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March 13, 2025
File No. 03.0035335.01

Mr. Rich Lucia
Environmental Engineer
Coastal Resources Management Council
4808 Tower Hill Road, Suite 116
Wakefield, RI, 02879

Received
3/14/2025
**Coastal Resources
Management Council**

Re: Response to Comments
Application No. 2024-11-020
Rock Garden Resiliency Improvements
Blithewold, 101 Ferry Road, Bristol, RI

Dear Mr. Lucia:

On October 17, 2024, GZA submitted an application for CRMC Assent on behalf of Blithewold Mansion, Gardens and Arboretum (Blithewold). The application (**2024-11-020**) detailed proposed activities consisting of the construction of a flood control berm, the removal of sediment from the bottom of a man-made water garden pond, installation of a pond liner in the water garden, and ancillary drainage improvements.

On January 28, 2025, GZA received an email from you requesting additional information. This letter is in response to your January 28, 2025 comments.

Listed on the National Historic Register in 1984, Blithewold's landscape features many unique garden zones of varying type spread thoughtfully and intentionally across the property. Some of these features, dating to the early 1900s are now being threatened by a trio of dangers from sea level rise, upland flooding and climate change. Through a long process of Master Planning, a Cultural Landscape Report was derived which has focused on the many garden zones in a thoughtful comprehensive approach to determining the value, aesthetic and preservation going forward. Throughout the process, focus on the historical significance and best methods to deal with environmental changes have been kept in a primary position; with an even greater focus on the dangers facing the Water and Rock Garden zones.

To facilitate your review, we have presented your comments followed by our responses in italics. Necessary revisions have been made to the project plans based on comments provided as well as modifications proposed by the Client. A revised Plan Set (total of 9 sheets) is attached for your reference.

General Review Comments:

Comment No. 1:

Is the 562 LF hybrid like what is shown on C-C x-section? This is not clear. Please provide additional cross sections along the shoreline. Please note, if the extent of work is the same as shown on C-C it would be considered non-structural... (i.e. One existing toe stone and vegetated slope). If work is greater than one existing toe stone then it would be a hybrid shoreline protection, please address Additional Cat B requirements for shoreline protection facilities. (RICRMP 1.3.1.G.4)



Response to Comment No. 1

Approximately 190 lineal feet of the proposed berm will utilize one stone at the toe of the berm. The remainder of the berm will be fully vegetated. The proposed berm will not utilize more than one placed stone at any point in the alignment. Additional cross sections have been added to the Drawings 7 and 8 to provide clarity.

Comment No. 2:

Please address setback variance for the fill (RICRMP 1.1.9 and 1.1.7). Please clarify if it less than 10,000 cy of fill.

Response to Comment No. 2

The proposed project will result in net fill of 600 cubic yards. Cut/fill calculations have been added to Drawing 6. The applicant is proposing a variance to place fill within 50 feet of the coastal feature. The variance criteria are addressed below:

1. *The proposed alteration conforms with applicable goals and policies of the Coastal Resources Management Program.*

The proposed alteration seeks to protect an existing historical / cultural resource while creating additional areas of coastal wetland. The Site is on the National Register with easements held by the Rhode Island Historical Preservation and Heritage Commission. On February 12, 2025, the RIHPHC review the project and approved the proposed landscape resiliency measure.

2. *The proposed alteration will not result in significant adverse environmental impacts or use conflicts, including but not limited to, taking into account cumulative impacts.*

The proposed alteration will have a net positive environmental impact through the creation of additional coastal wetland areas while incorporating nature-based design features to improve the resilience of the garden to coastal storms and protect the historically significant landscape areas.

3. *Due to conditions at the site in question, the applicable standard(s) cannot be met.*

The applicable standard cannot be met due to the existing locations of the landscape features including the, Water and Rock Gardens, which are listed historical sites. These landscape features are in close proximity to the coastal feature and wetland areas; therefore, the proposed resiliency measures cannot be implemented outside of the regulatory buffer zones.

