

March 26, 2009

To: Pelham Building Committee

Please see our responses below in bold, colored text:

Frank & Paul Marinace

March 19, 2009

Follow-up questions for Paul & Frank Marinace

Re: Pelham High School Building Committee Meeting Feb 16, 2009

1. If the Windham Road land purchase had been approved or became approved in the near future, please discuss and estimate the remaining engineering services and site investigations needed before pulling permits and going out for bids?

Preliminary site design has been completed for the new high school on the Windham Road site. This represents about 30% of the total site design effort. In order to bid a set of site plans, 80% complete plans are necessary. The balance of the site design cost through permitting would be \$180,000, and a total design / permitting period of about 9 months.

2. If we were to start over on a different piece of property, please discuss and estimate the typical engineering services and site investigations needed to get the project to the point of pulling permits and going out for bids?

It is impossible to estimate this without knowing something about the proposed site. If the soils conditions, permitting issues, and cost of sitework were comparable to the Windham Road site, then the cost to take a site design to bidding would be about \$300,000. To this you would need to add some building design work, surveying, wetlands mapping, and geotechnical costs, which could be another \$150,000, bringing the total to \$450,000. The survey / design / permitting period would be about 11 months.

3. Please expand upon, compare and contrast the expansion/renovation estimates that were discussed?
 - a. the 39M full renovation
 - b. the 28-30M minimal renovation - what is lost in terms of educational impact, and operation aspects - traffic patterns, sound isolation, etc.

The \$39M renovation / addition option would provide a total building area and quality of construction somewhat comparable to a new high school. This budget assumes a complete overhaul of the building, so although a renovation can never use space quite as efficiently as a new building, this would come very close.

The \$29M option would cut back on renovation scope in the existing space, so energy efficiency, mechanical and electrical systems, traffic flow, sound isolation, etc. would remain similar to the current conditions, which are significantly inferior to those in a new building. With the new classrooms provided, many small existing classrooms could be combined to provide better space usage and easier scheduling of classes. A schematic building design, done in conjunction with the school administration, would be required to determine the full impact of a reduced renovation scope on school operations and curriculum (see next item).

4. Please discuss or estimate engineering services to develop a plan of a "staged" expansion. Please consider recommended priorities for staging - what would be addressed in 1st round, 2nd round, nth round, etc? It was stated that staging is "much more expensive". Please estimate how much more expensive. What would be minimum cost for a 1st stage? When should core areas be addressed?

In order to determine how a phased plan would unfold, it would be necessary to complete a preliminary design of the built-out project. This should include:

- **Site topographic survey and test borings be completed in order to confirm that the site will accommodate relocated playing fields and the addition.**
- **Preliminary site design and discussions with permitting authorities to confirm that site plan is likely to receive wetlands / alteration of terrain permits. Note that this does not involve actually obtaining permits, just a reasonable level of confidence that they could be obtained.**
- **Engineering analysis of the existing high school to determine which systems need to be replaced or upgraded depending on which renovation option is selected.**
- **Architectural analysis of the building program to determine how phasing would affect school operations during interim periods, and which space needs are highest priority.**
- **Preliminary floor plans and site plan for each phase.**
- **Budget estimates for each phase.**

It is estimated that this analysis, engineering, and design work would cost \$190,000. This would be comparable to the detailed work we did a year and a half ago for the new school. Developing a full site design suitable for bidding, the filing of permits, and construction would be significantly more expensive, adding another \$180,000 to the cost.

As an alternative, we could do significantly simpler design work, which would result in a very schematic set of floor and site plans for each phase, less engineering analysis of the existing systems, and a lower cost, perhaps in the \$60,000 range. This would not provide the level of detail of the previous option, but it would give you plans and budgets that could be confidently taken to a March vote.

The extent of work included in each phase, and how much those phases would cost, should be developed from the building analysis, and cannot be accurately determined in advance of that. That being said, in general terms, the first phase would have to include all the sitework, as well as a significant portion of the addition, and would therefore likely be in the \$18 - \$22M range for the smaller project, and \$28 - \$32M range for the more comprehensive renovation.

5. It was recommended that Pelham pursue land acquisition opportunities. Please advise on a land acquisition strategy, recommended size of property(s) and reasoning behind that strategy. Consider new needs for Pre-School services and Kindergarten.

We always recommend that school districts buy land adjacent to their schools whenever they become available, if the price is reasonable. This applies to the high school site - particularly the land along Marsh Road between the high school and elementary school, since flat, dry land for parking and fields is at a premium near the buildings. The logic is that it is far cheaper to buy land than to fit a building to a congested site, and adding a few well-placed acres near an existing building can reduce the need for a new school site years in the future.

A standalone kindergarten building on a new site would likely require about 5 - 7 acres of reasonably flat, dry land. This could be reduced to perhaps 4 acres if it were sited somewhere on the existing schools site and could take advantage of shared parking, play areas, driveways, etc.

