

11. CPA PROJECT APPLICATION FORM

[CPC Use Only: Date Received 1/4/19 By: SAMMIE KUL  
Assigned CPC #2020- 06 ]

If possible, use word processor to fill out form. Please answer all questions, use "N/A" if not applicable.

1. a.) Applicant Name and Organization: Last Abraham First Vanessa  
Organization(s) (if appropriate) GROTON PUBLIC LIBRARY
- b.) Regional Project: Yes  or No?  If Yes, Town/Organization: \_\_\_\_\_
2. Submission Date: 01/09/2019
3. Applicant Address: St. 99 Main Street  
City/ State: GROTON / MASSACHUSETTS ZIP: 01450
4. Ph. # 978-448-8000 Email: vabraham@gpl.org
5. CPA Purpose. Check all that apply:  
Community Housing  (Affordable Housing: ) Historic Preservation  Open Space:   
Recreation
6. Town Committee or boards participating: Library Trustees, HDC, Town Mgr, DPW, SB, FC
7. Project Location/Address: Groton Public Library, 99 Main St., Groton
8. Project Name: 1893 Historic Library Preservation -- New Roofing System
9. Additional Responsible Parties (If applicable):

Role (specify)	Name	Address	Ph. (w) (cell)	Email
Property/Site Owner	Library Trustees	99 Main St.	978-448-8000	gpltrustees@gpl.org
Project Manager	Vanessa Abraham	99 Main St.	978-448-8000	director@gpl.org
Lead Architect	GRLA	239 South St, Hopkinton MA	508-544-2600	cpaszko@gfarchitects.com
Project Contractor	Gorman Richardson Lewis Architects	239 South St, Hopkinton MA	508-544-2600	cpaszko@gfarchitects.com
Project Consultants	Knollmeyer Bldg Co.	60 Jonspin Rd, Wilmington MA	781-259-5000	info@knollmeyerbuldingcorp.com
Other: Struct.Eng.	RRC Engineering	60 Man Mar Dr, Plainville MA	508-384-0163	info@rrcengineering.com
Other				

10. As appropriate, indicate if proposal requires P&S agreement  Deed   
Option agreement  Other-describe: \_\_\_\_\_
11. a.) Assessor info. (map/ block/ lot id.(s)): 113/18/0 b.) Tax classification type: exempt
12. Permits required: Zoning:  Historic Preservation:  Other : \_\_\_\_\_
13. Historic Commission Approval signoff (when required): \_\_\_\_\_ Date: \_\_\_\_\_
14. Funding: a.) Requested from CPC: \$ 395000 b.) Committed from other sources: \$ 730000  
c.) Annual anticipated total income : \$ 929702 d.) Annual anticipated total expense: \$ 929702  
d.) Anticipated net income (loss): \$ \_\_\_\_\_ e.) Estimator name/company: \_\_\_\_\_
15. CCP Objectives - use codes from Section 5 to indicate all that apply: 5.1.1 & 5.1.2
16. Project Timelines: Proposed Start Date: 07/01/2019 Projected Complete Date: 12/31/2019
17. Estimated Delivery Date of Completion Report to CPC: 12/31/2019

18. Project description and explanation (attach additional sheets as needed): We are applying for CPA funds to preserve the 1893 building from further water damage due to insufficient drainage and snow&ice protection. While the 1893 slate roof, flat seam copper roof, copper gutters and downspouts are all in fair condition, if we replace the metal flashings and expand the snow & ice shield underlayments, we would need to remove 20-25% of the slate. The National Park Service Preservation Brief recommends replacing a historic slate roof if 20% or more is removed. The benefit of doing the 1893 roofing /drainage systems at the same time as the failing 1999 roofing/drainage system is two-fold: 1. The worst leaks are at the junction of the 1893 and 1999 buildings and a huge part of the roofing and drainage system problems are not only poor quality work on the addition, but also that the systems don't tie together. It would be best for the entire structure if it had ONE roofing & drainage system that tied together to protect all parts. 2. The site has enormous challenges: a 3-story sloping lot, daunting vertical heights, limited ground & roof access. The cost of scaffolding and giant crane needed alone is worth paying for a 100 year system rather than a 20 year roofing and drainage system that needs replacement five times in the same period.

19. Feasibility: We await the results of the structural engineer hired to determine if the 1999 addition can take on the added weight of a slate roof. If so, then HDC approval will be needed prior to changing artificial slate to real slate.

20. List of attachments: GRLA Building Envelope & Design Study Proposals; The National Park Service Preservation Brief 29: Repair, Replacement, & Maintenance of Historic Slate Roofs; Assessors Map; USGS Map; Budget Sheet; Proposed FY20-24 Capital Plan Pages on \$1.125 Million Library Roof Project; Groton Herald article; Support Letters

21. Additional Information: We are delighted to be working with professional building envelope scientists (GRLA) - knowledgeable, experienced, dedicated professionals passionate about historic preservation. They have done a very thorough job and have been terrific to work with. We have complete confidence in their ability to design the best protection for this library for decades and generations to come. Right now, the full \$1,125,000 for the entire project is in the draft capital plan for the Town for FY2020. Any amount the CPC supports up to \$395,000 - pending successful outcomes of spring votes - are costs directly removed from Groton's taxpayers.