4. *The modification requested by the applicant is the minimum variance to the applicable standard(s) necessary to allow a reasonable alteration or use of the site.*

The proposed modification is the minimum required to allow for the protection of cultural and historical sites in the medium-term future.

5. *The requested variance to the applicable standard(s) is not due to any prior action of the applicant or the applicant's predecessors in title. With respect to subdivisions, the Council will consider the factors as set forth in § 1.1.7(B) of this Part below in determining the prior action of the applicant.*

The applicant and its predecessors have not performed prior actions that have led to need for the requested variance.



6. *Due to the conditions of the site in question, the standard(s) will cause the applicant an undue hardship. In order to receive relief from an undue hardship an applicant must demonstrate inter alia the nature of the hardship and that the hardship is shown to be unique or particular to the site. Mere economic diminution, economic advantage, or inconvenience does not constitute a showing of undue hardship that will support the granting of a variance.*

If the variance is not granted, the applicant will not be able to protect historical gardens from the impacts of sea level rise and coastal storm surges, which would result in the loss of an important historic site in the Town of Bristol.

Comment No. 3:

Need a planting plan (natives) for all areas, especially the restored coastal wetland.

Response to Comment No. 3

A planting schedule has been included in the revised plan set.

Comment No. 4:

Will access be through the existing cart path?

Response to Comment No. 4

Post construction access will be through the existing cart path. This has been added to Drawing 5 of the revised plan set. Construction access will be coordinated with the selected contractor and may from the great lawn.

Comment No. 5:

Address the existing sewer line and future access.

Response to Comment No. 5

The existing sewer line is property of the Town of Bristol. In accordance with the Town of Bristol, the Water Pollution Control Department is responsible for the maintenance and improvement of the town sewer systems. No work under this application will interfere with the Town's access to the sewer line.

Comment No. 6:

Need to show where future migration areas will be, including elevations/route

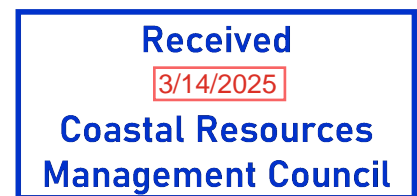
Response to Comment No. 6

The proposed future marsh migration areas, based on CRMC's Rhode Island Sea Level Affecting Marshes Model (SLAMM) have been added to Drawing 4.

Need / Purpose Comments:

Comment No. 1:

CRMC needs a more detailed writeup as to why the rock garden can't be moved inland, avoiding the need for a berm/fill/setback variance and allowing further marsh migration.





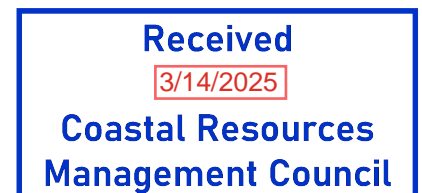
Response to Comment No. 1

Moving a historic landscape out of its created space is contrary to the National Parks Service recommendations of historic preservation and changes the design dynamic of the naturally occurring features that drew the original design to that area of the property. The associated costs and risk of deteriorating the historic fabric of the garden designed zones through change of character also poses a foundational challenge to the mission of Blithewold "...is to preserve New England's finest garden estate through excellence in horticulture and historic preservation, and by our example to teach and inspire others."

Through much deliberation, the internal decision was made to protect the garden zones in situ for historic preservation, through the construction of an earthen berm, with limited visual disturbance to the current landscape, maintaining a vibrant natural ecosystem and enlarging the already present coastal defenses of saltmarsh and associated floodplain. The protection of that area through the implementation of this earthen berm, is similar to what would have most likely been categorized as maintenance over the course of time had the family retained ownership or had staff hours and organization budgets allowed in previous decades.

The proposed project adheres to the following standards developed by the National Parks Service:

1. Preserving historic integrity
2. Avoiding impairment
3. Protect Cultural and natural resources
4. Build resiliency in the landscape
5. Preparing for future conditions



Comment No. 2:

Need to address SLAMM maps further (more than 1'SLR); where will coastal wetland be allowed to migrate in future (ie, south lawn area)?

