

Massachusetts School Building Authority

School District Tyngsborough

District Contact Michael R Flanagan TEL: (978) 649-7488

Name of School Tyngsborough Middle

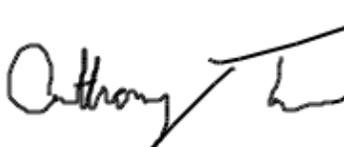
Submission Date 4/4/2018

SOI CERTIFICATION

To be eligible to submit a Statement of Interest (SOI), a district must certify the following:

- The district hereby acknowledges and agrees that this SOI is NOT an application for funding and that submission of this SOI in no way commits the MSBA to accept an application, approve an application, provide a grant or any other type of funding, or places any other obligation on the MSBA.
- The district hereby acknowledges that no district shall have any entitlement to funds from the MSBA, pursuant to M.G.L. c. 70B or the provisions of 963 CMR 2.00.
- The district hereby acknowledges that the provisions of 963 CMR 2.00 shall apply to the district and all projects for which the district is seeking and/or receiving funds for any portion of a municipally-owned or regionally-owned school facility from the MSBA pursuant to M.G.L. c. 70B.
- The district hereby acknowledges that this SOI is for one existing municipally-owned or regionally-owned public school facility in the district that is currently used or will be used to educate public PreK-12 students and that the facility for which the SOI is being submitted does not serve a solely early childhood or Pre-K student population.
- After the district completes and submits this SOI electronically, the district must mail hard copies of the required documentation described under the "Vote" tab, on or before the deadline.
- The district will schedule and hold a meeting at which the School Committee will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is required for cities, towns, and regional school districts.
- Prior to the submission of the SOI, the district will schedule and hold a meeting at which the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body will vote, using the specific language contained in the "Vote" tab, to authorize the submission of this SOI. This is not required for regional school districts.
- On or before the SOI deadline, the district will submit the minutes of the meeting at which the School Committee votes to authorize the Superintendent to submit this SOI. The District will use the MSBA's vote template and the vote will specifically reference the school and the priorities for which the SOI is being submitted. The minutes will be signed by the School Committee Chair. This is required for cities, towns, and regional school districts.
- The district has arranged with the City/Town Clerk to certify the vote of the City Council/Board of Aldermen or Board of Selectmen/equivalent governing body to authorize the Superintendent to submit this SOI. The district will use the MSBA's vote template and submit the full text of this vote, which will specifically reference the school and the priorities for which the SOI is being submitted, to the MSBA on or before the SOI deadline. This is not required for regional school districts.
- The district hereby acknowledges that this SOI submission will not be complete until the MSBA has received all of the required vote documentation in a format acceptable to the MSBA. If Priority 1 is selected, your SOI will not be considered complete unless and until you provide the required engineering (or other) report, a professional opinion regarding the problem, and photographs of the problematic area or system. If Priority 3 is selected, your SOI will not be considered complete unless and until you provide a summary of the accreditation report focused on the deficiency as stated in this SOI.

**LOCAL CHIEF EXECUTIVE OFFICER/DISTRICT SUPERINTENDENT/SCHOOL COMMITTEE CHAIR
(E.g., Mayor, Town Manager, Board of Selectmen)**

Chief Executive Officer *	School Committee Chair	Superintendent of Schools
Robert Jackson Chair, Board of Selectmen	Anthony Tinnirella	Michael Flanagan
(signature)		
Date	Date	Date
3/27/2018 4:03:47 PM	4/2/2018 7:54:32 PM	3/27/2018 9:20:08 AM

* Local chief executive officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice.

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Name of School Tyngsborough Middle

Submission Date 4/4/2018

Note

Thank you for your consideration.

The following Priorities have been included in the Statement of Interest:

1. Replacement or renovation of a building which is structurally unsound or otherwise in a condition seriously jeopardizing the health and safety of school children, where no alternative exists.
2. Elimination of existing severe overcrowding.
3. Prevention of the loss of accreditation.
4. Prevention of severe overcrowding expected to result from increased enrollments.
5. Replacement, renovation or modernization of school facility systems, such as roofs, windows, boilers, heating and ventilation systems, to increase energy conservation and decrease energy related costs in a school facility.
6. Short term enrollment growth.
7. Replacement of or addition to obsolete buildings in order to provide for a full range of programs consistent with state and approved local requirements.
8. Transition from court-ordered and approved racial balance school districts to walk-to, so-called, or other school districts.

SOI Vote Requirement

I acknowledge that I have reviewed the MSBA's vote requirements for submitting an SOI which are set forth in the Vote Tab of this SOI. I understand that the MSBA requires votes from specific parties/governing bodies, in a specific format using the language provided by the MSBA. Further, I understand that the MSBA requires certified and signed vote documentation to be submitted with the SOI. I acknowledge that my SOI will not be considered complete and, therefore, will not be reviewed by the MSBA unless the required accompanying vote documentation is submitted to the satisfaction of the MSBA.

Potential Project Scope: Potential New School

Is this SOI the District Priority SOI? YES

School name of the District Priority SOI: 2018 Tyngsborough Middle

Is this part of a larger facilities plan? YES

If "YES", please provide the following:

Facilities Plan Date: 6/15/2016

Planning Firm: Lavallee Brensinger Architects

Please provide a brief summary of the plan including its goals and how the school facility that is the subject of this SOI fits into that plan:

The purpose of the Comprehensive Facilities Assessment was to examine the physical infrastructure of the buildings in the school district and to determine what actions may be necessary to allow the ongoing long-term use of all the school buildings in the District, including the Middle School Facility. The goal was to understand the existing conditions of the subject facilities, identify deficiencies, and recommend improvements as part of a long-term capital spending plan. The study included an evaluation of existing conditions including architectural features, code compliance, the building envelope, structural systems, security, food service equipment, and mechanical, plumbing, fire protection, electrical, communications, and data systems. Based on the evaluation, deficiencies were identified and recommendations and costs were developed to address those deficiencies. Budgets were established for each facility and prioritized into a ten-year capital spending plan. Recommended actions for Tyngsborough Middle School included substantial renovation work to the exterior envelope including replacement of all windows and the roof, replacement of all interior finishes, substantial renovation of all toilet rooms, installation of an automatic sprinkler system, replacement of the water distribution system and all plumbing fixtures, replacement of all electrical and communications systems, renovation of the kitchen and replacement of all food service equipment, replacement of mechanical equipment (except for the boilers), and renovations to improve security and access control at the main office.

Please provide the current student to teacher ratios at the school facility that is the subject of this SOI: 21 students per teacher

Please provide the originally planned student to teacher ratios at the school facility that is the subject of this SOI: 23 students per teacher

Does the District have a Master Educational Plan that includes facility goals for this building and all school buildings in District? YES

If "YES", please provide the author and date of the District's Master Educational Plan.

The District's Comprehensive Facilities Assessment (developed in collaboration with Lavallee Brensinger Architects) lists the capital improvement needs for each school by priority, including Tyngsborough Middle School. Additionally, this year the District developed and began the implementation of its Strategy for District Improvement. This comprehensive plan includes three overarching objectives which include a focus on meeting the needs of all students and rigorous and consistent programming.

Is there overcrowding at the school facility? YES

If "YES", please describe in detail, including specific examples of the overcrowding.

As the district continues to progressively implement the co-teaching methodologies, we continue to find the classroom size and limited amount of small group learning environments to restrict abilities to do this at a high level. Co-taught settings include several adults in classrooms settings which creates a more congestive learning environment. This is compounded by the space needed for appropriate Middle School student furnishings and movable technology.

Rooms are too small for varied instructional practices, cooperative groups, and other best instructional practices in today's educational world. When teachers break students into cooperative working groups for small group instruction and project-based learning, students have to work in alternative locations outside the classrooms. This often results in students working on the floors in the corridors.

Classrooms in general were designed for rows of tablet arm desks and are undersized according to today's standards of Middle School design. The rooms cannot accommodate flexible and adaptable arrangements of chairs and tables to meet today's teaching methods. Furthermore, a more inclusionary model of instruction which brings Special Education back into the classrooms, is severely limited by lack of space prohibiting the presence of additional teaching staff in the rooms.

The current best practice in integrating technology into the middle school classroom also results in space concerns.

Today's students benefit from a necessary set of technological tools which include chromebooks, iPads, laptops, and necessary charging carts as well as personal learning devices. The limited sizes of the classrooms cannot support this level of technology.

There is a lack of confidential and private space for group meetings, English Language Learners (ELL) instruction, Special Education (SPED), Counseling, and the school psychiatrist. ELL is currently taught in an open space in the corner of the library which offers no privacy or confidentiality. Furthermore, ELL has been sent over to the high school due to space limitations at the Middle School. SPED programs are taught in converted closet and storage space.

Today's middle school students require 21st Century skills including Science, Technology, Engineering, and Mathematics (STEM). The current program is taught in an antiquated and inadequate general classroom which does not offer appropriate or necessary electrical infrastructure, safety considerations (ventilation, tools, skill specific work stations, etc), or open concept learning environment. Students frequently work on the floor or out in the corridor due to lack of space.

