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June 7, 2016

Waltham Community Preservation Committee  
Waltham City Hall  
610 Main Street  
Waltham, MA 02152

To the Honorable Members of the Waltham Community Preservation Committee:

On behalf of Historic New England, I am pleased to submit a Community Preservation Act funding application to the Waltham Community Preservation Committee, requesting \$165,900 toward a \$335,000 preservation project at The Vale, the 1793 Theodore Lyman Estate.

The project will focus on the historic greenhouses, which were built between 1804 and c. 1930 and are among the oldest continuously operating examples in the United States. Through this project, the City of Waltham will help preserve these fragile nationally significant structures, ensure the health of the historic plant collections, and provide better service to the nearly 10,000 individuals who visit every year for greenhouse tours and plant sales.

If sufficient funding is secured, this urgently-needed project can be carried out between April 1, 2017 and October 31, 2017.

Thank you very much for considering our application. If you have any questions, please feel free to contact me or Laura Gadbery, our Institutional Giving Officer, at 617.994.5975 or [lgadbery@historicnewengland.org](mailto:lgadbery@historicnewengland.org).

We appreciate the support of the City of Waltham and the Community Preservation Committee for the Lyman Estate. Thank you.

Sincerely yours,

Carl R. Nold  
President and CEO

**City of Waltham  
Community Preservation Act Funding Application**

**Submitted by**

**Historic New England**

**The Historic Greenhouses at The Vale  
(Theodore Lyman Estate)**





## **BRIEF PROJECT SUMMARY**

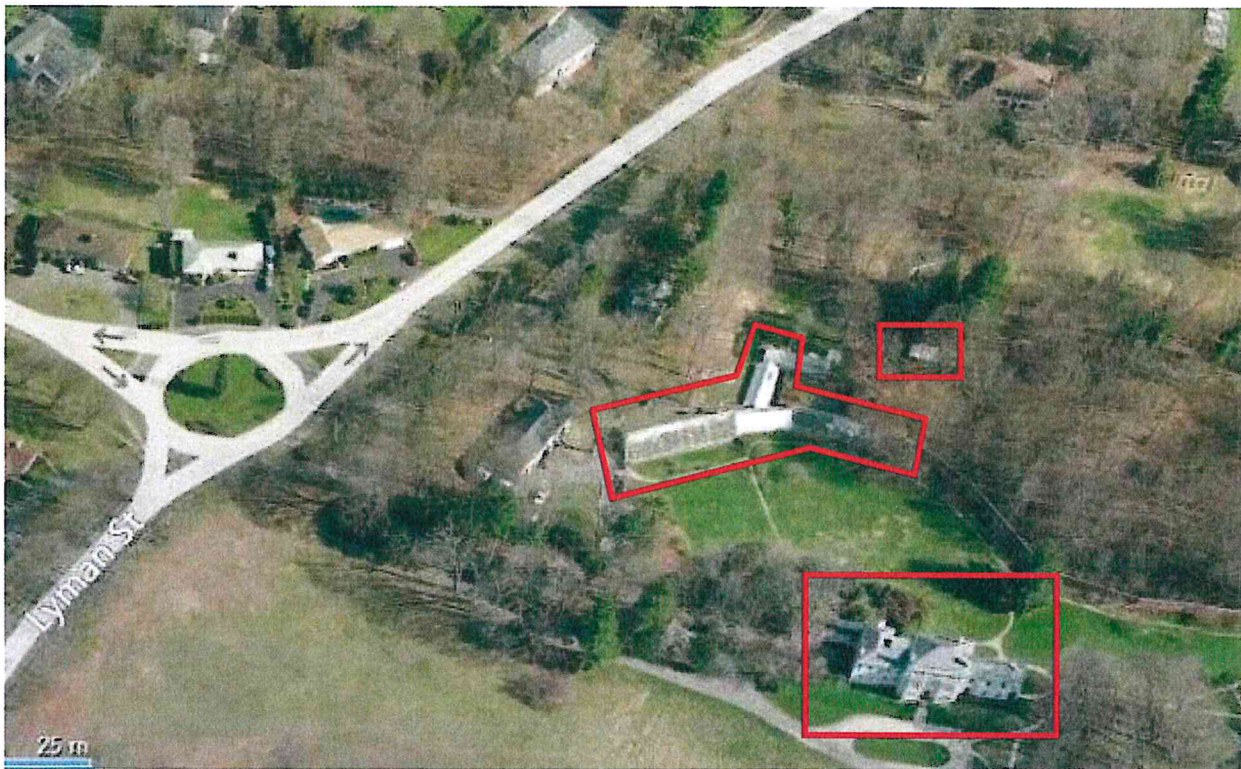
Historic New England respectfully requests a grant of \$165,900 from the City of Waltham's Community Preservation Act Fund to support a \$368,500 project at The Vale, the 1793 Theodore Lyman Estate. The project will focus on the historic greenhouse complex, built between 1804 and c. 1930, and include the following five components: masonry repairs and repointing, heating system rehabilitation, window conservation, plant table repairs and associated asbestos removal, and accessibility improvements.

