	$24,000	$24,000	$328,800	$82,200	$427,440		Floor Plan
98	F-84	Remove existing carpet throughout facility.	Smith	Arch - Interior Finishes	○		CDR | Maguire	3,600	SF	$3	$9,000	$1,530	$900	$900	$12,330	$3,083	$16,029	Requires field visit	Floor Plan
109	F-94	Remove and replace existing lighting with new LED fixtures and controls.	Smith/ Brooks	Electrical	○		CDR | Maguire	137,500	SF	$10	$1,306,250	$222,063	$130,625	$130,625	$1,789,563	$447,391	$2,326,431		Ceiling Plan
111	F-96	Upgrade technology infrastructure and electronics conistent with Category 6AUTP cabling and gigabit connectivity.	Smith	Electrical	○		OMR Feasibility	49,600	SF	$4	$173,600	$29,512	$17,360	$17,360	$237,832	$59,458	$309,182		Floor Plan
112	F-98	Install a single convection oven.	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$5,000	$5,000	$850	$500	$500	$6,850	$1,713	$8,905		N/A
113	F-99	Install a two-compartment steamer	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$12,000	$12,000	$2,040	$1,200	$1,200	$16,440	$4,110	$21,372		N/A
114	F-100	Install a four-burner range	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$3,000	$3,000	$510	$300	$300	$4,110	$1,028	$5,343		N/A
115	F-101	Install new exhaust hood that meets overhang requirements of NFPA 96	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$50,000	$50,000	$8,500	$5,000	$5,000	$68,500	$17,125	$89,050		N/A
116	F-102	Install a fire suppression system in Kitchen.	Smith	FFE	○	+	CDR | Maguire	1	Lump Sum	$14,000	$14,000	$2,380	$1,400	$1,400	$19,180	$4,795	$24,934		Floor Plan
117	F-103	Install a 3-compartment reach-in-freezer.	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$6,500	$6,500	$1,105	$650	$650	$8,905	$2,226	$11,577		N/A
118	F-104	Install one warming cabinet to hold food at a safe temperature between lunches.	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$2,500	$2,500	$425	$250	$250	$3,425	$856	$4,453		N/A
119	F-105	Install a new 3-door reach-in refrigerator.	Smith	FFE	○		CDR | Maguire	1	Lump Sum	$5,500	$5,500	$935	$550	$550	$7,535	$1,884	$9,796		N/A
120	F-106	Remove existing televisions with VCRs from classrooms.	Smith	FFE	○		OMR Feasibility	17	Locations	$75	$1,275	$217	$128	$128	$1,747	$437	$2,271	Requires field visit	Floor Plan
121	F-107	Provide all classrooms with LCD projectors and interactive white boards.	Smith	FFE	○		OMR Feasibility	15	Locations	$4,000	$60,000	$10,200	$6,000	$6,000	$82,200	$20,550	$106,860		Floor Plan

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2	F-2a	Remove existing roofing and trim components at Brooks School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to meet Energy 2030 goal). Base roof material white TPO, Replace all trim components.	Brooks	Arch - Building Exterior	A		SBAC Meeting	47,800	SF	$18	$836,500	$142,205	$83,650	$83,650	$1,146,005	$286,501	$1,489,807		Roof Plan
3	F-2b	Remove existing roofing and trim components at Brooks School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to meet Energy 2030 goal). Base roof material white PVC, Replace all trim components.	Brooks	Arch - Building Exterior	A		SBAC Meeting	47,800	SF	$19	$884,300	$150,331	$88,430	$88,430	$1,211,491	$302,873	$1,574,938		Roof Plan
4	F-3	Remove and replace existing uninsulated windows, curtain wall systems, and associated transite panels (ACMs) in the Brooks School and replace with triple glazed insulated and thermally broken, R5 vinyl systems.	Brooks	Arch - Building Exterior	A		CDR | Maguire	6,800	SF	$148	$1,006,400	$171,088	$100,640	$100,640	$1,378,768	$344,692	$1,792,398		Ext. Elev.
30	F-31	Remove and replace all science casework and countertops with new.	Brooks	FFE	A		CDR | Maguire	128	LF	$450	$57,600	$9,792	$5,760	$5,760	$78,912	$19,728	$102,586	Assume wall mounted cabinets and base cabinets	Floor Plan
34	F-33a	Provide all classrooms with LCD screens and wireless screen casting display capability.	Brooks	FFE	A		SBAC Meeting	18	Locations	$5,000	$90,000	$15,300	$9,000	$9,000	$123,300	$30,825	$160,290		Floor Plan
35	F-34	Remove existing unit ventilators in 17 classrooms. Replace with centralized air distribution system with DW cooling coils, condensing units, and VAV boxes.	Brooks	Mechanical	A		CDR | Maguire	39,300	SF	$16	$609,150	$103,556	$60,915	$60,915	$834,536	$208,634	$1,084,896		Floor Plan
37	F-34b	Remove existing unit ventilators in 17 classrooms. Replace with new unit ventilators and CHW units.	Brooks	Mechanical	A		CDR | Maguire	39,300	SF	$14	$550,200	$93,534	$55,020	$55,020	$753,774	$188,444	$979,906		Floor Plan
38	F-34c	Augment 17 existing unit ventilators with split ducting system for cooing.	Smith	Mechanical	A		CDR | Maguire	39,300	SF	$12	$471,600	$80,172	$47,160	$47,160	$646,092	$161,523	$839,920		Floor Plan
43	F-39	Remove and replace domestic water distribution system serving potable water fixtures only.	Brooks	Plumbing	A		CDR | Maguire	51	Locations	$2,451	$125,000	$21,250	$12,500	$12,500	$171,250	$42,813	$222,625		N/A
44	F-39a	Replace piping at water bubblers only (including new bubblers at code required locations).	Brooks	Plumbing	A		SBAC Meeting	11	Locations	$4,100	$45,100	$7,667	$4,510	$4,510	$61,787	$15,447	$80,323		Floor Plan
56	F-50a	Provide and connect new life safety power generator equipment as primary and sized to compliment existing generator for sufficient capactity	Brooks/ Smith	Electrical/ Life Safety	A			1	Lump Sum	$300,000	$300,000	$51,000	$30,000	$30,000	$411,000	$102,750	$534,300	Need KW number (smaller than F-50)	N/A
71	F-62	Remove existing carpet throughout facility	Link	Arch - Interior Finishes	A		CDR | Maguire	5,000	SF	$3	$12,500	$2,125	$1,250	$1,250	$17,125	$4,281	$22,263		Floor Plan

Preliminary Facilities Scope

revised: 1.28.15

Lincoln Public Schools - K-8 Study

Indicates a code compliance item triggered by Immediate Needs Scope.

● Immediate Needs | Φ Near Term Needs | ○ Deferred Needs | **A** Alternates | + Included in CIP

Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost[2]	Comments	Take-off Document
74	F-63a	Remove existing flat roofing and trim components at Link Building down to existing deck. Replace with new insulation and single-ply, light-colored PVC roofing system (to comply with 2030 Challenge). Replace all trim components.	Link	Arch - Building Exterior	A		CDR | Maguire	24,300	SF	$19	$449,550	$76,424	$44,955	$44,955	$615,884	$153,971	$800,649		Roof Plan
75	F-63b	Remove existing flat roofing and trim components at Link Building down to existing deck. Replace with new insulation and single-ply, light-colored TPO roofing system (to comply with 2030 Challenge). Replace all trim components.	Link	Arch - Building Exterior	A		CDR | Maguire	24,300	SF	$18	$425,250	$72,293	$42,525	$42,525	$582,593	$145,648	$757,370		Roof Plan
79	F-66a	Remove existing precast concrete exterior wall panels at Reed Gym and replace with EIFS system.	Reed Gym	Arch - Building Exterior	A		D&W	7,200	SF	$30	$216,000	$36,720	$21,600	$21,600	$295,920	$73,980	$384,696		
90	F-79a	Remove existing roofing and trim components at Smith School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to meet Energy 2030 goal). Base roof material white TPO, Replace all trim components.	Smith	Arch - Building Exterior	A		SBAC Meeting	42,900	SF	$18	$750,750	$127,628	$75,075	$75,075	$1,028,528	$257,132	$1,337,086		Roof Plan
91	F-79b	Remove existing roofing and trim components at Smith School down to existing deck. Replace with new tappered to insulation and single-ply roofing system (to meet Energy 2030 goal). Base roof material white PVC, Replace all trim components.	Smith	Arch - Building Exterior	A		SBAC Meeting	42,900	SF	$19	$793,650	$134,921	$79,365	$79,365	$1,087,301	$271,825	$1,413,491		Roof Plan
93	F-81	Remove and replace existing windows, curtain wall systems, and associated transite panels (ACMs) in the Smith School and replace with triple glazed insulated and thermally broken, R5 vinyl systems.	Smith	Arch - Building Exterior	A		CDR | Maguire	5,588	SF	$148	$827,024	$140,594	$82,702	$82,702	$1,133,023	$283,256	$1,472,930		Ext. Elev.
122	F-109	Remove and replace existing boilers and air handling units in Smith Boiler Room with high-efficiency condensing boilers. (Excludes relocation to a space above grade)	Smith	Mechanical	A		CDR | Maguire	1	Lump Sum	$150,000	$150,000	$25,500	$15,000	$15,000	$205,500	$51,375	$267,150		N/A
123	F-109a	Remove and replace existing boilers and air handling units in Smith Boiler Room with high-efficiency condensing boilers. (Excludes relocation to a space above grade, but includes waterproofing solution for continued use of basement)	Smith	Mechanical	A		SBAC Meeting	1	LS	$175,000	$175,000	$29,750	$17,500	$17,500	$239,750	$59,938	$311,675		Floor Plan
126	F-112	Remove existing unit ventilators in 21 classrooms. Replace with centralized air distribution system with DW cooling coils, condensing units, and VAV boxes.	Smith	Mechanical	A		CDR | Maguire	49,600	SF	$16	$793,600	$134,912	$79,360	$79,360	$1,087,232	$271,808	$1,413,402		Floor Plan
128	F-112b	Remove existing unit ventilators in 21 classrooms. Replace with new unit ventilators and CHW units.	Smith	Mechanical	A		CDR | Maguire	49,600	SF	$14	$694,400	$118,048	$69,440	$69,440	$951,328	$237,832	$1,236,726		Floor Plan

Preliminary Facilities Scope

revised: 1.28.15

Lincoln Public Schools - K-8 Study

Indicates a code compliance item triggered by Immediate Needs Scope.

● Immediate Needs | Φ Near Term Needs | ○ Deferred Needs | **A** Alternates | + Included in CIP

Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost [2]	Comments	Take-off Document
129	F-112c	Augment existing unit ventilators with split ducting system for cooing.	Smith	Mechanical	A		CDR | Maguire	49,600	SF	$12	$595,200	$101,184	$59,520	$59,520	$815,424	$203,856	$1,060,051		Floor Plan
134	F-117	Remove and replace domestic water distribution system serving potable water fixtures only.	Smith	Plumbing	A		CDR | Maguire	49,600	SF	$3	$148,800	$25,296	$14,880	$14,880	$203,856	$50,964	$265,013		Floor Plan
135	F-117a	Replace piping at water bubblers only (including new bubblers at code required locations).	Smith	Plumbing	A		SBAC Meeting	18	Locations	$4,100	$73,800	$12,546	$7,380	$7,380	$101,106	$25,277	$131,438		Floor Plan

SBAC TOTAL IMMEDIATE NEEDS SCOPE	**$8,392,945**
SBAC TOTAL NEAR TERM NEEDS SCOPE	**$19,131,279**
SBAC TOTAL CAPITAL IMPROVEMENT SCOPE	**$27,524,224**
SBAC TOTAL DEFERRED SCOPE	**$7,703,561**
FACILITIES SUB-TOTAL	**$35,227,784**

[1] *General Conditions includes 9% General Conditions, 1% Bond, 1.25% Insurances; 2% GMP contingency and 3% OH&P*

[2] *Total Project Cost assumes construction could not begin until November 2015 and, therefore, includes one year of esclation at 4%.*

[3] *Dore & Whittier performed a review of previous studies and other information provided by the Town of Lincoln and Lincoln Public Schools. D&W also performed a visual inspection of the existing facility to quantify certain scope items to the extent possible. Dore & Whittier did not perform any distructive testing. All quantities and costs should be considered conceptual until the Town of Lincoln and Lincoln Public School selects specific projects to pursue. The further investigation and design work that would come with specific construction project would better define scope and more accurately estimate costs.*

[4] *No phasing costs are included in any scope items. Costs associated with phasing (and additional escalation costs) are included in comprehensive options.*

This identified Capital Improvement scope represents a compilation of scope identified in previous studies and augmented by members of the School Building Advisory Committee (SBAC). This list is intended to serve as an ala carte menu from which the SBAC, and by extension the Town of Lincoln, can assemble more comprehensive projects. Line items have been priced individually with project costs to support this effort, but it should be noted that there are interactions between line items (in terms of Code triggers and cost efficiencies) which can't be fully captured in this format.

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Preliminary Educational Scope

revised: 1.28.15

● High Improvement | Φ Moderate Improvement | ○ Modest Improvement | **A** Alternates | + Included in CIP

Line #	Item #	Scope Description	Location	System Category	SBAC Priority	In CIP Calculation	Scope Source	QTY	Units	$/UNIT	Direct Cost	General Conditions Cost [1] (17%)	Design Contingency (10%)	Owner's Contingency (10%)	Total Construction Cost	Soft Costs (25%)	Total Project Cost [2]	Comments	Take-off Document
4	E-1c	Provide speech amplification equipment	Brooks	Acoustics	●		SBAC Meeting	13	Classrooms	$1,800	$23,400	$3,978	$2,340	$2,340	$32,058	$8,015	$41,675		Floor Plan
6	E-5	Construct new entry sequence with better connection to administration and visibility from parking.	Brooks	Safety and Security	●		SBACII Memo	1	LS	150000	$150,000	$25,500	$15,000	$15,000	$205,500	$51,375	$267,150		
7	E-6	Construct new full-prep kitchen to serve grades 5-8.	Brooks/ Reed Gym	Food Service	●		SBACII Memo	2,400	SF	420	$1,008,000	$171,360	$100,800	$100,800	$1,380,960	$345,240	$1,795,248	Assumes two servings	Programming assumption based on student population
9	E-8	Construct new cafeteria to serve grades 5-8.	Brooks/ Reed Gym	Student Dining	●		SBACII Memo	3,000	SF	300	$900,000	$153,000	$90,000	$90,000	$1,233,000	$308,250	$1,602,900	Assumes two servings @ 15 NSF per student + 1.5 net to gross multiplier.	Programming assumption based on student population
15	E-11c	Provide speech amplification equipment	Smith	Acoustics	●		SBAC Meeting	21	Classrooms	$1,800	$37,800	$6,426	$3,780	$3,780	$51,786	$12,947	$67,322		Floor Plan
16	E-11d	Provide sound-absorbative materials to classrooms to improve acoustics by removing 2700 SF of existing acoustical tiles and installing tectum wall panels at Kindergarten Classrooms.	Smith	Acoustics	●		SBAC Meeting	4,600	SF	$13	$57,960	$9,853	$5,796	$5,796	$79,405	$19,851	$103,227		Int. Elev.
18	E-13	Demolition of existing 2nd Grade classrooms toilet facilities, and boiler room	Smith	Educational	●		SBACII Memo	6,320	SF	10	$63,200	$10,744	$6,320	$6,320	$86,584	$21,646	$112,559		Existing CAD Floor Plan
19	E-14	New construction of four 2nd Grade classrooms, toilet facilities and boiler room	Smith	Educational	●		SBACII Memo	7,455	SF	260	$1,938,300	$329,511	$193,830	$193,830	$2,655,471	$663,868	$3,452,112	Assumes 950 NSF per classroom, similar toilet fixture count, and 1.5 Multiplier	
20	E-15	Construct new full-prep kitchen to serve grades K-4.	Smith	Food Service	●		SBACII Memo	2,475	SF	420	$1,039,500	$176,715	$103,950	$103,950	$1,424,115	$356,029	$1,851,350	Assumes two servings	
22	E-18	Construct new entry sequence with better connection to administration and visibility from parking.	Smith	Safety and Security	●		SBACII Memo	1	LS	150000	$150,000	$25,500	$15,000	$15,000	$205,500	$51,375	$267,150		
23	E-19	Construct new cafeteria to serve grades K-4.	Smith	Student Dining	●		SBACII Memo	3,750	SF	300	$1,125,000	$191,250	$112,500	$112,500	$1,541,250	$385,313	$2,003,625	Assumes two servings @ 15 NSF per student + 1.5 net to gross multiplier.	Programming assumption based on student population
24	E-20	Small Group Breakout spaces	TBD	Educational	●		SBACII Memo	1,700	SF	200	$340,000	$57,800	$34,000	$34,000	$465,800	$116,450	$605,540	Assumes approximately 100 NSF space per pair of existing classrooms.	Programming assumption based on student population
25	E-21	Classroom-sized Breakout clusters (Hub Areas)	TBD	Educational	●		SBACII Memo	9,000	SF	230	$2,070,000	$351,900	$207,000	$207,000	$2,835,900	$708,975	$3,686,670	Assumes 1000 NSF per grade level at 1.5 net to gross multiplier	Programming assumption based on Hanscom Model
26	E-22	Construction of new, larger Science spaces	TBD	Educational	●		SBACII Memo	7,200	SF	180	$1,296,000	$220,320	$129,600	$129,600	$1,775,520	$443,880	$2,308,176	Assumes within existing foortprint	Programming assumption based on MSBA Guidelines
28	E-24	Construction of new, larger Art spaces	TBD	Educational	●		SBACII Memo	3,600	SF	250	$900,000	$153,000	$90,000	$90,000	$1,233,000	$308,250	$1,602,900	Assumes all new construction	Programming assumption based on MSBA Guidelines
1	E-1	Provide sound-absorbative materials to classrooms to improve acoustics by removing 4,700 SF of existing acoustical ceiling treatment and installing suspended ACP.	Brooks	Acoustics	Φ		SBAC Components	10,600	SF	$5	$57,664	$9,803	$5,766	$5,766	$79,000	$19,750	$102,700		Ceiling Plan

5	E-2	Reconfiguration of existing Science spaces	Brooks	Educational	Φ		SBACII Memo	5,515	SF	160	$882,400	$150,008	$88,240	$88,240	$1,208,888	$302,222	$1,571,554	Assumes reconfiguration in place	Existing CAD Floor Plan
12	E-11	Provide sound-absorbative materials to classrooms to improve acoustics by removing 4502 SF existing acoustical tiles and installing suspended ACP.	Smith	Acoustics	Φ		SBAC Components	15,600	SF	$5	$74,880	$12,730	$7,488	$7,488	$102,586	$25,646	$133,361		Ceiling Plan
10	E-9	Addressing grading, irrigation, drainage at central field..field replacement subgrade, new seed, better drainage	Brooks/ Smith	Education	O			1	Lump Sum	427,308	$427,308	$72,642	$42,731	$42,731	$585,412	$146,353	$761,036	See site plan	Site Plan
11	E-10	Reconfigure existing site circulation pattern to improve bus/parent vehicle/pedestrian conflicts	N/A	Site/Landscape	O		SBACII Memo	1	LS	250000	$250,000	$42,500	$25,000	$25,000	$342,500	$85,625	$445,250		
2	E-1a	Provide sound-absorbative materials to classrooms to improve acoustics by installing tectum wall panels.	Brooks	Acoustics	A		SBAC Meeting	5,915	SF	$12	$70,980	$12,067	$7,098	$7,098	$97,243	$24,311	$126,415	VIF	Interior Elev.
3	E-1b	Provide sound-absorbative materials to classrooms to improve acoustics by installing fabric-wrapped acoustical wall panels.	Brooks	Acoustics	A		SBAC Meeting	5,915	SF	$22	$130,130	$22,122	$13,013	$13,013	$178,278	$44,570	$231,762	VIF	Interior Elev.
8	E-7	Construction of an enclosed breezeway between Brooks and Reed Gym	Brooks/ Reed Gym	Safety and Security	A		SBACII Memo	1,500	SF	240	$360,000	$61,200	$36,000	$36,000	$493,200	$123,300	$641,160	Assumes straight connection, 150' long x 10' wide - exterior face to exterior face.	CAD Floor Plan
13	E-11a	Provide sound-absorbative materials to classrooms to improve acoustics by removing 2700 SF existing acoustical tiles and installing tectum wall panels.	Smith	Acoustics	A		SBAC Meeting	20,000	SF	$12	$240,000	$40,800	$24,000	$24,000	$328,800	$82,200	$427,440		Int. Elev.
14	E-11b	Provide sound-absorbative materials to classrooms to improve acoustics by removing existing acoustical wall tiles and installing fabric-wrapped acoustical wall panels.	Smith	Acoustics	A		SBAC Meeting	20,000	SF	$22	$440,000	$74,800	$44,000	$44,000	$602,800	$150,700	$783,640		Int. Elev.
17	E-12	Gut renovation of existing 2nd Grade classrooms	Smith	Educational	A		SBACII Memo	5,150	SF	120	$618,000	$105,060	$61,800	$61,800	$846,660	$211,665	$1,100,658	Assumes renovation in place	Existing CAD Floor Plan
21	E-15a	Construct new warming kitchen to serve grades K-4.	Smith	Food Service	A		SBACII Memo	2,475	SF	363	$898,425	$152,732	$89,843	$89,843	$1,230,842	$307,711	$1,600,095	Assumes two servings	
27	E-23	Reconfiguration/Relocation of existing Art spaces.	TBD	Educational	A		SBACII Memo	3,600	SF	150	$540,000	$91,800	$54,000	$54,000	$739,800	$184,950	$961,740	Assumes within existing foortprint	Programming assumption based on MSBA Guidelines

SBAC TOTAL HIGH IMPORTANCE SCOPE	**$19,767,604**
SBAC TOTAL MODERATE IMPORTANCE SCOPE	**$1,807,615**
SBAC TOTAL CAPITAL IMPROVEMENT SCOPE	**$21,575,219**
SBAC MODEST IMPORTANC SCOPE	**$1,206,286**
EDUCATIONAL SUB-TOTAL	**$22,781,505**

[1] General Conditions includes 9% General Conditions, 1% Bond, 1.25% Insurances; 2% GMP contingency and 3% OH&P

[2] Total Project Cost assumes construction could not begin until November 2015 and, therefore, includes one year of esclation at 4%.