There is no teacher preparation area and no space for teachers to prepare lessons let alone conduct team planning sessions.

Due to the lack of music classroom space, students must travel to the High School for music classes to be held in that facility. This disrupts the high school music program schedule and the presence of Middle School students in the High School is a disruption and security concern. Approximately 50 students move between the high school and middle school due to class reassignment. While our school doors are locked and access is only allowed through two video monitored entries, having 50 students traveling between the buildings on campus significantly challenges school security. Additionally, educators lose instructional time due to the time required to walk from the Middle School to the High School and back. Similarly, the TV and media classes also go to the High School for instruction due to lack of space in the Middle School. As such, fewer students participate in these programs due to the inconvenience. Furthermore, lack of music space in the Middle School results in the storage of musical instruments in the Middle School stair wells which is unsafe and non-compliant with the building code.

The rooms that are used for science instruction are woefully inadequate and undersized. The lack of programmatically appropriate space, safety features, utilities, sinks, and appropriate furniture and equipment forces the faculty to make instructional decisions based on the limitations of the spaces.

An undersized gym and wellness classroom limits the number of physical education and Wellness classes that can be scheduled, thus offering fewer opportunities for students. Multiple and simultaneous classes are difficult to schedule.

Lack of an appropriately sized art classroom space has impacted compliance with State Standards. Lack of storage space, classroom space, and a kiln prohibits instruction of ceramics, pottery, sculpture, and graphic design. The class is limited to 2D instruction only.

Has the district had any recent teacher layoffs or reductions? YES

If "YES", how many teaching positions were affected? 6

At which schools in the district? Elementary School and Middle School

Please describe the types of teacher positions that were eliminated (e.g., art, math, science, physical education, etc.).

One Pre-school, one Elementary Spanish, one 7th grade Social Studies, one 7th grade Math, one 8th grade Social Studies, one 8th grade ELA

Has the district had any recent staff layoffs or reductions? YES

If "YES", how many staff positions were affected? 1

At which schools in the district? Elementary

Please describe the types of staff positions that were eliminated (e.g., guidance, administrative, maintenance,

etc.).

Elementary Para-professional

Please provide a description of the program modifications as a consequence of these teacher and/or staff reductions, including the impact on district class sizes and curriculum.

The pre-school reduction is a result of declining enrollment and programmatic changes. The elimination of the elementary Spanish position is a result of programmatic changes that will result in the district being able to add a Library/Media Specialist at the elementary school. The curricular impact of this decision is that we will restructure the scope and sequence so that students will receive a comprehensive three-year experience at the middle school that will prepare them for high school. The middle school staffing reduction is a result of restructuring due to declining enrollment. The middle school will maintain a strong teaming model with one 4 person team and one 2 person team at each grade level.

Please provide a description of the local budget approval process for a potential capital project with the MSBA. Include schedule information (i.e. Town Meeting dates, city council/town council meetings dates, regional school committee meeting dates). Provide, if applicable, the District's most recent budget approval process that resulted in a budget reduction and the impact of the reduction to the school district (staff reductions, discontinued programs, consolidation of facilities).

The Superintendent and Administrative team build a fiscally responsible budget (FY19 Initial Budget has been based on level service) which is submitted to the School Committee. The School Committee then presents the budget to the Board of Selectmen and the Finance Committee. The budget is typically approved at Town meeting in May. The FY19 Budget projects an increase of 2.6%. In FY18 the budget increased by 3.0%, In FY17 by 3.4%, in FY16 by 2.3%, and in FY15 it increased by 3.3%. The overall initial FY19 budget is \$20,229,800. It is anticipated that the initial FY19 budget will need to be adjusted downward as the Town currently projects revenues lower than department requests. The Town has attempted several proposition 2 1/2 overrides but have failed. Thus, each year, the School Department has had to make cuts in its initial budget requests to reconcile as well adapt offerings and physical plants as to maintain an adequate level of service for our students educationally.

General Description

BRIEF BUILDING HISTORY: Please provide a detailed description of when the original building was built, and the date(s) and project scopes(s) of any additions and renovations (maximum of 5000 characters).

The two story Tyngsborough Middle School building was constructed in 1967 to serve as the town's first comprehensive Jr. Sr. High School. In 1992 a new Jr. Sr. High School building was constructed and the now Middle School became an Elementary School building. For this relocation of grade levels many science, business, English and foreign language labs were removed and renovated into elementary school classrooms. In March of 2002 grades 1-5 moved into a brand new elementary school and the Tyngsborough Middle School was created at 50 Norris Road housing grades 6-8, relieving the overcrowding at the Jr. Sr. High School which at this time changed its distinction to Tyngsborough High School. Although no additions have ever been constructed to the now Tyngsborough Middle School, several renovation projects have taken place over the years starting with the replacement of the main building roof in 1994. A concrete access ramp was also added to the front entrance in 1994. In 1995 two handicapped accessible bathrooms were added on the first floor as well as a limited access elevator in the center of the main building. A second limited access elevator was added to the Gymnasium side of the building in 1997, and in 1998 the Gymnasium portion of the building received a new roof.

No new educational space has been added to this school since it was built.

Due to space limitations, antiquated systems and finishes and equipment, the facility cannot support today's instructional models including the flexible, project-based learning, and co-teaching methodologies. For example, the obsolete and outdated electrical system is insufficient to support the contemporary technological supports required to deliver the District's intended student learning outcomes.

TOTAL BUILDING SQUARE FOOTAGE: Please provide the original building square footage PLUS the square footage of any additions.

80667

SITE DESCRIPTION: Please provide a detailed description of the current site and any known existing conditions that would impact a potential project at the site. Please note whether there are any other buildings, public or private, that share this current site with the school facility. What is the use(s) of this building(s)? (maximum of 5000 characters).

The Tyngsborough Middle School is located at 50 Norris Road in Tyngsborough and shares a 56-acre site with Tyngsborough High School. This is a Middle-High School campus. Our vision is to rejuvenate the campus by addressing the deficiencies of the Middle School.

The primary and secondary access to the front of the school, is from Norris Road, and is shared with Tyngsborough High School.

The parking lots, bus lanes, Synthetic Turf Multi-Purpose Field, softball field, baseball field and 4 lane track are all shared with the high school population. Although the Middle School shares a campus and outdoor space with Tyngsborough High School, the athletic field space is not adequate to service the physical education and athletics programs at the two schools.

Site lighting was replaced in April 2013 with LED parking lot and building lights as part of an incentive program with National Grid. The pavement in both the bus lanes, driveways and parking areas is in need of replacement. The site is served by both municipal sewer and water.

Access to the building for service and receiving as well as to the athletic fields is prohibited due to tight turning radii in the service loop road which encircles the Middle School and High School.

The accessible parking spaces near the main entrance are on a slope which appears to exceed the maximum slope requirement of 2%. Furthermore, not all public entrances are accessible such as the entrance to the administrative offices.

ADDRESS OF FACILITY: Please type address, including number, street name and city/town, if available, or describe the location of the site. (Maximum of 300 characters)

Tyngsborough Middle School
50 Norris Road
Tyngsborough, MA 01879

BUILDING ENVELOPE: Please provide a detailed description of the building envelope, types of construction materials used, and any known problems or existing conditions (maximum of 5000 characters).

The Middle School is a steel and concrete frame structure with brick masonry veneer walls. At the main building, the cladding at the first floor is aluminum framed ribbon windows with exposed concrete columns. The second floor cantilevers over the first floor approximately ten feet. The second floor cladding is brick masonry and precast panels. At the second floor, there are narrow aluminum framed windows with opaque spandrel panels at the top and bottom of each window. Windows are glazed with single pane glass. The frames, glazing and hardware for these original units is obsolete and needs to be replaced. Interior rooms have now windows, but some have skylights. Store-front style entrance and exit doors also are outdated and have single pane glazing.

The separate gym building is a two-story steel and concrete frame structure. The lower ten feet of the first floor exterior wall is cast-in-place painted concrete. The rest of the facade is clad with brick. There are sections of aluminum framed ribbon windows at each facade. Windows are glazed with single pane glass.

The one-story walkway that connects the two buildings is clad with precast panels.

The main roof was replaced in 2001 and the gym roof replaced in 1998. Both roofs are Sarnafil PVC membrane. The roof edge sheet metal flashing was replaced along with the roof membrane. The main building roof has twelve plastic skylights and two skylights with safety glass. There is also a large brick masonry chimney at the south end of the main roof. The gym building roof has a one foot tall parapet. Both roofs have interior roof drains.

Safety hazards require immediate attention. The cementitious soffit material at the first floor of the main building is cracked at all facades. The entire soffit should be sounded and any loose material that could represent a fall hazard should be removed and repaired.

Most of the observed distress should be addressed to improve water tightness and energy performance of the building. For example, replacing the single plane glazing with insulated glass will improve thermal performance and reduce solar heat gain. The glazing putty and perimeter sealant has failed and allows air and bulk water to enter. The broken spandrel panels at the second floor windows also allow bulk water to infiltrate. Replacement of the window assemblies should be considered; at a minimum, it is recommended that glazing putty and perimeter sealant be replaced.