A grant from the City of Waltham will help preserve the character-defining features in these fragile glass structures, which are amongst the oldest continuously operating greenhouses in the country; provide adequate ventilation and more reliable heat for the historic plant collections; and better serve the nearly 10,000 individuals of all ages and abilities who visit the greenhouses every year for tours and plant sales.

If sufficient funding is secured, the project will take place April 1, 2017 and October 31, 2017.

## **PROJECT DESCRIPTION**

### **Property Overview and Significance**



*21<sup>st</sup>-century aerial view of The Vale, showing the mansion at lower right, the large greenhouse complex (1804-c. 1930) to the northwest, and the small "Ancient Greenhouse" (c. 1798) directly north.*





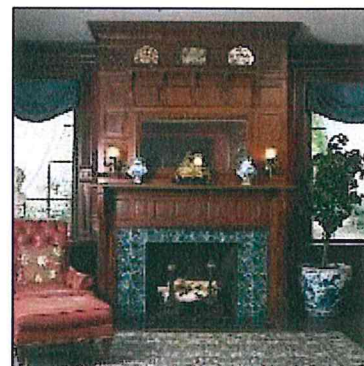
*Front (south) façade of the mansion, looking northwest. Photographer: Justin H. Goodstein-Aue, 2012. Courtesy Historic New England.*



*Ballroom, looking east. Photographer: Colleen Chapin, 2016. Courtesy Historic New England.*



*Stairway with Palladian window, looking north. Photographer: Collection Services, 2008. Courtesy Historic New England.*



*Library, looking west. Photographer: Collection Services, 2008. Courtesy Historic New England.*



*Front (south) façade of the greenhouse complex, looking north. Left: "Grape House" (1804); Middle: "Orchid House" (c. 1840); Right: "Camellia House" (1820s). The "Sales House (c. 1930) is behind the "Orchid House." Photographer: Kristin Wood, 2014. Courtesy Historic New England.*





*Interior of the "Camellia House" (1820s), looking east. Photographer: Colleen Chapin, 2016. Courtesy Historic New England.*



*Interior of the "Sales House" (c. 1930), looking south. Photographer: Colleen Chapin, 2016. Courtesy Historic New England.*

The Vale, a National Historic Landmark, served as a warm-weather country estate for the Lyman family from the time it was constructed in 1793 by Theodore Lyman, a Boston merchant, until its donation to Historic New England in 1951 by the children of Arthur T. Lyman, Jr. and Susan Cabot Lyman. The property brilliantly merges late eighteenth-century architectural and landscape design into a single ideal. The Federal-style mansion, designed by architect Samuel McIntire, originally consisted of a two-story center section symmetrically flanked by a lower section. It was substantially enlarged in 1882. The naturalistic landscape, laid out by English gardener William Bell, contained a McIntire-designed stable/carriage house, greenhouse, kitchen garden, 600-foot wall for espaliered peaches, rolling pastures, lawns, ponds, rare specimen trees and shrubs, woodlands, and park stocked with Bengal deer imported from England. Though now much reduced in scale, The Vale is among a handful of eighteenth-century landscaped estates in New England that survive with its principal features nearly intact.

The Vale's greenhouses are amongst the oldest continuously operating examples in the country. The "Ancient Greenhouse," built no later than 1798, was heated with a firebox and flue system and may well be the nation's sole surviving example of a bark-pit greenhouse. Four additional greenhouses, constructed between 1804 and c. 1930, now form an interconnected complex. They are as follows: an 1804 structure that provided exotic fruits and cut flowers before being transformed in the 1870s into a grapery, using cuttings from the royal greenhouses at Hampton Court in England ("Grape House"); a structure, believed to have been built in the 1820s, that initially was for the cultivation of peach trees and now houses one of only two historic collections of Camellia trees to survive in the metro Boston area, with some specimens over one hundred years old ("Camellia House"); a c. 1840 structure connecting these two previously independent greenhouses that originally was for the cultivation of roses and now displays hundreds of varieties of orchids ("Orchid House"); and finally, a c. 1930 structure designed by the noted greenhouse builder Lord & Burnham, which the family used for growing cut flowers and Historic New England currently allocates for retail services ("Sales House"). Collectively, these fragile structures provide vivid testimony to the family's ongoing passion for horticulture and greenhouse engineering over the course of 153 years and to the careful stewardship of Historic New England since 1951.



## History of Individual Greenhouses

### *“Ancient Greenhouse” (by 1798)*

The “Ancient Greenhouse,” sometimes referred to as the “Bark Pit,” is assumed to be the greenhouse mentioned in the Direct Tax of 1798.<sup>1</sup> It is a wood-framed structure set on a brick foundation and built into the side of a small hill, facing south. The roof is comprised of large multi-lite sash made of wood and designed to be propped open for ventilation (*Photo 1*). In addition to passive solar gain, the house was heated via a fire box that vented to a horizontal flue running the full length of the structure and ultimately through a traditional vertical chimney at the east end (*Photo 2*). The heated air flowing through the flue system kept the brick mass warm and allowed this heat to be released.

