

South Burlington School District
Master Planning and Visioning
Financial Subcommittee Report
August 23, 2016

Review of Real Estate Model

The South Burlington Board of School Directors formed a financial subcommittee to review more deeply the real estate model developed in 2015/16 by White + Burke as part of the Master Planning and Visioning Process. The group reviewed the structure of the model and the assumptions made about real estate matters in the model. Stephanie Hainley of White + Burke responded to the committee's questions and made some slight changes to the model as a result of the committee's comments. In general the committee felt the structure of the financial model was sound and that the model did a good job of capturing the input White + Burke had received through their own real estate analyses and the assumptions provided by the district. The model is, however, high-level and real-estate-focused. It was not developed in a way that allows for easy testing of different assumptions about demographics and other factors affecting capacity. A further limitation of the model is that it takes the costs of upgrades for the various options as assumptions rather than building them up in any kind of detail. In general the model simplifies fairly complex assumptions into hardcoded inputs, which makes reviewing assumptions in the model somewhat challenging without further analysis.

In order to better understand the assumptions provided to White + Burke by the District administration, the committee held two meetings with John Stewart and Annette Harton and requested additional information about topics related to but not within the direct purview of the financial model. Using information gathered during these meetings and through emails and phone calls, the committee conducted additional analyses to try to answer questions that arose during the review of the model.

The key topics that the committee reviewed in more detail were

1. **Demographics** – With two years of history, where does actual enrollment stand relative to the demographic projections created for the Task Force?
2. **Capacity** – Does each option provide enough capacity to serve the district's elementary enrollment needs if enrollment matches the demographic projections? Remains steady? Increases slightly?
3. **Stewardship Costs** – Stewardship costs were a significant assumption underpinning the financial model. Intuitively it would seem that at some point stewardship costs for three aging buildings would overtake the cost of building a new school. Is there a financial case to be made for consolidation in some form based on projected stewardship costs?
4. **Operating Cost Savings** – How were assumptions about operating cost savings developed? At first review some the assumptions seemed counter-intuitive. For example, there were higher operating costs savings projected for operating two schools that for operating a single, consolidated elementary school. Do operating costs savings, when added to stewardship cost

savings, generate enough cost savings to cover the investment costs of any of the consolidation options?

5. **Upgrade Costs** – Upgrade costs were included as high-level (i.e. not detailed) assumptions in the model. What thinking underlies those assumptions? What upgrades were considered when developing those assumptions? Do the upgrades include the costs of renovating any of the five schools to support 21st century learning?

Demographics

McKibben Demographics and Cropper GIS, the demographic consultants contracted as part of the Task Force process, projected that school enrollment would decline slowly across the district. By 2025 the demographers estimated that K-5 enrollment would be 891 versus 947 in 2015, a decline of 5.9%. The demographers estimated that K-12 enrollment would decline from 2,338 in 2015 to 2,243 in 2025, a decline of 4.1%. McKibben's projections for K-5 enrollment in 2016 and 2017 were 948 and 949 students, respectively. Actual enrollment for 2016 was 944 (0.4% below the projections) and enrollment for 2017 is projected to be 969¹ (2.1% above the projections). The distribution of students across grades and schools is somewhat different than the demographers projected. However, overall actual enrollment numbers in the elementary schools have been close to those projected by the demographers to date.

	2016 P	2016 A	Variance	%	2017 P	2017 A	Variance	%
Orchard	359	358	(1)	-0.3%	364	382	18	4.9%
Chamberlin	227	230	3	1.3%	215	232	17	7.9%
Central	362	356	(6)	-1.7%	370	355	(15)	-4.1%
TOTAL DISTRICT	948	944	(4)	-0.4%	949	969	20	2.1%

Historically, enrollment across the elementary schools has varied significantly from year to year. On average since 1975, enrollment has declined by 0.3%. Total enrollment across the three schools has been as high as 1,179 in 1999 and as low as 684 in 1983. Year-on-year, enrollment has increased by as much as 10% (1994) and decreased by 10% (1983). Enrollment for the three elementary schools is projected to increase by 2.6% for the 2016/2017 school year versus the 2015/2016 school year. For the District as a whole, administration estimates there will be a decrease in enrollment of 1.3% from 2,375 last year to 2,344 this year.