22. Management Plan: Due to the size of this project, it will require a project manager OPM/Clerk of the Works, which will be advertised for at the same time as the bid solicitations. GRLA has concluded their additional on-site studies and are now working to design the new roofing and drainage systems for the entire building. They will be managing the bid process, which will be in March with the Town Manager bids for the Highway Facility project. The bids will be opened together, and then actual costs brought to Spring Town Meeting for voter approval. If this project passes at Town Meeting, it will go to the voters for a general bond / debt exclusion vote at the May election. If the bond passes, then this project will be able to move forward on July 1, depending on the awarded OPM's and contractors' schedules. The Town Manager, Town Accountant, Library Director, GRLA, and Library Trustees will all assist in overseeing the project with the OPM, to ensure problems are handled, costs are contained, & the project is completed as scheduled.

23. Applicant Signature: [Signature] Chair, GPC Trustees Date: Jan 11, 2019  
 Co Applicant Signature: [Signature] Date: 1/11/19  
 Co Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)**  
CPA Project Application # 2020-06 (Slate Roof Replacement)



*View of the 1893 library slate roof, with elastomeric membrane (EPDM) roof and HVAC area behind, and 1999 sloped roof to the rear.*

**Expanded Project Description and Explanation:**

While the original slate roof on the 1893 library building is in the best condition of the three library roofing systems, an inability to arrest interior water damage in the 1893 building - no matter what fixes have been tried – finally led the Library Trustees to pursue a full building envelope study (of which the CPC funded \$5,000 of the total \$11,226, with the rest paid with state aid) in FY2018.

Following the bidding process, the Library Trustees hired Gorman Richardson Lewis Architects (GRLA) of Hopkinton, MA, historic building specialists and envelope scientists, to do a full evaluation of the entire building envelope and make recommendations for preserving the beautiful historic 1893 building, as well as the 1999 addition. (Full report attached.) GRLA wished to do three additional studies, as well as design the new roofing and drainage system for the entire building and manage the bid process for this project. At Fall Town Meeting 2018, a warrant article for \$66,000 for GRLA's additional design study and work was approved.

## **HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)**

CPA Project Application # 2020-06 (Slate Roof Replacement)

Since then, GRLA has completed their three additional studies, and are drawing up the roofing system replacement specifications for bids right now. They will have them ready to go out to bid in March in conjunction with the Town Manager's Highway Department Construction bids in order to have accurate numbers to bring to Spring Town Meeting for voter approval.

The Board of Trustees of the Groton Public Library are requesting financial support of up to \$395,000 in Community Preservation Act funds for the portion of this project that is for the historic preservation of the 1893 building. Whatever FY2020 CPA funds are granted and voted for this project up to the amount requested will be removed from the direct obligation of Groton taxpayers (contingent upon a positive Spring Town Meeting vote in April AND a positive General Bond Debt Exclusion vote in May), as the entire \$1.125 million project is currently on the Town Manager's Draft Capital Plan for FY2020.

### **Funding Sources:**

After the Library Trustees and Director regrouped from our complete shock at the GRLA report and projected costs to address all envelope issues, we have worked with the Town Manager to plan for this project since spring 2018. We made a formal presentation to the Finance Committee and Select Board in July. We have investigated other avenues for potential funding support of this project, but none were appropriate for funding municipal building maintenance and repair of the 1999 roofing and drainage systems and the 1893 masonry and window components. It was the CPC that seemed to be the funding source in the best alignment with the need for the historic restoration and protection of the 1893 building with adding snow and ice shield and flashings replacement, and the subsequent new roofing and drainage systems made necessary by performing this work. We also investigated whether a performance bond was still in place to make the original contractors pay for the poor workmanship that is the direct cause of many of the issues we have in the building, but that bond is long gone.

### **Benefits to Groton**

The Groton Public Library is the eighth oldest public library in the state. It was founded in 1854 - the same year as the Boston Public Library - but it did not have its own home until the townspeople and generous benefactors raised money for Groton's first library building in 1893. The Library is built on land donated by Charlotte A. L. Sibley and it was designed pro bono by Boston architect Arthur Rotch, a grand-son of Abbott Lawrence, who was the original grantor of funds for the establishment of Groton's library in 1854. Library Staff, Volunteers, and Trustees squeezed every inch of space from the 4,000 sq. ft. 1893 building to serve the public for over 100 years, but on March 6, 1999, the newly renovated and expanded library opened, with the entire library now sized at 17,140 sq. ft.

The Groton Public Library has been an important part of the community for 165 years. We are fortunate to live in a community that recognizes a good public library is a priceless asset to all.

