

# STAFF RECOMMENDATION

NCPC File No. MP57



---

**U.S. NATIONAL ARBORETUM**  
**MASTER PLAN MODIFICATION AND CHINESE GARDEN**  
3501 New York Avenue, NE  
Washington, D.C.

Submitted by the U.S. Department of Agriculture

January 25, 2007

---

## **Abstract**

The U.S. Department of Agriculture has submitted a master plan modification for the U.S. National Arboretum 446-acre campus in Washington, D.C. for Commission review and approval. The National Arboretum (Arboretum) management proposes additional development on the eastern area of the Arboretum, which could include construction of a Chinese Garden complex; development of an Anacostia waterfront access path; construction of new American with Disabilities Act (ADA) accessible pedestrian trails within the Asian Collection; development of new tram stops at the Arboretum; realignment of Holly Spring and Hickey Hill Roads; and construction of decorative security entrances to the Arboretum from the Anacostia River. The submission outlines a general development framework of land-uses, particularly the new Chinese Garden, and details specific features that comprise the master plan modifications.

## **Commission Action Requested by Applicant**

Approval of master plan modification and comments on concept site design pursuant to 40 U.S.C. § 8722 (b)(1), and (d).

---

## **Executive Director's Recommendation**

The Commission:

**Approves** the National Arboretum Master Plan Modification and favorably comments on the Concept for the Chinese Garden, as shown on NCPC Map File No. 43.20 (05.00)-42157, with the following provisions:

- **Notes** that the Chinese Garden perimeter must demonstrate, in its progress design, full incorporation of additional new planting of tree species.
- **Emphasizes** that further design review of the character development for the boundary of the Garden adjacent to Holly Spring Road should be undertaken by the Arboretum to reduce the full impact of the 20-plus new structures that would be placed into the setting of this area.

- **Strongly encourages** the Arboretum to coordinate the planned riverside trail with the National Park Service to ensure the revised property boundary is appropriately defined and that no inadvertent encroachment on Park Service property occurs by way of the path development to the Asian Collection entrance near the Anacostia River.

\* \* \*

## PROJECT DESCRIPTION

The U.S. National Arboretum (Arboretum) has submitted to the Commission a master plan modification to the approved 2000 master plan for the Arboretum. While the original master plan envisioned strategic planning objectives for the next 20 to 25 years, recently, a monetary gift from the Chinese government—intended to demonstrate the history and culture of Chinese gardening, has provided the Arboretum an opportunity for additional development within the eastern sector of the facility.

This modification area extends from Holly Spring Road to the southwestern boundary of the Arboretum at the river, and from Hickey Run to the northern boundary at New York Avenue. Within this area, a plan of the proposed modification includes the development of a new classical Chinese Garden complex, improved accessibility and rehabilitation of the Asian Collection exhibit, and the establishment of a connection to new development along the Anacostia River planned by the Anacostia Waterfront Corporation and the National Park Service at the Arboretum's eastern boundary.

### Site Location

The Arboretum is located on a 446-acre site in northeast Washington, DC, and is the premier horticulture research facility of the United States Department of Agriculture. Established by Congress in 1927 and opened to the public in 1959, the Arboretum is known for its extensive research and

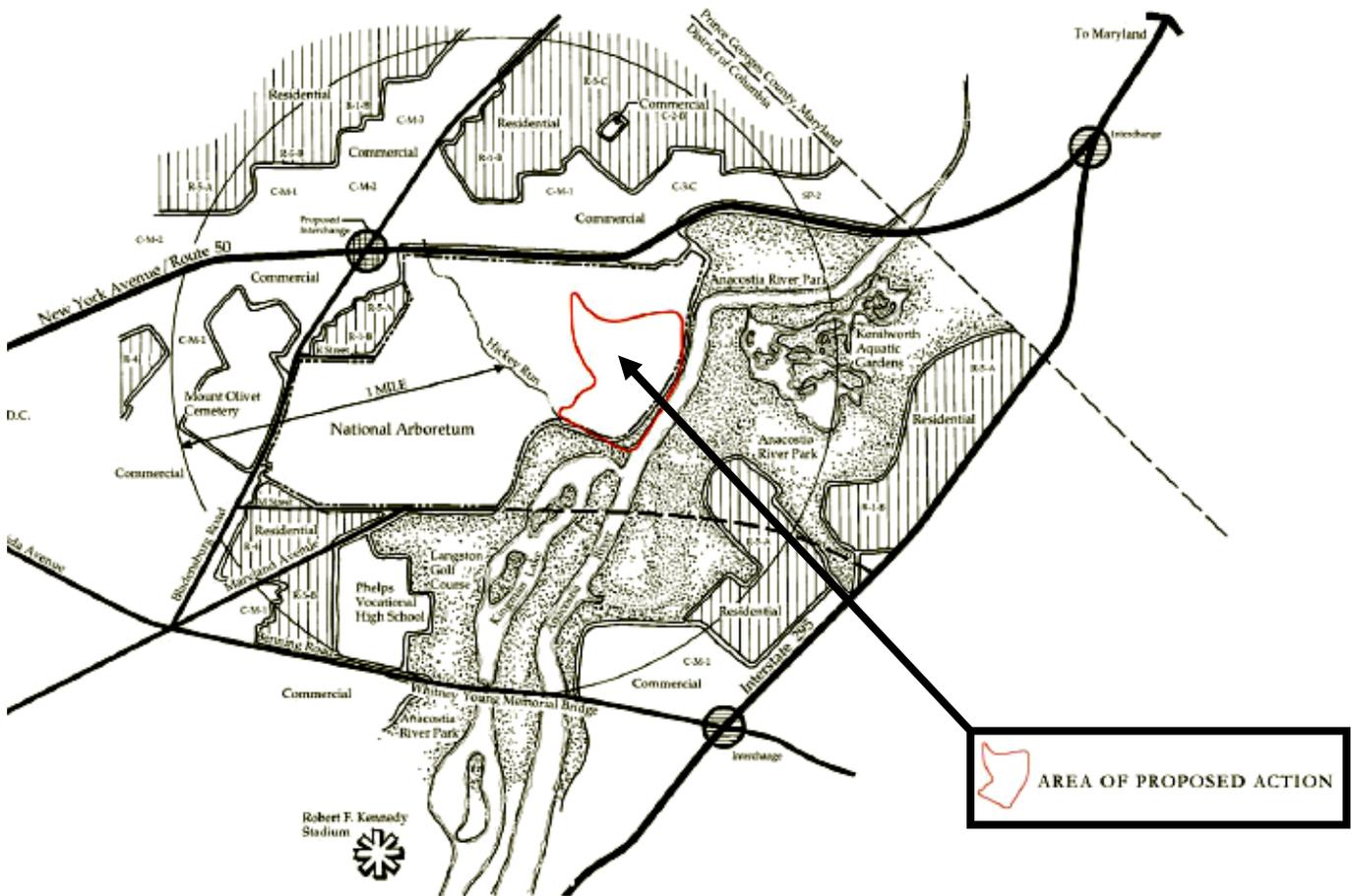


**AERIAL VIEW OF THE NATIONAL ARBORETUM**

exquisite plant exhibits. Over the years, as the Arboretum has gained popularity for its exhibits, it has seen a rise in the number of annual visitors.

The area of proposed master plan changes consists of moderately steep sloping hills that reach their lowest point at the edge of the Anacostia River. Two bodies of water, Hickey Run and the main stem of the Anacostia River are close-by the edges of the project area that includes about 15 acres of landscape that has been altered over the years of the Arboretum’s existence.

The entire Arboretum has been designated a Category II Landmark or “Historical Place” and is listed on the National Register of Historic Properties. Additionally, the New York Avenue Brick Kilns, a portion of the Arboretum property, are listed separately on the National Register.