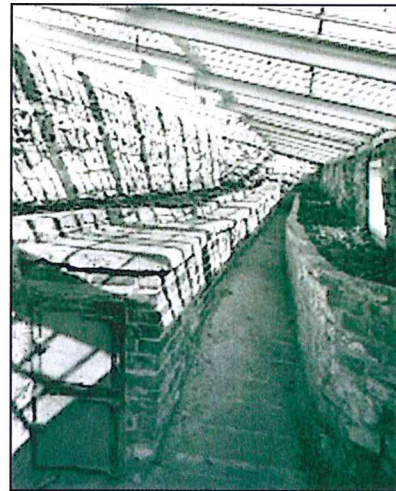


*Photo 1 – “Ancient Greenhouse,” looking northeast.  
Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Site context for Photos 1 & 2.  
Bing maps, imagery date unknown,  
copied 2016.*

*Photo 2 – Interior view of the “Ancient Greenhouse,” showing the  
horizontal heating flue. Historic New England RS#17499.*



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<sup>1</sup> 1798 Direct Tax District #5 (Newton, Weston, Waltham), via transcription at Historic New England archives.



Four wood-and-steel-framed greenhouses were built between 1804 and c. 1930 southwest of the “Ancient Greenhouse.” They are now interconnected via steps and form a single complex.

*“Grape House” (1804)*

The westernmost and oldest section of the greenhouse complex is believed to have been constructed in 1804. It definitely existed by 1822, as Theodore Lyman sketched it on a map of Waltham of that date.<sup>2</sup> Although the “Grape House” originally was built for growing cut flowers and rare fruits, it was converted into a grapery in the 1870s, using cuttings imported from the royal greenhouses at Hampton Court in England. To accommodate the vines, the interior was provided with three-and-one-half-foot-high ground beds made of brick (*Photo 4*). These vines still bear large clusters of fruit that Historic New England offers for sale each summer.

The “Grape House” is an eccentric gable-shaped, brick structure built into a small hill, with a south-facing roof, operable sash at the peak, and walls containing two rows of operable sash (*Photos 3, 5-6*). The north side contains a basement that includes a potting area, modern heating mechanical system, additional storage, and a small office. The north roof is clad in black asphalt shingles and features three multi-lite wooden skylights and a chimney stack for the heating system (*Photo 6*). Truncated chimneys (*Photo 7*) and ghost lines in the brick work (*Photo 8*) indicate a change in heating function and roof shape over time.

The “Grape House” once had clerestory windows, a door at the east end, a central chimney, and a different window configuration. At some point after 1884, the clerestory windows were removed, and the roofline and chimney location were changed. Operable sash in plane with the roof were installed in the 1930s. The cast iron piping of a gravity hot-water system was likely installed at the same time.



*Photo 3 – South façade of the “Grape House.” Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Site context for Photos 3-8. Bing maps, imagery date unknown, copied 2016.*

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<sup>2</sup> 1822 map of Waltham by E. Smith with Theodore Lyman’s sketch of The Vale at the upper right, showing the “Grape House,” McIntire stable/carriage house, and McIntire mansion. Historic New England RS # 1214.





*Photo 4 – Interior of the “Grape House,” showing the historic grapevines in the upper right corner. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 7 – Interior of the “Grape House,” showing the truncated chimney from the early heating system. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 5 – West façade of the “Grape House,” showing the eccentric gable. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 6 – North façade of the “Grape House.” Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 8 – Interior of the “Grape House,” showing the physical evidence of changes in the roof line. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*“Camellia House” (1820s)*

The easternmost section of the greenhouse complex was not sketched by Theodore Lyman on the 1822 map of Waltham and is therefore believed to have been constructed somewhat later.<sup>3</sup> Like the “Grape House,” it has a south-facing roof and wall formed from multi-lite sash. There is one row of operable sash at the peak of the roof; the south wall has two rows (*Photo 9*).

The “Camellia House” incorporates part of a pre-existing, 600-foot retaining wall commonly called the “Peach Wall” on account of the espaliered peach trees that once grew against its south face (*Photos 10-12*). The greenhouse was originally built to provide better protection for the trees from the harsh New England climate. The structure eventually became bowed and out of plumb. Arthur T. Lyman took down part of the structure in 1908 to correct these issues and subsequently rebuilt it wider and taller to house the family’s collection of Camellia trees, a genus native to Asia that was ill-suited to the New England climate and that required cultivation in glass houses where the temperature could be kept mild and the environment moist. The Vale’s Camellia collection includes specimens that are now more than 100 years old (*Photo 13*). Only one other historic collection of Camellias exists in the Boston area and it is not open to the public.<sup>4</sup>

The “Camellia House” is heated via a continuation of the cast iron piping of the gravity hot-water system installed in the 1930s.