## **HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)**

CPA Project Application # 2020-06 (Slate Roof Replacement)

The Groton Public Library continues to uphold the motto inscribed over its doors - "Open to All" - and will remain a dynamic and vibrant center in the years and decades to come.

Today, GPL is here for the informational needs, educational support, and cultural enrichment of the entire community, through every phase of life. We are the local job, technology, lifelong learning, and resources center. We support early childhood development and preparation for schooling, home schooling, online schooling, and formal schooling for all ages. We are a literacy and language resource open 6 days a week most of the year, including evenings, Saturdays, and Sundays. We provide free access to vast collections of physical and virtual books, materials, and other incredible resources to celebrate and promote the joys of reading and learning and we deliver all with friendly, professional, and generous service. We are a center meeting place and a comfortable space to work, read, write, or simply be. We are a safe haven; a quiet and beautiful refuge from a noisy and overstimulating world. In FY2018, over 100,000 people visited the library, borrowed over 200,000 items, and over 11,000 attended our ever-expanding variety of programming offerings for all ages. In the 2017 town assessment survey, 97% of residents who responded said the library offered good value for their tax dollars - the highest rated department in town - and 95% rated our quality of service as good (22%) or excellent (73%) - also the highest of all town departments.

Keeping the library building protected from further water infiltration and damage is essential to our mission and is a service to every resident in Groton. Any amount the CPC can fund to preserve and protect our historic beautiful 1893 building will (votes permitting) provide direct financial relief to Groton taxpayers.

### **Section 4 Criteria:**

This project does meet the criteria for Historic Preservation under allowable Community Preservation Spending guidelines. While the Groton Public Library is not listed on the State Register of Historic Places, the Groton Historical Commission determined (see attached report dated June 2006) that the Groton Public Library is recommended for listing in the National Register of Historic Places. The building's associations with historic educational activity in Groton establish its significance under Criterion A. The design of the yellow brick building's arched window tops and columniated entry porch, the surviving historic exterior materials and architectural details make the property eligible under Criterion C. The library retains integrity of design, materials, setting, and workmanship. GPL is also located in Groton's historic district and is a building and institution significant to the history, architecture, and culture of Groton.

The CPA funding requested is for the protection and preservation of the 1893 historic property from further water damage and decay.

### **Restoration, Not Repair**

## HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)

CPA Project Application # 2020-06 (Slate Roof Replacement)

While GRLA's report included maintenance and repair of 1893 masonry and window components, as well as full replacement of the 1999 sloped and rubber roofs, this work is not included in our CPC request. We are requesting CPC support only for the work to preserve and protect the 1893 building from further water damage and decay: adding the needed amount of snow and ice shield plus flashings replacement, and the subsequent need for new roofing and drainage systems following this preventative work on the 1893 building.

The Library is prominent on historic Main Street, and the Library Trustees are in the process of applying for designation on the National Register of Historic Places. Fortunately, great care was taken in the 1999 renovation and expansion to keep the construction materials and high quality in keeping with the late Victorian period design of the original building, both inside and out; this attention to detail will be critical in being awarded this designation.

The original 1893 Groton Public Library is a truly gorgeous historic building – one worth preserving from further damage and decay from water infiltration. The Library is a beloved cultural center and institution in Groton. We hear from new residents every year that they decided to purchase a home in Groton over another town because of the Groton Public Library, as well as from those who moved out of Groton and miss this library terribly, as they feel that their new town's library does not measure up to GPL. The Groton Public Library is a treasure that must be preserved for generations to come.

This project qualifies for CPA funding under Preservation of Historic Resources, as the new slate roof with proper underlayments, insulation, and drainage, will preserve the 1893 from further damage and decay due to water infiltration.

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### **Current Schedule**

GRLA is on target with this schedule and the Town Manager's bid schedule, as of Jan. 10, 2019.

Additional Study/Measurements	Fall 2018
• 3 days	Fall 2018
Design and Documentation Phase	Winter 2018/2019
• 50% Design Development Set	December 2018
• 95% Design Development Set	January 2019
• Bid Documents	February 2019
Bid Phase	Spring 2019
Construction Phase	Summer 2019

## Relevant Sections from GRLA's Building Envelope Assessment Report

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### 4. Discussion and Recommendations (pages 39-43)

#### 4.1 Steep-Slope Roof Systems

##### 4.1.1 Ice Dams and Attic Conditions

Ice dams were reported to be the main source of moisture infiltration and deterioration of building components related to the roof system on the 1893 building. Ice dams are typically the result of heat loss from the conditioned building space, which can raise the temperature of the cold roof deck, causing snow and ice to melt, refreeze, and back-up under the slate shingles and underlayments.