[3] Dore & Whittier performed a review of previous studies and other information provided by the Town of Lincoln and Lincoln Public Schools. D&W also performed a visual inspection of the existing facility to quantify certain scope items to the extent possible. Dore & Whittier did not perform any distructive testing. All quantities and costs should be considered conceptual until the Town of Lincoln and Lincoln Public School selects specific projects to pursue. The further investigation and design work that would come with specific construction project would better define scope and more accurately estimate costs.

[4] No phasing costs are included in any scope items. Costs associated with phasing (and additional escalation costs) are included in comprehensive options.

This educational scope represents a compilation of scope identified in previous studies and augmented by members of the School Building Advisory Committee (SBAC). This list is intended to serve as an ala carte menu from which the SBAC, and by extension the Town of Lincoln, can assemble more comprehensive projects. Line items have been priced individually with project costs to support this effort, but it should be noted that there are interactions between line items (in terms of Code triggers and cost efficiencies) which can't be fully captured in this format.

Public Forum #1 – September 16th, 2014

Dore & Whittier facilitated the first public forum on September 16th, 2014. The intent of the meetings was to:

- Inform attendees of SBAC progress since conclusion of MSBA feasibility study
- Introduce Dore & Whittier as the selected design firm for this study
- Present educational possibilities
- Present preliminary cost considerations
- Identify issues for consideration and exploration that are important to those in attendance

Key Elements Presented

The bulk of the presentation focused on the characteristics of 21st educational facilities and several preliminary cost considerations based on the sets of scopes identified in Task One.

Dore & Whittier shared the following five characteristics of 21st century educational facilities:

- First and foremost, facilities must be warm, safe and dry. They must meet the basic needs of those occupying the facility. These elements include appropriate thermal comfort and control, appropriate acoustical qualities, up to date life safety equipment such as sprinklers and egress paths, and general protection from the elements.
- Facilities should provide a variety of places for instruction that support individual learning modalities and multiple intelligences. Such spaces may include classrooms, small group rooms, multipurpose spaces, and hubs among others.
- Facilities should embody the 4Cs of 21st century skills – critical thinking, collaboration, communication, and creativity. Such facilities are often outfitted to accommodate student-to-student collaboration, teacher-to-teacher collaboration, student presentations, and places to make things.
- Technology should be ubiquitous throughout the facility and available to all students as tools of their learning experience.
- 21st Century schools possess the ability to adapt to change over time.

As part of the presentation, Dore & Whittier shared an analysis of the existing facility as it compared to MSBA guidelines for individual spaces. Dore & Whittier shared examples of projects from their portfolio of work that exhibit these characteristics and the Hanscom School example currently under construction on Hanscom Air Force Base, which also possesses many of these characteristics.

Dore & Whittier shared their methodology for estimating the preliminary scope of work identified in Task One. They also shared preliminary estimates for three major systems in need of repair or replacement: Roofing, Windows, and Mechanical Systems.

Previous reports identified the existing roof as an area of concern and had recommended a complete replacement of the entire roof down to the existing deck – with the exception of the rood on the Reed Gym. Although Dore & Whittier did not perform an assessment or conduct any destructive testing, a visual observation of the roof during one of its site visits confirmed these recommendations. Dore & Whittier explored three different roofing systems for estimation: an EPDM system, a PVC system, and a TPO system. Estimates ranged from approximately $2.9M to $3.1M. For purposes of the actionable options developed in Task Three, SBAC chose to use an EPDM system for cost estimating purposes.

update on cost estimates | roofing scope

	opt 1 EPDM	opt 2 PVC	opt 3 TPO
hard costs +	$2.3M	$2.5M	$2.3M
soft costs @ 25%	$0.6M	$0.6M	$0.6M
total project	$2.9M	$3.1M	$2.9M

Selective window replacement occurred during the 1994 construction project, but many windows are still both single pane and energy inefficient or are in poor condition. The Town of Lincoln adopted a 2030 Energy By-law which requires public facilities in Lincoln to be more energy efficient. Dore & Whittier explored and presented two alternatives for window replacement: one which addressed only the windows not replaced in 1994 to a standard of the current energy building code and one which replaced all the windows (including all those installed in 1994) to the standard of the 2030 Energy By-Law. Project costs associated with each alternative were estimated to be $.8M and $2.5M, respectively. For purposes of the actionable options developed in Task Three, SBAC chose to use the alternative that meets the current energy building for cost estimating purposes.

update on cost estimates | window scope

	opt 1 | energy 2030 (15,330 SF)	opt 2 | poor cond. only (5,306 SF)
hard costs +	$2.0M	$0.6M
soft costs @ 25%	$0.5M	$0.2M
total project	**$2.5M**	**$0.8M**

The existing building provides ventilation and heat via unit ventilators in most classrooms. These types of systems are often noisy, energy inefficient, and do not provide cooling capabilities. The Design Team explored four alternatives for updating these systems. Option one removed the existing unit ventilators and replaced them with an overhead air distribution system that provided both ventilation and cooling capabilities via variable air volume units. Option two removed exiting unit ventilators and replaced them with an overhead air distribution system that provided both ventilation and cooling capabilities via induction units. Option three removed and replaced the existing unit ventilators with new, more energy efficient, unit ventilators with cooling capabilities. Option four retained the existing unit ventilators for ventilation, but split ductless systems added to classrooms to provide cooling capabilities. Preliminary project cost estimates for the alternatives ranged from $2.3M to $8.1M. For purposes of the actionable options developed in Task Three, SBAC chose to use an overhead system with induction units for cost estimating purposes.

update on cost estimates | mechanical scope

	opt 1 (full ac w/ VAV)	opt 2 (full ac w/ induction)	opt 3 (new UV w/ CHW)	opt 4 (add split ductless)
hard costs +	$6.5M	$6.4M	$5.9M	$1.8M
soft costs @ 25%	$1.6M	$1.6M	$1.5M	$0.5M
total project	**$8.1M**	**$8.0M**	**$7.4M**	**$2.3M**

Finally, Dore & Whittier presented current market conditions in Massachusetts in dollars per square foot for each of four levels of construction. We presented this information to communicate that commercial construction differs from residential construction and from other geographic areas of the country. The information was intended to prepare attendees, and residents of Lincoln in general, for the presentation of estimates that would occur later in the process.

- Light Renovation: $281/SF total project cost
- Medium Renovation: $375/SF total project cost
- Heavy Renovation: $394/SF total project cost
- New Construction: $425/SF total project cost

The Public Forum concluded with a small group exercise intended to invite input from the attendees. At individual tables and on flip chart paper, attendees responded to these three prompts:

- Q1: What key issues should the process explore?
- Q2: What are your priorities? Briefly explain why.
- Q3: How would you define a successful study/project?

The following summarizes the results of this small group exercise. Complete results are provided in Appendix II of this report. Numbers in parentheses indicate how many tables, out of ten tables, reported a similar response.

<u>Question #1: What key issue details should the process explore?</u>

(6) Education
(6) Site Sensitivity
(6) Cost
(5) Facilities
(4) Flexibility
(4) Center Fields
(3) Kitchen Facilities
(3) Accessibility
(2) Safety
(2) Warm, Safe and Dry
(2) Energy Efficiency
(1) Break Out Spaces
(1) Class Size
(1) Striking balance between school, fields, greenery, and community
(1) Minimize impact to students during construction
(1) Teacher Retention
(1) Long term solution [50 years +/-]
(1) Minimal Planning Window [10-15 years+/-]
(1) Minimize Specialized Facilities
(1) Recreational Facilities
(1) Integrate Parents/Grandparents into Educational Strategy

Question #2: What are your priorities and briefly explain why?

(5) Facilities & Code compliance
(4) Education
(4) Cost
(3) Safety
(3) Cafeteria
(3) Flexibility
(2) Energy Efficiency
(2) Site
(2) Warm, Safe and Dry
(1) 2nd grade classroom size
(1) Internet access
(1) Electric upgrades
(1) Traffic management
(1) Knowing long term true cost – long term costs, life cycle/payback/operating
(1) Fire Suppression
(2) Preservation of Center Field
(1) Safe Parking
(1) Technology
(1) Accessibility
(1) Long term solution [50 years +/-]

Question #3: How would you define a successful study/project?

(3) Range of options for town to identify as priorities
(3) Solution that the Lincoln Community can support
(2) A clear strategy for moving forward with consensus
(1) Full inspection of current circumstances
(1) No more study money
(1) Bring together the community center project and school buildings
(1) Minimize the amount of Town decisions to get a final outcome (i.e no overrides)
(1) Articulate educational vision that motivates elements beyond general comfort and safety
(1) Need single long term solution

Task Two General Findings & Recommendations

Dore & Whittier's cost estimator, PM&C, prepared conceptual cost estimates based on the facility needs and educational enhancement documents developed in Task One. Scope line items were priced as individual projects. Cost estimates included hard costs and soft costs to determine overall project costs. When organized by the categorizations developed by the SBAC in Task One, the costs were as follows:

Facilities Needs

TOTAL PROJECT COSTS for IMMEDIATE FACILITIES NEEDS =	$ 8.39 M[3]
TOTAL PROJECT COSTS for NEAR TERM FACILITIES NEEDS =	$19.13 M
TOTAL PROJECT COSTS for DEFERRABLE FACILITIES NEEDS =	$ 7.70 M
SUB-PROJECT COST for FACILITIES NEEDS =	$35.22 M

Educational Enhancements

TOTAL PROJECT COSTS for HIGH IMPORTANCE EDUCATIONAL ENHANCEMENTS =	$ 19.8 M
TOTAL PROJECT COSTS for MODERATE IMPORTANCE EDUCATIONAL ENHANCEMENTS =	$1.8 M
TOTAL PROJECT COSTS for MODEST IMPORTANCE EDUCATIONAL ENHANCEMENTS =	$ 1.2 M
SUB-PROJECT COST for EDUCATIONAL ENHANCEMENTS =	$22.8 M

GRAND PROJECT COST TOTAL = $58.02 M[4]

Dore & Whittier explored the code trigger implications of these cost estimates in subsequent tasks.

Those in attendance at Public Forum #1 indicated a desire for the study to consider the following issues:

- Alignment of Facilities with an Education Vision
- Cost impact to the Town of Lincoln
- Sensitivity to the Site (particularly the Central Fields)
- Safety and Security
- Long Term Improvements to the Facility

[3] Once identified, the Design Team determined that the Immediate Facilities Needs would trigger several additional code upgrades. These code upgrades were incorporated into the cost estimates for Option 1A. Please refer to the tables in Task Two and the options information in Task Three in the body of the report for additional information.

[4] A sum of the grand project totals is approximately $58 M. It is evidence that cost saving may be available by pursuing full options rather that piecemeal projects priced individually as in Task One.

TASK THREE – MODEL SEVERAL PLAN OPTIONS

Overview

Task Three focused on the development of options. Members of the School Building Advisory Committee (SBAC) tasked Dore & Whittier to model several options as floor/site plans and requested that all options be based on the following assumptions and restrictions. The full range of options was to:

- Be restricted to the Ballfield Road Campus site – no alternative sites were considered
- Represent a wide range of costs in incremental steps
- Address facility needs w/ priority of needs as a variable
- Provide educational enhancements in incremental steps
- Retain basic existing site planning:
    - L-shaped building
    - Sensitivity to central green
    - Retention of existing trees to the greatest extent feasible
    - Sensitivity to wetlands, river fronts, vernal pools, etc.
- Explore varying levels of renovations & additions in incremental steps
- Explore all new construction for cost comparison purposes only

Task Three also included confirmation of the educational program and two opportunities to present progress of the study to - and invite comment and feedback from - the general public. Task three concluded with the State of the Town Meeting, the second of these opportunities.

3.1 Confirm The Educational Program and Other Goals

The MSBA Feasibility Study conducted in 2012 resulted in an educational program and corresponding space summary. While the current SBAC, the School Committee, and the current superintendent generally agreed this program was appropriate, it is important to note that this educational program was developed and confirmed prior to the hiring of Dr. McFall as superintendent. Since the publication of that MSBA Feasibility Study, the SBAC, in collaboration with the School Committee and Dr. McFall, identified several educational enhancements for consideration, some of which were not included in the MSBA Feasibility Study educational program. These enhancements included:

- Flexible Educational Spaces – Variety of sizes and mutli-purpose spaces
    - New Kitchens and Cafeterias[1]
    - Small Group Rooms
    - Hub Spaces
- Improved Second Grade Classrooms
- Safety and Security at the Reed Gym
- Accommodations for Students with Special Needs

Prior to preparing options, Dore & Whittier conducted a site visit to observe teaching and learning and to better understand educational deficiencies. The Design Team also met with members of the faculty, administration, and school committee to present several facility concepts that support 21st teaching and learning practices.

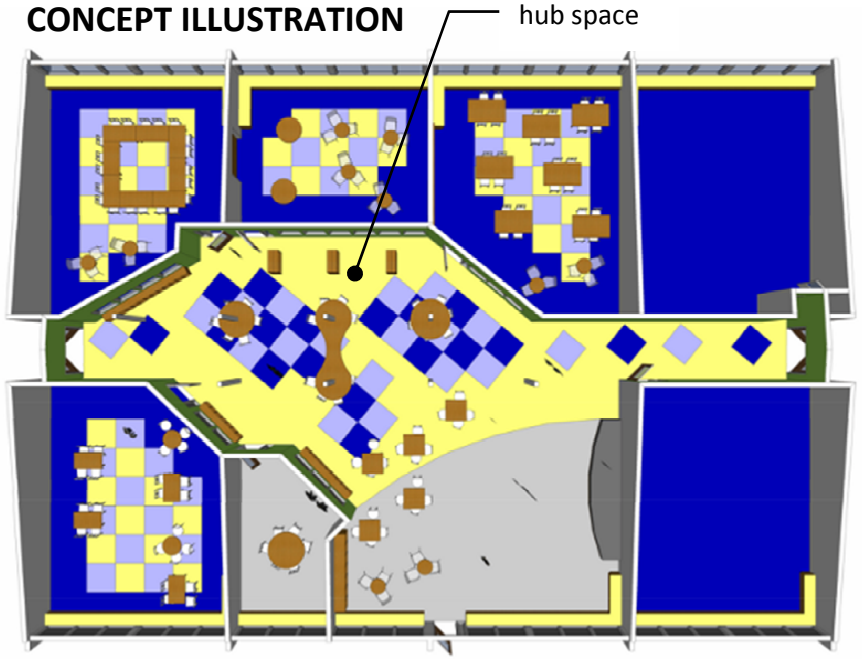
Flexible Educational Spaces

The delivery of education continues to evolve. Unlike architectural and planning strategies of fifty years ago, 21st century educational facilities must be capable of supporting multiple group sizes, students with special needs, and at least some spaces must be adaptable enough to accommodate multiple activities. Flexible educational spaces refers to the presence of instructional spaces, collaboration spaces, and gathering spaces of varying sizes – not just the one-size-fits-all-classroom of fifty years ago.

In the Lincoln School, several critical spaces that would fall into this category are either inappropriate for their use (i.e. windowless storage closets as spaces to serve students with special needs) or they are missing from the facility (i.e. purpose-built kitchens, dedicated but multi-purpose cafeterias, small group rooms, and hub spaces). The images that follow illustrate examples of each of these spaces.

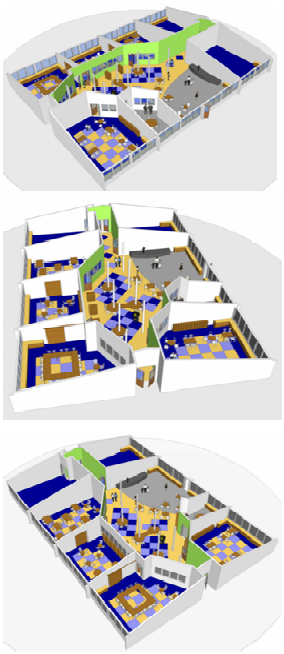
[1] The two existing gymnasiums currently serve as cafeterias. No dedicated cafeteria spaces exist within the existing building. The concept of a multi-purpose cafeteria is one where the space's primary function is for student dining. Effective multi-purpose cafeterias, however, are outfitted in such a way to also serve as large group instruction spaces and geographically located in such a way to allow community use after school hours. Each of the options that contains new cafeterias is based on this concept.

CONCEPT ILLUSTRATION



forest avenue elementary school | middle town, RI

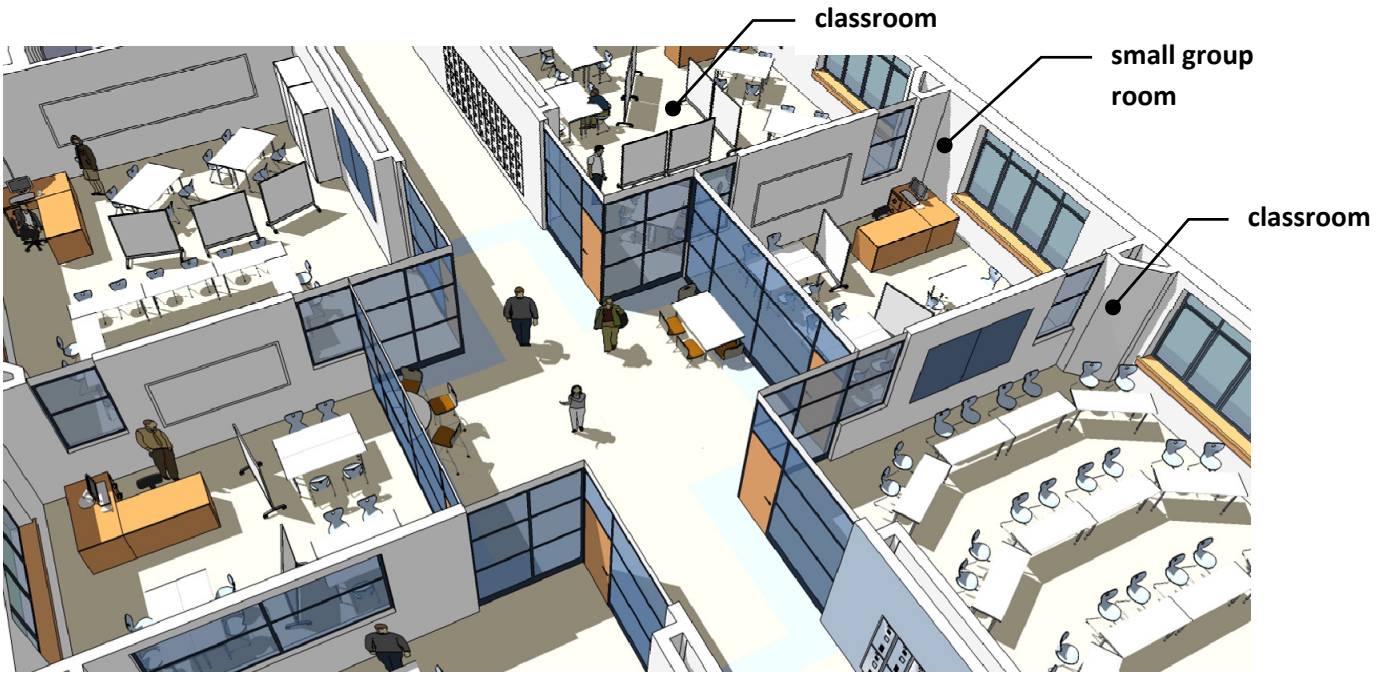
K-2 multi-age learning community : fielding/nair international