*Photo 9 – South façade of the “Camellia House,” showing the operable sash. Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Site context for Photos 9-13. Bing maps, imagery date unknown, copied 2016.*

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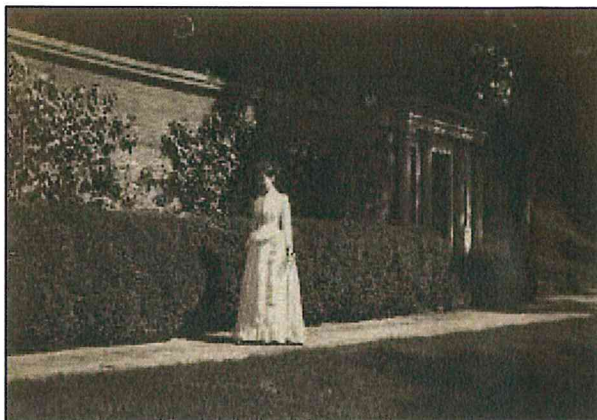
<sup>3</sup> See footnote 2.

<sup>4</sup> The only other historic collection of Camellias in the Boston area is at the privately-owned H.H. Hunnewell Estate in Wellesley.





*Photo 10 – East façade of the “Camellia House,” incorporating the existing “Peach Wall” at right. Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Photo 11 – Ella Cabot Lyman next to the “Peach Wall” with espaliered fruit trees, ca. 1890. Photographer: Herbert Lyman Photograph Album. Historic New England RS # 178693.*



*Photo 12 – North façade of the “Camellia House,” with the “Peach Wall” at left. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 13 – Interior of the “Camellia House,” with the historic Camellia collection. Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*

### *“Orchid House” (c. 1840)*

Around 1840, the “Grape House” and “Camellia House” were connected via a new structure featuring two rows of operable sash on the south face (*Photo 14*). Originally built for the cultivation of roses and other cut flowers for the mansion, it now houses more than 500 orchids (*Photos 15-16*).

The “Orchid House” retains the arched opening in the “Peach Wall” that initially served as a passageway from the “pleasure grounds” to the kitchen garden. It is heated via a continuation of the cast iron piping of the gravity hot-water system installed in c. 1930.





*Photo 14 – South façade of the “Orchid House,” with the “Grape House” at left and western end of the “Camellia House” at far right. Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Site context for Photos 14-16. Bing maps, imagery date unknown, copied 2016.*



*Photo 15 – Interior of the “Orchid House,” with the arch in the “Peach Wall” leading to the “Sales House.” Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 16 – Interior of the “Orchid House,” with Greenhouse Manager Lynn Ackerman (right) and Assistant Manager Erin Dancy. Photographer: Olivia Gatti, 2015. Courtesy, Historic New England.*

### *“Sales House” (c. 1930)*

The fourth and final section of the greenhouse complex was commissioned from Lord & Burnham, the oldest greenhouse manufacturer in the United States, and built between 1928 and 1930. It is a gabled, steel-framed, split-level structure with multi-lite sash forming the roof and side walls. A single row of operable sash exists on the east and west walls, as well as one row on either side of the roof peak. The mechanical heating system installed at the outset meant that it did not require a south orientation. The greenhouse extends north from the “Orchid House” at an oblique angle and has a glass roof facing east and west (*Photos 17-18*).<sup>5</sup> There is direct access from the “Orchid House.”

<sup>5</sup> The building plans are housed in the Lord & Burnham collection in the New York Botanical Garden archives in the Bronx (Lord & Burnham, Detail Plans for Mr. A. Lyman, Waltham, MA – July 22, 1924).



Although the greenhouse was originally used for the cultivation of cut flowers for the mansion and homes of local relatives, it is currently allocated for retail services and commonly referred to as the “Sales House” (*Photo 19*).

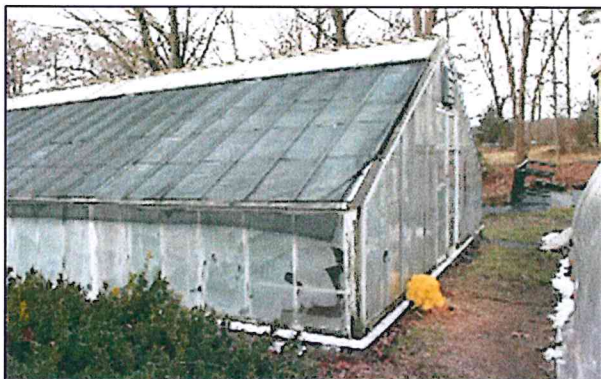
A Community Preservation Act grant from the City of Waltham will enable an interior reorganization of the complex that will improve public accessibility by moving retail services from the c. 1930 structure to the c. 1840 structure, which is more easily accessed. The orchid collection, in turn, will move to the “Sales House.” The c. 1930 structure will continue to serve as the backdrop for Historic New England’s outdoor plant sales.



*Photo 17 – West façade of the “Sales House,” looking toward the “Grape House.” Photographer: Colleen Chapin, 2014. Courtesy, Historic New England.*



*Site context for Photos 17-19. Bing maps, imagery date unknown, copied 2016.*



*Photo 18 – Northeast corner of the “Sales House.” Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*



*Photo 19 –Interior of the “Sales House,” looking toward the “Orchid House.” Photographer: Colleen Chapin, 2016. Courtesy, Historic New England.*

## Property Use

The Vale is a major cultural and recreational resource for Waltham residents and a frequent destination for tourists who wish to visit this late eighteenth-century country estate with its McIntire-designed mansion and carriage house/stable, historic greenhouses, and landscaped



grounds. It is one of Historic New England's most popular properties, welcoming 21,276 visitors in 2015. Visitors can enjoy tours of the mansion and greenhouses; buy specialty plants and merchandise; receive expert horticultural advice; go to a variety of public programs; attend weddings, private parties, and corporate events; and wander leisurely through the extensive lawns and perennial gardens.