**CONTEXT DIAGRAM INDICATING MASTER PLAN MODIFCATION AREA LOCATION**

Background

Previous Commission actions involving the Arboretum master plan include:

- By action dated November 2000, the Commission approved the updated Master Plan for the U.S. National Arboretum, Washington, D.C., as shown on NCPC Map File No. 43.20

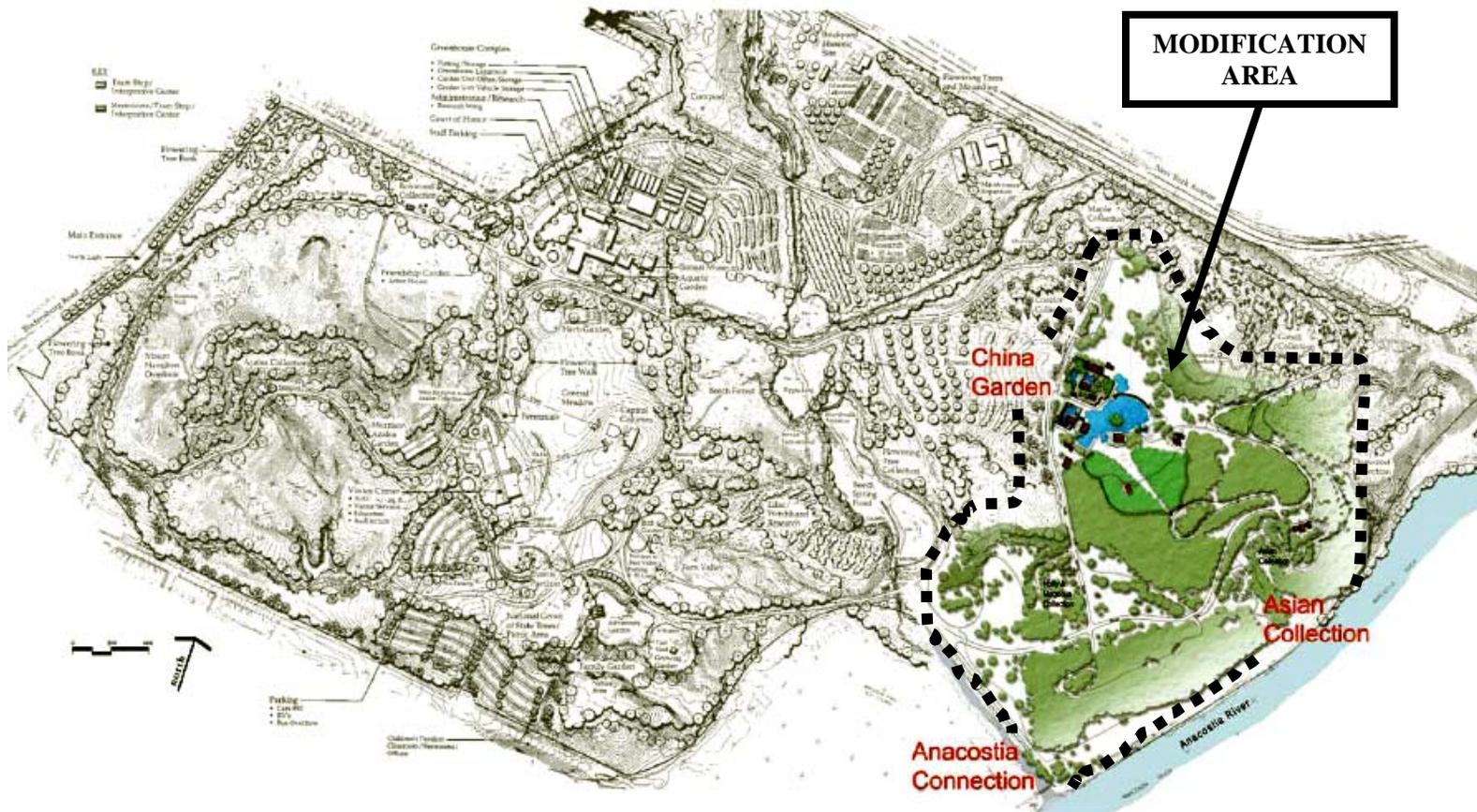
(05.12)-40840. In addition, the Commission required that the Arboretum and their consultants, in consultation with Commission staff, incorporate the following comments:

- In the future updates of the master plan:
  1. Retain the Maryland Avenue (M Street) entrance gate and entry road configuration as a symbolic gateway and future entrance to the Arboretum.
  2. Do not preclude the New York Avenue entrance as a future entrance to the Arboretum.
  3. Identify specific connections to link the Arboretum with pedestrian pathways and bike and water trails in Anacostia River Park.
  4. Consult with the DC State Historic Preservation Office (SHPO) in the development of a plan for the Brick Yard that will maintain and preserve the historic structures and allow for their public interpretation.
  5. Develop a Cultural Resources Management Plan that identifies future plans for, and maintenance and preservation of, the contributing features of this (the Arboretum) National Register-listed site.
- In the further development of the following projects to:
  1. Coordinate the new Bladensburg Road main entrance throughout the planning and design process to ensure compatibility and compliance with federal plans and regulations.
  2. Conduct early consultation with Commission staff in the siting and design of the Visitor Center. The design of the new Visitor Center should result in a landmark structure that incorporates a major environmental education theme resulting in green building architecture.
  3. Ensure the appropriateness and compatibility of the Primary Parking Lot in relation to the Visitor Center and incorporate mitigation measures in the siting and design of both the Primary and Overflow Parking Lots.

The Arboretum has responded to the issues noted above, in subsequent specific project submissions from 2003 to 2006, which include:

- A Bladensburg Road new facility entrance project that included the Primary Parking Lot and incorporated the design of both the Primary and Overflow Parking Lots, which was approved by the Commission in January 2004.
- Discussions in 2004 with the District of Columbia Department of Transportation establishing that future District transportation plans preclude any form of vehicle entrance from New York Avenue.
- Linking of the Arboretum to the Anacostia River Park as proposed in the current submission.
- Future budget funding for eventual development of a plan for the Brick Yard.

- Future budget funding for eventual development of new Visitor Center which will be coordinated and submitted to the NCPC as a project undertaking currently identified in the Federal Capital Improvements Program, FY 2007-2012.



**ARBORETUM SITE PLAN INDICATING MASTER PLAN MODIFICATION, ELEMENTS OF CHINA GARDEN, ANACOSTIA WATERFRONT RIVERWALK CONNECTION, AND ASIAN COLLECTION PATHWAY AREA**

### Applicant's Proposal

The proposed master plan modifications involve the eastern sector of the Arboretum only and include: the development of two visitor area nodes; rehabilitation of aging trail systems; enhancement of vehicular and pedestrian circulation; improved security, upgraded stormwater management and erosion control measures. The plan indicates the general approach, project magnitudes, and character of specific future development actions within this sector of the Arboretum.

Detailed modification elements include the following:

