

MEMORANDUM OF AGREEMENT
AMONG
THE U.S. DEPARTMENT OF AGRICULTURE, AGRICULTURAL RESEARCH
SERVICE,
THE DISTRICT OF COLUMBIA STATE HISTORIC PRESERVATION OFFICER,
THE NATIONAL CAPITAL PLANNING COMMISSION,
AND THE NATIONAL CHINA GARDEN FOUNDATION

REGARDING
THE NATIONAL CHINA GARDEN
AT THE U.S. NATIONAL ARBORETUM, WASHINGTON, D.C.

This Memorandum of Agreement (MOA) is made as of this 18th day of November 2016, by and among the U.S. Department of Agriculture's (USDA) Agricultural Research Service (ARS), the District of Columbia State Historic Preservation Officer (DCSHPO), the National Capital Planning Commission (NCPC), and the National China Garden Foundation (NCGF), (referred to collectively herein as the "Parties" or "Signatories" or individually as a "Party" or "Signatory") pursuant to Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. §470f and its implementing regulations 36 CFR Part 800, and Section 110 of the NHPA, 16 U.S.C. § 470h-2.

WHEREAS, the United States National Arboretum (USNA) is a research and education institution, public garden and living museum, whose mission is to enhance the economic, environmental, and aesthetic value of landscape plants through long-term, multidisciplinary research, conservation of genetic resources, and interpretative gardens and educational exhibits. Established in 1927, and opened to the public in 1959, the USNA is the only federally-funded arboretum in the United States and is open to the public free of charge; and,

WHEREAS, the USNA, located at 3501 New York Avenue, NE, is owned by the United States government and under the administrative jurisdiction of the USDA's ARS and occupies approximately 446 acres in Northeast Washington, DC and bound by Bladensburg Road on the west, New York Avenue on the north, and M Street on the south. ARS and the NCGF plan to construct the National China Garden (undertaking) on a 12-acre, undeveloped parcel within the USNA. The project site is located on the eastern area of the USNA, east of Holly Spring Road at its intersection with Meadow Road (Attachment A); and

WHEREAS, The USNA is listed in the National Register of Historic Places as documented in the 1973 nomination form, and the D.C. Inventory of Historic Sites. The USNA contributing elements, the road system, the Brick Kiln Complex, gazebos, gardens, gates on the outside fence, walls, fountains, the Capitol Columns, and springhouses were documented through the 2000 Historic Resource Management Plan; and

WHEREAS, the USDA has designated ARS as the lead federal agency for this undertaking; and

WHEREAS, the undertaking is an expression of friendship and collaborative efforts between the United States and China that builds on formal agreements in 2004, 2011, and 2016 to construct the garden at the USNA. The project was authorized by Congress pursuant to Pub. L. No. 110-246, § 7415 (June 18, 2008), 122 STAT. 1651, 2017. The purpose of the undertaking is to create the finest example of a classical Chinese garden in the United States, featuring a harmonious balance of man-made structures, plants, water and rock formations. The National China Garden would become an important cultural center in the nation's capital, providing an opportunity for visitors from around the world to learn from, enjoy, and gain an appreciation for the influence of

China's history of horticulture and garden design; a focal point for cultural activities and vibrant link between the United States and China; a living classroom and national center for the study, appreciation and practice of traditional Chinese culture; and a venue for meetings conferences, and special events; in addition to public tours and year-round cultural and educational activities. The National China Garden will also be an important opportunity for integrating new plant collections and exhibits into the U.S. National Arboretum's research and education mission; and, in combination with existing heritage collections, a complete center of excellence in Asian plants and plant culture at the U.S. National Arboretum with expanded opportunities for new multinational collaboration; and

WHEREAS, the undertaking incorporates the five key elements that compose a traditional Chinese garden: rocks, water, scenic views, plants and artwork; and highlights three types of traditional Chinese gardens: private residential, forest and lake gardens. In addition to the garden itself, the venue includes a range of structures, a central lake feature, art and furnishings. The buildings and structures include eight enclosed pavilions, six open pavilions, four open corridors, two stone bridges, one landscape element (White Pagoda), one restroom building, one support services building (with additional restrooms), courtyard enclosing walls and rockeries of various sizes. These efforts will be collectively referred to herein as the undertaking (undertaking); and

WHEREAS, the above-ground elements of the National China Garden are to be based on original designs by Chinese designers, following traditional Chinese architectural precepts. A United States design team is responsible for designing underground elements and infrastructure and, cooperatively with the Chinese design team, ensuring that both above- and below-ground elements are in compliance with local and federal codes and regulations. Both the above- and below-ground elements of the National China Garden would be constructed by Chinese craftsmen and a general contractor, respectively. The garden and range of materials, structures, art and furnishings for the garden are to be provided by the People's Republic of China as a gift to the people of the United States; and,

WHEREAS, NCPC will review the undertaking pursuant to the National Capital Planning Act of 1952; pursuant to 40 U.S.C. § 8722(b)(1) and (d); and

WHEREAS, the approval action by NCPC is also considered an undertaking subject to Section 106 of the NHPA and by entering into this MOA, NCPC designates the ARS as the lead agency pursuant to 36 CFR 800.2(a)(2); and

WHEREAS, the NCGF, an independent nonprofit organization, which has been established to raise the funds to develop the garden and sustain the site for the public's enjoyment, has participated in the consultation and has been invited to sign this MOA as an Invited Signatory pursuant to 36 CFR 800.6(c) (2); and

WHEREAS, ARS, DCSHPO, and NCPC are the Signatories and the NCGF is an Invited Signatory to this MOA; and

WHEREAS, ARS and NCPC initiated Section 106 consultation with the DCSHPO by letter dated May 21, 2015; and

WHEREAS, ARS, in consultation with DCSHPO and NCPC, defined both a primary and secondary Area of Potential Effect (APE) for the Undertaking. The undertaking's Archaeological Area of Potential Effects (APE) includes the limits of physical disturbance within the 12-acre parcel, staging, and sewer connection areas. Construction staging areas will be limited to the paved areas of the New York Avenue parking lot and the 12-acre parcel (Attachments B and C). The Above-Ground APE extends to a 1.5-mile radius from the project footprint to encompass the

boundaries of the USNA and views from the surrounding area (Attachment D); and

WHEREAS, ARS has determined, in consultation with DCSHPO and NCPC that the undertaking will cause adverse effects on the USNA as described in ARS's letter dated July 12, 2016 (Attachment E). The DCSHPO concurred with the determination; and

WHEREAS, such adverse effects include, but are not limited to, altering the current design, setting, and feeling of the Arboretum. The physical destruction or alteration of a section of Meadow Road N.E. between Holly Spring Road N.E. and Conifer Road N.E. and the removal of a section of Conifer Road N.E. between Holly Spring Road N.E. and Meadow Road N.E. will alter the USNA's traffic pattern. In addition, the further development of the meadow and introduction of visual elements will alter the arboretum's natural preserve-like setting; and

WHEREAS, a Phase I Archaeological Survey was completed within the Archaeological APE and no National Register-eligible resources were identified and no further work was recommended; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), ARS has notified the Advisory Council on Historic Preservation (AHP) of its adverse effect determination with specified documentation by letter dated September 21, 2016, and the AHP has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

WHEREAS, ARS determined, in consultation with SHPO that there are no federally recognized Indian tribes in the District of Columbia; and

WHEREAS, on July 16, 2015, the U.S. Commission of Fine Arts (CFA) approved the concept plans for the National China Garden Project; and

WHEREAS, on December 3, 2015, the NCPC provided comments on the concept plans for the National China Garden Project; and

WHEREAS, ARS provided for public involvement in the Section 106 review process in accordance with 36 CFR § 800.8(a)(1) by coordinating Section 106 review with public review and consultation via an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) process; and

WHEREAS, on September 29, 2016, the ARS and NCPC released the National China Garden Draft EA for a 30-day public review and comment period pursuant to NEPA. The EA evaluated two alternatives for the Undertaking (Attachment F) and identified Alternative 2 as the Preferred Alternative; and

WHEREAS, ARS made significant progress in avoiding and minimizing some adverse effects by means of the Section 106 consultation and NEPA review through an EA. Such measures include moving the 69-foot tall White Pagoda out of the immediate line of sight from the Hickey Hill Overlook; relocating the White Pagoda further down Hickey Hill to reduce the elevation by 18 inches; reducing the number of trees to be removed; relocating other trees as appropriate; limiting topographical changes to re-grading; minimizing lighting design and intensity; and preserving the view shed from the Hickey Hill Overlook along the existing clearing; and,

NOW, THEREFORE, ARS, DCSHPO, and NCPC agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

ARS shall ensure that the following measures are carried out:

I. GENERAL REQUIREMENTS

- A. Applicable Codes and Standards. The undertaking shall be planned, developed, and executed by ARS in consideration of the recommended approaches in applicable National Park Service's National Register Bulletins (e.g., *How to Apply the National Register Criteria for Evaluation*, *How to Complete the National Register Registration Form*, and *How to Evaluate and Nominate Designed Historic Landscapes*).
- B. Qualifications. ARS shall ensure that all historic preservation work performed on its behalf pursuant to this MOA shall be accomplished by, or under the direct supervision of a person or persons who meet(s) or exceed(s) the Secretary of Interior's Professional Qualification Standards in those areas in which the qualifications are applicable for specific work performed.
- C. Anti-Deficiency Act. ARS's obligations under this MOA are subject to availability and appropriated funds, and the stipulations of this MOA are submitted to the provisions of the Anti-Deficiency Act. ARS will make reasonable and good faith efforts to secure the necessary funds to implement this MOA in its entirety. If compliance with the Anti-Deficiency Act alters or impairs ARS' ability to implement the stipulations in this MOA, ARS will consult in accordance with Stipulation VIII (Amendments) or IX (Termination) of this MOA.

II. MITIGATION MEASURES

- A. National Register Nomination Updates. ARS will update the existing National Register nomination through development of a broader historic context, re-evaluation of contributing vs. non-contributing resources, including landscape features, re-evaluation of periods of significance, and a thorough analysis of integrity. Particular emphasis also will be placed on evaluating the arboretum's designed landscape (such as development of the circulation/road system and patterns of change in types and locations of plant collections that illustrate historic influences such as significant persons, trends, or events in arboretum design). An evaluation of the Administration Building under the District of Columbia's Modernism historic context will also be completed as part of the updated National Register nomination. ARS will submit the draft updates to NCPC and DC SHPO for their review. NCPC and DC SHPO will have 30 days to review and provide concurrence or comments. The nomination updates will be finalized no later than December 2019, upon anticipated completion of construction and opening of the National China Garden to the public.
- B. Public Outreach and Education. ARS will develop a public outreach program, in coordination with the National China Garden Foundation regarding the National China Garden and the USNA that will include a written tri-fold brochure (500 copies) that will be available to visitors of the USNA, information for placement on USDA/USNA and NCG Foundation websites, and a public lecture. The public outreach program will emphasize the arboretum's development history and focus on the historic designed landscape and the historic influences on the types and locations of plant collections over time, including the National China Garden. ARS will coordinate development of this program, and ultimate distribution of any printed materials, in consultation with the DC SHPO. The tri-fold brochure, website information and public lecture will be completed no

later than December 2019 concurrent with the National Register Nomination Update. Draft text for the brochure and website will be submitted to DC SHPO. They will have 30 days to review and comment.

