

MEMORANDUM/Abbot Public Library Renovation Committee
Critical Infrastructure Replacements & Proposed Renovations Abbot
Public Library
January, 2020

Warrant Article for Town Meeting

To see if the Town will vote to raise, appropriate & apply a sum of money for renovating, remodeling, reconstructing & replacing infrastructure to the existing Town building known & identified as ABBOT PUBLIC LIBRARY, & to determine whether this appropriation shall be raised by borrowing or otherwise, or by taking any other action relative thereto.

PROBABLE RECOMMENDATION that a sum not greater than **\$9,500,000** be appropriated (\$1,000,000 of which will be provided by the Abbot Public Library Fund, Inc.)

Summary of the Case

The Town of Marblehead must act now, to preserve (& update) the Abbot Public Library, which is a public building/asset -- & which is **at risk** of exposure to patron/staff injuries & liabilities.

Many of its critical infrastructure systems are verging on failure & can no longer be maintained in an ongoing patch-work maintenance mode.

- Actual annual maintenance costs have exceeded the annual maintenance budget over the last several years by more than double.

Many of the current infrastructure systems are more than merely “out of code,” but are beyond their functional life spans (30+ years) & now present the risk of becoming a “liability” to the Town.

These needs are urgent & cannot await being “processed” through the channels for state funding - which would mean over 7 years of waiting time in the queue with no guarantee of being a successful candidate for state funds. The time spent to take this approach -- with only a 50% maximum reimbursement policy—would only add to the cost of infrastructure replacement.

In contrast, by way of example, the duly elected Library Board of Trustees has already begun to call upon **private funding**, available by limited & restricted bequests, to responsibly execute several steps toward at least a partial upgrade of existing systems & spaces (& to professionally assess the cost-feasibilities of the needed replacements & renovations):

- 2016 (\$60,000) – Through a bid process managed by the Town to hire architects (Schwartz Silver) to assess the feasibility & likely cost of an entirely new building, estimated to be between \$20-\$30M in 2018 dollars – & reaching the conclusion, based on community surveys, focus groups & further review of the actual square footage needs of the library, that the existing space (& location) was the most desirable & practical option.
- 2016 (\$70,000) – Funded & completed a “water penetration study” to define strategies for modification & mitigation, as well as a supplemental engineering review of the mechanical systems of the library. Peer review of report was done in September, 2017 (\$5,000)

- 2017 (\$250,000) - Designed & renovated an entirely new Children’s Center—our most urgent priority— opened in December 2017.
- 2017 (\$100,000) – Designed & renovated the Meeting Room --our most publicly used space— opened in January of 2018.
- 2018 (\$59,000) – Funded the hiring of architects (Johnson & Roberts) to assess the feasibility of the needed renovations & replacements, & to design a complete renovation of the Library, within the existing footprint. We are currently at phase 1 of Schematic Design.

These privately funded expenditures thus far (totaling over \$500K), have been undertaken in recognition by the Board of Trustees of the “aged” condition of the library & the urgent need for replacement & renovation.

Accordingly, the Board is now ready to present to the Town, its responsibly developed plan for “*Critical Infrastructure Replacements & Proposed Renovations*” of the Town asset known as the Abbot Public Library, which will provide the town of Marblehead with a “new” library for the next 25 years at a fraction of the cost of building a new space.

Proposed Schedule

The following schedule has been developed for this project:

- | | |
|--|-----------------------|
| • Receive approval for project’s funding at Town Meeting | May/June 2020 |
| • Final Design Documents | June to December 2020 |
| • Prepare Construction Documents | January to April 2021 |
| • Bid Phase | May to June 2021 |
| • Execute contract with selected contractor | July 2021 |
| • Library moves out of current location | August 2021 |
| • Construction begins | September 2021 |
| • Construction is completed | September 2022 |
| • Library moves back into renovated space | October 2022 |
| • Opening of renovated library | November 2022 |

Background

The original library building was constructed in 1953-54, with renovations/new wing constructed in 1990-91. The Library & its equipment & furnishings are owned by & the responsibility of the Town.

A. Annual patronage/usage/staffing data

- 18,577 Number of 2017 card holders
- 190,975 Number of 2017 transactions
- Open 7 days a week except summer (6 days a week) with evening hours 3 nights a week
- 537 Number of FY 2018 Programs (both Hosted & Originated for all demographics),
- 300 Number of FY 2018 Volunteers (Trustees; Friends; Driftwood GC; 2nd Century; etc.)
- 647/wk Hours of FY 2018 FTE Staff

B. Maintenance History –

Routine maintenance has been performed as needed on the various building systems, but the majority of these systems either are (or are very close to being) at the **end of their useful life span & are no longer providing reliable service**. In some cases – like with the air conditioning system – several emergency repairs have had to be performed.