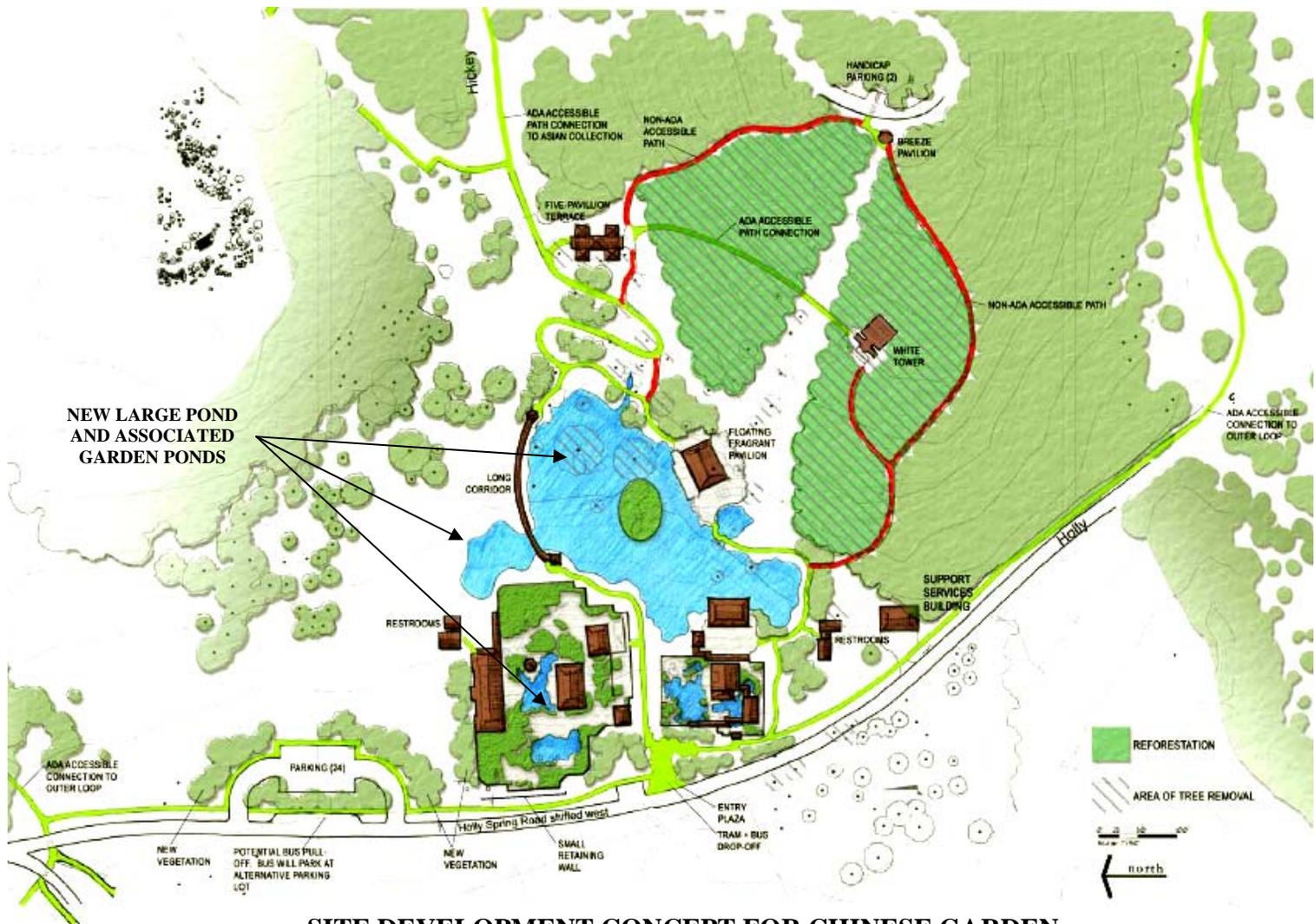
#### The Chinese Garden

The development of a new classical Chinese Garden within the Arboretum will highlight the distinct cultural traditions of the ancient Chinese horticultural and building design practices. The

garden establishment has been generously donated to the U.S. government and people by the Chinese government, and serves to strengthen cultural ties between the two countries. Within the garden, three distinct compounds will house a variety of enclosed and open air buildings. In each subarea of the Garden, different elements of the culture will be displayed.

In addition to the various buildings, the Chinese Garden will contain a large reflecting pool and four small reflecting ponds (see site development plan below). The three Garden areas include:

- The “Ge Garden,” the largest section of the garden. It will have four enclosed buildings and 3 open air pavilions. The main attraction of the Ge Garden will be an ornate exhibition hall that will serve a variety of formal functions.
- The “Mountain House of Sliced Stone” will be the next largest section of the garden. It will consist of possibly three enclosed buildings and 4 open air pavilions. Each of the various halls of the House will have different art and educational exhibits.
- The “Garden Floating on the Lake” will have 5 different open air pavilions surrounding it as well as one enclosed pavilion for meetings and lectures. The garden will also feature a bridge to enable pedestrians to cross the lake.



**SITE DEVELOPMENT CONCEPT FOR CHINESE GARDEN**

### Pine Tree Reforestation

White Pine trees on the slopes east of Holly Spring Road will be removed due to the poor condition of the trees within the area. The area will be reforested as part of the Garden implementation.

### Holly Spring Road Realignment

Holly Spring Road will be re-aligned west of its current location to better accommodate the Chinese Garden complex. Relocation of Holly Spring Road by roughly 40 feet will provide a significant reduction in overall cut and grading within the site for the Chinese Garden. Grading is further reduced with a slight modification to the lake's eastern/south eastern edge. Because of the steep slope adjacent to the lake, narrowing the lake in this area allowed for a decrease of approximately 5 ½ feet in the height of the bank or retaining wall next to the large pond area.

### Garden Parking Area

In establishing the Chinese Garden within the Arboretum, a parking lot is proposed for development adjacent to the main garden complex to handle limited vehicular traffic within the area and to provide easy access for the disabled. The proposed parking lot will be 5,800 square feet in size and will be able to accommodate 24 vehicles. A nearby bus pull-off area will be provided for loading and unloading of visitors to the Chinese Garden; long-term bus parking will be provided at an alternative location within the Arboretum.

### Establishment of a Chinese Garden Tram Stop

As in the 2000 Master Plan, the proposed master plan modification will have tram stops at new and renovated attractions within the Arboretum. With the development of the Chinese Garden complex, a new tram stop will be placed at the main entrance to the garden and will service the visitors to the area.

### Accessible Path Development

The proposed action calls for the development of a series of Americans with Disabilities Act (ADA) accessible paths in order to connect the various structures of the Chinese Garden to each other and to connect the Chinese Garden to other parts of the Arboretum trail system, such as the Outer Loop. These paths will help improve accessibility for all visitors and protect the viability of the collections by directing pedestrian traffic to established routes.

### Realignment of Hickey Hill Road

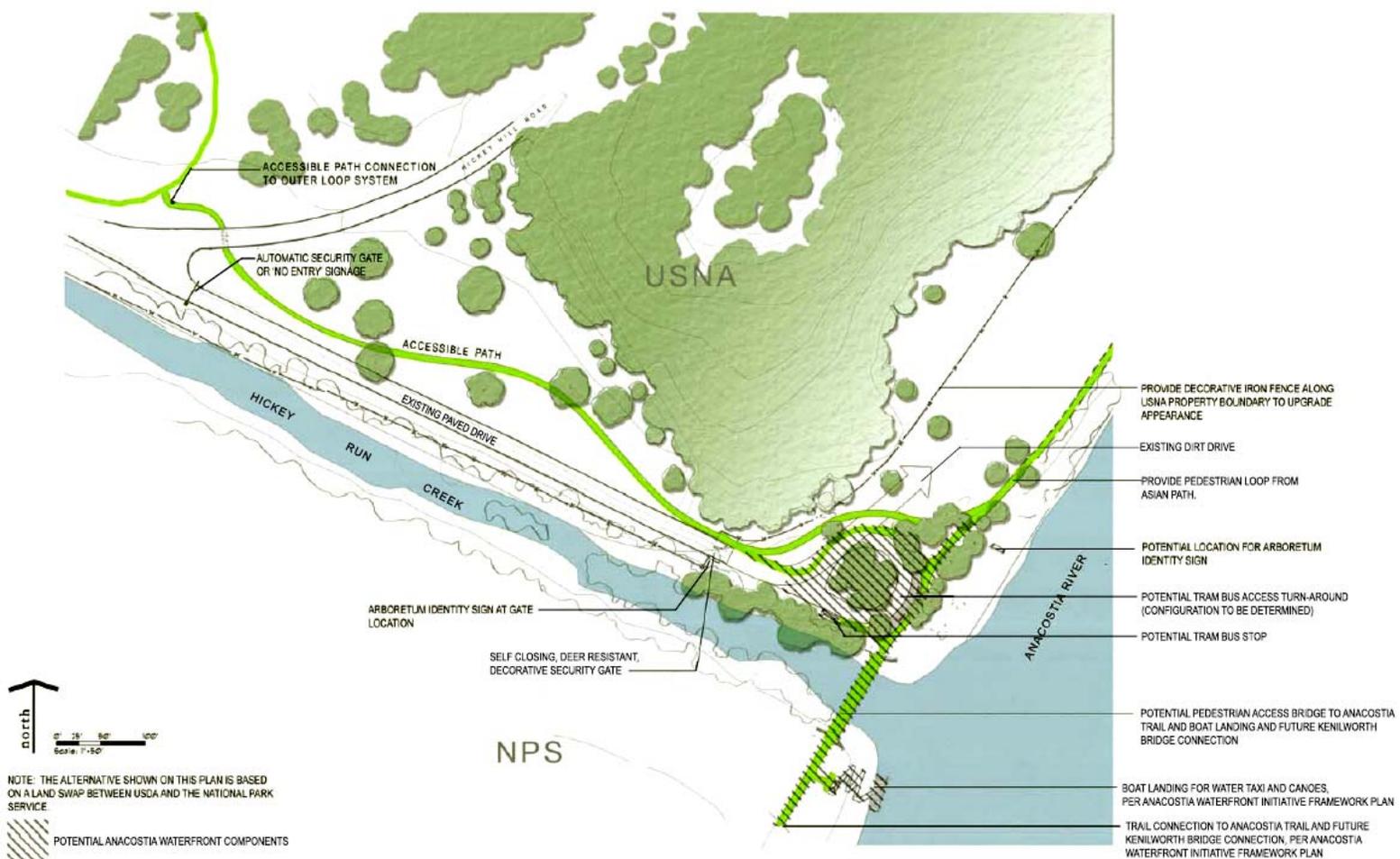
In the master plan modification, the Asian Collection Area will include Hickey Hill Road being realigned to the west near the existing restrooms in order to accommodate the development of a new parking lot and interpretive visitor center planned for the future. This modification will allow visitors to move from the parking area to the new visitor node without crossing Hickey Hill Road.