Capacity Analysis

One consideration that was beyond the purview of the real estate model produced by White + Burke was the capacity of the different configuration options and their sensitivity to potential deviations from the demographic projections. White + Burke's model assumes each option can accommodate all projected students. Using overall capacity projections from the District's 2008 Facility Master Plan and assuming the demographic projections are accurate through 2025, each option would seem to accommodate the district's needs through 2025. The 2008 Facility Master Plan estimated the following capacities: Central 420 students, Orchard 360 students and Chamberlin 300 students. However, overall projections ignore the complications caused by the fact that students do not enroll evenly across schools or grades. The Board and the community were concerned that if the number of schools was reduced, and enrollment increased slightly instead of decreasing slightly the district could find itself without enough capacity to serve all of its elementary students. This situation could be particularly challenging if school property had been sold as part of consolidation or if a single consolidated elementary school had been built on a site without room for expansion. The district must also consider the relative costs of

¹ As of August 14, 2016. School enrollment for the 2016/2017 school year is still fluctuating as of the date of this report. Total estimated elementary school enrollment increased from 939 to 969 between June 14 and August 14, 2016.

carrying excess capacity for a certain period of time if enrollment declines slowly versus building additional capacity if the student population increases slightly.

Capacity Analysis 1 – Square Footage per Student

There are several different ways of approaching capacity analysis. The 2008 Facility Master Plan estimated total capacity based on the design and total square footage of each school compared to state guidelines for square footage per student. The plan estimated a maximum capacity for each school and then discounted it by 25% to account for programmatic issues (for example the need for rooms to provide occupational therapy to students with IEPs) that might reduce the ability to operate at full capacity. This approach provides a rough estimate of capacity. Its accuracy hinges on whether or not 75% of absolute maximum capacity is the correct number to assume for net capacity today. Without an updated detailed study of the current uses of each building to determine whether this assumption is correct, this approach seems less accurate than other ways of determining current capacity.

Capacity Analysis 2 – Average Students per Classroom

Another way of analyzing capacity is to estimate the average number students per classroom necessary to serve all of our projected students. Based on information provided by the business office, each of Orchard and Central schools is assumed to have 23 total classroom-sized spaces. Once other required uses (e.g. pre-school at Orchard, coaching spaces, etc.) are factored in, each of those schools is assumed to have 20 net spaces that can be used as K-5 classrooms without significant cost to remodel the buildings. In 2017, the district projects that it will use 20 classrooms at Orchard and 19 at Central. In addition, one classroom at Orchard is currently devoted to district-operated pre-school. Chamberlin is assumed to have 19 total classroom-sized spaces of which 3 are needed for other required uses and 16 are available for K-5 classrooms. The district expects to use 14 of those rooms for K-5 in 2017. Two additional rooms are currently used for pre-school classrooms – one operated by the district and one operated by the YMCA.

In total, based on these assumptions, the district has 56 elementary classrooms available without performing any major upgrades or reconfigurations. At an average of 17.5 students per classroom, below the District's projected average of 18.5² for 2017, these 56 classrooms would provide capacity for an average of 980 students. This is slightly more capacity overall than the district is projected to need. As mentioned above, expected K-5 enrollment for 2017 was 969 as of August 14. The demographers projected that K-5 enrollment will decline to 891 students by 2025.

Closing Chamberlin (Option 3) and moving to two K-4 schools at Orchard and Central with the 5th grade at the middle school would result in 40 net classrooms available for grades K-4. At the same average classroom size of 17.5, this would produce capacity for 700 students. Despite the expected decline, K-4 enrollment is expected to stay above 700 until approximately 2030. The district would need to increase average classroom size in K-4 to 19.5 in order to have capacity for 780 K-4 students, the peak number the district is projected to reach in 2019. This could be challenging given the District's current policy limitations on classroom sizes (Ideal range of 16-18 in grades K-3 with a hard limit of 20; ideal range of 16-20 in grade 4 with a hard limit of 25).

² As of August 14, 2016.