Response to Comment No. 2

In a future scenario that includes sea level rise of greater than 1-foot, the coastal wetlands and salt marsh would be allowed to migrate into the south lawn area. As the grade rapidly increases in this area, Blithewold would not lose the use of this area under these scenarios, as events are held in the higher elevation portions of the lawn.

Comment No. 3:

If only addressing 10yr storm/1'SLR with this project, what happens with 25yr, 100yr, 2-5' SLR scenarios...Higher berms or move further inland then? If so, why not now?

Response to Comment No. 3

In the project planning phase, the applicant considered the benefit/cost of different sea level rise and coastal storm scenarios. Blithewold determined that increasing the berm height from what is proposed would result in negative impacts to the historical and natural conditions of the gardens and would result in increased project cost. The National Oceanic and Atmospheric Administration (NOAA) predicts that the sea level will rise will not exceed the 1.8¹ feet addressed in the design until sometime between 2060 and 2080 under the intermediate scenario in Providence, Rhode

¹ 2022 Sea Level Rise Technical Report, National Oceanic and Atmospheric Administration.



Island.² The applicant understands that maintenance and repairs to the proposed berm may be required if large coastal storms occur.

Comment No. 4:

If the Special Exception is approved and the project has to be done here/this way, staff may be able to support the proposed coastal wetland 3.7:1 mitigation as it links to separate coastal areas.

Response to Comment No. 4

Noted.

FWWVC Comments:

Comment No. 1:

Wetland B is a freshwater wetland if it is unlined at this time, need to fully address in writing the FWWVC Rules/application process (through this app) --Minimize/alternatives

Response to Comment No. 1

The existing water feature (Water Garden, Wetland B) was constructed in the early 1900s with a clay liner. This liner was compromised in the mid-1980s when the pond was dredged to make up for deferred maintenance. This concurrent work would replace the existing liner, renovate the existing water feature and take advantage of construction efficiency associated with earthwork and site landscape restoration while preventing future disruptions to the area.

Comment No. 2:

Why does the design include lining a FWW? It may be inundated in the future even with the berm and nearby tree roots will also likely be exposed to saltwater intrusion below

Response to Comment No. 2

See response to FWWVC Comment 1 above. In addition, the liner system will prevent saltwater intrusion as a result of groundwater tidal fluctuations to the water garden during high tides.

GZA installed three (3) groundwater monitoring wells on September 20, 2024. Water level transducers were installed in the wells to provide continuous monitoring of groundwater levels between October 18 and November 5, 2024. During high tides within this monitoring period, groundwater depths below ground surface ranged from 2.5 to 3.5 feet below the ground surface at GZ-2, which was the well installed closest to the Water Garden. Most of the existing tree root depths in this area extend to a depth of approximately 18-inches below the ground surface.

² NOAA sea level rise predictions range from “low” which is lineal extrapolation of the current rate of sea level rise observed since the early 1990s and “extreme”, which represents an increase in ice melt. The intermediate range is near the middle of these scenarios. The report states that 1-foot or greater sea level rise by 2100 is 90% likely to occur even if greenhouse gas emissions achieve net 0 by 2075.





Processing Comments:

Comment No. 1:

Proof of updated ownership (says Blithewold Inc on app as transferred from Heritage Foundation, but ownership proof shows as Heritage Foundation still?)

Response to Comment No. 1

Ownership of Blithewold was transferred from the Heritage Foundation of Rhode Island to Blithewold Inc. in 2019. Updated ownership information is attached.

Comment No. 2:

Special Exception required, need to address Criteria...where is the public purpose? (RICRMP 1.1.8) Is the public allowed access here?

