

Arlington High School
MSBA Project Benchmarks - DRAFT

| | | MSBA Project Benchmarks | | | | |
|-------------------------------------|---|---|---|---|---|-------------------------------------|
| | | Arlington HS | Waltham HS (Vocational Included)** | Belmont HS (Upper Middle Included) | Saugus HS-MS (Upper Middle Included) | Somerville HS (Vocational Included) |
| Base Info | Phase | Module 4, Schematic Design | Module 4, Schematic Design | Module 5, Detailed Design | Module 6, Construction | Module 7, Construction |
| | Project Type | New Construction (Phased/Occupied) | New Construction (Unoccupied) | Addition/Renovation (Occupied) | New Construction (Unoccupied) | Addition/Renovation (Occupied) |
| | Date Approved by District | Targeting: Spring, 2019 | TBD | Fall, 2018 | Summer, 2017 | Fall, 2016 |
| | Design Enrollment | 1,755 | 1,830 | 2,215 | 1,360 | 1,590 |
| PSR Stage Raw Data | Total Construction Cost | \$238,072,994 | Unknown | \$237,594,715 | \$127,885,357 | \$199,191,461 |
| | Total Project Budget | \$308,278,341 | \$381,292,924 | \$295,824,264 | \$160,860,953 | \$255,997,997 |
| | Total Gross Sq. Ft. | 415,292 | 429,638 (64,870 vocational) | 445,100 | 271,320 | 373,373 (64,950 vocational) |
| | Total Gross Sq. Ft. of Non-Educational Program Space | 53,575 | Unknown | 12,532 | 0 | 2,400 |
| | Construction Cost Per Sq. Ft. | \$573 | Unknown | \$534 | \$471 | \$533 |
| | Project Cost Per Pupil | \$175,657 | \$208,357 | \$133,555 | \$118,280 | \$161,005 |
| SD Stage Raw Data | Total Construction Cost | \$235,286,827 | Unknown | \$236,647,607 | \$127,685,356 | \$199,051,710 |
| | Total Project Budget | \$290,851,820 | Unknown | \$295,159,189 | \$160,720,553 | \$255,982,704 |
| | Total Gross Sq. Ft. | 408,590 | Unknown | 445,100 | 269,070 | 369,496 |
| | Total Gross Sq. Ft. of Non-Educational Program Space | 29,365 | Unknown | 12,532 | 0 | 3,057 |
| | Construction Cost Per Sq. Ft. | \$576 | Unknown | \$532 | \$475 | \$539 |
| | Project Cost Per Pupil | \$165,728 | Unknown | \$133,255 | \$118,177 | \$160,995 |
| SD Adjusted for Escalation* | Total Project Budget Escalated to AHS Schedule | \$290,851,820 | \$381,292,924*** | \$311,005,040 | \$179,610,841 | \$287,945,728 |
| | Construction Cost Per Sq. Ft. | \$576 | Unknown | \$560 | \$531 | \$606 |
| | Project Cost Per Pupil | \$165,728 | \$208,356 | \$140,409 | \$132,067 | \$181,098 |
| Module 3 - PSR MSBA Citation | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2018_Board/8_29_18/Arlington%20HS%20PS%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2018_Board/8_29_18/Waltham%20FSA%20Extension%200a%20Time%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2018_Board/6_27_18/Belmont%20PS%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2017_Board/2_15_17/Saugus%20PSR%20BaD%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2016_Board/7_20_16/Somerville_PS_Memo_Final.pdf | |
| Module 4 - SD MSBA Citation | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2019_Board/4_10_19/Arlington_HS_PS%26B%20Board%20Memo_Final.pdf | N/A | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2018_Board/8_29_18/Belmont%20PSB%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2017_Board/6_28_17/Saugus%20High%20School%20PS%26B%20Board%20Memo_Final.pdf | http://www.massschoolbuildings.org/sites/default/files/edit-contentfiles/About_Us/Board_Meetings/2017_Board/2_15_17/Somerville%20PS%26B%20Board%20Memo_Final.pdf | |

*The Total Project Costs have been escalated to the AHS midpoint of construction. We are using the industry standard of 4% annual escalation.