AFTER CONSTRUCTION

forest avenue elementary school | middle town, RI

K-2 multi-age learning community : fielding/nair international

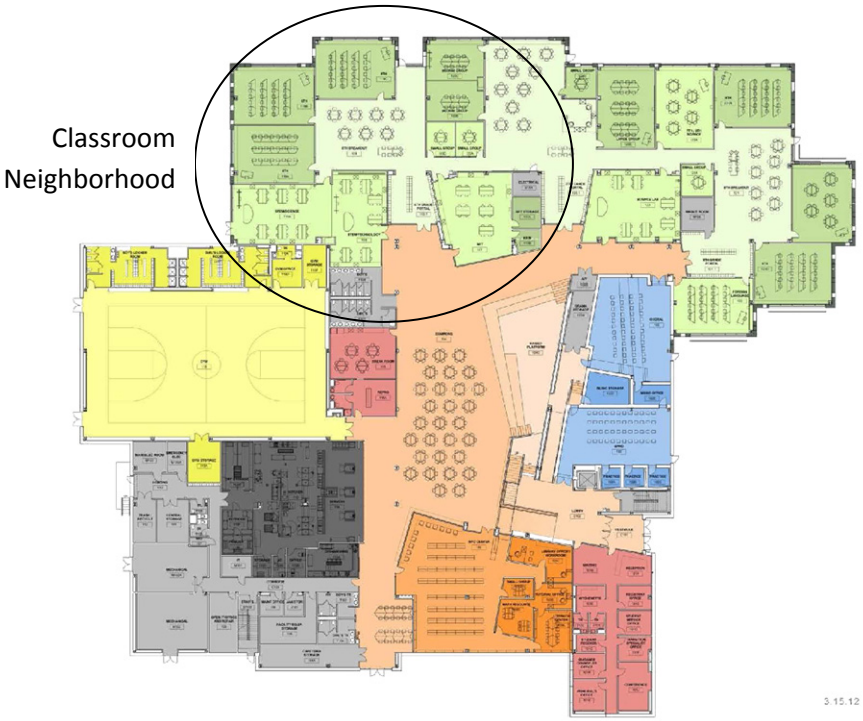


wilmington high school | wilmington, ma

small group break out: dore & whittier architects

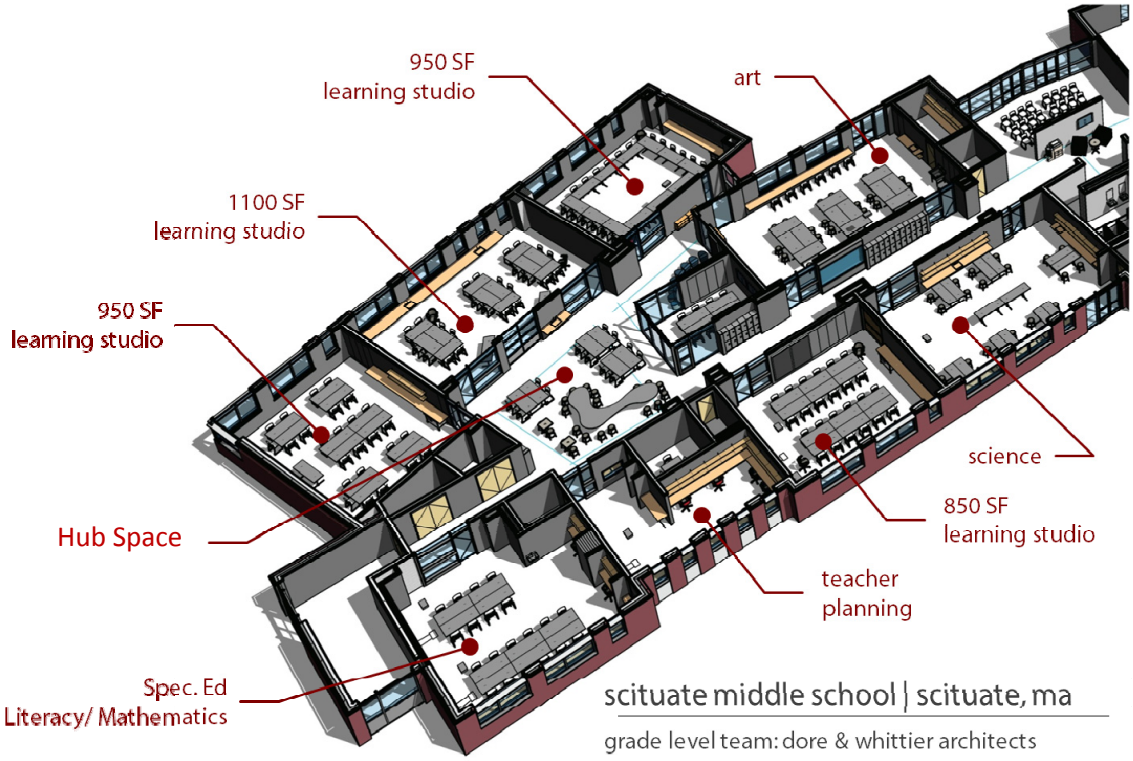
hanscom school | lincoln, ma

plan diagram: ewing cole



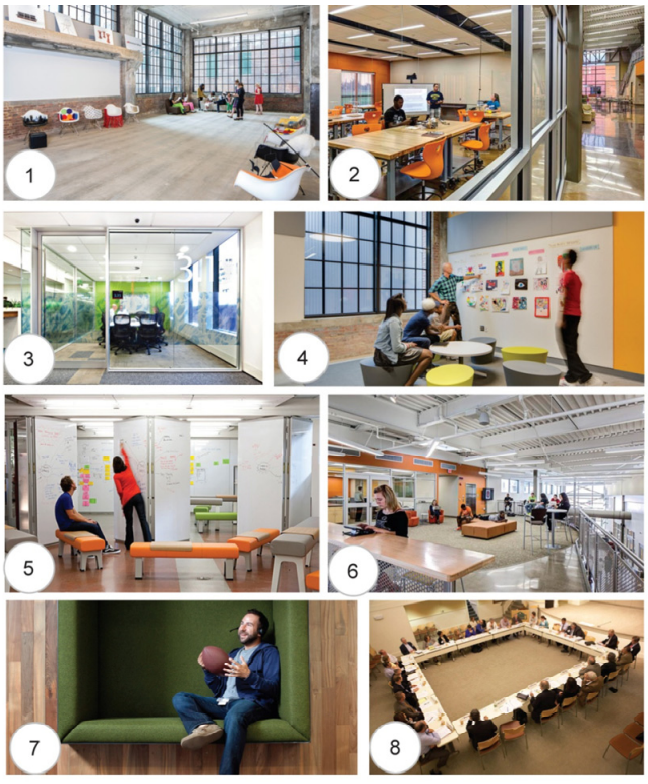
hanscom school | lincoln, ma

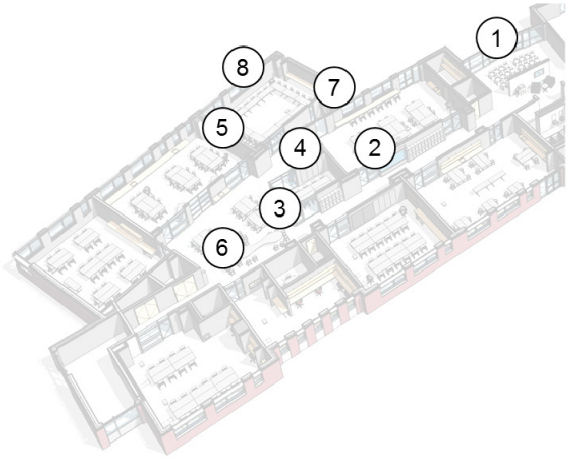
plan diagram: ewing cole



scituate middle school | scituate, ma

grade level team: dore & whittier architects





scituate middle school | scituate, ma

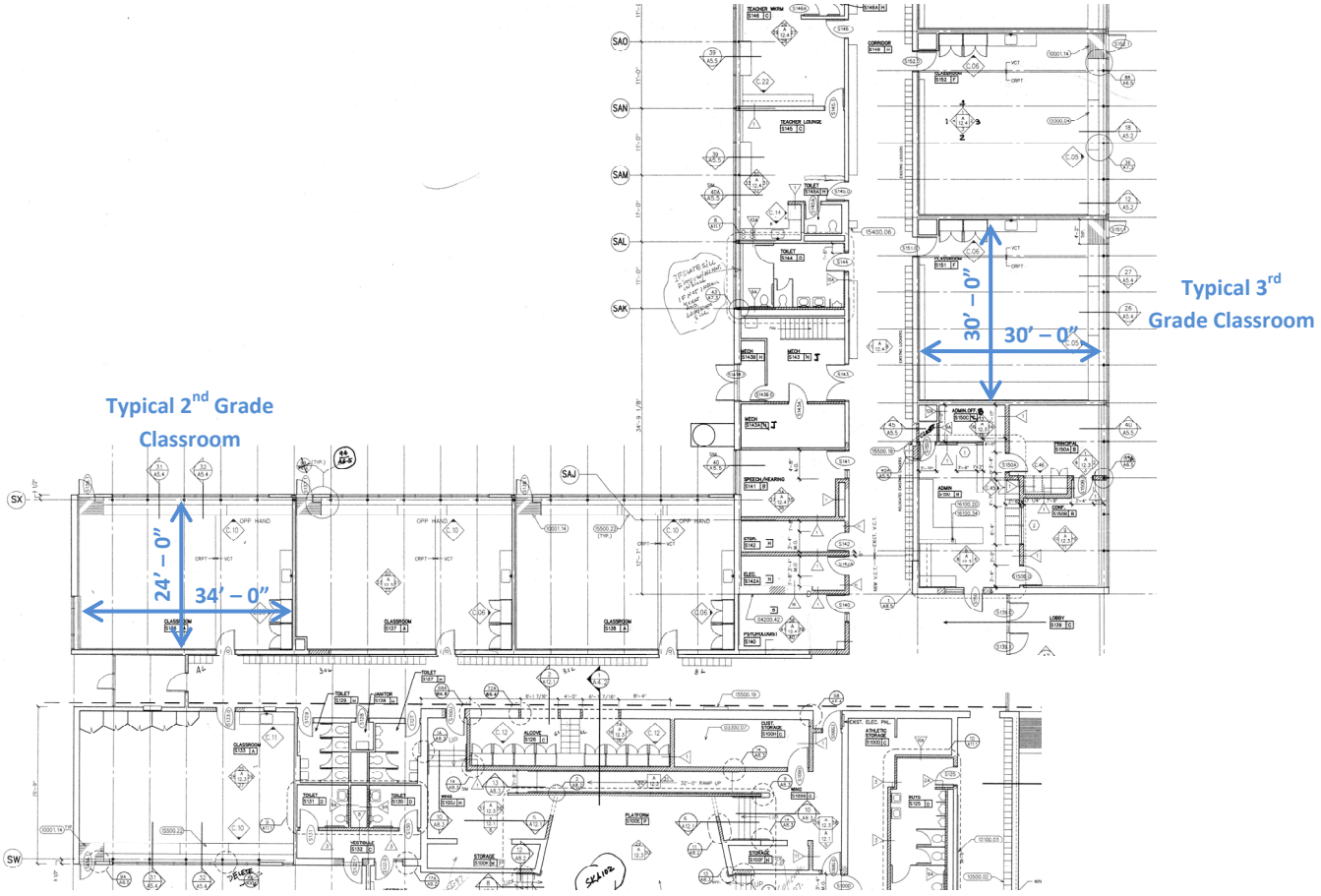
grade level team: dore & whittier architects

Improved 2nd Grade Classrooms

Previous studies and interviews with faculty and staff indicated a perceived inequity of the existing 2nd Grade classrooms in the Smith building relative to other classrooms in the facility. Dore & Whittier performed a space needs analysis, conducted site visit observations, and took field measurements to confirm these perceived inequities. The 2nd grade classrooms differ from other classrooms in the facility in three ways:

1. They are undersized relative to MSBA guidelines for classrooms. The illustration below depicts a space needs analysis of the existing facility relative to MSBA guidelines. Red indicates spaces that are less than 90% of the state guideline. The 2nd grade classrooms in Smith are the only classrooms that fall into this category.

2. They have an aspect ratio that is longer and narrower than other grade-level classrooms. These proportions make it more challenging to arrange into multiple areas compared to other classrooms.



3. They have not held up against the elements as well as other areas of the facility due to their position on the site and because they were not fully renovated as part of the 1994 project.

Safety & Security at the Reed Gym

In the current configuration, doors to the Reed Gym and the easternmost doors of the Brooks school must remain open during the school day to allow students to pass between the two for both physical education and lunch. With no administrative presence at either of these sets of doors, this presents a safety and security risk. Previous studies, the recent report produced by the SBAC, and Dore & Whittier all agree that a logical solution to this condition is to construct a new cafeteria to connect the Brooks school with the Reed Gym. Such a solution would allow for all exterior doors to remain locked during school hours and would position a multi-purpose space in a location with easy access to parking for community use after school hours.

3.2 Develop Options and Iterate

Dore & Whittier developed a full range of options based on the assumptions and restrictions identified by the SBAC. Dore & Whittier also synthesized the information related to facilities needs from Task One with the educational information from Task Three to form families of options. For consistency, this first iteration of options was based on a 30 year time horizon. Each potential solution, if implemented, was designed to serve the District for approximately 30 years before significant capital investment would be necessary again.[2] It was an approach that best captured the true long-term costs and best allowed apples to apples evaluation of all the options. Initially, the four families of options consisted of the following:

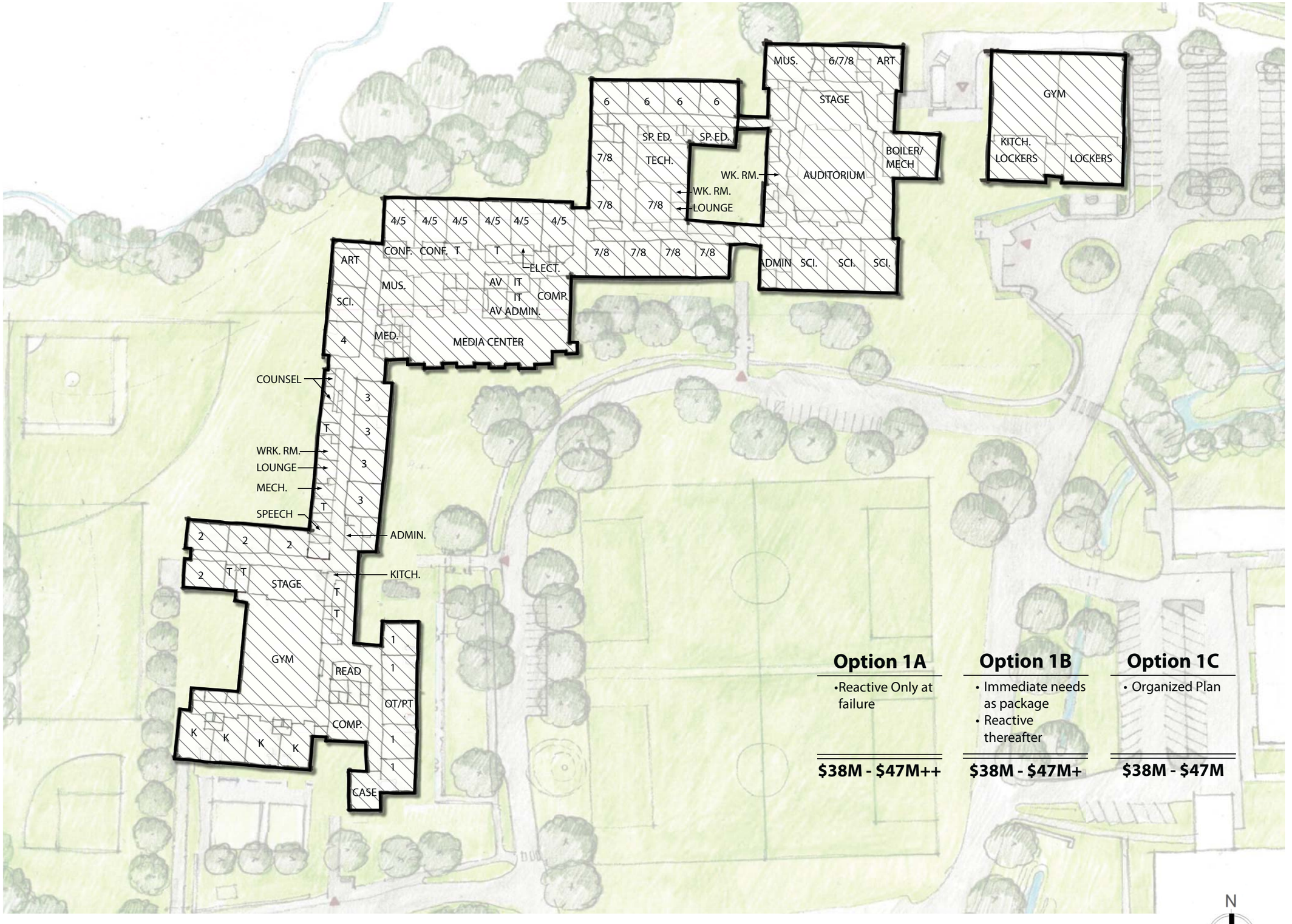
- Family Number One (Selective Renovation) – Addressed facilities needs only. Variations within this family were based on when work was undertaken.
    - Option 1A responded to facility needs items only upon failure.
    - Option 1B addressed immediate facility needs only, addressed them as an organized package, and responded to the remaining facility needs only upon failure as some point in the future.
    - Option 1C addressed all the facilities needs in an organized project and phased such that all the work could be completed as quickly as possible.
- Family Number Two (Renovations & Additions) – Addressed all facility needs plus an á la carte approach to providing educational enhancements. Variations within this family were based on which single educational enhancement was provided.
    - Option 2A addressed all the facility needs and provided new kitchens and cafeterias, but no other educational enhancements.
    - Option 2B addressed all the facility needs and provided small group rooms, but no other educational enhancements.
    - Option 2C addressed all the facility needs and provided improvements to the 2nd Grade classrooms, but provided no other educational enhancements.
- Family Number Three (Renovations & Additions) – Addressed all facility needs plus provided all educational enhancements. Variations within this family were based on the balance between renovation and new construction.
    - Option 3A addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and selective new additions.

[2] A thirty year time horizon does not assume every building component will serve for thirty years. The thirty year time horizon is only meant to convey a long-term solution as opposed to several short term or delayed solutions. Regular maintenance and selective individual building components may need to be replaced in that time, but major systems (i.e. Mechanical, Electrical, Plumbing, Structural) should not need major replacements over the thirty year time horizon.

  - Option 3B addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and a major new addition at Brooks.
  - Option 3C addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and major new additions at both Brooks and Smith.
  - Option 3D addressed all the facility needs and provided all the educational enhancements. This option accomplished by a major renovation of only the 1994 construction, the Brooks Auditorium, the Smith Gym, and the Reed Gym. All other portions of the existing building would be demolished and replaced with all new construction – a portion of which would be two stories.
- Family Number Four (All New Construction) - Addressed all facility needs plus provided all educational enhancements. (Developed for cost comparative purposes only).

Dore & Whittier developed eleven options based on this family structure and presented these options to the general public at a public forum held on October 16th. Additional information regarding this presentation and community feedback is provided below in the sub-section titled Public Forum #2 and in Appendix III.

The following pages document this initial set of options presented at Public Forum #2.



Option 1A

- Reactive Only at failure

$38M - $47M++

Option 1B

- Immediate needs as package
- Reactive thereafter

$38M - $47M+

Option 1C

- Organized Plan

$38M - $47M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

LINCOLN SCHOOL - OPTIONS 1A, B, & C

CAPITAL IMPROVEMENTS ONLY

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KITCHENS & CAFETERIAS ONLY

LINCOLN SCHOOL - OPTION 2A

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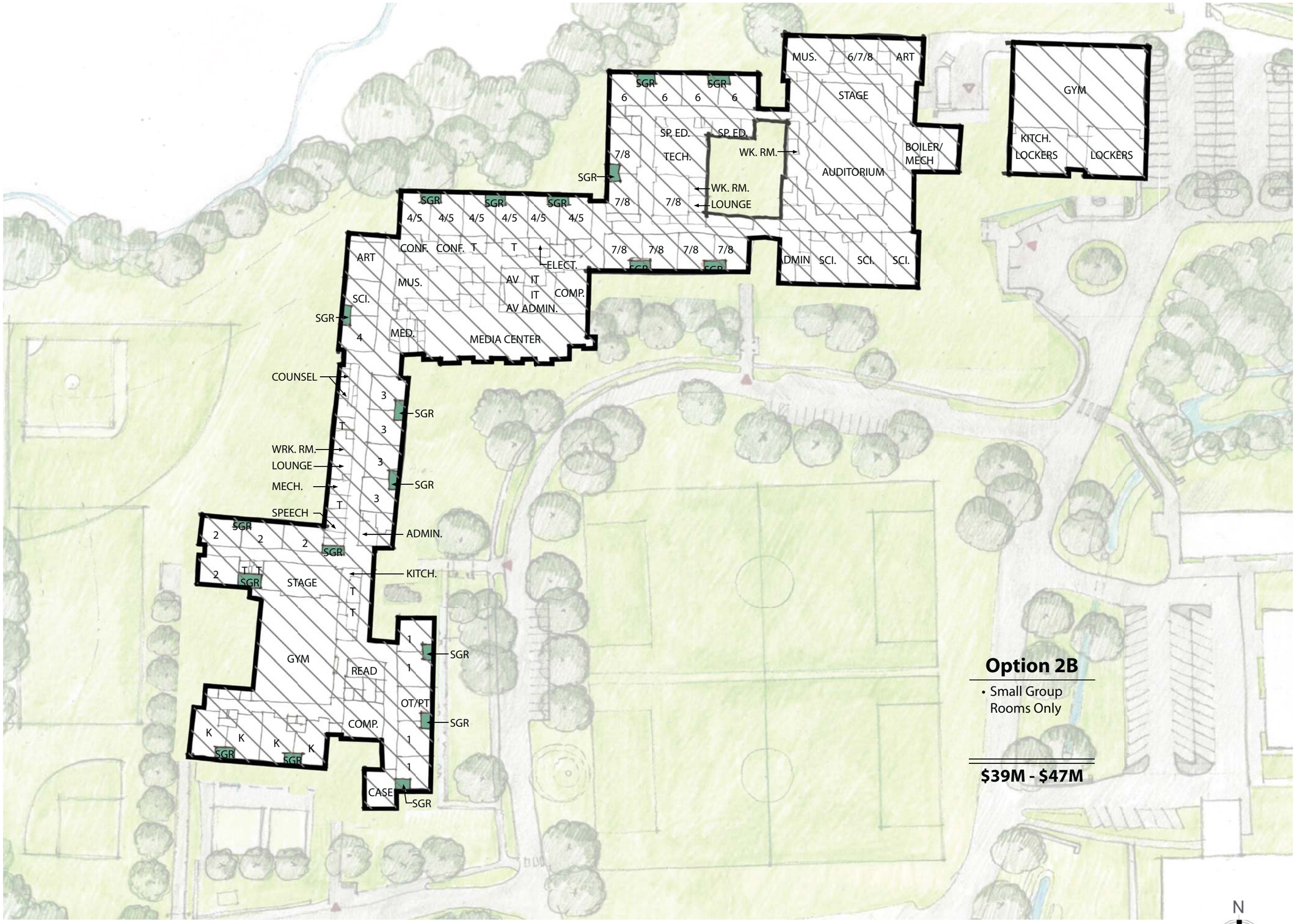
LINCOLN SCHOOL - OPTION 2B

SMALL GROUP ROOMS ONLY



Option 2B

- Small Group Rooms Only

$39M - $47M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

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LINCOLN SCHOOL - OPTION 2C.1

SECOND GRADE CLASSROOMS UPGRADES ONLY

Option 2C.1

- Second Grade Classroom Upgrades Only

$40M - $48M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

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LINCOLN SCHOOL-OPTION 2C.2

SECOND GRADE CLASSROOMS UPGRADES ONLY

MUS. 6/7/8 ART
STAGE
GYM
KITCH.
LOCKERS LOCKERS
BOILER/ MECH
AUDITORIUM
6 6 6 6
SP. ED. SP. ED.
7/8 TECH.
WK. RM.
WK. RM.
LOUNGE
7/8 7/8
4/5 4/5 4/5 4/5 4/5 4/5
CONF. CONF. T T
ELECT.
7/8 7/8 7/8 7/8
ADMIN SCI. SCI. SCI.
ART
MUS.
SCI.
AV IT
IT COMP.
AV ADMIN.
4 MED.
MEDIA CENTER
COUNSEL
3
T 3
WRK. RM.
LOUNGE
3
MECH.
3
SPEECH
BOILER
ADMIN.
2
2
STAGE T
T
2
1
2 GYM READ 1
OT/PT
COMP.
K K K K 1
1
CASE

Option 2C.2

- Second Grade Classroom Upgrades Only

$40M - $48M

N

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

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LINCOLN SCHOOL - OPTION 3A

MAJOR RENOVATION / SELECTIVE ADDITIONS

MS Hub Space
MS Hub Space
MUS.
ART
TECH
STAGE
BOILER/ MECH
KITCH
GYM
CAFE
LOCKERS
LOCKERS
TECH
AUDITORIUM
MS Hub Space
CASE
CASE
ART
SCI.
CONF.
SGR
OT/ PT
S.
P.
T
ELECT.
3)SGR
ADMIN & MED
TECH
TECH
EVENT ENTRY
BROOKS ENTRY
COMP.
AV
INST.
LIT./ READ
MEDIA CENTER
SGR
4th Grade Hub Space
RESOURCE
3rd Grade Hub Space
2nd Grade Hub Space
BOILER/ ELECT.
SGR
STAGE
CAFE/ LOBBY
SMITH ENTRY
MUS.
GYM
ADMIN & MED
SERV.
KITCH.
Kindergarten Hub Space
1st Grade Hub Space
EVENT ENTRY

Option 3A

- Major Renovation
- Selective Additions

$48M - $58M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

DORE & WHITTIER ARCHITECTS, INC.