III. DESIGN REVIEW

1. Based on the Preferred Alternative, Alternative 2 per Exhibit E, ARS plans to submit to NCPC a combined preliminary and final submission for review and approval.
2. ARS will prepare 100% Construction Drawings as part of the CFA and NCPC final and preliminary/final submissions.
3. ARS will distribute copies, in electronic format only unless requested otherwise by a Signatory, of both the CFA and NCPC final submissions to the Signatories. ARS will distribute the CFA's Secretary correspondence and the NCPC's Action and Executive Director's Recommendation to all Signatories.

IV. POST-REVIEW DISCOVERIES

Should cultural resources be unexpectedly identified during the implementation of the undertaking or any actions taken pursuant to this MOA, ARS shall stop work in the location, secure the find, and notify the SHPO within 24 hours by phone and email. Following evaluation, ARS shall ensure that reasonable efforts are made to avoid, minimize or mitigate adverse effects to eligible properties, and shall consult SHPO to resolve any unavoidable adverse effects pursuant to 36 CFR § 800.6.

V. MONITORING AND REPORTING

Each year following the execution of this MOA until it expires or is terminated, ARS shall provide all parties to this MOA a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in ARS's efforts to carry out the terms of this MOA.

VI. ELECTRONIC COPIES

Within one month of the last signature on this MOA, ARS shall provide each Signatory and Invited Signatory with one legible, color, electronic copy of this fully-executed MOA and all of its attachments. If the electronic copy is too large to send by e-mail, ARS shall provide each signatory with a copy of this MOA on a compact disc.

VII. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, ARS shall consult with such party to resolve the objection. If ARS determines that such objection cannot be resolved, ARS will:

- A. Forward all documentation relevant to the dispute, including the ARS's proposed resolution, to the ACHP. The ACHP shall provide ARS with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, ARS shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. ARS will then proceed according to its final decision.

- B. If the ACHP does not provide its advice regarding the dispute within thirty (30) days, ARS may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, ARS shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
- C. It will be ARS' responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute.

VIII. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP. At any time in the six-month period prior to expiration of the MOA, the signatories may mutually agree to extend the MOA with or without amendments.

IX. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, ARS must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. ARS shall notify the signatories as to the course of action it will pursue.

X. DURATION

This MOA will expire if its terms are not carried out within five (5) years. Prior to such time, ARS may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation VIII below.

XI. SIGNATURES

Execution of this MOA by the ARS, SHPO, NCPC, and NCGF and implementation of its terms evidence that ARS has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

IN WITNESS WHEREOF, the parties have caused this AGREEMENT to be executed, each by its duly authorized officers, as of the date first written above.

[Signatures Follow On Separate Pages]

ATTACHMENT LIST

Attachment A: Site Context

Attachment B: Construction Diagram

Attachment C: Archaeological Area of Potential Effects

Attachment D: Direct and Indirect Above-Ground APE

Attachment E: ARS July 12, 2016 Consultation Letter

Attachment F: Plan Alternatives

**SIGNATORY PAGE
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REGARDING
THE NATIONAL CHINA GARDEN
AT THE U.S. NATIONAL ARBORETUM, WASHINGTON, D.C.**

U.S. Department of Agriculture, Agricultural Research Service

By: //original signed// Date: 11/17/2016

Richard T. Olsen, Director

**U.S. National Arboretum
Agricultural Research Service
U.S. Department of Agriculture**

By: //original signed// Date: 11/17/2016

Mary Wilkins, Authorized Department Officer

**Agricultural Research Service
U.S. Department of Agriculture**

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District of Columbia State Historic Preservation Office

By: //original signed// **Date:** 11/15/2016

David Maloney

District of Columbia State Historic Preservation Officer

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National Capital Planning Commission

By: //original signed// **Date:** 11/17/2016

Marcel C. Acosta, Executive Director

National Capital Planning Commission

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National China Garden Foundation

By: //original signed// Date: 11/15/2016

Sandra Gibson, Executive Director

National China Garden Foundation

Attachment A

Site Context

National China Garden Environmental Assessment

Site Context



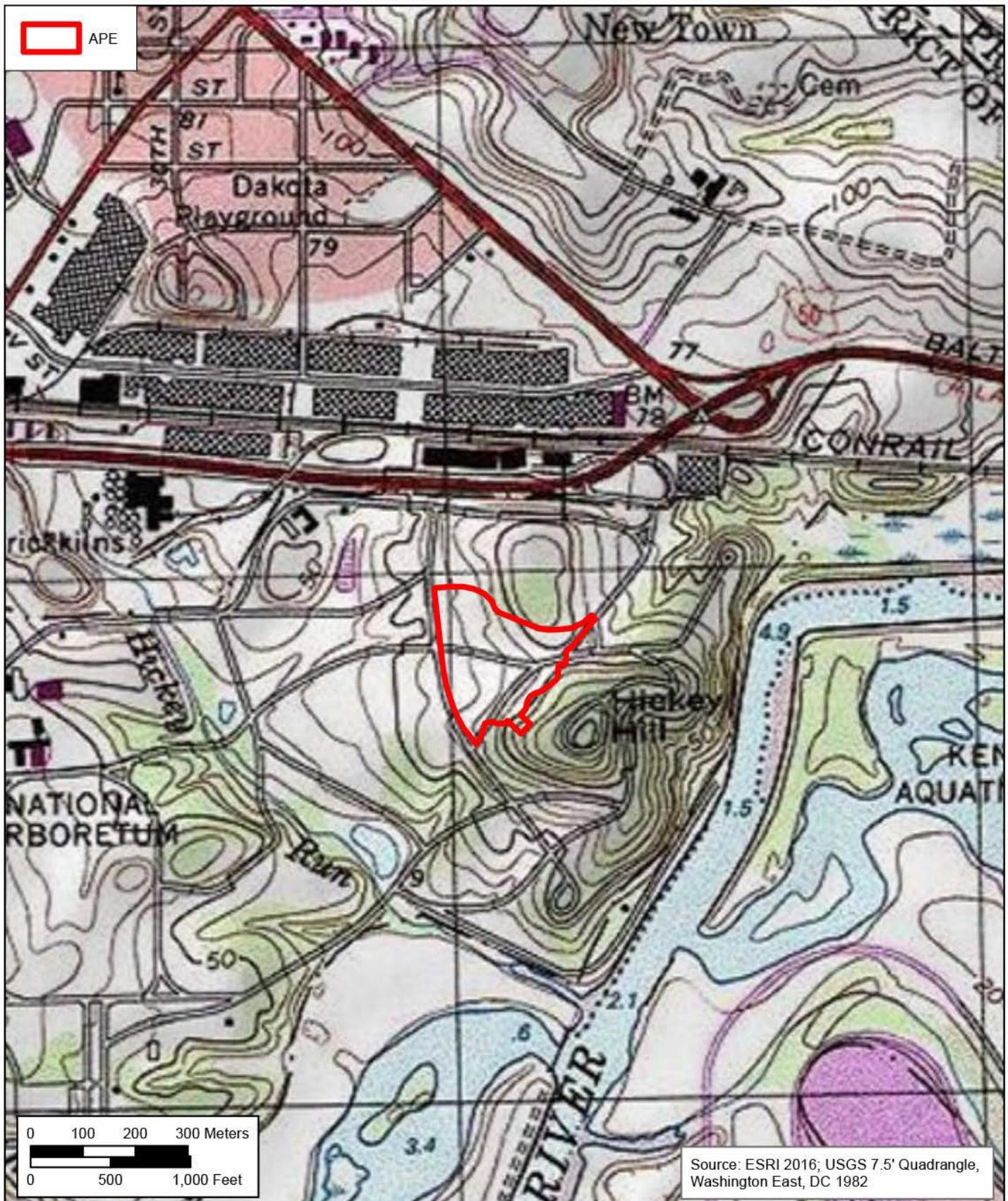
Attachment B
Construction Staging Areas

National China Garden Project

Construction Diagram



Attachment C
Archaeological Area of Potential Effects



CLIENT National China Garden Foundation

PROJ Phase I Archaeology Survey

REVISION NO 0 DR BY RXK 04/13/16

SCALE 1:10,000 CHK BY PAR 04/13/16

Q:\Projects\ENV\CRM\National China Garden\1. Data\1.4 GIS PM VB



TITLE

Project APE Archaeological APE

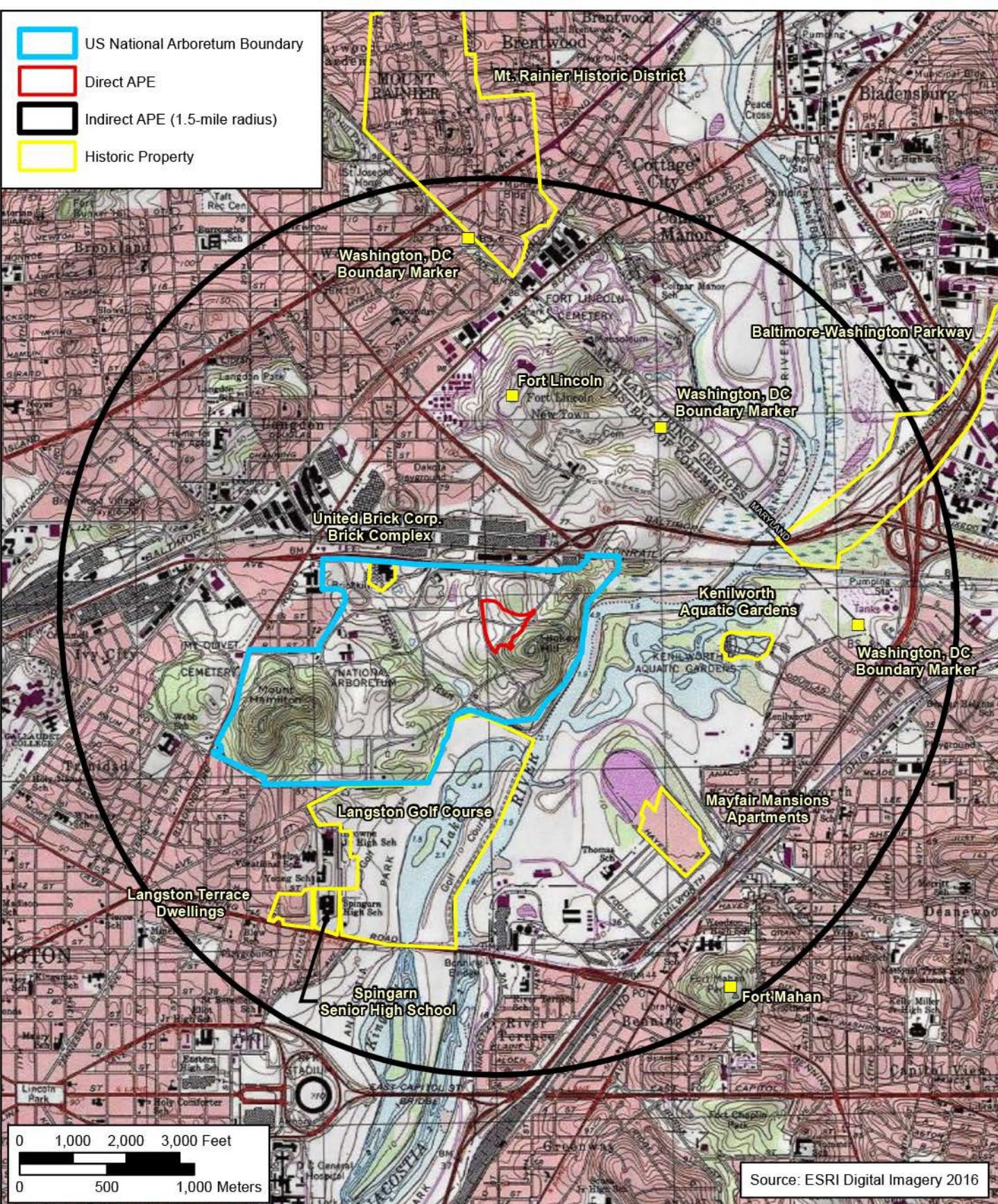
AECOM

12420 Milestone Center Dr.
Germantown, MD 20876

PROJ NO 60430170

FIGURE 1-2

Attachment D
Direct and Indirect Above-Ground APE



CLIENT Rhodeside & Harwell

PROJ National China Garden

REVISION NO 1 DR BY KAF 04/08/2016

SCALE 1:30,000 CHK BY ML 04/11/2016

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1E-Data\1E-4 GIS

E. Data E.4 GIS

TITLE

Direct and Indirect Above-Ground APE



AECOM

12420 Milestone Center Dr.
Germantown, MD 20876

PROJ NO 60430170

FIGURE

3-1

Attachment E
ARS July 12, 2016 Consultation Letter



United States Department of Agriculture

Research, Education, and Economics
Agricultural Research Service

July 12, 2016

Mr. David Maloney
State Historic Preservation Officer
District of Columbia State Historic Preservation Office
1100 4th Street, SW, Suite E650
Washington, DC 20024