**Waltham Process Notes: Waltham began the feasibility study process in 2016 and produced estimates for two sites that ranged from \$283 million to \$300 million. Neither of these town-owned sites were feasible, and in June 2018 the town council voted to use eminent domain to buy property for a new school. The shown Waltham Total Project Cost have been approved by the Waltham SBC in preparation for the 12/14/18 PSR Submission (Citation from 12/3/18 Meeting Minutes: <https://drive.google.com/file/d/18i8GaBMYgmAD0wOvz00HrYLoZQEORq/view>)

***Waltham's budget has not been escalated as the construction midpoint is projected to be 4 months ahead of AHS.

Comparison of MSBA Schematic Design (SD) Space Summary / Total Project Budget Forms

| Proposed Space Summary (Based on SD) | Arlington HS Square Feet (SF) | Belmont HS-MS Square Feet (SF) | Saugus HS-MS Square Feet (SF) | Somerville HS Square Feet (SF) |
|--|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| Core Academic Spaces | 88,660 | 111,280 | 77,410 | 67,064 |
| Special Education | 32,690 | 24,310 | 14,490 | 18,842 |
| Art & Music | 15,200 | 16,150 | 13,250 | 9,731 |
| Auditorium/Drama | 12,440 | 14,200 | 10,400 | 10,895 |
| Vocations & Technology | 19,200 | 19,400 | 9,100 | 59,516 |
| Health & Physical Education | 36,830 | 54,642 | 24,830 | 39,377 |
| Library Learning Commons | 12,550 | -- | -- | -- |
| Media Center | -- | 13,744 | 8,400 | 8,569 |
| Dinning & Food Service | 13,710 | 16,698 | 11,140 | 12,148 |
| Medical | 1,510 | 2,140 | 1,210 | 1,310 |
| Administration & Guidance | 6,375 | 8,200 | 6,005 | 11,395 |
| Custodial & Maintenance | 2,960 | 3,437 | 2,645 | 2,818 |
| Other | 29,365 | 12,532 | 0 | 3,507 |
| Total Grossing Factor | 1.50 | | 1.50 | 1.51 |
| Total Building Gross Floor Area (GFA) | 408,590 | 445,100 | 269,070 | 369,496 |

| Total Project Budget (Based on SD) | Arlington HS | Belmont HS-MS | Saugus HS-MS | Somerville HS |
|---|----------------------|----------------------|----------------------|----------------------|
| Feasibility Study Agreement Subtotal | \$2,000,000 | \$1,750,000 | \$1,850,000 | \$1,940,000 |
| Administration Subtotal | \$7,584,600 | \$8,767,000 | \$4,895,026 | \$9,716,956 |
| Architectural/Engineering Subtotal | \$21,078,647 | \$20,800,000 | \$12,189,816 | \$18,705,171 |
| Existing Building Demolition | \$3,136,000 | \$1,836,375 | \$1,313,375 | \$5,476,093 |
| In-Bldg. Hazardous Material Abatement | \$3,498,100 | \$6,580,000 | \$3,486,650 | \$2,069,440 |
| Asbestos Cont'g Floor Mat'l Abatement | \$780,000 | \$520,000 | \$360,000 | \$1,000,000 |
| Building Sitework | \$18,625,642 | \$14,350,958 | \$13,337,293 | \$21,944,804 |
| Construction Budget | \$235,286,827 | \$236,647,607 | \$127,685,356 | \$199,051,710 |
| Misc. Project Costs Subtotal | \$4,098,198 | \$2,740,000 | \$375,000 | \$3,440,000 |
| Furnishings & Equipment | \$8,073,000 | \$7,088,000 | \$4,896,000 | \$5,096,000 |
| Swing Space / Modular / Phasing | \$2,207,198 | \$1,000,000 | \$0 | \$2,540,000 |
| Design Enrollment | 1,755 | 2,215 | 1,360 | 1,590 |
| Total Building Gross Square Feet (GSF) | 408,590 | 445,100 | 269,070 | 369,496 |
| MSBA Reimbursement Rate | 49.72% | \$40.66% | 57.72% | 73.87% |
| Total Project Budget (excluding contingencies) | \$281,006,272 | \$278,959,189 | \$152,091,198 | \$241,546,035 |
| Scope Items Excluded or Otherwise Ineligible | \$113,056,080 | \$92,629,827 | \$39,308,724 | \$82,551,497 |
| Construction Contingency | \$7,075,741 | \$14,200,000 | \$7,661,121 | \$12,764,470 |
| Owner's Contingency | \$2,769,807 | \$2,000,000 | \$968,234 | \$1,672,199 |
| Total Project Budget | \$290,851,820 | \$295,159,189 | \$160,720,553 | \$255,982,704 |
| Construction Cost Per Square Foot | \$576 | \$532 | \$475 | \$539 |
| Total Project Cost Escalated to AHS Schedule | \$290,851,820 | \$311,005,040 | \$179,610,841 | \$287,945,728 |
| Const. Cost Per Sq. Ft. Escalated to AHS Schedule | \$576 | \$560 | \$531 | \$606 |
| Project Cost Per Pupil Escalated to AHS Schedule | \$165,728 | \$140,409 | \$132,067 | \$181,098 |