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Option 3B

- Major Renovation
- Major Additions at Brooks

$50M - $62M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

MAJOR RENOVATION / SELECTIVE ADDITIONS

LINCOLN SCHOOL - OPTION 3B

DORE & WHITTIER ARCHITECTS, INC.

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LINCOLN SCHOOL - OPTION 3C

MINOR RENOVATION / MAJOR ADDITIONS AT BROOKS & SMITH

Option 3C

- Major Renovation
- Major additions at Brooks and Smith

$50M - $62M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

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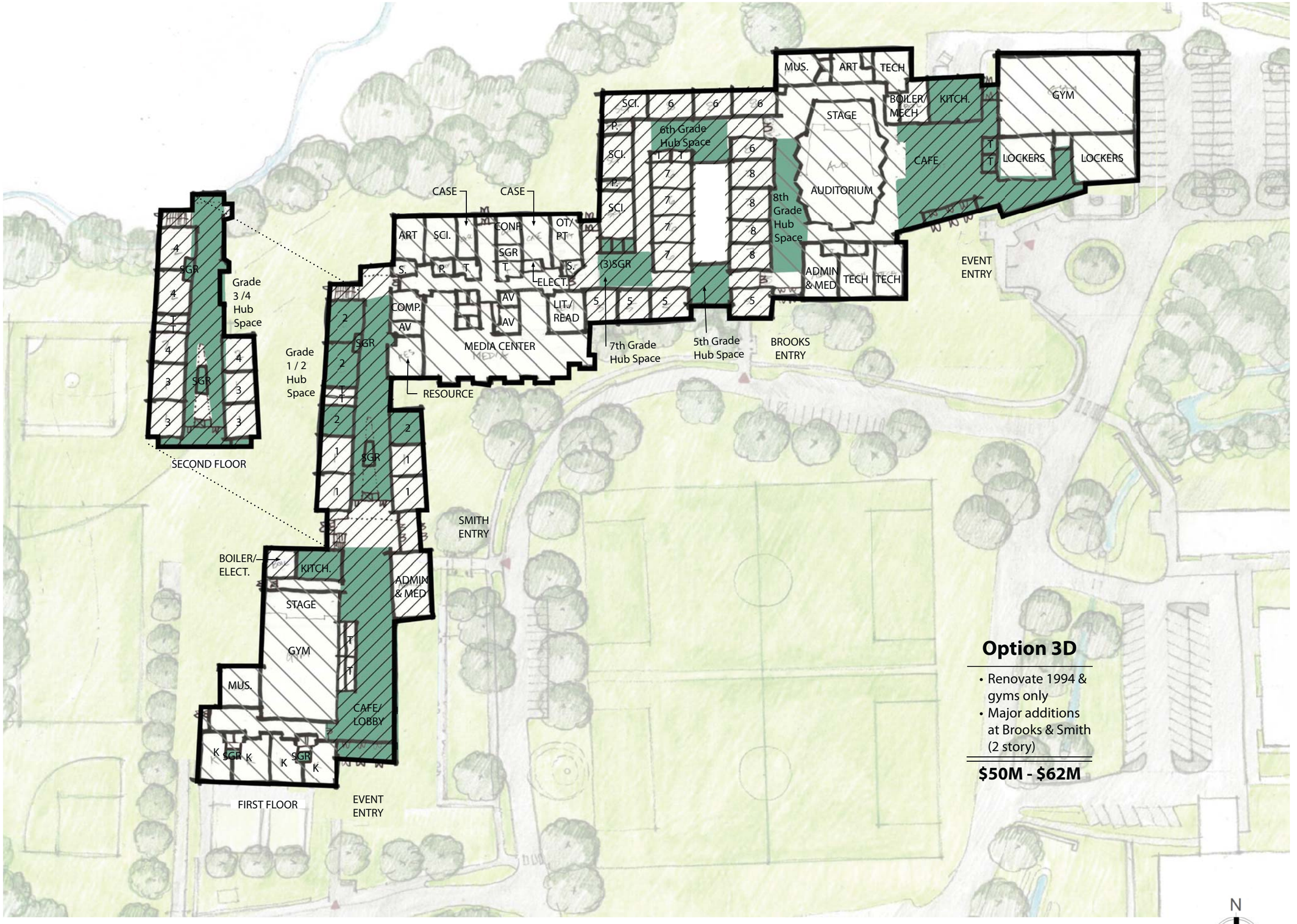
LINCOLN SCHOOL - OPTION 3D

RENOVATE 1994 & GYMS ONLY / MAJOR ADDITIONS AT BROOKS & SMITH (2-STORY)



Option 3D

- Renovate 1994 & gyms only
- Major additions at Brooks & Smith (2 story)

$50M - $62M

PROGRAMMING NEEDS

NEW CONSTRUCTION

RENOVATION

N

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Public Forum #2 – October 16th, 2014

At the Lincoln Public Meeting held on Oct. 16th, Dr. McFall, Superintendent of Lincoln Public Schools, gave a brief presentation of the district's educational vision. Dore & Whittier Architects followed with a presentation outlining a range of conceptual options and costs meant to address facility needs and provide educational enhancements in incremental steps. Illustrations of these options were provided in the sub-section above titled: 3.2 Develop Options and Iterate. Dore & Whittier organized options in four families and ranged from a reactive repairs approach, to heavy renovation, to new construction. Copies of the presentation are provided in Appendix III of this report.

Key Presentation Topics

- Lincoln's Educational Vision
- Initial Conceptual Options
- Facilities Scope Cost Updates

Small Group Exercises

To conclude the meeting, Dore & Whittier invited the approximately one hundred residents of the Town in attendance to react to the presentations and respond the following prompts:

1. Which of the programmatic components excited you? Why?
2. What additional questions do you have about how the Educational Vision impacts facility design?
3. What are your initial thoughts about the range of options presented?
4. What about an option(s) excite you? Why?
5. What other option(s) or combinations of options should the Design Team explore?
6. What questions do you have about the options?

Summary of Public Input

Complete transcriptions of attendees' responses to the prompts are provided in Appendix III of this report. The following bulleted list summarizes these results.

- Attendees consistently expressed a desire to align the educational vision with the building layout.
- Attendees expressed little support for Options 1 and 2.
- Attendees expressed a desire to focus attention on exploring the third family of options as it may provide the most value to the town.
- Attendees expressed a desire to continue to explore a full range of options that includes a new construction solution as well as a two story solution on the existing site.
- Attendees expressed interest in seeing the full itemized lists of facility needs and educational enhancements, specifically their associated costs.

- Attendees expressed value in exploring community use of school spaces.
- Attendees expressed value in exploring the Community Center project with the school building project concurrently. It was clear that more information was needed to understand the integration of the Community Center.

Other Outcomes & Next Steps

In addition to the transcribed outcomes, an ad hoc dialogue during the closing summary generated other outcomes worthy of note.

- Anecdotally, attendees expressed an interest in reorganizing the options to better reflect a wider selection of cost increments – even if this meant not all options represent the same time horizon.
- There was a desire expressed for more variations within the á la carte family of options that provided educational enhancements. Rather than a simple one-at-a-time approach as was presented in the meeting, attendees expressed a desire for combinations of educational enhancements without providing the complete list of educational enhancements.
- Attendees posed several questions about which options might garner the support of the MSBA. Dore & Whittier responded to these questions by clearly stating:
    - The Town must engage the MSBA to know for certain which options might garner their support. Dore & Whittier cannot speculate.
    - As part of their process, the MSBA requires that viable options address both facility needs and educational needs.

In response to these outcomes, Dore & Whittier collaborated with the SBAC to reorganize the families of options and prepared additional options.

Based on feedback received from Public Forum #2 and with additional input from the SBAC, Dore & Whittier revised the families of options as a second iteration. First, for simplicity, the SBAC reduced the number of families from four to three. The fourth family, for all new construction, was eliminated in favor of including this option in the third family. This simplification clarified that each family was differentiated from the others by how many of the educational enhancements were included. This revised strategy resulted in clearer cost increments between options. The resulting definition of families consisted of the following:

- Family Number One (Facility Needs Only) – Addressed facility needs only. Variations within this family were based on the categories of need identified by the SBAC in Task One.
    - Option 1A addressed only the items identified as immediate needs and line items triggered by the building code. It is important to note that this option would require additional capital investment at some point in the future to address the near term and deferrable facility needs that are not reflected in the reported cost. So, the cost reported for this option is for the immediate needs only and does not reflect the true cost of the option over a 30 year time horizon.

- Option 1B addressed only the items identified as immediate and near term needs. It is important to note that this option would require additional capital investment to address the deferrable facility needs at some point in the future that are not reflected in the reported cost. So, the cost reported for this option does not reflect the true cost over a thirty year time horizon.

  In order to create the most cost-effective options, members of the SBAC did not include the deferrable facilities needs in either Option 1A or Option 1B. As the largest portion of these deferrable needs is site-related, they were included in Option 2F as described below and in all of the Option 3 family of options.

- Family Number Two (Á La Carte Educational Enhancements) – Addressed immediate and near term facility needs plus an á la carte approach to providing educational enhancements. Variations within this family were based on which single educational enhancement was provided. Based on feedback from Pubic Forum #2, several options were added to this family – some for individual educational enhancements and others as combinations of the educational enhancements without including all the enhancements.
  - Option 2A addressed the immediate and near term facility needs and provided acoustical treatments to classrooms, but no other educational enhancements.
  - Option 2B addressed the immediate and near term facility needs and provided small group rooms, but no other educational enhancements.
  - Option 2C addressed the immediate and near term facility needs and provided improvements to the 2nd Grade classrooms, but provided no other educational enhancements.
  - Option 2D addressed the immediate and near term facility needs and provided new kitchens and cafeterias, but provided no other educational enhancements.
  - Option 2E addressed the immediate and near term facility needs and provided new kitchens and cafeterias as well as the acoustical treatments for classrooms identified in Option 2A, but provided no other educational enhancements.
  - Option 2F addressed the immediate and near term facility needs and provided new kitchens and cafeterias as well as the acoustical treatments for classrooms identified in Option 2A, improvements to 2nd grade classrooms identified in Option 2C, and the deferrable facility needs, but provided no other educational enhancements.

- Family Number Three (Comprehensive Educational Enhancements) – Addressed all the facility needs, including the deferrable facility needs, plus comprehensive provisions for educational enhancements. These options included the following educational enhancements that were not included in any Option 2;
  - Hub spaces
  - Neighborhood expression
  - Improved spatial relationships

- Improvements to Special Education Spaces
- Improvements to entry sequences
- Improvements to school offices

Variations within this family were based on the balance between renovation and new construction.

- Option 3A addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and selective new additions.
- Option 3B addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and a major new addition at both Brooks and Smith.
- Option 3C addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the 1994 construction, the Brooks Auditorium, the Smith Gym, and the Reed Gym. All other portions of the existing building would be demolished and replaced with all new construction – a portion of which would be two stories.
- Option 3D addressed all the facility and provided all the educational enhancements in an all new facility. [Developed for comparative purposes only.]

These revised options were presented to the citizens of Lincoln at the State of the Town meeting held November 15th. Additional information regarding this presentation and community feedback is provided below in the sub-section titled State of the Town and in Appendix IV.

The following pages document the set of options presented at State of the Town. All cost estimates are total project costs and assume no MSBA participation. The Town's share of eligible[3] costs may be reduced by approximately 40% assuming MSBA participation.

[3] MSBA grants are subject to several provisions that deem certain costs ineligible for reimbursement.

Lincoln School: Facility Needs

A formal and detailed presentation of these options will occur on 12/2/14 at 7PM in the Brooks Auditorium.

Option 1A

Option 1A is a *de minimus* project that addresses immediate needs and focuses on systems that are at the end of their useful life and if not addressed in a planned manner could jeopardize the operation of the school until repaired. This option provides no educational enhancements and does not address near term, or deferrable needs.

0-5 years ..... $12.2 M

Option 1B

Option 1B addresses immediate and near-term needs as determined by the SBAC. Addressing these needs in a single project would be the most cost effective way of maintaining the school facility. This option provides no educational enhancements and does not address near term, or deferrable needs.

0-10 years ..... $29.2 M

Educational

- ❑ Classroom Acoustics
- ❑ Smith Kitchen / Cafeteria
- ❑ Brooks Kitchen/Cafeteria
- ❑ Small Group Rooms
- ❑ 2nd Grade Classrooms
- ❑ Neighborhoods
- ❑ Hub Spaces
- ❑ Spatial Adjacencies
- ❑ Windowless Offices
- ❑ Acoustical Ceilings Throughout
- ❑ Science Rooms Upgrade
- ❑ Art Rooms Upgrade
- ❑ Improved Entrance Security
- ❑ Improved School Offices

Facilities

IMMEDIATE

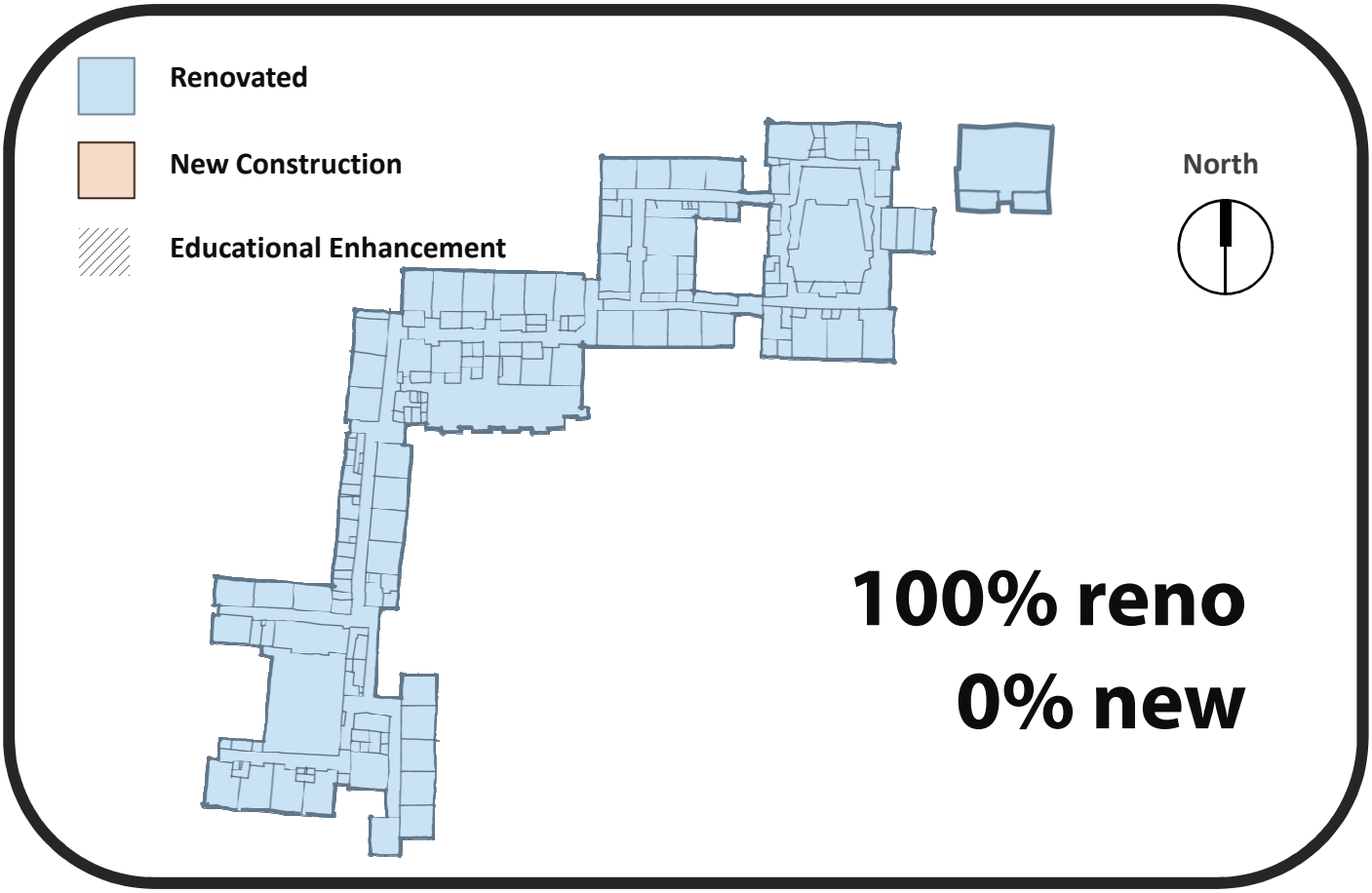
- ✓ Sprinklers
- ✓ Fire Alarm
- ✓ Roofing
- ✓ Precast Concrete
- ✓ Boilers & Boiler Room
- ✓ Emergency Generator
- \+ Code Triggers

NEAR-TERM

- ✓ Building Envelope
- ✓ Elect. Infrastructure
- ✓ Classroom Lighting
- ✓ Plumbing
- ✓ Intrusion Alarm
- ✓ Heating/Ventilating
- ✓ Hazardous Materials

DEFERRED

- ❑ Interior Finishes
- ❑ Remaining Lighting
- ❑ Furnishings & Equip.
- ❑ Girls Locker Room
- ❑ Paving and Curbing
- ❑ Play Field Improvement



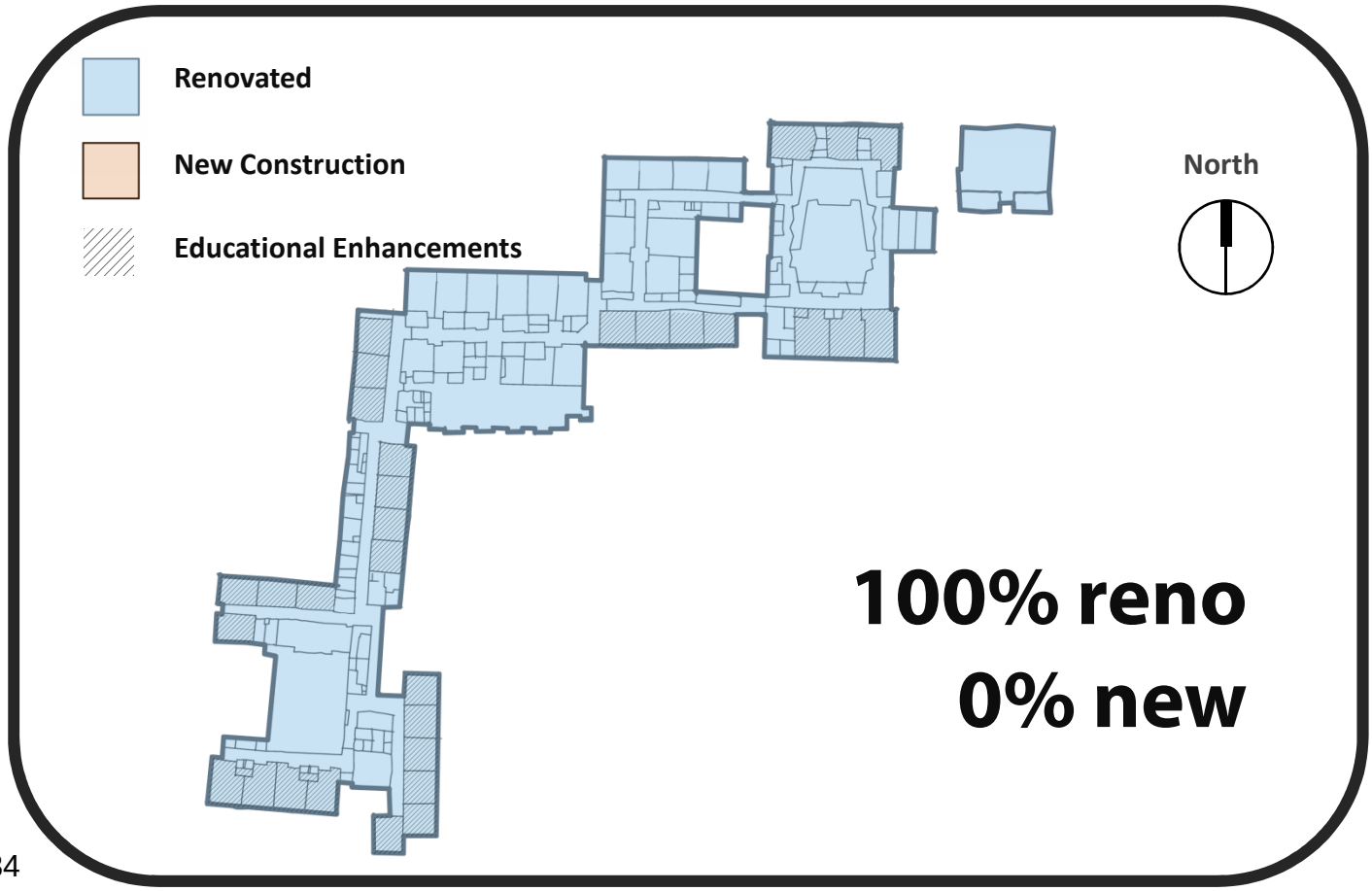
Lincoln School: A la Carte program

Option 2A

Option 2A addresses all facility needs addressed in option 1B and provides acoustical treatments to classrooms as an educational enhancement. It does not provide any other educational enhancements or address deferrable facility needs.