Previous interior renovations to the building included increasing attic insulation above the finished ceiling within the 1893 Library Building as well as installing HVAC ducts within the attic above the insulation. Locating the ducts above the insulation system may reduce thermal efficiency of the building and allow transfer of heat from the conditioned spaces into the attic. The 1893 Library building has mass masonry walls below the roof eaves with less thermal resistance value than the attic insulation, allowing for heat loss through the walls that may increase the potential for ice damming on the roof system. To combat the issue of ice dams, industry standards typically recommend installing additional insulation to separate the warm interior environment from the cool exterior environment, especially at the roof eaves.

Additionally, attic spaces between the original building and the addition are thermally connected and have non-continuous insulation with numerous thermal penetrations. Particularly, the multi-story void between the original building and addition observed on the north side of the building (photos 13-15), attic stairwell, interior skylight, and utilities penetrations all represent penetrations of the thermal barrier between the interior conditioned space and the unconditioned attic, causing significant thermal loss of conditioned air to the attic spaces, which in turn, raises the temperature of the roof deck and promotes ice dam formation on the roof.

The multi-story void on the north elevation appears to create a heat stack effect, drawing heat from the occupied spaces below and also appears to be the location of severe moisture infiltration as it is aligned with the poorly configured roof expansion joint and flashings.

Ventilation of the attic spaces is minimal including a manually operated passive turbine vent in the skylight at the original library building and isolated louvered vents in the vertical walls of the mansard roof system. Based on the inconsistent thermal and ventilation conditions observed within the attic spaces, it appears there are

## HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)

CPA Project Application # 2020-06 (Slate Roof Replacement)

several factors contributing to ice dams and associated moisture infiltration. Industry standards recommend installing ice and water shield membrane a minimum of 3'-0" beyond the plane of the exterior walls below the eave in a well insulated and ventilated building. Due to the conditions observed, GRLA recommends GPL consider installing ice and water shield (a self-adhered modified bitumen underlayment) a minimum of 6'-0" up slope from the eaves to provide greater protection against moisture infiltration from ice dams.

Further detailed evaluation is recommended to develop a specific scope of repairs to improve thermal efficiency of the building. Improving thermal efficiency will not only reduce ice damming potential, but may also allow the building HVAC system distribute heat to the building more evenly and efficiently. Other options to improve thermal efficiency include installing insulation above the roof deck; however this may alter the exterior appearance of the building by increasing the height of the roof fascia.

### 4.1.2 Slate Shingles

The slate roofing system at the original Groton Library Building is approximately 125 years old. In general, the existing slate roof system appears to be in fair condition; however, the slate shingles shown signs of age related deterioration including isolated cracked, broken, and missing shingles.

Historically, slate roof systems have an average lifespan of 60-125 years; however, some slate roof systems have been known to last 200 years or longer. The lifespan of the slate roof system is determined by the quality, fabrication, installation, and maintenance of the material.

The slate shingle roof system on the 1893 library building appears to be mostly original to the building. Maintenance repairs noted in Section 2.1 above included the removal and replacement of sheet metal flashings and the installation of ice and water shield at several gutters and valleys as well spot replacement of broken or missing shingles. Repairs indicate approximately 2.5 courses of slate were removed at the valleys and eaves to install the ice and water shield to protect against leaks from ice dams, which would indicate that the ice and water shield membrane extend 1'-6" to 3'-0" above the flashings.

The National Parks Service Preservation Briefs strongly recommend the repair of historic slate roofs rather than replacement whenever possible and that roof replacement on historic structures be considered a last resort. The preservation briefs also recommend that if more than twenty percent of a slate roof system requires repair, it is typically more cost effective to replace the entire slate shingle roof system

## HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)

CPA Project Application # 2020-06 (Slate Roof Replacement)

than to perform spot repairs.

Based on the conditions noted above, the removal of slate shingles at the roof eaves around the perimeter of the building and valleys is recommended to install ice and water shield membrane further up the roof slope (6'-0" minimum) to protect against moisture infiltration. Other repairs that should be considered include the removal and replacement of isolated cracked, missing, or otherwise deteriorated shingles. As this work will likely approach approximately 20% of the slate shingles, it is recommended that the slate roof system be considered for replacement. Removal and reinstallation of the slates could be considered, however, based on the advanced age of the shingles, the slates may become damaged upon removal or may not have enough service life remaining to make reinstallation cost effective as replacement can be expected to have a longer service life than reinstallation repairs.

### 4.1.1 Sheet Metal Flashings

Sheet metal flashings throughout the original 1893 building primarily consist of plain red copper flashings that are approximately 18 years old. Sheet metal flashings at the 1999 addition primarily consist of lead coated copper and are original to the construction of the addition.

In general, flashings appear to be in good condition throughout much of the roof. Many of the ridge and valley flashings appear to have lapped seams in lieu of soldered seams and isolated areas appeared to have voids in the seams that may allow moisture infiltration. Exposed fasteners at the copings show signs of corrosion and deterioration in several areas.

Roof expansion joint flashings consist of lead coated copper and extend through the synthetic slate roof close to the tie-in to the 1893 roof at the valleys. Valleys at the connection of the buildings also consist of lead coated copper. On the north elevation, the expansion joint, valley flashing, and gutter all meet at the eave. On the south elevation, the expansion joint terminates into the valley a few feet above the eave.