Subject: **National China Garden, United States National Arboretum, Washington, District of Columbia – Determination of Effects for Architectural/Above-Ground Historic Resources**

Dear Mr. Maloney:

The purpose of this letter is to request your continued consultation under Section 106 of the National Historic Preservation Act (NHPA), as amended (54 U.S.C. 306108) for the National China Garden undertaking. The United States National Arboretum (U.S. National Arboretum, USNA) and the Agricultural Research Service of the United States Department of Agriculture (USDA-ARS), in partnership with the National China Garden Foundation, are proposing the construction of the National China Garden, a classical Chinese garden complex on the grounds of the USNA. For the National Environmental Policy Act (NEPA) and Section 106 processes, ARS is serving as the lead federal agency for the proposed action, working in cooperation with the National Capital Planning Commission (NCPC). The proposed Project is subject to the review of the NCPC under the National Capital Planning Act. Concurrently, ARS is preparing an Environmental Assessment in accordance with Section 102 of NEPA and the Council on Environmental Quality's Regulations for implementing NEPA (40 Code of Federal Regulations 1500-1508).

The National China Garden Foundation, working in partnership with ARS and USNA, has retained a team led by Page Southerland Page as the design team for the proposed Project. Team member Rhodeside & Harwell is leading the Environmental Assessment process for the Project and selected AECOM to assist with the architectural/above-ground historic resources and archaeological resources services required for the development of the Environmental Assessment and completion of the NHPA Section 106 process. This letter presents ARS's determinations of effect of the Project on architectural/above-ground historic resources for the two developed alternatives. The AECOM architectural history team, located in Germantown, Maryland, undertook investigations to determine the presence of architectural/above-ground historic resources, defined as those that are listed or eligible for listing in the National Register of Historic Places (NRHP) in the Project Area. All work was conducted or directed by staff that meet the *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61) in Architectural History and History. Resumes for Project personnel are available upon request. A separate letter will address the results of a recent archaeological survey at the USNA and present determinations of effect for archaeological resources.

U.S. National Arboretum
Director's Office
3501 New York Avenue, N.E.
Washington, DC 20002
USDA is an Equal Opportunity Provider and Employer

Project Background

On May 21, 2015, ARS formally initiated District of Columbia State Historic Preservation Office (DC SHPO) consultation by letter (Attachment 1). No formal response was received from DC SHPO. At that early stage of the undertaking, ARS had not made a formal determination of the Project's effect on cultural resources. As part of the 2006 update to the USNA Master Plan, which included an early concept plan for the National China Garden, we received a comment letter from you dated July 24, 2006. In that letter, you noted that the primary concern would be with archaeological resources. Based on preliminary discussions with Dr. Ruth Trocolli and Ms. Anne Brockett at the NCPC NEPA kickoff meeting on June 11, 2015, this continued to be the main concern from a NHPA Section 106 perspective. A site visit with agency staff was held on August 14, 2015 and included representatives from NCPC and Ann Brockett from the DC SHPO. The height and location of the proposed pagoda within the National China Garden was the main issue of concern for above-ground historic resources.

In late 2006 and early 2007, both NCPC and the Commission of Fine Arts (CFA) approved the *U.S. National Arboretum Master Plan Modification and Chinese Garden*, which included the development of a Chinese Garden complex at the same location currently proposed. In general, the latest concept plan is consistent with the scheme previously reviewed by the Commission, but further refined. The latest plan includes a similar program, yet a more compact layout and modified parking and access configurations. The current plan reduces the extent of land disturbance and grading, includes fewer support buildings and a smaller lake, and no longer includes a proposed pavilion at the top of Hickey Hill. Moreover, Holly Spring Road remains in its current location (rather than being shifted westward), while the location and alignment of paths have changed in order to improve accessibility and limit vegetation disturbance.

The project team continued to consult with agencies as the concept design evolved. Initial submissions of a revised concept were approved by the Commission of Fine Arts on July 16, 2015 and by NCPC at its December 3, 2015 meeting. The Commission of Fine Arts approved the concept subject to the provision of additional plans at an intermediate scale for each precinct that include additional information on scale, topographic alterations, buildings, materials and interpretation. NCPC approved the concept with a range of comments to consider prior to preliminary plan review (see Attachment 1).

Description of the Undertaking

The purpose of the proposed action is to create the finest example of a classical Chinese garden in the United States, featuring a harmonious balance of man-made structures, plants, water and rock formations. The National China Garden would become:

- an important cultural center in the nation's capital, providing an opportunity for visitors from around the world to learn from, enjoy, and gain an appreciation for, the profound influence of China's history of horticulture and garden design;
- a focal point for cultural activities, as well as a vibrant link between the United States and China;
- a living classroom and national center for the study, appreciation and practice of traditional Chinese culture; and
- a venue for meetings, conferences and special events, in addition to public tours and year-round cultural and educational activities.

The project is necessary as an expression of friendship and collaborative effort between China and the United States that builds on formal agreements in 2004 and 2011 between the two countries to construct the garden at the U.S. National Arboretum. It also helps fulfill mutual commitments,

reaffirmed during the U.S.-China Strategic Economic Dialogue, to deepening bilateral economic cooperation and advancing common objectives. Moreover, the 2008 United States Farm Bill gave the U.S. Secretary of Agriculture authority to build the China Garden on 12-acres of undeveloped land in the U.S. National Arboretum and to raise private funds for the garden construction and maintenance.

The programmatic and design elements of the proposed action are necessary to create a classical Chinese garden that is faithful to, and an authentic representation of, Chinese garden tradition and philosophy, including:

- Incorporating the five key elements of a Chinese garden: rocks, water, scenic views, plants, artwork
- Creating a series of interconnected physical experiences that balance natural and man-made structures and scenery and integrate both natural beauty and exquisite human craft.
- Demonstrating the three prevalent types of classical Chinese gardens: the private residential garden, the garden close to water bodies, and the garden in the woods.
- Exhibiting the traditional alignment, relationships, proportions, and adjacencies among garden elements, based on the most representative Chinese garden precedents and within the constraints imposed by the U.S. National Arboretum site.
- Providing a representative range of personal experiences and emotions elicited by the classical Chinese garden, from quiet reflection to meeting close friends and family to enjoying views and the walking experience.

The government of China will donate the design, construction of the buildings, art work, and furniture at a cost of approximately \$62 million, while the US government will provide the site, infrastructure, and maintenance. The Project design team has been working jointly since 2003 and includes collaboration between Chinese classical garden experts and US design professionals, led by Page Southerland Page and consultants. The National China Garden Foundation, an independent non-profit organization, has been established to raise the funds to construct the garden and sustain the site for the public's enjoyment for years ahead. Once completed, the USNA will own the China Garden.

The proposed National China Garden would be constructed on a 12-acre, undeveloped parcel within the USNA, a 446-acre research and education facility and living museum open to the public and located 2 miles from the U.S. Capitol Building in the District of Columbia (Attachment 2). The USNA is bordered by Bladensburg Road on the west, New York Avenue on the north, and M Street on the south. Visitor entrances are located on New York Avenue and R Street N.E. The proposed site is situated on the eastern area of the Arboretum, east of Holly Spring Road at its intersection with Meadow Road. Hickey Hill and the Anacostia River are located further to the east. New York Avenue is located approximately a quarter mile to the north. The site's topography consists of a gently sloping meadow against a backdrop of pine trees.

ARS is considering two Alternatives for the National China Garden (Attachment 2). These alternatives were developed in accordance with the Project objectives established to meet the Project purpose and need.

Alternative 1

Gardens

Ge Garden

The Ge Garden, a four-season garden, would be constructed in the northeast quadrant of the site, including the Embracing Mountain Building which will be used as a cultural center. It would replicate most of the four-season garden structure of the original Ge Garden in Yangzhou, China and would include pavilions (furnished with examples of classical Chinese decorative arts), rockeries, small meandering water bodies and extensive plantings typical of elegant classical Chinese residential gardens. This garden would represent Chinese residential gardens of a grand scale, and it would provide an intimate glimpse into the highly cultured atmosphere of residential compounds in Ming and Qing Dynasty China. The Ge Garden in the National China Garden would feature four main sections, designated as four seasons with different rockeries and pavilions associated with spring, summer, fall and winter.

Mountain House of Sliced Stones

The Mountain House of Sliced Stones would be a smaller, more modest residential garden. It would include the Nanmu Hall, representing the lifestyle of a Chinese scholar and the manner in which guests might have been received in his home. The garden's pond, rockeries, and plantings would be more modest and naturalistic in feeling than those of the Ge Garden. The Mountain House of Sliced Stones would be designed and constructed to serve as a replica of an existing residential garden in Yangzhou, China.

Garden on Lake

The Garden on Lake would occupy the largest area of the site. A central lake, with a cascade and rocky edges, would be constructed in the central portion of the National China Garden. The Tai-Chi Isle, a planting of flowering lotus and water lilies forming a ying/yang circular pattern, would be constructed in the center of the lake. The Cultural Corridor would be constructed along the northern edge of the lake, leading visitors from the Ge Garden to the Peony Garden, which would be designed to serve as a signature garden devoted to the iconic Chinese peonies, including both tree peony and herbaceous peony cultivars. The outer side of the corridor would be partially enclosed by stone tablets that are engraved with ancient Chinese poems written in various types of calligraphy. At the south side of the lake, the Floating Fragrance Hall would provide an unobstructed view of the entire garden and surrounding area. Koi fish would inhabit the lake during all seasons, and lake edges, depths, and water quality would be designed to accommodate them. The Garden on Lake would be constructed to include several pavilions, structures and scenic areas around the main lake.

Urban Forest (Garden in Woods)

Nestled in the trees on the west side of Hickey Hill, the Urban Forest (Garden in Woods), a wooded hillside garden, would be constructed on the western slope of Hickey Hill, gently sloping up from the lake and offering commanding views of the entire garden complex. The garden's primary structures, the Five Pavilion Terrace and the White Pagoda, would be designed and constructed based on similar structures in China and would be nestled among existing trees supplemented with new plantings.