The library has tried to "absorb" the costs of emergency repairs to these systems, but at times has approached the town asking for financial assistance. In some cases, the library has used some funds from grants/trusts to pay for the emergency repairs, but cannot rely on this approach going forward. The cost & frequency of these emergency repairs is increasing making it difficult for the library to follow its budget. This results in reliability (and safety) issues, making it more problematic for the library to maintain "normal" operations.

The following is a comparison of the original maintenance budget versus actual expenditures for the last three fiscal years. The data was obtained from the Town accounting records associated with the **R&M Building & Grounds** accounting category. Copies of the printouts are contained in **Appendix 1**.

	FY 2015	FY 2016	FY 2017	Total
Actual Maintenance Costs	\$8,909.62	\$43,942.62	\$16,329.49	\$69,181.73
Original Maintenance Budget	\$10,834.00	\$10,834.00	\$10,834.00	\$32,502.00

Overage 212%

Maintenance by Discipline	FY 2015	FY 2016	FY 2017	Total
Electrical	\$2,406.02	\$3,039.56	\$763.02	\$6,208.60
Fire Sprinkler	\$300.00	\$8,254.00	\$300.00	\$8,854.00
HVAC	\$883.00	\$1,320.72	\$6,223.88	\$8,427.60
Elevator	\$2,464.19	\$2,599.72	\$3,192.94	\$8,256.85

As can be seen, the maintenance costs for fiscal years 2016 & 2017 significantly exceeded the original budget. This trend demonstrates that the existing systems within the Library are requiring more than just routine maintenance to keep them operational. It demonstrates that they are at, or fast approaching, their life span & are in need of complete replacement.

C. Building Renovations: implemented & proposed:

- 2015/2016 – The Trustees hired an architect to investigate the possible construction of a completely new library building on the existing or a different site. The size of the new library varied from replacing the existing footprint (30,000 square feet) up to a 35,000-square foot building. The estimated costs ranged from \$20 to \$30 million. Based on the results, the Trustees decided to move forward with performing renovations on the existing Children’s Room & Meeting Room & not pursue the construction of a completely new building. It became clear that, after these renovations, more space was not needed – rather, a total re-design of the existing space was what would be required to meet 21st Century expectations.

- 2016 – Renovations of Children’s Room & Meeting room -- **completed** with private donations totaling \$350,000.

In 2018 the Library Trustees with the guidance of the Building Renovation Committee (citizen volunteers with architectural, engineering and financial expertise) hired a professional architect/engineering team to assess the existing condition of the building -- **as part of their study to perform renovations**. More broadly, without a well-planned & executed renovation, the risk for the Library is that of **obsolescence** into the 21st century.

As a result of the architect/engineering team’s evaluation of the existing building, along with consultation with the Trustees as to their goals for the library’s renovations, a series of options were developed. As a result of several design charrettes to review the design options with the Trustees, the architect/engineering team has developed a conceptual design layout for the proposed renovations.

During the development of the options, the architect/engineering team factored in **“green” design elements** that would help reduce the overall carbon footprint of the renovated building. Some of the green design elements would be to install new more energy-efficient HVAC system, replace the existing lighting with LED fixtures to decrease electrical usage, use low flow toilets, etc. These green design elements would be further refined as the architect/engineering team moved forward with their preparation of the construction documents.

The following is a summary of the proposed renovations:

- **Proposed Renovation, Remodeling & Reconstruction:**
 - Improve spaces for library staff & circulation desk.
 - Expand patron services by increased digital resources.
 - Provide a “coffee-bar” & related amenities.
 - Provide better facilities for group meetings & study
 - Provide better spaces for informal reading & socialization.
 - Improve lighting & seating.
 - Create a dedicated space for teens.
 - Create a business zone.
 - Improve the “Secret Garden” to provide programming/recreation space, as well as to better connect the library to the outdoors.

As part of this conceptual design, the architectural team also generated an estimate of probable project costs. The total “fully loaded” cost (raw construction cost plus 9% for general conditions, 3% for bonds & insurance, 4% for overhead & profit, & 15% for design & estimating contingency) of the renovations was estimated to be \$1,586,084 in August 2018 dollars.