Based on moisture staining below the expansion joint, this area appears to be the source of several interior leaks observed as referenced in the photos of this report. GRLA recommends reconfiguration of these components to provide a more water tight connection.

GRLA recommends the removal and replacement of the sheet metal flashings in conjunction with the replacement of the steep slope roofing systems

## HISTORIC PRESERVATION OF 1893 GROTON PUBLIC LIBRARY (NEW ROOF & DRAINAGE SYSTEMS)

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recommended.

### 4.1.2 Gutters and Downspouts

Both steep slope roof systems are drained by sheet metal gutters and downspouts. The gutter systems of the original building and the addition operate separately and abut each other, but do not align vertically where they meet near the building expansion joint. The connection appears to consist of several overlapping pieces of both copper and lead coated copper flashings. The overlapping pieces of sheet metal gutter, valley flashing, and roof expansion joint flashing are suspected as the sources of moisture infiltration as daylight could be viewed at these intersections when viewed from the building interior. The gutters have been reported by GPL to overflow in these areas and may infiltrate the building when the gutters become clogged or exceed flow capacity.

Gutter dimensions between the original building and the addition appear to vary. Gutters at the addition appear to be built into the fiberglass cornice, which could be viewed from the attic. Failed seams in the gutter may be allowed to infiltrate to the building interior.

Spacing between downspouts at the addition also appear to exceed industry recommended standards and may contribute to overflowing gutters. Additional downspouts are recommended to be installed and should be coordinated with building aesthetics and drainage at grade level. Several broken downspout joints were observed throughout the building and are recommended for repair or replacement. Broken downspouts may displace uncontrolled water to unwanted locations and may result in premature deterioration of exterior wall components.

At the west elevation entrance, a broken downspout joint and leaking downspout at the canopy appear to be contributing to deterioration of the canopy ceiling components.

Broken gutter straps near valleys were also observed and may be caused by sliding snow. Downspout maintenance and additional gutter straps are recommended in these areas.

Based on the select deteriorated gutter and downspout observations listed in this report and the recommendation to remove and replace the steep slope roof systems on the building, GRLA recommends the removal and replacement of the sheet metal gutters and downspouts in conjunction with the replacement of the roof system.

Drainage calculations are recommended to determine appropriate gutter and drain leader sizing and if additional drain leaders may be required.

**GRLA PRELIMINARY ESTIMATES TO ESTIMATE 1893 LIBRARY HISTORIC PRESERVATION PROJECT COSTS**

**GRLA PRELIMINARY ESTIMATES, ENTIRE ENVELOPE PROJECT**

Scope of Work	Direct Costs	General Conditions	Mobilization	Bonds & Insurance	Overhead & Profit	Subtotal	Contingency	Total
		10%	10%	3%	15%		20%	
Steep Slope Roofs	\$520,543	\$52,054.30	\$52,054.30	\$15,616.29	\$78,081.45	\$718,349	\$143,669.87	\$870,000
Low Slope Roof	\$67,057	\$6,705.66	\$6,705.66	\$2,011.70	\$10,058.49	\$92,538	\$18,507.62	\$110,000
Masonry Repairs	\$60,600	\$6,060.00	\$6,060.00	\$1,818.00	\$9,090.00	\$83,628	\$16,725.60	\$100,000
Window Repairs	\$26,670	\$2,667.00	\$2,667.00	\$800.10	\$4,000.50	\$36,805	\$7,360.92	\$45,000
<b>Total</b>	<b>\$674,870</b>	<b>\$67,486.96</b>	<b>\$67,486.96</b>	<b>\$20,246.09</b>	<b>\$101,230.44</b>	<b>\$931,320</b>	<b>\$186,264.01</b>	<b>\$1,125,000</b>

Totals for this preliminary estimate are rounded to the nearest \$5,000 increments.

GRLA=Gorman Richardson Lewis Architects, Hopkinton, MA

Estimates are based on 2018 public sector pricing and include 20% contingency in the event of unforeseen conditions are encountered either during the design development or construction phases of the project. These estimates are based on performing the work during normal business hours while the building remains occupied. Before proceeding with repair design or procurement, GRLA recommends an evaluation of the existing structural components supporting the slate roof be performed. Costs associated with major structural renovations are not included in this preliminary estimate. GRLA does not recommend using these order-of-magnitude estimates for sensitive budgeting.