$29.5 M

Educational	Facilities	
✓ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
❑ Smith Kitchen / Cafeteria	✓ Fire Alarm	
❑ Brooks Kitchen/Cafeteria	✓ Roofing	
❑ Small Group Rooms	✓ Precast Concrete	
❑ 2nd Grade Classrooms	✓ Boilers & Boiler Room	
❑ Neighborhoods	✓ Emergency Generator	
❑ Hub Spaces	+ Code Triggers	
❑ Spatial Adjacencies	✓ Building Envelope	NEAR-TERM
❑ Windowless Offices	✓ Elect. Infrastructure	
❑ Acoustical Ceilings Throughout	✓ Classroom Lighting	
❑ Science Rooms Upgrade	✓ Plumbing	
❑ Art Rooms Upgrade	✓ Intrusion Alarm	
❑ Improved Entrance Security	✓ Heating/Ventilating	
❑ Improved School Offices	✓ Hazardous Materials	
	❑ Interior Finishes	DEFERRED
	❑ Remaining Lighting	
	❑ Furnishings & Equip.	
	❑ Girls Locker Room	
	❑ Paving and Curbing	
	❑ Play Field Improvement	



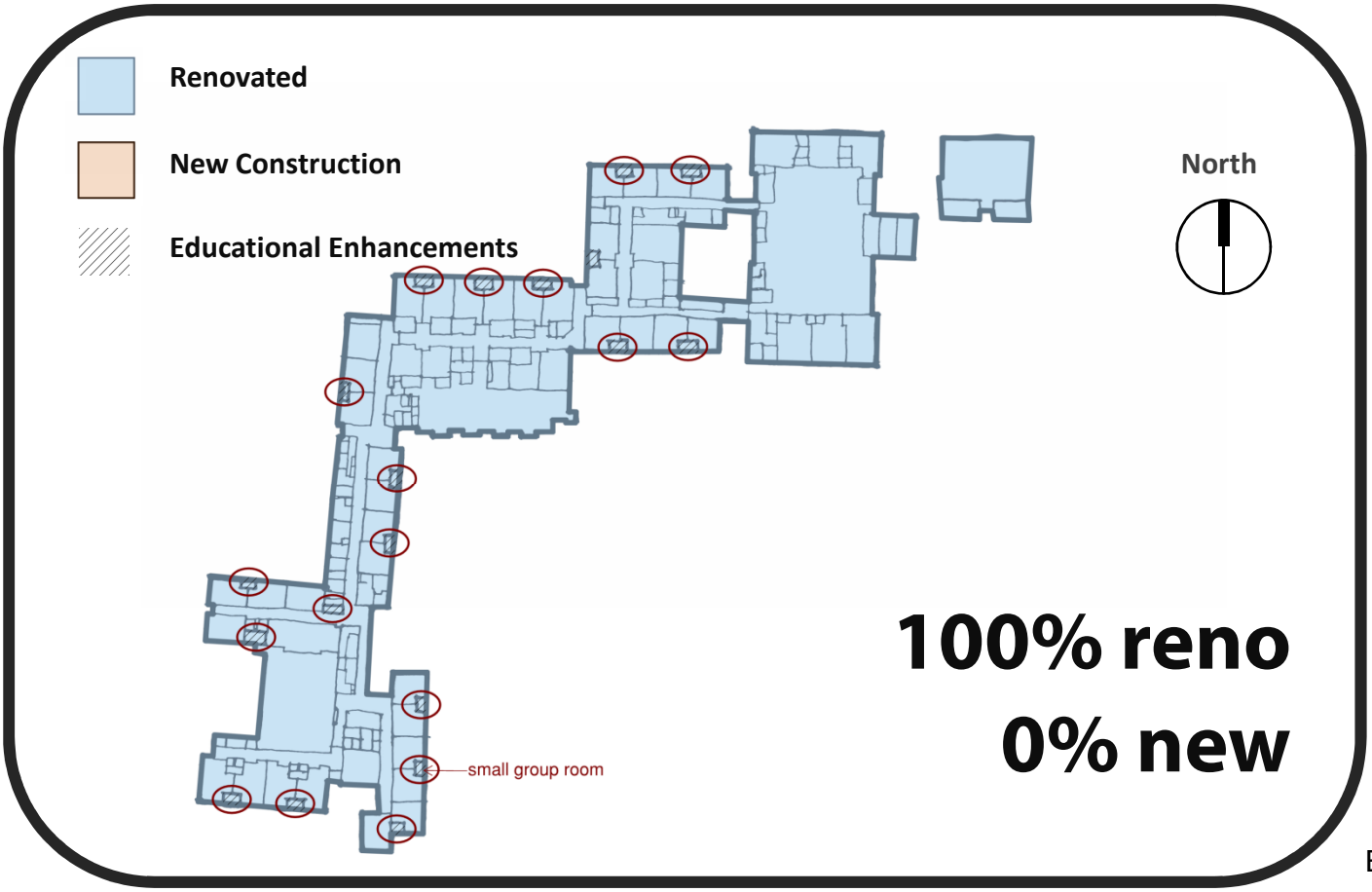
Lincoln School: A la Carte program

Option 2B

Option 2B addresses all of the facility needs identified in Option 1B and provides small group rooms between pairs of classrooms as an educational enhancement. It does not provide any other educational enhancements or address deferrable facility needs.

$29.8 M

Educational	Facilities	
❑ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
❑ Smith Kitchen / Cafeteria	✓ Fire Alarm	
❑ Brooks Kitchen/Cafeteria	✓ Roofing	
✓ Small Group Rooms	✓ Precast Concrete	
	✓ Boilers & Boiler Room	
❑ 2nd Grade Classrooms	✓ Emergency Generator	
❑ Neighborhoods	+ Code Triggers	
❑ Hub Spaces	✓ Building Envelope	NEAR-TERM
❑ Spatial Adjacencies	✓ Elect. Infrastructure	
❑ Windowless Offices	✓ Classroom Lighting	
❑ Acoustical Ceilings Throughout	✓ Plumbing	
❑ Science Rooms Upgrade	✓ Intrusion Alarm	
❑ Art Rooms Upgrade	✓ Heating/Ventilating	
❑ Improved Entrance Security	✓ Hazardous Materials	
❑ Improved School Offices	❑ Interior Finishes	DEFERRED
	❑ Remaining Lighting	
	❑ Furnishings & Equip.	
	❑ Girls Locker Room	
	❑ Paving and Curbing	
	❑ Play Field Improvement	



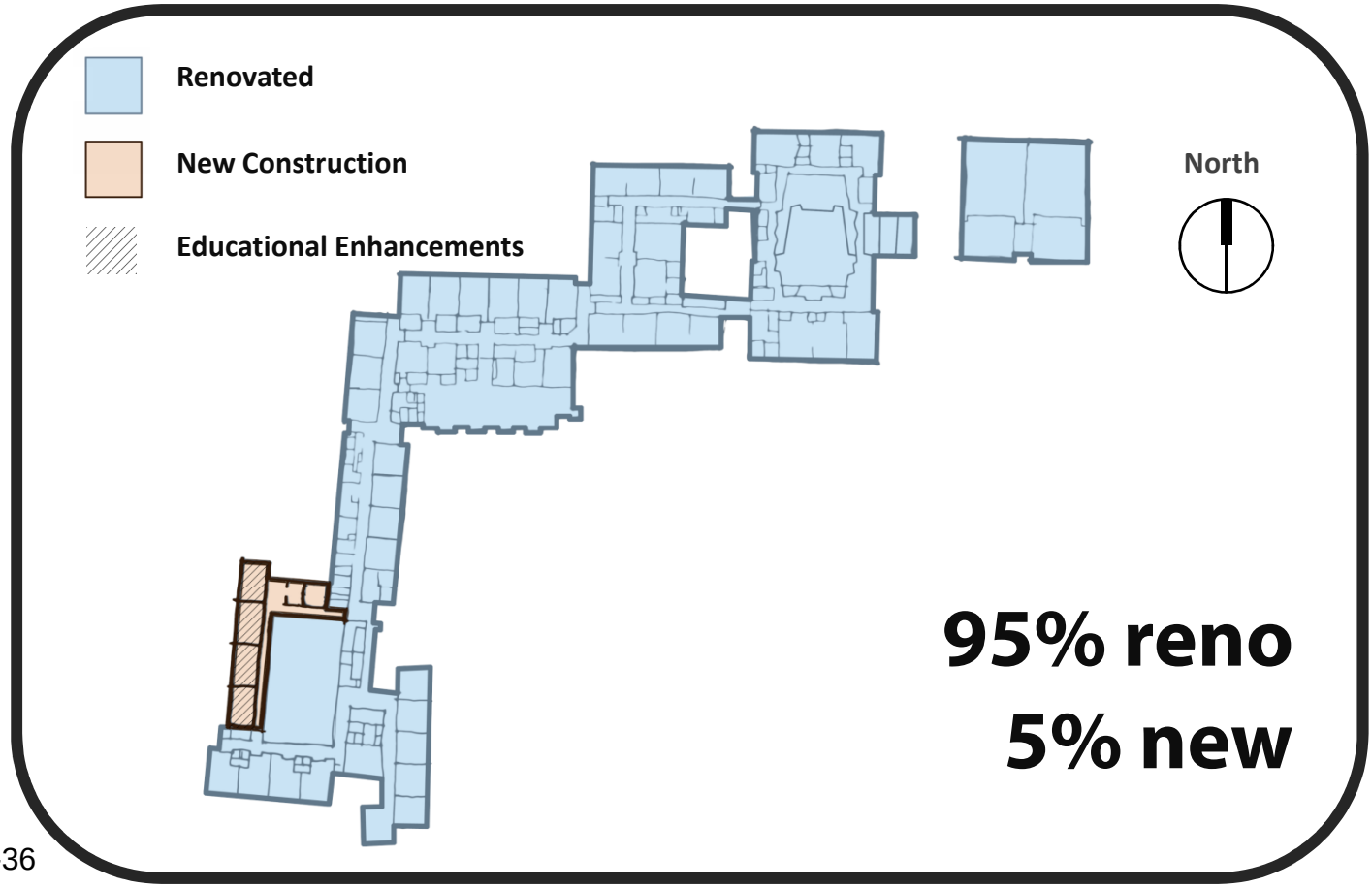
Lincoln School: A la Carte program

Option 2C

Option 2C addresses all of the needs identified in Option 1B and reconstructs the second grade classrooms as an educational enhancement. It does not provide any other educational enhancements or address deferrable facility needs.

$32.0 M

Educational	Facilities	
❑ Classroom Acoustics ❑ Smith Kitchen / Cafeteria ❑ Brooks Kitchen/Cafeteria ❑ Small Group Rooms	✓ Sprinklers ✓ Fire Alarm ✓ Roofing ✓ Precast Concrete ✓ Boilers & Boiler Room ✓ Emergency Generator + Code Triggers	IMMEDIATE
✓ 2nd Grade Classrooms ❑ Neighborhoods ❑ Hub Spaces ❑ Spatial Adjacencies ❑ Windowless Offices ❑ Acoustical Ceilings Throughout ❑ Science Rooms Upgrade ❑ Art Rooms Upgrade ❑ Improved Entrance Security ❑ Improved School Offices	✓ Building Envelope ✓ Elect. Infrastructure ✓ Classroom Lighting ✓ Plumbing ✓ Intrusion Alarm ✓ Heating/Ventilating ✓ Hazardous Materials	NEAR-TERM
	❑ Interior Finishes ❑ Remaining Lighting ❑ Furnishings & Equip. ❑ Girls Locker Room ❑ Paving and Curbing ❑ Play Field Improvement	DEFERRED



Lincoln School: A la Carte program

Option 2D

Option 2D addresses all the facilities needs identified in Option 1B and provides additions at Brooks and Smith for new cafeterias, a main kitchen, and a warming kitchen as educational enhancements. It does not provide any other educational enhancements or address deferrable facility needs.

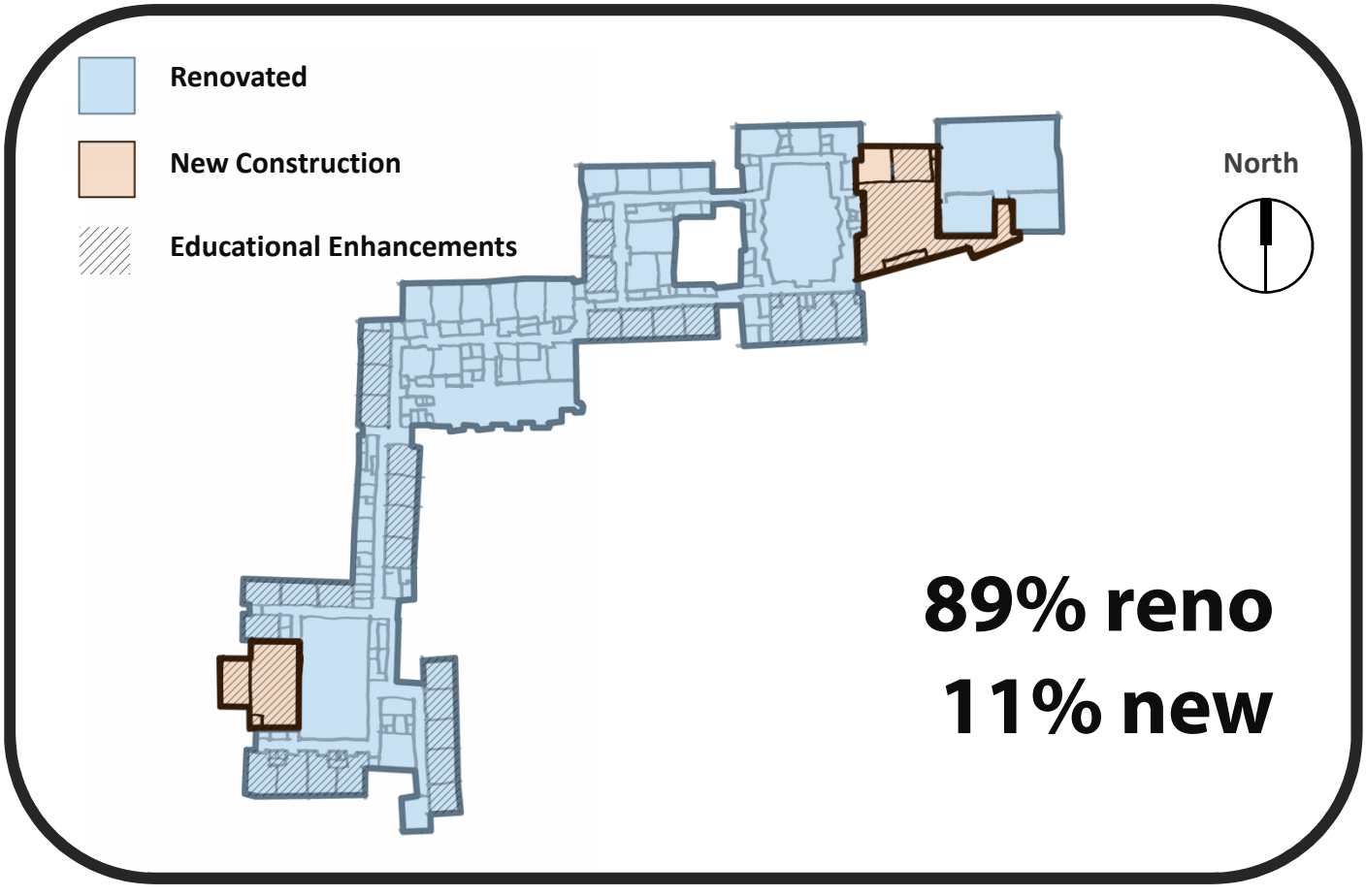
$36.6 M

Option 2E

Option 2E addresses all the facilities needs identified in Option 1B, provides acoustical enhancements to classrooms, and includes additions at Brooks and Smith for new cafeterias, a main kitchen, and a warming kitchen as educational enhancements . It does not provide any other educational enhancements or address deferrable facility needs.

$36.9 M

Educational	Facilities	
✓ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
✓ Smith Kitchen / Cafeteria	✓ Fire Alarm	
✓ Brooks Kitchen/Cafeteria	✓ Roofing	
	✓ Precast Concrete	
❑ Small Group Rooms	✓ Boilers & Boiler Room	
❑ 2nd Grade Classrooms	✓ Emergency Generator	
❑ Neighborhoods	+ Code Triggers	
❑ Hub Spaces	✓ Building Envelope	NEAR-TERM
❑ Spatial Adjacencies	✓ Elect. Infrastructure	
❑ Windowless Offices	✓ Classroom Lighting	
❑ Acoustical Ceilings Throughout	✓ Plumbing	
❑ Science Rooms Upgrade	✓ Intrusion Alarm	
❑ Art Rooms Upgrade	✓ Heating/Ventilating	
❑ Improved Entrance Security	✓ Hazardous Materials	
❑ Improved School Offices	❑ Interior Finishes	DEFERRED
	❑ Remaining Lighting	
	❑ Furnishings & Equip.	
	❑ Girls Locker Room	
	❑ Paving and Curbing	
	❑ Play Field Improvement	



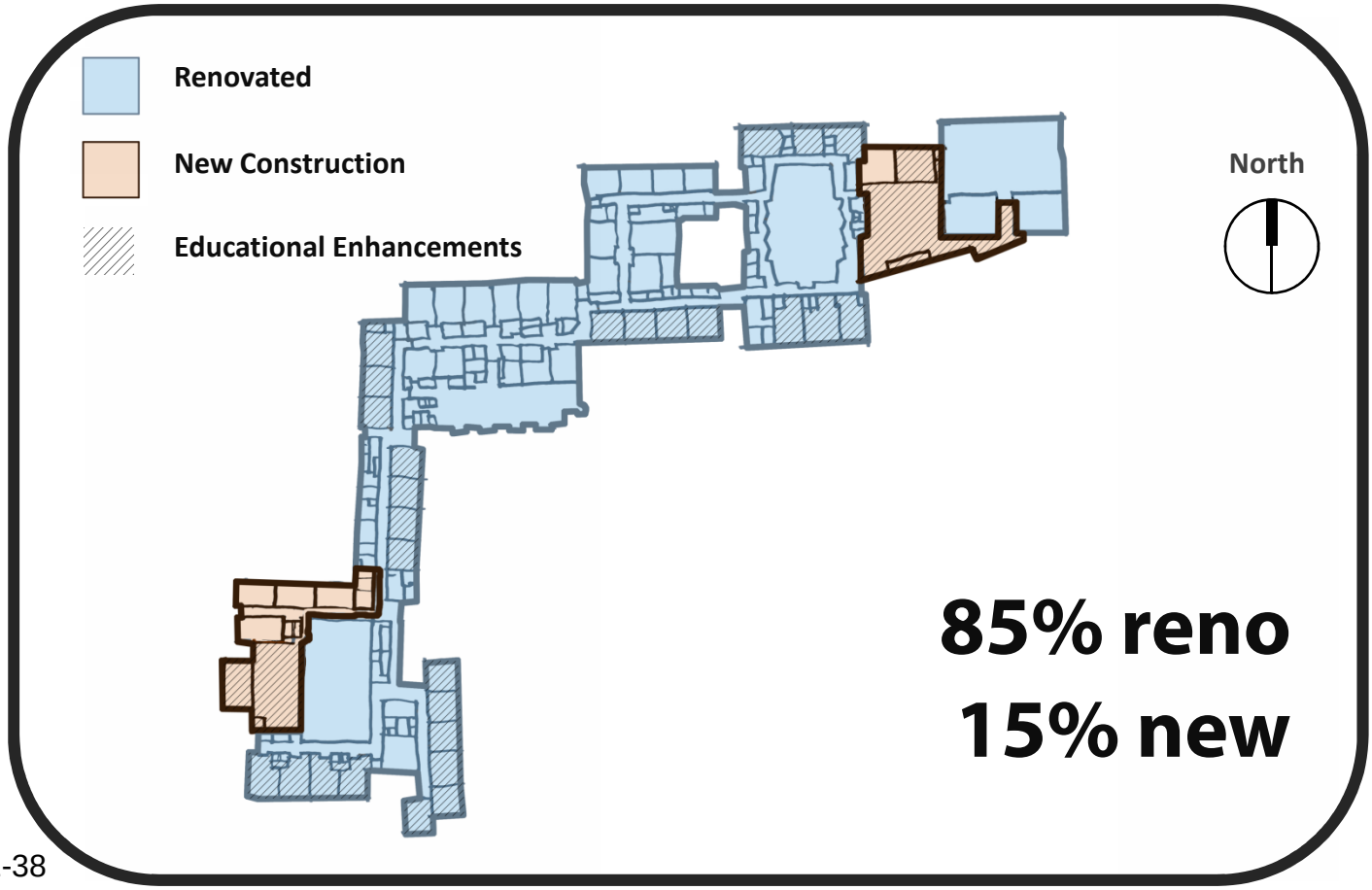
Lincoln School: A la Carte program

Option 2F

Option 2F addresses all of the facility needs identified in Option 1B and deferrable needs, provides acoustical enhancements to classrooms, provides additions at Brooks and Smith for resized 2nd grade classrooms, new cafeterias, a main kitchen, and a warming kitchen as educational enhancements.