Steel lintels and the adjacent masonry are showing signs of distress, corrosion of the lintel causes rust scale build-up, which in turn displaces the adjacent brick and mortar. Open joints and cracked bricks increase the amount of water that enters the system, and this added water can accelerate the corrosion of the lintels.

Failed building joint sealant and vertical cracking through the brick masonry at the building corners of the gym allow water to infiltrate the wall system. The cracking may be caused by movement of the foundation, differential movement of the backup material or structure, or the lack of control joints.

Has there been a Major Repair or Replacement of the EXTERIOR WALLS? NO

Has there been a Major Repair or Replacement of the EXTERIOR WALLS? NO

Year of Last Major Repair or Replacement:(YYYY) 1967

Year of Last Major Repair or Replacement:(YYYY) 1967

Description of Last Major Repair or Replacement:

Original

Description of Last Major Repair or Replacement:

Original

Roof Section A

Roof Section A

Is the District seeking replacement of the Roof Section? YES

Is the District seeking replacement of the Roof Section? YES

Area of Section (square feet) 44434

Area of Section (square feet) 44434

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

PVC

Type of ROOF (e.g., PVC, EPDM, Shingle, Slate, Tar & Gravel, Other (please describe))

PVC

Age of Section (number of years since the Roof was installed or replaced) 16

Age of Section (number of years since the Roof was installed or replaced) 16

Description of repairs, if applicable, in the last three years. Include year of repair:

None

Description of repairs, if applicable, in the last three years. Include year of repair:

None

Window Section A

Window Section A

Is the District seeking replacement of the Windows Section? YES

Is the District seeking replacement of the Windows Section? YES

Windows in Section (count) 532

Windows in Section (count) 532

Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))

Aluminum frame single glaze casements and fixed.

Type of WINDOWS (e.g., Single Pane, Double Pane, Other (please describe))

Aluminum frame single glaze casements and fixed.

Age of Section (number of years since the Windows were installed or replaced) 48

Age of Section (number of years since the Windows were installed or replaced) 48

Description of repairs, if applicable, in the last three years. Include year of repair:

Most repairs have been to hardware, and that is difficult as parts are not readily available. Often parts are made by maintenance staff. Of course, other repairs are of the replacing broken glass type.

Description of repairs, if applicable, in the last three years. Include year of repair:

Most repairs have been to hardware, and that is difficult as parts are not readily available. Often parts are made by maintenance staff. Of course, other repairs are of the replacing broken glass type.

MECHANICAL and ELECTRICAL SYSTEMS: Please provide a detailed description of the current mechanical and electrical systems and any known problems or existing conditions (maximum of 5000 characters).

Tyngsborough Middle School has most of its original 1968 era mechanical and electrical systems in place today with the exception of the new boiler room equipment installed in 2008.

Limitations and problems exist that do not allow for an efficient control and delivery of heat. Presently, the mechanical systems serving the building consists of natural gas fired hot water boiler plant serving hot water unit ventilators located in every classroom, heating and ventilation units, unit heaters and convectors. A hot water radiation loop is also in place around the exterior wall of the first floor. The majority of the mechanical equipment appears original to the building. The mechanical systems and associated controls throughout the building have served past their anticipated life expectancy and are recommended to be replaced. Throughout the building, there is a lack of thermal comfort which varies from extreme cold to uncomfortable heat and has resulted in the closing of rooms since they are uninhabitable due to the environmental conditions.

At numerous locations throughout the Middle School where insulated heating hot water supply and return piping is exposed it was tagged as containing asbestos. It would be recommended that all piping in the building be tested and tagged properly to be abated from any existing systems determined to be reused.

The building has an original Barber Coleman pneumatic/electric control system. Control of fresh air and exhaust fans is limited and not energy efficient or optimum for personal health. The majority of the controls are pneumatic, appear original, and are past their anticipated life expectancy.

Electrical power to the building is three phase 208 volt and single phase 120 volt with all of the main switch gear and sub-panels original to the building. Many of the original 20 amp breakers installed in the sub-panels often fail to trip and need to be replaced. Emergency power is provided by a natural gas fired 10kw emergency generator which runs only the emergency lights and the walk-in cooler and freezer located in the food service area. A new emergency generator and life safety system should be installed. There is no central air conditioning or chilled air provided in this facility. The electrical systems do not reflect, nor do they meet the needs of a modern-day facility. Code changes over the years have resulted in existing systems that do not meet today's electrical codes. Most of the existing systems are not suited for expansion due to the incompatibility of new technologies. Replacement parts are no longer available for many of the systems. Furthermore, there is a lack of electrical outlets to support technology for both students and teachers in the classrooms.

The Fire Alarm System consists of an addressable Notifier AFP-400 series control panel. Manual pull stations are not ADA compliant; many are mounted above 48" A.F.F. A radio master box is the method of transmission. The detector coverage and notification appliances do not meet current code. Full coverage is required in a non-sprinkled, E-use Group and speaker strobes with voice evacuation is required in an E-use Group.

The Plumbing Systems serving the building are cold water, hot water, sanitary, waste and vent system, storm drain piping, laboratory waste and vent system and natural gas. Municipal sewer and municipal water service the Building. Most of the plumbing systems are original to the building. Portions of the system have been updated as part of building renovation and upgrade projects, including all new Boiler Room Equipment and domestic water heater system. The plumbing systems beyond Boiler Room are beyond their expected life of service. Due to its age, a complete new water piping distribution system is recommended. The copper piping, valves and insulation are in poor condition and have served their useful life. Furthermore, all new fixtures are recommended. Attempts have been made to make bathroom fixtures accessible, however most fixtures do not meet current accessibility codes. There are only 2 ADA compliant toilet rooms in building. Gang toilet rooms do not have ADA accessible fixtures, accessories, or compartments. There is a lack of appropriate and code compliant toilet rooms for students on the second floor. There are no staff toilets on the second floor.

The building is not equipped with an automatic sprinkler system.

The Security System consists of a wireless Intrusion System made up of wireless door contacts and a Honeywell intrusion keypad. The building is equipped with an antiquated CCTV security camera system consisting of 2 cameras which monitor the main entry and the south parking lot. Poor line of sight issues have been noted between the main office and the main entry as well as out to parking lot and approach to the building. The building can be accessed by visitors or intruders unimpeded.

Boiler Section 1**Boiler Section** 1**Is the District seeking replacement of the Boiler?** NO**Is the District seeking replacement of the Boiler?** NO**Is there more than one boiler room in the School?** NO**Is there more than one boiler room in the School?** NO**What percentage of the School is heated by the Boiler?** 100**What percentage of the School is heated by the Boiler?** 100**Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)**

Natural Gas

Type of heating fuel (e.g., Heating Oil, Natural Gas, Propane, Other)

Natural Gas

Age of Boiler (number of years since the Boiler was installed or replaced) 9**Age of Boiler (number of years since the Boiler was installed or replaced)** 9**Description of repairs, if applicable, in the last three years. Include year of repair:**

None

Description of repairs, if applicable, in the last three years. Include year of repair:

None

Has there been a Major Repair or Replacement of the HVAC SYSTEM? NO**Has there been a Major Repair or Replacement of the HVAC SYSTEM?** NO**Year of Last Major Repair or Replacement:(YYYY)** 1967**Year of Last Major Repair or Replacement:(YYYY)** 1967**Description of Last Major Repair or Replacement:**

The heat delivery system is original.

Description of Last Major Repair or Replacement:

The heat delivery system is original.

Has there been a Major Repair or Replacement of the ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM? NO**Has there been a Major Repair or Replacement of the ELECTRICAL SERVICES AND DISTRIBUTION SYSTEM?** NO**Year of Last Major Repair or Replacement:(YYYY)** 1967**Year of Last Major Repair or Replacement:(YYYY)** 1967**Description of Last Major Repair or Replacement:**

The electrical distribution system is original.

Description of Last Major Repair or Replacement:

The electrical distribution system is original.

BUILDING INTERIOR: Please provide a detailed description of the current building interior including a description of the flooring systems, finishes, ceilings, lighting, etc. (maximum of 5000 characters).

The interior of the Tyngsborough Middle School is for the most part original and has surpassed its end of useful life. The flooring in corridors and classrooms is 12"x12" vinyl/asbestos composition tiles. Carpeted floors are located in some offices, library space, and computer labs and are worn and should be replaced.

All interior walls are painted CMU block with the exception of drywall partitions that have been added to create additional learning spaces. All painted surfaces are worn and should be repainted.

The ceilings are original 4x8 acoustical tiles in suspended frame. Stained, damaged, and worn out ceiling tiles and grid throughout the building should be replaced.

Interior doors are oak veneer, and are only capable of being locked from outside classroom on hallway side of door. Furthermore, doors are equipped with original non-ADA compliant hardware in addition to a lack of accessible clearances around the door openings. The doors of the enclosed stairways are held open with door opener hooks. If the stair doors are to remain open the hooks must be replaced with hold-open devices connected to the building fire alarm system so that the doors close upon alarm activation.