| Other / Non-Program Spaces Breakout | Square Feet (SF) |
|--|---------------------|
| Arlington HS | 35,245 |
| Payroll | 950 |
| Community Education | 1,810 |
| School District Offices | 9,455 |
| LABBB (Unique to AHS, counted in Special Education portion of Space Summary) | 6,280 |
| Menotomy Preschool | 16,750 |
| Belmont HS-MS | 12,532 |
| Technology Workroom | 900 |
| Technology Offices | 150 |
| Technology Director Office | 400 |
| Technology Conference Room | 200 |
| Equity Academic Center | 850 |
| Metco Office | 150 |
| BEA Office | 150 |
| Food Service Director | 150 |
| Nurse's Office/ Waiting | 150 |
| Pool Pump Room | 7,447 |
| Locker Room / Pool | 1,620 |
| School Store | 125 |
| Resource Officer | 120 |
| Storage for Emergency Center | 120 |
| Saugus HS-MS | 0 |
| N/A | |
| Somerville HS | 3,507 |
| School Storage | 346 |
| SPS District Technology Office | 1,077 |
| Somerville City Cable | 1,082 |
| Health Suite | 1,002 |

PLEASE NOTE: This information has been taken directly from each project's Schematic Design Submission. These figures have not been escalated to the AHS schedule. Waltham has not been included as they have not yet submitted a Schematic Design Report.

Arlington High School
MSBA Project Benchmarks - DRAFT

Comparison of MSBA Preferred Schematic Report (PSR) Space Summary / Total Project Budget Forms

| Proposed Space Summary (Based on PSR Submission) | Arlington HS | Belmont HS-MS | Saugus HS-MS | Somerville HS |
|---|------------------|------------------|------------------|------------------|
| | Square Feet (SF) | Square Feet (SF) | Square Feet (SF) | Square Feet (SF) |
| Core Academic Spaces | 87,680 | 111,280 | 76,390 | 69,155 |
| Special Education | 31,560 | 24,310 | 13,680 | 19,959 |
| Art & Music | 15,200 | 16,150 | 13,250 | 11,120 |
| Auditorium/Drama | 12,440 | 14,200 | 10,400 | 10,800 |
| Vocations & Technology | 19,200 | 19,400 | 9,100 | 64,950 |
| Health & Physical Education | 37,028 | 54,642 | 28,150 | 39,829 |
| Library Learning Commons | 12,550 | -- | -- | -- |
| Media Center | -- | 13,744 | 8,400 | 7,500 |
| Dinning & Food Service | 13,708 | 16,698 | 11,540 | 12,035 |
| Medical | 1,510 | 2,140 | 1,320 | 1,310 |
| Administration & Guidance | 6,158 | 8,200 | 6,005 | 11,035 |
| Custodial & Maintenance | 2,942 | 4,347 | 2,645 | 2,818 |
| Other / Non-Programmed Spaces | 53,537 | 12,532 | 0 | 2,400 |
| Total Grossing Factor | 1.50 | 1.50 | 1.50 | 1.59 |
| Total Building Gross Floor Area (GFA) | 415,292 | 445,100 | 271,320 | 402,128 |