$47.6 M

Educational	Facilities	
✓ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
✓ Smith Kitchen / Cafeteria	✓ Fire Alarm	
✓ Brooks Kitchen/Cafeteria	✓ Roofing	
❑ Small Group Rooms	✓ Precast Concrete	
✓ 2nd Grade Classrooms	✓ Boilers & Boiler Room	
❑ Neighborhoods	✓ Emergency Generator	
❑ Hub Spaces	+ Code Triggers	
❑ Spatial Adjacencies	✓ Building Envelope	NEAR-TERM
❑ Windowless Offices	✓ Elect. Infrastructure	
❑ Acoustical Ceilings Throughout	✓ Classroom Lighting	
❑ Science Rooms Upgrade	✓ Plumbing	
❑ Art Rooms Upgrade	✓ Intrusion Alarm	
❑ Improved Entrance Security	✓ Heating/Ventilating	
❑ Improved School Offices	✓ Hazardous Materials	
	✓ Interior Finishes	DEFERRED
	✓ Remaining Lighting	
	✓ Furnishings & Equip.	
	✓ Girls Locker Room	
	✓ Paving and Curbing	
	✓ Play Field Improvement	



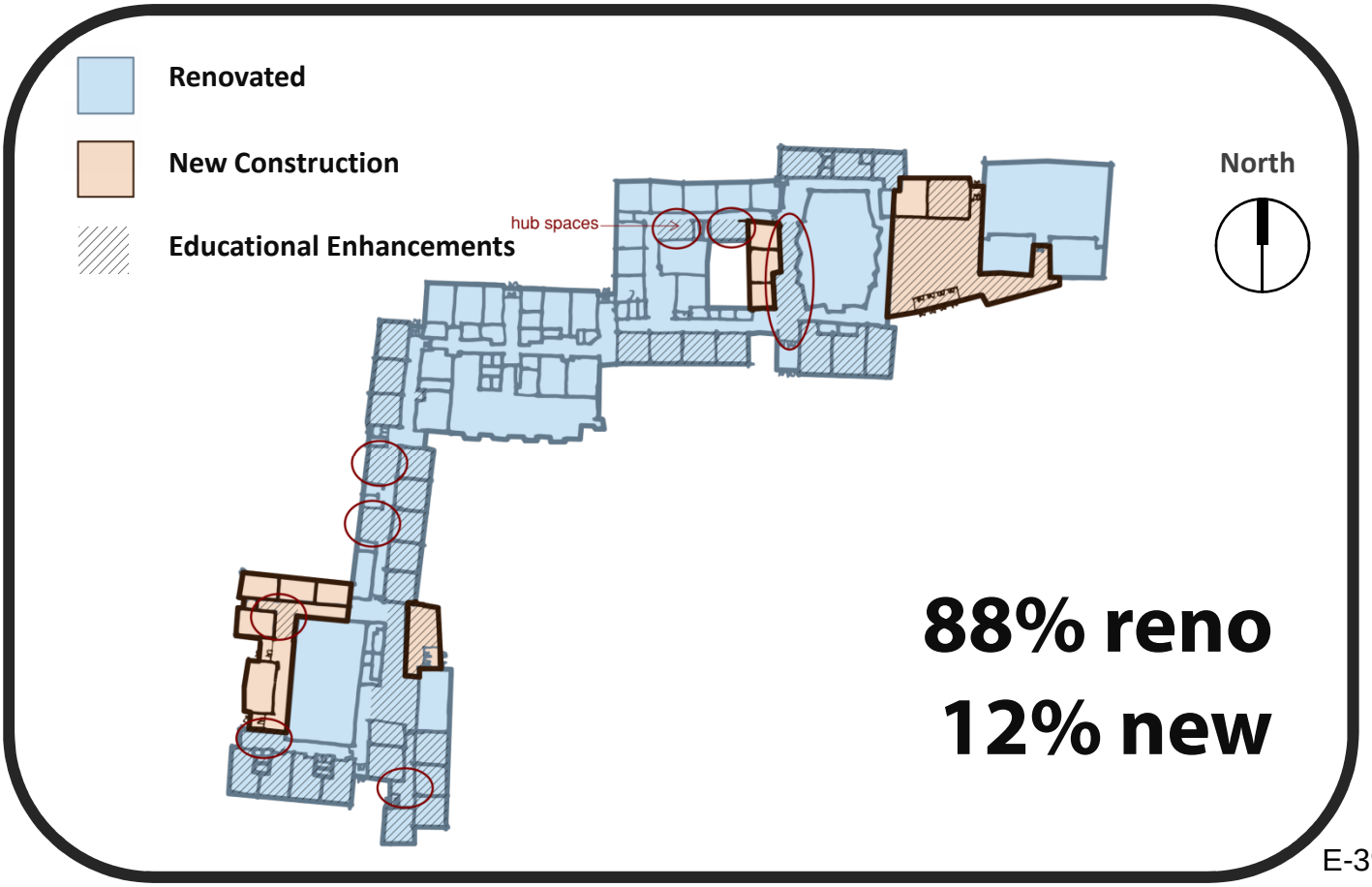
Lincoln School: Comprehensive

Option 3A

Option 3A addresses all the facility needs and provides all the educational enhancements via comprehensive renovation augmented by new construction. This option reorganizes the Brooks and Smith classrooms to provide flexible learning spaces through the creation of neighborhoods, hub spaces, and small group rooms within the confines of the existing building. Additions at Brooks and Smith add kitchens and cafeterias for both schools.

$54.7 M

Educational	Facilities	
✓ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
✓ Smith Kitchen / Cafeteria	✓ Fire Alarm	
✓ Brooks Kitchen/Cafeteria	✓ Roofing	
✓ Small Group Rooms	✓ Precast Concrete	
✓ 2nd Grade Classrooms	✓ Boilers & Boiler Room	
✓ Neighborhoods	✓ Emergency Generator	
✓ Hub Spaces	+ Code Triggers	
✓ Spatial Adjacencies	✓ Building Envelope	NEAR-TERM
✓ Windowless Offices	✓ Elect. Infrastructure	
✓ Acoustical Ceilings Throughout	✓ Classroom Lighting	
✓ Science Rooms Upgrade	✓ Plumbing	
✓ Art Rooms Upgrade	✓ Intrusion Alarm	
✓ Improved Entrance Security	✓ Heating/Ventilating	
✓ Improved School Offices	✓ Hazardous Materials	
	✓ Interior Finishes	DEFERRED
	✓ Remaining Lighting	
	✓ Furnishings & Equip.	
	✓ Girls Locker Room	
	✓ Paving and Curbing	
	✓ Play Field Improvement	



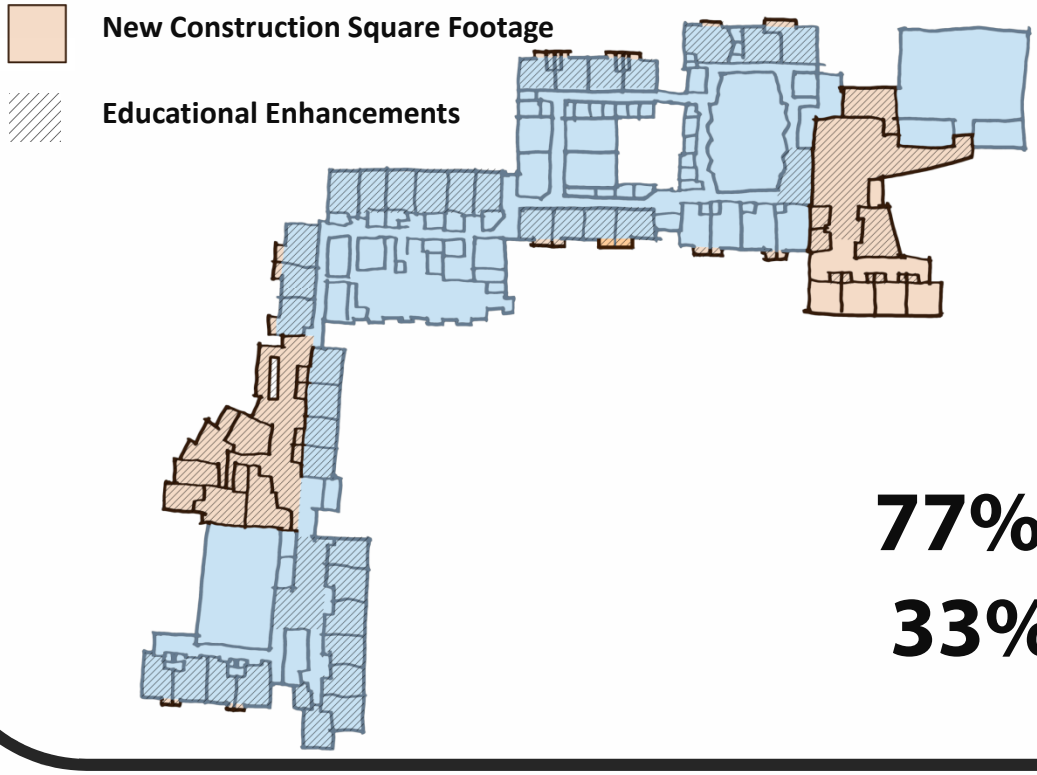
Lincoln School: Comprehensive

Option 3B

Option 3B addresses all of the facility needs and provides all the educational enhancements. This options retains and renovates most of the existing building, but demolishes a portion of the 1948 area of the Smith school and constructs a new addition that houses a warming kitchen, cafeteria (multi-purpose space) to serve the Smith School, improved school offices, hubs, and small group rooms. A newly constructed addition connects the Brooks Auditorium to the Reed gym that houses a full-prep kitchen and cafeteria (mutli-purpose space), and four classrooms.

$55.8 M

Educational	Facilities	
✓ Acoustics in Classroom	✓ Sprinklers	IMMEDIATE
✓ Smith Kitchen / Cafeteria	✓ Fire Alarm	
✓ Brooks Kitchen/Cafeteria	✓ Roofing	
✓ Small Group Rooms	✓ Precast Concrete	
✓ 2nd Grade Classrooms	✓ Boilers & Boiler Room	
✓ Neighborhoods	✓ Emergency Generator	
✓ Hub Spaces	+ Code Triggers	
✓ Spatial Adjacencies	✓ Building Envelope	NEAR-TERM
✓ Windowless Offices	✓ Elect. Infrastructure	
✓ Acoustical Ceilings Throughout	✓ Classroom Lighting	
✓ Science Rooms Upgrade	✓ Plumbing	
✓ Art Rooms Upgrade	✓ Intrusion Alarm	
✓ Improved Entrance Security	✓ Heating/Ventilating	
✓ Improved School Offices	✓ Hazardous Materials	
	✓ Interior Finishes	DEFERRED
	✓ Remaining Lighting	
	✓ Furnishings & Equip.	
	✓ Girls Locker Room	
	✓ Paving and Curbing	
	✓ Play Field Improvement	



77% reno

33% new

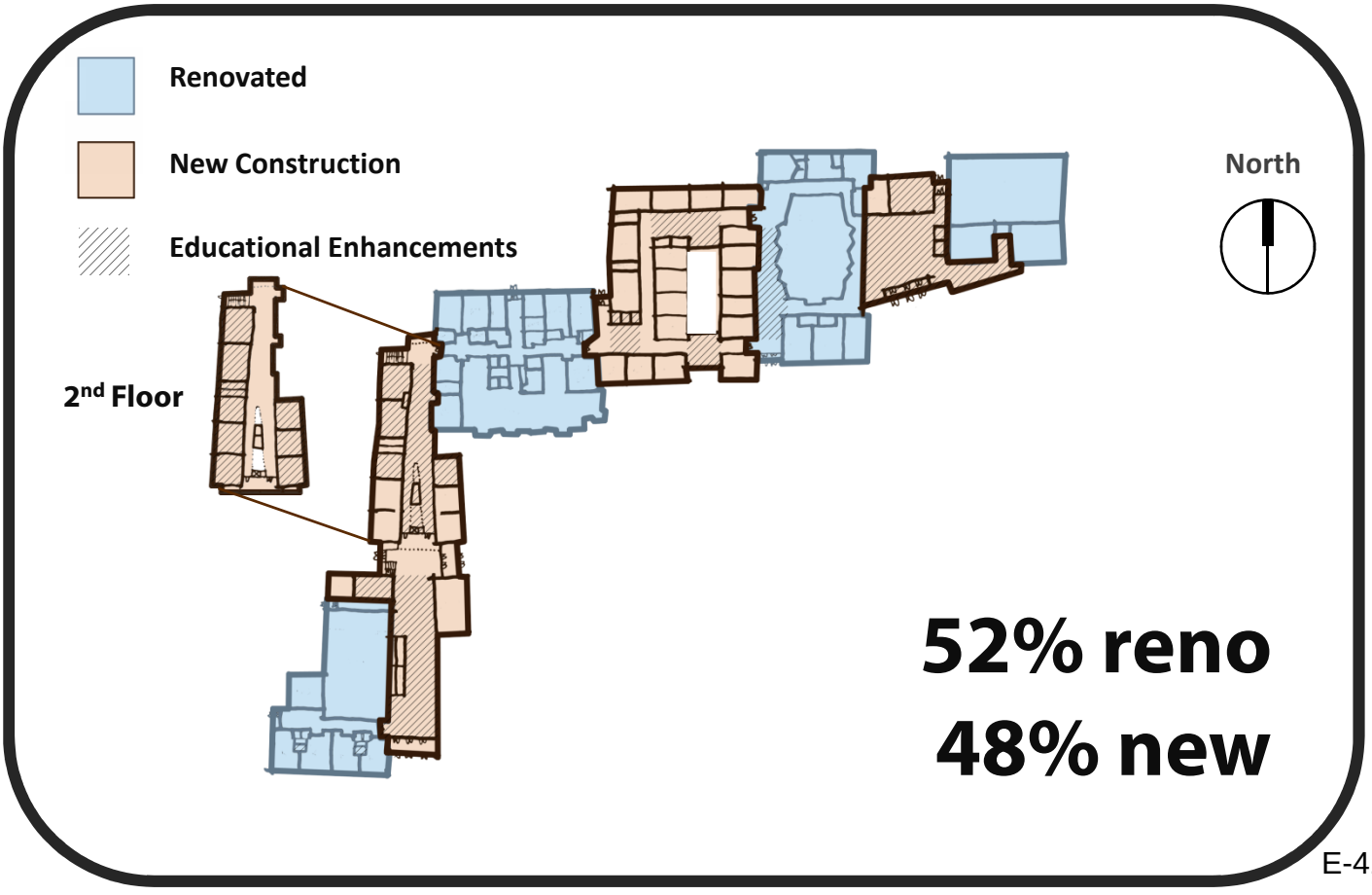
Lincoln School: Comprehensive

Option 3C

Option 3C addresses all the facility and educational needs via new construction and comprehensive renovation. This option retains and renovates the 1994 construction, the Smith gym, the Brooks auditorium, and the Reed gym. This option rebuilds the Brooks classrooms with optimal spatial adjacencies for hub spaces and small group rooms in an all new, one story addition. A new two story addition houses 2nd,3rd , and 4th grade classrooms organized into neighborhoods with hub spaces and small group rooms. This addition connects a renovated Link building to the renovated Smith gym.

$58.8 M

Educational	Facilities	
✓ Classroom Acoustics	✓ Sprinklers	IMMEDIATE
✓ Smith Kitchen / Cafeteria	✓ Fire Alarm	
✓ Brooks Kitchen/Cafeteria	✓ Roofing	
✓ Small Group Rooms	✓ Precast Concrete	
✓ 2nd Grade Classrooms	✓ Boilers & Boiler Room	
✓ Neighborhoods	✓ Emergency Generator	
✓ Hub Spaces	+ Code Triggers	
✓ Spatial Adjacencies	✓ Building Envelope	NEAR-TERM
✓ Windowless Offices	✓ Elect. Infrastructure	
✓ Acoustical Ceilings Throughout	✓ Classroom Lighting	
✓ Science Rooms Upgrade	✓ Plumbing	
✓ Art Rooms Upgrade	✓ Intrusion Alarm	
✓ Improved Entrance Security	✓ Heating/Ventilating	
✓ Improved School Offices	✓ Hazardous Materials	
	✓ Interior Finishes	DEFERRED
	✓ Remaining Lighting	
	✓ Furnishings & Equip.	
	✓ Girls Locker Room	
	✓ Paving and Curbing	
	✓ Play Field Improvement	



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3.3 Develop Cost Estimates for Options

Dore & Whittier and its cost estimator prepared cost estimates for each of the options developed. A methodology for these estimates was developed based on the available existing building documentation, the level of detail of each option illustration, the conceptual nature of the study, and current cost trends in Massachusetts public sector construction. The methodology relied on the development of definitions for three levels of renovation:

- Light Renovation – Repair, replacement and/or new installation of some major systems (i.e. roofing, heating and ventilation, electrical, plumbing, and sprinkler systems) and replacement of finishes (i.e. paint, flooring, ceiling tiles, etc.). No interior reconfiguration of spaces. No structural alterations included. Only triggered building code upgrades as required.
- Medium Renovation – Light renovation plus, complete replacement of all major systems with new. Selective interior reconfiguration of spaces included. Significant improvements to building exterior envelope included. No structural alterations included. Only triggered building code upgrades as required.
- Heavy Renovation – Complete replacement of all existing systems except the structure. Complete replacement of the exterior building envelope. Significant interior reconfiguration included.

massachusetts construction trends*

	light renovation	medium renovation	heavy renovation	new construction
base	$180	$235	$250	$270
+ general conditions	$45	$65	$65	$70
+ soft cost @25%	$56	$75	$79	$85
total project costs	$281	$375	$394	$425

*costs per square foot

As in Task One, each estimate represents a total project cost calculated using the following typical methodology:

Hard Costs (Materials, Labor, Contractor Overhead and Profit, Contingencies)

A: Direct Construction Cost = Cost Quantity x Unit Cost

B: General Conditions Cost = A x 17%

General conditions consist of a construction contingency, permitting fees, bonds, insurance, and contractor overhead and profit.

C: Design Contingency = A x 10%

Given the conceptual nature of this study, the design contingency represents the level of uncertainty of specific design choices (i.e. product/system selection, design layout)

D: Owner's Contingency = A x 10%

An owner's contingency is typical in most construction projects and represents the owner's choice and ability to change their mind about design and construction decisions.

E: Total Construction Cost = A + B + C + D

Soft Costs (Designer Fees, Consultant Fees, Testing Services, Commissioning)

F: Soft Costs = E x 25%

G: Escalation = (E + F) x $.04^{H}$

H: Total Time Required for Phasing in Years

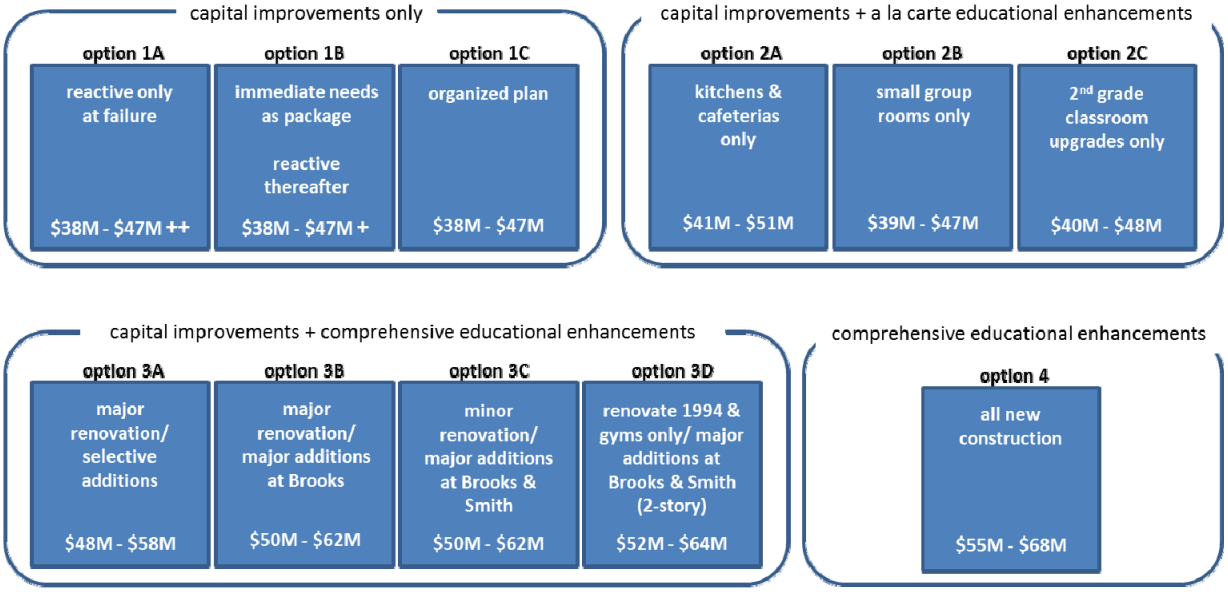
Total Project Cost

J: Total Project Cost = E + F + G

Each estimate assumed no work could begin prior to November 2015. Therefore, each estimate included at least one year of escalation at 4%, but also accounted for additional escalation based on phasing and swing space necessary to complete the project. For any work begun beyond November of 2015, additional escalation must be added at a rate of 3%-5% per year.

For each conceptual option developed, areas of the design were labeled as light renovation, medium, renovation, heavy renovation, or new construction based on the information and estimates prepared for Task One. The following two graphics depict summaries of the estimates for the Public Forum #2 held on October 16th and the State of the Town meeting held on November 15th.

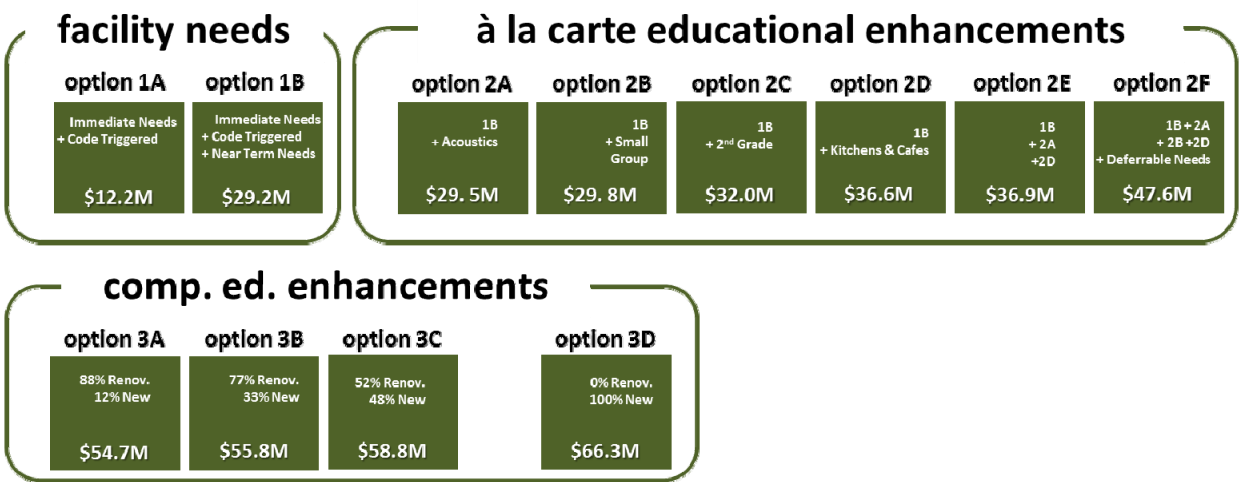
preliminary options summary | october 16th, 2014



+ As a portion of the work over the thirty year time horizon is reactive in nature and, therefore, unpredictable, all that can be known is that it will be more expensive than Option 1C.