6. We discussed that more work can get done per dollar with a new on new scenario. Please estimate the productivity per dollar spent on the other options if New-on-New is 100%. With school population being on the site during option 2. Also a 3 or 4 phase addition/renovation scenario with school population on site and 1 phase being done every 3-5 years (option 3)

Option 1 (New-on-New)	100 % Productivity
Option 2 (Addition/Renovation)	? %
Option 3 (Staged Addition/Renovation)	? %

A renovation / addition project might be 80-90% as "productive" as new construction in terms of construction in place for every dollar spent, with the lower end of the range representing a project that is heavier on renovation, and the higher end representing a project that is mostly an addition and sitework.

The largest loss in a phased renovation project is the inflation that drives up the cost of the second phase, which could be a 20% increase over three years. If the 1st phase is 2/3 of the work, and the 2nd phase is 1/3 of the work, then the net "productivity" might be in the 70% range.

The inverse of "productivity" is cost, so let's consider a \$40M one phase new building as the starting point. The same value of work constructed as a one phase renovation / addition would cost, on average 17% more, or \$47M, and a phased renovation / addition would cost the same 17% more, plus another 10% more for the administration of two separate projects, plus another 20% more for inflation over three years, which totals a 47% increase in cost, or \$59M. A three or four phase project would be considerably more expensive than a two phase project.

7. Would a renovation in stages result in multiple mechanical systems or require oversized systems that would not be used until later?

There are two options:

- Renovate / replace the entire mechanical system in the existing building at one time. If this were done in the second phase, then renovated spaces would use the existing system until the second phase was complete.

- Renovate / replace the system only in areas affected by each phase of construction.

It is difficult to determine which approach makes the most sense until a renovation plan is worked out, and an engineer has studied the existing system.

8. Request for clarification: Is it correct that the gym, library and cafeteria in the current high school would be adequate for a junior high or middle school with minimal renovation?

Yes - in terms of space sizes. Given the state of the building systems, however, the entire building could use a renovation no matter which age group occupies it.

9. Previous addition/renovation plan had the same space as the new high school option. However, just because it is the same total space, can it result in the same number and type of spaces, same academic and co-curricular programs, same science labs, same gymnasium and locker rooms, same hallway lockers, same auditorium, etc. as the new high school option?

There is some inherent inefficiency in a renovated space, so although the total area is equivalent, the functionality of a renovated space will be slightly less. This cannot be determined until a renovation plan has been completed.

10. Are you familiar with any projects where the community staged multiple additions, where the community had to vote and approve each stage? What was the time frame to get to the desired capacity?

Most school districts choose to complete renovation / addition projects in one phase for several reasons:

- **The economics of two or more projects spaced a few years apart are not to the advantage of taxpayers. At an average annual construction inflation rate of 6%, and with a 15% economy-of-scale penalty for building two smaller projects, the second phase of a project that would have cost \$10M could end up costing \$13.4M three years later.**
- **Rather than disrupting school for two years, a two-phase approach would disrupt school for four years in a 7 year span (if 3 years between projects).**
- **Planning concessions are made in a phased approach unless the second addition involves just adding classrooms, or the renovation of a portion of the building not touched in the first phase.**
- **It is difficult to rally support from the public for another large bond a year or two after a substantial project has been completed.**

We have worked with some school districts that have completed successive projects on the same school, such as the Londonderry High School projects. They completed a \$2.5M project in 2000 which included renovations to one wing of the school plus a new 28,000 s.f. addition, and then in 2003 approved a \$13.7M project which included more renovations, adding a second floor to the earlier addition, and building a new field house. While these projects were not part of a master plan, they ended up working this way.

They also did a \$6M Middle School addition in 2000, a pair of \$1M additions to the North and South Elementary Schools in 2000, a new \$4.5M kindergarten building in 2001, a \$5.5M addition / renovation to the North Elementary School in 2005 and a \$5.5M addition / renovation to the South Elementary School in 2008. So, rather than doing one \$35M project, they were able to split the needed work into several smaller projects completed over a 8 year period. Working on several different schools made this much easier to manage. There's no doubt that it cost significantly more to do many, small projects, but it was more palatable to the voters.

Another example is the Jaffrey-Rindge school district, which has chosen to split their middle / high school construction needs into three phases. The first phase, a 10M renovation / addition to the middle / high school building and the

construction of a track facility was completed this past year. The second phase will be the construction of a new gymnasium and locker room addition, and the third phase will be a new middle school and the conversion of the middle school space in the existing building to high school use. Again, this is not the most economical approach, but they felt it was the most likely to succeed.

11. What are the most expensive building spaces to build, new and/or in a renovation?

The most expensive spaces in a school to build or renovate are the boiler room, kitchen, locker rooms, science labs, toilets and auditorium. Classrooms are the least expensive.

12. What is the minimum size of a piece of land that a small elementary school could be built on, e.g. Pre-K/K-2 or grades 4-6?

For a 3-grade, 900 student elementary school (maximum build-out size @ 300 students / grade), the state requires a minimum of 14 acres of flat, dry usable land. You may want to consider looking for a slightly larger parcel if you intend to build additional playing fields on the site.

13. Please restate your assessment on the amount of buildable land that we have left on the current Marsh Rd. site.

Per our April 2007 report, we estimate that there are a total of 83 buildable acres. This is pending an accurate survey to determine the extent of flood plain.

Thanks again for the excellent discussion back on Feb 16.

Best Regards,

Pelham High School Building Committee