Response to Comment No. 2

The Blithewold Mansion, Gardens and Arboretum sits on Bristol Harbor on the on the eastern shore of Narragansett Bay. Blithewold, with a central location in the Rhode Island Town of Bristol, welcomes more than 50,000 visitors annually, including tourists, students, and community members. Blithewold is an American Garden Treasure, Rhode Island's oldest public garden, and New England's only accredited coastal arboretum. The site was recognized as an arboretum in 1926 with a diverse collection of 3,000 woody plants and trees, the largest Giant Sequoia east of the Mississippi, and seven historic gardens including a Rock and Water Garden with coastal views.

Comment No. 3:

Category B criteria and hearing required. (RICRMP 1.1.3.E).

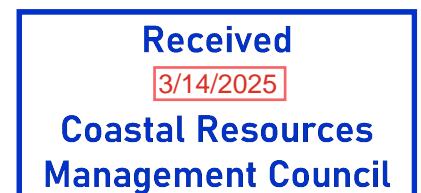
Response to Comment No. 3

The Category B criteria are addressed below:

Demonstrate the need for the proposed activity or alteration;

Blithewold's coastal Rock and Water Gardens are inundated with salt water during storm surges and especially monthly king high tides, damaging the horticultural and historical exhibits. The Rock Garden's perennial plantings are protected from northwest winds by mature English yews and Eastern red cedars. Sea level rise increased tidal elevations and storm surges are increasing the frequency of coastal flooding in proximity of the Rock Garden. This saltwater exposure is causing stress to the trees in the garden. In addition, the Water Garden's freshwater lily pond and Asian-inspired plantings are also exposed to saltwater more frequently. Blithewold would like to protect the gardens from sea level rise and coastal flooding while managing stormwater runoff and expanding essential habitat area. The proposed design consists of a flood control berm, filling of wetlands and creating new wetlands.

Demonstrate that all applicable local zoning ordinances, building codes, flood hazard standards, and all safety codes, fire codes, and environmental requirements have or will be met; local approvals are required for activities as specifically prescribed for nontidal portions of a project in §§ 1.3.1(B), (C), (F), (H), (I), (K), (M), (O) and (Q) of this Part; for projects on state land, the state building official, for the purposes of this Section, is the building official;





Bristol town ordinances permit the placement of fill in FEMA Special Hazard Zones if the following conditions are met:

- 1. Said action will not encroach upon a watercourse.*
- 2. Said action will not result in an increase in the potential flood level (Tidal Flood Zone). Where it is determined that said action may result in an increase in the potential flood level, the building official shall require appropriate measures to offset the potential increase. Adequate drainage shall be provided so as to reduce the exposure of the site or any other land to flood hazard³.*

The proposed project will meet both conditions.

Describe the boundaries of the coastal waters and land area that is anticipated to be affected;

The site is identified with an address of 101 Ferry Rd (Plat 165 / Lot 7&8) in Bristol, RI. The property is owned by Blithewold Inc. and encompasses the mansion and gardens. It is bordered by Bristol Harbor to the west, residential properties to the north and east, and another lot owned by Blithewold to the south. As detailed above, the mansion, wetlands, rocky beach, recreation areas, lawn, gardens, and several other ancillary structures exist on the Site. Ferry Road runs along the eastern property line. There is an access road approximately 20-feet north of the northern property line that connects to an approximately 150-foot-long gravel road that runs parallel to the western property line. A sewer line owned by the Town of Bristol runs under the gravel path.

The waterbody adjacent to the property is Bristol Harbor, characterized as Type 2 waters which are associated with low intensity use. These are waters that are in areas with high scenic value that support low-intensity recreation and residential use. The existing rocky beach coastal feature is approximately 1,105-feet in length.

Demonstrate that the alteration or activity will not result in significant impacts on erosion and/or deposition processes along the shore and in tidal waters;

Prior to construction activities, the contractor will install sediment and erosion controls (straw wattles) along the in the locations shown on Drawing 5.

Access to the Site will be via the existing access road located along the northern property line of the Site. All proposed work will occur landward of the mean high-water line. No materials or equipment will be stored west of the existing gravel road that runs along the western edge of the property line, parallel to the shoreline. The project will not significantly alter the existing coastal feature.