Capacity Analysis 3 – Classrooms Required

The limitation of the analysis above is that it focuses on averages while the reality of classroom and school distribution is somewhat more complicated. In order to address this limitation, the committee performed a third capacity analysis. This analysis used the demographic projections by grade, by elementary school and estimated the number of classrooms that would be needed to serve all students under each scenario. The impact of each scenario on average classroom size, the number of classrooms that could be “saved” under each scenario and the available excess capacity or need for additional capacity under each scenario are all important points for discussion that result from this analysis.

Enrollment and enrollment trends currently vary between the elementary schools in the District. The District estimates an average class size of 19.1 at Orchard in 2017 with total enrollment of 382. Over the past three years, enrollment at Orchard has grown at an average rate of 2.6%. At Chamberlin the average class size will be approximately 16.6 in 2017 with total enrollment of 232. Enrollment at Chamberlin has decreased an average of 0.8% per year since 2014. At Central the average class size will be around 18.7 in 2017 with total enrollment of 355. Enrollment at Central has decreased an average of 1.0% per year for the past three years. Assuming the District’s current estimate for 2017 enrollment is accurate, overall K-5 enrollment in the district will have increased an average of 0.4% per year since 2014.

Projected Enrollment for 2017

	K-5 Enrollment	Average K-5 Class Size	3 Year Average Growth in Enrollment
Orchard	382	19.1	2.6%
Chamberlin	232	16.6	-0.8%
Central	355	18.7	-1.0%
District	969	18.3	0.4%

Generally over the past 3 years, cohorts across the District have shown fairly small variations in size. For example, the cohort that joined the District as kindergarteners in 2014 began with 148 students, decreased to 146 students in 2015 (-1.4%), decreased to 141 students in 2016 (-3.4%) and appears on track to increase to 144 students in 2017 (2.1%). At the individual school level, however, there is much greater variation (see table below for example). This variation at the school level is the primary challenge in determining the number of classrooms needed each year at each school.

2014 Kindergarten Cohort Changes in Enrollment

	Enrollment				Change		
	2014	2015	2016	2017	2015	2016	2017
Orchard	51	48	45	48	-5.9%	-6.3%	6.7%
Chamberlin	33	32	34	37	-3.0%	6.3%	8.8%
Central	64	66	62	59	3.1%	-6.1%	-4.8%
District	148	146	141	144	-1.4%	-3.4%	2.1%

One effect of consolidation would be to smooth out some of these variations in enrollment. Instead of trying to create optimal class sizes for 3 groups of kindergarteners, for example, the District would be able to determine the right number of classrooms to serve the entire cohort as a single group (under Options 4 and 5) or 2 groups (Option 3). If one uses the hard limits in the District's policy on classroom size and the demographer's projections, the analysis shows that by optimizing classrooms across 2 schools instead of 3 schools Option 3 could save as many as 9 classrooms versus Options 1 and 2 in 2018. After declining from 9 in 2018 to 1 in 2025, the number of classrooms saved versus options 1 and 2 stabilizes at 3 for the remainder of the projected years (through 2036). Options 4 and 5 could similarly save 9 classrooms in 2018, bouncing around between 3 and 5 saved classrooms before stabilizing at an average of 6 saved classrooms from 2031 to 2036.

Options 1 and 2 produce an average K-5 classroom size of 17.5 in 2018 growing to a peak of 18.6 in 2025 before declining to 17.8 in 2036. Option 3 would result in an average classroom size of 21.0 in 2018, declining to 18.9 by 2036. Options 4 and 5 would result in an average classroom size of 21.0 in 2018, declining to 20.3 in 2036. To be clear, the higher average classroom sizes result from optimizing the number of classrooms for each grade level while still keeping within the District's policy guidelines, not from any attempt to expand classroom size beyond the guidelines.

Assuming the District uses the upper policy limits on class size, the District would have excess capacity of 2 classrooms in 2018, increasing to 8 classrooms by 2025 under Options 1 and 2. For the analysis of Option 3, the subcommittee focused on K-4 capacity. This assumes that 9 classrooms could be converted at the middle school to house the 5th graders, leaving 40 classrooms at Orchard and Central for K-4. Under Option 3 there would be 2 excess K-4 classrooms in 2018, decreasing to 0 from 2019 through 2021. In 2022 the District would be projected to be over capacity by 1 classroom, then back to 0 from 2023 to 2025. From 2026 on there would be 2 excess classrooms if enrollment continues to decline.