++ As all of the work over the thirty year time horizon is reactive in nature and, therefore, unpredictable, all that can be known is that it will be more expensive than both Option 1B and Option 1C.

final options summary | november 15th, 2014



State of the Town – November 15th, 2014

The Town of Lincoln held its annual State of the Town meeting on Saturday, November 15th, a meeting designed to give residents of Lincoln the opportunity to discuss Town-wide issues in an open and democratic forum. The 2015 agenda included two agenda items: a presentation on the progress of a study related to a community center and a presentation on the progress of The Lincoln School study. Dr. McFall, Superintendent of Lincoln Public Schools, and Dore & Whittier presented on behalf of the SBAC and the School Committee. Dr. McFall gave a brief presentation of the District's educational vision similar to that presented at the October 16th Public Forum. Dore & Whittier Architects followed with a presentation and a series of printed handouts outlining both the process to date and an updated range of conceptual options with cost estimates meant to address facility needs and provide educational enhancements in incremental steps. Additional information is provided in Appendix IV of this report. Illustrations handed out were provided in the sub-section above titled: 3.2 Develop Options and Iterate but are also provided in Appendix IV. Time devoted to the Lincoln School project also included approximately fifty minutes for public question and comment and concluded with a set of individual exercises designed to gather feedback about the options.

In Exercise #1, Dore & Whittier and the SBAC invited those in attendance to identify the project family that they would most likely support if Lincoln were to fully fund the project independently, without the participation of the MSBA. Of the 188 people who responded in this exercise at the State of the Town, 77% expressed support for the Option 3 family. Approximately twenty percent showed support for the À la Carte Option 2 family, while 3% supported the facility-only Option 1 family.

EXERCISE #1 – Participants placed a dot on the option they would support assuming Lincoln chose to fully fund a project without the participation of the MSBA.
Total Participants = 188

6 Facility Needs Only – Options 1A & 1B
$12.2M - $29.2M – Fully Funded by Lincoln

38 A La Cart Educational Enhancements – Options 2A, 2B, 2C, 2D, 2E, and 2F
$29.5M - $47.6M – Fully Funded by Lincoln

144 Comprehensive Educational Enhancements – Options 3A, 3B, 3C, and 3D
$54.7M - $66.3M – Fully Funded by Lincoln

In Exercise #2, Dore & Whittier invited those in attendance to hand-write responses to the prompts, "I like…", "I wish…", "I wonder…". This open ended exercise was designed to gather initial reactions to the material presented, to be used as a tool to understand the community's appetite for a school project, and to help this study move forward.

EXERCISE #2 – Participants commented on the three families of options by responding to three prompts, "I like…", I wish…", and "I wonder…". This open ended exercise documented a wide range of individuals' thoughts.

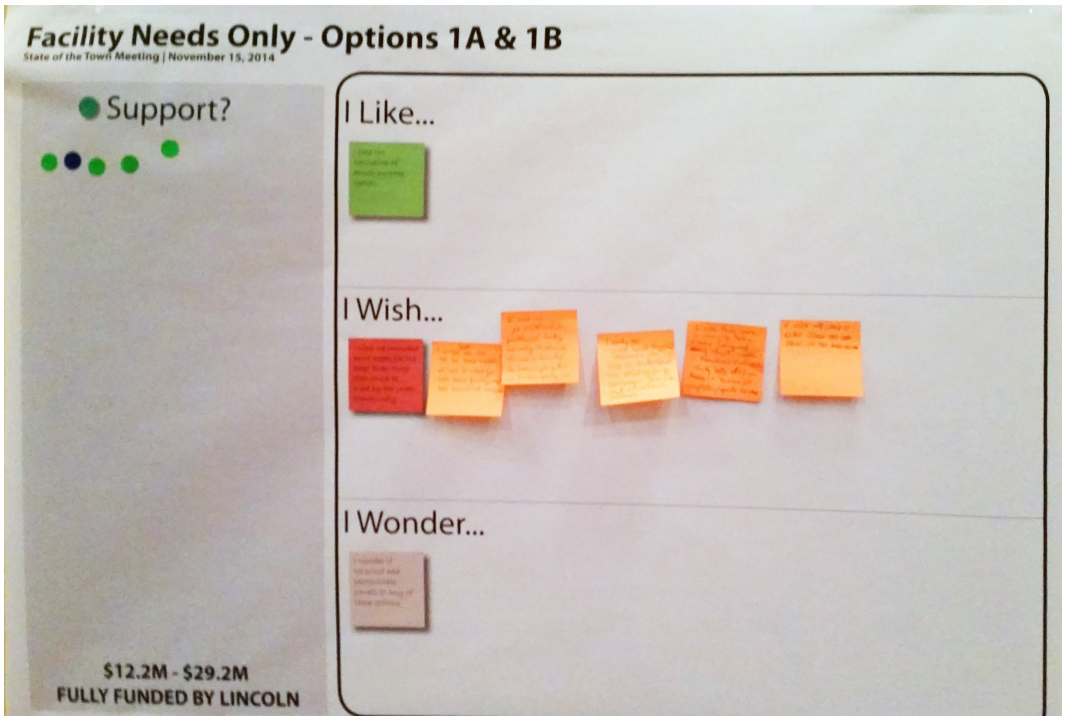
It would be disingenuous to suggest that participants' responses neatly gelled into a community-wide consensus. This summary only strives to capture some of the overarching themes of these comments.

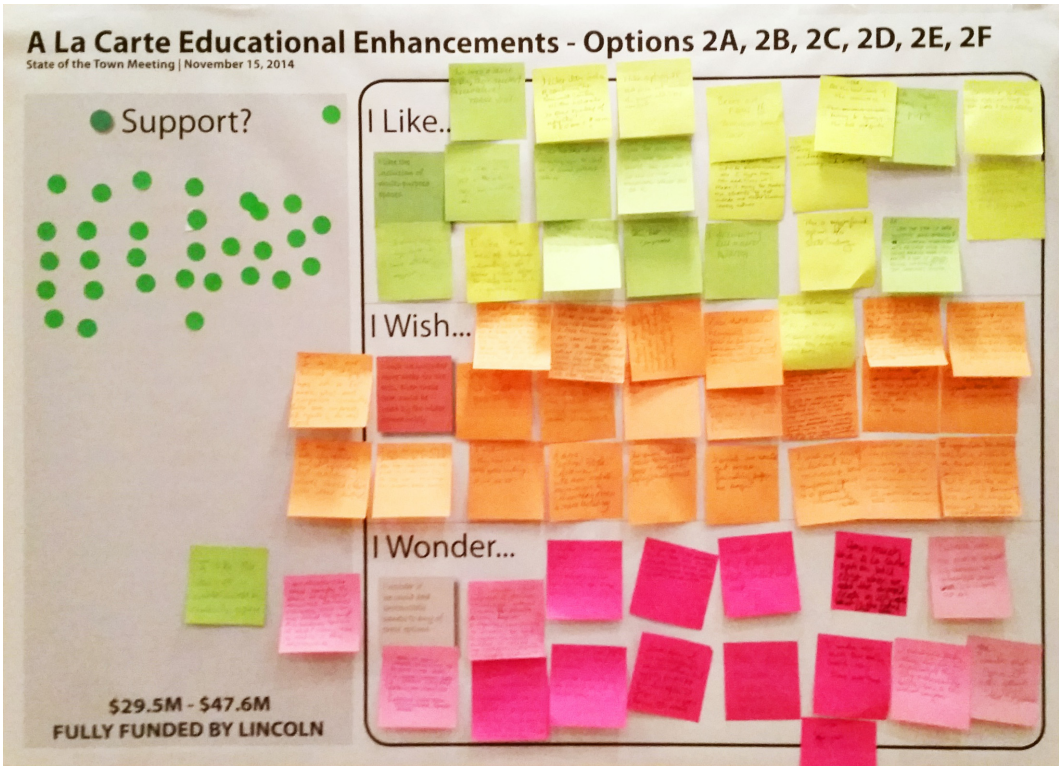
- The third family of options received the highest volume of hand-written responses followed by the second family of options. The first family options received the fewest number of hand-written responses.
- In general, the responses suggested a community-wide desire to pursue school and community center projects concurrently, if not as a single investment.[4]
- **Education**. Responses suggested that maximizing the educational impact of any facility investment is perceived as a key desired outcome.
- **Energy efficiency**. Responses suggested that energy efficiency is also a key desired outcome of any facility investment.
- **Cost**. Responses suggested that, while there may be support for a significant school project, the cost impact to individual households must be clearly understood and communicated to the broad community.
- While the exercise, specifically asked participants to respond assuming no MSBA participation, responses suggested a general agreement to pursue MSBA participation.[5]

[4] A single investment implies a single Town warrant article. While such a strategy is not prohibited under the MSBA process, combining school functions and community center functions as a single project, and funded through the same Town warrant article, would significantly complicate MSBA's process. Pursuing a school project and a community center project concurrently, but with two separate warrant articles, where the community center project is completely outside the MSBA process, would greatly simplify the MSBA process, but would require the Town to take two votes.

[5] At the time of the State of the Town meeting, Dore & Whittier had not yet prepared estimated design and construction timelines for WITH and WITHOUT MSBA participation. Those in attendance were not yet aware that the MSBA process would likely delay completion of a project by approximately 18 months.

The images below depict the results of the two exercises. What is important about these images is where the concentration of interest appears to exist.





Task Three General Findings and Recommendations

Task Three focused on the development of options. Dore & Whittier and the SBAC organized the final iteration of options into three families of options:

Family #1 – Facility Needs Only

- Option 1A – Immediate Needs and Code Triggered Items Only, **$12.2M**
- Option 1B – Option 1A + Near Term Facility Needs, **$29.2M**

Family #2 – À La Carte Educational Enhancements

- Option 2A – Option 1B + Acoustical Treatments for Classrooms, **$29.5M**
- Option 2B – Option 1B + Small Group Rooms, **$29.8M**
- Option 2C – Option 1B + Improvements to 2nd Grade Classrooms, **$32.0M**
- Option 2D – Option 1B + New Additions Housing Kitchens and Cafeterias, **$36.6M**
- Option 2E – Option 1B + Option 2A + Option 2D, **$36.9M**
- Option 2F – Option 1B + Option 2A + Option 2C + Option 2D, **$47.6M**

Family #3 – Comprehensive Educational Enhancements

- Option 3A – 88% Renovation/12% New Construction, **$54.7M**
- Option 3B – 77% Renovation/23% New Construction, **$55.8M**
- Option 3C – 52% Renovation/48% New Construction, **$58.8M**

- Option 3D – 0% Renovation/100% New Construction, **$66.3M**

Outcomes from this task suggest the following:

- The smallest actionable project has an associated project cost of approximately $12.2M, all of which would likely be borne entirely by the Town of Lincoln. Although this cost represents a lower up front financial commitment, it does not represent the full cost to modernize the facility to the same level as options in the second and third families.
- There appears to be several viable addition/renovation options (at a variety of price points, albeit with varying numbers of educational enhancements) that align with the considerations identified by the SBAC and communicated at the top of this section of the report.
- Educational enhancements to the facility that support the District's educational vision are a key desired goal of any school construction project.
- There appears to be support (at least by those in attendance) for a significant school project even without MSBA participation.

In response to these general findings, Dore & Whittier recommends the following:

- Truth test support for a significant school project once details of each of the options have been fully presented by engaging participants in additional small group exercises at Public Forum #3.
- Design future large group exercises to differentiate support for various options based on whether or not MSBA participation is pursued.

TASK FOUR – EVALUATE THE MODELS

Overview

Task Four focused on evaluating the options, specifically identifying the pros and cons and developing an understanding of which options appeared to be the most appealing to the community. Members of the SBAC chose not to evaluate the options in committee meetings, but rather relied on members of the Lincoln community in attendance at the December 2nd Public Forum #3 to perform the evaluations. The process did not result in an official short list of options, but resulted in an apparent preference for four options for at least those in attendance.

4.1 Evaluation By The Public

Public Forum #3 – December 2, 2014

At Public Forum #3, Dore & Whittier presented the revised options in detail and clarified the advantages, disadvantages, and timing implications of choosing to pursue MSBA participation. In a series of small group exercises, Dore & Whittier invited the attendees to comment on the building solutions as well as their personal values related to key variables that arose in the comments following the presentation at State of the Town. Those in attendance were also invited to evaluate options by identifying pros and cons of each and by indicating support for projects both with and without MSBA participation.

<u>Implications of pursuing MSBA participation</u>

- Approximately 40% Reimbursement of eligible costs
- Requirement to Address Facility & Educational Needs
- Uncertainty of Participation
- Timing Delay of approximately 18 months @ 3% - 5% annual escalation
- MSBA Process – Full Feasibility Study Required
- Separation of School & Community Center Projects – MSBA permits elements serving non-school uses to be constructed as part of their process under the same warrant article, but doing so adds complexity of management. It might be in the Town's best interest not to combine funding for a community center to the school project in the same warrant article. Should the Town choose to undertake a community center project concurrently as a free-standing, wholly separate building, and funded under a separate warrant article from the school project, the MSBA would have no objections. Such a decision would not adversely impact a school project from the MSBA perspective.

Dore & Whittier prepared and presented the timing comparison for Option 3a to determine an estimated timing delay associated with pursuing MSBA participation. Option 3A was used for these comparison purposes, but using this option to demonstrate the timing in not meant to suggest any preference by the Design Team or by the MSBA for this option. The estimated time to a fully completed building is likely to be delayed by approximately 18 months under the MSBA process. Much of this delay is associated with the time required for the MSBA to invite[1] the Lincoln School Committee to collaborate on a Feasibility Study.

Timing Comparison – Opt 3A

With MSBA Grant

Date	Milestones	Mths
4/15	Submission of SOI	7
11/15	Invitation from MSBA*	5
4/16	OPM Selection	3
7/16	Designer Selection	2
9/16	Feasibility Study	4
1/17	Schematic Design	6
7/17	Design Development	4
11/17	Construction Documents	6
5/18	Construction	25
6/20	Occupancy	

Initial Estimate..... $54.7M

+ Additional Escalation..... $3.3M

- Potential MSBA Grant..... - $24.3M

Fully Funded by Town

Date	Milestones	Mths
6/15	OPM Selection	2
8/15	Designer Selection	1
9/15	Schematic Design	6
3/16	Design Development	4
7/16	Construction Documents	6
3/17	Construction	25
4/19	Occupancy	

Initial Estimate..... $54.7M

+ Additional Escalation..... $0.0M

- Potential MSBA Grant..... - $0.0M

[1] The MSBA period for receiving Statements of Interests is expected to close in April 2015. The earliest invitation to collaborate on an MSBA Feasibility Study would be November 2015. The timing comparison assumes this best case scenario, but additional delays based on MSBA's current project load are possible an solely at the discretion of the MSBA.

Exercise #1 – Key Variables

In exercise #1, those in attendance were invited to identify which key variables represented the highest priorities. The key variables of a successful project presented included:

- Minimize Cost to Town
- Maximize Educational Enhancements
- Meet 2030 Energy By-Law
- Maximize Preservation of Existing Building
- Minimize Time to Occupancy
- Maximize Community Use
- *Return on Money Spent (Participant added variable)*

Participants identified their individual first and second priority choices in the first table top exercise. Dore & Whittier used a simple weighting methodology to score each of the variables. Each first priority received two points. Each second priority received one point. Totals for each were then summed. The final results follow.

1. Maximize educational enhancements (**120 points**)
2. Minimize cost to town/ return on money spent[2] (**27/19 = 56 points**)
3. Meet 2030 Energy By-Law (**18 points**)
4. Maximize Community Use (**16 points**)
5. Maximize Preservation of Existing Building (**10 points**)
6. Minimize Time to Occupancy (**5 points**)

It is important to note, that the variables that scored lowest during this exercise was not an expression of unimportance. They should also be considered in the design of any real project. These outcomes merely communicate that the lower-scoring variables are less important than those that scored the highest to those in attendance.

Exercise #2 – Evaluation of the Options

Dore & Whittier prepared floor plans of each option and summaries of which facilities needs and educational enhancements were included in each. Documentation for each option also included the revised conceptual cost estimate and an estimated Town share assuming MSBA participation. Facilitators invited each table to evaluate the option on their table by identifying pros and cons. Each table evaluated a different option. After a pre-determined number of minutes, tables were

[2] Return on money spent was a variable added by one group of table participants and has been included in the tally for minimize the cost to the town due to its similarity and focus on cost.

asked to rotate to another option at an adjacent table. Upon arriving at their new option, table members were asked to review the work of the previous group and either add to the list of pros and cons or to refute those already present. This process was repeated five times. Not all table groups evaluated every option, but all options were evaluated at least five times. What follows below is a summary of sentiments expressed during the evaluation by those in attendance. A full transcription of these results is available in Appendix V.

Option 1A & Option 1B - Facility Needs Only

Individuals who would support with MSBA participation: Not Applicable
Individuals who would support without MSBA participation: **1**

Attendees did not express much interest or support for these options. Although their comments suggested that lower initial costs might be perceived as an advantage, more emphasis was placed on the cons which included not addressing all the facilities needs and not providing any educational enhancements. In addition to these, most attendees recognized that, while up-front costs were low, additional costs would be necessary to complete the work and that those delayed costs would be highly unpredictable.

Option 2A - Facility Needs and Acoustical Treatment in Classrooms

Individuals who would support with MSBA participation: Not Applicable
Individuals who would support without MSBA participation: **0**

Evaluations of this option mimicked those for Options 1A & 1B. Although the costs were low and, although both the immediate and near term needs were addressed, simply addressing the acoustical challenges in classrooms appeared to most to be of little value for the cost.

Option 2B - Facility Needs and Small Group Rooms

Individuals who would support with MSBA participation: Not Applicable
Individuals who would support without MSBA participation: **2**

Evaluations of this option also mimicked those for Options 1A & 1B. Simply addressing the small group rooms neglected the acoustical treatments in classrooms. Attendees also pointed out that although small group rooms would benefit many students – particularly those receiving additional services – locating them between existing classrooms would result in an exacerbation of the challenges in the existing 2nd grade classrooms.

Option 2C - Facility Needs and Reconstruction of Second Grade Classrooms

Individuals who would support with MSBA participation: Not Applicable
Individuals who would support without MSBA participation: **2**

Attendees recognized that this option addressed the needs of the most educationally limiting rooms. They also identified, however, that this intervention benefits only a small percentage of the school population. Attendees expressed a sentiment that suggests this option was helpful in understanding the cost impact of this work relative to other options, but that in practical terms, it demonstrated little value.

Option 2D & 2E - Facility Needs and Kitchens and Cafeterias and Acoustics

Individuals who would support with MSBA participation: Not Applicable
Individuals who would support without MSBA participation: **17**

Although these options were presented together, most attendees responded only to Option 2E. Option 2E tied with option 2F for the second highest point total for support without MSBA participation. Attendees recognized that the connection between the Brooks Auditorium and the Reed Gym would increase security within the school and that acoustical treatments in classrooms would improve the performance of existing classrooms. While this option garnered some support without MSBA participation, at least some attendees expressed a concern that this project may create regret in the not-too-distant future that Town did not embark on a larger, more comprehensive project.

Option 2F - Facility Needs, Deferrable Facility Needs, Kitchens, Cafeterias, Acoustics, and Resized Second Grade Classrooms

Individuals who would support with MSBA participation: **7**
Individuals who would support without MSBA participation: **17**

Option 2F tied with option 2E for the second highest point total for support without MSBA participation. It was also the first option to garner any support with MSBA participation. Those in attendance identified a mixed set of pros and cons. While demolition of only a small portion of the building was received as advantageous, attendees felt this intervention was not transformative enough educationally. While attendees expressed the inclusion of several educational enhancements as a pro, they also expressed that they may not be enough educational value for the cost.

Option 2G - Facility Needs, Kitchens, Cafeterias, Acoustics, and Resized Second Grade Classrooms, but no Deferrable Facility Needs

Those in attendance speculated about a new option, an Option 2G that would be identical to Option 2F but exclude the deferrable facility needs. This speculation was directly related to the value disposition expressed about Option 2F. The premise of Option 2G was to bring the costs down by eliminating the site elements contained within the deferrable facility needs. By reducing the cost, the collective sentiment was that this increased its value. Dore & Whittier followed up with the necessary consultants and confirmed that this concept is viable.

Option 3A - Comprehensive Renovation with Selective New Construction

Individuals who would support with MSBA participation: **4**
Individuals who would support without MSBA participation: **4**

In their evaluations, those in attendance identified providing the full educational enhancements as a pro. In addition, attendees cited the cost as a con should the Town choose to pursue such an option without MSBA participation. Based on the identified preferences, attendees preferred Options 2E, 2F, and 3B over Option 3A.

Option 3B - Comprehensive Renovation with New Construction at Brooks and Smith

Individuals who would support with MSBA participation: **10**
Individuals who would support without MSBA participation: **19**

The evaluation from those in attendance mimicked the evaluation of Option 3A, but garnered far more support regardless of MSBA participation. Based on the feedback, something about the perceived aesthetic quality of this option was more appealing than Option 3A. However, at least some in attendance felt portions of this option appeared to be less flexible and somewhat disorganized.

Option 3C - Comprehensive Renovation and Major New Construction

Individuals who would support with MSBA participation: **44**
Individuals who would support without MSBA participation: **11**

This option garnered the most support assuming MSBA participation. It was the third highest scorer without MSBA participation. A willingness to explore a portion of the building that was two stories was perceived as a positive – both from an energy efficiency perspective and from a sense of conforming to the existing siting strategy. Related to the proposed second story, at least some of the attendees speculated about a similar option

that existed on one story. Finally, based on the identified preferences and the pros and cons, it appeared this option crosses a threshold for the Town's share of the cost that may be beyond what members of the community are willing to spend.

Option 3D – All New Construction

Individuals who would support with MSBA participation: **7**
Individuals who would support without MSBA participation: **2**
Although developed only for basis of comparison, Dore & Whittier invited those in attendance to also evaluate Option 3D. Although this option garnered little support regardless of MSBA participation from those in attendance, at least some participants expressed a preference for this option. An ability to be most energy efficient and a chance to start fresh were identified as pros. An inability and unlikelihood to get full community support for this option were cited as cons.