Path Development

The 2000 Master Plan called for the rehabilitation of existing Asian Collection trails by correcting erosion problems, providing new and wider (3 - 4 foot) steps, improving aesthetic quality, and providing for better stormwater management. The submitted modification also recommends the construction of an elevated boardwalk through the metasequoia grove near the Dogwood Collection to preserve the root system of the trees while providing access for visitors.

Anacostia Waterfront Access Development

The master plan modification provides for the development of an 18 foot wide restricted-access paved road to connect Hickey Hill Road to the vicinity of the river. This road will provide maintenance vehicle and tram access to the new trail proposed for along the river's edge and to possible boating facilities proposed by the Anacostia Waterfront Initiative (D.C. Office of Planning and AW Corporation). It will be available only during Arboretum operating hours.



**ANACOSTIA WATERFRONT ACCESS DRIVE CONCEPT  
SITE DEVELOPMENT PLAN**

### Anacostia Waterfront Accessible Path Development

With the development of a waterfront access path in the District of Columbia Anacostia Waterfront Initiative, the Arboretum will be accessible from the Anacostia. To ensure pedestrian access, a 7-foot wide ADA accessible path would be extend from the Outer Loop trail near Hickey Run and run parallel to the new 18-foot wide paved road to the potential waterfront access loop. At the potential access loop, the pedestrian path will connect to a new 1,300 foot trail along the Anacostia River that will connect to the base of the Asian Collection trail. A potential new tram stop will be established at the tram access loop that is connected to the roadway development noted above. This will provide visitors access to the Arboretum from the new Anacostia park trail features.

In conjunction with the pathway development, revisions would occur to the fence and gates already existing along the Arboretum property line near the Anacostia River. Both the current fence and gates are made of chain link steel. As requested by the Commission in 2004, the revised perimeter gate system will be upgraded to a self-closing, deer-resistant and decorative fence, coordinated with other Arboretum entrances to provide an aesthetically pleasing yet secure gateway.

## PROJECT ANALYSIS

### Executive Summary

The master plan modification for the National Arboretum represents a thorough and comprehensive planning update to changing conditions and responds to a unique opportunity that is afforded to the Arboretum by the gift of the Peoples Republic of China.

Implementation of the modification is in concert with the original master plan of 2000, and will result in a significant enhancement of the visitor experience. This, in turn, will allow the Arboretum to better achieve its key strategic plan goals in the areas of research, education, and garden/collections. The modification enables the Arboretum to continue to maintain its high standard of excellence in the twenty-first century.

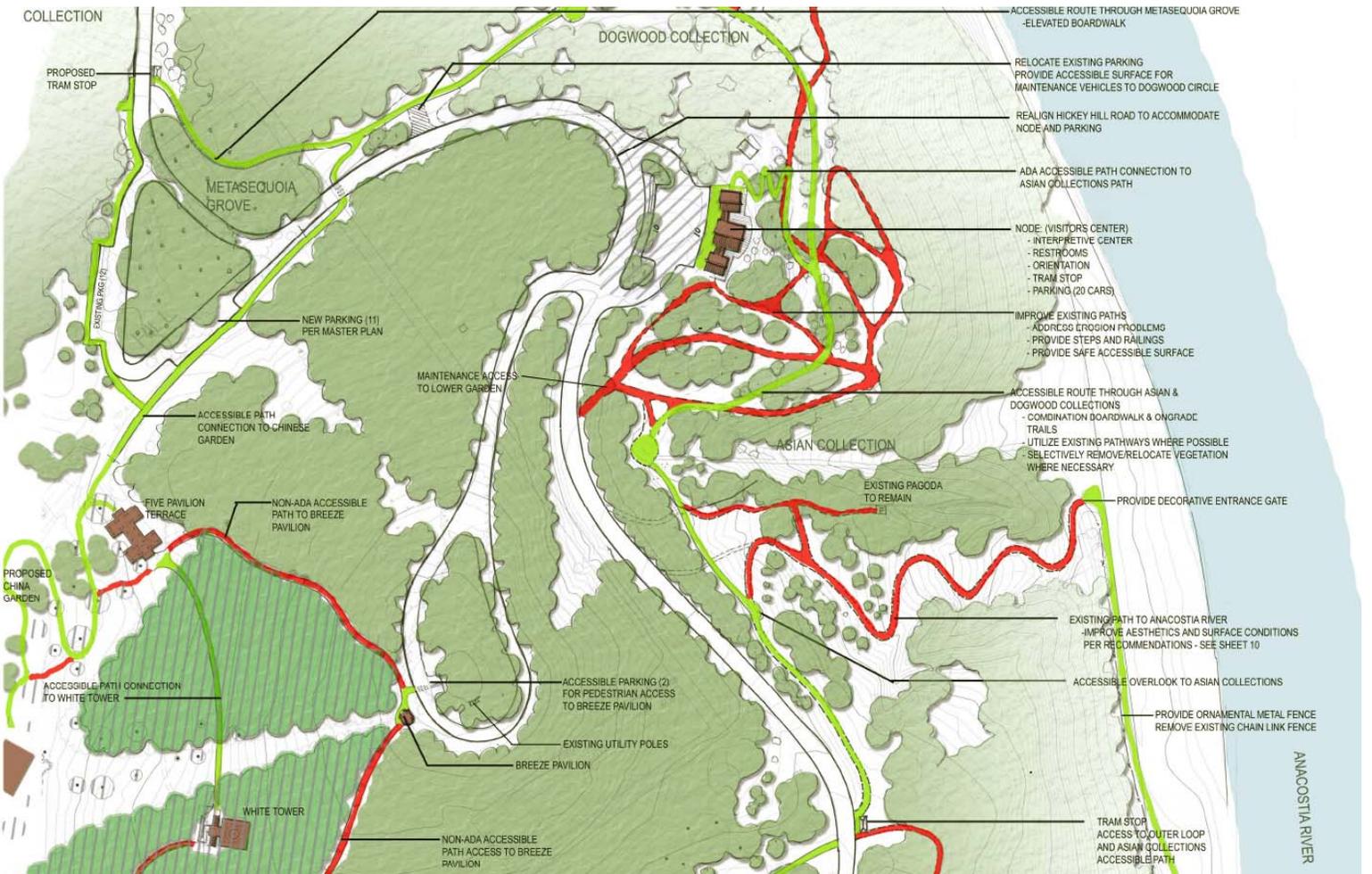
Staff is encouraged that the Plan's modification recognizes the importance of maintaining vistas and large-scale landscapes of the eastern environs of the campus, in order to preserve the qualities that visitors treasure. Staff is pleased that access to the Arboretum will be further integrated to the Anacostia River by the modifications, and that the riverside pedestrian pathways provide walking and bike trail connections to the Anacostia River parkland northeast and south of the Arboretum. Nevertheless, the Arboretum is strongly encouraged to coordinate the planned riverside pathway with the National Park Service to ensure no inadvertent encroachment on Park Service property occurs with the development of the planned path to the Asian Collection and that all necessary boundary modifications are appropriately agreed to by the Park Service.

In reviewing the submitted modifications to the master plan, staff requests that the following comments be presented by the Commission to the Arboretum in regard to further project development of the Chinese Garden complex.

### Detailed Evaluation

Staff believes the increased density and the nature of the site development concept for the Chinese Garden is clear, but needs to be carefully transitioned to the existing landscapes present at the Arboretum. The desired change in character and basic attributes of the planned Chinese Garden are important campus open space modifications and involve various size buildings adjacent to very naturalistic settings. The impact of development on the eastern tree canopy involving the existing white pines is regrettable; but more persuasive is the staff concern regarding building massing and buffer space adjacent to the Garden. Staff recommends that the Commission emphasize that the Garden perimeter must demonstrate, in its progress design, full incorporation of new planting of tree species. Additionally, further design review of the character development for the boundary of the Garden, adjacent to Holly Spring Road, should be undertaken by the Arboretum to reduce the full impact of the 20-plus new structures that would be placed into the foreground setting of this area. As it stands, the garden development crowds this foreground near the re-aligned road, in contrast to the revered tradition of garden development that is fitted to the land as scenic sections to be disclosed—not at one glance, but gradually in sequences.