Additional erosion and sediment controls such as straw bales and a silt fence will be deployed as needed.

Demonstrate that the alteration or activity will not result in significant impacts on the abundance and diversity of plant and animal life;

The flood control berm has been strategically placed to protect and limit disturbance to crucial Site features, including trees, gardens, and wetlands. There are three wetlands on the Site: Wetland A is an area subject to flooding and estuarine, Wetland B is an isolated manmade freshwater pond, Wetland C is forested/emergent freshwater wetland. The berm will impact wetlands A and C, as shown on the provided Drawing Set. 2,418 square feet of infill in Wetlands A and C are proposed to construct the berm. To offset Wetland Infill, approximately 8,890 square feet of coastal wetlands will be created, resulting in approximately 3.7:1 compensation. Bristol Harbor and the existing rock beach shoreline coastal feature will be minimally affected by the construction of the proposed berm. Given the flood control berm's setback from the existing coastal feature, it is not anticipated that the alteration will result in significant impacts to public access to, or use of, the water and shoreline. The setback of the berm will also relieve any potential for erosion or disruption of shoreline sediment dynamics. Additionally, the alteration will have no significant impact on animal life.

³ Article IX, Division 2, Section 28-307(3)



Restoration of wetlands proposed to be filled will ensure that the diversity of plant life is preserved. It is not anticipated that the flood control berm will have any significant impact on the quality of water in the immediate vicinity.

Demonstrate that the alteration will not unreasonably interfere with, impair, or significantly impact existing public access to, or use of, tidal waters and/or the shore;

The Blithewold Mansion, Gardens and Arboretum sits on Bristol Harbor on the eastern shore of Narragansett Bay. Blithewold, with a central location in the Rhode Island Town of Bristol, welcomes more than 50,000 visitors annually, including tourists, students, and community members. The Van Winkle family was enthusiastic about their responsibility to maintain the waterfront and the proposed project will allow for continued access to the gardens and waterfront for both members and the public.

Demonstrate that the alteration will not result in significant impacts to water circulation, flushing, turbidity, and sedimentation;

The proposed creation of additional coastal wetland areas will result in a positive impact to coastal waters and wetlands in the vicinity of the site.

Demonstrate that there will be no significant deterioration in the quality of the water in the immediate vicinity as defined by DEM;

The proposed creation of additional coastal wetland areas will result in a positive impact to coastal waters and wetlands in the vicinity of the site.

Demonstrate that the alteration or activity will not result in significant impacts to areas of historic and archaeological significance;

The goal of the project is to preserve an area of historical significance.

Demonstrate that the alteration or activity will not result in significant conflicts with water dependent uses and activities such as recreational boating, fishing, swimming, navigation, and commerce, and;

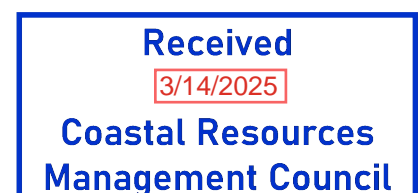
The proposed project does not encroach on waterways or restrict water dependent uses.

Demonstrate that measures have been taken to minimize any adverse scenic impact (see § 1.3.5 of this Part).

This project will protect the coastal gardens, while showcasing nature-based solutions to climate change. Blithewold will provide educational programming and signage to inform visitors about nature-based solutions to climate change. Blithewold is a significant historical, cultural, environmental, and education resource with a reputation as a premiere public garden, which brings more than 50,000 visitors annually. This project will enable Blithewold to sustainability preserve the historic gardens and expand educational opportunities for visitors.

Comment No. 4:

Please contact ACOE to confirm if a permit will be required for this work.





Response to Comment No. 4

Discussions with ACOE have been initiated and any necessary authorization will be obtained prior to the start of work.

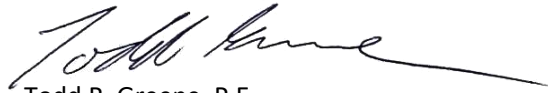
As you review our responses and plans, please let us know if there are additional questions or comments that need further explanation.