- The White Pagoda (69 feet tall), a structure serving as a landscape element, would be constructed within the existing clearing on the western slope of Hickey Hill. It would take the form of an existing pagoda on Slender West Lake of Yangzhou. This type of pagoda

- originates from the Stupa of Buddhism and exemplifies the deep influence of Buddhism on the Chinese Culture.
- The Five-Pavilion Terrace, an open pavilion, would be constructed in the northeasternmost portion of the National China Garden site. Borrowing architectural elements from the Five-Pavilion Bridge in Yangzhou, China, it would consist of five pavilions sitting on a platform, with four located at the corners and one in the center. From afar, this structure would also look like a booming lotus, a much-cherished flower in Taoism. The Five-Pavilion Terrace would symbolize the influence on Chinese culture by Taoism, which emphasizes the union of humans and nature.

Support Services Building

A Support Services Building (27 feet tall and enclosed area, including basement, of 6028 square feet) would be constructed in the southwest corner of the National China Garden site. It would function as the maintenance center of the National China Garden. The exterior of the building would exhibit traditional Chinese architectural language, while the interior would be fully equipped with modern amenities for office use. The basement space would house restrooms as well as mechanical and electrical equipment serving not just this building but also the water system for the lake.

Plantings

Plant materials would be installed at sizes as mature as possible to create a full representation of the quality of the classical Chinese garden. Plantings would be obtained in part from USNA collections and pre-growing, as well as through donations from other U.S. arboreta and from commercial sources.

Access and Circulation

Parking and Loading

Parking and loading facilities would be constructed as follows:

- A parking area consisting of 12 visitor parking spaces (8 general + 4 handicap spaces), accessed from Holly Spring Road, would be constructed in the northwestern corner of the site, with access to the Ge Garden complex.
- A service parking area with approximately 6 parking spaces (for maintenance, catering, drop-off, and managers), accessed from Holly Spring Road via a service drive, would be constructed adjacent to the northeast corner of the Ge Garden.
- A parking area with 6 spaces for staff and maintenance, accessed from Holly Spring Road, would be constructed adjacent to the Support Services Building in the southwestern portion of the site.
- A truck loading area would be located adjacent to the Ge Garden complex.

Service Access

A service drive would be provided on the north side of the Ge Garden. It would provide service access and loading for the Embracing Mountain Building in the Ge Garden complex. An extension to this drive, constructed of supported turf, would provide emergency vehicle access further into the site.

Site Emergency Access

Four access ways would be constructed to provide the required site emergency access and would be carefully located to create minimal intrusion.

- Access Way #1, from the south parking area and along the south edge of lake: This would provide access to the Floating Fragrance Pavilion, Boat Hall, and the Management and Restroom Building.

- Access Way #2, located along the front edge of the Ge Garden and Mountain House of Sliced Stone Gardens from Holly Spring Road. This would provide fire access to the two gardens and their internal structures.
- Access Way #3, located on the north side of the Ge Garden. This fire access way would extend beyond the service access drive and would provide fire access to the Square and Peony Pavilions.
- Access Way #4, located to the east of the Five Pavilion Terrace. This fire access way would utilize a portion of an existing road bed, but would be constructed of supported turf to conceal it within the landscape.

Paths

Paths would be constructed throughout the site to provide access to and from garden destinations. Paths would include accessible pedestrian paths (compliant with Americans with Disabilities Act accessibility requirements) and inaccessible pedestrian paths. Accessibility would be achieved throughout the site to every building and structure via one or more accessible paths.

Site and Landscape Lighting

The intent of lighting the National China Garden is to provide a design that is harmonious with authentic Chinese cultural standards while complying with local United States codes and regulations. The general lighting approach for the site is to allow visitors to safely navigate throughout the site, highlight significant architectural and landscape details, and provide an engaging and visually dynamic experience. This will be achieved by carefully selecting lighting fixtures, locating them at pathways, bridges, landscaping, parking areas, and the exterior of structures. The Pagoda will be lit similarly to the other buildings in the garden and will be illuminated, but not brightly illuminated. Light fixture type "KX5" will be used to light the tower of the Pagoda; other lights on the Pagoda include KX9, KX3, and KX2. Collaboration between the Chinese and US design teams will be required to coordinate light fixtures selected by the US team, and those to be provided by the Chinese team. Lights would be turned off whenever the USNA is closed. USNA hours are currently 8:00 a.m. to 5:00 p.m. daily. There will be one evening event each year lasting from 5:00 p.m. to 9:30 p.m. Other than this one event, no additional evening events are planned for the National China Garden.

Lighting Code Requirements

Code requirements will govern how specific areas of the site will need to be illuminated, including Americans with Disabilities Act (ADA)-accessible paths, and emergency access ways for fire and medical emergency purposes. While working to maintain cultural authenticity, it is critical to ensure compliance with all local codes and regulations. Nighttime outdoor illumination will be based on the expected level of activity as well as the ambient conditions of the location, with light levels responding to varying activity levels in order to maintain effects of light on the outdoor night environments and reduce energy use. Lighting within parking areas must meet code requirements for safety and security and circulation (path) and security lighting must provide adequate levels to allow for safe egress. While obtrusive lighting will also be considered, the design will ensure that this lighting will be positioned and aimed in a way that does not allow for light to trespass into surrounding areas. Lighting controls will also be utilized to create a time schedule to decrease light during late night hours, which will help reduce unnecessary energy consumption.

Landscape Lighting

Taking into account relevant codes and regulations, careful consideration will be given to all extant landscape elements, including softscape (trees, shrubs, flowers, and other plant material), hardscape (rocks, cliffs, sidewalks, stairs, benches, planters, etc.), and water features, in order to create a balanced composition. Varying color temperatures and levels of brightness will be used in order to create depth and visual interest. Collaboration will occur between lighting designers and landscape architects and the Chinese design team in order to determine characteristics of plant material as well as factors dictating selection and location of fixtures and equipment. While lighting is integral to allow interaction with the garden at night, fixtures will still be visible during the daylight hours. Therefore, designers will be working to carefully integrate these fixtures into the landscape to make them less conspicuous.

Alternative 2 (Preferred Alternative)

As a result of early comments from NCPC staff in NEPA scoping comments and in subsequent conversations with NCPC and SHPO, the design team developed Alternative 2 with the goal of minimizing or eliminating adverse indirect effects on historic properties (Attachment 2). Developed with input from the Chinese design team, this alternative responds to comments related to the potential adverse visual effect of the pagoda element of the National China Garden on historic properties. This alternative places the pagoda at a slightly higher elevation than the Alternative 1 and within the wooded area to the west of the existing clearing.

Gardens

Ge Garden

The Ge Garden would be constructed in the northeast quadrant of the site, as described under Alternative 1.

Mountain House of Sliced Stones

The Mountain House of Sliced Stones would be constructed as described under Alternative 1, except for the following:

- A restroom would be incorporated within the Mountain House of Sliced Stones complex, to ensure that restrooms are conveniently located for garden visitors and for those attending classes or other events.

Garden on Lake

The Garden on Lake would be constructed as described under Alternative 1, with the exception of the following:

- The central lake in this alternative would be smaller in size (total surface area of 5,312 m² or approximately 1.3 acres) and would have a slightly different shape in order to accommodate other design elements in this alternative.
- The Garden on Lake would also include an overlook constructed at the terminus of the entry path to the Ge Garden, providing a location for enjoying views of the lake.

Urban Forest (Garden in Woods)

The Urban Forest (Garden in Woods) would be constructed as described under Alternative 1, except for the following:

- The White Pagoda (69 feet tall), a structure serving as a landscape element, would be constructed in a different location than in Alternative 1: within the woods to the west of the existing clearing on the western slope of Hickey Hill. As in Alternative 1, it would take the

form of an existing pagoda on Slender West Lake of Yangzhou and would exemplify a type of pagoda originating from the Stupa of Buddhism and exemplifies the deep influence of Buddhism on the Chinese Culture.

Support Services Building

A Support Services Building (27 feet tall and enclosed area, including basement, of 6028 square feet) would be constructed in the northwest corner of the National China Garden site. As in Alternative 1, it would function as the maintenance center of the National China Garden. The exterior of the building would exhibit traditional Chinese architectural language, while the interior would be fully equipped with modern amenities for office use. The basement space would house restrooms as well as mechanical and electrical equipment serving not just this building but also the water system for the lake.

Plantings

Plant materials would be installed as described under Alternative 1.

Access and Circulation

Parking and Loading

Parking and loading facilities would be constructed as follows:

- A consolidated visitor, staff and service parking area, accessed from Holly Spring Road, would be constructed adjacent to the west side of the Support Services Building in the northwestern portion of the site. Parking would consist of 12 visitor spaces (8 general + 2 handicap) and an additional 8 spaces devoted to staff and maintenance.
- A service area would be constructed adjacent to the northeastern portion of the Ge Garden complex, providing space for truck loading and turnaround and would accommodate up to 2 parking spaces for service vehicles (maintenance, catering, drop-off, and managers).
- An overflow parking area, constructed of supported grass, would be located immediately south of the Mountain House of Sliced Stones, with access (via rollover cuts) from Holly Spring Road. This area would accommodate parking needs on an as-needed basis when permanent parking facilities in Arboretum cannot accommodate the demand for parking.

Service Access

A service drive, accessed from Holly Spring Road, would be constructed to the north of the Support Services Building and would provide a connection to the service area for the Embracing Mountain Building in the Ge Garden Complex. An extension to this drive, constructed of supported turf, would provide emergency vehicle access further into the site.

Site Emergency Access

Emergency access ways would be constructed as described under Alternative 1.

Paths

Paths would be constructed as described under Alternative 1.

Lighting Code Requirements

Lighting code requirements are as described under Alternative 1.

Landscape Lighting

Landscape lighting would be installed as described in Alternative 1.

Delineation of Area of Potential Effects

Upon initiation of Section 106 consultation, ARS identified a preliminary Area of Potential Effects (APE) that encompasses a geographic area where potential direct (physical) and indirect (visual) effects on historic properties may occur as a result of the Project. The direct and indirect APE for architectural/above-ground historic resources is depicted in Attachment 3. The following text provides a narrative description.

The direct APE is delineated as the entire proposed National China Garden footprint, since physical alterations are confined to the area of construction.

The indirect APE is delineated as a one-and-a-half-mile radius from the Project footprint, which encompasses the boundaries of the USNA and views and viewsheds from the surrounding area to the Project site, particularly the lines of sight between the Project and the historic and cultural resources noted by the NCPC in their June 16, 2015 NEPA Scoping Comments letter, such as the Kenilworth Aquatic Garden, Civil War Fort Sites (Defenses of Washington), New York Avenue N.E., residential neighborhoods to the southeast and north, future Anacostia Riverwalk trail, and views within the Arboretum.

Field Visits

AECOM architectural historians conducted field visits of the National China Garden Project Area on August 14, 2015 and March 11, 2016. On August 14, 2015, AECOM principal architectural historian Mark Edwards, MS, visited the Project Area, which is bound by Meadow Road N.E. on the north, Holly Springs Road N.E. to the west, and Hickey Hill to the south and east. The Project Area is traversed southwest to northeast by Conifer Road N.E. and comprises open meadows to the northwest and mature conifers to the southeast of Conifer Road N.E. Photographic overviews of the property were taken from several points within the property (Attachment 6). One historic property, the USNA (NR#19730411), and one contributing element to the USNA, the road system, were observed within the field visit area.