While acknowledging this general scope of concern, the staff nevertheless finds no major adverse issues with the master plan modification and **recommends approval by the Commission of the National Arboretum Master Plan Modification and comments favorably on the Chinese Garden.**



**ASIAN COLLECTION PATHWAY REHABILITATION CONCEPT  
SITE DEVELOPMENT**

Applicant: The U.S. National Arboretum, a facility of the U.S. Department of Agriculture.

Estimated Cost: The submission has no total estimated cost identified. Individual projects that comprise the planning would be established under the specific proposals as determined by the Arboretum preliminary and final planning. Presently the Chinese Garden is estimated, in the Capital Improvements Program, as a project costing slightly more than \$910,000.00.

Architect: The master plan modification was developed, as design contractor effort, by the firm of Rhodeside & Harwell, Inc., Alexandria, Virginia.

### Urban Design Context

As Institutional land located in northeast Washington, D.C., the great significance of the National Arboretum is that it is 446 acres of green space in an urban area. Although the Arboretum is physically connected to the fabric of greenways in the area and is at the terminus of one of the major avenues emanating from the U.S. Capitol, it is isolated from the man-made elements of the urban framework by topography and incompatible uses. The Anacostia Waterfront Initiative is remedying some of this isolation by establishing a pedestrian and recreational trail along various points at the Anacostia River. Working with the Anacostia Waterfront Corporation, the National Park Service and Arboretum anticipate a trail area near the eastern boundary of the Arboretum in the next five to ten years.

Maryland Avenue does not serve to tie the Arboretum to the urban fabric, even though it starts at the Capitol and terminates at the Arboretum. With the existing condition of the Avenue in this area, and with no plans to extend M Street across the Anacostia River, developing the Arboretum as the grand terminus to the Avenue is not feasible at this time.

## COORDINATION

### Coordinating Committee Meeting

The Coordinating Committee at its January 10, 2007 meeting reviewed the proposal and forwarded it to the Commission with the statement that the project has been coordinated with all agencies represented. The participating agencies are: NCPC, the District of Columbia Office of Planning, the National Park Service and the General Services Administration.

### Commission of Fine Arts

The National Arboretum met with the Commission of Fine Arts (CFA) at its meeting of July 27, 2006. The Commission reviewed and approved the revised draft master plan for the U.S. National Arboretum to include the proposed classical Chinese garden, accessibility-related modifications to the Asian Collection path system, and the linkage of the Arboretum to the Anacostia Riverfront Walk.

## CONFORMANCE

### 2000 Master Plan

The current 2000 Master Plan objectives and physical layout are maintained by the proposed modifications. One of the major goals of the 2002 Master Plan is the desire to bring a better understanding to the public of the vital role that research plays on the various collections and exhibits at the Arboretum. Through informative signage and interpretive centers, the Arboretum visitor, with the staged implementation of the overall plan, will become aware of the inter-relationship between the Arboretum's research program and the plants they are enjoying.

The submitted modification supplements the 2000 Master Plan visitor goals, which are: to attract visitors to the limit of the 2000 Plan, to make sure they feel welcome and want to return, and to enhance the educational opportunities that the Arboretum offers. The 2000 Master Plan provides the framework for the following:

- Build a new main entrance on Bladensburg Road that is as attractive as the rest of the Arboretum experience;
- Build a new Visitor Center to serve as the gateway to the Arboretum. This facility will provide an orientation to the site and to the Arboretum's programs and serve as a clear starting point for a tour of the grounds. It will also contain classrooms and educational support facilities.
- Construct parking areas with easy access to the new Visitor Center.
- Create a core pedestrian precinct around the ellipse linking the Visitor Center with nearby gardens, collections and displays.
- Create a perennial display within the core.
- Build a garden about the "Origin of Cultivated Plants."
- Create an area that engages families and educates and enchants the next generation of Arboretum supporters.
- Simplify the existing circulation to create a series of loops for visitors to tour the grounds.
- Provide tram service, in lieu of personal vehicles, to access the gardens and collections.
- Provide a network of educational and visitor facilities throughout the site, including interpretive centers, restrooms, tram stations and limited satellite parking lots.
- Develop a pedestrian path system to provide handicapped access as well as a safer and more pleasant experience for walkers.
- Renovate and modernize existing infrastructure.
- Create a comprehensive introduction to the Arboretum on the Internet.

The submitted modifications remain in full conformance with these objectives of the 2000 Master Plan.

### Urban Design and Security Plan

The Commission's current Urban Design and Security Plan (UDSP) does not directly specify measures to be implemented at federal research campuses. The UDSP implementing submission guidelines, recently approved by the Commission, emphasize that the UDSP measures seek to protect the physical design principles inherent in the District of Columbia historic plan and its historic resources, and to minimize the physical and visual intrusion of security barriers into public space (such as the national capital's vistas, rights-of-way, parks, squares, circles and plazas). These issues are generally applicable to the Arboretum planning effort given its physical location within the District of Columbia.

The only current provision of security measures with the submitted master plan modification calls for the construction of two new security gates at the waterfront entrance area. A fence with pedestrian gate already exists at the Arboretum property line near the Anacostia River. Both the fence and gate are made of chain link steel and have been in place for about four years.

The proposed new gates are at separate locations. The first gate will be located along the new 18-foot wide paved road near the waterfront access loop and the second gate will replace the existing one and will be located at the connection point between the Asian Collection trail and the pathway along the Anacostia River. Each of these gates will be self-closing, deer-resistant and will incorporate decorative elements, coordinated with other Arboretum entrances to provide an aesthetically pleasing and secure entrance to the Arboretum.

### National Environmental Policy Act

In compliance with NCPC's Environmental and Historic Preservation Policies and Procedures (April 1, 2004), the National Arboretum, as the lead federal agency within the U.S. Department of Agriculture, prepared an Environmental Assessment (EA) of the master plan modification and its detailed separate proposed project elements that comprise the site development revisions for the National Arboretum. The Arboretum completed a Finding of No Significant Impact on November 23, 2006. The NCPC Executive Director issued a Finding of No Significant Impact on December 29, 2006.

NCPC announced on its website the availability of the Finding and EA for public comment. The EA and comments from other federal and District of Columbia agencies about the EA analysis, appended to the document, are information that is made available to review in compliance with the requirements of the National Environmental Policy Act (NEPA) and the Commission's implementing Environmental and Historic Preservation Policies. In addition, the notice adheres to procedures that apply to actions that affect floodplain areas in accordance with Federal Executive Order (EO) 11988, "Floodplain Management," dated May 24, 1977.

The EA examines three alternatives that include two variants of the proposed Classical Chinese Garden and the no action alternative.

NCPC staff has found few potential environmental impacts. Those that exist are minimal and are addressed by mitigation through design modifications and through best management practices and revised design approaches that the applicant has incorporated into its submission of the master plan. Affects to historical and cultural components of the environment regarding potential plans may impact one small historic structure and are being addressed by a National Historic Preservation Act, Section 106 requirements, which would be completed by the Arboretum in the further development of the project planning provided to NCPC and the District of Columbia State Historic Preservation Office. The proposed master plan modification does impart minor disturbance to the floodplain of the Anacostia River but does not adversely impact the Anacostia River, as reviewed by the Commission in accordance with federal Executive Order (EO) 11988, "Floodplain Management".

### Floodplain Finding

The proposed master plan update and its implementation would minimally affect the 100-year floodplain of the Anacostia River adjacent to the Arboretum at the river's western shoreline. Federal Executive Order (EO) 11988, "Floodplain Management," May 24, 1977, seeks to avoid the long and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. EO 11988 applies to federally supported projects and directs agencies to consider alternatives to siting in a floodplain. The Executive Order addresses development in the 100-year floodplain as well as critical actions in the 500-year floodplain. A critical action is defined by the Water Resources Council Floodplain Management Guidelines, developed to implement EO 11988, as any activity for which even a slight chance of flooding is too great. For example, if an action would create an added dimension to the flood (such as facilities producing or storing volatile or toxic materials) or if the occupants of a building located in the floodplain (hospitals, schools) were not sufficiently mobile to evacuate; the planned project would be regarded as a critical one. The loss of irreplaceable records or emergency services involved in a planned action would also be considered criteria for critical actions.