When analyzing Option 4 the subcommittee assumed that Orchard would have 20 classrooms to serve K-2, and a new school would have 24 net classrooms to serve grades 3-5. The projections show that the District would need 24 classrooms to serve grades K-2 in 2018, meaning 4 additional classrooms would be needed at Orchard. In the same year, the new school would have 3 excess classrooms to serve grades 3-5. The need for 4 additional classrooms at Orchard would remain until 2024 when it would begin to decline. By 2031 there would be a need for 1 additional classroom at Orchard, and this need would remain through 2036. The new school would have excess capacity of 1-3 classrooms to serve grades 3-5 throughout the projections period.

The subcommittee assumed that the single school in Option 5 could accommodate 40 net classrooms to serve grades K-4, and 9 classrooms could be remodeled at the middle school to serve the 5th grade. Using these assumptions, there would be excess capacity of 2 classrooms in 2018, declining to 0 by 2022, then increasing to 5 excess classrooms by 2031 and stabilizing there through 2036.

Using the upper policy limits for the above analysis produces average class sizes by grade under any of the consolidation options that are quite close to the District's upper policy limits (e.g. kindergarten classes would reach an average maximum of 19.8 per class in 2019 under Option 3 before declining over time to just under 18 by 2028). There has been concern from parents as class sizes have reached the upper policy limits, so the committee also reviewed the analysis after changing the assumed upper limit on class size to the maximum of the District policy's "ideal range" for each grade. Changing the

assumptions to lower class sizes shows that Option 3 would save 1-4 classrooms from 2018 to 2024, before stabilizing at 1-2 from 2025-2036. Options 4 and 5 would save 5-7 classrooms through 2024, and from 2-5 thereafter. Average classroom sizes for the total District under Option 3 using this set of assumptions would vary from year to year between 16.3 and 17.3 through 2036.

Consolidation would be challenging if the district attempts to target the ideal maximum in its policy guidelines. Even under Options 1 and 2 there would be a shortage of 1-3 classrooms through 2023, changing to an excess of 2-4 classrooms from 2025-2036. Option 3 would result in a shortage of 8 classrooms through 2022, then declining and eventually stabilizing at a shortage of 2 classrooms from 2028-2036. Option 4 would result in a shortage of 7 classroom for K-2 through 2022, eventually declining to a shortage of 3 by 2036. Option 4 would also result in a shortage of 2 classrooms for grades 3-5, eventually declining to a shortage of 1 by 2031. Option 5 would result in a shortage of 4 classrooms, eventually declining to 0 by 2031 and may have excess capacity of 1 classroom in 2036.

In reality the district aims for ideal classroom sizes but uses the flexibility expand classes up to the hard limit when a class in a particular school is close to the cutoff for needing an extra teacher, as is the case at Orchard in the 2 and 4 grades this year. If planning continues this way, reality would likely reflect a case between the one generated assuming the hard limits and the one assuming the ideal maximum limits. Thus under Option 3 there could be a shortage of as many as 8 classrooms in 2018 or eventually excess capacity of up to 2 classrooms. All of this assumes that the demographics continue to follow projections. Any increase in the number of elementary students would further challenge capacity.

In summary, capacity could be a challenge for the district under any of the three consolidation scenarios. Especially in the short-term before enrollment has really declined, the district would have to be extremely creative with the use of space and would incur some costs to ensure that all elementary students could fit into Orchard and Central. The Board and the community need to discuss whether they are willing to accept the challenges of limited capacity in order to obtain operating and stewardship cost savings that can be achieved by closing one or more of the district's elementary schools. Some factors to consider in that discussion are 1) the high costs of rebuilding additional capacity if the district consolidates prematurely, 2) the costs of carrying additional unused classrooms if the district has too much capacity, 3) other uses for additional capacity if it is available (e.g. expansion of district-operated pre-school, possible 21st century learning spaces).