In response to early comments by NCPC staff in NEPA scoping comments and in subsequent conversations with NCPC and DC SHPO regarding potential adverse indirect visual effects to historic properties, on March 11, 2016, AECOM architectural historians Mark Edwards and Brian Cleven, MS, visited the Project Area and surrounding locations identified in the NCPC letter dated June 16, 2015 to verify existing conditions and analyze lines of sight within the USNA and between the USNA and nearby historic properties. These sites included locations within the USNA identified in the NRHP nomination, from points south and west of the National China Garden, the United Brick Corporation Brick Complex (NR# 19781003), Civil War Fort Sites (Defenses of Washington, NR# 19740715), Kenilworth Aquatic Gardens (NR# 19780825), the future Anacostia River Trail (intersection of Hayes and Jay Streets), Springarn Senior High School (NR# 14000198), and residential neighborhoods to the north, and residential neighborhoods to the southwest (vicinity of Langston Terrace Dwellings, NR# 87001851; and Langston Golf Course, NR# 91001525). Photographs were taken from these various locations (Attachment 6).

The site visit revealed that the Project Area is surrounded by trees that shield most views to and from the proposed National China Garden. Within the USNA, the surveyors noted that while portions of the National China Garden (particularly the White Pagoda) may be visible from elsewhere in the USNA, such as the edge of the Azalea Collection on the bottom eastern edge of Mount Hamilton and the narrow

viewshed from the top of Hickey Hill, the topography and tree cover will block or significantly obscure most views to and from the National China Garden within the USNA. At properties outside the USNA, the surveyors observed that only the top of the tallest element of the National China Garden, the White Pagoda, has the potential to be seen from properties outside of the USNA and anticipated that some of these views would be altered very minimally, similar to placement of a church steeple or antenna. The National China Garden would not be visible at all from New York Avenue N.E. because of intervening topography and trees or from the northeast and the southeast, because of Hickey Hill.

Visual Analysis

To enhance and verify the line of sight observations made during the March 11, 2016 field visit, Rhodeside & Harwell completed a visual analysis, and the results were analyzed by AECOM architectural historians for two categories of visual effects: (1) visual resources and visual character and (2) light emissions. A summary of the analysis is below. Visualizations are included in Attachment 4.

Methodology

To assess the potential visual impacts of the proposed structures on the National China Garden site, the Rhodeside & Harwell team used a combination of site visits, site photography and a dimensionally accurate digital site model (created using DC GIS data, 3ds Max, Rhinoceros, and design drawings for both alternatives). In order to assess the scale and visibility of the proposed structures from multiple key vantage points, existing conditions photographs of locations representative of the views and settings of the area (Attachment 6) were matched to the model via alignment to streets and existing topographic conditions. Finally, visualizations were prepared from each of the locations where the proposed structures would be visible to demonstrate the impact, if any (Attachment 4):

1. **USNA, Capitol Columns:** The top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)
2. **USNA, Hickey Hill Overlook:** National China Garden White Pagoda will be visible in Alternative 1 and obscured by trees in Alternative 2 (Attachment 4)
3. **Brick Kilns (United Brick Corporation Brick Complex):** Top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)
4. **Fort Lincoln Park:** Top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)
5. **Dakota Playground (residential neighborhoods to the north):** Top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)
6. **Langston Golf Course:** Top of National China Garden White Pagoda will be obscured in Alternative 1 and partially visible in Alternative 2 (Attachment 4)
7. **Spingarn High School:** Top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)
8. **Maryland Avenue NE and 19th Street N.E. (residential neighborhoods to the southwest, Langston Terrace Dwellings, Langston Golf Course):** Top of National China Garden White Pagoda will be partially visible in Alternative 1 and Alternative 2 (Attachment 4)

Other Sites Considered

In addition to preparing the accompanying visualizations (Attachment 4), the design team also assessed views to the proposed National China Garden from the following locations representative of the views and settings of the area, using a digital model (no final visualizations were prepared due to the lack of visual effects):

1. **Dogwood Collection Parking Lot:** Based on analysis of the site using the digital 3D model and site photography, as well as on-site documentation, the Project team determined that the proposed National China Garden would not be visible from this location, due to existing topography and tree cover.
2. **Kenilworth Aquatic Gardens:** Based on analysis of the site using the digital 3D model and site photography, the Project team determined that the proposed National China Garden would not be visible from this location due to topographic conditions.
3. **Maryland Avenue NE and 22nd Street N.E.:** The National China Garden would not be visible, as views would be blocked by the large, mature trees at the end of Maryland Ave. Even without the trees blocking the view, the digital model indicated that the pagoda would be slightly less visible than the view from Maryland Avenue and 19th Street NE, due to the lower vantage point.

Other views representative of the views and settings of the area were blocked by vegetation or topography:

4. **Fort Mahan Park:** A site visit to the park on March 28, 2016 revealed that that views of the surrounding area from the top of the hill are obscured by trees and brush, even when leaves are not on the trees.
5. **Anacostia River Trail (Hayes and Jay Streets):** The National China Garden would not be visible from this location, due to existing vegetation blocking views across the river at this location.
6. **New York Avenue:** The National China Garden would not be visible, given that views into the Arboretum are blocked by topography.

Existing Visual Resources and Visual Character

Visual resources include buildings, sites, traditional cultural properties, and other natural and manmade structures or objects that are visually important, have unique characteristics, or obscure or block other landscape features. Visual character refers to the overall visual makeup of the existing environment where the proposed Project would be located. For example, areas in close proximity to densely populated areas generally have a visual character that could be defined as urban, whereas less developed areas could have a visual character defined by the surrounding landscape features, such as open grass fields, forests, mountains, or deserts, etc.

The visual resources and visual character of the Project Area include the open meadows along Meadow Road N.E., Holly Springs Road N.E., and Conifer Road N.E.; the conifers on Hickey Hill to the east and south; the Gotelli Dwarf Conifers collection to the north; holly trees to the southwest; and the variety of trees and shrubs in the research plots to the west. As described above, the Project will introduce four types of Chinese gardens: the Ge Garden and Mountain House of Sliced Stones residential garden complexes, the Garden on Lake around a central lake, and an Urban Forest (Garden in Woods), which includes the proposed White Pagoda structure and Five-Pavilion Terrace building. The gardens will feature a range of open and enclosed pavilions, landscape elements, walkways and water elements, including a central lake..In addition, the Project will include a Support Services building providing office and maintenance functions. Within the USNA, portions of the National China Garden may be visible from a few of the USNA contributing elements (as listed in the NRHP nomination and later Built Resources Survey), such as the Hickey Hill Overlook (Alternative 1 only), the Azalea Collection, the Morrison Glenn Dale Azalea Clonal Garden (also known as the Morrison Garden, Morrison Azalea Garden, and Morrison Glenn Dale Azalea Garden), and the Road System; however, line of sight to the Project is either interrupted or blocked by topography or tree cover.

As described in the Rhodeside & Harwell analysis above, except for far-off views of the top of the White Pagoda at the brick kilns (United Brick Corporation Brick Complex), Fort Lincoln Park, Dakota Playground, Langston Golf Course, and Spingarn High School, the National China Garden will not be visible outside of the USNA. Line of sight to the Project is either interrupted or blocked by topography, tree cover, or other structures.

Existing Light Emissions

Light emissions include any light that emanates from a light source into the surrounding environment. Examples of sources of light emissions include roadway lighting and lighted signs. Glare is a type of light emission that occurs when light is reflected off a surface (e.g., window glass, solar panels, or reflective building surfaces).

There are no existing light emissions from the Project area, but the USNA is located within a dense urban environment with high levels of light emissions from street lights, building lights, and lighted signs and other urban sources of light. Glare is typical from windows and building surfaces in this urban environment.

The Project will introduce light fixtures at pathways, bridges, landscaping, parking areas, and the exterior of structures to allow visitors to safely navigate throughout the site, highlight significant architectural and landscape details, and provide an engaging and visually dynamic experience. Obtrusive lighting will also be considered in the design, ensuring that this lighting will be positioned and aimed in a way that does not allow for light to trespass into surrounding areas. Light emissions into and out of the proposed location of the National China Garden are shielded by layers of shrubs, bushes, and conifers and deciduous trees of varying heights.

Historic Properties

Section 106 regulations define a historic property as any prehistoric or historic district, building, structure, or object included, or eligible for inclusion, in the NRHP. The identification of resources within the direct and indirect APE was conducted through review of existing documentation, on-site survey, and consultation with NCPC and SHPO. A summary of the historic properties in the APE is in Table 1. A more detailed description is below.

Table 1. Historic Properties in the National China Garden Project APE

Identifier	NRHP Status	Date Recorded	Description	Direct or Indirect APE
NR# 73002122 U.S. National Arboretum	Listed	04/11/1973	Arboretum (1927)	Direct and Indirect
NR# 78003061 United Brick Corporation Brick Complex (New York Avenue Brick Kilns)	Listed	10/03/1978	Kiln Complex (1900-1930)	Indirect
NR#14000198 Spingarn Senior High School	Listed	05/12/2014	High School (1950)	Indirect
NR# 74000274 Civil War Fort Sites (Defenses of Washington)	Listed	07/15/1974, 10/28/1977	Forts (1861-1865) (boundary increase)	Indirect

NR# 87001851 Langston Terrace Dwellings	Listed	11/12/1987	Apartments (1935-1938)	Indirect
NR# 89001735 Mayfair Mansions Apartments	Listed	11/01/1989	Apartments (1942-1946)	Indirect
NR# 91001525 Langston Golf Course Historic District	Listed	10/15/1991	Golf Course (1939)	Indirect
NR# 96001251 Northeast No. 8 Boundary Marker of the Original District of Columbia NR# 96001252 Northeast No. 7 Boundary Marker of the Original District of Columbia NR# 96001253 Northeast No. 6 Boundary Marker of the Original District of Columbia	Listed	11/01/1996	Boundary Markers (1972)	Indirect
NR#90001319 Mount Rainer Historic District	Listed	09/07/1990	Historic District (1900-1940)	Indirect
NR#91000532 Baltimore-Washington Parkway (Parkways of the National Capital Region Multiple Property Listing)	Listed	05/09/1991	Parkway (1925-1974)	Indirect
NR# 78000258 Kenilworth Aquatic Gardens	Listed	08/25/1978	Park (1938)	Indirect

NR# 73002122 – USNA

The USNA comprises 446 acres at 24th and R Streets, N.E., Washington, DC. Established in 1927 by Congress, the Arboretum is a scientific and educational facility operated by the USDA-ARS. The property contains numerous buildings, structures, and landscape features, such as a circuitous road system, walls, gates, gazebos, gardens, and tree collections. It is listed in the NRHP (April 11, 1973) and the District of Columbia Inventory of Historic Sites (March 7, 1968). A historic background of the USNA is provided in Attachment 7.

NRHP Nomination Form

The USNA was listed in the NRHP on April 11, 1973 (Attachment 5, Gerson 1972). It was nominated under the following areas of significance: prehistoric aboriginal, landscape architecture, urban planning, and arboriculture. The period of significance was listed as the twentieth century and specifically 1927, when USNA was established. Because the nomination is an early version of the NRHP nomination form, it does not include an analysis of integrity or a formal list of contributing and noncontributing features; however, a number of features are described (Table 2). Of the features identified in the nomination, one is within the direct APE: the Road System.