NCPC has determined the proposed tram stop and pedestrian pathway modifications of the revised master plan are not critical actions and do not add any significant effect to the flow dynamics of a flood, nor does the proposed construction occur in the floodway of the Anacostia River.

Alternative sites within the floodplain were evaluated by the Arboretum and NCPC review staff, but much of the Arboretum existing property being considered for paths and the tram stop exists as leisure interest/open space areas and are the only areas feasibly adjacent to the Anacostia Waterfront Riverwalk, a project of the District's Anacostia Waterfront Corporation in cooperation with the National Park Service. Information presented in the EA indicated there are no practicable sites outside the floodplain area that are feasible for the proposed Arboretum facilities that would meet the planned objective of connecting to the Anacostia Waterfront trail. Other considered areas involved steep slopes or densely forested tracts of land that are not feasible for trail development.

Review by NCPC staff of all pertinent information provided by the Arboretum indicates the proposed pathway improvements will not adversely affect the floodplain. No significant displacement of floodplain water storage area will occur because all project elements will be subject to inundation during flooding and contain no volume extent that would displace floodwaters. No significant impervious areas are introduced. Site grading is minimized at the area of the planned improvements with no additional fill or cut. Consequently, the flooding characteristics of the river at this location are not significantly or appreciably altered. Recreational amenities (benches) included in the pedestrian pathways will be designed to withstand flooding impacts.

### Hydrology

The proposed action will have minimal impact on the hydrology within the area of proposed action. Much of the hydrologic impact of the proposed action will exhibit no change to the major water drainage patterns of the Arboretum. The proposed five pond areas of the Chinese Garden are independent and isolated water features that will be connected only to new drainage systems within the Chinese Garden complex by hydraulic pipes, with some featuring recirculation

functions. The ponds themselves will serve a variety of purposes including stormwater management and new habitats for wildlife and aquatic species at the Chinese Garden complex.

### Wetlands

The proposed action will have a minimal or no impact on the 743 square foot wetland area that runs along the banks of the Anacostia River at the base of the Asian Collection on the eastern boundary of the Arboretum. This wetland resides outside the limits of potential work in the establishment of a new entrance at the existing access point on the eastern boundary near the Asian Collection ravine path.

### Floodplain

The only construction that would occur within the floodplain would be the development of the pedestrian trail along the Anacostia River and the tram stop at the trail that features pervious pavement materials. To provide access at the river shore, the trail and stop would necessarily be located within the floodplain. The floodplain extends three hundred feet from the river's edge toward the hills within the Arboretum. The proposed location would not increase the risk of flooding and/or flood related damage within the floodplain area. The National Arboretum intends to establish an Executive Order 11988 floodplain finding as required by the directive once preliminary design details of the features at the tram stop and pathways, including a new metal picket perimeter fence, are completed.

### Topography

The proposed action is affecting existing topographic conditions within the area of work at the east side of the Arboretum, but is not significant. Site grading work would be need to undertake the construction of the ponds, relocated roadways, buildings and trails to level out the topography of the areas. These areas, however, are selectively developed or altered within defined limits to each area. The proposed development elements of the master plan modification will have specific constraints that must be taken into account in that area. Specific measures to mitigate minimal impacts associated with these areas and committed to in the master plan modification include:

### *Chinese Garden Complex*

During the cut and fill and grading operations to prepare the Garden Complex site for the construction, approximately 37,000 cubic yards of soil will be cut from the high part of the construction area, and would be transported to fill approximately 36,000 cubic yards of land near Holly Spring Road. Submitted plans specify techniques that include: the creation of temporary diversion channels, building of retaining walls where the garden meets Hickey Hill, soil binding applications, and geotextile stabilization of layered earth construction. Sedimentation control plans and a stormwater management plan will be prepared by the Arboretum and submitted to the District of Columbia Department of Consumer and Regulatory Affairs (DCRA) for this work as required by the National Pollutant Discharge Elimination System (NPDES) purposes in accordance with the Clean Water Act. NCPC future project reviews of the specifically implemented plans will assure compliance and incorporation of these mitigation features, and current master plan modification identifies the use and presence of these elements in the proposal drawings. NCPC staff finds these measures as noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure their implementation.

### *Asian Collection Rehabilitation*

The effects on topographic conditions within the Asian Collection area of the Arboretum will occur during the construction of the realignment of Hickey Hill Road near the Asian Collection exhibit. In the submitted plans, approximately 235 cubic yards of soil will be cut and used to fill approximately 440 cubic yards of land to create a level terrain for the realignment of the road. Mitigation actions will follow best management practices to control erosion during this construction through developed erosion control plans established in accordance with a stormwater management plan that will be prepared by the Arboretum and submitted to the District of Columbia Department of Consumer and Regulatory Affairs (DCRA) for National Pollutant Discharge Elimination System (NPDES) purposes in accordance with the Clean Water Act. The erosion and sedimentation control plan will include measures to prevent erosion of cleared areas and the transport of soil and sediment. Techniques that will be implemented include: diversion channels, soil binding applications, geotextile fabric stabilization, and slope drains. NCPC future project reviews of the specifically implemented plans would assure compliance and incorporation of these features, and the submitted master plan modification identifies the use and presence of these elements in the modification proposal. NCPC staff finds these measures as noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure their implementation.

### *Anacostia Waterfront Access Path*

Slight impacts on existing topographic conditions will result from the construction of the waterfront access path. During construction, minor grading may need to be completed to create level terrain for the development of a tram stop. Project measures will employ best management practices that would be implemented in construction of the area and will include temporary revetment of soils, soil binding applications, and geotextile stabilization of earth layers. Sedimentation control plans and a stormwater management plan will be prepared by the Arboretum and submitted to the District of Columbia Department of Consumer and Regulatory Affairs (DCRA) for National Pollutant Discharge Elimination System (NPDES) purposes in accordance with the Clean Water Act. The master plan modification identifies the use and presence of these elements in the submission. NCPC future project reviews of the specifically implemented plans will assure compliance and incorporation of these features. NCPC staff finds these measures as noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure the mitigation implementation as a provision of the approval process.

### Vegetation

Construction activities associated with the development of the Chinese Garden complex, the Anacostia waterfront access path, and the Asian Collection rehabilitation will require removal or alteration of existing vegetation within the areas of proposed action. None of this activity is found to be significant as mitigated by the master plan modifications covering each area noted below.

### *Chinese Garden Complex*

Due to the proposed construction of the Garden Complex in the existing meadow, the Chinese Garden area will result in changes to vegetation at the Arboretum. Proposed modifications include removal of two mature stands of white pines, select other trees, and native grasses as part of

construction. Arboretum officials state (2006) that many of the trees denoted for removal (the white pines) are aging and becoming weak wooded. These trees are closely planted together, in poor condition, prone to blow downs, and would need to be removed by the Arboretum in the future within a period of five to ten years.

The Garden Complex impact on vegetation is found by NCPC staff to be minimal in effect due to master modification design provision that stipulates replacement of existing trees with new ones, and the installation of new trees, shrubs and groundcovers in the new Chinese Garden complex design. This effect is not significant. It is likely, however, that replacement will not be one-for-one regarding species, but that new species will be planted as appropriate to the design of the new garden complex. The new vegetation of the master plan modification will help absorb some of the stormwater runoff created by the removal of current trees and groundcover and any additional impervious surfaces created within the area. The submitted plans specify and commit to tree planting replacement at the east side of the Garden complex. NCPC future project reviews of the specifically implemented plans would assure compliance and incorporation of these features. NCPC staff finds these measures as noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure their implementation.

#### *Anacostia Waterfront Access Path*

Construction of the Anacostia waterfront access path will create a minor impact on vegetation along areas of the Arboretum near the Anacostia River and is not significant due to the limited number of trees involved. During construction of the access path, only a select number of trees may have to be removed at the base slope area of hills. To prevent excessive amounts of erosion, development of a temporary revetment will minimize erosion and prevent advanced erosion problems near the river. Since the mid 1990's, the National Arboretum has modified their vegetation mowing policy to promote the regrowth of a natural buffer along Hickey Run and bottom land areas. This effort will be implemented and maintained in the area of the access path. NCPC staff finds these provisions and the use of these mitigation measures adequate to address the effects.