| Total Project Budget (Based on PSR Submission) | Arlington HS | Belmont HS-MS | Saugus HS-MS | Somerville HS |
|---|----------------------|----------------------|----------------------|----------------------|
| Feasibility Study Agreement Subtotal | \$2,000,000 | \$1,750,000 | \$1,850,000 | \$1,975,000 |
| Administration Subtotal | \$8,132,555 | \$8,767,000 | \$4,895,026 | \$10,415,356 |
| Architectural/Engineering Subtotal | \$21,166,934 | \$20,800,000 | \$11,739,816 | \$21,482,008 |
| Existing Building Demolition | \$3,136,000 | \$1,836,375 | \$1,313,375 | \$7,406,640 |
| In-Bldg. Hazardous Material Abatement | \$3,318,100 | \$6,580,000 | \$3,486,650 | \$0 |
| Asbestos Cont'g Floor Mat'l Abatement | \$780,000 | \$520,000 | \$360,000 | \$0 |
| Building Sitework | \$8,111,665 | Unknown | \$9,135,484 | \$8,661,233 |
| Construction Budget | \$238,072,994 | \$236,647,607 | \$127,685,356 | \$197,820,084 |
| Misc. Project Costs Subtotal | \$800,000 | \$2,740,000 | \$375,000 | \$3,255,200 |
| Furnishings & Equipment | \$11,056,500 | \$7,088,000 | \$3,263,200 | \$5,096,000 |
| Swing Space / Modular / Phasing | \$0* | \$1,000,000 | \$0 | \$2,355,200 |
| Design Enrollment | 1,755 | 2,215 | 1,360 | 1,590 |
| Total Building Gross Square Feet (GSF) | 415,200 | 445,100 | 294,586 | 369,496 |
| MSBA Reimbursement Rate | 49.72% | 40.66% | 57.72% | 77.44% |
| Total Project Budget (excluding contingencies) | \$282,824,166 | \$278,959,189 | \$152,091,198 | \$240,793,649 |
| Scope Items Excluded or Otherwise Ineligible | \$98,038,794 | \$92,629,827 | \$39,128,388 | \$83,218,254 |
| Construction Contingency | \$16,969,450 | \$14,200,000 | \$7,661,121 | \$11,869,205 |
| Owner's Contingency | \$8,484,725 | \$2,000,000 | \$968,234 | \$1,688,943 |
| Total Project Budget | \$308,278,341 | \$295,159,189 | \$160,720,553 | \$254,351,796 |
| Construction Cost Per Square Foot | \$573 | \$534 | \$471 | \$533 |
| Total Project Cost Escalated to AHS Schedule | \$308,278,341 | \$315,720,381 | \$179,645,865 | \$269,050,488 |
| Const. Cost Per Sq. Ft. Escalated to AHS Schedule | \$573 | \$564 | \$527 | \$532 |
| Project Cost Per Pupil Escalated to AHS Schedule | \$175,657 | \$142,537 | \$132,093 | \$169,214 |