Classrooms lack appropriate display and teaching surfaces throughout the building, especially in science. The building is outfitted with antiquated blackboards and teachers have jerry-rigged their own markerboards for basic instruction and advanced instructional methods such as 360-degree learning.

Lighting throughout the building is by surface mount fluorescent fixtures with T-8 bulbs. The gymnasium was recently retrofit with T-5 lamps and fixtures. In general, the interior lighting is in poor condition. No energy efficiency measures are present, such as occupancy sensors, and there are still some T12 fluorescent lamps in use.

There are a number of interior classrooms without exterior windows and do not have access to daylight, natural ventilation, or views.

The Gym is equipped with non-code compliant gym bleachers. Poor sightlines exist due to the addition of a LULA lift to address accessibility issues. The room is either too cold or too hot and is frequently closed due to environmental issues.

The existing building generally has accessible routes to all areas, however significant work would be required to bring the building into full compliance with the MAAB. Doors in several corridors were observed to be provided with a clear width less than the required 32". The exit stairways are not provided with the appropriate nosing. Handrails are also not fully code compliant. Sinks in classrooms are not accessible. Integrated wheel chair seating is not provided in the Gymnasium and Auditorium. The showers in the Gymnasium are not accessible.

PROGRAMS and OPERATIONS: Please provide a detailed description of the current grade structure and programs offered and indicate whether there are program components that cannot be offered due to facility constraints, operational constraints, etc. (maximum of 5000 characters).

The Tyngsborough Middle School serves students in grades 6 – 8. The school program is developmentally appropriate with students assigned to designated teams within each grade level. The school offers students English, math, science, STEM, social studies, foreign languages, library media, art, computers, theater, service learning, and wellness. Our music program consists of students who elect into the middle school/high school band, and is currently offered in the adjacent high school since there is no dedicated music classroom space in the Middle School. The school offers after school activities including athletics and co-curricular clubs. A full range of services are provided to students with disabilities in inclusive settings.

The school site and plant do not adequately support the delivery of high quality school programs and services. Furthermore, the inadequate and inflexible facility limits our ability to teach the innovative programs that we offer.

The simple task of having students working together in small groups on collaborative projects, in preparation for real world work experiences, cannot happen in the classroom. Students must leave the classroom and work in the corridors which is disruptive to the surrounding classrooms. Furthermore, many of our classrooms lack basic amenities such as proper storage and classroom sinks. Our current electrical infrastructure hinders our ability to bring the appropriate amount of technology into all classrooms to appropriately educate our students.

The school is committed to inclusionary practices for all students with disabilities and special education needs. However, undersized classrooms lack the physical space to accommodate more than one instructor and staff to achieve this. Furthermore, an inflexible layout of the buildings has resulted in some Special Education programs, such as Bridges, to be isolated in an inappropriate locations in the building.

Our science facilities are completely inadequate to appropriately teach all of the courses we offer and we teach these classes in inferior rooms with inconsistent or nonexistent facilities. In our science labs, basic needs like electricity, gas and plumbing do not always work. Rooms also do not have proper ventilation for conducting experiments. Furthermore, a lack of space, safety features, sinks, and appropriate furniture and equipment forces the faculty to make instructional decisions based on the limitations of the spaces. These deficiencies severely limit hands-on, authentic, and relevant science curriculum experience.

The school offers STEM courses but we have no appropriate facilities for such a program. The program is limited by a space which is an antiquated general classroom without exterior windows, adequate ventilation, and electrical and plumbing infrastructure to support student projects requiring access to advanced tools. Project-based learning is limited by the constraints of the room which includes a lack of space and appropriate furniture forcing students to work on the floor and in the corridor.

A chorus program is limited and can't be offered in the building due to lack of music classroom space. Band is limited since it is taught in the High School. The limited availability of the High School music classrooms negatively impacts the enrollment of both Middle School and High School programs. Furthermore, the music program has had difficulty meeting its curriculum framework and state standards.

The wellness program, currently taught in a general classroom, is constrained in its scope due to lack of space to accommodate fitness equipment.

The art room is not physically able to offer the variety of opportunities of the state-mandated curriculum (technology, graphic design, or pottery work). Lack of storage space, classroom space, and a kiln prohibits instruction of ceramics, pottery, sculpture, and graphic design.

There are no adequate and dedicated spaces for OT/PT services, speech and language services, reading support services, and special education services. Instruction in these areas are taking place in converted storage rooms or in open areas such as the library without privacy or confidentiality.

There are no team or adequate teacher work and planning areas that offer collegial, collaborative opportunities and technology availability that staff may appropriately research and plan high quality lessons or to meet as teams. Cafeteria space has been displaced to provide a single professional development and conference room space.

The bleachers in the gym are not in compliance with current code. Heat in gym is inadequate in winter and too hot in warmer months which limits the use of the space for events and ceremonies such as graduation and assemblies.

Finally, the building is equipped with sub-standard, inadequate, and antiquated toilet room facilities.

EDUCATIONAL SPACES: Please provide a detailed description of the Educational Spaces within the facility, a description of the number and sizes (in square feet) of classrooms, a description of science rooms/labs including ages and most recent updates, a description of the cafeteria, gym and/or auditorium and a description of the media center/library (maximum of 5000 characters).

The Middle School was designed and built originally as a high school in the 1960's. The expectations of that era do not reflect the needs of today. Many current programs and services were not offered or planned for in the original building design. Over the years, new programs were developed, other programs were removed and new requirements were mandated by the state. However, there have not been any updates to the facility which has resulted in numerous space utilization deficiencies within the building. Many asbestos containing materials were used in the design and construction of the Tyngsborough Middle School.

The school has 29 classrooms, and five classrooms which have been modified for sub-separate programming and small

group/pull out work. There are two computer labs, and a small copy room. The majority of the classrooms are undersized at less than 850 square feet which limits instructional options. The design of the classrooms do not support delivery of instruction for the 21st century learner. These rooms are inflexible spaces designed for teacher directed instruction. They are too small for our student centered collaborative instruction and assessment methods which require space for tables, small group meetings and breakout sessions.

There are 4 science classrooms each with limited lab space for our 7th and 8th graders, and our 6th graders have science in a non-lab classroom. The science classrooms lack the space, furnishings, equipment and utilities to support today's leaning environment. The rooms are original to the building and have not been updated in its 49 year life span. As such, the science labs are both obsolete and too small. All of the labs have plumbing, electrical and gas deficiencies. Lab and collaboration spaces overlap creating overcrowding and safety concerns.

The Library/media center sized at 1,542 square feet is significantly undersized and has limited technology infrastructure and hardware. Furthermore, the space is shared with special services programs which presents problems with privacy and confidentiality.

The cafeteria and kitchen are adequate in size, but lack efficiency of scale in its systems. Serving line upgrades took place in 2013 by adding a warming tray and salad bar to replace aging equipment. A reorganization of the kitchen and servery layout has been recommended. The size of the cafeteria has been reduced to accommodate a new faculty dining room.

The auditorium lacks adequate seating and is ineffectively designed for public performances and general assemblies. Furthermore, it is fully utilized by the Theater class which prohibits use during the day for team or class gatherings and assemblies.

The gym is (6,700 square feet) and is equipped with wooden bleachers that are difficult to get parts for and not up to today's building codes.

The art room is not physically able to offer the variety of opportunities of the state-mandated curriculum (technology, graphic design, or pottery work).

Special Education and English Language Learners spaces have limited technology and physical integrative access for inclusion; therefore, limiting the richness of these state mandated services. There is no appropriate teaching area for our Occupational and Physical Therapists to adequately serve the students.

CAPACITY and UTILIZATION: Please provide the original design capacity and a detailed description of the current capacity and utilization of the school facility. If the school is overcrowded, please describe steps taken by the administration to address capacity issues. Please also describe in detail any spaces that have been converted from their intended use to be used as classroom space (maximum of 5000 characters).

Currently there are 415 middle school students in a building that was originally designed as a high school, and later retrofit for an elementary school. The ability for students to access appropriate educational opportunities, as outlined in our district vision statement of providing global opportunities, is greatly impacted.

Rooms are too small for varied instructional practices. When teachers break students into cooperative working groups, students have to work in alternative locations outside the class, such as on the floors in the corridors. In order to keep students in the classroom, the most practical organizational structure is to put desks in rows which is not conducive to cooperative groups or other best instructional practices in today's educational world.

The current best practice in integrating technology into the middle school classroom also results in space concerns. Today's students benefit from a necessary set of tools which include chromebooks, iPads, laptops and necessary charging carts as well as personal learning devices. This all takes up space including the need to charge all the devices.

We have a number of classroom spaces that are undersized and not appropriate for most of our classes and programs. This impacts our utilization of all classrooms. Smaller classroom sizes restrict the flexible use of furniture and prohibits the use of more modern furniture and equipment thus creating crowding and overflow of project based instruction onto the floors and into the corridors.