**CALCULATIONS FOR GROTON PUBLIC LIBRARY HISTORIC PRESERVATION PORTION OF ENTIRE BUILDING ENVELOPE PROJECT, Using GRLA's Figures and Formulas Above**

		10%	10%	3%	15%		20%		Rounded to Nearest \$5,000 Increment
1893 Slate Roof	\$194,650	\$19,465	\$19,465	\$5,840	\$29,198	\$268,617	\$53,723	\$322,340	\$320,000
1893 Flat Seam Copper Roof Peak	\$4,873	\$487	\$487	\$146	\$731	\$6,725	\$1,345	\$8,070	\$10,000
1/2 Drainage System for 1893 building	\$37,910	\$3,791	\$3,791	\$1,137	\$5,687	\$52,316	\$10,463	\$62,779	\$65,000
<b>Total, 1893 Roofing Systems</b>	<b>\$237,433</b>	<b>\$23,743</b>	<b>\$23,743</b>	<b>\$7,123</b>	<b>\$35,615</b>	<b>\$327,658</b>	<b>\$65,532</b>	<b>\$393,189</b>	<b>\$395,000</b>

# GRLA PRELIMINARY ESTIMATES TO ESTIMATE 1893 LIBRARY HISTORIC PRESERVATION PROJECT COSTS

<b>GRLA</b>	Project Name : Groton Public Library Project Number: 2017054.01 Date: 02/07/2018 Client: Groton Public Library
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## PRELIMINARY COST ESTIMATE: 1893 HISTORIC PRESERVATION PORTION

Slate Roof Replacement	Quantity	Unit	Unit Price	Total
Demolition	3,500	SF		
Slate Shingles	3,500	SF		
Synthetic Roof Underlayment	3,500	SF		
Self-Adhered Modified Bitumen	1,500	SF		
Copper Flashings				
Ridge (16 oz.)	135	LF		
Hip (16 oz.)	125	LF		
Valley (16 oz.)	90	LF		
Deck Repair (5%)	150	SF		
<b>Subtotal</b>				<b>\$194,650</b>

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Flat Seam Copper Roof Replacement	Quantity	Unit	Unit Price	Total
Demolition	125	SF		
Copper Pans (20 oz.)	125	SF		
Self-Adhered Modified Bitumen	125	SF		
Copper Flashings				
Edge (16 oz.)	60	LF		
Deck Repair (5%)	8	SF		
<b>Subtotal</b>				<b>\$4,873</b>

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Roof Drainage System Replacement	Quantity	Unit	Unit Price	Total
Demolition	690	SF		
Demolition	170	LF		
6" Hanging Copper Gutter (20 oz.)	665	SF		
6" Built-in Copper Gutter (20 oz.)	25	SF		
5" Copper Downspouts (20 oz.)	170	SF		
<b>Subtotal</b>				<b>\$75,820</b>



Above: Approximate demarkation of 1893 Slate Roof from 1999 addition.  
Below: 1893 Flat Seam Copper Roof with Skylight



# Town of Groton, Massachusetts



## Proposed Capital Plan FY 2020 - 2024



**Town Manager**  
Mark W. Haddad

## TOWN OF GROTON

173 Main Street  
Groton, Massachusetts 01450-1237  
Tel: (978) 448-1111  
Fax: (978) 448-1115

## Select Board

Barry A. Pease, *Chairman*  
Alison S. Manugian, *Vice-Chairman*  
John R. Giger, *Clerk*  
Joshua A. Degen, *Member*  
Rebecca H. Pine, *Member*

December 31, 2018

**Honorable Select Board:**  
**Honorable Finance Committee:**

Pursuant to Section 6-6 of the Town of Groton Charter, I am pleased to present the proposed Five-Year Capital Plan for Fiscal Years 2020 through 2024 for the Town of Groton, Massachusetts. Specifically, the Charter states that the Town Manager shall submit a Capital Improvement Plan to the Select Board and Finance Committee at least 6 months before the start of the fiscal year. This Plan is being submitted in compliance with the Charter.

As you know, this Plan allows for careful, critical review of major expenditures, while also giving us the ability to move up or delay expenditures should an imminent need arise. By scheduling expenditures, it allows for a more even distribution of costs, thereby providing greater budget stability. During our most recent bond issue to finance the Senior Center, Lost Lake Fire Protection and Radio Project, S&P Global Direct reviewed our finances and budgeting and maintained our Bond Rating at AAA with a Stable Outlook. Part of their review focused on our Capital Planning. In their Rating Document, they stated that *"Groton also maintains a strong focus on long-term capital planning, evidenced by a five-year capital improvement plan (CIP) that identifies projects and costs across all departments. The Town updates its CIP annually and details pay-as-you-go funding and bond financing of all capital projects."* The Finance Team and I are very proud of this recognition as they understood how seriously we take our Capital Planning.

That said, this year will mark a departure from past Capital Plans as we are adding a new section that provides an additional five (5) year lookout on our Municipal Building needs through Fiscal Year 2030. We believe adding this new section will aid the Select Board and Finance Committee in understanding the long-range needs of our buildings and allow the Finance Team to plan for any major projects that may require long term debt planning.