| Other / Non-Program Spaces Breakout | Square Feet (SF) |
|--|------------------|
| Arlington HS* | 53,537 |
| Comptroller | 1,350 |
| Facilities Department | 5,475 |
| Payroll | 2,325 |
| IT Network and Offices | 4,725 |
| Community Education | 2,700 |
| School District Offices | 13,380 |
| LABBB (Unique to AHS, counted in Special Education portion of Space Summary) | 6,810 |
| Menotomy Preschool | 16,810 |
| Belmont HS-MS | 12,532 |
| Technology Workroom | 900 |
| Technology Offices | 150 |
| Technology Director Office | 400 |
| Technology Conference Room | 200 |
| Equity Academic Center | 850 |
| Metco Office | 150 |
| BEA Office | 150 |
| Food Service Director | 150 |
| Nurse's Office/ Waiting | 150 |
| Pool Pump Room | 7,447 |
| Locker Room / Pool | 1,620 |
| School Store | 125 |
| Resource Officer | 120 |
| Storage for Emergency Center | 120 |
| Saugus HS-MS | 0 |
| N/A | |
| Somerville HS | 2,400 |
| School Storage | 300 |
| Somerville City Cable | 1,000 |
| Health Suite | 1,100 |

* PLEASE NOTE: Since the PSR Submission, The Arlington School Building Committee has decided, with direction from the Superintendent's office, and the Town Manager's office, to exclude the Comptroller, Facilities Department and IT Department from the AHS Building Project. This will lower the project's "Other/Non-Program Space" to 24,025 GFA.

PLEASE NOTE: This information has been taken directly from each project's PSR Submission. These figures have not been escalated to the AHS schedule. Waltham has not been included as their PSR, submitted on 12/14/18 is under review by the MSBA and has not yet been made public.

* The Arlington High School Phasing/Swing Space cost has been included in the overall cost per square foot as well as the Construction Contingency. The current plan does not require modular program spaces..

| | Construction Schedule | | | Compared to AHS | | Total Construction Cost | Compound Escalation Construction Cost (see table below for calculation) | Actual Soft Cost Percentage | Total Escalated Cost with Soft Cost Factor | Enrollment | Total Escalated Cost Per Pupil |
|------------------------------|-----------------------|------------|------------|-----------------|-------|-------------------------|---|-----------------------------|--|------------|--------------------------------|
| | Start | End | Midpoint | Months | Years | | | | | | |
| Arlington HS SD | 7/1/2020 | 4/1/2025 | 11/15/2022 | | | \$235,286,827 | \$235,286,827 | 0.2361585377 | \$290,851,820 | 1,755 | \$165,728 |
| Waltham HS** PSR | 1/1/2021 | 1/1/2024 | 7/2/2022 | 4 | 0.3 | Unknown | Unknown | 0.2570000000 | \$381,292,924 | 1,830 | \$208,357 |
| Belmont HS-MS PSR | 12/3/2019 | 11/12/2023 | 5/16/2021 | 17 | 1.4 | \$237,594,715 | \$251,169,754 | 0.2570000000 | \$315,720,381 | 2,215 | \$142,537 |
| Belmont HS-MS SD | 4/15/2019 | 9/1/2023 | 6/23/2021 | 16 | 1.3 | \$236,647,607 | \$249,352,218 | 0.2472519488 | \$311,005,040 | 2,215 | \$140,409 |
| Saugus HS-MS PSR | 5/22/2018 | 8/2/2021 | 12/27/2019 | 34 | 2.8 | \$127,885,357 | \$142,916,361 | 0.2570000000 | \$179,645,865 | 1,360 | \$132,093 |
| Saugus HS-MS SD | 5/22/2018 | 8/2/2021 | 12/27/2019 | 34 | 2.8 | \$127,685,356 | \$142,692,852 | 0.2587234593 | \$179,610,841 | 1,360 | \$132,067 |
| Somerville HS PSR | 3/15/2018 | 11/3/2023 | 1/7/2021 | 22 | 1.8 | \$199,191,461 | \$214,041,756 | 0.2570000000 | \$269,050,488 | 1,590 | \$169,214 |
| Somerville HS SD | 4/1/2018 | 6/1/2021 | 10/31/2019 | 36 | 3.0 | \$199,051,710 | \$223,906,103 | 0.2860110772 | \$287,945,728 | 1,590 | \$181,098 |
| Minuteman Reg. Voc. Tech. HS | 6/19/2017 | 9/25/2019 | 8/7/2018 | 51 | 4.3 | \$119,200,892 | \$140,822,224 | 0.2570000000 | \$177,013,535 | 628 | \$281,869 |
| Newton North HS* | 7/1/2007 | 8/1/2010 | 1/14/2009 | 166 | 13.8 | \$166,000,000 | \$285,585,365 | 0.2570000000 | \$358,980,804 | 1,850 | \$194,044 |
| Wellesley HS | 9/29/2009 | 2/28/2012 | 12/14/2010 | 143 | 11.9 | 83,279,182 | \$132,897,581 | 0.2570000000 | \$167,052,260 | 1,480 | \$112,873 |
| Concord-Carlisle HS | 7/1/2014 | 7/1/2016 | 7/1/2015 | 88 | 7.3 | 76,371,496 | \$101,822,194 | 0.2570000000 | \$127,990,498 | 1,245 | \$102,804 |
| Natick HS | 9/1/2010 | 9/1/2012 | 9/1/2011 | 134 | 11.2 | \$73,510,500 | \$113,908,203 | 0.2570000000 | \$143,182,611 | 1,281 | \$111,774 |
| Thompson ES | 3/11/2010 | 9/1/2013 | 12/6/2011 | 131 | 10.9 | \$15,130,244 | \$23,445,071 | 0.2570000000 | \$29,470,454 | 380 | \$77,554 |
| Gibbs MS | 7/1/2017 | 8/1/2018 | 1/15/2018 | 58 | 4.8 | \$19,000,000 | \$22,965,791 | 0.2570000000 | \$28,867,999 | 500 | \$57,736 |