Due to a lack of teacher work and planning space, the teacher dining room was repurposed as a professional development space. A portion of the cafeteria was displaced to create a new sub-standard teacher dining space.

There is a lack of confidential and private space for group meetings, English Language Learners (ELL) instruction, Special Education (SPED), Counseling, and the school psychiatrist. ELL is currently taught in an open space in the corner of the library which offers no privacy or confidentiality. Furthermore, ELL has been sent over to the high school due to space limitations at the Middle School. SPED programs are taught in converted closet and storage space.

The STEM program is taught in an antiquated and inadequate general classroom which does not offer appropriate or necessary electrical, safety considerations (ventilation, tools, skill specific work stations, etc), and open concept learning environment. Students frequently work on the floor or out in the corridor due to lack of space.

There is no teacher preparation area and no space for teachers to prepare lessons.

Due to the lack of music classroom space, students must travel to the High School for music classes to be held in that facility. This disrupts the high school music program schedule and the presence of Middle School students in the High School is a disruption and security concern. Approximately 50 students move between the high school and middle school due to class reassignment. While our school doors are locked and access is only allowed through two video monitored entries, having 50 students traveling between the buildings on campus significantly challenges school security. Additionally, educators lose instructional time due to the time required to walk from the Middle School to the High School. Similarly, the TV and media classes also go to the High School for instruction due to lack of space in the Middle School. As such, fewer students participate in these programs. Furthermore, lack of music space in the Middle School results in the storage of musical instruments in the Middle School stair wells which is unsafe and non-compliant with the building code.

The rooms that are used for science instruction are woefully inadequate and undersized. The lack of programmatically appropriate space, safety features, utilities, sinks, and appropriate furniture and equipment forces the faculty to make instructional decisions based on the limitations of the spaces.

An undersized gym and wellness classroom limits the number of physical education and Wellness classes that can be scheduled, thus offering fewer opportunities for students. Multiple and simultaneous classes are difficult to schedule.

Lack of appropriately sized art classroom space has impacted compliance with State Standards. Lack of storage space, classroom space, and a kiln prohibits instruction of ceramics, pottery, sculpture, and graphic design.

The nurse's office is very small and does not allow for privacy and confidentiality.

MAINTENANCE and CAPITAL REPAIR: Please provide a detailed description of the district's current maintenance practices, its capital repair program, and the maintenance program in place at the facility that is the subject of this SOI. Please include specific examples of capital repair projects undertaken in the past, including any override or debt exclusion votes that were necessary (maximum of 5000 characters).

The district employs a Supervisor of Buildings and Grounds and a custodial and maintenance staff of 20 individuals to clean and maintain the four school facilities and associated grounds. Overseeing the maintenance of the district's assets is:

1 - Supervisor of Buildings and Grounds; 1 - Licensed System Wide Maintenance Tec.; 1 - System Wide Maintenance of Grounds Tec.; 4 - Building Maintenance men; 3 - Head Custodians; and 11 Custodians. The web-based work order management system called Maintenance Direct from "SchoolDude" is currently in place to manage our repair and

preventative maintenance programs. Workers are trained to concentrate on the health and safety of the occupants when it comes to prioritizing maintenance practices, and will address these calls first. Daily observance of all major building components is stressed and vital to operational management and is incorporated into our maintenance staff's routine. Although we practice preventative maintenance regularly at all of our facilities, we recently began using a second product from SchoolDude called PMDirect - which can be programed to automatically generate PM work orders on HVAC and grounds equipment.

Our capital repair program has a history which proves our interest and desire to make this facility more energy efficient as we have completed a construction project at the Middle School to accomplish this goal. The recent boiler replacement project leaves no doubt of our intention to make this facility more comfortable and energy efficient. The district's ten-year capital asset improvement plan has proven to be a great tool to bring to the forefront the importance of maintaining the community's most important physical assets. However, given the age of the building and its systems, it is difficult to maintain and service antiquated systems whose replacement parts are no longer available.

Some of our most recent projects are as follows:

-Boiler Replacement Middle School; Roof Replacement Early Childhood Center; Technology Upgrades; Communication and Security Camera Installations.

In 2012, \$12,500 was awarded the School Committee for an Athletic Field Feasibility Study at the Norris Road Campus. Some of the athletic field improvements suggested in this study are: relocation of the existing baseball and softball fields to conform with standard design criteria, an additional running lane to the track, a walking/wellness path, and a multi-purpose field layout behind the middle school. Since these fields are on a shared campus, this upgrade would greatly enhance the wellness and athletic programs at the Tyngsborough Middle School.

We anticipate future capital repair programming which may include an Asbestos Abatement Study and an Asbestos Abatement project schedule. Below is a list of proposed capital projects for FY '17 through FY' 20.

Security Upgrades System Wide
 Technology Replacement Cycle
 TPS Furniture Replacement Cycle
 Custodial/Maintenance Equipment Cycle
 Paving Plan
 Asbestos Abatement Plan
 Windows Tyngsboro Middle School
 Bleachers TMS
 Generator TMS
 Ceiling Refurbish TMS
 Restrooms TMS
 Tyngs. Elementary School Phone System Replacement
 Tyngsboro High School Renovations
 Tyngsboro High School Auditorium
 Norris Road Athletic Field Complex
 HVAC Lakeview School
 Windows and Doors Lakeview School
 Generator Lakeview School

Priority 5

Question 1: Please provide a detailed description of the issues surrounding the school facility systems (e.g., roof, windows, boilers, HVAC system, and/or electrical service and distribution system) that you are indicating require repair or replacement. Please describe all deficiencies to all systems in sufficient detail to explain the problem.

Tyngsborough Middle School has most of its original 1968 era mechanical and electrical systems in place today with the exception of the new boiler room equipment installed in 2008.

Limitations and problems exist that do not allow for an efficient control and delivery of heat. Presently, the mechanical systems serving the building consists of natural gas fired hot water boiler plant serving hot water unit ventilators located in every classroom, heating and ventilation units, unit heaters and convectors. A hot water radiation loop is also in place around the exterior wall of the first floor. The majority of the mechanical equipment appears original to the building. The mechanical systems and associated controls throughout the building have served past their anticipated life expectancy and are recommended to be replaced. Throughout the building, there is a lack of thermal comfort which varies from extreme cold to uncomfortable heat and has resulted in the closing of rooms since they are uninhabitable due to the environmental conditions.

At numerous locations throughout the Middle School where insulated heating hot water supply and return piping is exposed it was tagged as containing asbestos. It would be recommended that all piping in the building be tested and tagged properly to be abated from any existing systems determined to be reused.

The building has an original Barber Coleman pneumatic/electric control system. Control of fresh air and exhaust fans is limited and not energy efficient or optimum for personal health. The majority of the controls are pneumatic, appear original, and are past their anticipated life expectancy. Furthermore, the master control system, and individual room thermostats are both original equipment and do not offer the facility manager the ability to set parameters and/or temperature setpoints. To compound this, fresh air and exhaust air are not easily controlled and this lends itself into being very inefficient. Although the maintenance of all of the HVAC equipment has been above average over the years, the age of the water piping and pneumatic valves has begun to make it difficult to make routine repairs. Pneumatic controls and valves are older technology and it is becoming increasingly difficult to find quality service personnel to attend to our needs. Due to lack of air conditioning, an antiquated heating system, no ventilation, and little to no insulation in the exterior walls and large building overhangs, there are significant deficiencies in thermal comfort throughout the facility. This not only negatively impacts the learning environment, but also makes a number of spaces uninhabitable over the course of the school year, thus necessitating the relocation of teachers and disrupting team structures.

New updated unit ventilators and EMS software is needed which would provide the end user with the ability to configure all devices centrally to give as much or as little ability to change room temperature locally to make it easier to adhere to the Energy Policy. Occupants should only be given enough local temperature adjustability to make them comfortable while staying in compliance. A total commissioning of the sequence of operations with regard to fresh air, temperature control, and CO2 levels needs to be performed with new equipment to deliver, monitor and control these vital levels.

Electrical distribution in the facility is also old and outdated. Panels need to be upgraded so that in the event a short-circuit occurs in the field, the necessary safety measure of a breaker "tripping" takes place. We have had many instances where this doesn't take place and the receptacle or cord end suffers damage. Electrical power to the building is three phase 208 volt and single phase 120 volt with all of the main switch gear and sub-panels original. Many of the original 20 amp breakers installed in the sub-panels often fail to trip and need to be replaced.

The emergency generator power at the Tyngsborough Middle School is currently hugely inadequate for the building and its programs. The 10kw emergency generator is designed to provide emergency power for minimal emergency lighting and the walk-in cooler and freezer. At present no boilers, pumps, circulators or heating equipment is fed by emergency power. This unit is a natural gas fired, 43 year old Onan generator, which is very difficult to maintain and control. Currently it must be turned on manually. There are no replacement parts available for the transfer switch; and to upgrade any part of the system would require major renovation. A new generator, transfer switch gear, lighting controls, and recommissioning of the equipment controlled is needed.