Of the 21,276 recorded visitors in 2015, 47% visited the greenhouses (9,968 individuals). The proposed project will ensure that The Vale continues to function as an essential part of the Waltham community and provide tangible benefits to its residents.

All Waltham residents receive free admission to tours of the mansion and greenhouses, and are offered a 10% discount on function rentals. The grounds, which total thirty-seven acres, are open daily for recreational purposes, from dawn to dusk, and frequently accessed. Historic New England is currently collaborating with the Waltham Land Trust on the Western Greenway Project, which will include a trail through The Vale.

Guided tours of the mansion are offered year round on the third Saturday of each month, on three additional days during Camellia Days (mid February–mid March), and by appointment. The first floor is open for self-guided exploration during most public programs.

Except for major holidays, the greenhouses are open year-round from 9:30 am to 4:00 pm on Tuesdays through Sundays between December 15 and July 15, and on Tuesdays through Saturdays between July 16 and December 14. Guided tours are available on weekdays by appointment. There is a brochure for self-guided tours and interpretive signage that visitors can use to understand the story of these remarkably rare greenhouses.

Historic New England offers a wide array of public programming at the estate. The most popular offerings include the following:

- *Movies at the Mansion*: Free family-friendly outdoor screenings on the grounds of the estate on four Thursdays in July. Movie-goers are encouraged to come early and set up blankets or lawn chairs, bring picnic suppers, enjoy musical entertainment by the Waltham High School show band, and explore the greenhouses and first floor of the mansion. The series has quickly become a signature event. Although attendance in 2015 was lower than in previous years owing to the fact that it rained on two of the four movie dates, 740 enthusiastic movie-goers attended the screenings. East Cambridge Savings Bank, Watertown Savings Bank, and the Waltham West Suburban Chamber of Commerce have been involved as community sponsors since the program's founding in 2012.
- *Plant Sales*: six major sales per year.
  - Houseplant and Begonia Sale (January), featuring a wide variety of plants that are not readily available elsewhere.
  - "Camellia Days" (mid-February to mid-March), with small- and medium-sized Camellias for sale. This is a much-anticipated event during winter when people



- are especially eager to see colorful flowers and foliage. Visitation in 2016 totaled 2,144.
- Two Orchid Sales (April and November). At each sale, hundreds of orchids are offered, with the staff assisting customers on the proper choice for their conditions. During the April 2016 sale, staff welcomed 960 people and sold 400 orchids.
- Herb Plant Sale (May). Historic New England recently increased the variety of herbs that it offers for sale in order to serve diverse constituencies within the Waltham community and encourage experimentation with different cuisines. Among the newly introduced offerings are culantro (Caribbean and Latin American cuisine), shiso (Asian cuisine), and papalo (Mexican and South American cuisine), along with recipes that feature these herbs.
- Hosta and Perennial Plant Sale (June).
- *Greenhouse Workshops*: annual workshops held in November and taught by Lynn Ackerman, the greenhouse manager. In 2016, Ms. Ackerman will teach *Beginning Orchid Growing* for individuals interested in learning the essentials, from selecting the right plants to proper lighting, watering, fertilizing, and repotting.
- *Master Gardener Program*: a training program in partnership with the Massachusetts Master Gardeners Association, whereby amateur and professional horticulturalists from the Master Gardeners Association volunteer at The Vale and get credit toward their certificate. They receive horticultural training and learn how to give tours of the grounds, in combination with the greenhouses.
- *Other*: In 2015, programming included talks on the history of Camellias in Boston, jewelry, the history of Christmas, invasive species, architecture, Rex Trailer, New England furniture, and servants.

Historic New England collaborates with a number of local businesses and organizations in addition to those mentioned above. They include the Waltham Historical Society, Waltham Public Library, Stonehurst, Olde Colony Civil War Roundtable, Pizzi Farm, Waltham Boys & Girls Club, Waltham Fields Community Farm, and Waltham Land Trust.

## **Project Goals**

The proposed project will ensure that the greenhouses are preserved and continue to benefit the residents of Waltham. There are four main goals:

- to preserve the character-defining features of these historic structures, which are amongst the oldest continuously operating greenhouses in the country;
- to ensure that the greenhouses can continue to serve the community without threat to public safety;
- to provide adequate ventilation and more reliable heating for the plants (some of which are over one hundred years old) and more comfortable conditions for the nearly 10,000 people who visit the greenhouses every year for tours and plant sales; and



- to better serve the public by improving accessibility and making the greenhouses more visitor-friendly.

The project has five main components, as follows: masonry repairs and repointing; heating system rehabilitation; window conservation; plant table repairs and associated asbestos removal; and accessibility improvements to the site and interior spaces. Additional project details are provided in the various Annotated Scope of Work documents (attached).