| Compound Escalation Construction Cost | | | | | | | | | | | | | | |
|---------------------------------------|-------------------|------------------|------------------|-----------------|-------------------|------------------|------------------------------|--|---------------|---------------|---------------------|---------------|--------------|--------------|
| Project | Belmont HS-MS PSR | Belmont HS-MS SD | Saugus HS-MS PSR | Saugus HS-MS SD | Somerville HS PSR | Somerville HS SD | Minuteman Reg. Voc. Tech. HS | | Newton-North | Wellesley HS | Concord-Carlisle HS | Natick HS | Thompson ES | Gibbs MS |
| Construction Cost | \$237,594,715 | \$236,647,607 | \$127,885,357 | \$127,685,356 | 199191461.0 | \$199,051,710 | \$119,200,892 | | \$166,000,000 | \$83,279,182 | \$76,371,496 | \$73,510,500 | \$15,130,244 | \$19,000,000 |
| Escalation Rate | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% | 4.00% |
| term (years) | 1.4 | 1.3 | 2.8 | 2.8 | 1.8 | 3.0 | 4.3 | | 13.8 | 11.9 | 7.3 | 11.2 | 11.2 | 4.8 |
| Compounding periods per year | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| Future Value | \$251,169,754 | \$249,352,218 | \$142,916,361 | \$142,692,852 | \$214,041,756 | \$223,906,103 | \$140,822,224 | | \$285,585,365 | \$132,897,581 | \$101,822,194 | \$113,908,203 | \$23,445,071 | \$22,965,791 |

PLEASE NOTE: The Total Project Costs have been escalated to the AHS midpoint of construction. We are using the industry standard of 4% annual escalation. Actual Soft Cost Percentages are used for Arlington HS SD, Belmont HS-MS SD, Saugus HS-MS SD and Somerville HS SD. The average of these cost costs were then taken and applied to all other projects.

*Newton North construction schedule and construction cost is assumed from the following citations: (http://archive.boston.com/news/education/k_12/articles/2010/08/31/197m_later_newton_north_to_open/) (<https://doreandwhittier.com/newton-north-high-school.html>)

**Waltham construction timeline is assumed as a 36 month construction project starting on 1/1/2021 (the midpoint being 4 months ahead of the Arlington High School Project midpoint). We have not escalated the Waltham budget as the construction midpoint is only 4 months ahead of Arlington's.