The electrical systems do not reflect, nor do they meet the needs of a modern-day facility. Code changes over the years have resulted in existing systems that do not meet today's electrical codes. Most of the existing systems are not suited for expansion due to the incompatibility of new technologies. Replacement parts are no longer available for many of the systems. Furthermore, there is a lack of electrical outlets to support technology for both students and teachers in the classrooms. For example, the STEM classroom lacks electrical capacity to support the program, specifically the use of advanced tools, saws, drills, CAD stations, robotics instruction, and appropriate ventilation.

Lighting fixtures are for the most part all surface mounted and all original with the exception of an upgrade to energy efficient ballasts and T-8 bulbs that took place in 2001. The gymnasium received an upgrade to new T-5 fixtures in 2007 and this has provided a much needed savings on labor and utility costs. Occupancy sensors that were installed years ago have been disconnected (due to poor performance) and need to be re-introduced as part of an overall energy saving lighting distribution and control project.

Kitchen/Food Service equipment is all original - from the electric service-line warmers, to the gas fired ovens and cooktops, and the walk-in cooler and freezer. Maintenance on this equipment over time has been very good, however the style of meal served and the preparation methods have changed with the times and new equipment and service lines are needed. Parts are difficult if not impossible to procure for this equipment when repairs are necessary, and for a 49 year old kitchen that serves multiple lunches and breakfast daily, this presents a problem. Newer more energy efficient gas fired service lines and preparation ovens and cooktops would save on the bottom line as would new walk-in refrigeration units. In 2013 a warming tray and salad bar were added to the existing serving line to replace obsolete equipment.

The Fire Alarm System consists of an addressable Notifier AFP-400 series control panel. Manual pull stations are not ADA compliant; many are mounted above 48" A.F.F. A radio master box is the method of transmission. The detector coverage and notification appliances do not meet current code. Full coverage is required in a non-sprinkled, E-use Group and speaker strobes with voice evacuation is required in an E-use Group. Another area of concern is the presence of "spray-on" asbestos fire coating on the structural steel members above the corridor walls (on both levels). The building also contains vinyl asbestos floor tiles in all of the classrooms and corridors. A major abatement program should be designed and conducted to remove the once industry-standard fire proofing material from the building. In fact we have added such a request in our most recent capital expenditure request.

Presently, the Plumbing Systems serving the building are cold water, hot water, sanitary, waste and vent system, storm drain piping, laboratory waste and vent system and natural gas. Municipal sewer and municipal water service the Building. Most of the plumbing systems are original to the building. Portions of the system have been updated as part of building renovation and upgrade projects, including all new Boiler Room Equipment and domestic water heater system. The plumbing systems beyond Boiler Room have served their useful life. Due to its age, a complete new water piping distribution system is recommended. The copper piping, valves and insulation are in poor condition and have served their useful life.

All new plumbing fixtures are recommended. Attempts have been made to make bathroom fixtures accessible, however most fixtures do not meet current accessibility codes. There are only 2 ADA compliant toilet rooms in building. Gang toilet rooms do not have ADA accessible fixtures, accessories, or compartments. Another inadequate system in the Tyngsborough Middle School is the ratio of bath fixtures to students. In the area of gender equity we fall far short of being compliant as there are currently only two water closets and sinks in the girls student restroom on the second floor - which has 25 classrooms! This is the only student bathroom on that level. A faculty bath with single fixtures was reassigned to students on the second floor to help remediate this situation. There are no staff toilets on the second floor. A new design, with present day standards for bathroom facilities in schools needs to be designed and implemented.

The building is not equipped with an automatic sprinkler system.

The Security System consists of a wireless Intrusion System made up of wireless door contacts and a Honeywell intrusion keypad. The building is equipped with an antiquated CCTV security camera system consisting of 2 cameras which monitor the main entry and the south parking lot. Poor line of sight issues have been noted between the main office and the main entry as well as out to parking lot and approach to the building. The building can be accessed by visitors or intruders unimpeded. With an increased urgency for schools to create and sustain consistent and updated safety measures for all students and staff, this is crucial for Tyngsborough Middle School. There is a need for an update of its internal and external communications including intercom replacement to ensure messages to and from all areas in the building replacement of a clock and bell system that is currently inoperable and antiquated, as well as modernization of a fire and police communication.

While we have introduced many cost saving and energy saving programs to the Middle School over the years, it seems we are never going to see the true results of these attempts if we do not replace all of the exterior windows and doors. Currently the aluminum frame, single glaze window units, and store-front style door units are responsible for a substantial heat loss in the winter - and heat gain in the summer. Parts for the casement style windows are no longer available and have to be fabricated when needed. New windows and doors would allow greater comfort for the inhabitants and help us to achieve greater savings by using less fossil fuels and would also help to minimize our carbon footprint effect on the environment.

Priority 5

Question 2: Please describe the measures the district has already taken to mitigate the problem/issues described in Question 1 above.

1995 - Install new mixing valve controls for Main Building and Gym Loop.

1995 and 1998 - New roof with engineered insulation panels.

2001 - Ma. Electric Lighting Program. Ballasts and bulbs replaced.

2004 - Install an engineered Boiler Room DDC Panel to allow more efficient monitoring of boilers, pumps and hot water loop.

- Also install boiler/pump control relays, status current switches, and hot water

- supply/return and outdoor air temperature sensors.

- Provide hot water compensating valve controls.

2005 - Install stand alone gas fired domestic hot water boiler to use on off-season months.

2008 - Install complete new boiler room heat package to include:

- New Viessmann Vitocrossal 300 gas fired condensing boiler

- New Viessmann Vitorand 200 gas fired triple-pass hot water boiler

- 2 New Riello 50/M Gas Burners

- Viessmann Vitotronic 100, Viessmann Vitocontrol-S VD2/CT3 controllers

- 2 Viessmann Vitocell-V 300 indirect fired hot water storage tanks (120 gal.)

- 1 Triangle Tube Prestige wall mount condensing boiler for domestic hot water

2013 - Added warming tray and salad bar to kitchen serving line.

Kitchen Food/Service area, heat distribution equipment, and electrical equipment has only received routine maintenance and preventative maintenance over the years due to limited budget and funding. Teachers bathroom facilities on the second floor have been converted to student baths. This effort only added one toilet fixture to the total for female students, and two for male students.

2016 – Added a second set of entry doors and electrified door hardware at the main entry to create a secured entry to the building

In addition to the items noted above, the following actions have also been taken:

Teaching and learning spaces have been created over the years in hallways, storage closets, and other areas. These spaces were not meant to house teachers and children.

Exterior Walls: The District attempts to mitigate these conditions with ongoing repairs. However, mitigation is not possible without the reconstruction of this façade. Water infiltration has been attributed to design rather than malfunction. Unchecked and continuing water intrusion can further deteriorate the exterior wall structure and possibly lead to the introduction of mold into the wall assembly.

HVAC: The District attempts to mitigate HVAC problems with ongoing repairs. A project to make needed improvements to the facility HVAC system would be a significant undertaking. Such work would require compliance with numerous building codes and state regulations.

Priority 5

Question 3: Please provide a detailed explanation of the impact of the problem/issues described in Question 1 above on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.

The building we are seeking funds for is forty-nine years old, and has undersized core educational spaces, is poorly insulated, has minimal bathrooms, poor lighting, antiquated technology and technology infrastructure, an aging auditorium, original windows and kitchen/food service equipment. The requested upgrades will provide students, teachers and staff an improved environment which will promote teaching and learning to today's standards. The increased availability of technology, hard wired and wireless, will enhance the student/teacher experience as well. It is certainly been understood, researched and well documented the impact a quality educational environment has on student learning and achievement.

Core Educational Classrooms are too small for varied instructional practices. When teachers break students into cooperative working groups, students have to work in alternative locations outside the class. In order to keep students in the classroom, the most practical organizational structure is to put desks in rows which is not conducive to cooperative groups or other best instructional practices in today's educational world.

As the district including the middle school continues to progressively implement the co-teaching methodologies, we continue to find the classroom size and limited amount of small group learning environments to restrict abilities to do this at a high level. Co-taught settings include several adults in classrooms settings which creates a more congestive learning environment.

Instructional options are limited by undersized classrooms in the following ways: there are no dedicated music rooms, students have to travel to the High School for the music program; the art room is inadequate and does not allow compliance with state standards; there are no properly equipped science rooms; substandard HVAC systems have made it virtually impossible to maintain adequate temperature and ventilation to classrooms; uncomfortable classrooms are not conducive to learning; the lack of appropriate space for Wellness class results in students working on the floor in the corridor on small group projects. The education of every student in the school is affected by these problems.

With the technological revolution that we are experiencing in our world, we are also experiencing an educational revolution in the way we instruct our students. Our classrooms were all built before computers, LCD projectors, and other technological media devices had even been invented. The current best practice in integrating technology into the middle school classroom also results in space concerns. Today's students benefit from a necessary set of tools which include chromebooks, iPads, laptops and necessary charging carts as well as personal learning devices. This all takes up space including the need to charge all the devices. Furthermore, we cannot implement the newest methods in teaching and learning using current educational technology. The Middle School does not have the electrical infrastructure to support this new technology such as: electrical outlets, a proper electrical distribution system, and wiring to support today's electrical loads. New energy efficient lighting is also a crucial repair needed as part of the electrical system upgrade.