Very truly yours,

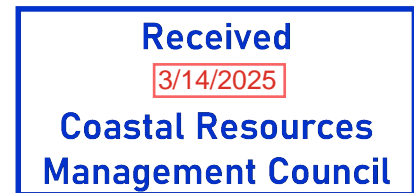
GZA GEOENVIRONMENTAL, INC.


Ryan DaPonte, P.E.
Senior Project Manager


Matthew Page, P.E.
Consultant/Reviewer


Todd R. Greene, P.E.
Principal-In-Charge

Attachments: Revised Plan Set (12 Sheets)
Updated proof of ownership



\\GZAPROVIDENCE\JOBS\ENV\35335.01.RAD\WORK\CRMC NEW ASSENT\RESPONSE TO COMMENTS\35335.01 RESPONSETOCOMMENTS_FINAL.DOCX

cstaff1@crmc.ri.gov

From: Tracy Silvia <tsilvia@crmc.ri.gov>
Sent: Tuesday, January 28, 2025 2:38 PM
To: rlucia@crmc.ri.gov; 'Cstaff1'
Cc: 'Oliver Allamby'; 'Brittany Spurlock'
Subject: RE: 2024-11-020

Follow Up Flag: Follow up
Flag Status: Flagged

As Additional Information Requested event...thanks Ollie

Tracy A. Silvia
Sr. Environmental Scientist
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Oliver Stedman Government Center
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(401) 783-3370
www.crmc.ri.gov
tsilvia@crmc.ri.gov

From: rlucia@crmc.ri.gov <rlucia@crmc.ri.gov>
Sent: Tuesday, January 28, 2025 2:18 PM
To: 'Tracy Silvia' <tsilvia@crmc.ri.gov>; 'Cstaff1' <cstaff1@crmc.ri.gov>
Subject: FW: 2024-11-020

Please put in PAES...2024-11-020

From: rlucia@crmc.ri.gov <rlucia@crmc.ri.gov>
Sent: Tuesday, January 28, 2025 2:17 PM
To: 'Ryan.DaPonte@gza.com' <Ryan.DaPonte@gza.com>; 'Tracy Silvia' <tsilvia@crmc.ri.gov>
Subject: 2024-11-020

Ryan,

We are working on the Blithewood application File # 2024-11-020. There are numerous items that need to be addressed before we can put this out to notice and continue with a review.

- Is the 562 lf hybrid like what is shown on C-C x-section?....this in not clear. Please provide additional cross sections along the shoreline. Please note, if the extent of work is the same as shown on C-C it would be considered non-structural...(i.e. One existing toe stone and vegetated slope).

If work is greater than one existing toe stone then it would be a hybrid shoreline protection, please address Additional Cat B requirements for shoreline protection facilities. (RICRMP 1.3.1.G.4)

- Additional requirements- please address setback variance for the fill (RICRMP 1.1.9 and 1.1.7). Please clarify if it less than 10,000 cy of fill.
- Need a planting plan (natives) for all areas, especially the restored coastal wetland
- Will access be through the existing cart path?
- Address the existing sewer line and future access.

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Need/Purpose:

- CRMC needs a more detailed writeup as to why the rock garden can't be moved inland, avoiding the need for a berm/fill/setback variance and allowing further marsh migration.
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- Why does the design include lining a FWW? It may be inundated in the future even with the berm and nearby tree roots will also likely be exposed to salt water intrusion below.

Processing:

- Proof of updated ownership (says Blythewood Inc on app as transferred from Heritage Foundation, but ownership proof shows as Heritage Foundation still?)
- Special Exception required, need to address Criteria...where is the public purpose? (RICRMP 1.1.8) Is the public allowed access here?
- Category B criteria and hearing required. (RICRMP 1.1.3.E).
- Please contact ACOE to confirm if a permit will be required for this work.

Thanks,
Rich

Richard Lucia, P.E.
Environmental Engineer IV
RI Coastal Resources Management Council