In addition, the Select Board has developed and approved a definition of what constitutes a Capital Budget Item. We are including this new language in our proposed Plan this year. Specifically, the definition is as follows:

Honorable Select Board  
Honorable Finance Committee  
Town of Groton Capital Plan 2020 – 2024  
page two

*Capital Budget Items, both tangible and intangible, are defined as future projects, programs, improvements and acquisitions having an estimated useful life of at least three (3) years and an initial cost of at least twenty-five thousand dollars (\$25,000). Examples of Capital Items include but are not limited to land (e.g., open space, parks, athletic fields, cemeteries, etc.); municipal buildings and building improvements (all types); vehicles (all kinds); machinery (all types); equipment (all types, including office); computer hardware and software (all types); communication systems (e.g., two-way radios and systems, digital communications networks, antennas, etc.); and infrastructure (e.g., roads, bridges, dams, water and sewer lines, cisterns and other water holding tanks, etc.)*

In developing this plan, I worked closely with all Department Heads and attempted to identify capital improvement projects that represented major, non-recurring expenditures and prioritized them. We have balanced the immediate and long-term capital needs of the Town given available resources. I am proposing the following items from the Capital Plan be funded in FY 2020:

<u>Department</u>	<u>Item</u>	<u>Amount</u>	<u>Funding Source</u>
Fire and EMS	Engine 3 Replacement	\$ 140,875	Ambulance Fund
Fire and EMS	Service 1 Replacement	\$ 60,000	Ambulance Fund
Highway	Building Upgrade	\$ 4,000,000	General Obligation Bond
Highway	Brush Mower/Field Mower	\$ 45,000	Capital Asset
Highway	Dump Truck	\$ 40,000	Capital Asset
Highway	Backhoe	\$ 95,000	Capital Asset
Town Facilities	IT Infrastructure/Computer Purchase	\$ 40,000	Capital Asset
Town Facilities	Dispatch Upgrade	\$ 60,000	Capital Asset
Town Facilities	Municipal Building Exterior Repairs	\$ 25,000	Capital Asset
Town Facilities	Paint Police Station/Roof Repairs	\$ 20,000	Capital Asset
Transfer Station	Tractor Trailer Unit/Trash Trailer	\$ 40,000	Capital Asset
Library	Roof Repair	\$ 1,125,000	General Obligation Bond
Police	Police Cruisers	\$ 109,845	Capital Asset
Country Club	Pool Improvements	\$ 15,000	Capital Asset
Country Club	Cart Path Repairs	\$ 10,000	Capital Asset
Country Club	Triplex - Greens Mower	\$ 5,100	Capital Asset
Water Department	Water Meter Replacement Program	\$ 75,000	Water Revenue
Sewer Department	Wastewater Treatment Plant Upgrades	\$ 1,250,000	Sewer Revenue
GDRSD	Annual Regional School Capital	\$ 479,011	GDRSD Capital
	<b>Total Requested</b>	<b>\$ 7,634,831</b>	

**Honorable Select Board  
Honorable Finance Committee  
Town of Groton Capital Plan 2020 – 2024  
page three**

To fund this proposed Capital Plan in FY 2020, I am proposing that the following amounts be appropriated from the following sources:

General Obligation Bond	\$ 5,125,000
Capital Asset Fund	\$ 504,945
Ambulance Fund	\$ 200,875
Water Revenue	\$ 75,000
Sewer Revenue	\$ 1,250,000
GDRSD Capital Fund	\$ 479,011
<b>Total</b>	<b>\$ 7,634,831</b>

I wish to acknowledge and thank all of the Department Heads and Staff for their efforts in producing this document.

I look forward to the opportunity to discuss this proposed plan in more detail.

Sincerely,

Mark W. Haddad  
Town Manager

**Town of Groton, Massachusetts  
CAPITAL PLAN  
2020 - 2024**

<b>FUNDING SUMMARY</b>						
	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>Five Year Total</b>
<b>GENERAL FUND</b>	\$ -	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 160,000
<b>BOND</b>	\$ 5,125,000	\$ -	\$ 70,000,000	\$ -	\$ -	\$ 75,125,000
<b>CAPITAL ASSET</b>	\$ 504,945	\$ 901,240	\$ 696,535	\$ 725,031	\$ 513,632	\$ 3,341,382
<b>WATER REVENUE</b>	\$ 75,000	\$ 75,000	\$ 3,375,000	\$ -	\$ -	\$ 3,525,000
<b>SEWER REVENUE</b>	\$ 1,250,000	\$ -	\$ -	\$ -	\$ 14,500,000	\$ 15,750,000
<b>AMBULANCE FUND</b>	\$ 200,875	\$ 464,655	\$ 137,215	\$ 132,335	\$ 451,880	\$ 1,386,960
<b>GDRSD CAPITAL</b>	\$ 479,011	\$ 368,472	\$ 445,894	\$ 554,878	\$ 553,408	\$ 2,401,663
<b>TOTAL</b>	<b>\$ 7,634,831</b>	<b>\$ 1,849,367</b>	<b>\$ 74,694,644</b>	<b>\$ 1,452,244</b>	<b>\$ 16,058,920</b>	<b>\$ 101,690,005</b>