Table 2. Features of USNA as listed in NRHP Nomination Form

Identifier	Type	Direct or Indirect APE
Administration and Lab Building	Building	Indirect
Springhouses	Buildings	Indirect
Road System	Landscape Feature	Direct
Azaleas Collection	Landscape Feature	Indirect
Unpaved paths through Azaleas Collection	Landscape Feature	Indirect
Morris Glen Dale Azalea Clonal Garden	Landscape Feature	Indirect
Fern Valley	Landscape Feature	Indirect
Dogwood Collection	Landscape Feature	Indirect
Gotelli Dwarf Conifer Collection	Landscape Feature	Indirect
Elliptically-Shaped 30-Acre Meadow	Landscape Feature	Indirect
M Street Entrance	Landscape Feature	Indirect
Natural Plantings along Hickey Hill Road	Landscape Feature	Indirect
Four Overlooks	Landscape Feature	Indirect

Built Resources Survey

In 2000, DS*Atlantic* Historic Preservation Studio completed a Resource Management Plan (Attachment 5, DS*Atlantic* Historic Preservation Studio 2000) that inventoried forty-two buildings, structures, and objects and listed them as contributing, noncontributing, or demolished resources (Table 3). Of the contributing resources included in the inventory, one is within the direct APE: NA64, Road System, listed as dating from 1947 to 1949.

Table 3. Inventory of USNA Built Resources as listed in Built Resources Survey

Resource #	Resource	National Register Status	Type	Date	Direct or Indirect APE
NA01	Gatehouse	DEM	Building	1949	Indirect
NA02	“M” Street Residence	DEM	Building	1949	Indirect
NA09	Comfort Stn. #1 (M St)	NC	Building	1950s	Indirect
NA10	Rain Shelter-Dogwood	NC	Structure		Indirect
NA12	Shop/Stor./Office	NC	Building	1956	Indirect
NA13	Office/Shop	NC	Building	1958	Indirect
NA14	Equipment Storage	NC	Building	1958	Indirect
NA15	Garage Storage	NC	Building	1958, late 1990s	Indirect
NA16	Garage Storage	NC	Building	1958, late 1990s	Indirect
NA18	Head House/Greenhouse	NC	Building/Structures	1962	Indirect
NA19	Administration Building	NC	Building	1964	Indirect
NA20	Arbor House & Gift Shop	NC	Building		Indirect
NA20A	Restroom Facility	NC	Structure		Indirect
NA21	Gazebo-Azalea	NC	Structure		Indirect
NA22	Comfort Stn #2 – Hickey	NC	Building	1950s	Indirect
NA25	Flam. Liq. Storage	NC	Building		Indirect
NA29	Gazebo – China	C	Structure		Indirect
NA30	Gazebo – Beech	C	Structure		Indirect

NA46	Gazebo – Gotelli	NC	Structure	1980s	Indirect
NA47	Brick Kiln Complex	C	Building/Structure	Ca. 1990	Indirect
NA48	Red Oak Springhouses (2)	C	Buildings	Ca. 1870s	Indirect
NA49	Japanese Pavilion	NC	Building	1976	Indirect
NA50	North American Pavilion & Greenhouse	NC	Building	1990	Indirect
NA50	North American Pavilion & Greenhouse	NC	Building	1990	Indirect
NA51	Chinese Pavilion	NC	Building	1996	Indirect
NA52	Brick Bride Wall	C	Structure		Indirect
NA53	Beechwood Road Bridge	NC	Structure		Indirect
NA54	Meadow Road Bridge	NC	Structure		Indirect
NA55	Morrison Garden (also known as the Morrison Azalea Garden, Morrison Glen Dale Azalea Garden, and Morrison Glenn Dale Azalea Garden)	C	Structure	1947	Indirect
NA56	R Street Gates	C	Structure		Indirect
NA57	NY Avenue Gates	C	Structure		Indirect
NA58	Conifer Road Gates	C	Structure		Indirect
NA59	M Street Gates	C	Structure		Indirect
NA60	Bladensburg Road Gates	C	Structure		Indirect
NA61	Dogwood Fountain	NC	Structure	1965	Indirect
NA62	Iron Fence/Masonry Wall	C	Structure		Indirect
NA63	Capital Columns	NC	Objects	1990	Indirect
NA64	Road System	C	Structure	1947-1949	Direct
NA65	Fountain at National Herb Garden	C	Structure		Indirect
NA66	Fountain at Japanese Coll.	NC	Structure		Indirect
NA67	Sculpture at Arbor House	NC	Objects	1993	Indirect
NA68	International Pavilion	NC	Structure	1996	Indirect
NA69	Garden Shed at Arbor House	NC	Structure	1990	Indirect
NA70	National Grove of Trees	NC	Structure	1997	Indirect
KEY:					
Contributing Resource (C)					
Noncontributing Resource (NC)					
Demolished (DEM)					

Additional Research

Additional research was conducted by AECOM architectural historians to develop a historical background of the USNA as a whole and the Road System specifically (Attachment 7).

The USNA contains both contributing planned landscape features and buildings/structures/objects. The living landscape collections of trees, shrubbery, and other plants have naturally changed over time, with individual plants replaced when they die, trees and shrubs growing taller and wider, and plantings expanding and retreating from their original collection boundaries (such as the trees at the Hickey Hill overlook). Overall, the original plantings considered contributing to the USNA NRHP listing (Table 2) retain their integrity. The buildings/structures/objects considered contributing to the USNA NRHP listing (Table 2) and in the Building Inventory (Table 3) are still present.

The Road System, which is in the direct APE, is an aesthetic route, designed to follow the natural topography of the site and to highlight the scenic views and collections of the USNA. Since completion in 1958, there have been only small alterations to the road system, all occurring at minor roads between 1980 and 1983, such as the removal of a short road with turnabout leading to the greenhouses, removal of a short road with turnabout to the east of the M Street entrance, removal of a short road leading off Beechwood Road near Ellipse Road Maps, and the shortening of the northern road leading from the Kingman Lake Overlook (USDA 1980, 1983). Overall, the road system has retained its integrity of location, design, setting, feeling, and association.

The USNA landscape as a whole has been altered over the years, although a reasonable amount of changes would be expected given the nature of the USNA as a living landscape with research collections. The USNA was not finished developing at the time of NRHP listing and would need to continue to fulfill its role as a research and educational facility through establishment of new collections going forward. Added and altered gardens and collections since listing in the NRHP include the Japanese Stroll Garden and Japanese Bonsai Pavilion in 1976; renovation of Cryptomeria Valley and Kidder Overlook and an iris collection in 1977; the Lee Azalea Garden between 1978 and 1980; the National Herb Garden in 1980; a Tree Walk (renamed National Crabapple Society Planting by 1986), Baker Garden, a Court of Honor, Bushheister National Bird Garden, Chadwick Overlook and Waterfalls, and National Country Garden between 1980 and 1983; removal of the rhododendrons, replacement of Crape myrtles with Research Plots, Wildflower Fields, Legumes, Japanese Maple Collection, Watnong Conifer Collection, Japanese Collections, Chinese Collections, Korean Mountain, Shade Tree Collection, Future Discovery Gardens, and Future Plant Life Center between 1983 and 1986; the National Grove of State Trees in 1989; and the Friendship Garden in 1991. Buildings, structures, and objects that have been added since the NHP nomination include an entrance from New York Avenue in 1977, the Capitol Columns placed within a garden in 1985, and a red pagoda in the Asian Collection that was reconstructed in 1996. An emergency broadcast tower has also been added on Hickey Hill (Attachment 7).

Review of historic aerials and topographic maps revealed that the pine trees on the southeast side of the proposed National China Garden were planted circa 1950 and Conifer Road N.E. was on its present alignment in 1945 (Google Earth Professional 3/1949; NETR Online 1951; USGS 1945). Holly Spring Road N.E. and Meadow Road N.E. were constructed along their current alignment circa 1955 (NETR Online 1957). The meadow area is regularly mowed (Google Earth Professional 4/1988- 4/2015; NETR Online 1957-2013).

Overall, the modifications to the USNA since it was listed in the NRHP have been compatible additions, appropriate to the purpose for which the USNA was listed in the NRHP as an important example of landscape architecture, urban planning, and aboriculture.

NR# 78003061 – United Brick Corporation Brick Complex (New York Avenue Brick Kilns)

The United Brick Corporation Brick Complex (New York Avenue Brick Kilns) is located within the 2800 block of New York Avenue, N.E., Washington, DC, bounded by New York Avenue to the north, commercial development to the west, and the USNA to the south and east. It contains kiln structures and vacant buildings dating from 1927 to the 1950s formerly used by the United Clay Products Corporation in brick manufacture.

The complex was listed in the NRHP on October 3, 1978 (Jacobson 1976). According to the nomination form, the twelve kilns and their adjoining stacks comprise the most significant and central portion of the brickworks. The twelve beehive kilns all exhibit the same basic method of construction, with circular

walls made of common red brick and interiors lined with heat-resistant firebrick. Ten of the kilns (those not designed for oil heat) are accented by twelve arched fireboxes. The complex contains eight 40 to 50-feet tall brick exhaust stacks, six which are rectangular and two which are round. Nearby structures include a factory building and a drying shed.

The complex is significant as an example of the typical beehive-style kilns once common but now rare. In addition, it is a visibly cohesive complex for the sole purpose of firing bricks, the kilns have similar structures but with variations that reflect the changes in technology during the period, and the kilns depict and contain the history of a form of manufacture once common to Washington. They are the last kilns of the type in Washington (Jacobson 1976).

The complex was also listed in the District of Columbia Inventory of Historic Sites on March 3, 1979.

NR# 14000198 – Springarn Senior High School

The Springarn Senior High School is located at 2500 Benning Road, N.E., in the Carver/Langston neighborhood in northeast Washington DC. It is bounded by 20th Street N.E. on the east, Benning Road on the south, the Langston Terrace Dwellings on the west, and Charles Young School on the north. The high school is an 8.71-acre part of a larger complex of public school buildings (Hugh M. Brown Junior High School [1932], Phelps Vocational School [1934] and Charles Young Public School [1937]), occupying 27.25 acres of land overlooking a fairway of the Langston Golf course and the Anacostia stream valley. All the school buildings were built for African Americans during segregation.

The high school was listed in the NRHP on May 12, 2014 (Walton and Raglin 2014). According to the nomination form, the large and stately three-part Colonial Revival-style brick school building with a modified H-shaped plan was built in 1950. The two-story building sits atop a full ground floor, and although structurally of concrete, it is clad with red brick walls.

The school is significant under Criterion A as a last high school built for African American students during the final period of racial segregation in Washington DC. It is also significant as the last of the Colonial Revival-style school buildings constructed in the District of Columbia. It was one of the last products of the Office of the Municipal Architect, established in 1909, and also one of the Merrel Coe's last schools as the superintendent of construction.

NR# 74000274 – Civil War Fort Sites (Defenses of Washington) – Fort Lincoln and Fort Mahan

Civil War Fort Sites is a discontiguous group of forts in Washington, DC, Maryland, and Virginia of the Civil War period around the nation's capital and which have been acquired by the Department of the Interior, National Park Service for park purposes. Of these sites, Fort Lincoln and Fort Mahan are within the APE.

The Civil War Fort Sites was listed in the NRHP on July 15, 1974 and included seventeen forts. The boundaries were expanded on October 28, 1977 to include two additional forts. The forts formed a circumferential defense system in the District of Columbia. The foundations and revetments of many of the fortifications have disintegrated. At the end of the Civil War there were sixty-eight enclosed forts and batteries, ninety-three unarmed batteries, three blockhouses, and twenty miles of trenches connecting the main defense works. The Civil War Fort Sites is significant for its deterrence of Confederate attack, freeing Union troops for offensive purposes, and an illustration of nineteenth century theory of field fortifications and modifications (Dillon 1972).