Stewardship Costs

Members of the community and the Board have continued to comment that with aging buildings, the district will surely reach a point where stewardship costs outweigh the costs of building a new school or schools. The White + Burke model took into account stewardship costs that were projected by the district. The financial subcommittee asked several questions of the business office regarding the stewardship projections. The business office team felt that the projections provided as inputs to the White + Burke model were sound and provide enough contingency to cover any possible unforeseen stewardship requirements. Projections for the elementary schools through 2026 match the district's detailed and continually updated stewardship plan and include all major projects like boilers and roof repairs plus any smaller identified projects. In later years the projections allocate approximately \$80,000-\$100,000 per year per school for stewardship plus \$200,000 for a replacement of Orchard's

boiler in 2027. The committee pressed the business manager on whether there were specific items or contingencies that might have been left out of the projections. The business manager believes that the district has done a very good job of maintaining its buildings over time and that the projections capture accurately the ongoing maintenance needs of the buildings.

The district also projects overall, unallocated stewardship costs for items like technology upgrades and upgrades to gym space and playing fields used by all the schools among others. The business office guided the committee to allocate these expenses evenly across the schools when trying to separate out the elementary schools. Thus the committee allocated 60% of overall, unallocated stewardship costs to the elementary schools.

The committee compared total stewardship expenses from 2017-2036 allocated to the elementary schools with the costs for reconfiguring schools (making changes to remaining elementary school(s) and the middle school to accommodate additional students) and building new schools. The results of the committee’s analysis are provided below. As noted, there are some projected stewardship savings for Option 2 versus Option 1 as a result of proposed upgrades to the elementary schools that would allow the district to avoid some stewardship costs. The committee felt that including proposed upgrades in this analysis would make the analysis less clear and so the determination was made to leave them out. This analysis shows that the scale of the projected stewardship costs, even for aging buildings, is much smaller than the costs involved in building a new school. Closing Chamberlin school would result in only a negligible cost savings of \$270K over 20 years.

2017-2036	Option 1	Option 2	Option 3	Option 4	Option 5
Projected Stewardship (Elementary Schools) ¹	\$ 10,856,250	\$ 10,365,543	\$ 8,045,607	\$ 6,682,587	\$ 5,116,268
Stewardship Savings v. Option 1 (Elementary Schools) ²	\$ -	\$ 490,706	\$ 2,810,642	\$ 4,173,663	\$ 5,739,982
Capital Costs for Reconfiguration	\$ -	\$ -	\$ (2,540,427)	\$ (2,650,221)	\$ (1,902,405)
Capital Costs for New Schools	\$ -	\$ -	\$ -	\$ (27,955,900)	\$ (37,087,700)
Net Savings/(Additional Spending)	\$ -	\$ 490,706	\$ 270,215	\$ (26,432,458)	\$ (33,250,123)

¹Stewardship for elementary schools comprises direct projections for each building plus 60% of unallocated overall district improvements.

²Stewardship savings for Option 2 are generated as a result of upgrades to the elementary schools. Upgrades are excluded from this analysis for clarity.

Operating Cost Savings

The district should also be able to achieve some operating cost savings by closing one or more elementary schools and consolidating into 1-2 buildings. The district business office provided operating cost savings assumptions that were included in White + Burke’s model. The committee spent time reviewing the detail that underlies the assumptions that were included in the model. Projected savings focused on two major elements: headcount and utilities.

In Option 3 some headcount savings can be achieved at the remaining elementary schools by reducing the total number of classrooms (the district estimated 9) and some administrative costs. However, some additional costs would have to be added at the middle school to accommodate the 5th graders (8 core teaching FTEs plus 7.6 FTEs of administrative, coaching, special education and other support roles).

Overall headcount was expected to be reduced by 2.7 FTEs. Utilities would also be lower because there would be one less building. In total the business offices projects an annual cost savings of approximately \$382,000 for Option 3 versus Options 1 and 2.