Today's middle school students requires 21st Century skills including Science, Technology, Engineering, and Mathematics (STEM). An adequate STEM space would include the necessary electrical, safety considerations (ventilation, tools, skill specific work stations, etc), and open concept learning environment.

Tyngsborough has recently been named a "green community " by the Commonwealth of Massachusetts, thereby demonstrating its commitment to conservation of energy, efficient use of space and recycling. However, for years we have held off on committing Green Community Funding to the Tyngsboro Middle School until the status of our SOI application is determined. As such, energy lost through the windows impacts our resources. Poor ventilation effects the health and wellbeing of our students and staff.

Continued investment in the obsolete Middle School facility is an inefficient and ineffective use of public funds. Repairs to the Middle School facility would only restore it to its current, obsolete condition that limits the implementation of innovative educational programming, mandated state expectations (educator evaluation and district-determined measures), and intended student outcomes.

Priority 5

Question 4: Please describe how addressing the school facility systems you identified in Question 1 above will extend the useful life of the facility that is the subject of this SOI and how it will improve your district's educational program.

Tyngsborough Middle School resides on a Middle-High School campus. Our vision is to rejuvenate the campus by addressing the deficiencies of the Middle School to maintain educational equity with other middle schools in the Commonwealth. However, the Middle School has outlived its useful life and is woefully inadequate to support the programmatic, safety, and support needs for the students and teachers in the Tyngsborough School District. Addressing the issues noted in this SOI will allow the staff to focus more consistently on Curriculum and Instruction, Assessment and appropriate Program Evaluations along with having the ability for on-site professional development opportunities.

Providing a new facility will enhance and elevate the overall educational environment. A comfortable, easy to control, and dependable environment can only help foster increased learning and community building. Additionally, improvements of core educational classrooms and program areas will significantly improve the positive climate and culture goals of our educational program. By addressing the deficiencies of Tyngsborough Middle School, we can ensure that the school's caring and dedicated staff can focus on their educational mission enhanced by a school facility that supports their academic endeavors and goals.

Please also provide the following:

Have the systems identified above been examined by an engineer or other trained building professional?:

YES

If "YES", please provide the name of the individual and his/her professional affiliation (maximum of 250 characters):

LCI Energy, under contract to the MA DOER, conducted a town wide energy audit in November of 2008. In 2016, Lavallee Brensinger Architects performed a facilities assessment of Tyngsborough Middle School.

The date of the inspection: 11/15/2008

A summary of the findings (maximum of 5000 characters):

Tyngsborough Middle School has most of its original 1968 era mechanical and electrical systems in place today with the exception of the new boiler room equipment installed in 2008. Limitations and problems exist that do not allow for an efficient control and delivery of heat. Presently, the mechanical systems serving the building consists of natural gas fired hot water boiler plant serving hot water unit ventilators located in every classroom, heating and ventilation units, unit heaters and convectors. A hot water radiation loop is also in place around the exterior wall of the first floor. The majority of the mechanical equipment appears original to the building. The mechanical systems and associated controls throughout the building have served past their anticipated life expectancy and are recommended to be replaced. Throughout the building, there is a lack of thermal comfort which varies from extreme cold to uncomfortable heat and has resulted in the closing of rooms since they are uninhabitable due to the environmental conditions.

At numerous locations throughout the Middle School where insulated heating hot water supply and return piping is exposed it was tagged as containing asbestos. It would be recommended that all piping in the building be tested and tagged properly to be abated from any existing systems determined to be reused.

The building has an original Barber Coleman pneumatic/electric control system. Control of fresh air and exhaust fans is limited and not energy efficient or optimum for personal health. The majority of the controls are pneumatic, appear original, and are past their anticipated life expectancy.

Electrical power to the building is three phase 208 volt and single phase 120 volt with all of the main switch gear and sub-panels original. Many of the original 20 amp breakers installed in the sub-panels often fail to trip and need to be replaced. Emergency power is provided by a natural gas fired 10kw emergency generator which runs only the

emergency lights and the walk-in cooler and freezer located in the food service area. A new emergency generator and life safety system should be installed. There is no central air conditioning or chilled air provided in this facility. The electrical systems do not reflect, nor do they meet the needs of a modern-day facility. Code changes over the years have resulted in existing systems that do not meet today's electrical codes. Most of the existing systems are not suited for expansion due to the incompatibility of new technologies. Replacement parts are no longer available for many of the systems. Furthermore, there is a lack of electrical outlets to support technology for both students and teachers in the classrooms.

The Fire Alarm System consists of an addressable Notifier AFP-400 series control panel. Manual pull stations are not ADA compliant; many are mounted above 48" A.F.F. A radio master box is the method of transmission. The detector coverage and notification appliances do not meet current code. Full coverage is required in a non-sprinkled, E-use Group and speaker strobes with voice evacuation is required in an E-use Group.

The Plumbing Systems serving the building are cold water, hot water, sanitary, waste and vent system, storm drain piping, laboratory waste and vent system and natural gas. Municipal sewer and municipal water service the Building. Most of the plumbing systems are original to the building. Portions of the system have been updated as part of building renovation and upgrade projects, including all new Boiler Room Equipment and domestic water heater system. The plumbing systems beyond Boiler Room have served their useful life. Due to its age, a complete new water piping distribution system is recommended. The copper piping, valves and insulation are in poor condition and have served their useful life. Furthermore, all new fixtures are recommended. Attempts have been made to make bathroom fixtures accessible, however most fixtures do not meet current accessibility codes. There are only 2 ADA compliant toilet rooms in building. Gang toilet rooms do not have ADA accessible fixtures, accessories, or compartments. There is a lack of appropriate and code compliant toilet rooms for students on the second floor. There are no staff toilets on the second floor.

The building is not equipped with an automatic sprinkler system.

The Security System consists of a wireless Intrusion System made up of wireless door contacts and a Honeywell intrusion keypad. The building is equipped with an antiquated CCTV security camera system consisting of 2 cameras which monitor the main entry and the south parking lot. Poor line of sight issues have been noted between the main office and the main entry as well as out to parking lot and approach to the building. The building can be accessed by visitors or intruders unimpeded.

Priority 7

Question 1: Please provide a detailed description of the programs not currently available due to facility constraints, the state or local requirement for such programs, and the facility limitations precluding the programs from being offered.

The Tyngsborough Middle School offers all required programs as required by DESE. To accomplish this, space is compromised and shared, thereby impacting the experience for all students.

The simple task of having students working together in small groups on collaborative projects, in preparation for real world work experiences, cannot happen in the current classrooms. They must leave the classroom and work in the corridors which is disruptive to the surrounding classrooms.

Outdated science labs with limited student work stations and technology severely limits hands-on, authentic, and relevant science, technology and engineering curriculum experience. Furthermore, a lack of space, safety features, utilities, sinks, and appropriate furniture and equipment forces the faculty to make instructional decisions based on the limitations of the spaces.

The STEM program is limited by a space which is an antiquated general classroom without exterior windows, adequate ventilation, and electrical and plumbing infrastructure to support student projects requiring access to advanced tools. Project-based learning is limited by the constraints of the room which includes a lack of space and appropriate furniture forcing students to work on the floor and in the corridor.

A chorus program can't be offered due to lack of music classroom space. Band is limited since it is taught in the High School. The limited availability of the High School music classrooms negatively impacts the enrollment of both Middle School and High School programs. Furthermore, the music program has had difficulty meeting its curriculum framework and state standards.

The wellness program, currently taught in a general classroom, is constrained in its scope due to lack of space to accommodate fitness equipment.

The art room is not physically able to offer the variety of opportunities of the state-mandated curriculum (technology, graphic design, or pottery work). A lack of an appropriately sized art classroom space has impacted compliance with State Standards and the program has had difficulty meeting its curriculum framework. Lack of storage space, classroom space, and a kiln prohibits instruction of ceramics, pottery, sculpture, and graphic design. The class is limited to 2D instruction only.

There are no adequate and dedicated spaces for OT/PT services, speech and language services, reading support services, and special education services. Instruction in these areas are taking place in converted storage rooms or in open areas such as the library without privacy or confidentiality.

Priority 7

Question 2: Please describe the measures the district has taken or is planning to take in the immediate future to mitigate the problem(s) described above.

Wherever possible, the dedicated staff of the Middle School are diligently working around the building's deficiencies to provide the highest quality educational opportunities. Although not ideal, conversion of spaces such as storage rooms and closets have been converted to instruction space to make use of all of the space available in the building. Routine maintenance and functional issues are addressed as they arise to ensure that they do not materially affect the educational focus of the students and staff of the Middle School. Our Maintenance and Custodial staffs consistently work together to serve our students and staff in regard to issues that are not routine for most school buildings: leaks, heating and air quality issues, electrical failures, and other maintenance situations that are serious concerns in regard to student and staff health and safety.