The NRHP nomination describes Fort Lincoln as having little evidence of earthwork remains and nearby trenches and covered way. The Fort Lincoln site was also the scene of Commodore Barney's engagement with the British on August 24, 1814 (Dillon 1972). Because of the construction of an urban park on top of the site, a significant percentage of the Fort Lincoln earthwork has been destroyed.

The NRHP nomination states that Fort Mahan had some evidence of earthworks visible. Situated on an isolated hill belonging to Dr. William Manning, Fort Mahan was located less than mile east of Benning's Bridge and commanded the approaches to the bridge from Bladensburg via the Eastern Branch Road, and from Upper Marlboro by way of Benning Road. The remains of the fort are located within Fort Mahan Park (Dillon 1972).

NR# 87001851 – Langston Terrace Dwellings

The Langston Terrace Dwellings are located on 13 acres overlooking the Anacostia River, bounded by Benning Road on the south and encompassing sections of 21st St N.E., H St N.E., and 24th St N.E. on the west, north, and east sides, respectively. The complex is composed of 2-, 3-, and 4-story masonry dwelling units that form a total of fourteen separate International-style housing blocks arranged around a large rectangular common space. They were constructed between 1935 and 1938.

Langston Terrace Dwellings was listed in the NRHP on November 12, 1987 (Leiner 1986). The nomination form states that Langston Terrace is a well-preserved example of the nation's first group of federally-initiated, funded, and supervised peacetime housing for limited-income citizens. The project was funded by the Public Works Administration and the buildings were designed by Hilyard Robert Robinson, a pioneer in American public housing. The development is significant for the NRHP under Criteria A and C.

It was also listed in the District of Columbia Inventory of Historic Sites on September 16, 1987.

NR# 89001735 – Mayfair Mansions Apartments

The Mayfair Mansions Apartments are a seventeen-building garden apartment complex constructed between 1942 and 1946 and located on the former site of the Benning Race Track. The parcel lies between Hayes and Jay Streets N.E., Kenilworth Terrace N.E., and the Paradise Apartment complex. It contains three-story buildings featuring Colonial Revival elements and thirty-four to thirty-nine one, two, or three bedroom apartments.

The Mayfair Mansion Apartments was listed in the NRHP on November 1, 1991 (Reynolds 1989). The complex is significant under Criterion A as the first privately developed multi-family housing project insured by the Federal Housing Administration (FHA). In addition, it was conceived and designed by a black architect, Albert I. Cassell and developed by him and his black co-developer, Elder Lightfoot Soloman Michaux, for black occupancy at a time when housing in the District of Columbia was in critically low supply and significantly inferior to housing for whites. The Mayfair Mansions Apartments project paved the way for making FHA housing available to blacks nationwide.

It was also listed in the District of Columbia Inventory of Historic Sites on May 17, 1989.

NR# 91001525 – Langston Golf Course Historic District

The Langston Golf Course Historic District is a 145-acre federally-owned eighteen-hole public golf course located at the 2600 Benning Road, N.E. The course is bounded by Benning Road to the south, a portion of the Anacostia River to the east, the USNA to the north, and District of Columbia public school property to the west.

Opened in June 1939 and listed in the NRHP on October 15, 1991, the course is significant for its association with the development and desegregation of public golfing facilities in the Washington DC. area. It represents the efforts of Secretary of the Interior Harold L. Ickes efforts to offer equal access to all public facilities for black citizens and it was the home course for the Royal Golf Club and the Wake Robin Golf Club, the nation's first golf clubs for black men and women (Cole 1989).

NR# 96001251 – Northeast No. 8 Boundary Marker of the Original District of Columbia

NR# 96001252 – Northeast No. 7 Boundary Marker of the Original District of Columbia

NR# 96001253 – Northeast No. 6 Boundary Marker of the Original District of Columbia

These three sandstone boundary markers are located along the northeast boundary of the District of Columbia at the Kenilworth Aquatic Gardens, the Fort Lincoln Cemetery, and 3601 Eastern Avenue. A three-foot-by-three-foot iron fence four to five feet high surrounds each of the markers. Laid in 1792, the markers were the 15th, 14th, and 13th markers to be located in Maryland. The fences were dedicated 1926, circa 1916, and in 1916, respectively.

The boundary markers were listed in the NRHP on November 1, 1996 (Barsoum 1996a, 1996b, and 1996c) and are nationally significant under Criterion A for the establishment of the permanent seat of the government for the United States in one of the first comprehensively planned cities of modern times. They are also associated with the surveyor Andrew Ellicott and Benjamin Banneker, a gifted free black astronomer and mathematician who collaborated with Ellicott in the survey. The markers were the first monuments erected by the United States.

The boundary markers were also listed in the District of Columbia Inventory of Historic Sites on November 8, 1964.

NR# 90001319 – Mount Rainier Historic District

The approximately 260-acre Mount Rainier Historic District contains 1,152 buildings, of which 1,001 directly contribute to its character. The streetscapes were developed over a period of more than forty years from circa 1900 to 1940. The district's street grid is laid over a gently rolling landscape. The majority of the buildings are modestly-scaled, detached, single-family, frame houses. With the exception of five churches and a bank building, the district's buildings are vernacular in inspiration and erected individual and in groups in a range of forms and styles that represent the evolution and diversity of vernacular design throughout the early years of the twentieth century.

The historic district was listed in the NRHP on September 7, 1990 (Berger 1990). It is locally significant under Criterion A as an early, large, and essentially intact example of the type of suburban community that changed the character of western Prince George's County in the early years of the twentieth century. The areas of significance include architecture and community planning and development. The period of significance is 1900 to 1940.

NR# 91000532 – Baltimore-Washington Parkway (Parkways of the National Capital Region, 1913-1965)

The Baltimore-Washington Parkway extends northeast from the eastern boundary of the District of Columbia near the Anacostia River, through Prince Georges County and Anne Arundel County, Maryland, encompassing 1,353 acres. The terrain is composed of generally forested, gentle hills with modest vistas but no outstanding scenic features. Although promoted since the early twentieth century, construction

was not initiated by the Federal Bureau of Public Roads until 1942, with most development occurring from 1950 to 1954.

The Baltimore-Washington Parkway was listed in the NRHP as part of the Parkways of the National Capital Region, 1913-1965 Multiple Property Listing on May 9, 1991 (Leach 1990a, 1990b). It is significant in the areas of transportation and landscape architecture under NRHP Criteria A and C. It is associated with urban development of the national capital as a federal center, it exemplifies the last period of construction for this type of road, and it is the only fully developed parkway of its kind in Maryland. It achieved extraordinary significance under Criteria G as a contributing element to the national park and parkway system developed during the first half of the twentieth century, although the parkway itself was constructed largely between 1950 and 1954 and was less than fifty years old at listing. Its enabling legislation justifies it as a major scenic artery within the park and roadway system for the nation's capital, as a formal entrance to the city of Washington, DC, as a defense/military route among suburban federal installations and the city, and as a contributing element to the commercial and residential development of the Baltimore-Washington corridor.

NR# 19780825 – Kenilworth Aquatic Gardens

The Kenilworth Aquatic Gardens is located at Kenilworth Avenue and Douglas Street, N.E. and composed of a series of irregularly sized and shaped ponds, formed by diking parts of the Anacostia River flood plain, a wetland habitat of swamp marshes. The gardens house many varieties of water lilies, pond and marginal plants, including poppy, bamboo, water-hyacinth, and native trees. The gardens remain essentially unchanged from 1938, the year they ceased operation as a commercial enterprise (the Shaw Gardens) and became part of the National Park system. An administration building, two original greenhouses, and an exterior tank also date from the early commercial period. The federal government purchased the gardens in 1938 and renamed it the Kenilworth Aquatic Gardens.

The Kenilworth Aquatic Gardens was listed in the NRHP on August 25, 1978 (Dillon and Heintzelman 1973, revised 1976). The significance of the gardens lies in its contribution to the botanical study and development of water plants and gardens under the direction of its founder, W.B. Shaw and his daughter L. Helen Fowler.

It was also listed in the District of Columbia Inventory of Historic Sites on March 7, 1968.

Determination of Effect

Effects assessments are based on the criteria of adverse effect as defined in the ACHP regulations (36 CFR Part 800.5). The criteria of adverse effect as follows:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics that of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. [36 CFR 800.5(a)(1)]

Alternative 1

Direct Effects

USNA

There will be direct adverse effects on the USNA as a result of Alternative 1. The direct adverse effects will be caused by the removal of a section of Meadow Road N.E. between Holly Spring Road N.E. and Conifer Road N.E. and the removal of a section of Conifer Road N.E. between Holly Spring Road N.E. and Meadow Road N.E. The two roads are part of the USNA Road System, which is a contributing element of the USNA.

The removal of sections of Meadow Road and Conifer Road N.E. will alter the original planners' conception and design, which was a singular statement, and will specifically alter two of the major circulatory routes the designers included for visitors to view and reach the Gotelli Dwarf Conifer Collection, the Dogwood Collection, the Asian Collections, and the Hickey Hill Overlook when heading east, and to view and reach the center of the USNA when heading west. The Road System is an aesthetic route, designed to follow the natural topography of the site and to highlight the scenic views and collections of the USNA. Since completion in 1958, there have been only small alterations to the system, all occurring at minor roads between 1980 and 1983, such as the removal of a short road with turnabout leading to the greenhouses, removal of a short road with turnabout to the east of the M Street entrance, removal of a short road leading off Beechwood Road near Ellipse Road, and the shortening of the northern road leading from the Kingman Lake Overlook (USDA 1980, 1983). Overall, the road system has retained its integrity of location, design, setting, feeling, and association.

Other Historic Properties

There will be no direct adverse effects on the other historic properties as a result of the Alternative 1 because there will be no physical alterations to those historic properties.

Indirect Effects

USNA

There will be indirect adverse effects on the visual resources and visual character of the USNA as a result of Alternative 1. (For definitions of visual resources and visual character, please refer to pages 8-9.) The indirect adverse effects will be caused by the placement of the National China Garden's White Pagoda within the Hickey Hill Overlook views. The overlook and its views are a contributing element of the USNA.

The visual analysis (see earlier subsection) and accompanying visualizations (Attachment 4) demonstrate that the pagoda is a large addition that substantially blocks the view through the existing clearing from the Overlook. The introduction of the pagoda into the Hickey Hill Overlook will introduce a large contrast between the Project and the background and surrounding landscape elements. The USNA landscape has been altered over the years: the living landscape collections of trees, shrubbery, and other plants have naturally changed over time and a reasonable amount of changes would be expected given the nature of the USNA as a living landscape with research collections. Further, the USNA was not finished developing at the time of NRHP listing and would need to continue to fulfill its role as a research and educational facility through establishment of new collections going forward. Overall, however, modifications have been compatible additions, appropriate to the purpose for which the USNA was listed in the NRHP as an important example of landscape architecture, urban planning, and aboriculture.

As a whole, the National China Garden design will be complementary to the Asian Collection located on the eastern slopes of Hickey Hill. The scale of the garden features, with the exception of the pagoda, is low and unobtrusive. Nonetheless, though the growth of the purposely planted trees has narrowed the overlook over the years, it continues to highlight the scenic views and collections of the USNA as the original planners intended, and the White Pagoda will diminish the characteristics for which USNA was found eligible for NRHP listing.