D. Infrastructure Assessment (2018 dollars)

In addition to the proposed building renovations, the architect/engineering team also identified several issues with the existing infrastructure of the building. In February 2018 the architect/engineering team performed a site visit to inspect & ascertain the existing conditions of the various systems. The consulting engineering firm of Garcia, Galuska, Desousa conducted an assessment of the followingsystems:

- Electrical Distribution System
- Interior Lighting System

- Emergency Lighting System
- Exterior Lighting System
- Wiring Devices
- Fire Alarm System
- Feeder/Branch Circuits
- Tel/Data Security
- Heating
- Air Conditioning & Ventilation
- Exhaust Fans
- Automatic Temperature Controls

The findings of their assessment were summarized in two reports (*Electrical Existing Conditions Systems Report & HVAC Existing Condition Systems Report*) dated March 12, 2018. In addition, the architect reviewed the building & also noted some issues with respect to items that do not meet the current building code. Although these code violations don't have to be addressed right away, when the other renovation work is performed, the regulations require that the entire building must be brought up to the current code.

Based on input from the architect/engineering team, given the overall age & generally poor condition of the existing infrastructure systems, it doesn't make sense to try & simply perform repairs/renovations to them. Based on the scope of the renovations within the building resulting in the removal of walls/ceilings, it would be an ideal time to simply replace the systems with new ones. It was noted that it has become difficult to obtain parts for some of the systems because they are no longer made. Also, given the advances in technology, a new system would operate more efficiently. Finally, there would be an inherent risk attempting to repair the existing systems because it is difficult to correctly assess the condition of every aspect of the existing system. It is likely that by reusing a portion of an existing system, there is an increase in future issues instead of having a completely new system. Based on these reasons, the Trustees are moving forward with the idea that all the existing systems identified need to be replaced.

The following is a summary of the architect/engineering team's findings as to the need for critical improvements to the existing library's infrastructure - at significantly higher costs than what the library can be expected to absorb through its current budget or existing grants. All costs shown are estimated in **August 2018** dollars.

Failure to address these critical needs will (incrementally but in short order) render the Library impaired as an asset of the Town – thus becoming more of a liability – as noted by above historical data.

- **Critical needs infrastructure replacements:**
 - Elevator
 - Electrical
 - Fire Alarm & Protection
 - HVAC
 - Plumbing
 - Surface storm run-off

A more detailed breakdown on each of these critical infrastructure improvements is provided below:

Elevator – Estimated Cost **\$228,431**.

There is extensive rusting of the floor of the elevator due to the high-water table in the area of the library that is impacting the elevator's ultimate structural integrity. The excessive moisture in the elevator pit also makes it prone to untimely failures requiring additional maintenance.

Also, the current size of the elevator is too small & does not meet current building code.

Risk Assessment:

- Possibility of patron(s)/staff being trapped in stuck elevator.
- A person in a wheelchair not having enough space to maneuver within the elevator.

Electrical – Estimated Cost **\$1,275,050**.

The electrical engineers noted that the existing lighting & power panels in building have reached their life expectation. While the panels might continue operating for several more years with no problems, based on all the other proposed renovations – especially with the installation of a new fire alarm, security, & tel/data systems – ensuring that the library has a reliable power distribution system is a critical element.

Risk Assessment:

- Due to the age of the equipment, could result in major system failure
- Need to upgrade the emergency lighting for safety throughout building.
- Increase in electrical usage & associated costs of using existing system - as compared to using new LED fixtures.
- Existing emergency generator that provides emergency power to the sump pumps located below the library basement to prevent flooding of the lower level has been determined to be obsolete and inactive. Generator replacement is critical.

Fire Alarm & Protection – Estimated Cost **\$359,941**.

The engineers noted that the existing fire alarm system does not meet the current building codes (& presents current risks) because of the following conditions:

- The existing building is not fully sprinklered.
- Existing alarm is not ADA-compliant for manual stations & notifications.
- System is nonaddressable.
- Need to install speaker/strobe appliances throughout building, especially in bathrooms

Risk Assessment:

- If a fire occurs within a section of the building where the existing alarms are not ADA compliant.

- A handicapped person is not able to pull the alarm alerting every one of the fire.
- A person who is blind or deaf in the bathrooms won't know of the fire alarm because of the lack of speaker/strobe appliances.

HVAC – Estimated Cost **\$1,766,211.**

Based on the results of a previous 2015 study, it recommended that the existing HVAC system should be assessed. Based on the 2018 evaluation, the engineers determined that, "The majority of the presently installed HVAC systems have reached their maximum serviceable life & are in need of replacement."