#### *Asian Collection Rehabilitation*

The rehabilitation of the Asian Collection will have no significant impacts on vegetation within the area of proposed action. In order to clear a path for the realignment of Hickey Hill Road, a small number of white oaks and Virginia pine trees will have to be removed. In removing these trees, the master plan modification incorporates and identifies sediment and erosion control measures to minimize the effect on the surrounding environment.

The development of an elevated ADA-accessible trail near the Dogwood Collection of the Asian Collection area will have a minor impact on the vegetation and is not significant. To limit the minor effect that the boardwalk would have on existing plants in the metasequoia grove, designers have provided in the master plan modification an elevated path that will reduce the walkway disturbance area and thus significantly minimize the vegetation disturbance. In building the boardwalk, the activity will incorporate the erosion control measures developed under the requirements of the District of Columbia erosion and sedimentation control plan requirements and include geotextile stabilization of small construction related soil areas. These areas are identified in the master plan modification. NCPC future project reviews of the specifically implemented plans will assure compliance and incorporation of these features. NCPC staff finds these measures as

noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure their implementation.

### Noise

Temporary increases in ambient noise levels within the Arboretum will occur during construction activities associated with the proposed action, but are found by the NCPC to be not significant given that they are temporary. Arboretum construction specifications during the modification's phased implementation will impose the following restrictions on construction activities:

1. Strict adherence to all applicable local noise ordinances.
2. No construction activity to commence prior to 6:00 am or terminate later than 6:00 pm.
3. All equipment is to be well maintained and in proper working order.
4. Internal combustion engines or heavy equipment, generators, compressors, cranes and other equipment are to be fitted with mufflers that maintain the noise levels to applicable standards.
5. The project area is to be posted to warn of the possible dangers from noise. Pedestrians will be encouraged to remain at a safe distance from the site.
6. Noisy equipment is to be kept as far away as possible from nearby receptors, and the equipment would not idle un-necessarily.
7. Stationary noise generating equipment is to be enclosed.

NCPC future project reviews of the specifically implemented plans would assure compliance and incorporation of these features. NCPC staff finds these measures as noted above appropriate and adequate. Required future NCPC review and approval of project plans will insure their implementation.

Other sources of noise pollution will minimally increase due to the proposed action. No significant increase in visitor population to the Arboretum is anticipated beyond that noted within the existing 2000 master plan (approximately 750,000 people per year). That visitation was found to be accommodated by the 2000 plan in the creation of a new entrance road to the facility from Bladensburg Road and the removal of vehicle traffic within the Arboretum by the implemented tram system of the master plan. These actions were analyzed by the October 2000 EA completed by the Arboretum and found to be not significant.

In the December 2006 submitted master plan modification, only the Chinese Garden Complex is a completely new structural area. While this noise pollution source will generate minor amounts of noise, its presence will have only a minimal effect on the auditory environment of the Arboretum. Potential sources of noise will include the increased volume of tram and pedestrian traffic that will be generated by the addition of new tram routes at the Garden Complex, but is not significant due to the increased distance from the Arboretum property boundary and isolating barrier of the intervening hills of the interior site location. The installation of permanent, noise-producing mechanical equipment (i.e., air conditioning units, ventilation units, and generators) associated with six new buildings is anticipated to increase the background ambient noise level, but is minimal and not significant given that all new equipment will meet U.S. EPA, Department of Energy, and Occupational and Health Administration standards for noise production relating to those types of equipment.

### Transportation and Pedestrian Circulation

The Arboretum is committed to the construction of the tram system in conjunction with the construction of the Chinese Garden and plans to minimally increase the number of trams to accommodate visitors. The proposed action calls for the creation of new tram stops along Holly Spring Road at the Chinese Garden complex, and at the Anacostia waterfront access path. The development of these few stops and the additional building infrastructure surrounding them, (i.e., the Chinese Garden on Holly Spring Road) will require the realignment of Holly Spring Road and the creation of new landscaped features at the Anacostia waterfront access path.

The construction of these roads will have no significant short-term impacts on traffic circulation. During this time, certain road access may have to be limited to service only; moreover, current circulation patterns would be temporarily diverted. In the long term, construction of the Chinese Garden complex will require the removal of underutilized portions of Meadow Road and Hickey Hill Road in what is now the existing meadow. The traffic currently served by these roads can be accommodated by Hickey Hill Road after construction. Moreover, once the proposed actions are completed and the few additional tram routes are added, the net impact on transportation will be an improved circulation network within the Arboretum.

Pedestrian access to Arboretum exhibits and collections within the area of proposed action will be enhanced with the development of new trails to access the Anacostia River and the Chinese Garden complex. The construction of each of these paths will add new pedestrian routes where none currently exist. The greatest potential for change will occur with the development of the Outer Loop trail. This trail will create a permanent ADA accessible trail that will provide visitors with access to each of the collections in the eastern half of the Arboretum, including the Holly / Magnolia Collection, the Chinese Garden, the Asian Collection as well as the Dogwood and Gotelli Collections. Many of these elements are currently not ADA compliant. Other pedestrian circulation improvements will be the development of the waterfront access path and the trail along the Anacostia River. While the latter is currently an unmarked trail, the path will be improved with pervious paving, signage and upgraded Arboretum entrances. This trail will provide more visitors with access to the river and will provide a linkage to other possible river activities in cooperation with the District's Anacostia Waterfront Initiative Plan.

Temporary impacts resulting from construction activities at the Arboretum would result from construction vehicles accessing the site, but are not significant. Access to the site by construction vehicles would be consistent with District regulations for truck and construction movement and access. In order to minimize temporary and minor impacts of construction activities associated with the proposed Chinese Garden Complex, construction activities would be conducted in accordance with the District of Columbia controls listed in the Manual on Uniform Traffic Control Devices and any other applicable District of Columbia construction control requirements for traffic. NCPC staff finds this provision and the use of this mitigation measure as specified in the submitted modification plan appropriate and adequate to address the effect. Required future NCPC review and approval of project plans will insure their implementation.

### Cultural Resources—Historic features

The National Historic Preservation Act, Section 106 consultation, will be addressed during specific project design implementation for each element of the master plan modification. Initial discussion

and review of the master plan modifications occurred with the District of Columbia Historic Preservation Office in July 2006 (see attached letter).

Within the area of the master plan modification and project development, only one structure—the Chinese gazebo (within the Asian Collection)—is cited in the National Register of Historic Properties as a contributing resource towards the historic importance of the Arboretum. This structure is not affected by any construction within the proposed area. Based on this outcome, NCPC staff finds there is no significant effect on historic resources from the proposed action.

Coordination and Section 106 consultation with the District of Columbia State Historic Preservation Office will continue with development of the preliminary design and the establishment of a determination of affect by the National Arboretum as required by Section 106 of the National Historic Preservation Act.

#### Cultural Resources—Archeological features

The EA acknowledges that there may be archeological resources effects, and that participation in consultation process under the National Historic Preservation Act is ongoing. However, based on the findings of the EA development, NCPC staff has determined the potential impact not significant to archeological features because of the proposed action's avoidance of the potential resources within the master plan modification area, and would be mitigated by the Arboretum's further definition of the archeological site area and consultation with the District of Columbia State Historic Preservation Officer during specific project area design implementation.

The area of proposed action involves four sites listed as potential archeological resources, per coordination letter received from District of Columbia State Historic Preservation Officer (DC-SHPO) dated July 24, 2006. The SHPO recommended avoidance of these areas. Avoidance is a feasible action in regard to the proposed plans, since none of the identified archeological sites are within the limits of the master plan modification. Still, even with the implemented measure of avoidance, the location of the identified archeological site 51NE12 on the eastern edge of Arboretum property is not clearly defined in the map provided by the DC-SHPO's office. A careful definition of the area in preliminary design efforts will further determine the exact location and extent of the site. Avoidance measures such as modification of project plans or relocation of the project design features will be taken if the site is deemed to be in conflict with the proposed construction of the access path along the Anacostia River.

In the event that archaeological resources are uncovered during ground-disturbing activities, construction by the National Arboretum would stop while appropriate archaeological studies are completed in accordance with Section 106 of the National Historic Preservation Act. NCPC staff finds the provision and the use of this mitigation measure as specified is appropriate and adequate to address the effect, should it occur. The National Historic Preservation Act, Section 106 consultation specific requirements will be addressed during individual project design implementation.