While portions of the National China Garden may be visible from a few of the other USNA contributing elements (Tables 2 and 3), such as the top of the pagoda from the Azalea Collection and the Morrison Glenn Dale Azalea Clonal Garden, and from the Road System, the visual analysis and accompanying visualizations (Attachment 4) demonstrated that the line of sight to the Project is either interrupted or blocked by topography or tree cover from most directions, and when the National China Garden is visible, it will have a similar profile to a church steeple visible in the distance.

There will be no indirect adverse effects from light emissions (page 9) on the USNA as a result of Alternative 1. Alternative 1 has been designed with respect to the degree to which it would offset visual impacts. The Project will introduce light fixtures at pathways, bridges, landscaping, parking areas, and the exterior of structures to allow visitors to safely navigate throughout the site, highlight significant architectural and landscape details, and provide an engaging and visually dynamic experience. The Pagoda will be lit similarly to the other buildings in the garden and will be illuminated, but not brightly illuminated. Lights would be turned off whenever the USNA is closed. USNA hours are currently 8:00 a.m. to 5:00 p.m. daily. There will be one evening event each year lasting from 5:00 p.m. to 9:30 p.m. Other than this one event, no additional evening events are planned for the National China Garden. While obtrusive lighting will also be considered in the design, the design will ensure that this lighting will be positioned and aimed in a way that does not allow for light to trespass into surrounding areas. Light emissions into and out of the proposed location of the National China Garden are shielded by layers of shrubs, bushes, and conifers and deciduous trees of varying heights. Though it will introduce lighting where there is no lighting currently, it will be appropriate to the scale of the surrounding elements and will not be overly obtrusive and will only be lit in the evening once a year.

Other Historic Properties

There will be no indirect adverse effects on the visual resources and visual character of the other historic properties as a result of Alternative 1. The visual analysis (see earlier subsection) and accompanying visualizations (Attachment 4) demonstrate that, except for far-off views of the top of the White Pagoda at the brick kilns (United Brick Corporation Brick Complex), Fort Lincoln Park, Dakota Playground, Langston Golf Course, and Springarn High School, the National China Garden will not be visible outside of the USNA. Line of sight to the Project will be either interrupted or blocked by topography, tree cover, or other structures. When the top of the pagoda is visible, it will have a similar profile to a church steeple visible in the distance. It will be not obstruct, substantially alter, or remove the character and quality of views and the number of locations from which the resources can be viewed.

There will be no indirect adverse effects from light emissions on the other historic properties as a result of the Alternative 1. The Project will introduce light fixtures at pathways, bridges, landscaping, parking areas, and the exterior of structures in the Project Area; however, light emissions into and out of the proposed location of the National China Garden are shielded by layers of shrubs, bushes, and conifers and deciduous trees of varying heights. Obtrusive lighting will also be considered in the design; however, the design will ensure that this lighting will be positioned and aimed in a way that does not allow for light to trespass into surrounding areas. Further, the historic properties in the APE are located within a

dense urban environment with high levels of light emissions from street lights, building lights, and lighted signs and other urban sources of light, and glare is typical from windows and building surfaces in this urban environment.

Temporary Effects

ARS has determined the proposed Project will have temporary, adverse indirect effects on the context or visual setting of some historic resources during construction of National China Garden. Construction activities could result in temporary visual obstructions created by machinery and other construction equipment and result in temporary loss of context for the architectural resources nearby. However, any such impacts would be temporary and indirect, and only last the duration of the construction period.

Alternative 2 (Preferred Alternative)

Direct Effects

USNA

There will be direct adverse effects on the USNA as a result of Alternative 2. The direct adverse effects will be caused by the removal of a section of Meadow Road N.E. between Holly Spring Road N.E. and Conifer Road N.E. and the removal of a section of Conifer Road N.E. between Holly Spring Road N.E. and Meadow Road N.E. The two roads are part of the USNA Road System, which is a contributing element of the USNA.

The removal of sections of Meadow Road and Conifer Road N.E. will alter the original planners' conception and design, which was a singular statement, and will specifically alter two of the major circulatory routes the designers included for visitors to view and reach the Gotelli Dwarf Conifer Collection, the Dogwood Collection, the Asian Collections, and the Hickey Hill Overlook when heading east, and to view and reach the center of the USNA when heading west. The Road System is an aesthetic route, designed to follow the natural topography of the site and to highlight the scenic views and collections of the USNA. Since completion in 1958, there have been only small alterations to the system, all occurring at minor roads between 1980 and 1983, such as the removal of a short road with turnabout leading to the greenhouses, removal of a short road with turnabout to the east of the M Street entrance, removal of a short road leading off Beechwood Road near Ellipse Road, and the shortening of the northern road leading from the Kingman Lake Overlook (USDA 1980, 1983). Overall, the road system has retained its integrity of location, design, setting, feeling, and association.

Other Historic Properties

There will be no direct adverse effects on the other historic properties as a result of the Alternative 2 because there will be no physical alterations to those historic properties.

Indirect Effects

USNA

There will be no indirect adverse effects to the visual resources and visual character (pages 8-9) of the USNA as a result of Alternative 2. Alternative 2 was developed as a result of direct communication with SHPO and NCPC staff and represents an effort to minimize or eliminate visual effects on elements within the USNA by placing the pagoda within the trees and to the west of its location in Alternative 1. The visual analysis (see earlier subsection) and accompanying visualizations (Attachment 4) demonstrate

that the pagoda's placement does not block the contributing Hickey Hill Overlook element and is tucked into, and obscured by, the hillside trees.

The addition of the National China Garden within the USNA landscape in Alternative 2 will not diminish the characteristics for which USNA was found eligible for listing. The USNA landscape has been altered over the years: the living landscape collections of trees, shrubbery, and other plants have naturally changed over time and a reasonable amount of changes would be expected given the nature of the USNA as a living landscape with research collections. Further, the USNA was not finished developing at the time of NRHP listing and would need to continue to fulfill its role as a research and educational facility through establishment of new collections going forward. Overall, modifications have been compatible additions, appropriate to the purpose for which the USNA was listed in the NRHP as an important example of landscape architecture, urban planning, and aboriculture. As a whole, the National China Garden design will be complementary to the Asian Collection located on the eastern slopes of Hickey Hill. The scale of the garden features, with the exception of the pagoda, is low and unobtrusive, and the placement to the side of the Hickey Hill Overlook and in the trees will not be a large contrast between the Project and the background or surrounding landscape elements.

While portions of the National China Garden may be visible from a few of the other USNA contributing elements (Tables 2 and 3), such as the top of the pagoda from the Azalea Collection and the Morrison Glenn Dale Azalea Clonal Garden, and from the Road System, the visual analysis and accompanying visualizations (Attachment 4) demonstrated that the line of sight to the Project is either interrupted or blocked by topography or tree cover from most directions, and when the National China Garden is visible, it will have a similar profile to a church steeple visible in the distance.

There will be no indirect adverse effects from light emissions (page 9) on the USNA as a result of Alternative 2. Alternative 2 has been designed with respect to the degree to which it would offset visual impacts. The Project will introduce light fixtures at pathways, bridges, landscaping, parking areas, and the exterior of structures to allow visitors to safely navigate throughout the site, highlight significant architectural and landscape details, and provide an engaging and visually dynamic experience. The Pagoda will be lit similarly to the other buildings in the garden and will be illuminated, but not brightly illuminated. Lights would be turned off whenever the USNA is closed. USNA hours are currently 8:00 a.m. to 5:00 p.m. daily. There will be one evening event each year lasting from 5:00 p.m. to 9:30 p.m. Other than this one event, no additional evening events are planned for the National China Garden. While obtrusive lighting will also be considered in the design, the design will ensure that this lighting will be positioned and aimed in a way that does not allow for light to trespass into surrounding areas. Light emissions into and out of the proposed location of the National China Garden are shielded by layers of shrubs, bushes, and conifers and deciduous trees of varying heights. Though it will introduce lighting where there is no lighting currently, it will be appropriate to the scale of the surrounding elements and will not be overly obtrusive and will only be lit in the evening once a year.

Other Historic Properties

There will be no indirect adverse effects on the visual resources and visual character of the other historic properties as a result of Alternative 2. The visual analysis (see earlier subsection) and accompanying visualizations (Attachment 4) demonstrate that, except for far-off views of the top of the White Pagoda at the brick kilns (United Brick Corporation Brick Complex), Fort Lincoln Park, Dakota Playground, Langston Golf Course, and Springarn High School, the National China Garden will not be visible outside of the USNA. Line of sight to the Project will be either interrupted or blocked by topography, tree cover, or other structures. When the top of the pagoda is visible, it will have a similar profile to a church steeple

visible in the distance. It will not obstruct, substantially alter, or remove the character and quality of views and the number of locations from which the resources can be viewed.

There will be no indirect adverse effects from light emissions on the other historic properties as a result of the Alternative 2. The Project will introduce light fixtures at pathways, bridges, landscaping, parking areas, and the exterior of structures in the Project Area; however, light emissions into and out of the proposed location of the National China Garden are shielded by layers of shrubs, bushes, and conifers and deciduous trees of varying heights. Further, the historic properties in the APE are located within a dense urban environment with high levels of light emissions from street lights, building lights, and lighted signs and other urban sources of light, and glare is typical from windows and building surfaces in this urban environment.

Temporary Effects

ARS has determined the proposed Project will have temporary, adverse indirect effects on the context or visual setting of some historic resources during construction of National China Garden. Construction activities could result in temporary visual obstructions created by machinery and other construction equipment and result in temporary loss of context for the architectural resources nearby. However, any such impacts would be temporary and indirect, and only last the duration of the construction period.

Summary

Overall, the National China Garden is a complementary addition to the USNA; however, both Alternative 1 and Alternative 2 will result in direct adverse effects on the Road System, a contributing element of the USNA. Alternative 1 will also have indirect adverse effects to the Hickey Hill Overlook, a contributing element of the USNA. Only under Alternative 2 does the National China Garden Project avoid indirect adverse effects. Alternative 2 was specifically developed as a result of direct communication with SHPO and NCPC staff and represents an effort to minimize or eliminate visual effects on elements within the USNA by placing the pagoda within the trees and to the west of its location in the Alternative 1.

Table 4. Summary of Determination of Effects

Alternative	Direct Effect	Indirect Effects
Alternative 1	Direct Adverse Effect	Indirect Adverse Effect
Alternative 2 (Preferred Alternative)	Direct Adverse Effect	No Indirect Adverse Effect

To resolve the adverse effects associated with the Project, ARS intends to pursue the negotiation and execution of a memorandum of agreement (MOA) according to 36 CFR 800.6(c). ARS will work with NCPC, SHPO, and the consulting parties to identify minimization and mitigation measures to include in the MOA.

ARS requests SHPO review and comment on this Project and concurrence with ARS's determinations. If you have any questions or desire additional information, please contact me at (202) 245-2701 or Ramon.Jordan@ARS.USDA.GOV. We look forward to continued consultation with your office on this proposed undertaking.

Sincerely,



Ramon Jordan, PhD
Research Program Representative
ARS and USNA Liaison to the National China Garden Project
U.S. National Arboretum

Cc: Jennifer Hirsch, Federal Preservation Officer, National Capital Planning Commission

Attachments

- 1 – SHPO and NCPC Correspondence
- 2 – Alternatives
- 3 – APE Map
- 4 – Visualizations
- 5 – Previous Studies
- 6 – Photographs of Existing Conditions
- 7 – Historic Development of USNA

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DSAtlantic Historic Preservation Studio

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Attachment F

Plan Alternatives



NATIONAL CHINA GARDEN ALTERNATIVE 1





NATIONAL CHINA GARDEN ALTERNATIVE 2