To address security issues, the addition of cameras, entry vestibule doors, and electrified door hardware has helped to mitigate the security concerns, but has not solved the issues.

In the spring of 2016, the district secured \$80,000 to perform a security and facility assessment by Lavallee Brensinger Architects. This report will help drive our long-range capital asset plan to address the needs of this building.

Priority 7

Question 3: Please provide a detailed explanation of the impact of the problem described in this priority on your district's educational program. Please include specific examples of how the problem prevents the district from delivering the educational program it is required to deliver and how students and/or teachers are directly affected by the problem identified.

Tyngsborough Middle School was built for the 20th century and is not conducive to 21st century learning. The program spaces in many disciplines do not meet the current standards of educational programming. The lack of appropriate educational spaces hinders our ability to meet the unique developmental needs of middle school students and have restricted the scheduling of classes. The limited potential to realize a true middle school model inhibits the ability of the students and teachers to meet in small groups for creative, real-life problem solving. This further compromises the students' ability to engage each other as well as their teachers in applied critical thinking opportunities which will enable them to develop the skills necessary for inclusion and success as future contributing members of society. Information and technology literacy is not only a mandatory 21st century skill but the use of technology is an essential motivational tool for all students. Our school is not equipped for our students to be successful in a global society. If our goal is to prepare students for their future, then the infrastructure of the antiquated building needs to be upgraded. Given the deficiencies of the physical building, the students of the Tyngsborough Middle School are at risk of not achieving their educational potential.

Due to the physical limitations of our facility, the following educational programs are impacted, compromised or unavailable:

Grade Six Science - The first floor of the middle school does not have science labs. As we support a team model middle school, these students experience science in a room with traditional classroom desks and corrosive surfaces as opposed to appropriate science lab furnishings and equipment. There is limited access to water and there are no wash stations. Additionally, the classrooms have limited electricity which impacts programming.

Grades Seven and Eight Science – The classrooms are undersized with antiquated furnishings and equipment. Some lack wall mounted marker boards and the instructors “make do” with jerry rigged marker boards on stands. The lack of adequate ventilation and utilities constrains what the instructors can teach, including some chemicals which cannot be handled given the limitations of the facility.

Special Education - The current space for our BRIDGES (life skills) program does not include a separate bathroom facility. Additionally the space provided for this program does not include equipment such as washer/dryer and oven/range top.

Speech - Our Speech Language Pathologist cannot run any groups larger than three students. This limits our ability to have group experiences for these students including social emotional support and collaboration.

Music / Band - There is no place to schedule a music class or allow our band program to practice in the middle school. Middle school students need to leave the building during the day to walk to the high school to participate in band. This creates a security issue in addition to a disruption to the High School program and schedule. Furthermore, Middle School students can experience reduced class time due to the time required to walk from the Middle School to the High School and back.

Guidance - Our school counselors do not have a space to conduct small groups, whole class lessons, or workshops.

Reading - There is no dedicated space for our Reading support classes. Currently, these classes happen in a shared space with special education support teachers who are also working with a different group of students.

Library - The electrical infrastructure of our Library/Media Center is limited by a lack of outlets. In order for students to work on technology in this space, it either needs to be wireless, or they need to go into the computer lab next door, thereby utilizing up two classrooms.

Art - The lack of appropriately sized art classroom space has impacted compliance with State Standards. Lack of storage space, classroom space, and a kiln prohibits instruction of ceramics, pottery, sculpture, and graphic design. The class is limited to 2D instruction only.

ELA - There is no space for a shared book/novel closet, thereby limiting vertical teaming and planning.

ELL – There is no dedicated space for ELL which is currently taught in an open space in the corner of the library which offers no privacy or confidentiality. Furthermore, ELL has been sent over to the high school due to space limitations at the Middle School. There is a significant need for dedicated instruction space, space for materials, and an appropriate level of confidentiality.

Special Ed. - We have three rooms for inclusion pull out support, all are varying in size. The 6th grade room is shared with Reading, limiting space. The 7th grade room is shared by two special educators, and the OT. The 8th grade room is a converted storage closet and not able to be used with groups of larger than 4-5 students. Given the model of middle school teaming (and current/projected student need), each team should have it's own small group room, thereby limiting time "off team."

OT - Our Occupational Therapist has no designated space. There is a small "smart room" with some sensory materials, however it is a converted closet including the breaker box for upstairs. In order to service students, she must find an empty classroom and/or use this closet (which isn't big enough for tables or desks.)

STEM - The space(s) currently used were not designed for this type of programming and instruction. There is limited to no access to proper electricity and water as well as limited ability to properly use more traditional tools and materials.

Theater - There is no classroom space for theater, so the class is conducted in the auditorium. However, the auditorium is also the only available space for grade level meetings, assemblies, or performances so we interrupt the learning of the theater class by moving it. Additionally, our auditorium is unable to house all of our students, so whole school assemblies need to happen at the high school.

Gym – severe changes in temperature in the space deem it uninhabitable at times. In addition to the environmental issue, size constraints prevent certain activities and events, such as graduation, from being held in the space. The bleachers are not in compliance with current code and the sightlines for games have been diminished to the addition of a LULA lift to bring a modicum of accessibility to the building.

ALL - There are many ideas and programs worthy of bringing into our classrooms which are limited by lack of access to sinks and also lack of electrical outlets. Furthermore, due to the lack of electrical infrastructure and space, group learning, cooperative learning, and the use of technology are significantly constrained.

There is an absence of private and confidential spaces for testing, counseling, speech, school psychologist, and remedial instruction.

Our teachers lack spaces for common planning and prep work. They currently use classrooms for planning, but then have to run to the copier/printer/paper cutter, etc. It should be all in one space. In order to create professional development space for the faculty, cafeteria space was sacrificed to replace a displaced faculty dining room. Furthermore, space for team meetings is relegated to available classrooms that are disconnected from resources rather than resourced, professional meeting spaces.

The Middle School facility has a rigid classroom structure that does not have the capacity to support a flexible and adaptable model of instruction. This puts the students at risk for not achieving their educational potential and preparation for an unknown future due to the deficiencies of the facility. Additionally, the obsolete building limits educators' ability to meet state and local professional standards and compromises their ability to educate their students.

REQUIRED FORM OF VOTE TO SUBMIT AN SOI

REQUIRED VOTES

If the SOI is being submitted by a City or Town, a vote in the following form is required from both the City Council/Board of Aldermen **OR** the Board of Selectmen/equivalent governing body **AND** the School Committee.

If the SOI is being submitted by a regional school district, a vote in the following form is required from the Regional School Committee only. FORM OF VOTE Please use the text below to prepare your City's, Town's or District's required vote(s).

FORM OF VOTE

Please use the text below to prepare your City's, Town's or District's required vote(s).

Resolved: Having convened in an open meeting on _____, prior to the closing date, the _____ *[City Council/Board of Aldermen, Board of Selectmen/Equivalent Governing Body/School Committee]* of _____ *[City/Town]*, in accordance with its charter, by-laws, and ordinances, has voted to authorize the Superintendent to submit to the Massachusetts School Building Authority the Statement of Interest dated _____ for the _____ *[Name of School]* located at _____ *[Address]* which describes and explains the following deficiencies and the priority category(s) for which an application may be submitted to the Massachusetts School Building Authority in the future

_____ ; *[Insert a description of the priority(s) checked off on the Statement of Interest Form and a brief description of the deficiency described therein for each priority];* and hereby further specifically acknowledges that by submitting this Statement of Interest Form, the Massachusetts School Building Authority in no way guarantees the acceptance or the approval of an application, the awarding of a grant or any other funding commitment from the Massachusetts School Building Authority, or commits the City/Town/Regional School District to filing an application for funding with the Massachusetts School Building Authority.

CERTIFICATIONS

The undersigned hereby certifies that, to the best of his/her knowledge, information and belief, the statements and information contained in this statement of Interest and attached hereto are true and accurate and that this Statement of Interest has been prepared under the direction of the district school committee and the undersigned is duly authorized to submit this Statement of Interest to the Massachusetts School Building Authority. The undersigned also hereby acknowledges and agrees to provide the Massachusetts School Building Authority, upon request by the Authority, any additional information relating to this Statement of Interest that may be required by the Authority.

Chief Executive Officer *

School Committee Chair

Superintendent of Schools

Robert Jackson

Anthony Tinnirella

Michael Flanagan

Chair, Board of Selectmen

(signature)

(signature)

(signature)

Date

Date

Date

3/27/2018 4:03:47 PM

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3/27/2018 9:20:08 AM

* Local Chief Executive Officer: In a city or town with a manager form of government, the manager of the municipality; in other cities, the mayor; and in other towns, the board of selectmen unless, in a city or town, some other municipal office is designated to the chief executive office under the provisions of a local charter. Please note, in districts where the Superintendent is also the Local Chief Executive Officer, it is required for the same person to sign the Statement of Interest Certifications twice.