There are three boilers that provide heat to the building. Numerous maintenance problems with boilers. Boilers are past the mid-point of their 20-year life span.

Majority of heating distribution system is in poor condition having been installed during the 1991 renovation project (system is almost 30 years old).

Air conditioning system is in poor condition having been installed during the 1991 renovation project (system is almost 30 years old). Reliability & maintenance issues keeping the system operational. Humidifier portion of system no longer works.

Risk Assessment:

- There have been actual occurrences of AC failure(s), risking patron & staff health issues.
- Concerns about the humidity levels within building during summer months damaging books & other materials.

Plumbing – Estimated Cost **\$155,211.**

The majority of the plumbing systems are original to the building & its additions. While some of the systems have been updated as part of building renovations, they have served their useful life. The existing building plumbing systems could continue to be used with maintenance & replacement of failed components; however other non-dependent decisions will force plumbing upgrades to bring them up to the current code requirements. Current access code requires accessible fixtures whenever plumbing is required. Also, when new fixtures are installed, current code requires that they be water conservation models. Finally, the proposed library renovations identified the installation of new bathroom facilities on the lower level that would require the installation of new water/sewer services.

- Due to the lack of accessibility to the existing main water service, it is recommended that during the building renovation, new domestic water piping should be installed.
- Install thermostatic mixing valves for the domestic hot water heaters.
- Replace the existing under slab sump pumps & pit to ensure they are capable to prevent flooding of the lower level of the library.

Parking Lot – Estimated Cost **\$123,814.**

Based on the 2016 *Water Penetration Study and 2017 Peer Review*, one of the major reasons identified for the past flooding of the lower level of the library is because of the slope of the access

road and back parking lot towards the building. Thus, as water flows down Maverick Street & then down the library’s access road, it is directed towards the library’s back entrance.

The study had called for the installation of an additional catch basin along Maverick Street to help collect some of the water before it enters the access road. Based on the Trustee’s discussion with the Water & Sewer Department, they have agreed to install this new catch basin within the next few years.

Another recommendation is for the parking lot to be regraded to re-direct the water away from the building. At least one additional catch basin would be installed in the new parking lot to help collect & direct the storm water away from the library. Finally, a series of perimeter drains are proposed to be installed around certain sections of the library to help collect the direct the flow of the water away from the building.

Total Infrastructure Replacement Cost \$3,908,658 (2018 dollars)

E. Overall Estimate of Probable Project Cost

Based on estimates provided by the architect/engineering team, the following is a summary of the costs:

- Building Renovations, Remodeling, & Reconstruction Cost: \$1,586,084
- Infrastructure Replacement Cost: \$3,908,658
- TOTAL CONSTRUCT COST (2018 dollars) \$5,494,742

Based on the current schedule, the actual construction of the library's renovations would start in September 2021 & would take approximately 12 months to complete. Therefore, we need to apply an escalation factor to the 2018 costs so they better reflect the anticipated construction costs. Therefore, we have assumed 44 months of escalation from August 2018 until April 2022 (mid-point of construction) at an escalation rate of 4.0% per year that increases the total estimated construction cost to **\$6,300,639** (\$18,316 escalation cost per month). If the project is delayed, then the overall cost will increase.

In addition to the construction costs, there are other related costs that would be incurred during the life of the project. Based on the architect’s extensive experience in Massachusetts library renovation & replacement projects, they have developed an estimate for other project-related costs as follows:

- Furnishing & Equipment: \$595,000
- Fees (OPM, Architecture/Engineering, Furnishings, etc.): \$871,583
- Project Expenses (Clerk-of-the-Works, survey, testing, etc.) \$254,500
- Contingencies (10% Construction & 5% Project): \$716,118
- Rental of private space for Temporary Library \$300,000
- Rental of storage space for books and furniture 100,000
- Moving cost (two ways) 300,000
- TOTAL OTHER COSTS **\$3,137,201**

Therefore, the total estimated project cost is:

- Construction Cost (2022 dollars) \$6,300,639
- Other Project-Related Costs (2022 dollars) \$3,137,201
- **TOTAL ESTIMATED PROJECT COST** **\$9,437,840**

Note: The percentage of contingencies carried in the estimate was discussed within Trustees and Building Renovation Committee and felt to be reasonable based on the current level of schematic design as well as other unspecified project-related costs (e.g., hazardous material abatement, rehab cost for the temporary library space, etc.) not currently carried in the overall project cost estimate.