**Town of Groton, Massachusetts  
CAPITAL PLAN  
2020 - 2024**

**LISTING OF PROJECTS BY FUNDING SOURCE**

**GENERAL FUND**

Page	Program	Description	Cost 2020	Cost 2021	Cost 2022	Cost 2023	Cost 2024	Funding Source
16	Town Facilities	IT Infrastructure/Computer Purchase		\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	General Fund
<b>Subtotal</b>			<b>\$ -</b>	<b>\$ 40,000</b>	<b>\$ 40,000</b>	<b>\$ 40,000</b>	<b>\$ 40,000</b>	

**BOND**

Page	Program	Description	Cost 2020	Cost 2021	Cost 2022	Cost 2023	Cost 2024	Funding Source
27	Library	Roof Repair	\$ 1,125,000					Bond
14	Highway	Building Upgrade	\$ 4,000,000					Bond
46	GDRSD	Florence Roche Elementary School			\$ 65,000,000			Bond
22	Town Facilities	Prescott School			\$ 5,000,000			Bond/CPA
<b>Subtotal</b>			<b>\$ 5,125,000</b>	<b>\$ -</b>	<b>\$ 70,000,000</b>	<b>\$ -</b>		



**LIBRARY**

**Town of Groton, Massachusetts**  
**CAPITAL PLAN**  
**Fiscal Years 2019 - 2024**

		APPROVED							
Page	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Five Year Total	Funding Source
<b>LIBRARY</b>									
26	Carpet Replacement				\$ 30,000			\$ 30,000	Capital Asset
	Emergency Exit Walkway Safety Improve	\$ 40,000						\$ -	Capital Asset
27	New Roofing and Drainage Systems		\$ 1,125,000					\$ 1,125,000	Bond
28	Upgrade Building Alarm System			\$ 20,000				\$ 20,000	Capital Asset
29	Repaint Library Interior				\$ 60,000			\$ 60,000	Capital Asset
30	Redo Interior Lighting					\$ 40,000		\$ 40,000	Capital Asset
31	Reconstruct Parking Lot			\$ 80,000				\$ 80,000	Capital Asset
32	AV System for Sibley Hall						\$ 25,000	\$ 25,000	Capital Asset
<b>Subtotal</b>		<b>\$ 40,000</b>	<b>\$ 1,125,000</b>	<b>\$ 100,000</b>	<b>\$ 90,000</b>	<b>\$ 40,000</b>	<b>\$ 25,000</b>	<b>\$ 1,380,000</b>	

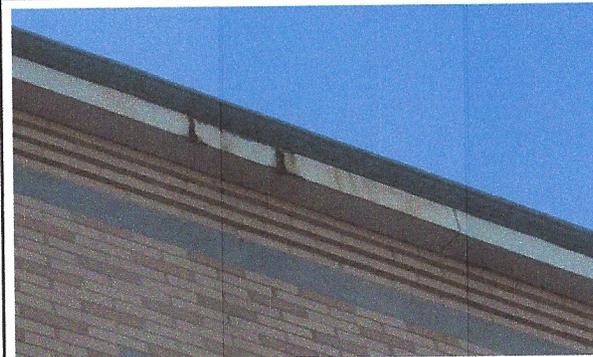
**TOWN OF GROTON CAPITAL PLAN - PROJECT DETAIL SHEET**

Project Title: **New Roofing, Drainage System and Water Protection**

Department: **Library**

**Reason for Need:**

We knew there were water and ice dam issues, but were told they were related to the gutters being undersized, not tying together, and poor flashings. Water infiltration into the building was visible through exterior efflorescence in the 1999 building and in the ice dams in the eaves in the 1893 building. Only when the building envelope assessment was completed did we understand the extent the entire needs for this building. This project would address all envelope issues at the same time: new slate roof (1893 & 1999 bldgs); new rubber roof (HVAC); new copper gutters, downspouts; new snow & ice shield; new snow guard system; new 1999 skylights; protect 1893 skylight; exterior masonry repointing, sealing, and adding joints; exterior window re-sealing & repair.



**RECOMMENDED FINANCING**

	SOURCE OF FUNDS	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	TOTAL COST
A. Feasibility Study							\$ -
B. Design							\$ -
C. Land Acquisition							\$ -
D. Construction							\$ -
E. Furnishings and Equipment							\$ -
F. Departmental Equipment	GB	\$ 1,125,000					\$ 1,125,000
G. Contingency							\$ -
H. Other							\$ -
<b>TOTAL:</b>		<b>\$ 1,125,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,125,000</b>

Sources of Funds Legend:

(OR) Operating Revenues      (CA) Capital Asset Fund      (EMS) EMS Fund Fees      (SE) Sewer Enterprise Fund Fees  
 (GB) General Obligation Bond      (ST) Stabilization Fund      (FC) Free Cash/Other      (WE) Water Enterprise Fund Fees