#### National Historic Preservation Act

The National Arboretum is listed in the National Register of Historic Places. An inventory of cultural resources within the site was completed in the summer of 2000. Fourteen features were determined to be contributing historic elements, including a gazebo, gardens, and the gates on the

outside fence, walls, a fountain, and springhouses. In addition, the road system is a contributing feature, as is the brick kiln complex. Some of these features would be affected by proposals in the modification, in particular, the road system revisions. National Historic Preservation Act, Section 106, review will need to be undertaken as each proposal is developed.

The brick kiln complex consists of the remains of kilns that formed an industrial center for brick making in the District of Columbia. While not related to the mission of the Arboretum, the brick kilns are located on federal land and contains important information about the commercial and industrial history of the city. It is incumbent upon the National Arboretum, as a federal agency, to maintain the brick kilns in an adequate state of preservation so that the history of the site can continue to be conveyed. The Arboretum could also develop either an active or passive interpretive program that would allow the public to view and learn about the brick kiln complex.

The staff recommends early consultation with the District of Columbia Historic Preservation Officer (DC-SHPO) on the major elements proposed in the Plan modification as noted in the materials provided in the submission. Further, the Arboretum should consult with the DC SHPO about any further treatment and appropriate interpretation of the brick kiln complex.

#### Comprehensive Plan for the National Capital: Federal Elements

Regarding master plans, the *Comprehensive Plan for the National Capital: Federal Elements* includes the following policy:

Guide the long-range development for all installations on which more than one principal building, structure, or activity is located or proposed through a master plan.

- The characteristics of the installation and its surroundings should be established through the master planning process as required by the Commission. Characteristics include the qualities and resources to be protected; building groupings, massing, and architectural character; and streetscape and landscape elements and character.
- Agencies should review master plans on a periodic basis to ensure that both inventory material and development proposals are current. Such reviews should be conducted at least every five years. Agencies should advise the Commission of the results of such reviews and provide to the Commission a proposed schedule for revising master plans when updating is determined to be needed. Revisions to master plans should reflect changed conditions and provide an up-to-date plan for the development of the installation.

(Federal Workplace Element, Development of Workplaces with Communities Policies-Coordination with the Community, Policy #10)

#### Federal Capital Improvements Program

The 2007-2012 FCIP was adopted September 7, 2006 and included projects that were submitted to NCPC for FCIP program review. The review and indicated recommendation of the adopted FCIP analysis includes:

- Chinese Garden  
*Recommended*  
\$ 670,000 (estimated project cost during FYs 2007-2012). To enhance the traditional

friendship between the Chinese and American people and deepen the American people's understanding of the Chinese garden culture, the United States and the People's Republic of China propose to construct a classical Chinese garden. This project will be jointly planned and constructed by the two governments. This project will include approximately 25 wooden structures, which will be fabricated in China using traditional Chinese construction techniques. The project also will include a 1.72-acre man-made pond. Prior funding for the project was \$240,000.

- Asian Valley Paths Renovation And Restroom Replacement

*Recommended*

\$8,400,000 (estimated total project cost). This \$1,597,000 (estimated total project cost). This project entails designing and constructing a new path system and nodes in the Asian collection, making a portion of the collection accessible to all persons, and linking it to other gardens and collections. The project also will replace public restroom facilities that are in poor condition. This portion of the project was previously presented in the FYs 2006-2011 program as *Replace Restroom (Asian Valley and National Grove of Trees)*. This project will be referred to NCPC, CFA, DCHPO, and other referral agencies if required.

- Education and Visitors Center

*Recommended*

\$31,745,000 (estimated total project cost). The project will construct a 50,000-square-foot building to meet growing needs for formal and informal science education space. The facility will assist in the fulfillment of the USNA's mission as a research and education facility. DCHPO and CFA will have an opportunity to comment on the design submittals. An environmental review will be performed.

- Hickey Run Stormwater Abatement Project

*Recommended and Strongly Endorsed*

\$3,000,000 (estimated total project cost during FYs 2007-2012). This project replaces the existing system with a state-of-the-art system. The project will collect and remove floatable debris, oil, and grease from water within Hickey Run. This project will be referred to NCPC for approval of the final site development plan. The project was referred to the CFA and has received concurrence. The DCHPO has provided concurrence provided notification shall be made if prehistoric lithics are uncovered during excavation. This project is strongly recommended to improve water quality to the Anacostia River watershed. At its May 4, 2006 meeting the design concept for this project was approved by delegated action of the Executive Director.

*This project first appeared in the FYs 2006-2011 program.*

- Events Pavilion

*Recommended*

\$550,000 (estimated total project cost). In accordance with the 2000 Master Plan, this project will provide for a newly constructed pavilion that will eventually be enclosed. This project will be referred to NCPC, CFA, DCHPO, and other referral agencies if required.

*This project first appeared in the FYs 2006-2011 program.*

- Azalea Paths Renovation

*Recommended*

\$1,500,000 (estimated total project cost). This project renovates the path system within the Azalea Collection to improve accessibility and maintenance. This project will be referred to NCPC, CFA, DCHPO, and other referral agencies if required. The project has received \$75,000 in prior funding.

*This project first appeared in the FYs 2006-2011 program.*

## ATTACHMENTS

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
HISTORIC PRESERVATION OFFICE  
OFFICE OF PLANNING



July 24, 2006

Ms. Lisa Bynum, Realty Specialist  
Real Property Section  
USDA  
10300 Baltimore Ave  
Beltsville, MD 20705-22350

Dear Ms. Bynum:

We have received your letter of June 22, regarding the Master Plan revisions to address a new Chinese Garden, Anacostia Waterfront Access and a re-design of the Asian Collections.

We have reviewed the plans you sent and it appears that the primary concern would be impact to archaeological resources. I have enclosed a map (Figure 3) from the Archaeological Resources Study completed in 1993 for the Arboretum which shows the location of archaeological resources that were identified through map research. A field survey conducted for this study determined that a number of those sites have no archaeological potential. I have enclosed Table #1 which shows this assessment site by site. On Figure 3, I have circled those sites that were determined to have archaeological potential (18, 20, 23 and 29) which appear to be located in the project area. These are the loci that you need to be aware of as you develop your plans for the Chinese Garden and re-design of the Asian Collections. Avoidance of any of these archaeologically sensitive areas is the suggested approach, however, if this can't be done then we would need to discuss the next step. If there is going to be impact to any of the other areas in which sites with intact deposits have been identified, then again, we would have to develop a plan to identify the significance of the resource.

There is also an already identified site on the eastern edge of the property, 51NE12. As plans develop for the Anacostia Waterfront, any impact to this potential site would need to be addressed.

*(Continued)*

Page two

July 24, 2006

We look forward to hearing from you as you continue developing these plans. If you have any questions, please contact Nancy Kassner of my staff at 442-8336, or [nancy.kassner@dc.gov](mailto:nancy.kassner@dc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "D. Maloney". The signature is written in a cursive style with a long, sweeping tail that extends downwards and to the right.

David Maloney  
Deputy State Historic Preservation Officer

**From:** Bynum, Lisa [mailto:Lisa.Bynum@ARS.USDA.GOV]  
**Sent:** Wednesday, November 01, 2006 12:02 PM  
**To:** Deana Rhodeside  
**Cc:** Elias, Tom; Laster, Dana; Washington, Katrina; Wingert, Angela; Wood, Holly  
**Subject:** FW: Master Plan Revisions - U.S. National Arboretum

As requested, please find below the "Section 106" reply from the D.C. Historic Preservation Office, for inclusion with the NCPC submittal.

Thank you.

---

**From:** Kassner, Nancy (OP) [mailto:Nancy.Kassner@dc.gov]  
**Sent:** Wednesday, November 01, 2006 11:18 AM  
**To:** Bynum, Lisa  
**Subject:** RE: Master Plan Revisions - U.S. National Arboretum

Lisa:

Further to your concern that our letter to you of July 24<sup>th</sup> regarding the Master Plan Revisions to the Chinese Garden, Anacostia Waterfront Access and redesign of the Asian Collections did not specifically mention Section 106, since the projects have not yet been fully designed or developed, we responded with our comments as you requested.

As the projects develop, and are submitted to this office for review under Section 106, we will be better able to assess the impacts these projects will have on archaeological and historic resources.

We will look forward to reviewing these projects in the future.

Nancy J. Kassner  
Archaeologist, DC Office of Planning  
Historic Preservation Office  
801 N. Capitol St, NE  
Suite 3000  
Washington, DC 20002

Phone: 202 442.8836  
Nancy.kassner@dc.gov