*Masonry Repairs and Repointing:* Various repairs to the brick masonry walls are necessary in order to preserve the historic fabric and prevent further damage. Mortar deterioration and loss can be seen in many locations on the “Grape House” and “Camellia House.” In some areas, vegetation has taken root and begun to penetrate the structure. A repointing campaign is planned, as well as structural rebuilding on several areas on the “Grape House.” The most serious deterioration is at the east end of the “Grape House,” where the corner and peak are losing integrity and must be rebuilt without harming the late nineteenth-century grapevine that is causing these issues.

*Heating System Rehabilitation:* The goal is to reduce the risk of catastrophic failure, significant flooding, and loss of historic plant material by replacing the existing pipes with a hydronic delivery system that is more compatible with today’s pressurized hydronic boilers and allows for precise temperature management. The existing 5” cast iron pipes, which were installed around 1930, are currently servicing a hydronic heating system that operates at a higher pressure than the original gravity-based heating system. Over the last several years, major leaks in the lead and oakum joints have developed and been repaired. Additional joints are actively leaking (at present, only moderately). The new delivery system will be installed under the plant tables and largely concealed from view. The 1930s piping will remain mostly in place.

*Window Conservation:* In 1997, Historic New England successfully conserved the operable sash in the “Grape House” and “Orchid House.” A similar project is now planned for the “Camellia House” and “Sales House.” The scope will include the following: sash removal and securing of the openings, conservation (typically Dutchman repairs), re-glazing, and re-installation. The work will ensure proper functioning of the operable sash, necessary ventilation for the plant collections, and more comfortable conditions for visitors.

*Plant Table Repairs and Associated Asbestos Removal:* In order to accommodate the new hydronic delivery system, Historic New England must dismantle the tables upon which the plants are displayed in the “Camellia House,” “Orchid House,” and “Sales House.” As discussed in the “Hazardous Materials” section, these tables contain Transite, an asbestos-cement product that insulates the plants from excessive heat. The goal is to safely remove the Transite insulation and reinstall the tables, replacing all deteriorated wood and metal components and incorporating a non-toxic insulation mat to protect the plants from excess heat.

*Accessibility Improvements to the Site and Interior Spaces:* Public accessibility is problematic owing to the fact that the greenhouses were built over the course of 126 years for private family use and are interconnected via a series of steps and sharp turns. Historic New England’s goal is



to provide the maximum amount of accessibility with the least amount of physical intervention, so that a larger number of people can be safely served.

The current entrance at the “Grape House” will be maintained and a second, more visitor-friendly entrance at the east end of the “Camellia House” will be improved. Historic New England will make the existing path to the “Camellia House” entrance wider and more stable to better accommodate individuals with mobility issues. Once the project is completed, visitors entering the complex at the “Camellia House” entrance will have full access to three of the five interior spaces (“Camellia House,” “Orchid House,” and lower section of the “Sales House”). Only one small ramp will be required.

Historic New England will also create a new path along the north elevation to provide greater accessibility and service for visitors attending the outdoor plant sales.

These pathway improvements will be accompanied by a reorganization of interior spaces. Retail operations will be relocated from the c. 1930 “Sales House” to the c. 1840 structure that currently houses the orchid collection. The lower section of the c. 1930 structure will become the new home for the orchid collection; the upper section will have a non-public function.

### **Community Need**

Historic New England is committed to the long-term preservation and management of The Vale in a manner that benefits the Waltham community. The proposed project will ensure uninterrupted and safe operation of the greenhouses, which are a treasured resource for residents and an important part of Waltham’s history. The project meets and/or exceeds a number of criteria and goals outlined in the City of Waltham’s Community Preservation Plan.

Historic New England will encourage Waltham-based contractors to bid on the various project components. Once the project begins, monies will be spent by these contractors at local gas stations, restaurants, and hardware-supply shops.

### **Community Support**

Three letters of support from interested members of the public are attached, as follows:

- |                       |  |
|-----------------------|--|
| Mr. John W. Cox       | History teacher at Waltham High School, lecturer at Lyman Estate, assistant treasurer of the Waltham Historical Society, board member of the Waltham Historical Commission |
| Mr. Stephen Parson    | Lyman family descendant, author of <i>An American Family. The Lymans and The Vale: 1631 to 1951</i>  |
| Mr. Wayne T. McCarthy | President of the Waltham Historical Society, Inc.  |



## Timeline

The proposed project is Historic New England's top preservation priority at The Vale for fiscal year 2018, which begins on April 1, 2017. It is eager to implement the project expeditiously and will move swiftly to carry out the various components once sufficient funding has been secured to ensure the project's success.

A \$165,900 grant from the City of Waltham and a \$50,000 grant from the Massachusetts Historical Commission will enable the project to begin on April 1, 2017 and to be completed by October 31, 2017. These dates have been carefully chosen. The heating system rehabilitation must take place outside of the heating season and the masonry repairs are best carried out during temperate conditions.

Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17
Accessibility Improvements						
Window Conservation						
	Masonry Repairs and Repointing					
	Plant Table Repairs and Associated Asbestos Removal					
		Heating System Rehabilitation				

## Credentials

Historic New England is in an excellent position to carry out the proposed project. Founded in 1910 as the Society for the Preservation of New England Antiquities, it is the oldest, largest, and most comprehensive regional heritage organization in the nation, and a leader in preservation, research, and innovative programming. It currently owns and operates thirty-six historic properties in five New England states and has a long history of successfully-implemented preservation projects, including other CPA-funded projects in Waltham, Quincy, Gloucester, Yarmouth, and Cambridge. Please see the section entitled "Professional Standards" for the organization's preservation philosophy and practices.

In 2011, the City of Waltham awarded Historic New England \$207,000 in CPA funding toward an award-winning preservation project at the mansion, which included repairs to the roof, veranda, electrical system, and the historic wood floors. This project complemented a comprehensive weatherization project that made the mansion 50% more energy-efficient without sacrificing its architectural integrity.

Historic New England is confident that it can implement the project within budget and on schedule. Detailed project-management and financial systems are in place to ensure timely and effective project completion. The Property Care team, led by Benjamin K. Haavik since 2004, is responsible for the design and implementation of all preservation projects. Additional assistance



and oversight is provided by staff from the organization's Business Services and Development teams.

Mr. Haavik will serve as project director. As the organization's Team Leader for Property Care, he is responsible for the preservation and maintenance of all thirty-six historic properties open to the public, and for developing and managing a \$1.66 million annual preservation budget for these sites. Additional responsibilities include the development and management of a \$4.61 million construction budget for the recently acquired Eustis Estate in Milton, which will open to the public in 2017. He oversees ten full-time staff, which includes preservation carpenters, preservation managers, and regional landscape managers. He has a master's degree in Historic Preservation from the University of Pennsylvania and meets the National Park Service Qualification Standards for: Architectural History, Architectural Conservation, Historic Architecture, and Historic Preservation.

Colleen Chapin will work under the supervision of Mr. Haavik and provide day-to-day oversight of the project. As Historic New England's Senior Preservation Manager for Metro Boston, Ms. Chapin is responsible for managing conservation, preservation, and maintenance projects at ten properties. She will maintain all records and prepare all required grant documents. Her previous experience includes management of the preservation and weatherization project at The Vale that received crucial support from the City of Waltham and a 2013 Preservation Award from the Massachusetts Historical Commission. Ms. Chapin is a graduate of the North Bennet Street School in Boston, is completing a master's degree in Historic Preservation at the University of Massachusetts, and has held a Massachusetts Construction Supervisor License since 2006.

Please see the organization's "501(c)(3) IRS Determination Letter," "Corporate Resolutions," and "Project Authorization" (attached).

Historic New England will measure the success of the project by accomplishing the over-arching objectives outlined in the Brief Project Summary, the individual goals described in the Project Goals section, and the specific component-related activities outlined in the Annotated Scope of Work documents.

## Budget

<b>Project Component</b>	<b>Waltham CPA Request</b>	<b>Historic New England Contribution</b>	<b>Total Cost</b>
Masonry Repointing	\$5,250		\$5,250
Masonry Repairs	\$21,000		\$21,000
Plant Table Repairs	\$24,150		\$24,150
Plant Table Repairs, Asbestos Removal		\$10,500	\$10,500
Heating System Rehabilitation	\$105,000		\$105,000
Accessibility Improvements, Exterior Pathways		\$33,600	\$33,600
Accessibility Improvements, Interior (Ramp)	\$10,500		\$10,500
Window Conservation		\$125,000	\$125,000
In-house professional project management fee (10% of project cost) for services provided by Benjamin Haavik and Colleen Chapin		\$33,500	\$33,500
<b>Totals</b>	<b>\$165,900</b>	<b>\$202,600</b>	<b>\$368,500</b>

Historic New England developed the budget in consultation with various vendors. The estimates provided above include a 10% contingency to allow for expected cost increases between the time of application to the Waltham Community Preservation Committee and the anticipated project start date, as well as possible budget adjustments for unanticipated complications. Please see the Annotated Scope of Work documents for the names of the vendors consulted (attached).

## Other Funding

The annual operating deficit for the greenhouses typically exceeds \$100,000 and is expected to total \$111,775 for the current fiscal year, which began on April 1, 2016.



\$111,306 Revenues (\$90,000 in plant sales, \$16,000 from a National Park Service grant, \$4,869 in miscellaneous income, and a draw of \$437 from a restricted endowment fund for the greenhouses, per the Board-approved spending policy)  
 (\$223,081) Expenses (utility costs, basic maintenance, small preservation projects, salaries/fringe benefits for greenhouse employees, plant supplies and care, etc.)  
 (\$111,775) Deficit

Historic New England routinely funds basic maintenance and small preservation projects through its operating budget. Major preservation initiatives, such as the one proposed here, require additional sources of revenue from foundations, government agencies, and individual donors. If the City of Waltham is able to contribute \$165,900 to the project (45% of the total cost), Historic New England believes that it can raise the remaining \$202,600. It has already begun identifying potential sources for this funding. In April 2016, it submitted an application to the Massachusetts Historical Commission for a \$50,000 matching grant from Massachusetts Preservation Projects Fund for window conservation in the “Camellia House” (1820s) and “Sales House” (c. 1930). Announcement of the grants will be made in June 2016. No other state or federal funding for the project is anticipated.

