

Lincoln Public Schools
Study of the Lincoln School
by
Dore & Whittier Architects, Inc.
February 5, 2015

The following pages represent the Executive Summary excerpted from the Dore & Whittier Architects, Inc. February 5, 2015 Final Report.

The report, in its entirety, can be found at the following locations:

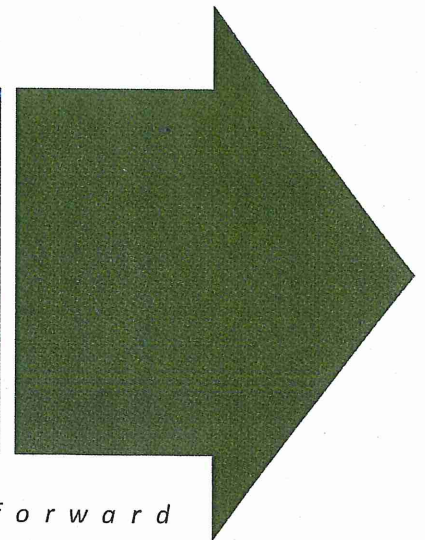
- Lincoln Library, Reference Materials (Previous studies of the Lincoln School are also available at the Lincoln Library.)
- Council on Aging
- Board of Selectman's Office
- Smith School Office
- Brooks School Office
- Office of the Superintendent of Schools, Hartwell Building

The report is also available on-line at <http://www.lincnet.org/Page/3165>.



Lincoln Public Schools

Study of the Lincoln School



... establishing a credible pathway forward

Final Report
5 February 2015

Dore & Whittier Architects, Inc.

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 incremental¹ 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
<u>TOTAL PROJECT COSTS for DEFERRABLE FACILITIES NEEDS =</u>	<u>\$ 7.70 M</u>
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
<u>TOTAL PROJECT COSTS for MODEST IMPROVEMENT EDUCATIONAL ENHANCEMENTS =</u>	<u>\$ 1.2 M</u>
SUB-PROJECT COST for EDUCATIONAL ENHANCEMENTS =	\$22.8 M

GRAND PROJECT COST TOTAL =	\$58.02 M⁴
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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.

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 than 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

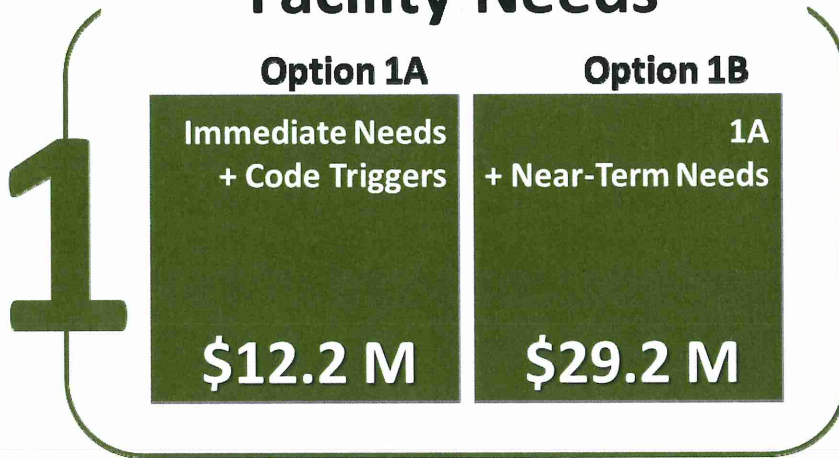
- Option 3C renovates the major anchors of the existing school: the 1994 construction, the Smith Gymnasium, the Brooks Auditorium, and the Reed Gym. All other portions of the existing buildings were demolished and replaced with all new construction. (52% renovation, 48% new)
 - Total Project Cost : \$58.8 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 participation⁷, eligible⁸ 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.

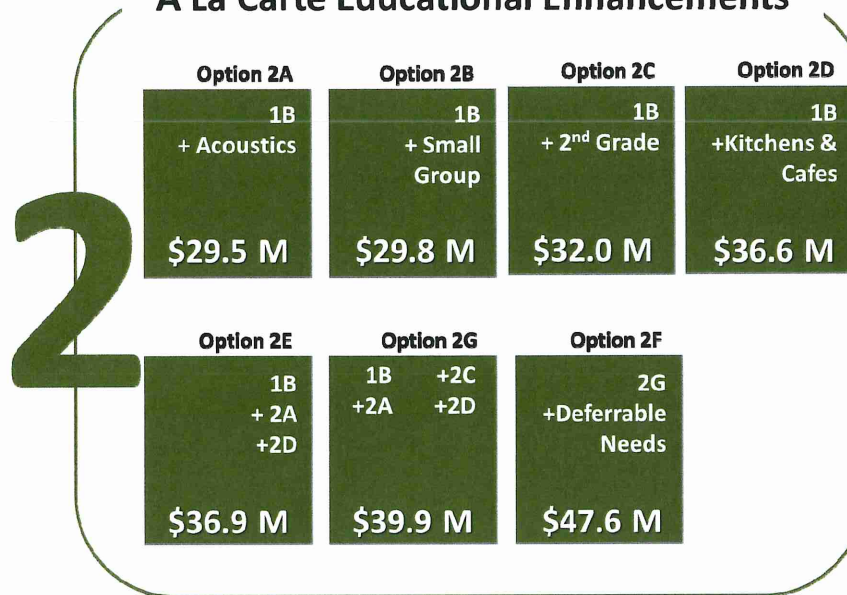
⁸ MSBA grants are subject to several provisions that deem certain costs ineligible for reimbursement.

Facility Needs



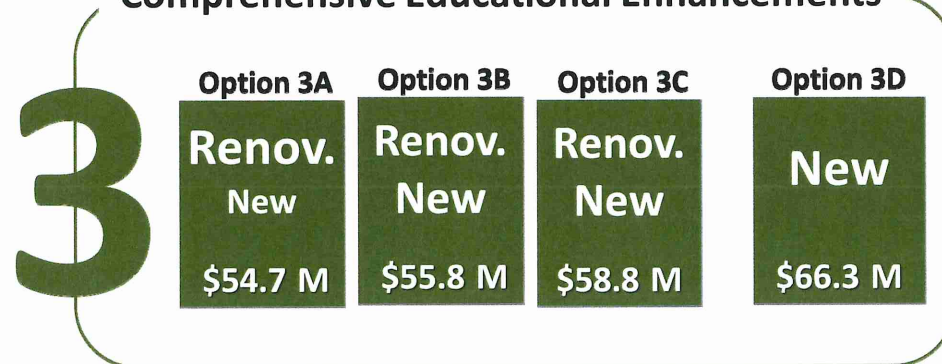
Facilities	
✓ Sprinklers	IMMEDIATE
✓ Fire Alarm	
✓ Roofing	
✓ Precast Concrete	
✓ Boilers & Boiler Room	
✓ Emergency Generator	NEAR-TERM
+ Code Triggers	
✓ Building Envelope	
✓ Elect. Infrastructure	
✓ Classroom Lighting	
✓ Plumbing	
✓ Intrusion Alarm	
✓ Heating/Ventilating	
✓ Hazardous Materials	

À La Carte Educational Enhancements



Facilities	
✓ Interior Finishes	DEFERRED
✓ Remaining Lighting	
✓ Furnishings & Equip.	
✓ Girls Locker Room	
✓ Paving and Curbing	
✓ Play Field Improvement	

Comprehensive Educational Enhancements



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 (**27/19¹¹ = 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 process¹², 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.