Option 4 cost savings are projected to be \$769,000 per year, and Option 5 cost savings are projected to be \$481,000 per year. To be clear, Option 5 cost savings are lower than those for Option 4 because the 5th graders stay in the elementary schools under Option 4 but move to the middle school under Option 5. Thus Option 5 creates some of the same redundant costs at the middle school that are created by Option 3. The subcommittee factored these costs into the comparison of the costs of reconfiguration to the projected savings (see below). The analysis shows that Option 3 provides potential cost savings of \$8.9 million over the next 20 years. The costs of building a new school and reconfiguring the schools in Options 4 and 5 still significantly outweigh the projected savings in stewardship and operating costs.

2017-2036	Option 1	Option 2	Option 3	Option 4	Option 5
Projected Stewardship (Elementary Schools) ¹	\$ 10,856,250	\$ 10,365,543	\$ 8,045,607	\$ 6,682,587	\$ 5,116,268
Stewardship Savings v. Option 1 (Elementary Schools) ²	\$ -	\$ 490,706	\$ 2,810,642	\$ 4,173,663	\$ 5,739,982
Capital Costs for Reconfiguration	\$ -	\$ -	\$ (2,540,427)	\$ (2,650,221)	\$ (1,902,405)
Capital Costs for New School	\$ -	\$ -	\$ -	\$ (27,955,900)	\$ (37,087,700)
Operating Costs Savings v. Option 1 ³	\$ -	\$ -	\$ 8,636,251	\$ 17,388,221	\$ 10,884,936
Net Savings/(Additional Spending)	\$ -	\$ 490,706	\$ 8,906,467	\$ (9,044,238)	\$ (22,365,187)

¹Stewardship for elementary schools comprises direct projections for each building plus 60% of unallocated overall district improvements.

²Stewardship savings for Option 2 are generated as a result of upgrades to the elementary schools. Upgrades are excluded from this analysis for clarity.

³Operating cost savings are generated at elementary schools in Options 3-5, offset by additional operating costs at middle school to accommodate 5th grade in options 3 and 5.

Upgrades

The upgrade assumptions that were included in White + Burke’s model were developed by Frank Locker with the assistance of Dore & Whittier architects as part of the Task Force process. The upgrades included in the model focus only “minor program changes” at the elementary schools. They do not include major upgrades to reconfigure school spaces for 21st century learning. Despite repeated requests, no one has been able to produce a detailed list of the proposed upgrades. Instead it appears that the type of upgrades needed at each building were used to develop a high level assumption of the cost per square foot of upgrading each building. The analysis provided below factors in the proposed upgrade costs for the elementary schools and the ones at the middle school related specifically to reconfiguration. Even with upgrades, Option 3 would generate \$2.5 million of cost savings over the next 20 years. Options 4 and 5 would still be significantly more expensive than Options 2 or 3.

2017-2036	Option 1	Option 2	Option 3	Option 4	Option 5
Projected Stewardship (Elementary Schools) ¹	\$ 10,856,250	\$ 10,365,543	\$ 8,045,607	\$ 6,682,587	\$ 5,116,268
Stewardship Savings v. Option 1 (Elementary Schools) ²	\$ -	\$ 490,706	\$ 2,810,642	\$ 4,173,663	\$ 5,739,982
Capital Costs for Reconfiguration	\$ -	\$ -	\$ (2,540,427)	\$ (2,650,221)	\$ (1,902,405)
Capital Costs for New School	\$ -	\$ -	\$ -	\$ (27,955,900)	\$ (37,087,700)
Operating Costs Savings v. Option 1 ³	\$ -	\$ -	\$ 8,636,251	\$ 17,388,221	\$ 10,884,936
Upgrades (Elementary Schools)	\$ -	\$ (5,242,169)	\$ (6,319,650)	\$ (4,946,900)	\$ -
Net Savings/(Additional Spending)	\$ -	\$ (4,751,463)	\$ 2,586,817	\$ (13,991,138)	\$ (22,365,187)

¹Stewardship for elementary schools comprises direct projections for each building plus 60% of unallocated overall district improvements.

²Stewardship savings for Option 2 are generated as a result of upgrades to the elementary schools.

³Operating cost savings are generated at elementary schools in Options 3-5, offset by additional operating costs at middle school to accommodate 5th grade in options 3 and 5.