Source	Funds to be Raised
Application submitted to the Massachusetts Historical Commission for a Massachusetts Preservation Projects Fund matching grant (pending)	\$50,000
Application submitted to the City of Waltham for a Community Preservation Act grant (pending)	\$165,900
Additional funds to be identified and secured (experienced projection)	\$152,600
<b>Totals</b>	<b>\$368,500</b>

Historic New England’s annual operating budget typically includes \$20,000 for basic maintenance and small preservation projects at The Vale. The organization has allocated additional resources this year through its capital budget—namely, \$190,000 for infrastructure improvements to the rotary and water/septic systems. Given the scale of these investments at the Lyman Estate and the ongoing needs of its thirty-five other properties, Historic New England respectfully asks for assistance with the greenhouse project. If the City of Waltham and Massachusetts Historical Commission are unable to contribute to the proposed project, it must be postponed or significantly reduced in scope.

## Maintenance

It is Historic New England’s philosophy and practice that long-term preservation is a result of

good maintenance. The prevention of damage and the assurance of long-term maintenance are undeniably better for the preservation of the site than any repair or replacement of historic material.

As previously stated, Historic New England budgets approximately \$20,000 annually for basic maintenance of The Vale, with approximately \$5,000 of this allocated specifically for the greenhouses. This does not include the cost of staff to manage, operate, and care for the property.

### **ADDITIONAL INFORMATION**

#### **Documentation**

The property was donated in 1951 to Historic New England, at that time called the Society for the Preservation of New England Antiquities, by the five children of Arthur T. Lyman, Jr. and Susan Cabot Lyman. The deed, recorded on October 2, 1951, is attached.

The Massachusetts Historical Commission holds a preservation restriction in perpetuity on the property (attached) and will review all proposed work to ensure that it is in compliance with the Secretary of Interior's *Standards for the Treatment of Historic Properties*.

#### **Construction or Rehabilitation**

Annotated Scope of Work documents and an updated Site Assessment are attached.

The project does not involve ground disturbance and will not have an impact on archaeological resources.

#### **Zoning**

No change of use is expected as a result of this project.

#### **City Approvals**

Benjamin K. Haavik and Colleen Chapin attended the March 14, 2016 meeting of the Waltham Historical Commission and shared detailed project plans with the members. A letter of approval from Clarence Darrow Richardson, Jr., Chairperson of the Commission, is attached.

Historic New England will seek other approvals, as necessary.

#### **Hazardous Materials**

Lead Paint: It is known that the majority of the paint on the exterior and interior contain lead paint. Any work involving those items will follow current EPA and OSHA standards.



Asbestos: The plant tables in the “Grape House,” “Orchid House,” and “Sales House” contain approximately 1,000 square feet of corrugated Transite, an asbestos-cement product that insulates the plants from excessive heat. This material does not present a daily health hazard as it is in good condition and not friable.

Historic New England must remove the Transite to accommodate the new heating delivery system that will be installed under the tables. The removal will be handled by a licensed asbestos contractor whose employees wear protective clothing and respiratory protection, and the material safely disposed of in a manner that does not present a public health risk.

Fuel Oil: Above ground interior oil tanks serve two of the buildings on site. No known below grade tanks are on site.

Gasoline Storage: Minimal amounts of gasoline are stored on site in appropriate containers that are checked multiple times per year for integrity issues.

MSDS: MSDS Sheets are stored in or near the areas that contain hazardous materials.

Hazardous Material Storage: Metal cabinets are located in several interior spaces for the storage of hazardous materials, mostly a small selection of paints and solvents.

Material Disposal: Lead paint debris is collected and disposed of by outside contractors. Excess paints are stored for reuse until the determination is made that the material is not usable. Paints and other materials are collected by a Certified Hazardous Waste Removal company.

## **Professional Standards**

The preservation of historic buildings, landscapes, and objects is integral to Historic New England’s strategic vision. It follows an institutional preservation protocol that mandates continual assessment of its properties, long-range maintenance, and monitoring of property lines. The proposed project is based on a comprehensive baseline assessment of the greenhouse complex that the organization conducted in 2009 and updated in 2016 (attached).

Historic New England’s preservation projects meet or exceed the Secretary of the Interior’s *Standards for the Treatment of Historic Properties*. The organization’s customary treatment approach—and the one that will be used for the majority of the proposed project—is preservation. Maintenance and conservation treatments that retain and preserve historic material are consistently chosen. When repairs or replacement are necessary, Historic New England strives to match materials in-kind and to document the work fully. Although rehabilitation of the heating system is required, the goal is to retain the historic piping system and to hide the new heat distribution system as much out of view as possible.

A Preservation Restriction is held on the property by the Massachusetts Historical Commission. Their review is also required to ensure the project meets the Secretary of Interior’s Standards.