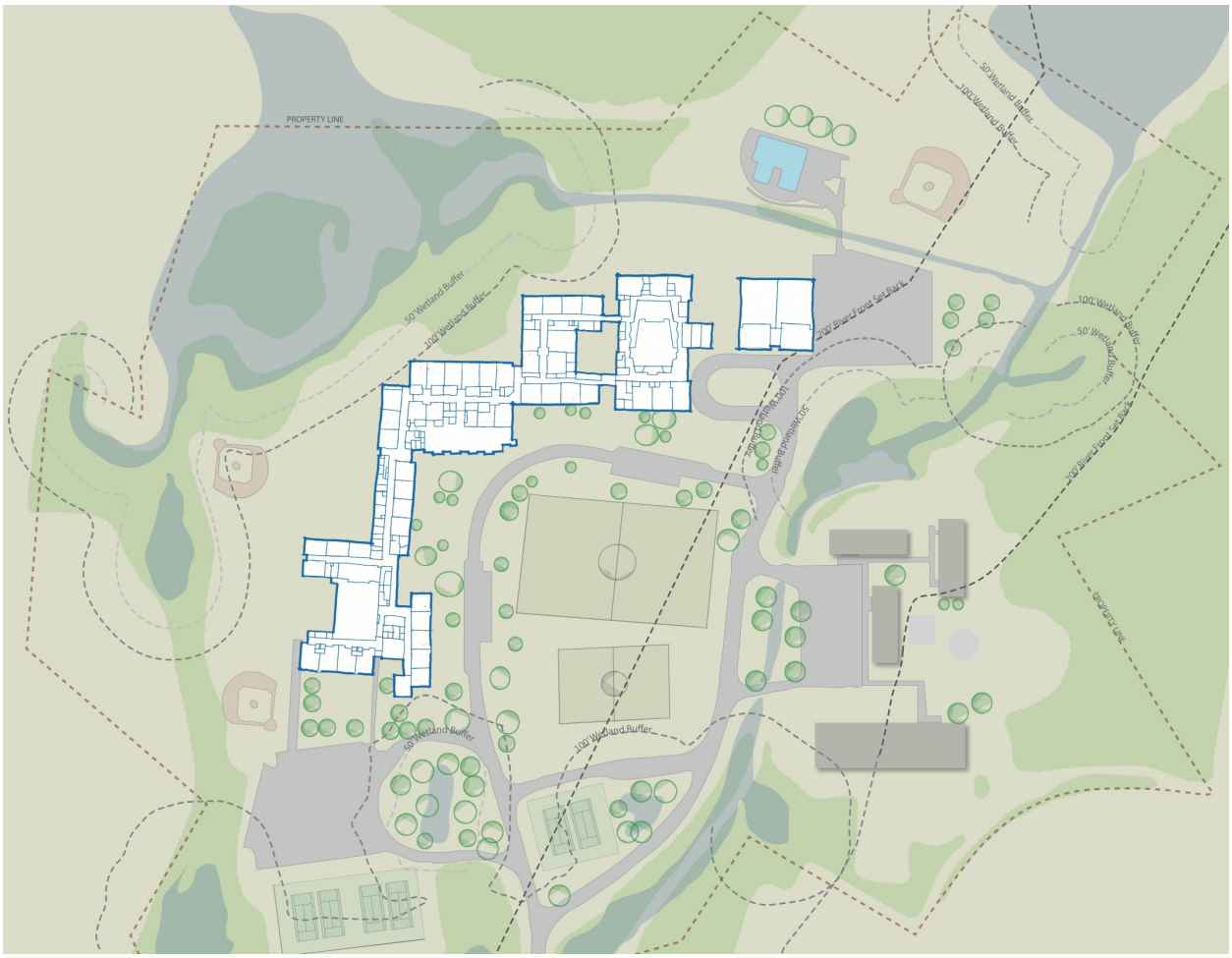
The outcomes of Public Forum #3 corroborate results of previous public forums in the following ways:

- Appears to be support (by at least those in attendance) for a significant project that not only addresses all the immediate and near term facility needs, but also provides most if not all of the educational enhancements.
- Any further development of options should respect the central green, retain existing trees, restrict interventions to the existing building's footprint, and reflect Lincoln's aesthetic values all to the greatest extent possible.
- Based on the estimated Town shares, there appears to be support for a school project where the Town contribution is approximately $29M - $40M.

4.2a –Key Issues: Permitting

Wetlands

Several questions arose during the study about potential permitting issues for the study's options. The attached site survey has the significant permitting boundaries highlighted in blue.



There is a 100' wetland buffer which is jurisdictional, in that it triggers review by the Conservation Commission. There is also a 50-foot "no disturb" local buffer. There are many ways to offset work within the 100-foot buffer. If an area within 50-feet is already disturbed, the local Conservation Commission would not necessarily require restoration, but the scope of construction would need to be reviewed.

The Conservation Commission considers the stream behind the school a river, which has a 200-foot Riverfront Area. The 100' is the Inner Riparian, which is looked at slightly differently than the 100'-200' area, but still a resource area. There is also a 1% Annual Chance Floodplain, and a Floodway associated with the stream. Development in the floodplain, therefore, would need to be minimal

and the construction of a service drive to the north of the school would need the approval of the Conservation Commission.

Septic

It has been suggested to Dore & Whittier that the existing Lincoln School is operating under a Title 5 variance and that the existing field is somehow non-conforming and possibly undersized. Nitsch Engineering, civil engineer for this study and the MSBA Feasibility Study conducted in 2012, has confirmed that the school septic system is currently operating under a variance. The variance was granted to allow the school to use a design flow of 200% its average water meter readings (as per 310 CMR 15.416(3)) instead of 15 gallons per person per day (as per 310 CMR 15.203(5)). The approved variance design flow is 7,790 gallons per day (GPD).

Renovations, such as considered during this study, should be able to use the septic system as currently installed. It is designed for 19,172 GPD, is approved for 7,790 and, is receiving 4,236 GPD. The variance is approved for a projected school population of 850 persons. Any changes on the site will need to be reviewed by the Board of Health and DEP. In addition to the leaching field under the Center Field, there is a smaller field that serves the Hartwell complex and a field which serves the pool which is north of the School.

The Town is simultaneously considering expanding the Hartwell complex to include a Community Center (Council on Aging and Recreation Department). Questions have been raised about the implications of such development from a septic system perspective. Specifically whether there are any overall loading restrictions for the site as a whole, even with two separate septic systems. The southernmost building in the Hartwell complex is connected to the main septic field. The other buildings are connected to a separate septic system. The water usage calculations included the Hartwell buildings. If the site as a whole exceeds 10,000 gallons per day (GPD), a Groundwater Discharge Permit is required. The site can handle the flows; however it will require extra permitting for changes to loading of either system.

By way of explanation, Nitsch Engineering provided the following summary history of the Ground Water Discharge Permitting for the Lincoln School site:

> *In January 2000 the Massachusetts Department of Environmental Protection (DEP) notified Lincoln Public Schools that it would need to develop and Administrative Consent Order (ACO) to define steps needed to bring the schools into compliance with DEP regulations. GZA subsequently prepared a Hydrogeological Study, Groundwater Discharge Permit Application, and Nitrogen Loading Analysis for the facility. In response to a request from DEP for further calculations, GZA demonstrated to the DEP that the design flow for the Schools is 7,856 gallons per day (GPD), which is 200% of the average meter reading of 3,928 GPD. Since the average daily flow rate was less than 10,000 GPD, DEP deemed the Groundwater Discharge Permit application withdrawn, and instructed the schools to file a BRPWP60 Variance for Schools permit application. GZA*

submitted the variance request in April 2007. The variance was approved in May 2007 based on a design flow of 7,790 GPD (200% of the average daily water meter readings from October 2001 to April 2006, which was lower than the 2002 water meter readings).

This information suggests that significant improvements to the school and the placement of a community center program on the site would not require increasing the capacity of the existing septic system. It also suggests that the proposed Option 2G, developed during Public Forum #3, is a valid option as site improvements may not be required.

4.2b –Key Issues: Town 2030 Bylaw

At most of the public meetings the question of energy efficiency arose specifically related to compliance with the Town's 2030 Bylaw adopted in 2008. As of July 1, 2014, Commercial Buildings in Massachusetts must comply with the 2012 International Energy Conservation Code (IECC) for Climate Zone 5 (Eastern MA). These are the prescriptive values for the IECC 2012:

- Windows fixed <= .38 U-Factor
- Windows operable <= .43 U-Factor
- Walls (metal framed above grade) >= R 13 + 7.5ci
- Roofs >= R-25.0

For a large structure like the Lincoln School, which falls under the commercial version of the MA Building Code (8th edition), Dore & Whittier recommends that an energy model be created during the Schematic Design phase of any proposed project. Since this study is not yet at that level of detail, assumptions were made relative to the prescriptive requirements of the IECC 2012 based on consultation with our MEP Engineers, Garcia, Galuska, DeSousa.

Town Bylaw

Motion under ARTICLE 40 Selectmen 2008

Moved: That the Town establish a Town Facilities Energy Performance Standard, as follows:

Clause I: Any town-owned buildings to be constructed or town-owned buildings undergoing major renovations shall be designed, to the extent practicable, as set forth below in Section II, so that the fossil fuel-generated energy consumption of the buildings is reduced, as compared with such energy consumption by a similar building with no fossil fuel-generated energy consumption reduction measures in fiscal year 2003 (as measured by Commercial Buildings Energy Consumption Survey or Residential Energy Consumption Survey data from the Energy Information Agency), by the percentage specified in the following table:

Year	*% reduction*
2008	*50*
2010	*55*
2015	*65*
2020	*80*
2025	*90*
2030	*100*

Clause II. Any Town entity acting as the project proponent for construction of a new building or renovating an existing building subject to the performance standard set forth herein, or the Town entity responsible for coordinating the design and construction or renovation of such a building, if such entity is different, may petition the Selectmen to adjust downward the applicable percentage reduction requirement by certifying in writing that meeting such requirement would be technically impracticable in light of the entity's specified functional needs for that building. Upon receipt of such a petition, the Selectmen may, in its sole discretion, adjust downward the applicable percentage reduction requirement. If the Selectmen is the project proponent, as described above, prior to taking any action to adjust downward the applicable percentage requirement, the Selectmen shall hold a public hearing for which at least one week's notice is published in a newspaper of general circulation in the Town.

Clause III. This standard shall take effect 180 days following enactment.

The Town 2030 Bylaw sets an aggressive, but achievable, goal for new public construction. For new work at the Lincoln School starting in 2016 at the earliest, the target would be 65% less energy consumption than a baseline building from the 2003 CBEC survey. In one sense this would be easier than outperforming the 2012 energy code in that it is based on existing buildings. However, the other part of this baseline is that it is based on total energy consumption and does not factor in that most existing schools have not upgraded to modern mechanical systems that provide some cooling capabilities (even those that do not include full air conditioning). The mere addition of this capability (should the Town and the School Committee chose to do so) increases the energy consumption substantially, no matter what HVAC system is chosen.

The question going forward will be – how far does the project pursue energy efficiency given increasing slope of the cost-benefit curve? Energy efficiency was evaluated as one of seven key variables in the final Public Forum and while there was support for this as a priority, it was substantially less than what emerged as the two main priorities: supporting the educational vision and cost efficiency. To provide the Town of Lincoln and the School Committee with data to help inform such decisions, Dore & Whittier's consultants developed the following information.

Sustainable Power Generation

Garcia, Galuska, DeSousa (GGD) estimates that sustainable power production consisting of a 1,300 KW Photovoltaic System would be required to sustain the net zero energy for the school. The 1,300 KW photovoltaic array will require an area of approximately of 130,000 S.F. based on 10 Watt/S.F. This is significantly larger than the readily available unshaded, flat roof area. D&W estimates that there are only about 40,000 sf of flat roof that are unshaded by other parts of the building or trees.

The estimated cost of the installed Photovoltaic System will be in the range of $5.00/Watt if roof mounted and the estimated weight of the ballasted rooftop Photovoltaic System is 10 lbs./S.F.

> *Should the roof structure permit, the Lincoln School could install photovoltaic panels on the 40,000 SF of unshaded flat roof for an estimated $2,000,000 to reduce the energy consumption of the building by 30%. This would not meet the 2030 by-law as a standalone solution.*

Ground-sourced Heat Pumps

During the MSBA Feasibility Study conducted in 2012, GGD previously calculated the scale of a ground-sourced heat pump system as needing a capacity of approximately 220 tons and would require (7) 1,500' standing column open wells requiring an area of approximately 42,000 sf. The system would have (2) 50 ton and (2) 60 ton water sourced heat pumps providing chilled and hot water to mixed VAV and induction system within the building. Such a heat pump system is estimated to cost approximately $1,000,000 (above HVAC System Option 2). A closed loop system would require many more wells (over 40) at approximately 350' and thus be even more expensive. The playfield could be an acceptable location.

Building Envelope Thermal Insulation

<u>Windows</u>

In the early part of this study, the cost premium for upgrading the existing windows to level needed to meet the 2030 Bylaw goal of 65% energy reduction was calculated assuming that triple paned PVC windows would be necessary. Typical aluminum framed commercial windows, even with the best low-E insulated glass have a U-factor in the .41-.44 range, which is right around the IECC 2012 prescriptive U-Factor of .43. Aluminum is a highly conductive metal which is the limiting factor in its performance as a window frame. PVC is a newer technology, but well established and allows for a total window system U-factor of around .25 (or R-5 in insulation terms).

Windows are always the least thermally insulating part of a building's envelope, so their complete replacement would be necessary to make significant energy savings. This study priced the replacement of 15,330 sf of existing wood framed and aluminum windows with triple-glazed PVC windows at a project cost of $2.5 million. This figure was presented at the 1st Public Forum.

Walls

Most of the existing walls have no insulation as they date to the 1950's and 1960's. Newer portions (which date to 1994) have limited insulation by today's standards and perform well below what would be needed to achieve the 2030 Town Bylaw. Since there was a significant public sentiment for preserving as much of the exterior of the existing L-shaped scheme, this study looked as installing spray foam polyurethane insulation from the inside. This approach would create an air barrier without requiring the removal of the existing brick walls. Other interior renovations such as HVAC and electrical upgrades would require the removal of the interior gypsum wall board anyway. For the facility needs identified in Task One, it was assumed that 3" of closed cell polyurethane foam would be installed which has R-Value of 18 (plus the insulating value of the brick, air cavity, and gypsum wallboard). The IECC 2012 prescriptive requirement for metal framed walls above grade >= R 13 + 7.5ci.

In order to super-insulate the walls, a reasonable starting assumption would be to fur out the interior side of the existing studs to create enough depth for 5" of polyurethane foam. This would provide a R-value of 30 (plus the other wall components), which is more than many new roofs (R-25). The additional cost of 2 more inches of insulating foam and the metal furring could be weighed against the energy savings once an energy model is created. It should be noted that in Dore & Whittier's previous experience, there is a significant fall-off in the benefit of additional wall insulation for schools, as their energy consumption is driven largely by the large number of occupants. This is in direct contrast to residential homes, which being largely empty have their energy efficiency tied closely to the insulating value of the building envelope.

Roofs

For the facility needs cost estimating in this study, the renovation of the roofs included 5" of insulation, an air barrier, and enough structural reinforcement to meet current building codes. The IECC prescriptive guidelines call for R-25 in Climate Zone 5 (Massachusetts), which is actually less. Often superinsulated buildings in the northeast target R-30 for walls and R-60 for roofs. Again as with the wall insulation an energy model would need to be created to truly determine if R-60 was a good cost-benefit solution.

Task Four General Findings and Recommendations

Dore & Whittier facilitated Public Forum #3 held on Tuesday, December 2nd, 2014. Those in attendance evaluated each of the revised options by identifying pros and cons. Members of the SBAC chose not to evaluate the options in committee meetings, but, rather, rely on the input and feedback of those in attendance for insight on Town preferences. The collective results of all the Public Forums and of the State of the Town Meeting suggest:

- Task Four corroborated sentiments expressed in earlier public forums and the Lincoln State of the Town Meeting. There may be support for a significant school project that addresses at least the immediate and near term facility needs as well as provides significant educational enhancements concurrently.
- Based on the conceptual cost estimates presented and the estimated Town shares, it appears that those who were in attendance are willing to support such a project where the Town's share is approximately $29M – $40M.
- Energy efficiency was expressed as a significant priority of the Town as expressed in the adoption of the Bylaw and at public meetings. Based on feedback from the Public Forums, there was a strong desire to develop an option that was as energy efficient as economically feasible. An energy model will allow a cost-benefit analysis of specific energy conservation measures.
- Dore & Whittier recommends that an energy model be developed in the Schematic Design phase once a single selected project has been selected. Such a model will allow the Town of Lincoln and the Lincoln School Committee to evaluate several energy efficiency strategies for their cost effectiveness.

TASK FIVE – PREPARE REPORT & MAKE RECOMMENDATIONS

Overview

In Task Five, Dore & Whittier assembled materials for a Draft Report. The other key outcome of Task Five was a final presentation to the Lincoln at Public Forum #4 held January 13, 2015. Although the study process did not conclude with any official recommendations or short lists of preferred options, results from Public Forum #3 suggested that four projects may have the most support for further exploration as part of an MSBA feasibility study or augmented schematic design process without MSBA participation.

- Option 2E – Without MSBA Participation:
  Addressed the immediate and near term facility needs and provided new kitchens and cafeterias as well as the acoustical treatments for classrooms identified in Option 2A, but provided no other educational enhancements.
  PROJECT COST = $36.9M, TOWN SHARE = $36.9M*

- Option 2G – Without MSBA Participation:
  Addressed the immediate and near term facility needs and provided new kitchens and cafeterias as well as the acoustical treatments for classrooms identified in Option 2A, improvements to 2nd grade classrooms identified in Option 2C, but no deferrable facility needs and no other educational enhancements.
  PROJECT COST = $39.9M, TOWN SHARE = $23.9**

- Option 2F – Without MSBA Participation:
  Addressed the immediate and near term facility needs and provided new kitchens and cafeterias as well as the acoustical treatments for classrooms identified in Option 2A, improvements to 2nd grade classrooms identified in Option 2C, and the deferrable facility needs, but provided no other educational enhancements.
  PROJECT COST = $47.6M, TOWN SHARE = $29.3M**

- Option 3B – Regardless of MSBA Participation:
  Addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the existing facility and a major new addition at both Brooks and Smith.
  PROJECT COST = $55.8M, TOWN SHARE = $34.4M**

  * Based on assumption of no MSBA participation
  ** Based on assumption of MSBA participation

- Option 3C – With MSBA Participation:
  Addressed all the facility needs and provided all the educational enhancements. This option accomplished this with a major renovation of the 1994 construction, the Brooks Auditorium, the Smith Gym, and the Reed Gym. All other portions of the existing building would be demolished and replaced with all new construction – a portion of which could be two stories.
  PROJECT COST = $58.8M, TOWN SHARE = $36.2M**

  * Based on assumption of no MSBA participation
  ** Based on assumption of MSBA participation

Public Forum #4 – January 13th, 2015

Dore & Whittier presented the Executive Summary of the DRAFT report in bullets, charts, and figures to those in attendance. An approximately 30-minute period of open questions, answers, and comments followed the presentation. Copies of presentation materials are provided in Appendix VI of this report.

In addition to Dore & Whittier's presentation, Ms. Jennifer Glass, Chairperson of the Lincoln School Committee gave a presentation and facilitated a table-top activity related to the Spring Town Meeting warrant articles. Ms. Glass, on behalf of the SBAC and the School Committee, invited those in attendance to provide commentary and feedback on three potential warrant article strategies. The outcomes of this exercise were outside the formal scope of this study, and have, therefore, not been included.

Final Findings, Recommendations, and Next Steps

At its outset, this study endeavored to accomplished several key tasks. At its core, however, this study endeavored to explore responses to the following questions:

- Is the existing facility in need of significant investment just to keep it operational? How much is such an investment?
- Are there viable design options that respect the central green, respect the existing trees, conform to the area of the site occupied by the existing building, and align well with the principles of 21st educational practices?
- Are any of those options affordable with MSBA participation?
- Are any of those options affordable without MSBA participation?
- Is there any community support for such projects?

The findings of this study suggest that:

- Yes. The existing facility needs a significant financial investment to allow it to continue its service into the long-term future. Over a thirty-year time horizon, that financial investment can be expected to be approximately $35M for all of the immediate, near term, and deferrable facility needs depending on how those projects are executed and sequenced.
- Yes. There appears to be viable design solutions that rely on a combination of additions and renovations to achieve all the desired goals. Existing site constraints will require careful collaboration with the Conservation Commission, other boards and commissions, and the Town entities working on the proposed community center project.
- Based on feedback from those in attendance at the five public engagement opportunities, there appears to be support for multiple options regardless of MSBA support, as long as the Town share of those projects is approximately $29M-$40M.

Next Steps

At this stage, the town of Lincoln has three potential pathways forward. First, the Town of Lincoln and Lincoln Public Schools can continue the current practice of addressing facility needs through annual capital expenditures. Should the Town and Lincoln Public Schools pursue this action, the individual scope items identified in Task One would likely be accomplished one-at-a-time over the course of many years.

Second, the Lincoln School Committee can prepare a revised Statement of Interest and seek MSBA participation. If invited to conduct a second Feasibility Study under the MSBA process[1], this pathway would require the appropriation of funds to secure the professional services of an Owner's Project Manager and a Designer, which would not be reimbursable by the MSBA. Should the Town of Lincoln pursue this pathway, a selected preferred option would likely resemble Option 2F or any of the third family of Options.

[1] The MSBA process is assumed to require the completion of a full feasibility study. The sequence of steps and deliverables for an MSBA Feasibility Study are clearly outlined in MSBA's Module 3. Such a feasibility study may be shortened slightly by shortening the portion of the process associated with facilities assessments with MSBA's approval. MSBA's process, however, would likely require the full definition of an educational program and the full exploration of preliminary alternatives. A full exploration of preliminary alternatives means that renovation only, renovation/addition, and all new construction alternatives must be explored. While the options developed for Dore & Whittier's study will have some value in this process, these preliminary alternatives explored as part of the MSBA process will, necessarily, look slightly different.

Finally, The Town of Lincoln can pursue a process to develop a school building project independently without participation by the MSBA. This pathway would also require the appropriation of funds to secure an Owner's Project Manager and Designer. These funds, however, might best be used for an abbreviated feasibility study which would refine a short list of options, allow the Town to select a single preferred option, and would include the preparation of a full schematic design. Selecting this pathway gives the Town of Lincoln and the Lincoln School Committee the greatest flexibility. Any option could be pursued on this pathway depending on the financial appetite of the Lincoln community and the financial capacity of the Town of Lincoln.